

# Investment for jobs and growth

Promoting development and good governance in  
EU regions and cities



Sixth report on economic, social and territorial cohesion

European Commission

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Sixth report on economic, social and territorial cohesion

Brussels, 2014

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## ►► Foreword



The crisis has had a major impact on regions and cities across the EU. Regional economic disparities which were narrowing have stopped doing so, while unemployment has risen rapidly in almost all parts of the EU. Poverty and exclusion have also increased, including in many cities in the more developed Member States.

This 6<sup>th</sup> Cohesion report departs from previous reports. It highlights the links of Cohesion Policy with the Europe 2020 strategy by including chapters on smart, inclusive and sustainable growth and shows how the Policy has evolved to strengthen its impact on the EU objectives of growth and jobs and how good governance is essential for its effectiveness.

Cohesion Policy has already improved regional competitiveness and people's lives across the EU. It has supported business start-ups and helped people to obtain qualifications and new jobs. It has widened access to broadband and invested in rail and in better road links in the less developed parts of the EU. And it has increased markedly the number of homes connected to clean drinking water supply and wastewater treatment facilities.



The EU Structural and Investment Funds (ESIF) are an increasingly important means of achieving the Europe 2020 goals, especially the employment and poverty reduction targets which will be harder to reach because of the crisis. In many of several Member States, they have become the main source of finance for public investment which Member States have cut back to reduce budget deficits.

The ESIF will invest more up to 2020 in a low carbon economy, innovation and SMEs, quality employment, labour mobility and social inclusion, as well as They in the core TEN-T and digital networks, education, training, lifelong learning and reform of public administration.

The European Semester and the country specific recommendations which come out of it, play a critical role in underpinning Cohesion Policy. The 2014-20 ESIF legal framework for the ESIF in 2014 has introduced new rules to ensure the right regulatory and macroeconomic setting is in place for the Policy cohesion to have the most impact. In addition, ESIF will invest more in strengthening administrative capacity because of a growing understanding that without good governance, high growth rates and regional economic convergence cannot be achieved.

These changes, together with a stronger focus on results, will ensure that Cohesion Policy will better tackle regional disparities in economic performance and living standards while also helping to achieve the Europe 2020 goals.

Johannes Hahn  
European Commissioner  
for Regional Policy

László Andor  
European Commissioner  
for Employment, Social Affairs  
and Inclusion



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**Cohesion Policy:** Covers all the programmes supported by the following Funds: the European Social Fund (ESF), the European Regional Development Fund (ERDF) and the Cohesion Fund (CF).<sup>1</sup> It is also known as regional policy.

**Structural Funds:** The European Social Fund (ESF) and the European Regional Development Fund (ERDF)

## Abbreviations

AMECO:	Annual macro-economic database of the European Commission's Directorate-General for Economic and Financial Affairs.
COH:	Cohesion Countries including less developed plus moderately developed Member States (see below)
DG BUDG:	European Commission, Directorate-General for Budget
DG COMP:	European Commission, Directorate-General for Competition
DG ECFIN:	European Commission, Directorate-General for Economic and Financial Affairs
DG EMPL:	European Commission, Directorate-General for Employment, Social Affairs & Inclusion
DG MOVE:	European Commission, Directorate-General for Mobility and Transport
DG REGIO:	European Commission, Directorate-General for Regional and Urban Policy
EAFRD:	European Agricultural Fund for Rural Development, formerly known as the European Agricultural Guarantee and Guidance Fund (EAGGF)
EEA:	European Environment Agency
EFGS:	European Forum for Geography and Statistics
EIB:	European Investment Bank
EMFF:	European Maritime and Fisheries Fund, formerly known as European Fisheries Fund (EFF) and before as Financial Instrument for Fisheries Guidance (FIFG)
ERDF:	European Regional Development Fund
ESF:	European Social Fund
ESIF:	European Structural and Investment Funds. Covers all programmes supported ESF, ERDF, CF, EAFRD and EFF.
EU:	European Union, formerly known as European Coal and Steel Community (ECSC), the European Economic Community (EEC) and the European Community (EC)
ISCED:	International Standard Classification of Education
JRC:	European Commission Joint Research Centre (JRC)
NSI:	National Statistical Institute
OECD:	Organisation for Economic Co-operation and Development
PPS:	Purchasing Power Standards

## Member States and their abbreviation

BE	Belgium
BG	Bulgaria
CZ	Czech Republic
DK	Denmark
DE	Germany
EE	Estonia

<sup>1</sup> EAFRD and the Fisheries Fund have been considered part of Structural or Cohesion Policy during certain periods. But they will be treated separately in this report.

IE	Ireland
EL	Greece
ES	Spain
FR	France
HR	Croatia
IT	Italy
CY	Cyprus
LV	Latvia
LT	Lithuania
LU	Luxembourg
HU	Hungary
MT	Malta
NL	Netherlands
AT	Austria
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovakia
FI	Finland
SE	Sweden
UK	United Kingdom

## Geographical groupings

### Member State groupings

#### By enlargement

For ease of reading, this report refers to the European Economic Community (EEC), the European Community (EC) as the European Union (EU).

EU-6:	The six initial member states: BE, DE, FR, IT, LU and NL
EU-9:	EU-6 plus DK, IE and UK
EU-10:	EU-9 plus EL
EU-12:	EU-10 plus ES and PT (mainly in chapter 6)
EU-12:	All Member States that joined in 2004 and 2007: BG, CZ, EE, CY, LV, LT, HU, MT, PL, RO, SI, SK
EU-13:	All Member States that joined in 2004, 2007 and 2013: BG, CZ, EE, HR, CY, LV, LT, HU, MT, PL, RO, SI, SK
EU-15:	EU-12 plus, AT, SE, FI
EU-25:	EU-15 plus CZ, EE, CY, LV, LT, HU, MT, PL, SI, SK
EU-27:	EU-25 plus RO and BG
EU-28:	EU-27 plus HR

### Geographic groupings

- Central and Eastern Member States: EE, LV, LT, PL, SK, CZ, SI, HU, RO, BG, HR
- Southern Member States: PT, ES, IT, EL, MT, CY
- Western Member States: EU-15
- Nordic Member States: SE, DK, FI
- Baltic States: EE, LV, LT
- Benelux: BE, NL, LU

**By level of development**

Less developed Member States: (BG, RO, PL, LV, LT, HU, EE, SK, HR) (GDP per head below 75% of EU average in 2012)

Moderately developed Member States: (PT, MT, CZ, SI, EL, CY<sup>2</sup>) (GDP per head between 75% and 90%)

Highly developed Member States: (IT, ES, FR, BE, DE, UK, FI, SE, DK, AT, NL, IE, LU (GDP per head above EU average)

**By status:**

Candidate countries: Turkey, Montenegro, Serbia and the Former Yugoslav Republic of Macedonia (FYROM)

Potential candidate countries: Albania, Bosnia and Herzegovina, Kosovo under UNSC Resolution 1244/99 and Iceland

**Metropolitan regions**

This classification was developed in cooperation with the OECD and consists of NUTS 3 approximation of all urban functional areas of more than 250,000 as defined by the EU-OECD Functional Urban Areas methodology.

**Predominantly urban, intermediate, predominantly rural regions**

This classification is based on the OECD classification, but revised by the Commission. A detailed methodology is included in the Eurostat Regional Yearbook 2010.

**Border regions**

Border regions are NUTS 3 regions which are eligible for cross-border co-operation programmes under the European Regional Development Fund regulation.

**Local typologies****Degree of urbanisation**

Cities: Local administrative units with more than 50 % of their population in an urban centre;

Towns and suburbs: Local administrative units with more than 50 % of their population in urban clusters but less than 50 % live in an urban centre;

Rural area: Local administrative units with more than 50 % of their population in rural grid cells

For more information see:

[http://epp.eurostat.ec.europa.eu/statistics\\_explained/index.php/Degree\\_of\\_urbanisation\\_classification\\_-\\_2011\\_revision](http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Degree_of_urbanisation_classification_-_2011_revision)

[http://ec.europa.eu/regional\\_policy/sources/docgener/work/2014\\_01\\_new\\_urban.pdf](http://ec.europa.eu/regional_policy/sources/docgener/work/2014_01_new_urban.pdf)

**Cities and commuting zones**

Cities: Same definition as above

Commuting zones: Contiguous local administrative units with at least 15% of their working population commuting to a city.

For more information see:

[http://epp.eurostat.ec.europa.eu/statistics\\_explained/index.php/European\\_cities\\_%E2%80%93\\_the\\_EU-OECD\\_functional\\_urban\\_area\\_definition](http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/European_cities_%E2%80%93_the_EU-OECD_functional_urban_area_definition)

[http://ec.europa.eu/regional\\_policy/sources/docgener/focus/2012\\_01\\_city.pdf](http://ec.europa.eu/regional_policy/sources/docgener/focus/2012_01_city.pdf)

<sup>2</sup> Cyprus was included because it is eligible for the Cohesion Fund. Its GDP per head in PPS was 92% of the EU average in 2012 and is projected to be below 90% in 2013.



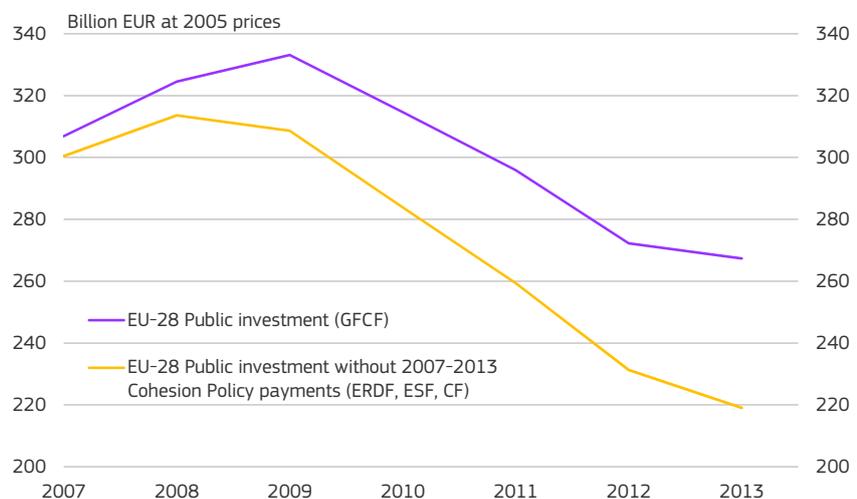
# Investment for jobs and growth<sup>1</sup>

## 1. Introduction

Although national governments had to apply spending cuts in recent years to balance their budgets and private financing dried up because of the financial and economic crisis, Cohesion Policy funding continued to flow to Member States and regions, supporting critical investments in growth and employment.

The crisis has had a profound impact on national and regional budgets, limiting funding availability across all investment areas. In the EU as a whole, public investment declined by 20% in real terms between 2008 and 2013 (Figure 1). In Greece, Spain and Ireland, the decline was around 60%. In the central and eastern European countries, where Cohesion Policy funding is particularly significant, public investment (measured as gross fixed capital formation) fell by a third. Without Cohesion Policy, investments in the Member States most affected by the crisis would have fallen by an additional 50%. Cohesion funding now represents more than 60% of the investment budget in these countries (Figure 2).

**Figure 1 Impact of Cohesion Policy on public investment, 2007-2013**

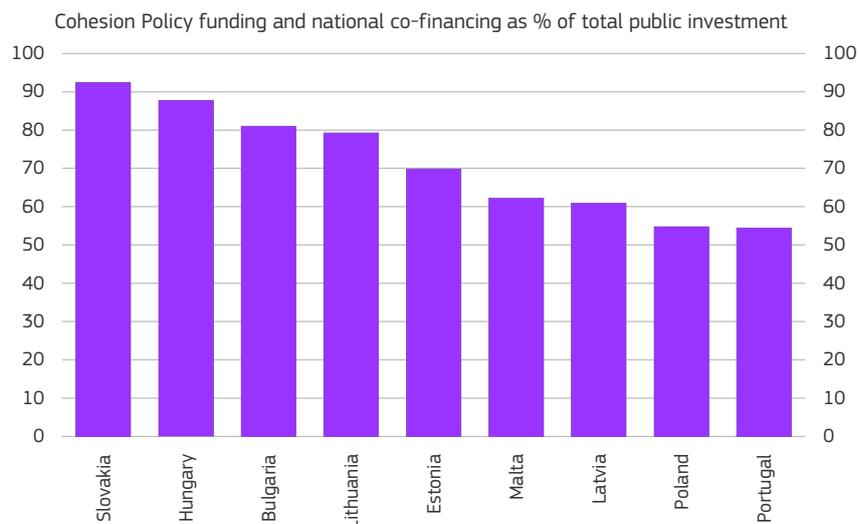


Source: Eurostat and DG REGIO

The economic crisis reversed a long trend of converging GDP and unemployment rates within the EU, affecting in particular regions in Southern Europe. The crisis also led to increases in poverty and social exclusion. This in turn has made it more difficult to meet several of the objectives of the Europe 2020 strategy.

<sup>1</sup> COM(2014) 473 final.

**Figure 2 Part of Cohesion Policy in public investment, average 2010-2012**



Source: Eurostat and DG REGIO

For example, in 210 of the 277 EU regions, there was an increase in unemployment between 2007 and 2012. In 50 of these regions, the increase meant that the unemployment rate more than doubled. The situation is particularly concerning for young people as, in 2012, in about half of the regions the youth unemployment rate was over 20%. As a result, many regions have not yet been able to contribute to meeting the Europe 2020 headline target of 75% employment in the population aged 20–64 by 2020.

As well as maintaining a focus on tackling long-term structural obstacles to development, the Commission and Member States responded to the crisis by re-directing some cohesion investments to areas where the impact on economic activity and employment would be direct and immediate. As a result, more than EUR 45 billion — or 13% of total funds — had been re-allocated by the end of 2013. This shifting of funds supported measures to mitigate growing unemployment and social exclusion and sustain investment in innovation and research and development (R&D), business support, sustainable energy, and social and education infrastructure.

The Commission also proposed measures to improve liquidity for the Member States most affected by the crisis. The adoption of these measures by the European Parliament and the Council allowed a reduction in national contributions, and led to more than EUR 7 billion of additional advance payments. A further reduction in national co-financing was also approved, worth almost EUR 2.1 billion.

Evidence suggests that Cohesion Policy investments have had a significant impact.

Between 2007 and 2012, the European Regional Development Fund (ERDF) created nearly 600,000 jobs. This is equivalent to almost 20% of the estimated job

losses in the same period, since the on-set of the financial crisis. It invested in 200,000 small and medium-sized enterprise (SME) projects and 80,000 start-ups, financed 22,000 projects involving research and business sector cooperation, provided broadband coverage to 5 million people and connected 5.5 million people to waste water treatment. In addition, EU investments under Cohesion Policy built 3,000 km of key European transport networks (15% of the overall TEN-T network) and also doubled the volume of government funding for R&D in the less developed Member States.

Between 2007 and 2012 the European Social Fund (ESF) supported 68 million individual project participations. After receiving ESF support 5.7 million unemployed or inactive people entered employment, and almost 8.6 million qualifications were gained through support from the ESF. There were more than 400,000 reported cases of new start-ups and people becoming self-employed. All of this has helped to either limit the fall in GDP in many countries or to prevent further increases in unemployment.

The effects of these investments will increase over the next few years as Member States have until the end of 2015 to use the funds from the 2007–2013 programmes and there is a time lag between the moment an investment is made and the time when its impact can be measured.

With a total budget of over EUR 450 billion (including national co-financing) for the 2014–2020 programming period, Cohesion Policy will be the main investment arm of the EU. It will provide the largest contribution to supporting SMEs, R&D and innovation, education, the low carbon economy, the environment, the fight against unemployment and social exclusion, to developing infrastructure connecting EU citizens and to modernising public administrations. Its investments, combined with structural reforms, will play a key role in supporting growth and job creation and in achieving the Europe 2020 strategy's objectives of smart, sustainable and inclusive growth.

The challenge is to ensure that these resources are used in the most effective and efficient way, maximising their impact, consolidating recovery and helping the EU to emerge from the crisis stronger and more competitive than before.

The new Cohesion Policy is fully aligned with the Europe 2020 strategy and its headline targets on employment, research and development, climate and energy, education and the fight against poverty and social exclusion, and linked to the European Semester and the EU economic governance process. Therefore, investments under Cohesion Policy will also be used to support policies pursued by Member States under the Integrated Guidelines and the National Reform Programmes, as well as to address the relevant country-specific recommendations (CSRs) from the Council. The Commission can also ask Member States to amend their Partnership Agreements and operational programmes to meet new challenges identified in the CSRs.

This Communication summarises the achievements of cohesion funding in the previous programming period. It describes the main elements of the Cohesion Policy reform introduced for the period 2014–2020<sup>2</sup>, and the trends emerging from the ongoing programme negotiations between the Commission and Member States. It is accompanied by a Staff Working Document<sup>3</sup>, analysing the socio-economic and governance challenges that Member States and regions are facing and assessing the impact of Cohesion Policy and public investment on economic and social disparities.

## 2. An evolving policy: Investing in regions' competitiveness to improve people's lives

The EU Treaty sets as objective for Cohesion Policy to reduce economic, social and territorial disparities, providing particular support to less developed regions.

Over time, the policy has helped to improve the standard of living and economic opportunities in EU regions by improving skills and employability; increasing access to regions; supporting administrative capacity building; establishing links between research institutions, universities and the business community; and providing services to small and medium-sized businesses. By supporting the main drivers of economic growth, Cohesion Policy helps EU regions grow more quickly.

While remaining true to its roots, Cohesion Policy has developed and progressed. In its early years, the policy had a purely national focus, financing predetermined projects in Member States, with little European influence. Over time, key principles were introduced such as multi-annual programming, more strategic investment and greater involvement of regional and local partners.

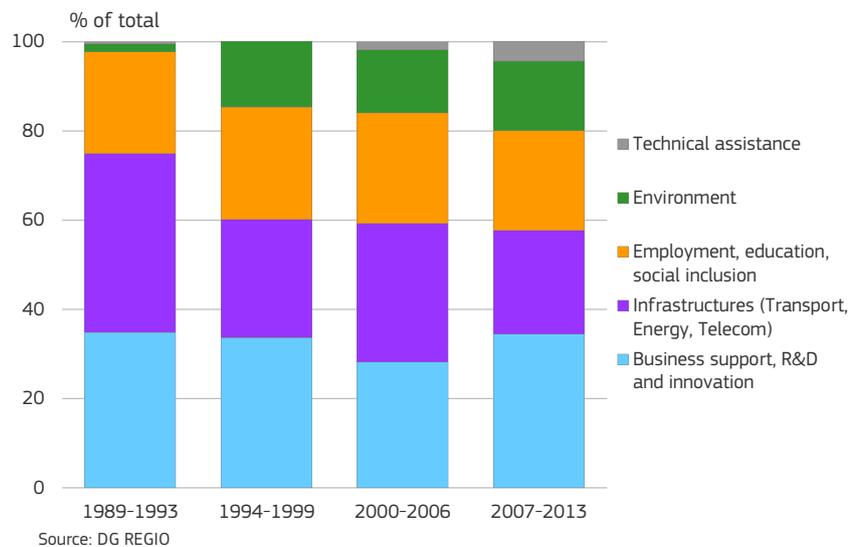
The bulk of financial support under the policy has consistently focused on less developed regions and Member States. There has, however, been a shift of investment away from infrastructure and towards SME support, innovation, more innovative employment and social policies. This shift has been made possible because of infrastructure development in Member States (both those that acceded after 2004 as well as in the 'older' Member States) supported under the Cohesion Policy in previous periods.

The proportion of investment in heavy infrastructure (transport in particular) was high when the policy was launched and after the 2004 enlargement, when countries with a clear infrastructure gap joined the EU (Figure 3). With the creation of the Cohesion Fund (CF) in the 1990s, environmental investment became increasingly relevant, helping Member States and regions to comply with EU directives and regulations in this area. Investment in the productive sector and in SMEs in particular has remained relatively stable.

<sup>2</sup> Regulation (EU) Nos 1299–1304/2013.

<sup>3</sup> SWD number to be added.

**Figure 3 Composition of cohesion policy investment in less developed regions, 1989-2013**



Investment in people (education, employment, and social inclusion), however, has declined slightly in relative terms. Nonetheless, the role of the ESF as an instrument for investing in human capital has grown significantly, most recently as a result of the dramatic impact of the economic crisis on Member States' labour markets. As a new measure to address this, the regulatory framework for 2014–2020 ring-fences a minimum share (23.1%) of the Cohesion Policy budget for the ESF. This is important to ensure the volume of investments in human capital, employment, social inclusion, public administration reform and institutional capacity building necessary for working towards the objectives of the Europe 2020 strategy.

For the first time, Cohesion Policy — in particular through the ESF — provided support during the 2007–2013 period to modernise and reform public administrations and judicial systems in convergence countries. This support aims to improve the functioning, accessibility and quality of public services, to facilitate evidence-based policy making and to deliver policy jointly with social partners and civil society.

Finally, the proportion of resources dedicated to technical assistance has increased significantly since 2000–2006, reflecting the critical importance of well-functioning institutions for the effective management of Cohesion Policy programmes.

By tailoring investments according to levels of economic development, Cohesion Policy has been able to adjust to the changing needs of each region over time. However, the evolution of the policy has not been as decisive as might have been expected. Evidence suggests, for example, that the introduction in 2007–2013 of compulsory earmarking of part of funding to EU priorities was a step forward, but results have been mixed and funds are still spread too thinly.

It has also become increasingly clear that the effectiveness of Cohesion Policy depends on sound macro-economic policies, a favourable business environment and strong institutions. In some cases, inappropriate policies and administrative and institutional weaknesses have limited the effectiveness of funding. Gaps have also remained when it comes to transposing EU legislation into national law in areas directly related to Cohesion Policy. Although attempts have been made to define strategic, institutional and administrative frameworks being in place, their application remained discretionary and unsystematic.

Finally, implementation of the funds has focused more on spending and compliance with management rules than on achieving objectives. Programme objectives have sometimes been vague, making it difficult to monitor and evaluate performance. Setting targets is complex and some Member States have set targets which were not ambitious enough. This has limited the capacity to evaluate the effects of interventions and to understand which measures were most effective and why.

### **3. Achieving results is at the core of the new Cohesion Policy**

The results of the negotiations on Cohesion Policy reform, which ended in December 2013, address these shortcomings.

The reform is focused on delivering an investment policy. Cohesion Policy objectives have been brought into line with the Europe 2020 strategy, and relevant CSRs are systematically being taken into account when planning investments. The way in which Cohesion Policy works has also been reformed, based on five main ideas.

#### **3.1 Cohesion Policy programmes need to operate in a favourable environment**

The new Cohesion Policy is linked to the EU economic governance process and to the 'European semester', as investment under the Cohesion Policy cannot be considered in isolation from the economic context in which it is undertaken.

In order to avoid unsustainable fiscal or economic policies that undermine the effectiveness of EU support during the 2014–2020 period, funding may be suspended when a Member State does not comply with the recommendations it received under the EU economic governance process.

The effectiveness of investment must not be undermined by unsound policies or regulatory, administrative or institutional bottlenecks. Member States and regions must therefore meet a series of pre-conditions. These are designed to ensure that investment feeds into a clear strategic policy framework that ensures swift transposition of EU law affecting the implementation of cohesion funding, sufficient

administrative capacity, and respect of minimum requirements on, for example, anti-discrimination, gender equality, disability, public procurement and state aid.

In particular, each area of investment must be based on a well-defined strategy. For example, no investment in transport can be made until a comprehensive national or regional transport strategy is in place. Similarly, investment in the field of R&D and innovation needs to be framed within a ‘smart specialisation strategy’, which involves a process of developing a vision, identifying competitive advantage, setting strategic priorities and making use of smart policies to maximise the knowledge-based development potential of any region. In a nutshell, projects should follow strategies and not the other way around.

### **3.2 Cohesion Policy programmes need to concentrate resources on a small number of priorities and maximise their added value**

Member States and regions need to concentrate funding on a limited number of areas of EU relevance. A large share of the ERDF will be allocated to four priorities at the centre of the Europe 2020 strategy: innovation and research, the digital agenda, support for SMEs and the low-carbon economy.

ESF concentration on up to five investment priorities will support the consolidation of outputs and results at European level. It will also ensure a clearer link with the European Employment Strategy and the Integrated Guidelines on Employment. At least 20% of the ESF budget will be ring-fenced for supporting social inclusion and combating poverty and discrimination.

Given the urgent need to tackle youth unemployment, a EUR 6 billion Youth Employment Initiative (YEI) has been launched, providing dedicated funding to help implement the Youth Guarantee across the EU. This ensures that every young person is offered appropriate employment or training within four months of leaving school or becoming unemployed. YEI funding will be focused on regions with particularly high youth unemployment rates.

Regions and Member States will have to make clear choices about their objectives. This will allow a critical mass of resources to be reached, ensuring a meaningful impact and guaranteeing that investments are made in those areas that have a direct and immediate impact on growth and jobs.

### **3.3 Cohesion Policy programmes need to define clear objectives and results**

Cohesion Policy success will be measured by its results and its impact. The reforms therefore concentrate on ensuring greater focus on results through better performance indicators, reporting and evaluation.

When designing programmes, Member States and regions must specify the results they intend to achieve by the end of the programming period. Programmes will have to set out how the proposed actions will contribute to achieving these objectives and will establish performance indicators with clear baselines and targets to measure progress. Each programme will have a performance framework to increase transparency and accountability.

To provide an additional incentive, approximately EUR 20 billion (or 6% of the Cohesion Policy budget) has been set aside, to be allocated in 2019 to those programmes which show they are on track to deliver their objectives.

### **3.4 Cohesion Policy programmes need to give a stronger voice to cities**

Cities can play a key role in Cohesion Policy and in meeting the objectives of the Europe 2020 strategy. More than two thirds of Europeans live in cities. Cities are productive and innovative and can take the lead on achieving smart growth. They can be more resource efficient (e.g. by minimising land take, soil sealing and energy use) and can take part in realising sustainable growth, e.g. through green infrastructure. Given the disparities of wealth, concentration of the socially excluded and concentration of poverty in cities, they are essential to tackling the challenge of inclusive growth.

For these reasons, it is expected that around half of ERDF will be spent in cities in 2014–2020. The new Cohesion Policy also aims to empower cities to design and implement policies that contribute to meeting the Europe 2020 objectives, by setting a minimum amount (5% of ERDF) for integrated investment in sustainable urban development, and by guaranteeing that cities will play the main role in selecting projects.

The Commission will also launch calls for projects under the new Innovative Urban Actions programme to support cities that are willing to test new ideas in urban development.

### **3.5 Cohesion Policy programmes need to better include partners at all levels**

The 2014–2020 policy framework is based on the premise that all partners at national, regional and local levels, respecting the principles of multi-level governance and including social partners and civil society organisations, will be involved at all stages of programming. For the first time at EU level, the European Code of Conduct on Partnership<sup>4</sup> provides a blueprint for Member States to reach out to and engage these partners in developing programmes, throughout programme implementation and during monitoring and evaluation. Partnerships could also be particularly effective in delivering community-led local development strategies.

<sup>4</sup> See Commission delegated regulation of 7.1.2014, COM(2013) 9651 final.

Measures to build capacity in social and civil society partners are also embedded in the new regulations.

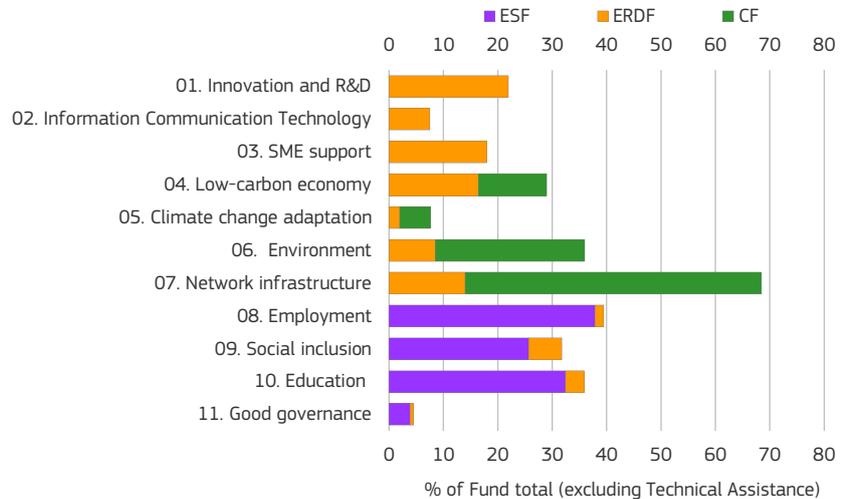
## 4. From theory to practice: emerging evidence from negotiations

At the time it adopted this Communication, the Commission had received all 28 Partnership Agreements (PAs) and around 150 operational programmes (OPs)<sup>5</sup>. Negotiations with Member States and regions are ongoing. Therefore, the following only provides an indication of the extent to which the main elements of the reform have been incorporated in the new strategies and programmes.

The information available shows some very encouraging trends and some challenges.

Overall, around EUR 336 billion are allocated to national and regional programmes under the Investment for growth and jobs (IGJ) goal. The resources are divided as follows: EUR 187.5 billion to the ERDF, EUR 63 billion to the Cohesion Fund, and EUR 85 billion to the ESF which is higher than the legally required minimum ESF allocation of EUR 80 billion<sup>6</sup>.

**Figure 4 Allocation to priorities by Fund, 2014–2020**



Source: Final and draft partnership agreements as of 1 June 2014

Around EUR 124 billion is allocated to R&D and innovation, ICT, SMEs, and low-carbon economy (Figure 4). This represents an increase of almost 22% compared

<sup>5</sup> Four PAs have already been adopted by the Commission.

<sup>6</sup> The financial resources for the IGJ goal include the ERDF (excluding support for European Territorial Cooperation), the ESF and the Cohesion Fund. The figures reflect the situation as of 1 June and may still change in the context of the programme negotiations.

to 2007–2013. Most of this amount is financed by the ERDF (EUR 116.5 billion) and the rest by the Cohesion Fund.

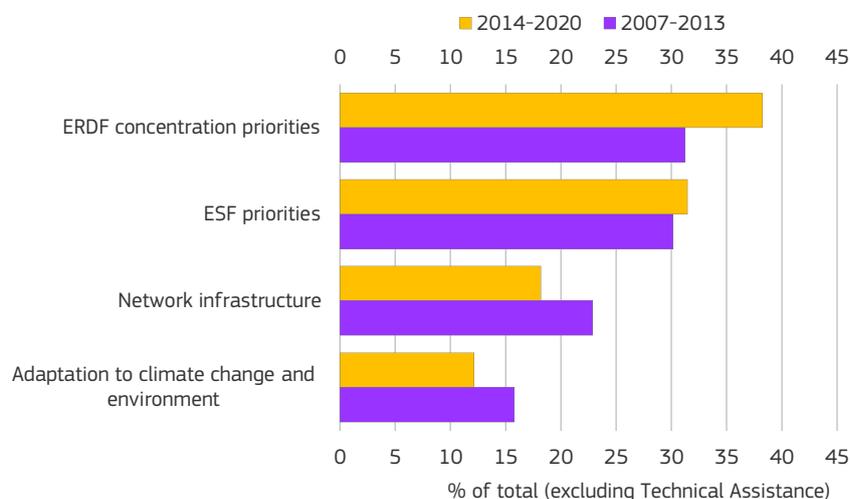
EUR 98 billion will be invested in employment, social inclusion and education measures. Most of this amount is financed by the ESF: employment (EUR 30.7 billion), social inclusion (EUR 20.9 billion), and education (EUR 26.3 billion).

EUR 59 billion is allocated to transport and energy network infrastructure, representing a decrease of 21% compared to 2007–2013.

Almost EUR 4.3 billion will be invested in institutional capacity building of public authorities and in the efficiency of public administrations and services (“good governance”). This represents an increase of 72% compared to the last period.

The new programming period brings therefore a clear shift in terms of funding priorities compared to 2007–2013 (Figure 5). Member States and regions will invest more on the ERDF priorities (R&D and innovation, ICT, SMEs, and low-carbon economy) and on the ESF priorities (employment, social inclusion, education, and governance). In turn, less money will be invested in network and environmental infrastructure. The decrease of investment in infrastructure is particularly marked in more developed Member States.

**Figure 5 Allocation to priorities 2014–20 and 2007–2013**



Source: Final and draft partnership agreements as of 1 June 2014 and DG REGIO

The particular focus that the Commission has placed on the low-carbon economy has resulted in a visible increase in this type of investment: more than EUR 38 billion will support the transition to a low carbon and climate resilience economy. Several countries have put particular emphasis on energy efficiency or developing renewable energy. In some cases, however, the link between investment and the

expected results in relation to the climate change objectives needs to be made clearer.

Given the challenges of high unemployment and increasing poverty, the focus on inclusive growth could be stronger in some PAs. The Commission is also of the view that the funding allocated to education is for the moment not sufficient to implement the priorities identified. In some PAs low priority is given to active measures for social inclusion. To ensure better social outcomes and investments that are more responsive to social change, social policy reform needs to be better embedded in programming.

Moreover, concerning the YEI, relevant information in some PAs and OPs is rather general and does not set out how this new initiative will be delivered and if and how it will support the implementation of Youth Guarantee schemes. In some programmes the actions supported by the YEI need to be more focused on supporting employment creation.

Notwithstanding the existence of a CSR on the integration of the Roma minority, some Member States do not foresee a dedicated priority for marginalised communities, making it more difficult to assess how much funding will be allocated to this policy area. Some Member States do not sufficiently address the needs of this target group or need to further elaborate their strategy and intervention logic.

Administrative modernisation and the quality of justice are recognised as key factors for competitiveness and inclusive growth. Many Member States are planning measures to make their public institutions stronger and improve their capacity to deliver more effective policies, better administrative services, speedier judicial proceedings, increased transparency and integrity of public institutions, and improved public participation in the different phases of policy-making. Yet, in a number of Member States where public administration reform has been identified as a challenge, a clear strategy is missing and objectives are incomplete and unclear, whilst such reform is indispensable to support jobs, growth and competitiveness. Moreover, in some of these Member States a clear political commitment to such reform is lacking.

It is clear that the need to prepare for investment by fulfilling conditions in advance of programme implementation has been taken seriously. The process has not been easy and, in many cases, the Commission will have to agree on action plans to ensure full compliance with the requirements within well-defined deadlines. Conditions, which Member States have found particularly difficult to meet, concern areas where EU Directives need to be transposed or where EU regulations need to be applied effectively.

Smart specialisation strategies have been designed at national and regional level to accelerate economic transformation and narrow the knowledge gap. More emphasis needs to be put on soft forms of support, on supporting market-driven research and cooperation with business. There is a risk of business-as-usual sup-

port for SMEs, instead of support being tailored to their needs and growth potential to ensure a high leverage effect and a quick uptake.

Some Member States have also designed programmes that establish clear links between the digital economy and innovation. This is important as investments in high speed broadband and ICT are needed to overcome specific bottlenecks and to encourage market-driven solutions. For example, it is essential to focus investment in broadband on next-generation networks to ensure that less developed regions do not fall further behind. Synergies between Cohesion Policy, Horizon 2020 and other EU programmes are also critical in the context of smart specialisation strategies at national and regional level.

In 2014–2020, some 88 programmes in 16 countries will be multi-fund programmes, combining resources from the ERDF, CF and ESF. This is expected to encourage an integrated approach bringing together different policies, funds and priorities.

To make the policy more effective, result-oriented and performance-based, Member States and regions will have to set detailed objectives and targets. It is essential that programmes do not express aims too generally, including a large number of possible actions to maintain maximum flexibility in selecting projects at a later stage. This is critical: if objectives and targets are not ambitious enough and detailed enough, it will be very difficult to evaluate the policy and to have a meaningful public debate about it. During the negotiation process, the Commission will focus on these risks.

Partnership Agreements have largely been drafted through reasonable dialogue with partners, although there are indications that in some cases this dialogue has been insufficient, important stakeholders were not involved, or comments were not reflected in later versions of the documents. The Commission will look very carefully at how Member States have applied the Code of Conduct on Partnership to ensure genuine participation by stakeholders.

Last but not least, the new period requires strong governance and coordination mechanisms at the national and regional level to ensure consistency between programmes, support to Europe 2020 and the CSRs, and to avoid overlaps and gaps. This is particularly important in view of the overall increase in the number of regional programmes (for ESF programmes it is almost 60% compared to 2007–2013).

## 5. Conclusion

In 2014–2020 Cohesion Policy will guide the investment of a third of the EU budget to help achieve the EU-wide goals of growth and jobs and reduce economic and social disparities. It is also the biggest investment instrument at EU level for pursuing the objectives of the Europe 2020 strategy. It provides the largest contribution in a number of areas, including support to SMEs, R&D and innovation,

investment in a skilled and competitive workforce, the fight against unemployment and social exclusion, climate change adaptation and the environment.

Economic models provide an indication of the macro-economic impact. For example, it is expected that in the main beneficiary countries thanks to Cohesion Policy GDP could be on average 2% higher and employment around 1% higher during the implementation period.

But the productivity-enhancing effects of the Cohesion Policy continue to build up after programmes have come to an end. By 2030, it is estimated that GDP in these countries will be more than 3% above the level expected in the absence of the policy. This means that over the period 2014–2030, for each euro spent in the main beneficiary countries, GDP is expected to be more than three euros higher.

For these effects to be realised, however, it is essential that Member States and regions deliver on the reforms and use the policy as an effective investment tool. The outcome of the ongoing negotiations to develop robust strategies, identify a small number of key investment priorities, set ambitious targets, and ensure that micro and macro conditions maximise the impact of the investment co-financed under the Cohesion Policy, will therefore be crucial.

The Commission will submit an initial progress report on the programmes to the European Parliament and Council in 2017. This will give an overview of progress by Member States and regions towards the objectives set in their programmes, indicating whether or not they are delivering the intended results.



## Executive Summary

This report comes out at the start of a new 7-year programming period for Cohesion Policy, when the situation in the EU is dramatically different from what it was at the start of the previous period in 2007. Then, the EU was still enjoying a sustained period of economic growth. Income levels were rising, as were employment rates and public investment, poverty and social exclusion were diminishing and regional disparities were shrinking. Nevertheless, despite the positive tendencies, disparities between regions of many different kinds remained wide.

The advent of the crisis changed all this. Since 2008, public debt has increased dramatically, income has declined for many people across the EU, employment rates have fallen in most countries and unemployment is higher than for over 20 years, while poverty and social exclusion have tended to become more widespread. At the same time, regional disparities in employment and unemployment rates have widened as have those in GDP per head in many countries while in others they have stopped narrowing. These developments mean that the Europe 2020 employment and poverty targets are now significantly further away than when they were first set and it will require a substantial effort over the next 6 years to achieve them in a context of significant budgetary constraints.

Chapter 1: In its first stage the crisis had a big impact on construction and manufacturing. In both, employment fell markedly, in construction as a result of the collapse of a real estate bubble in some Member States and a reduction in public investment and manufacturing because of a decline in global demand, especially for investment goods. More recently, world markets have expanded and exports have increased giving rise to some growth of manufacturing. This is particularly important for many of the Central and Eastern European Member States where manufacturing accounts for a large share of value-added.

The territorial impact of the crisis has been mixed. In most parts of the EU, metropolitan regions have been shown to be more prone to booms and busts, while overall rural regions have proved more resilient. In the EU-15, second-tier metropolitan regions performed average, while in the EU-13, they outperformed the other regions. Rural regions in the EU-15 had a smaller contraction of GDP than the other regions between 2008 and 2011 due to higher productivity growth. Also in the EU-13, higher productivity growth meant that he closed the growth gap with the other regions.

Not all developments, however, have been unfavourable. Despite the difficult economic context, the proportion of people with tertiary education has increased over recent years in most countries and early school leaving rates have declined. As a result, EU targets for both of these are likely to be reached by 2020 if not earlier. At the same time, R&D has not declined relative to GDP during the crisis

and has even started to increase slightly in the past year or two, though not by enough to reach the 3% target set for 2020. Innovation, however, remains highly concentrated in spatial terms and shows no sign of spreading to lagging regions.

Investment in transport and digital infrastructure has reduced the deficiencies in these networks in many rural areas and less developed regions. Access to the internet using the next generation technology, however, creates new challenges for rural areas where this technology is almost non-existent. In addition, completing the trans-European Transport network will require at least two more decades of substantial investment particularly in most of the Central and Eastern Member States.

The onset of the crisis led to major reductions in the EU in trade and foreign direct investment, which are important sources of growth for the less developed Member States. Fortunately, exports of the EU-13 to other EU countries have shown significant recovery and now account for a larger share of their GDP than before the crisis, while FDI has also picked up.

Competitiveness remains low in most regions in Central and Eastern Member States, though capital city regions are typically the exceptions. These tend to be highly competitive, but for the most part they do not as yet generate any measurable spill-overs to benefit other regions. Most regions close to the capital in these countries, therefore, do not gain perceptibly from their proximity, while in many more developed Member States the regions neighbouring the capital also tend to have high levels of competitiveness. Indeed, in some Member States, such as the Netherlands, Germany and Italy, other regions with an important second-tier city have a higher level of competitiveness than the capital city region.

Chapter 2: The crisis has wiped out half of the employment gains made between 2000 and the onset of the recession, particularly in the southern Member States. As a result, in transition and less developed regions, employment rates are around 10 percentage points below the national target as compared to only 3 percentage points below in the more developed regions. Increases in unemployment have also been larger in these regions, averaging 5 percentage points between 2008 and 2013 as against 3 percentage points in more developed regions.

Although 2013 was the first year in which the average rate of unemployment in the EU was the same for women as for men, big disparities remain in some parts, unemployment being much higher for women than for men in many southern regions. Employment rates for women remain lower than those of men in all EU regions. While the gap is relatively small in a number of Swedish and Finnish regions, it is more than 20 percentage points in Italy, Greece, and several regions in Romania, the Czech Republic and Poland. On the educational front, however, in nine out of ten regions more women than men aged 30–34 have a tertiary-level qualification.

Higher risk of poverty and social exclusion is another legacy of the economic crisis. There are now around 8 million people at risk of poverty in the EU, the

increase being particularly pronounced in Greece, Spain, Italy and the UK. A key issue is the variation within countries. The risk of poverty tends to be much lower in cities than in the rest of the country in less developed Member States, while in cities in the more developed Member States, the reverse is the case. Accordingly, in the latter, to meet the national Europe 2020 poverty targets requires a major reduction in the number of people at risk of poverty or exclusion in urban centres, while in the less developed countries the main challenge is to reduce the numbers at risk in more rural areas.

The large disparities in employment, income levels and social well-being are major factors underlying population movement within the EU. In Central and Eastern Member States, there has been a tendency over the past 20 years for people to move from rural areas to urban ones, especially to the capital city, as well as to other parts of the EU. The combination of a natural decline in population and outward migration has led to a significant reduction of people living in rural regions in the EU-13 over the past decade. In the EU-15, on the other hand, the population has risen on average in rural regions because of net inward migration more than offsetting a natural reduction in population.

In the EU-15, over the past decade the contribution of net inward migration to population growth was three times larger than that of the natural increase. By contrast, in the EU-13, net outward migration contributed twice as much to population decline as the natural reduction.

Wide variations remain across the EU in life expectancy and mortality rates. Life expectancy differs by more than 9 years between the 10 regions where it is highest and the 10 where it is lowest. Equally, infant mortality and deaths from road accidents in relation to population differ by a factor of four between the 10 best and worst performing regions.

Chapter 3: The crisis has had mixed effects on the environment. The reduction in economic activity and income has made it easier to reduce greenhouse gas emissions; though energy efficiency has not increased greatly so that this reduction may well be reversed when demand picks up. The crisis has also reduced the cost of allowances for greenhouse gas emissions in the European Trading Scheme, so depressing the economic incentives to invest in energy efficiency and renewable energy and delaying the transition to a low-carbon economy. The European Commission has postponed the auction of some allowances in response to these low prices.

Some progress has been made across the EU in improving the treatment of urban wastewater and solid waste. More towns and cities now meet the quality standards set in the EU Directive on urban wastewater treatment and more solid waste is recycled, or incinerated with energy recovery, and less is dumped in landfills. In both cases, however, more needs to be done and substantial investment is still required particularly in many of the less developed Member States and regions.

The quality of the ‘services’ provided by the eco-system differs substantially across the EU. The services concerned can fulfil important functions such as cleaning air and water, retaining water to reduce flood risks and removing carbon. The recent floods in many parts of the EU and the low air quality in many cities underline the need for them. The advantage of investing in such services is that it can often be cost-efficient while helping to limit the loss of bio-diversity.

The urban dimension of sustainable growth is one of many contrasts. On the one hand, air quality is poor in many cities, made worse by traffic congestion, and cities are more vulnerable to heat waves, due to the ‘heat island’ effect, as well as to flooding because of their proximity, in many cases, to rivers and the sea and the large expanse of sealed surfaces.

On the other hand, cities offer major advantages in terms of eco-efficiency, since the close proximity of different locations reduces the need to travel long distances. Public transport is also more available in cities, offering a more energy-efficient means of travel, and people living in cities on average use less energy to heat their housing. Equally, cities use land much more efficiently than others areas where population density is much lower and built-up land per inhabitant is much higher.

Chapter 4: In most Member States, the government budget has been in significant deficit over the crisis period and public debt levels have risen dramatically, in some cases well above 100% of GDP. The deterioration in public finances has led to the widespread implementation of fiscal consolidation measures and many governments have cut back public investment markedly. On average, public investment in the EU declined by 20% in real terms between 2008 and 2013, in Greece, Spain and Ireland, by over 60% and in the EU-12 countries, where Cohesion Policy funding is particularly important, by 32%. This could well depress growth rates over the medium-term.

As a result of the cut-backs in national expenditure, there is increased reliance on Cohesion Policy to finance growth-enhancing investment. In 2010–2012, Cohesion Policy funding was equivalent to 21% of public investment in the EU as a whole, to 57% in the Cohesion countries taken together and to over 75% in Slovakia, Hungary, Bulgaria and Lithuania. Without this funding, public investment in the less developed Member States would have declined even further.

Local and regional governments in the EU are responsible for almost two thirds of all public investment and, accordingly, the reductions which have occurred have had a big impact on them. The political autonomy (or self-rule) of regions has tended to grow over the past few decades, with substantial increases in many Member States. In Italy, in particular, the degree of self-rule in regions is now higher than in the Federal states of Germany, Austria and Belgium.

Chapter 5: The EU has given increasing attention to the importance of governance and the quality of public institutions over the past few years, including in relation to Cohesion Policy programmes. For example, an anti-corruption report

has been adopted in 2014 and many of the country-specific recommendations made as part of the European Semester concern issues of administrative capacity. Initiatives, such as e-Government and e-Procurement, can help both to increase efficiency and reduce the opportunities for abuse of power. In addition the development of national anti-corruption and anti-fraud strategies is likely to strengthen administrative capacity and lead to funds being used more effectively.

As regards Cohesion Policy, improving institutional capacity and public administration is one of the 11 key thematic objectives for the period 2014–2020. One of the reasons for this is the observed link between low levels of government efficiency and the absorption rate of Cohesion Policy funding for the 2007–2013 period, which is so low in some cases that there is a serious risk that Member States will lose significant amounts of the funds available to them.

While countries in the North of Europe score well in surveys of governance and ease of doing business, there are still too many Member States where the standard of public authorities is perceived to be low and significant numbers of people report paying bribes. New research has revealed that the ease of doing business and the quality of institutions also vary in many cases within countries, which implies that more targeted interventions may be needed to bring the situation in lagging regions up to standard. Research has also indicated that governance problems can act as a brake on social and economic development and limit the impact of Cohesion Policy investment.

Recognising the key role of regional and local authorities in public investment, the OECD has recently adopted principles on the effective management of public investment which apply across all levels of government.

Chapter 6: Cohesion Policy was born out of concerns that obstacles to economic development, such as a lack of innovation, labour force skills, infrastructure or institutional quality, will permanently depress growth and productivity and lead to lower standards of living. Over the years, the financial support under the policy, which has consistently focused on less developed regions, has shifted away from investment in hard infrastructure towards business support and innovation, employment and social inclusion to overcome these obstacles.

The nature of Cohesion Policy and its objectives have also evolved. The geographical coverage has been simplified, with all regions being eligible for a measure of support, while in addition to its focus on reducing economic disparities, the policy has become more closely aligned with the overall strategy of the EU. Accordingly, in the 1990s, funding was extended to environmental and trans-European transport infrastructure and in the 2000s, Cohesion Policy was directed towards the pursuit of the Lisbon and Gothenburg strategies for growth and sustainable development. In the new period, Cohesion Policy is an integral part of the Europe 2020 strategy with a strong focus on employment, innovation, sustainability and reducing poverty and social exclusion.

Successive enlargements of the EU have changed the challenges which Cohesion Policy has to confront and increased the difficulty of tackling them. Not only have they led to a much greater number of regions with low levels of development but they have also increased the territorial diversity of the EU.

With the introduction in the Lisbon Treaty of territorial cohesion as an explicit objective of Cohesion Policy, a stronger emphasis has been given to access to services, functional geography, territorial analysis and sustainability. This shift is mirrored in the increased focus on sustainable growth in Europe 2020 and in the recognition of the importance of moving beyond GDP when assessing territorial development. The debate on how to measure progress and the role of Cohesion Policy in this respect is still ongoing.

Chapter 7: Cohesion Policy in the 2007–2013 period made a substantial contribution to growth and jobs. It is estimated to have increased GDP by 2.1% a year on average in Latvia, 1.8% a year in Lithuania and 1.7% a year in Poland in relation to what it would have been without the investment it has funded. It is also estimated to have increased the level of employment, by 1% a year in Poland, 0.6% in Hungary, and 0.4% in Slovakia and Lithuania. The estimates of the longer-term effects are larger because of the impact on the development potential of economies. In both Lithuania and Poland, GDP in 2020 is estimated to be over 4% above what it would be without the investment concerned and in Latvia, 5% higher.

Over the same period, Cohesion Policy has been important in sustaining public expenditure in vital areas, such as R&D, support for SMEs, sustainable energy, human resource development and social inclusion. In some Member States, it also helped further national reform efforts, especially as regards education systems, the labour market and public administration.

There is clear evidence that the policy is producing tangible results in many areas. Support had been provided to over 60,000 RTD projects by the end of 2012, over 21,500 co-operation ventures between enterprises and research centres, and almost 80,000 business start-ups. In addition, the funds had provided over 5 million more people with access to broadband, 3.3 million with an improved supply of drinking water and 5.5 million with main drainage and a connection to waste water treatment facilities.

Between 2007 and 2012, the policy has supported up to 68 million individual participations in labour market programmes<sup>1</sup>, 35 million of them involving women, 21 million young people, 22 million unemployed and nearly 27 million of those with low levels of education (compulsory schooling or below). The ESF helped 5.7 million people find employment and almost 8.6 million to obtain qualifications, while Member States reported that it had contributed to over 400,000 business start-ups or people becoming self-employed.

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<sup>1</sup> Reporting counts all instances of participation and many people may have participated several times. Participations can range from a short interview, to counselling, training or work experience.

Major results are still expected from the 2007–2013 programmes over the remaining months up to the end of 2015. The payments data however underline the need to step up the completion of these programmes. Although there is an inevitable delay between expenditure on the ground and Commission payments being made, there is evidence of serious delays in a number of countries in projects being selected for support and being carried out. This is especially the case in areas such as RTDI, rail, ICT and broadband and investment in both renewable energy and energy saving, where authorities have limited experience or projects are relatively complex.

Chapter 8: In 2014–2020, a third of the EU Budget will be invested under Cohesion Policy to help address disparities between regions while at the same time contributing to the achievement of the Europe 2020 goals. The two objectives are fully compatible with each other. Indeed, the pursuit of the Europe 2020 goals can be seen as a means of furthering regional development aims and of strengthening the various elements which determine the growth potential of regions.

The new Cohesion Policy is not only fully aligned with the Europe 2020 strategy and its headline targets but it is also linked to the European semester and the EU economic governance process. This will ensure that the effectiveness of investment is not undermined by unsound economic and fiscal policies. Member States and regions are also required to put in place sound regulatory, administrative and institutional frameworks to maximise the impact of investment. Together with a concentration of resources on a few key priorities and a stronger focus on performance and results, it will increase value for money and the contribution of Cohesion Policy to growth and job creation.



# ▶▶ Chapter 1: Smart growth

## 1. Introduction

Cohesion Policy has invested heavily in smart growth over past decades. It has co-financed innovation, education and digital and transport networks. This investment has helped to create a Single Market that boosts growth, productivity and specialisation in all regions and which, accordingly, strengthens the position of the EU in global markets where it has to compete with both low-cost locations and highly innovative competitors.

This chapter describes the trends relating to smart growth in regions and cities in the EU and highlights the impact of the crisis on them. It covers a wide range of topics, including the territorial dimension of the crisis, innovation, tertiary education, entrepreneurship, the extension of digital and transport networks and market integration through trade and foreign direct investment.

The main concern throughout is to highlight the performance of the less developed regions and particular types of area such as cities and rural areas. The concern is also with the pursuit of the Europe 2020 national targets for R&D expenditure, tertiary education and lifelong learning.

Most of the long-term trends reported here are positive in terms of the performance of the EU economies. They include closer integration of markets, trade and FDI, the shift of employment to more productive sectors, better access to digital and transport networks and continuing increases in the number of people with tertiary education.

The crisis, however, has been highly disruptive in many parts of the EU. It has reversed the long-term trend towards a narrowing of regional disparities. It has led to reductions in economic activity and employment in most Member States. Fortunately, the first signs of recovery can be detected in several of

the aspects analysed here, such as increases in trade and positive GDP growth in the latter part of 2013 in almost all EU Member States.

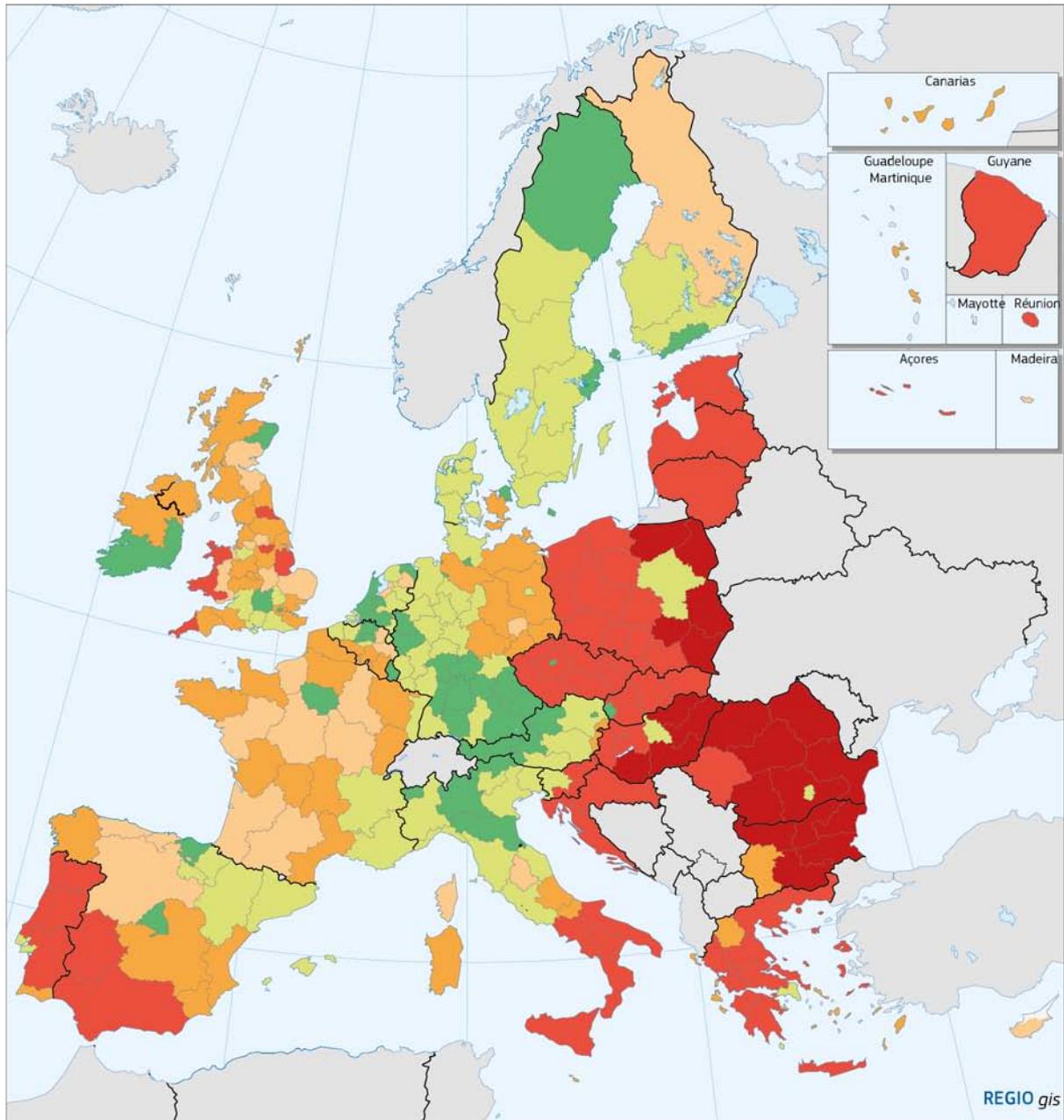
Although Cohesion Policy has made a substantial contribution to smart growth and reducing disparities, the low levels of innovation in many regions, the economic disparities which remain and the gaps in the physical and digital networks still require substantial amounts of investment in the coming years and beyond the present programming period.

## 2. The crisis suspended the reduction in regional disparities

One in four EU residents, live in (NUTS 2) regions with a GDP per head in PPS terms<sup>1</sup> below 75% of the EU average (Map 1.1). Most of these regions are located in central and eastern European Member States, but also in Greece, Southern Italy, Portugal and most of the outermost regions.

Between 2000 and 2011, all the regions in the central and eastern Member States recorded an increase in GDP per head in PPS relative to the EU average. The biggest increases were typically in the capital city regions. Indeed, in these regions in Slovakia, Romania and Bulgaria, GDP per head in PPS terms increased markedly (to 186% of the EU average in the first, 122% in the second and 78% in the third), in the first two countries by more than double the national average increase. In the less developed regions in Greece, Italy and Portugal (except Açores), however, there was no increase in GDP per head relative to the EU average, due in Greece to the severe effect of the crisis, but in the other two, partly to their growth rates being relatively low before the crisis.

<sup>1</sup> The Gross Domestic Product (GDP) per head in Purchasing Power Standards is the total value of all goods and services produced per inhabitant. Purchasing Power Standards (PPS) adjusts for differences between countries in purchasing power due to differences in price levels.



Map 1.1 GDP per head (PPS), 2011

Index, EU-28 = 100

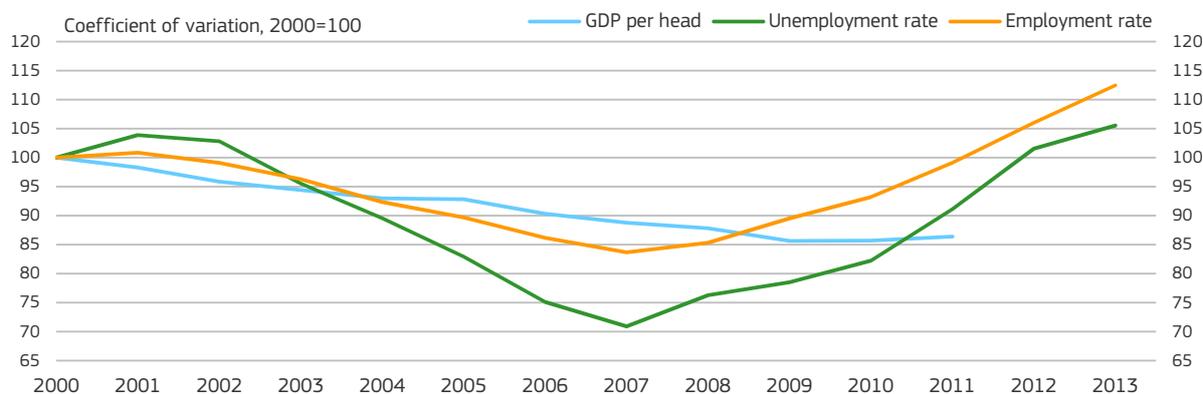
- < 50
- 50 - 75
- 75 - 90
- 90 - 100
- 100 - 125
- >= 125

Source: Eurostat

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**Figure 1.1 Coefficient of variation of GDP per head, employment rate (15-64), unemployment rate, EU-27 NUTS 2 regions, 2000-2012**



Source: Eurostat, DG REGIO calculations

Until the crisis in 2008, disparities between regional economies in the EU were shrinking (the coefficient of variation of regional GDP per head fell by 10% between 2000 and 2008 — Figure 1.1). In 2000, average GDP per head in the most developed 20% of regions was about 3.5 higher than that in the least developed 20%. By 2008, the difference had narrowed to 2.8 times. This was mainly due to the regions with the lowest GDP per head growing faster than average and catching up with the more prosperous ones (a process known as Beta convergence). However, the crisis seems to have brought this tendency to an end and between 2008 and 2011, regional disparities widened (the coefficient of variation increased slightly).

This break in the trend towards convergence is confirmed by other economic indicators for which more recent data are available, in particular for employment and unemployment. While regional disparities in both employment and unemployment rates narrowed between 2000 and 2007, they have widened significantly since 2008. In 2013, therefore, disparities in both were wider than in 2000.

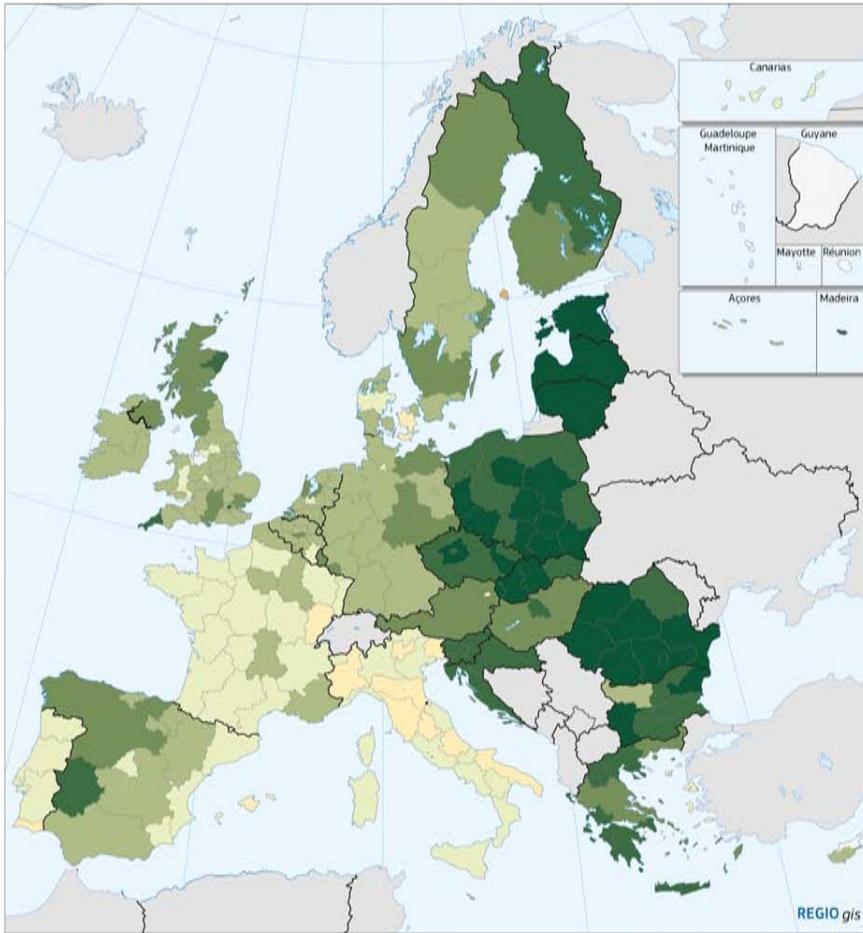
These changes can also be seen in the real growth rates of GDP per head. Virtually all regions had positive growth between 2001 and 2008, with rates of more than 5% a year in many regions in the EU-13 (Map 1.2). Between 2008 and 2011, two out of three regions experienced a reduction in GDP per head,

amounting to over 3% a year in Greece and in regions in Romania, the UK and Ireland (Map 1.3).

Regional disparities have widened during the last few years because the economic crisis has affected regions differentially. Some regions have been hit severely, others hardly at all. This is particularly evident with regard to regional unemployment rates. In 2008, five regions had an unemployment rate above 20%. In 2013, the number had increased to 27. At the same time, unemployment has gone down in many German regions because of the relatively strong performance of the German economy since the global recession in 2008–2009.

Even though the latest figures available for regional GDP per head show only the start of the crisis, the same pattern is evident. In some regions, GDP per head in real terms (i.e. at constant prices) declined considerably, as, for instance, in Közép-Dunántúl (Hungary) or in Estonia, where it fell by 15% between 2008 and 2009. In others, it continued to increase, as in Pomorskie (Poland) or Åland (Finland), where it rose by 4% and 6%, respectively.

The impact of the global recession following the financial crisis of 2008 had no clear geographical pattern, affecting both more and less developed economies. Between 2008 and 2009, real GDP per head fell markedly in the three Baltic States but also in Finland, Sweden and Italy. Equally, the fall in real GDP



Map 1.2 Growth of GDP per head in real terms, 2001–2008

Annual average % change

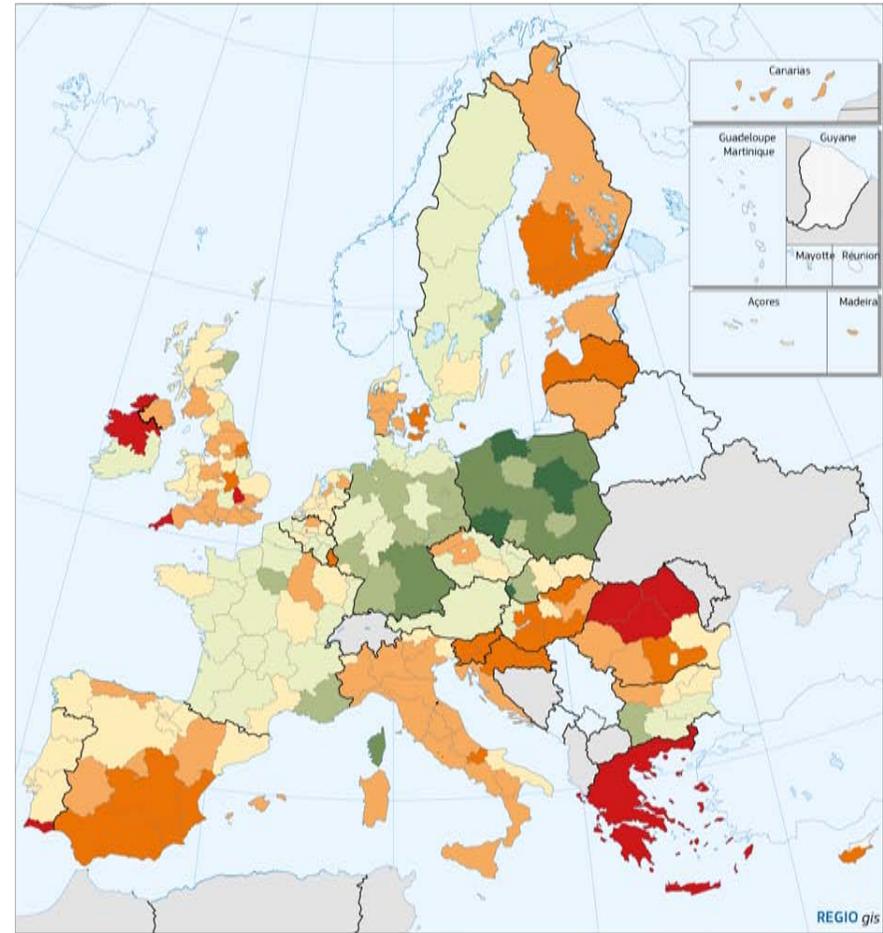
<span style="color: red;">■</span> < -3	<span style="color: lightgreen;">■</span> 1 - 2
<span style="color: orange;">■</span> -3 - -2	<span style="color: green;">■</span> 2 - 3
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<span style="color: yellowgreen;">■</span> 0 - 1	<span style="color: lightgrey;">■</span> no data

EU-28 = 1.7  
DE: NUTS 1 values

Source: Eurostat, DG REGIO

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Map 1.3 Growth of GDP per head in real terms, 2008–2011

Annual average % change

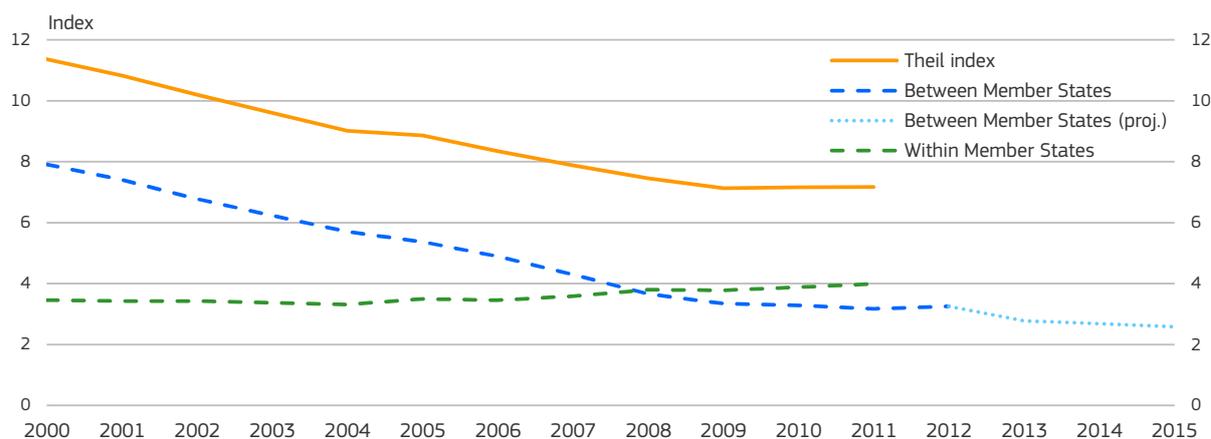
<span style="color: red;">■</span> < -3	<span style="color: lightgreen;">■</span> 1 - 2
<span style="color: orange;">■</span> -3 - -2	<span style="color: green;">■</span> 2 - 3
<span style="color: yellow;">■</span> -2 - -1	<span style="color: darkgreen;">■</span> 3 - 5
<span style="color: lightyellow;">■</span> -1 - 0	<span style="color: darkslategrey;">■</span> > 5
<span style="color: yellowgreen;">■</span> 0 - 1	<span style="color: lightgrey;">■</span> no data

EU-28 = -0.6  
AT, EL: national values; DE: NUTS 1 values

Sources: Eurostat, DG REGIO

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**Figure 1.2 Theil index, GDP per head, EU-28 NUTS 2 regions, 2000-2015**

Source: Eurostat, DG REGIO calculations

per head was relatively small in France and Belgium but also in Cyprus and Malta, while there was continued growth in Poland. Of the 13 regions in which real GDP per head fell by more than 10%, 6 had a GDP per head above the EU average in 2008.

Regional disparities within countries also widened significantly in a number of cases between 2000 and 2011. This was particularly so in Bulgaria and in Romania (where the coefficient of variation increased by 22 percentage points and 12 percentage points, respectively), mainly because of the high growth rate in the capital city region. While GDP per head in the other regions in the two countries still converged towards the EU average, it was at a much slower rate.

Regional disparities also widened in Greece and the UK over these 11 years (the coefficient of variation increasing by 12 and 8 percentage points, respectively) but in both cases partly because GDP per head declined relative to the EU average in a number of less developed regions. This was so, for example, in Ipeiros (Greece), where it declined from 71% of the EU average to 55%, and in West Wales and the Valleys (in the UK), where it fell from 72% of the EU average to 64%.

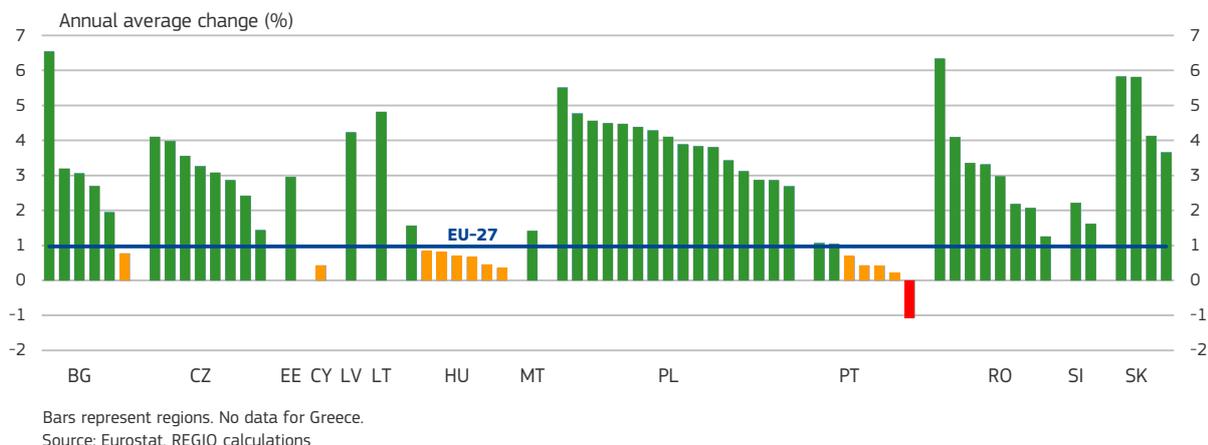
Another indicator of regional disparities, the Theil index<sup>2</sup>, can be decomposed into a component which

measures disparities between Member States and one which measures disparities within them. The index shows that disparities in GDP per head between NUTS 2 regions within Member States (which can only be calculated up to 2011 from the data available) have increased slightly since 2004, which to a large extent reflects the high rate of growth in a number of urban areas (typically capital city regions) in the EU-13 (Figure 1.2). This was offset by the marked reduction in disparities between Member States up until 2009, so leading to an overall reduction in regional disparities in the EU-28. The economic crisis interrupted this process of convergence, with disparities remaining unchanged in 2009 and increasing in 2010 and 2011. However, national accounts data for 2012 and the latest forecasts at the Member State level up to 2015 suggest that this interruption might only be temporary and that there may already have been a resumption of the process of convergence in 2012, so long as there was no significant increase in regional disparities within countries.

The effect of the economic crisis on the long-run process of regional disparities in the EU narrowing can also be seen in the experience of individual regions. Between 2003 and 2011, 50 of the 63 regions in the less developed or moderately developed Member States recorded a higher growth rate than the EU average (Figure 1.3). In the period prior to the crisis (2003–2008), 56 of these regions grew faster than

<sup>2</sup> The Theil index essentially measures the extent to which the inequality of GDP per head between regions differs from the situation where every region has the same level.

**Figure 1.3 Growth rates of GDP per head in less developed or moderately developed Member States, 2003-2010**



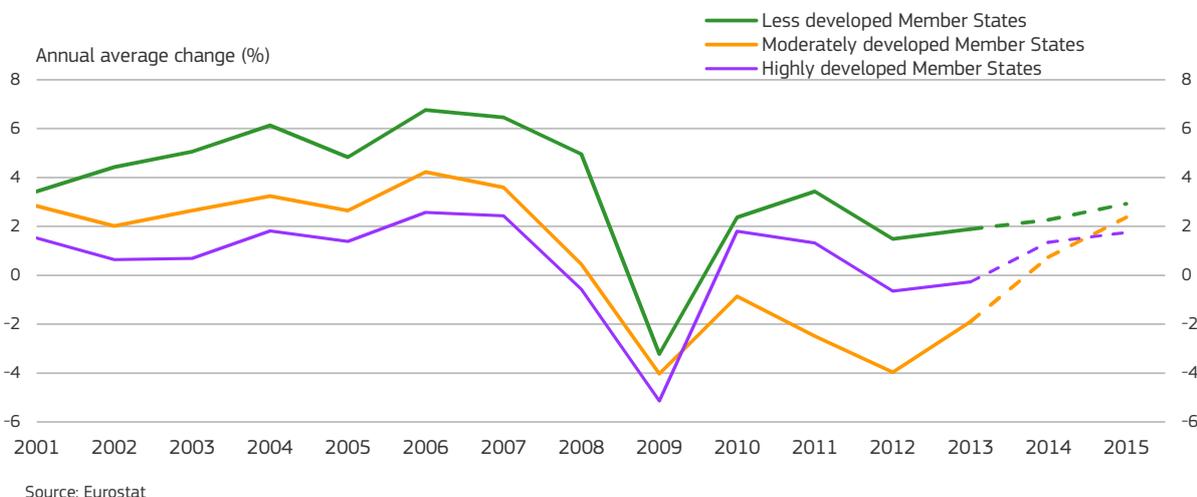
the EU average, while during the crisis (2009–2011), this number dropped to 45.

There are grounds for believing that the long-run convergence process in the EU will continue after the crisis comes to an end. Since the process is driven in part by less developed regions adopting technology and methods of working developed and tested in other regions, it means that they tend to catch up in terms of productivity. This process, assisted by investment funded under Cohesion Policy, is likely to see growth in less developed regions return to a higher rate than in the more developed parts of

the EU in the years to come, just as over the period 2003–2008.

Analysis of changes in GDP per head between 2000 and 2011 confirms that, in the long run, convergence is mostly a result of the least developed regions catching up rather than growth declining in the more developed ones. For example, 37 (NUTS 2) regions had a GDP per head below 50% of the EU average in 2000 but only 20 in 2011, with GDP per head in 16 regions increasing to between 50% and 75% of the EU average and in one region (Yugozapaden, the capital city region in Bulgaria) to between 75% and 100% of the average. The pace of convergence in

**Figure 1.4 Growth of GDP per head in real terms, 2001-2015**



București–Ilfov (Romania) between 1995 and 2011 was also remarkable, its GDP per head increasing from below 50% of the EU average to over 120%.

GDP per head grew faster in real terms in the less developed Member States over the period 2000–2013 and is forecast to continue to do so in 2014 and 2015 (Figure 1.4). The rate of growth in the moderately developed Member States, however, fell below that in the highly developed Member States in 2010 and continued to be lower in 2011–2013 but is forecast to be slightly higher by 2015.

## Turkey

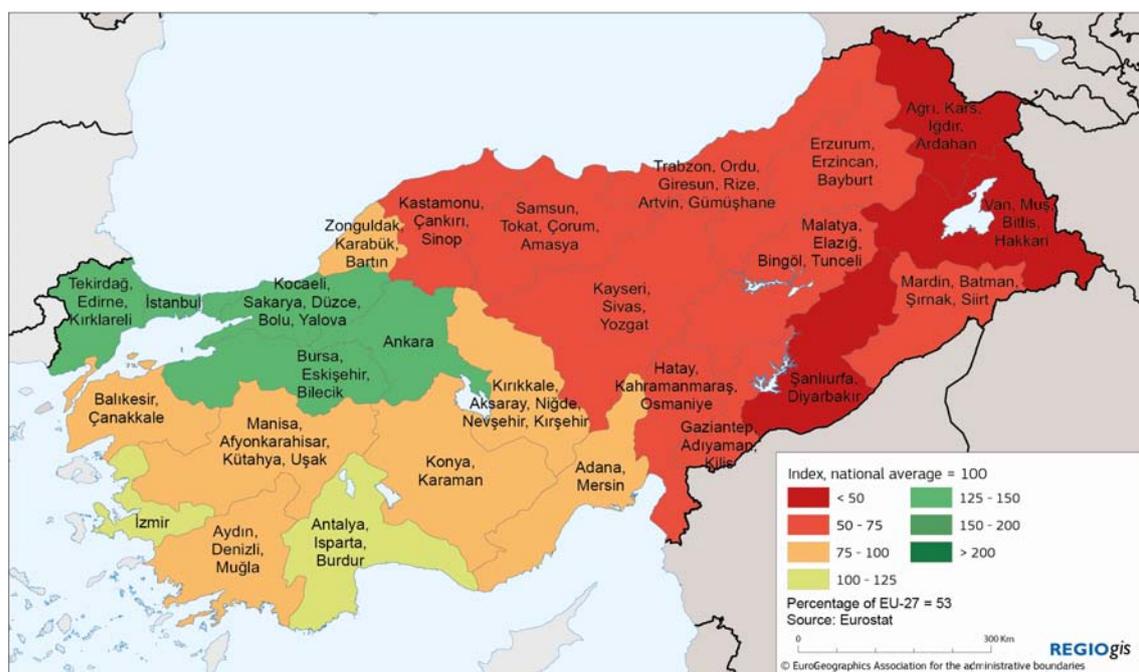
Turkey has a population of 75 million which is growing fast (by nearly 10 million over the past decade). The economy is also growing fast, by 5% a year between 2002 and 2012. As a result, GDP per head in PPS terms had risen to 56% of the EU average in the latter year, higher than in Romania or Bulgaria, but below that in Croatia.

There are, however, wide regional disparities. The western regions of Istanbul (50% above the national average in 2011), Kocaeli (41% above), Ankara (32%

above) and Bursa (31% above) have relatively high levels of GDP per head (Map 1.4). Three eastern regions have levels which are less than half the national average. These disparities widened between 2004 and 2007 but narrowed a little between 2007 and 2011.

The agricultural sector still accounts for almost a quarter of total employment and for a significant, though much smaller, share of GDP (9% in 2012).

Map 1.4 Turkey: GDP per head (PPS), 2011



### Regional economic disparities in the world

Large regional economic disparities can be found in the North American Free Trade Agreement Area (Map 1.5) as well as in the BRICs (Map 1.6). The disparities cannot be directly compared to those in Europe as the size of the regions differs too much. India and China both with a population of more than a billion would need more than 700 regions to be comparable with NUTS 2 regions in the EU. For the US, GDP per head should relate to 160 regions instead of 50 States to be comparable.

The North American Free Trade Agreement has facilitated closer economic integration between Canada, the US and Mexico since 1994 through increased trade and foreign direct investment. Unlike the EU, NAFTA does not involve freedom of movement of people. As a result, many of the Mexicans working in the US are illegal immigrants.

During the first decade of the agreement (1994–2003), real GDP per head growth in Mexico averaged only 0.8% a year. The rate was three times higher in Canada and the US over the same period. The low overall growth rate in Mexico was due not to the free trade agreement but possibly to low education levels, an unfavourable business environment and a lack of transport infrastructure. As NAFTA does not have a development policy like Cohesion Policy, it takes much longer for Mexican regions to benefit from trade integration.

Between 2004 and 2012, however, the Mexican economy performed better with real GDP per head growth averaging 1.5% a year despite the crisis, double the rate in Canada and the US.

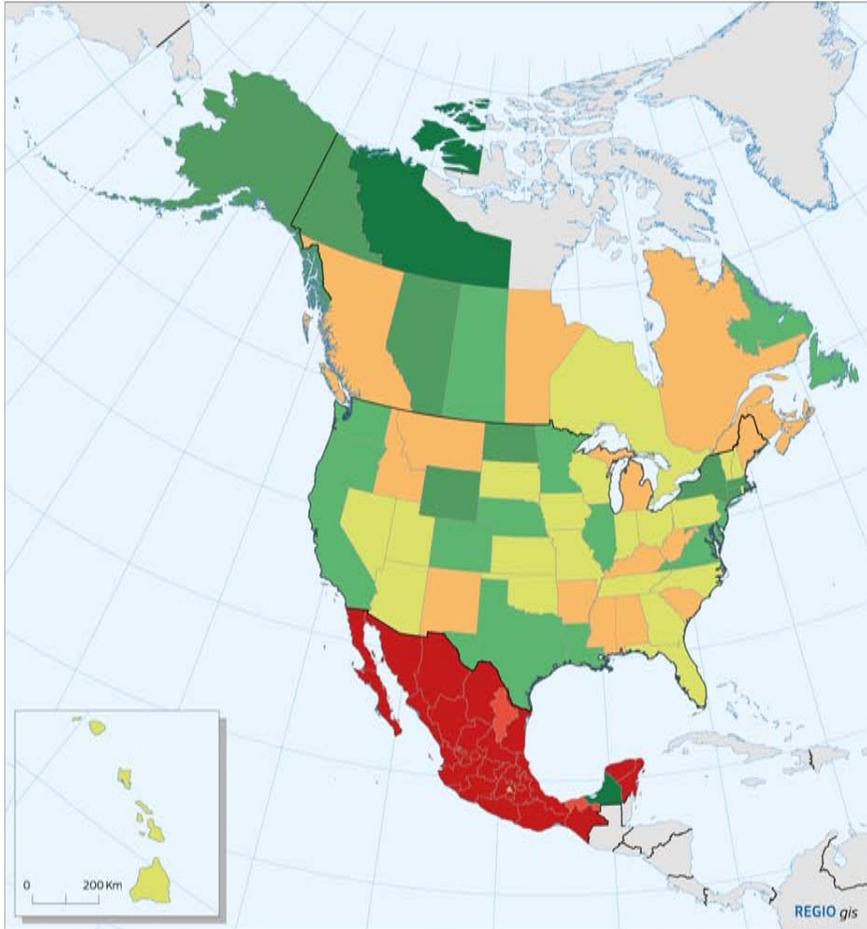
Despite the stronger economic performance of Mexico, there was no reduction in regional disparities in NAFTA.

In large part, this is because many of the less developed Mexican regions were not able to catch up.

Although regional disparities tend to widen in the first phases of economic development, this was not the case in the BRICs. Between 2000 and 2010, disparities narrowed in China and Brazil, though they widened in India and Russia.

In China, the coastal regions have a much higher GDP per head than the more inland regions. In Russia, Moscow and Saint Petersburg and the surrounding regions have a much higher GDP per head than the regions in the south of the country. More generally, GDP per head in the north tends to be higher than in the south because of the extraction of natural resources. Brazil and India also have large regional disparities, their main urban areas having a much higher GDP per head than the more remote rural regions.

As these countries have sought new ways of reducing regional disparities, they have become more interested in how Cohesion Policy operates. In the last 8 years, the Commission has signed memoranda of understanding on regional policy cooperation with China, Russia and Brazil and cooperation agreements with Chile, Peru and Japan as well as Ukraine, Moldova and Georgia under the Eastern Partnership. As part of the latter, the Commission has organised activities in respect of regional and urban policy which have led to exchanges on technical assistance, studies, study visits, training courses, conferences, network building and contacts between regions and cities in the EU and these other countries.



**Map 1.5 NAFTA: GDP per head (USD PPS), 2012**

Index, NAFTA average = 100

- < 50
- 50 - 75
- 75 - 100
- 100 - 125
- 125 - 150
- 150 - 200
- > 200

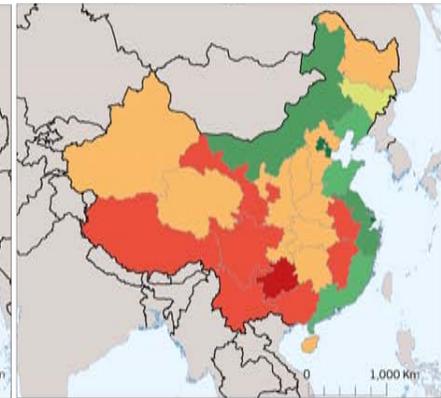
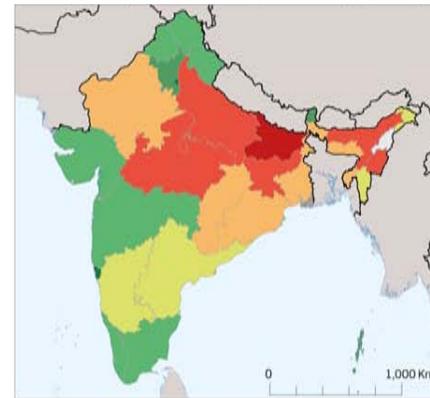
Mexico: 2011

Source: OECD

Source of Administrative boundaries: The Global Administrative Unit Layers (GAUL) dataset, implemented by FAO within the EC FAO Food Security for Action Programme

0 1,000 Km

REGIO gis



**Map 1.6 Russia, India, China and Brazil — GDP per head (USD PPS), 2010**

Index, national average = 100

- < 50
- 50 - 75
- 75 - 100
- 100 - 125
- 125 - 150
- 150 - 200
- > 200

Percentage of EU-27 :  
 Russia (2009): 70.1  
 India (2010): 11.6  
 China (2011): 27.5  
 Brazil (2010): 35.5

Sources: NSI, World Bank, DG REGIO

Source of Administrative boundaries: The Global Administrative Unit Layers (GAUL) dataset, implemented by FAO within the EC FAO Food Security for Action Programme



REGIO gis

## Western Balkan

There are three candidate countries in the Western Balkans (Montenegro, Serbia and the Former Yugoslav Republic of Macedonia) and three potential candidate countries (Albania, Bosnia-Herzegovina and Kosovo — as defined under UN Security Resolution 1244).

Montenegro has the smallest population, of around 620,000, but the highest GDP per head (if only 46% of the EU average in PPS terms in 2012) and the second lowest rate of unemployment (20%).

Serbia has the largest population (7 million) and the biggest economy. GDP grew by 6% a year between 2003 and 2008 but growth fell to 1.2% a year between 2008 and 2012. GDP per head is only a third of the EU average and unemployment was 24% of the labour force in 2012.

The Former Yugoslav Republic of Macedonia has a population just over 2 million. Its GDP grew by 5% a

year between 2003 and 2008 and by 2% over the subsequent four years. The unemployment rate is very high (31% in 2012) and GDP per head similar to that in Serbia (35% of the EU average).

The three potential candidate countries had a GDP per head of between 23% and 30% of the EU average in PPS terms in 2012. Albania had the lowest unemployment rate (14%) which was still well above the EU average, while rates in Bosnia-Herzegovina (29%) and Kosovo (35%) were very much further above the average.

Only one of the 6 countries (Albania) has an employment rate above 50% of the population aged 15–64 (in the EU, no Member State has a rate below 50%). In Bosnia-Herzegovina, it was only 40% in 2012 and in Kosovo, less than a quarter of working-age population were employed, which is remarkable.

**Table 1.1 Key indicators for Western Balkans, 2003–2012**

	Population (in 1000s)	GDP per head in PPS (EU-28=100)	Unemployment rate (%)	Employment rate, 15-64 (%)	Real GDP growth rate (% p.a.)	
	2012	2012	2012	2012	2003–2008	2008–2012
Montenegro	621	43	20	47	6.2	1.2
Former Yugoslav Republic of Macedonia	2060	35	31	44	4.7	1.9
Serbia	7217	35	24	45	5.0	0.2
Albania	2816	30	14	56	6.0	3.8
Bosnia and Herzegovina	3836	28	29	40	5.2	0.6
Kosovo (under UN Security Resolution 1244)	1816	23	35	24		4.6*

\* 2008–2011

Source: Eurostat

### 3. Central and eastern Member States maintain a strong industrial sector, but their agriculture needs to continue to modernise

In 1970, the industrial sector accounted for over 30% of total employment and GVA (gross value-added) in the EU-6 (i.e. the 6 Member States at the time). The rise of the service sector, the automation of manufacturing and the relocation of parts of manufacturing to emerging economies has led to a steady reduction in the share of employment and GVA in industry (excluding construction) in the EU economy (Figure 1.5). This trend was not affected by the enlargements up to those in 2004 and 2007 which both led to a small increase in the share of employment in industry. By 2012, the share of GVA in industry had fallen to 19% and the share of employment to 16%.

In the EU-12, however, the share of industry is larger than in the EU-15 and has changed less over time. The share of GVA in industry remained at around 27% between 1995 and 2012. The share of employment declined from 26% to 22% over these 17 years, but it remains much larger than in the EU-15, where only 14% of total employment is in industry (Figure 1.6).

The change in the share of agriculture has been substantial. In 1970, it accounted for 12% of total employment and 6% of GVA in the EU-6 (Figure 1.8). By

2012, the shares in the EU-27 had fallen to 5% and 2%, respectively. The effect of the various enlargements is more visible in this case, with increases in the employment share after the enlargements of 1981, 1986, 2004 and 2007. Because of the low level of productivity in agriculture in the countries joining the EU, however, its share of GVA did not increase significantly — subsistence farming, for example, contributes to employment in agriculture but hardly at all to GVA.

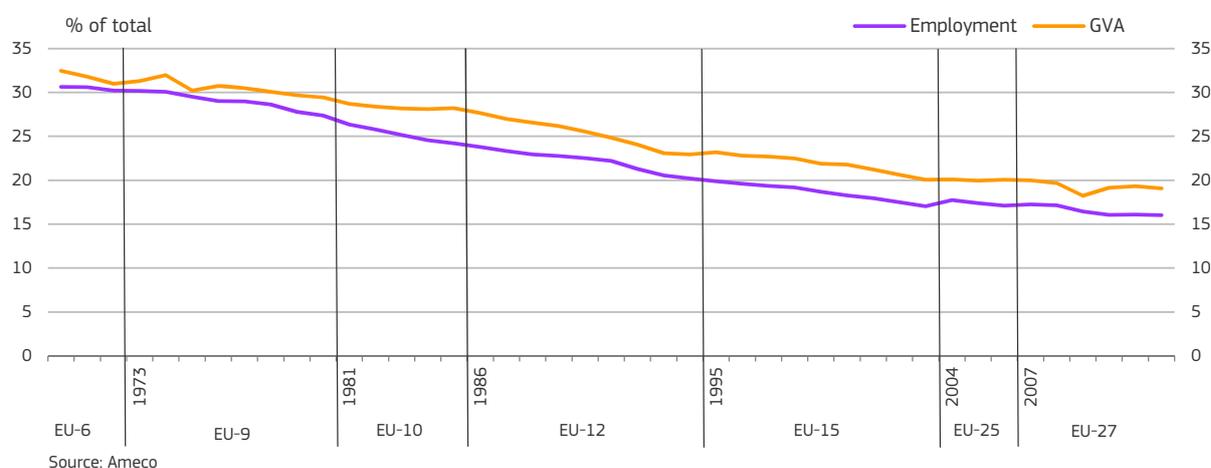
In the EU-12, the share of employment in agriculture fell from 25% to 15% between 1995 and 2012 and as productivity increases, it is likely that it will fall further (Figure 1.7). In the EU-15, it was only 3% in 2012.

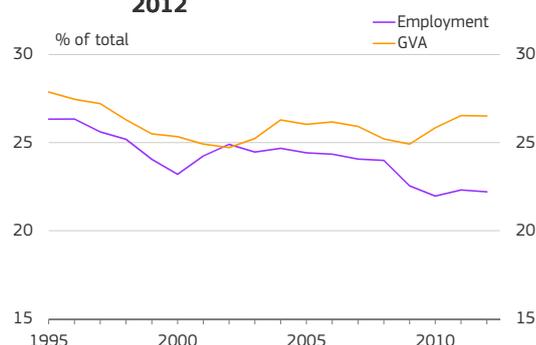
As the number of jobs in agriculture and industry declined, more jobs were created in services. However to switch from a job in agriculture or industry to one in services often requires learning a whole new set of skills. Providing training to people who want to find a job in a different sector can help to ease this transition.

### 4. Construction and industry most hit by the crisis

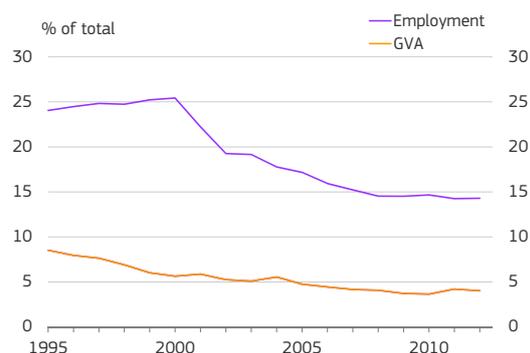
The less developed Member States tend to have a different economic structure than the rest of the EU

**Figure 1.5 Share of industry (excluding construction) in the EU, 1970–2012**

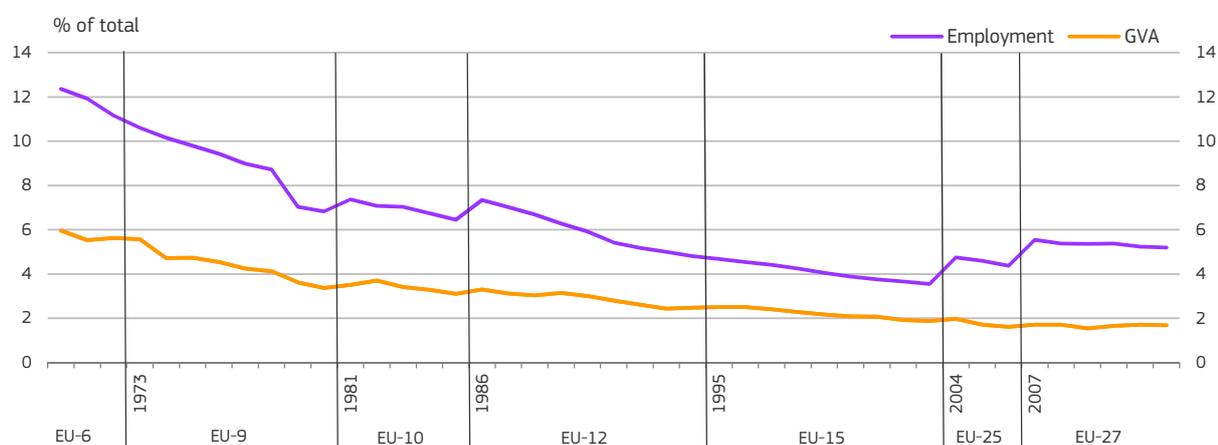


**Figure 1.6 Share of industry (excluding construction) in the EU-12, 1995-2012**

Source: Ameco

**Figure 1.7 Share of agriculture in the EU-12, 1995-2012**

Source: Ameco

**Figure 1.8 Share of agriculture in the EU, 1970-2012**

Source: Ameco

with more employment and GVA in industry (Table 1.2). In 2012, the share of employment in industry in these countries was 22%, 50% larger than in highly developed Member States (15%). There is little sign of convergence in this share. Industry in the less developed Member States showed higher growth of GVA than other sectors between 2000 and 2012. Even over the crisis period, 2008 to 2012, it grew by 2% a year while it declined by 1% a year in both moderately developed and highly developed Member States. Employment in industry also remained broadly unchanged up until 2008 in the less developed Member States, while it declined in the others.

Joining the EU and the Single Market has created more potential for specialisation and spatial cluster-

ing. Less developed Member States, therefore, may have been able to maintain a larger share of employment in industry because the balance between labour costs, productivity and accessibility created an attractive location for manufacturers.

Employment and GVA in construction has fallen sharply over the crisis period in all three country groups. The reduction was largest in the three Baltic States, Ireland, Greece and Spain, in all six of which a large real estate bubble burst as the financial crisis hit.

Financial and business services account for considerably smaller shares of employment and GVA in the less developed Member States, but they are increas-

Table 1.2 Change in employment and GVA by sector and group of Member States, 2000–2012

	Employment				GVA			
	Less developed	Moderately developed	Highly developed	EU-28	Less developed	Moderately developed	Highly developed	EU-28
<b>Share in 2012 (%)</b>								
Agriculture, forestry and fishing	15.9	8.3	2.5	5.2	4.5	2.7	1.5	1.7
Industry (except construction)	21.7	18.6	14.5	16.0	25.9	20.5	18.5	19.1
Construction	7.3	7.5	6.4	6.6	7.4	4.5	5.8	5.9
Wholesale and retail trade; transport; accommodation and food service activities; information and communication	25.0	29.1	27.7	27.4	26.8	27.1	23.2	23.6
Financial and insurance activities; real estate activities; professional, scientific and technical activities; administrative and support service activities	8.8	11.6	17.2	15.3	18.8	23.0	27.6	26.9
Public administration; activities of extraterritorial organisations and bodies	21.2	24.9	31.6	29.4	16.6	22.3	23.4	22.9
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Annual average % change 2000–2008</b>								
Agriculture, forestry and fishing	-2.5	-2.5	-1.6	-2.2	2.6	-1.9	0.8	0.9
Industry (except construction)	0.1	-0.3	-1.1	-0.7	5.8	3.7	1.0	1.4
Construction	4.6	0.8	1.5	1.9	6.5	1.2	1.4	1.7
Wholesale and retail trade; transport; accommodation and food service activities; information and communication	2.0	1.8	1.1	1.3	5.4	4.6	2.4	2.7
Financial and insurance activities; real estate activities; professional, scientific and technical activities; administrative and support service activities	3.1	3.1	2.8	2.8	4.7	2.9	2.5	2.6
Public administration; activities of extraterritorial organisations and bodies	1.2	1.8	1.4	1.4	1.7	1.9	1.5	1.6
<b>Total</b>	<b>0.8</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>4.7</b>	<b>3.0</b>	<b>1.9</b>	<b>2.1</b>
<b>Annual average % change 2008–2012</b>								
Agriculture, forestry and fishing	-1.3	-2.0	-1.5	-1.5	-3.1	-0.5	-1.8	-1.9
Industry (except construction)	-2.9	-3.6	-2.0	-2.3	2.0	-1.2	-1.0	-0.8
Construction	-3.5	-7.1	-3.9	-4.1	-0.3	-13.3	-3.9	-4.1
Wholesale and retail trade; transport; accommodation and food service activities; information and communication	-0.4	-1.8	-0.2	-0.3	0.9	-3.5	-0.1	-0.3
Financial and insurance activities; real estate activities; professional, scientific and technical activities; administrative and support service activities	2.3	-0.2	0.5	0.6	0.7	-1.0	0.3	0.3
Public administration; activities of extraterritorial organisations and bodies	0.2	-1.0	0.7	0.5	0.3	-0.7	0.8	0.7
<b>Total</b>	<b>-1.0</b>	<b>-2.3</b>	<b>-0.4</b>	<b>-0.6</b>	<b>0.8</b>	<b>-2.4</b>	<b>-0.2</b>	<b>-0.3</b>

Source: Eurostat

ing slowly towards those in the highly developed countries. The impact of the crisis on the combined sector in less developed Member States was limited, both employment and GVA continuing to grow, but at slower rates than between 2000 and 2008.

The restructuring and modernisation of the agricultural sector is still ongoing in the less developed Member States. In 2012, the sector accounted for 16% of total employment, over 6 times more than in highly developed Member States (2.5%). The share of GVA in agriculture was considerably smaller but three times larger than in the latter countries (4.5% as against 1.5%). Both shares are tending to decline as employment continues to shrink and growth of GVA lags behind that in other sectors. It was still the case, however, that the share of employment in agriculture in less developed Member States in 2012 was larger than in the EU-6 in 1970 (12%).

The impact of the crisis was more severe for the moderately developed Member States, GVA and employment declining by over 2% a year between 2008 and 2012. The reduction was especially large in construction, manufacturing, distribution, transport and communications.

Overall, the highly developed Member States were less affected by the crisis, employment declining by just 0.4% a year and GVA by 0.2% a year between 2008 and 2012. The biggest reduction in both employment and GVA were in construction, manufacturing and agriculture.

## 5. The crisis led to employment losses, but also some productivity gains

Between 2001 and 2008, GVA per head in the EU grew by 1.7% a year in real terms, primarily fuelled by productivity growth of 1.2% a year. Increases in the employment rate added another 0.5% a year while a rise in the share of working-age population in the total had a small but positive impact (0.1% — Table 1.3). Over the crisis period of 2008–2012, GVA per head fell by 0.5% a year and the employ-

ment rate by 0.8% a year with productivity growing by 0.3% a year.

The difference between the less developed Member States and the rest of the EU was pronounced in both periods. Between 2001 and 2008, growth of GVA per head was much higher in the less developed Member States (5.2% a year), primarily because of productivity growth (4.2% a year), while an increase in the share of working-age population in the total (which increases the number employed at any given employment rate) also contributed significantly (by 0.4% a year). Over the period 2008–2012, GVA per head in the less developed Member States as a group increased, but at a much lower average rate (by 1.2% a year), while it declined in virtually all other Member States. The main source of growth during these years was productivity (which increased by 1.8% a year) while employment declined significantly (by 1.1% a year).

All of the less developed Member States experienced losses in employment between 2008 and 2012 and gains in productivity, except Romania and Hungary where the opposite was the case. In five of the countries, productivity growth compensated for the reduction in employment and GVA per head remained unchanged. The effect of the rise in the share of working-age population in total was smaller during this period (adding 0.2% a year to growth instead of 0.4%), but it was still significant in Bulgaria, Poland and Slovakia (adding between 0.4% and 0.5% a year). In Croatia, there was a fall in working-age population relative to the total (reducing GVA per head by 0.6% a year) because of a combination of outward migration, low fertility rates and ageing.

GVA per head grew by 1.3% a year between 2001 and 2008 in the highly developed Member States, but declined by -0.7% a year between 2008 and 2012. In the first period, productivity growth (increasing by 0.9% a year) contributed more than the increase in the employment rate (of 0.4% a year), with the share of working-age population in the total remaining unchanged. Between 2008 and 2012, the employment rate declined (by 0.7% a year), while productivity increased only marginally and the share of population of working-age fell equally marginally on average,

Table 1.3 Decomposition of annual average change in GVA per head by Member State, 2001–2008 and 2008–2012

Average annual change (%)	2001–2008				2008–2012				
	GVA per head	Productivity	Employment rate	Share of working-age population	GVA per head	Productivity	Employment rate	Share of working-age population	
EU-28	1.7	1.2	0.5	0.1	EU-28	-0.5	0.3	-0.8	0.0
<b>Less Developed</b>	<b>5.2</b>	<b>4.2</b>	<b>0.6</b>	<b>0.4</b>	<b>Less Developed</b>	<b>0.9</b>	<b>1.8</b>	<b>-1.1</b>	<b>0.2</b>
Hungary	3.3	3.0	0.0	0.2	Croatia	-2.7	0.4	-2.5	-0.6
Poland	4.5	2.9	0.6	0.9	Romania	-1.2	-1.1	0.0	-0.1
Croatia	4.5	2.2	2.0	0.2	Hungary	-1.2	-1.4	0.3	0.0
Estonia	6.2	4.0	1.8	0.3	Latvia	-0.5	3.8	-4.5	0.3
Slovakia	6.4	4.4	1.1	0.8	Estonia	0.0	1.2	-1.4	0.3
Bulgaria	6.4	3.2	3.3	-0.3	Lithuania	0.4	0.9	-0.7	0.1
Romania	7.0	8.2	-0.8	-0.4	Bulgaria	1.0	3.8	-3.1	0.4
Latvia	8.5	5.0	3.1	0.2	Slovakia	1.2	2.3	-1.6	0.5
Lithuania	8.8	5.8	2.5	0.4	Poland	2.7	3.3	-1.0	0.4
<b>Moderately developed</b>	<b>2.7</b>	<b>2.1</b>	<b>0.5</b>	<b>0.1</b>	<b>Moderately developed</b>	<b>-2.5</b>	<b>-0.2</b>	<b>-2.0</b>	<b>-0.3</b>
Portugal	0.6	0.8	-0.2	0.0	Greece	-5.2	-0.8	-3.7	-0.8
Malta	1.8	1.3	-0.1	0.6	Cyprus	-3.2	0.4	-4.4	0.8
Cyprus	1.9	0.6	0.5	0.7	Slovenia	-2.4	-0.5	-2.0	0.1
Greece	3.2	1.6	1.4	0.1	Portugal	-0.8	1.8	-2.4	-0.2
Slovenia	4.3	3.3	0.8	0.1	Czech Rep.	-0.5	-0.3	0.0	-0.2
Czech Rep.	4.7	4.2	0.3	0.2	Malta	0.4	-0.8	1.2	-0.1
<b>Highly developed</b>	<b>1.3</b>	<b>0.9</b>	<b>0.4</b>	<b>0.0</b>	<b>Highly developed</b>	<b>-0.7</b>	<b>0.1</b>	<b>-0.7</b>	<b>-0.1</b>
Italy	0.2	-0.5	0.9	-0.3	Luxembourg	-2.6	-2.5	-0.5	0.3
Denmark	0.8	0.6	0.6	-0.4	Ireland	-1.8	2.4	-3.6	-0.6
France	0.9	1.0	-0.2	0.1	Italy	-1.8	-0.8	-0.9	-0.1
Spain	1.3	0.1	0.7	0.5	Finland	-1.7	-0.9	-0.4	-0.4
Belgium	1.4	1.0	0.4	0.0	Spain	-1.5	2.7	-3.9	-0.1
Germany	1.7	1.3	0.7	-0.4	UK	-1.4	-0.7	-0.5	-0.1
Netherlands	1.7	1.5	0.4	-0.1	Denmark	-1.2	0.7	-1.3	-0.5
Ireland	1.7	1.0	-0.2	0.8	Netherlands	-0.9	-0.3	-0.3	-0.3
Austria	2.0	1.4	0.6	0.0	Belgium	-0.5	-0.2	-0.5	0.1
UK	2.0	1.7	0.1	0.2	France	-0.3	0.3	-0.4	-0.2
Luxembourg	2.1	1.8	0.3	0.0	Austria	0.0	-0.4	0.3	0.0
Sweden	2.3	2.2	0.1	0.0	Sweden	0.5	0.9	-0.2	-0.2
Finland	2.5	1.5	1.0	-0.1	Germany	0.7	-0.1	0.6	0.2

In Ireland and Malta real GDP was used instead of real GVA

Source: Eurostat, Ameco and DG REGIO calculations

though by more (by around 0.5% a year) in Ireland, Denmark and Finland.

Among the highly-developed Member States, Ireland and Spain stand out as having suffered the biggest reduction in employment rates (by 3.6% and 3.9% a year) and having the highest productivity growth (2.4% and 2.7% a year). This is in part due to the collapse of construction, a sector with low productivity, though also to productivity gains in other sectors.

Germany and Sweden were the only two highly-developed Member States to experience an increase in GVA per head over the crisis period, but with a very different division between productivity and employment. In Germany, therefore, employment (taking the employment rate and share of working-age population together) increased by slightly more than GVA per head, effectively because of a small decline in productivity. In Sweden, productivity increased by more than GVA per head and the employment rate fell.

The moderately developed Member States (which include Greece, Portugal, Cyprus, Malta, Czech Republic and Slovenia) have been affected more strongly as a group by the crisis than the other Member States. While GVA per head grew by 2.7% a year in the first period, it shrank by 2.5% a year in the second, primarily due to reductions in the employment rate (by 2% a year), but also to a decline in the share of

working age population in the total (by 0.3% a year) and a fall in productivity (by 0.2% a year). The latter fall, therefore, cushioned the effect of the reduction in GVA on employment but only a little. There were, however, very different patterns of development over this period in the different countries.

In Malta, GVA per head increased slightly, the only country in the group where this was the case, but a relatively large decline in productivity (by 0.8% a year) was accompanied by a significant rise in the employment rate (by 1.2% a year). In Portugal, on the other hand, GVA per head declined but by less than the average in the group while productivity increased by much more than in the rest of the group (by 1.8% a year), so that the employment rate fell significantly (by 2.4% a year). In Cyprus, GVA per head fell markedly (by 3.2% a year), but productivity increased (by 0.4% a year) unlike in the other countries in the group (Greece and Slovenia), which combined with a large rise in working-age population relative to the total (by 0.8% a year), due to inward migration, led to the employment rate falling considerably (by 4.4% a year, more than in any other country).

### Decomposing growth in GVA per head

Growth in GVA per head is broken down into three main components: changes in productivity (GVA per person employed), changes in the employment rate (Employment relative to population of working age) and changes in the share of working age population in the total.

Accordingly:

$$\frac{\text{GVA}}{\text{Total population}} = \frac{\text{GVA}}{\text{Employment}} \times \frac{\text{Employment}}{\text{Working age population}} \times \frac{\text{Working age population}}{\text{Total population}}$$

The same identity can be expressed in terms of changes.

Usually, the employment rate is derived from the Labour Force Survey and is based on the place of residence of the person employed. Productivity, on the other hand, is calculated on the basis of employment at the place of work (from the national accounts). To ensure that this simple identity holds, the employment rate here is based on employment reported in the national accounts rather than the Labour Force Survey.

## 6. Growth in metropolitan regions more prone to booms and busts than in rural regions

### 6.1 Capital metropolitan regions performed well until the crisis led to above average employment losses

In 2011, metropolitan regions (Map 1.7) accounted for 59% of EU population, 62% of EU employment and 67% of EU GDP. Accordingly, they are major centres of employment and of business activity which have a higher level of productivity than elsewhere. In all Member States, GDP per head is higher in metropolitan regions than in other regions, though this does not always translate into higher growth rates. For example, between 2000 and 2011, GDP per head grew faster in non-metropolitan regions in Germany, Austria, Sweden, Finland, Portugal and Spain.

Nevertheless, in both the EU-15 and EU-13, real GDP per head in metropolitan regions grew faster than in

other regions between 2000 and 2008 (Table 1.4). Growth rates in capital city regions were especially high, partly because of their higher productivity growth in the EU-15 and higher employment growth in the EU-13.

Growth in second-tier metropolitan regions was the same as at the national level, but below the rate in the capital metropolitan regions. Smaller metropolitan regions grew more slowly than the other metropolitan regions. In the EU-15, they had the same rate of growth as in non-metropolitan regions. In the EU-13, the smaller metropolitan regions had a significantly lower rate of growth than the non-metropolitan ones.

The crisis had a different effect on the metropolitan regions in the EU-15 and the EU-13 between 2008 and 2011. In the EU-15, GDP in the capital metropolitan regions declined at the same rate as in other regions. In the EU-13, GDP in the capital metropolitan regions declined, while it grew in the other regions. In

**Table 1.4 Change in GDP per head, productivity and employment per head by type of metropolitan region, 2000–2008 and 2008–2011**

Average annual change (%)	2000–2008			2008–2011		
	GDP per head	Productivity	Employment per head	GDP per head	Productivity	Employment per head
<b>EU-15</b>						
Capital metropolitan region	1.4	0.9	0.6	-0.8	0.3	-1.1
Second tier metropolitan region	1.3	0.7	0.6	-0.8	0.1	-0.9
Smaller metro region	1.2	0.7	0.5	-0.6	0.2	-0.8
Non-metropolitan region	1.2	0.8	0.4	-0.8	0.2	-1.0
<b>Total</b>	<b>1.3</b>	<b>0.8</b>	<b>0.5</b>	<b>-0.7</b>	<b>0.2</b>	<b>-0.9</b>
<b>EU-13</b>						
Capital metropolitan region	5.5	3.6	1.9	-0.3	1.0	-1.3
Second tier metropolitan region	4.9	4.1	0.8	1.4	1.3	0.1
Smaller metro region	3.7	3.6	0.1	1.4	1.2	0.2
Non-metropolitan region	4.5	4.4	0.0	0.6	1.7	-1.1
<b>Total</b>	<b>4.9</b>	<b>4.3</b>	<b>0.6</b>	<b>0.7</b>	<b>1.4</b>	<b>-0.8</b>
<b>EU-28</b>						
Capital metropolitan region	1.9	1.0	0.9	-0.7	0.5	-1.2
Second tier metropolitan region	1.6	1.0	0.6	-0.6	0.1	-0.7
Smaller metro region	1.3	0.8	0.5	-0.5	0.2	-0.8
Non-metropolitan region	1.6	1.3	0.3	-0.5	0.5	-1.0
<b>Total</b>	<b>1.6</b>	<b>1.1</b>	<b>0.5</b>	<b>-0.5</b>	<b>0.4</b>	<b>-0.9</b>

Source: Eurostat and DG REGIO calculations

**Table 1.5 Change in real GDP per head, productivity and employment per head growth by urban-rural typology, 2000–2011**

Average annual change (%)	2000–2008			2008–2011			2011
	GDP per head	Productivity	Employment per head	GDP per head	Productivity	Employment per head	GDP per head (PPS) index EU-28=100
<b>EU-15</b>							
Urban	1.3	0.8	0.5	-0.9	0.2	-1.0	124
Intermediate	1.2	0.7	0.5	-0.6	0.3	-0.8	100
Rural	1.2	0.7	0.5	-0.5	0.4	-0.9	90
<b>Total</b>	<b>1.3</b>	<b>0.8</b>	<b>0.5</b>	<b>-0.7</b>	<b>0.2</b>	<b>-0.9</b>	<b>110</b>
<b>EU-13</b>							
Urban	5.5	3.6	1.9	0.7	0.9	-0.2	108
Intermediate	4.6	4.2	0.4	0.5	1.5	-1.0	57
Rural	4.3	4.5	-0.2	0.6	1.6	-1.1	46
<b>Total</b>	<b>4.9</b>	<b>4.3</b>	<b>0.6</b>	<b>0.7</b>	<b>1.4</b>	<b>-0.8</b>	<b>64</b>
<b>EU-28</b>							
Urban	1.5	0.9	0.7	-0.8	0.2	-0.9	122
Intermediate	1.5	1.0	0.5	-0.4	0.4	-0.9	90
Rural	1.7	1.5	0.2	-0.3	0.7	-1.0	74
<b>Total</b>	<b>1.6</b>	<b>1.1</b>	<b>0.5</b>	<b>-0.5</b>	<b>0.4</b>	<b>-0.9</b>	<b>100</b>

Source: Eurostat and DG REGIO calculations

both cases, this was accompanied by a larger reduction in employment than elsewhere.

In the EU-15, in second-tier and smaller metropolitan regions, productivity growth was low and employment declined, the fall in GDP per head being similar to that in the EU-15 as a whole.

In the EU-13, in second-tier and smaller metropolitan regions growth of GDP per head was twice the EU-13 average as a result of high productivity growth and no reduction in employment. It will be interesting to see whether this launches a period of higher growth rates outside the capital metropolitan regions leading to a narrowing of the gap in GDP per head with the latter.

A new ESPON study<sup>3</sup> specifically examining the performance of second-tier cities concluded that although some of these make a substantial contribution to the national economy, in most countries, they do not contribute as much as capital cities. It is

argued that they could contribute more, however, if they were given greater EU and national support.

The tendency to over-invest in the capitals and under-invest in second-tier cities is shown to be strong in many countries and it is arguable that higher level governments should resist this tendency and create territorial policies specifically for second-tier cities. This highlights the importance of a tailored, place-based development policy and of taking explicit account of the different territorial impact of national policies on R&D, innovation, education and skills and transport and connectivity.

## 6.2 GDP growth in rural regions was lower prior to the crisis, but proved more resilient during the crisis years

Between 2000 and 2008, real GDP per head in rural regions (Map 1.8 and Box) in the EU-28 grew by 1.7% a year (Table 1.5), similar to the rate in other types of region. The only difference was that productivity in

<sup>3</sup> Parkinson M. *et al.* (2012).

## City size, agglomeration benefits and metropolitan governance

In all OECD countries, productivity and wages increase with city size (Figure 1.9). As a result of their high levels of productivity and their sheer size, large urban agglomerations contribute substantially to national growth.

### Why are larger cities more productive?

The productivity of cities depends on a great many factors, such as having companies which are innovative and skilled workers. Productivity, however, at least up to a certain point, increases with the size of cities, which raises the question of why. The reasons are, first, that larger cities tend to have higher levels of human capital, even though the relationship with city size is often non-linear, in the sense that the shares of both very high skilled workers and low skilled increase at the same time. Secondly, larger cities typically have a larger share of high productivity sectors such as consulting and legal and financial services. Thirdly, larger cities are more likely to be hubs or service centres through which trade, finance and other flows are channelled. These flows typically require the provision of high value-added services. Fourthly, cities profit from 'agglomeration benefits', which means that, on average, the productivity of a person increases with the size of the city in which they live and work. Figure 1.10 shows productivity levels for cities in Germany and the US adjusted for difference in levels of human capital. Recent OECD estimates suggest that productivity increases by 2–5% for every doubling of the population (Ahrend *et al.* (2014a)), which is in line with similar studies for individual countries (Combes *et al.* (2011)).

Agglomeration benefits are usually thought to arise from 'sharing', 'matching' and 'learning' (see, e.g.,

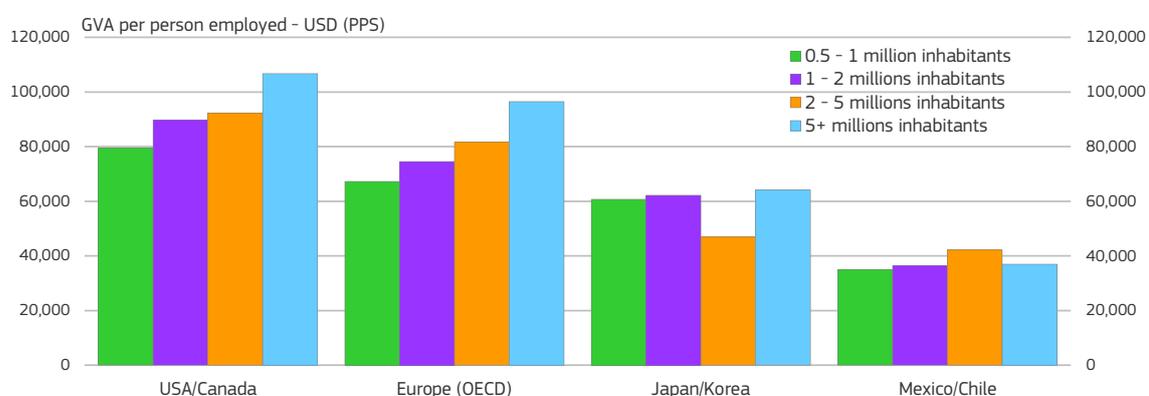
Duranton and Puga, 2004). In larger agglomerations, firms profit from a greater supply of local public goods, as well as 'shared', or common, facilities such as public laboratories and universities. It is also easier for them to find suppliers that more closely match their needs. Similarly, a larger labour market allows a higher level of flexibility and workers to be better matched to jobs. Equally, the easier generation, diffusion and accumulation of knowledge in larger agglomerations facilitates access to technologies and skills. In addition, agglomeration benefits are often thought to be related to people being better 'connected' in larger cities and to arise perhaps from higher levels of "knowledge based capital" (intangible assets) in the firms located there.

Agglomeration benefits not only arise from the size of population in a city itself but they can also be 'borrowed'; from neighbouring agglomerations. For every doubling of the population living in agglomerations within a 300 km radius, the productivity of the city in the centre is estimated to increase by 1–1.5% (Ahrend *et al.* (2014a)). This might explain why in the US productivity in urban agglomerations generally increases more strongly with population size than in European countries. Essentially, because distances between agglomerations tend to be less in Europe, smaller cities are not so disadvantaged since they 'borrow' agglomeration benefits from neighbouring towns and cities.

### The role of metropolitan governance structures in economic efficiency and well-being

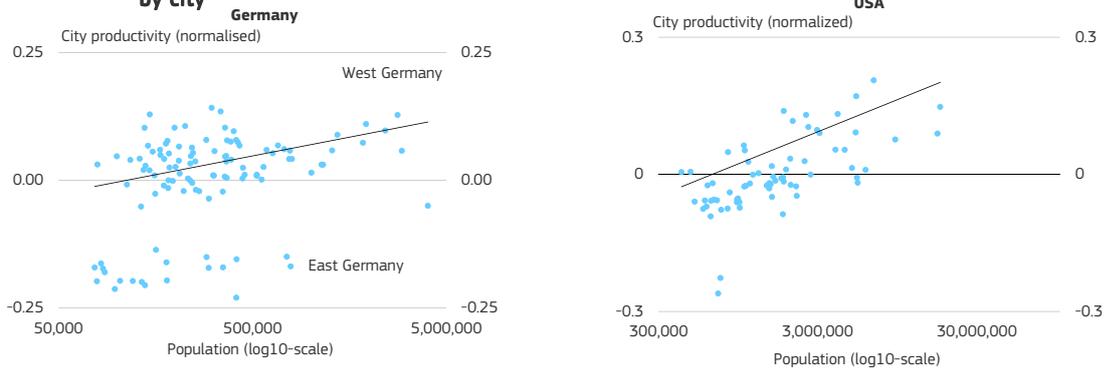
Metropolitan areas typically span a number of administrative boundaries. They, therefore, often suffer from fragmented policymaking, and it is not uncommon

**Figure 1.9 Larger metropolitan areas are more productive**



Source: OECD Metropolitan Database

**Figure 1.10 Population size and productivity by city**

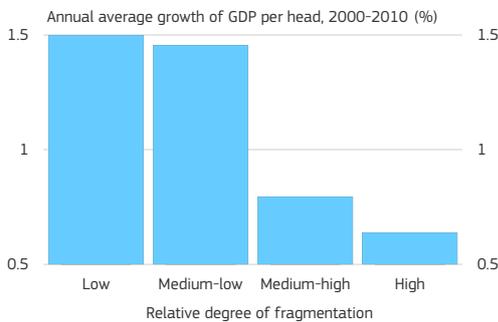


Source: Ahrend et al.

mon for there to be several hundred local authorities. If these are left to pursue policies independently of each other, they are unlikely to tackle the challenge of developing the economic potential of the metropolitan area as a whole and the well-being of the people living there in an adequate way. Research undertaken by the OECD shows that municipal fragmentation does indeed reduce economic growth (Figure 1.11) as well as the productivity of Metropolitan areas, estimates indica-

ting that a doubling of the number of municipalities per 100,000 people is associated with a reduction of 5–6% in productivity. It is likely that this in part is a result of sub-optimal provision of transport infrastructure, exemplified by routes in many Metropolitan areas ending at administrative boundaries for no apparent reason. This can also increase the possibility of those living in badly connected areas being socially excluded.

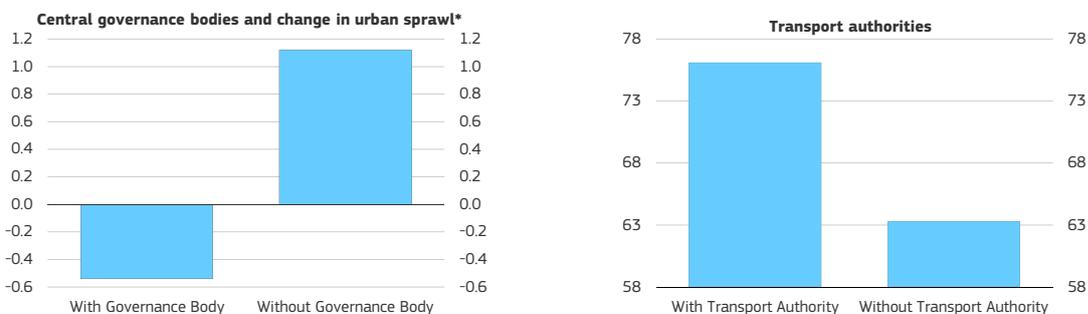
**Figure 1.11 Less fragmented metropolitan areas have experienced higher growth**



Source: Ahrend et al. (2014b)

The potentially adverse effects of the fragmentation of municipalities, however, can at least be mitigated to a large extent by governance arrangements. More specifically, the existence of a central metropolitan governance body is estimated to reduce the adverse effect of fragmentation on productivity by around a half. Metropolitan areas with a central governance body, on average, experience less urban sprawl, possibly as a result of more efficient use of land and the planning of transport (Figure 1.12). Similarly, in metropolitan areas with a transport authority, or some other body to coordinate transport, people tend to be much more satisfied with the public transport system; the areas concerned also tend to have significantly lower levels of air pollution (Ahrend *et al.* (2014b)).

**Figure 1.12 Governance institutions and selected outcomes**



\* Controlling for country fixed effects  
Source: Ahrend et al. (2014c)

rural region grew faster, while employment relative to population (i.e. the employment rate) rose more slowly.

In the EU-15, GDP per head in rural regions grew slightly more slowly as productivity growth was lower than in other regions, but the employment rate increased at the same rate as in other regions.

In the EU-13, GDP per head in rural regions also grew more slowly between 2000 and 2008 than in other regions, though here productivity growth was higher and employment contracted relative to population whereas in other regions, it increased. The two tendencies may be linked, insofar as the higher productivity growth was due to catching up in the use of technology and more efficient methods of working, including in agriculture, which in turn led to a reduction in employment.

The crisis had a differentiated effect on rural regions. The reduction in GDP per head between 2008 and 2011 was less pronounced in rural regions than in urban ones in the EU-15. In the EU-13, growth rates of GDP per head between 2008 and 2011 were much lower than in the preceding period but still positive. Growth in urban regions was slightly higher than in others.

Employment declined in all types of region, by more in urban regions in the EU-15 and in rural regions in the EU-13. Productivity continued to grow in the EU-15 and, more especially, in the EU-13. In both, growth was higher in rural regions than elsewhere.

In 2011, the differences in GDP per head between the three types of region in the EU-15 were much smaller than in the EU-13. In rural regions, average GDP per head was 90% of the EU average, in urban regions, 124% of the average, a difference of 34 percentage points. In the EU-13, on the other hand, GDP per head in the rural regions was only 46% of the EU average, while in urban regions, it was 108% of the average, a difference of 62 percentage points.

## 7. Start-ups rates and Entrepreneurship rely on individual initiative and the right institutional environment

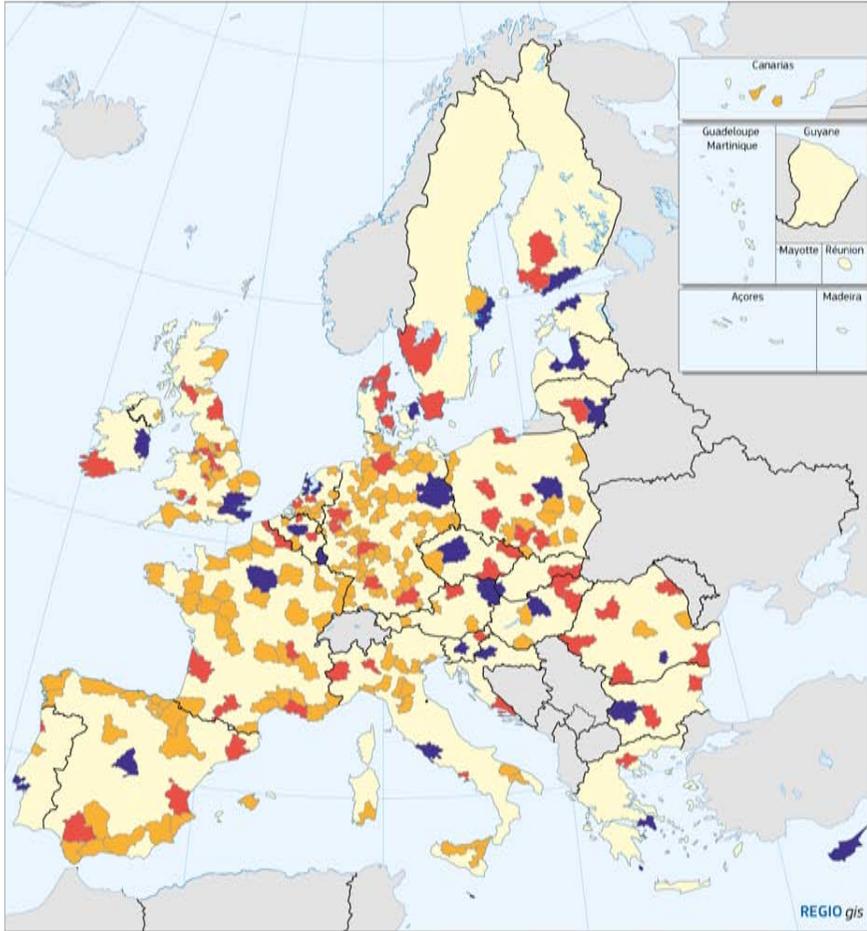
Business demography reflects the dynamism of an economy through the adaptation of economic structures and entrepreneurs to evolving market conditions. In the period 2014–2020, Cohesion Policy is focussed heavily on supporting smart growth with particular emphasis on innovation and high growth firms, with programmes aimed at supporting the innovative capacity of SMEs. In previous periods too, a substantial share of Cohesion Policy funding has been devoted to improving the business environment and supporting entrepreneurship.

Regional business demography indicators show where new businesses are created and how quickly firms grow. In this section, two main indicators are examined: the birth rate of firm (firms created in a region relative to the number of firms active there) and the death rate (firms going out of business which were last active in the region relative to the total number active).

The birth rate of enterprises is one of the main drivers of job creation and economic development. New, innovative enterprises tend to increase the competitiveness of an economy both directly and by pushing competitors to become more efficient. Death rates tend to indicate the economic activities which are no longer profitable.

In 2010, newly-created enterprises tended to be more numerous in (or around) capital city regions, both in more developed and less developed Member States. Birth rates were also high in regions where the economy continued to expand (in Poland especially) or experienced a quick recovery after the severe contraction of 2009 (as in Slovakia) (Figure 1.14).

In France, which on average recorded a high birth rate of businesses, regional differences are marked, higher rates being registered in outermost and southern regions as well as around Paris and in the regions bordering Belgium and Germany.



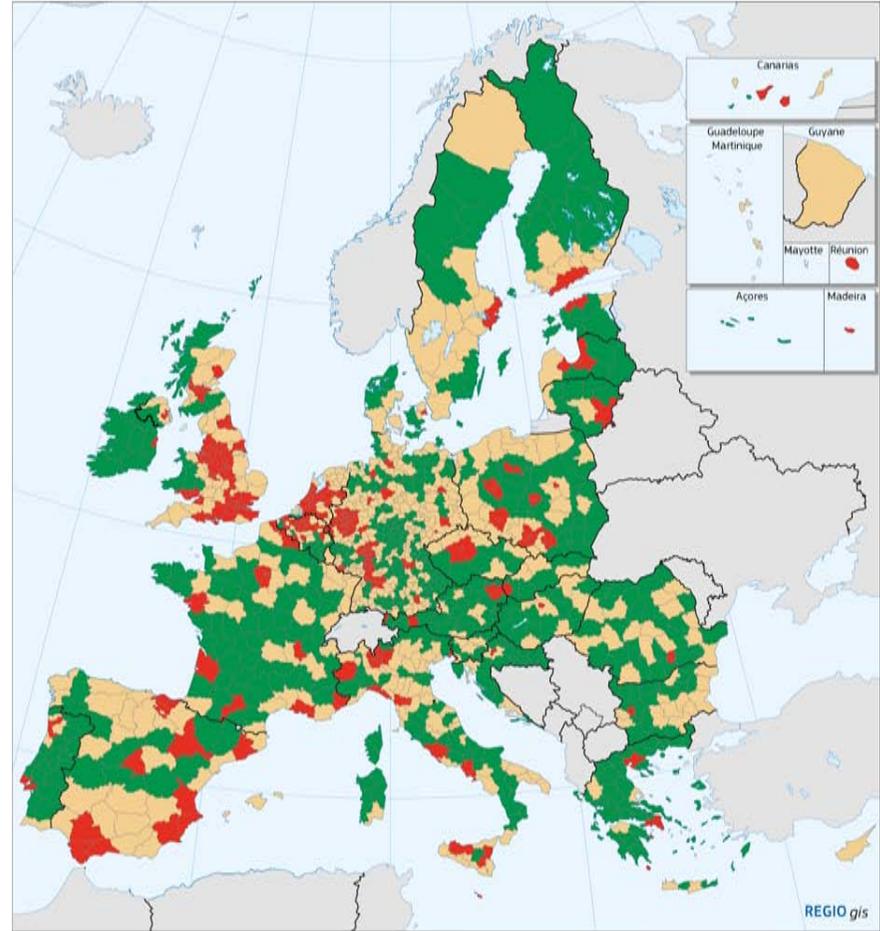
Map 1.7 Typology of metro regions

- Capital city region
- Second tier metro region (group of largest cities, excl. capital)
- Smaller metro region

Sources: Eurostat, DG REGIO

0 500 Km

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Map 1.8 Urban-rural typology of NUTS 3 regions

- Predominantly urban regions
- Intermediate regions
- Predominantly rural regions

Typology based on a definition of urban and rural 1 km<sup>2</sup> raster cells.

Sources: Eurostat, JRC, EFGS, LandScan, DG REGIO

0 500 Km

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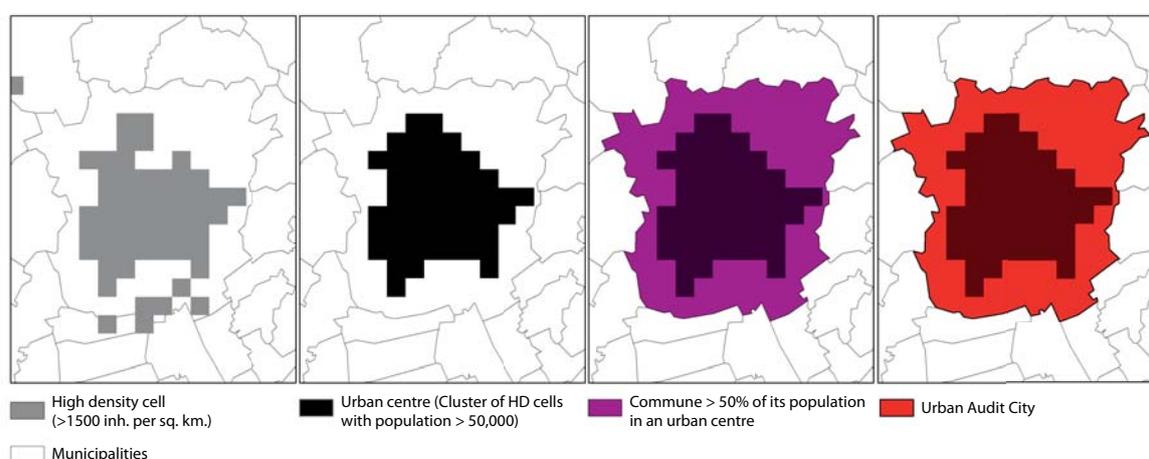
## EU-OECD city and commuting zone definition and metropolitan regions

The new EU-OECD definition is linked to metropolitan regions.

The cities in this new definition are identical to those identified by the degree of urbanisation (see above). A city is defined as one or more municipalities (local administrative unit level 2) that have at least 50% of their population living in an urban centre.

The commuting area of the city is defined as all contiguous municipalities where at least 15% of the residents in employment commute to the city. Municipalities below this threshold but surrounded by municipalities above this threshold are also included in the commuting area. (For more details, see Dijkstra and Poelman 2012 and OECD 2012). The city and its commuting zone form a functional urban area.

### High density cells, urban centre and city (Graz)



This report includes data for urban centres (see access to public transport), cities (see at risk of poverty) and cities and their commuting zone (see air quality).

The metropolitan regions<sup>1</sup> represent cities plus commuting zones of more than 250,000 inhabitants. If a NUTS 3 region has more than 50% of its population living in such a city plus commuting zone, it is considered as (part of) a metropolitan region.

The typology distinguishes three types of metropolitan regions:

1. capital city regions (i.e. where the national capital is located);
2. second-tier metropolitan regions;
3. smaller metropolitan regions.

Second-tier metropolitan regions consist of the largest cities in the country excluding the capital. A natural break in population size was used to distinguish the second-tier from the smaller metropolitan regions.

1 Eurostat, *Metropolitan regions*, [http://epp.eurostat.ec.europa.eu/portal/page/portal/region\\_cities/metropolitan\\_regions](http://epp.eurostat.ec.europa.eu/portal/page/portal/region_cities/metropolitan_regions).

## Commuting and functional geographies

The difference between GDP per head in urban regions and other regions is due in part to commuting which tends to distort the comparison. People working in an urban region and living in a neighbouring intermediate or rural region inflate GDP per head in the urban region (by contributing to its GDP, but not its population) and deflate GDP per head in the region they live (by adding to its population but not its GDP). In many cases, this effect is small, but in some cases it can be very large. For example, half the people working in Brussels live outside the Brussels region, so that GDP per head in Brussels is around twice what it would be without commuting. In such a situation, GDP per head is a poor proxy for income per head.

Using functional regions like labour market areas<sup>1</sup> or metropolitan regions avoids this distortion. Of the 272 metropolitan regions, however, 42 consist of a mixture of urban, intermediate and rural areas, which means that in these cases, the difference in GDP per head between the three types of area is likely to be exaggerated because of commuting.

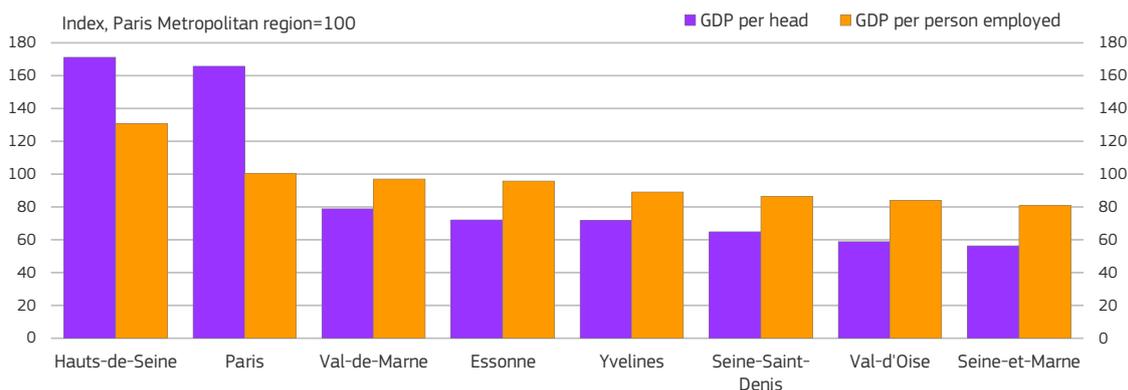
One way of showing the impact of commuting is to compare GDP per head (distorted by commuting) with GDP per person employed, persons employed being measured in terms of their place of work and, accordingly, not distorted by commuting. GDP per person

employed is, of course, much higher than GDP per head as only about half of the total population is employed. In a functional region with no inward or outward commuting this difference would equate to the share of the population in employment.

However, in the case of the Paris metropolitan region, for example, GDP per head is much higher than implied by this difference in the two areas with net inward commuting, while it is substantially lower higher in the areas with net outward (Figure 1.13). This illustrates the inflation of GDP per head in regions with more jobs than employed residents and the reduction in regions which have the opposite (which are, in effect, 'dormitory' regions for the region where economic activity is concentrated).

There is a growing consensus that economic policies and development strategies should be related to more functional regions rather than covering particular parts of an economic area or labour market. This can be seen in the emergence of new instruments to govern metropolitan areas in France, the UK and other countries. It is also why when assessing regional competitiveness several NUTS 2 regions have been combined to ensure that a single metropolitan area was not divided into multiple regions.

**Figure 1.13 GDP per head and per person employed in the Paris Metropolitan region, 2010**



Source: Eurostat and DG REGIO calculations

1 Eurostat has created a taskforce to investigate different labour market methodologies. Results will be available in 2015.

### New degree of urbanisation and urban-rural typology

Since the 5<sup>th</sup> Cohesion Report, the European Commission has developed a new typology of local areas which is linked to a typology of regions<sup>1</sup>.

Both typologies rely on a new analytical tool, the population grid, which is used to identify three types of cell:

1. urban centre (alternative name: high-density cluster): contiguous grid cells of one square km with a density of at least 1,500 inhabitants per square km and a minimum population of 50,000;
2. urban cluster: contiguous grid cells of one square km with a density of at least 300 inhabitants per square km and a minimum population of 5,000;
3. rural grid cell: grid cells outside urban clusters.

These are then used to define three types of municipality (local administrative units level 2) as follows:

1. cities: at least 50% of the population live in an urban centre;
2. towns and suburbs: less than 50% of the population live in an urban centre, but more than 50% live in an urban cluster;
3. rural areas: at least 50% of the population live in rural grid cells.

These cells are also used to define NUTS 3 regions as follows:

1. predominantly urban: less than 20% of the population live in rural grid cells;
2. intermediate: between 20% and 50% of the population live in rural grid cells;
3. predominantly rural: at least 50% of the population live in rural grid cells.

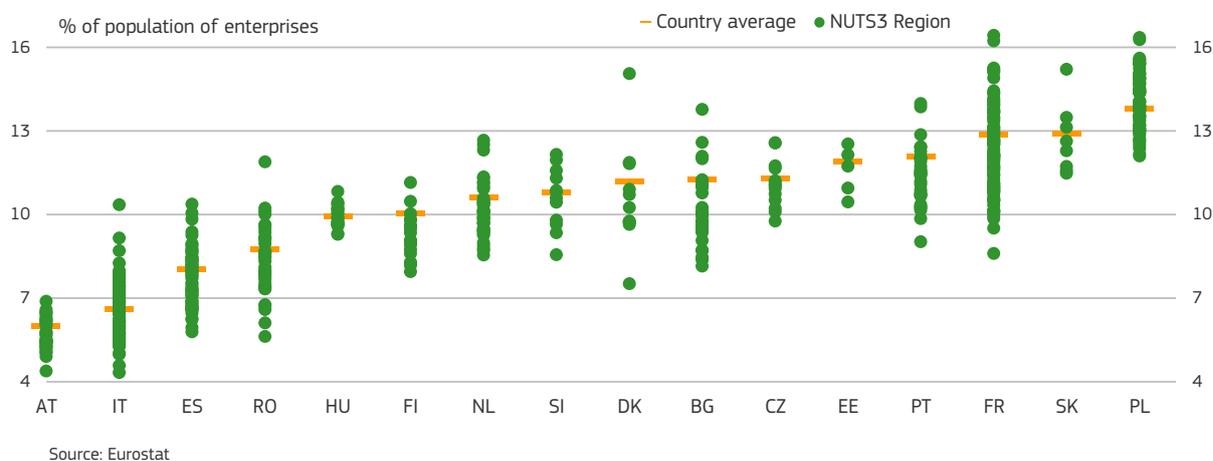
This creates an especially close link between rural regions and rural areas which are defined in the exact same way.

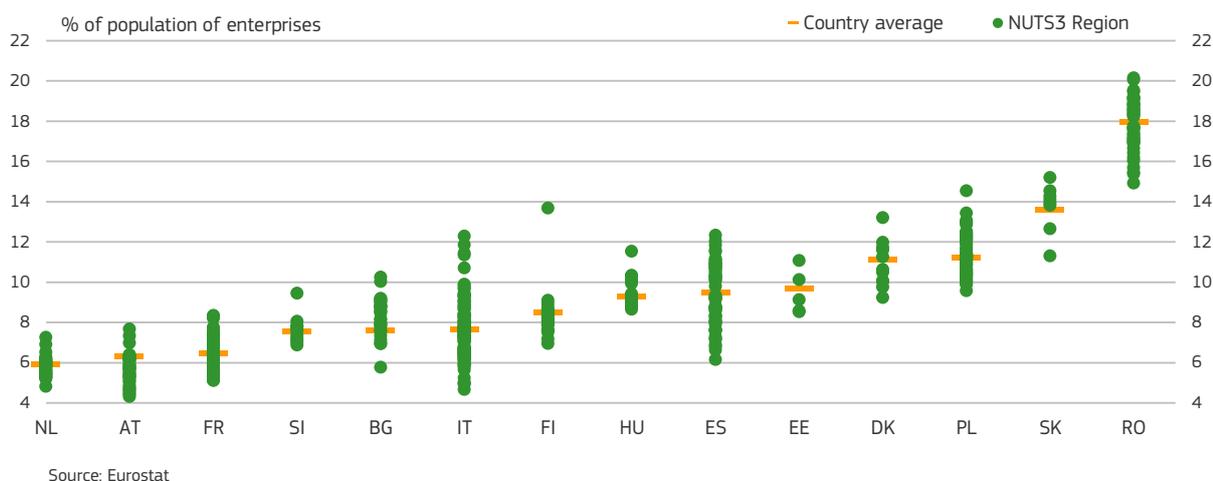
1 Eurostat, *Urban-rural typology*, [http://epp.eurostat.ec.europa.eu/statistics\\_explained/index.php/Urban-rural\\_typology](http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Urban-rural_typology).

In Austria and Italy, the birth rates were particularly low. In other countries, there are also large regional difference, though in some cases this is mainly due to a single region, such as Ilfov in Romania, the NUTS 3 region surrounding Budapest and Byen København (with a high rate) and Bornholm (a low rate) in Denmark.

Death rates of enterprises were particularly high in Romania, Slovakia and in most Polish regions as well as in southern regions of Spain (e.g. in Andalusia and Murcia), Italy (e.g. Calabria) and the eastern regions of Denmark (Figure 1.15). Low death rates were recorded in the Netherlands, Austria, north-east Italy and in several regions in France. Interestingly, regions

**Figure 1.14 Birth rate of enterprises, 2010**



**Figure 1.15 Death rate of enterprises, 2010**

in Poland and Slovakia tended to record high rates of both births and deaths of enterprises, indicating a particularly high rate of business turnover, or ‘churn’. In Romania, high death rates were accompanied by low rates of birth in 2010 reflecting the further contraction of the economy following the severe recession in 2009.

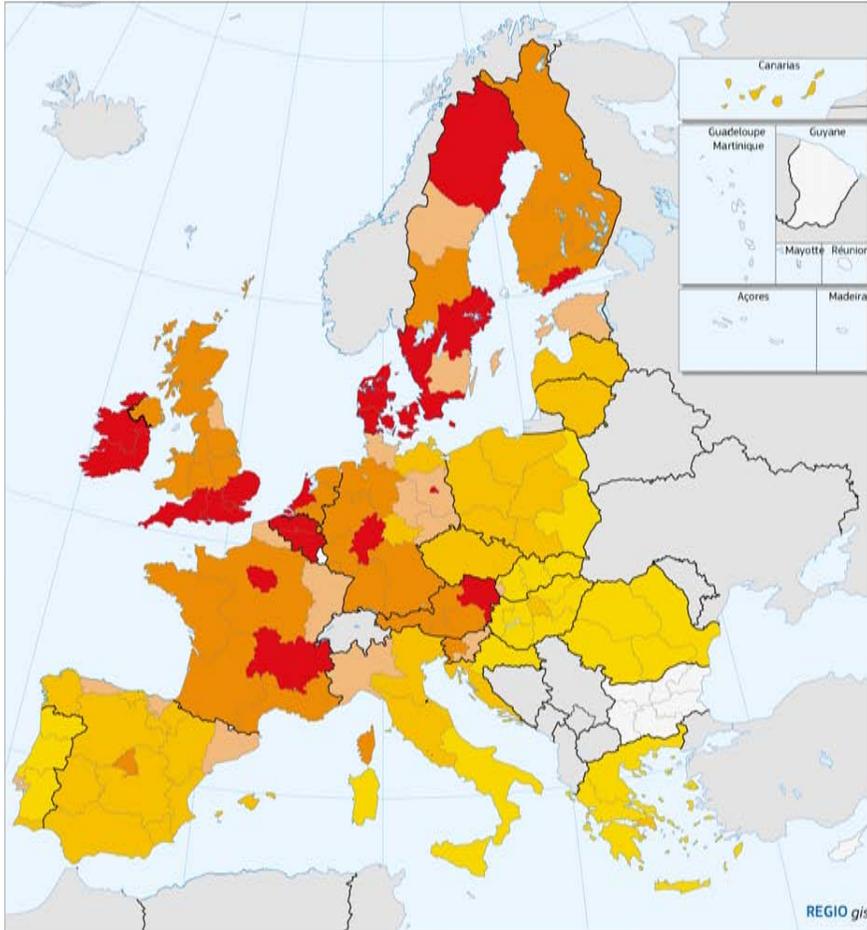
This new set of data on regional business demography has the potential to become a critical policy indicator to measure business dynamics at the regional level. It can reveal where start-up rates are substantially below average or which regions have a high death rate or a low survival rate. Any of these three instances should give rise to further investigation to identify why the business environment in the regions concerned seems sub-optimal.

Entrepreneurship is an important driver of economic development, restructuring and the growth of regions. Entrepreneurship can be seen as a dynamic, institutionally embedded interaction between the attitudes, abilities, and aspirations of individuals, shaping the allocation of resources through the creation of new ventures and the operation of existing ones. Accordingly, entrepreneurship reflects a complex process involving individual decision-making and the wider context where this occurs. The phenomenon has been studied from both the individual and context angles, but the complex relationship between the two has not been studied before at regional level.

The variations in entrepreneurship, as measured, across the 125 regions are substantial (Map 1.9), with a difference of over four-fold between the region with the highest ranking (Hovedstaden in Denmark) and that with the lowest (Macroregiunea doi in Romania). There are four Swedish, two Danish, two British, one French and one Irish region in the top 10, Hovedstaden being followed by the two regions with the largest cities in the EU, Greater London and Île de France. Other, more developed regions with large cities with higher GDP per head generally rank higher than less developed regions in the same country. In most cases, capital city regions are ranked first in each country. The regions with the lowest scores are in Romania, Hungary and Greece.

The index contains both individual-level and institutional or environmental indicators (see box), which reflect the regional context. For example, a factor such as the perception of risk is the outcome of combining an institutional factor (the actual business risk faced by a start-ups as measured by the business closure rate) and an individual one (the personal acceptance of risk by entrepreneurs, measured by the proportion of the population aged 18–64 stating that the fear of failure would not prevent them starting a business).

Analysis of the individual aspects gives a different picture than the combined index (Map 1.10). The top 10 regions of the ‘individual’ index still include



Map 1.9 The Regional Entrepreneurship and Development Index (REDI — Combined index)

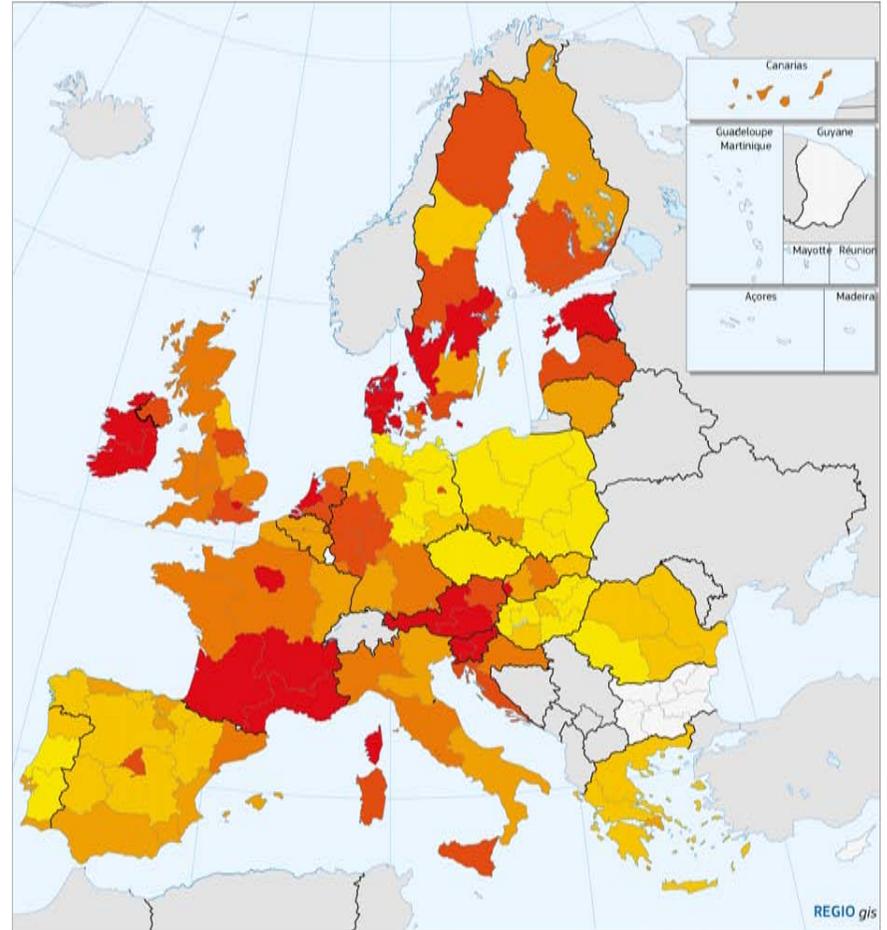
- < 30
- 30 - 40
- 40 - 50
- 50 - 60
- > 60

The index ranges from low level of entrepreneurship (low values) to high levels of entrepreneurship (high values).

Source: Szerb, L. *et al.* (2013)

0 500 Km

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Map 1.10 The Regional Entrepreneurship and Development Index (REDI) — individual dimension

- < 57.6
- 57.6 - 60.7
- 60.7 - 63.2
- 63.2 - 65.2
- 65.2 - 68.8
- >= 68.8

The index ranges from low level of entrepreneurship (low values) to high levels of entrepreneurship (high values).

Source: Szerb, L. *et al.* (2013)

0 500 Km

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### The Regional Entrepreneurship and Development Index — REDI

A recent EU-project<sup>1</sup> has developed an index (REDI — Regional Entrepreneurship and Development Index) that describes the entrepreneurial process, taking account of both individual attitudes and characteristics and the regional context and, accordingly, not only whether people are willing to start a business but also whether the conditions to do so are in place in the region concerned.

The index is composed of three sub-indices covering entrepreneurial attitudes, abilities and aspirations. Each of the sub-indices has an individual component (relating to the individual decision making behaviour) and an institutional component (relating to the context). Entrepreneurial attitudes indicate the attitudes of the population in a region as they relate to entrepreneurship, including elements such as perception of opportunities and risks, cultural support and networking. These are measured by indicators of market agglomeration, social capital and the extent of corruption. Entrepreneurial abilities measure characteristics of entrepreneurs and business start-ups with high growth potential, such as the take-up of technology, the level of human capital and the degree of market competition. The indicators used include the educational level, the degree of sophistication of businesses and the freedom for businesses to operate. Entrepreneurial aspirations refer to the distinctive, strategy-related nature of entrepreneurial activity such as product and process innovation and access to financing. These are measured by indicators of innovation, R&D and the development of the financial market. The indicators can relate to either regions (NUTS 1 or NUTS 2) or countries.

1 Szerb L., *et al.* (2013)

5 of those in the top 10 of the combined index (e.g. London, Hovedstaden and Île de France), but there are also the two Slovenian regions and the two Irish ones. The bottom 10 regions, unlike in the case of the combined index, include three German and four Polish ones.

This analysis can help regions tailor their strategies to remove the key bottlenecks to unleash the poten-

tial of entrepreneurship, including social entrepreneurship.

## 8. Innovation remains spatially concentrated

As widely documented in the economic literature, research and innovation play a critical role in determining the economic performance of countries and regions. Innovation, understood in the broad sense to include product, process, market and organisational innovation, is identified as one of the major engines of economic growth, employment and ecological sustainability and accordingly is of critical importance for social progress as well as prosperity.

In particular, innovation is an important driver of long-run productivity growth and, as such, is crucial for maintaining the competitiveness of firms over their rivals. This is particularly true for firms in Europe which more and more compete with firms located in less developed parts of the world and in emerging economies. These are not only catching up fast in terms of technology but they also continue to benefit from lower labour costs due in part to different standards in the organisation of the labour market, a lack of social protection for workers and lower income expectations, though low labour costs are offset to some extent by lower productivity. From this perspective, innovation, as well as the capacity to assimilate innovation produced elsewhere, can be regarded as an important condition for maintaining the specific features of the European social model.

In addition, contrary to growth obtained from restructuring economies, growth arising from innovation is in principle without bounds, which is why it is central to securing economic growth and development in the long-run<sup>4</sup>.

One of the main indicators for assessing investment in innovation is the level of regional expenditure on

4 The importance is recognised by the Innovation Union Initiative launched in 2010 as part of the Europe 2020 strategy which is aimed at boosting research and innovation throughout the EU through 34 action points.

research and development (R&D)<sup>5</sup>. Technical progress is to a large extent driven by R&D activities and expenditure on R&D indicates the effort devoted by the public sector and firms to generating innovations and new market opportunities<sup>6</sup>. The role played by R&D in supporting key engines of growth has made it a headline target objective of the Europe 2020 strategy, specifically that expenditure on R&D in the EU should reach 3% of GDP by 2020.

According to the latest data available, expenditure on R&D in the EU-28 amounted to around 2% of GDP in 2011 (Map 1.11). However, there is wide variation around the average with some regions — Braunschweig in Germany and Brabant Wallon in Belgium — having expenditure on R&D as high as 8% of GDP and others (Ciudad Autónoma de Ceuta in Spain, Dytiki Makedonia and Notio Aigaio in Greece, and Severozapaden in Bulgaria) having expenditure of only around 0.1% of GDP.

R&D expenditure in the Union has steadily increased over the past decade, from 1.8% of EU-27 GDP in 1995 to 2.0% in 2011. However, the pace of this increase is too slow to close the gap with other highly developed economies in the world, like Japan where R&D expenditure amounted to 3.7% of GDP in 2011 or the US where it stood at 2.9% of GDP.

In general, regions with high expenditure on R&D are the most highly developed ones. Of the 20 regions in the EU with the highest expenditure on R&D, 16 have a level of GDP per head above 100% of the EU-27 average. The vast majority of regions recording low levels of expenditure on R&D are located in southern, central and eastern Member States or are regions with relatively low levels of GDP per head in the Western Member States.

5 It should be noted however that if R&D expenditure is likely to underestimate innovation activities, particularly in sectors outside manufacturing where non-technological innovation is frequent (see the section on the Regional Innovation Scoreboard below).

6 Note that R&D expenditure is an input measure which does not capture the extent to which this expenditure is actually transformed into innovations and, more specifically, commercial innovations.

## 8.1 R&D and the 2020 target

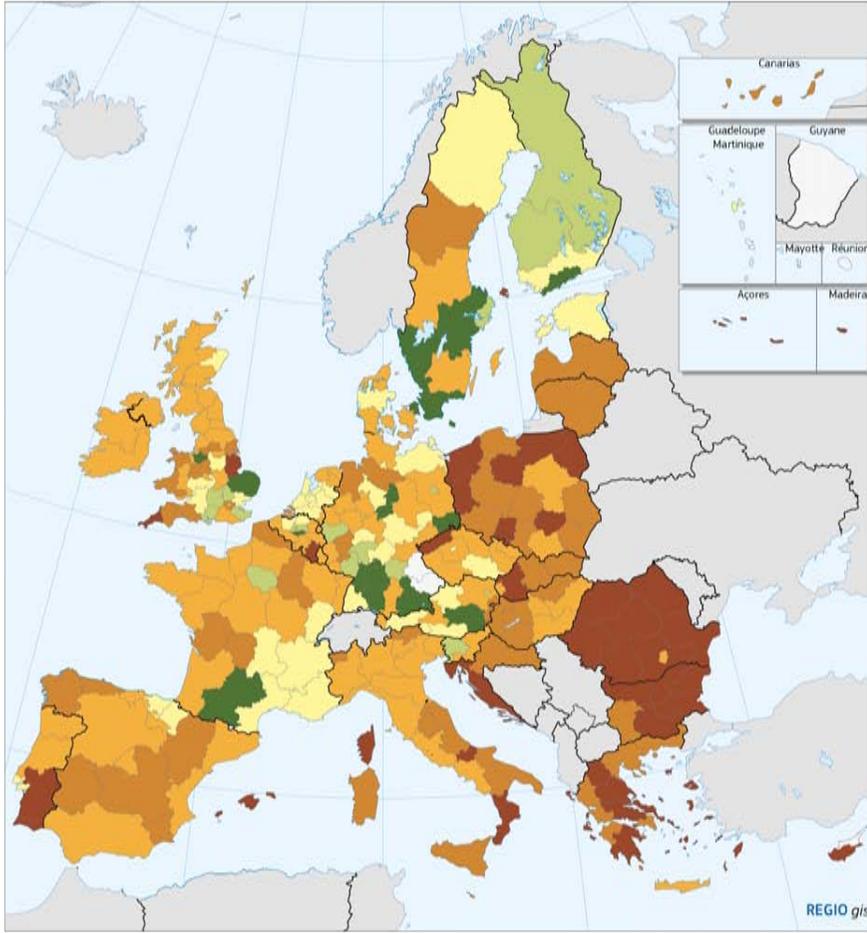
Expenditure on R&D in 2011 exceeded the Europe 2020 target of 3% in only 32 regions in the EU and it was less than 1% in 100 regions. Expenditure in the majority of regions is far below the national target, which for most Member States is below the overall target (Table 1.6 and Map 1.12). Only in 32 regions has expenditure reached the national target and even in Member States with expenditure close to the national target (e.g. Denmark, Sweden and Germany), regional disparities are still considerable<sup>7</sup>. However, not all regions can or should try to reach the national target since regional differences in this regard are an inherent feature of the situation, as noted below.

R&D expenditure is generally high in regions with a large city, though the regions with the largest city, which is usually the capital, do not in all cases have the highest levels. Indeed, many regions with high expenditure do not have a very large city, such as Oulu in Finland or Styria in Austria. In part, this is because very large cities tend to have a smaller share of activity in manufacturing, which generates most R&D.

R&D by no means captures all expenditure on innovation. While it captures a large share of innovation expenditure in manufacturing, it misses most of the expenditure in services. Because manufacturing is spatially concentrated, it is unrealistic to expect that all regions can reach the national target for R&D spending. Indeed, due to the positive ‘externalities’, or spill-overs, from concentration of technological innovation in a few locations, many regions should not aim to reach their national R&D target, but should focus instead on other ways to innovate.

Innovation is a key factor of development for all regions in the EU, not only the high-tech ones. However, regions differ widely in their performance with respect to innovation. Some are close to the global technology frontier and their growth generally hinges on R&D and technological innovation shifting this frontier outwards. Other regions are catching up with the leading ones through a process of absorbing existing

7 See ESPON (2013), *Territorial Dimension of the Europe 2020 Strategy*.



Map 1.11 Total expenditure on R&D, 2011

% of regional GDP

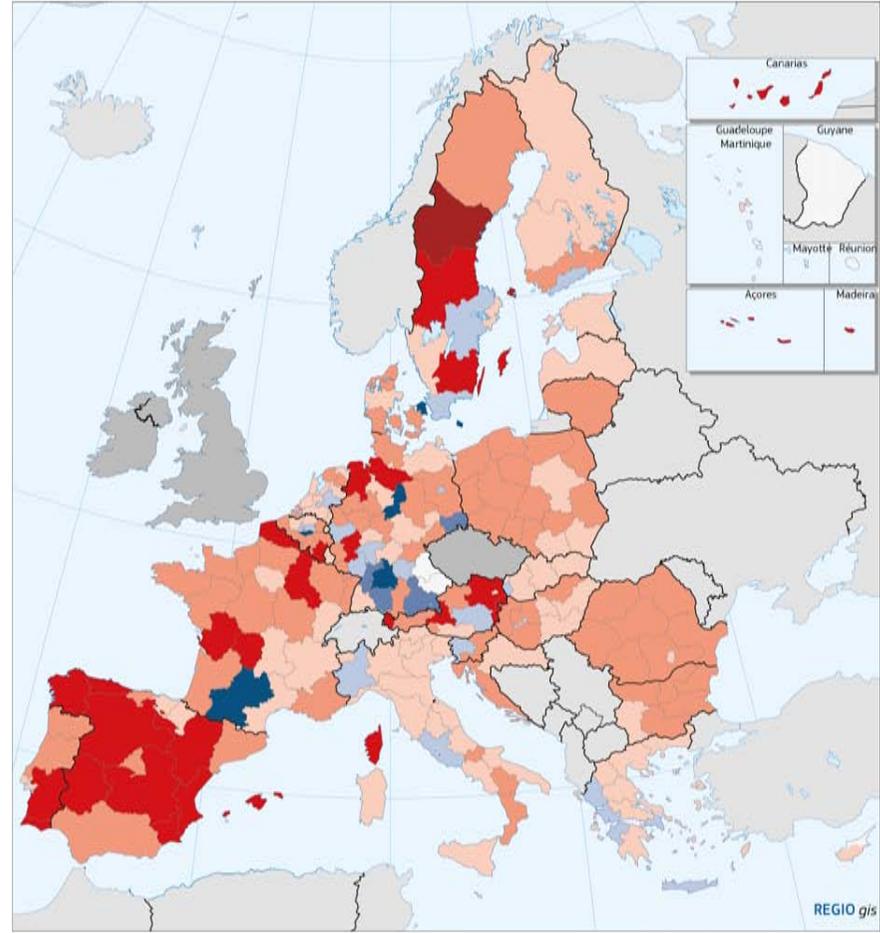
■ < 0.5	■ 3 - 4
■ 0.5 - 1	■ >= 4
■ 1 - 2	■ no data
■ 2 - 3	

EU-28 = 2.04  
FR91: 2009, LU: 2010  
The Europe 2020 R&D target is 3%.

Sources: Eurostat, DG REGIO

0 500km

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Map 1.12 Total expenditure on R&D, 2011 — Distance to national 2020 target

Percentage point difference

■ < -3	■ 1 - 2
■ -3 - -2	■ > 2
■ -2 - -1	■ no national target
■ -1 - 0	■ no data
■ 0 - 1	

EU-28 = -0.96  
Blue regions have reached the target.  
Red regions have not reached the target.

Sources: Eurostat, DG REGIO

0 500km

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**Table 1.6 Total R&D expenditure and the distance to the 2020 target, 2011**

	More developed	Transition	Less developed	EU-28
R&D as % of GDP, 2011	2.3	1.3	0.8	2.1
Distance to national target (% point difference)	0.4	1.4	0.9	0.9
% of regions* that have reached national target	21	8	5	14

\* Includes only regions with data and a national target

Source: Eurostat and DG REGIO calculations

technology and their main challenge is to increase the capacity of workers and enterprises located there to be able to do this.

For another set of regions, the limiting factor is their low endowment of infrastructure and the quality of the business environment. It is therefore important to take account of more aspects of innovation than simply R&D, or indeed technological innovation, in order to give a more accurate and complete picture of the geography of innovation in the EU. This is the approach adopted by the Regional Innovation Scoreboard (RIS) in assessing performance in this regard in NUTS 1 and 2 regions.

The RIS covers 190 regions in Europe in total — all those in the EU together with those in Norway and Switzerland<sup>8</sup>. It is based on 11 indicators reflecting various aspects important for innovation, such as ‘Human resources’, ‘Finance and support’, ‘Firm investment’, and ‘Linkages and entrepreneurship’ (capturing entrepreneurial efforts and related efforts at collaboration) as well as ‘Outputs’ (i.e. the number of firms that have introduced innovations on to the market or within their organisations and their effects on employment, exports and sales). For purposes of analysis, regions are grouped into four categories (Map 1.13): innovation leaders (34 regions), innovation followers (57 regions), moderate innovators (68 regions) and modest innovators (31 regions).

In general, regional performance as measured tends to be in line with national performance. Most of the regional innovation leaders and innovation followers are located in countries which are identified as such in the Innovation Union Scoreboard (IUS) and similar-

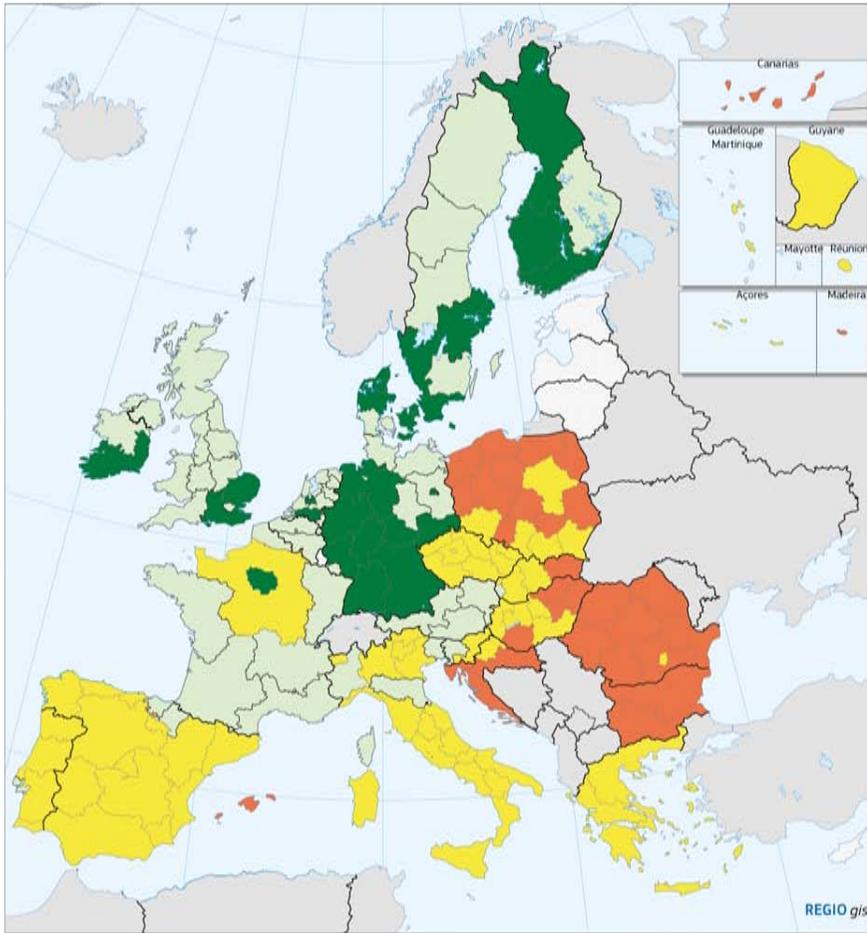
ly for the regional moderate and modest innovators. All the innovation leader regions are located in just 8 EU Member States (Denmark, Germany, Finland, France, Ireland, Netherlands, Sweden and the UK), indicating that excellence in innovation is concentrated in relatively few parts of Europe. Regions in Bulgaria, Croatia, Greece, Poland and Romania are assessed as having the worst performance.

There are, however, some variations in regional performance within countries. In particular, 14 countries have regions in two performance groups and four (France, Portugal, Slovakia and Spain) have regions in three groups. Only Austria, Belgium, Bulgaria, Czech Republic and Greece have all regions in the same group.

The analysis conducted for the period 2004–2010 shows that innovation performance has improved in most regions (155 out of 190, see Map 1.14). Regions with relatively high rates of improvement are located right across the EU. At least one region in every country increased its performance by more than the EU average. This is the case for all regions in Austria, Ireland, Netherlands and Switzerland.

On the other hand, in half of the countries (14), the performance of at least one region worsened over the period. The score declined by over 2.5% a year in 7 Polish regions, 4 Spanish regions and one region in each of Croatia, Italy and Romania. It declined by even more (by over 10% a year) in Ciudad Autónoma de Ceuta and Ciudad Autónoma de Melilla in Spain and Podlaskie and Kujawsko-Pomorskie in Poland. Overall, the results indicate that there is no sign of any catching-up, in the sense of performance in the less innovative regions converging towards that in the more innovative ones.

<sup>8</sup> Details about the method and the indicators used to establish the RIS can be found in the report prepared for the European Commission *Regional Innovation Scoreboard 2014*, European Commission (2014).



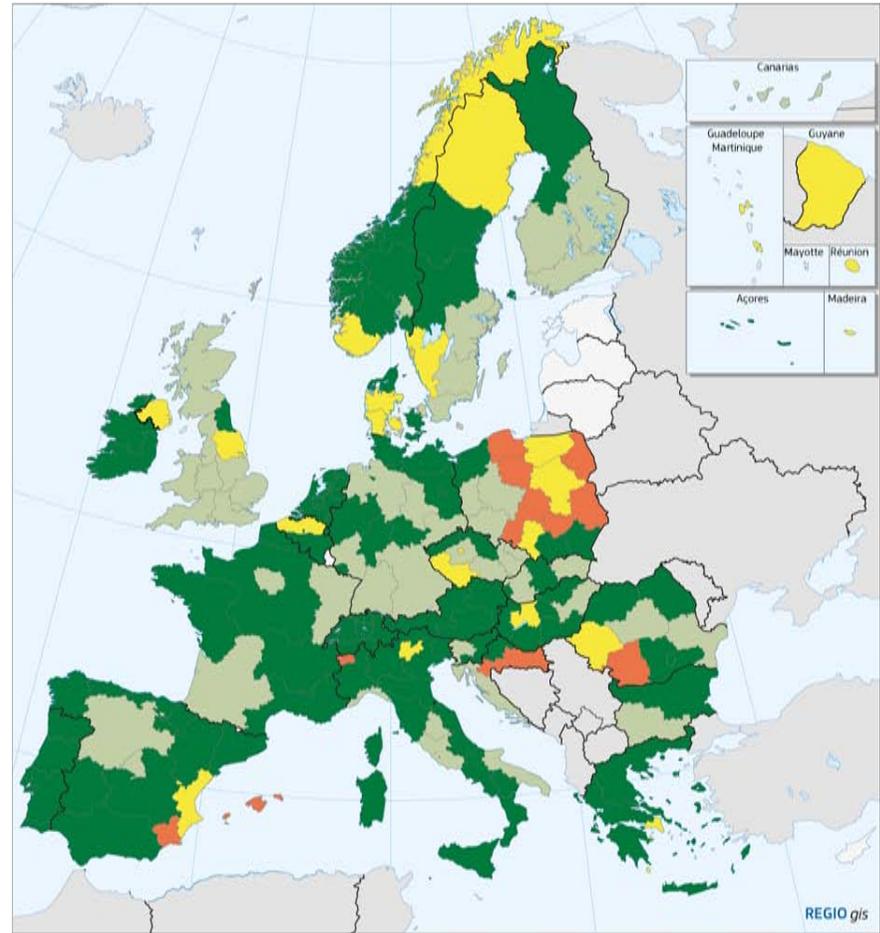
Map 1.13 Regional Innovation Scoreboard, 2014

- Innovation Leader
- Innovation Follower
- Moderate Innovator
- Modest Innovator

Source: Maastricht Economic and Social Research Institute on Innovation and technology

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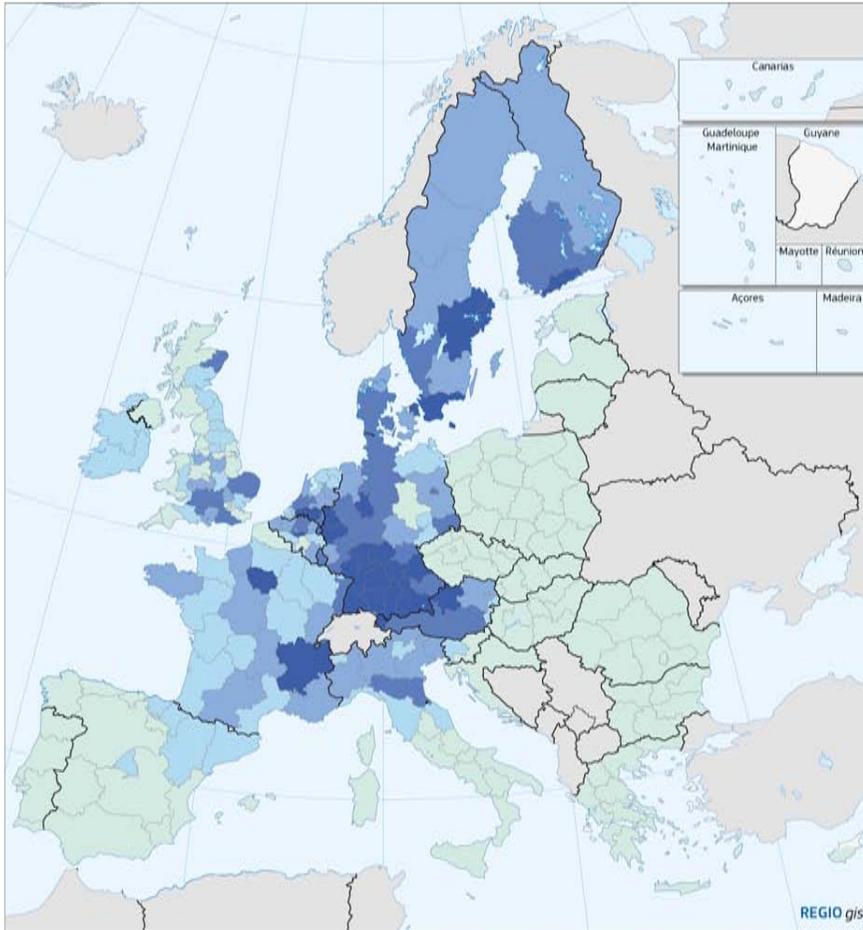
Map 1.14 Regional innovation growth performance, 2008-2014

- < -2.5%
- -2.5% - 0%
- 0% - 2.5%
- 2.5% - 15%
- 15% - 25%

Source: Maastricht Economic and Social Research Institute on Innovation and technology

0 500 Km

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**Map 1.15 Patents applications to the European Patent Office (EPO), average 2008–2009**

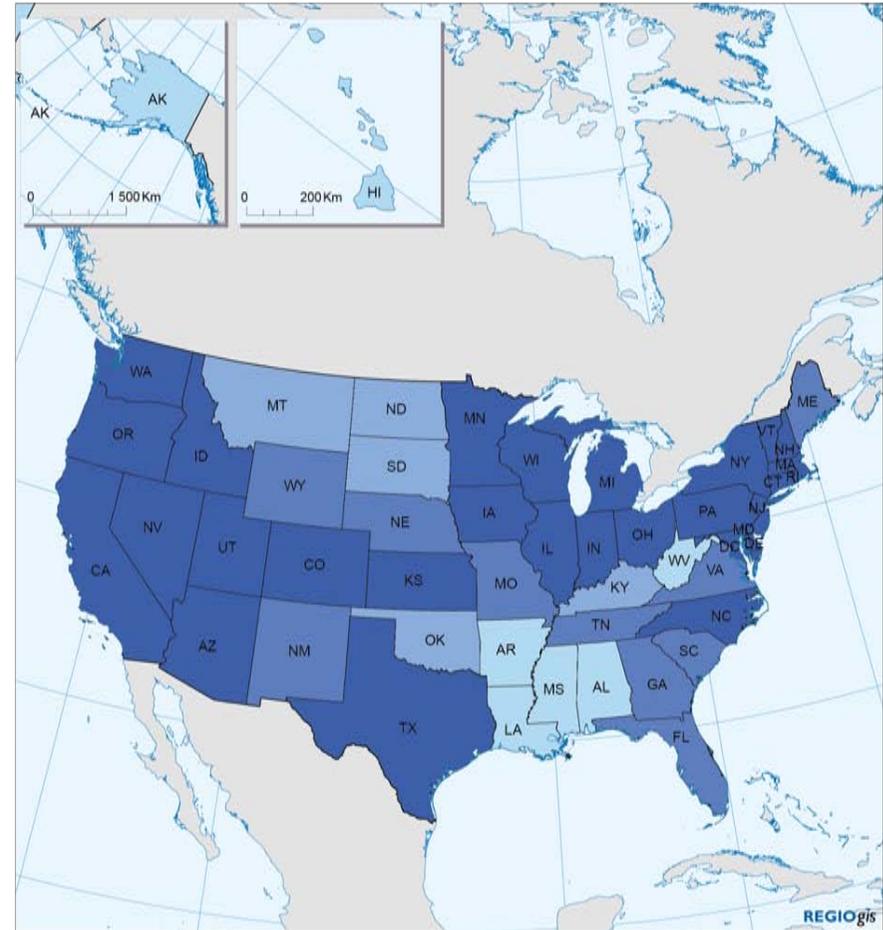
Applications per million inhabitants

- <50
- 50 - 100
- 100 - 150
- 150 - 250
- >= 250
- no data

EU-28 = 111  
Sources: Eurostat, DG REGIO

0 500Km

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**Map 1.16 Patent applications in the US, average 2011–2012**

Applications per million inhabitants

- <50
- 50 - 100
- 100 - 150
- 150 - 250
- >=250

US average = 408  
Source: US Patent and Trademark Office

0 1,000Km

Most of the highly innovative regions (innovation leaders and high performing innovation followers) have high scores on most indicators (e.g. human resources, R&D expenditure, entrepreneurship and product and process innovations). By contrast, the majority of the moderate and modest innovators have widely varying scores for the different aspects.

A positive attitude of people towards novelty (as monitored by the European Social Survey) is a key factor for both entrepreneurship and innovation. In addition, regional performance depends to a significant extent on a well-developed system of public financial support for innovation with many companies receiving some form of support. This suggests that public funding can compensate for a lack of private funding in stimulating innovation activity.

In general, the analysis confirms the wide diversity of regions in the EU in terms of innovation performance which reinforces the notion that innovation has a strong regional dimension. Given this wide variation, programmes for supporting innovation, including Cohesion Policy programmes, need to take explicit account of the local or regional context when devising the kind of support to provide.

## 8.2 Patenting in the EU and the USA

Over the two years 2008–2009, some 135 patent applications per million people were made to the European Patent Office (EPO). In the US, there were 408 applications per million over the same period. The higher patent rate in the US reflects a more innovative economy, though also a greater tendency to apply for patents.

Although there are marked variations across regions in both the EU and US, most US States have a much larger number of patents per head than EU regions.

In the EU, the regions with the highest patent application rates are Noord-Brabant (559 per million people), Stuttgart (544) and Mittelfranken (505); other regions with relatively high rates are in Germany, southern England, Sweden and Finland. The majority of the EU regions, however, have a relatively small number of patents per head (Maps 1.15 and 1.16).

In the US, the States with most patent applications are situated on the East and West Coasts, in Massachusetts (879 per million people) and California (864) especially.

The patent application figures suggest that whereas some regions in the EU may be close to the global knowledge frontier in certain areas of economic activity, most regions are not. In the US, there seem to be more States which fall into the former category.

## 9. Tertiary educational attainment is increasing, but large disparities persist

Tertiary education, with its links to research and innovation, can help to provide the highly skilled human capital that the EU needs to create jobs, economic growth and improvements in social welfare<sup>9</sup>.

A well-educated workforce is key to prosperity. There tends to be a strong correlation between the educational attainment of a region's workforce and median earnings in the region. In addition, attaining a relatively high education level tends to mean less risk of being unemployed. The share of people aged 25–64 with a high educational attainment level (i.e. with tertiary qualifications), however, varies significantly across regions (Map 1.17 and Figure 1.16). In only 10% of the regions in 2013 was the share over 40%, with Inner London, Brabant Wallon and Helsinki having the highest figures. In most cases, regions with

<sup>9</sup> European Commission, 2012, *Education and training monitor 2012*.

## Competitiveness and Innovation Framework Programme

The Competitiveness and Innovation Framework Programme (CIP) is one of the EU funding programmes supporting innovation activities (including eco-innovation) in the EU, access to finance and business support services. The programme, which had a budget of EUR 3.6 billion in the 2007–2013, is aimed at medium-sized enterprises and cohesion is not an explicit objective, although the main projects it supports contribute to achieving Cohesion Policy goals.

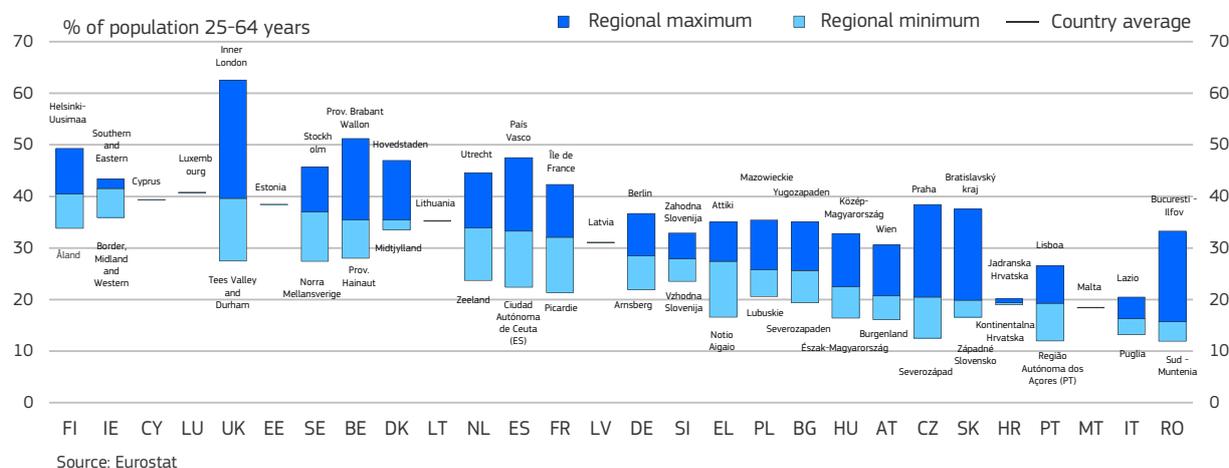
The main means of support for SMEs are financial instruments (with funding of around EUR 1 billion) through networks, platforms and agencies (e.g. the Enterprise Europe Network, PRO INNO Europe and Europe INNOVA) are also provided. Other initiatives are focused on European Clusters (e.g. European Cluster Observatory, European Cluster Excellence Initiative) and on supporting eco-innovation, market replication projects and ICT related pilot projects.

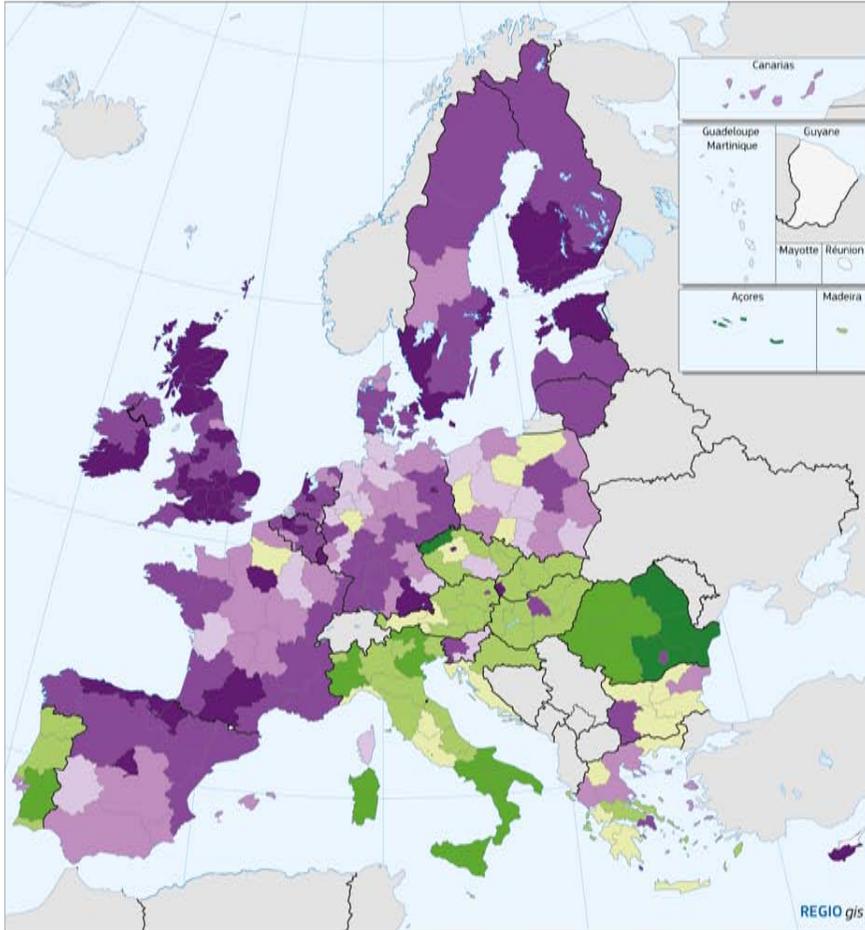
The CIP also supports statistical analysis of regional innovation. The Regional Innovation Monitor Plus (RIM Plus) project provides a platform for sharing knowledge of innovation policy trends in EU regions. The Regional Innovation Scoreboard (RIS) provides a comparative assessment of how European regions perform with regard to innovation. The 2012 edition of the RIS

confirms that there is considerable diversity in regional innovation performance and that differences do not change much over time. Between 2007 and 2011, therefore, only a small number of regions improved their performance.

Building on the lessons learnt from the CIP, two programmes will provide support for competitiveness and innovation in the 2014–2020 programming period. The Programme for the Competitiveness of Enterprises and SMEs (COSME) will focus on competitiveness issues of particular relevance for SMEs. Innovation will be covered by the Horizon 2020 Framework Programme for Research and Innovation. Improving synergies between COSME, Horizon 2020 and the Structural Funds is a key element of the new programmes. Regions are required to establish smart specialisation strategies at regional level in order to enhance the impact of their investment, to take better advantage of the innovative and creative potential of the Internal Market and to relate their strengths in research and innovation to business needs. In this context, Cohesion Policy funding can be an important source of support for the deployment of advanced manufacturing, modernisation of factories and the development of key enabling technologies.

**Figure 1.16 Proportion of population with tertiary education by country and regional extremes, 2013**





Map 1.17 Population aged 25–64 with tertiary education, 2013

% of total population aged 25–64

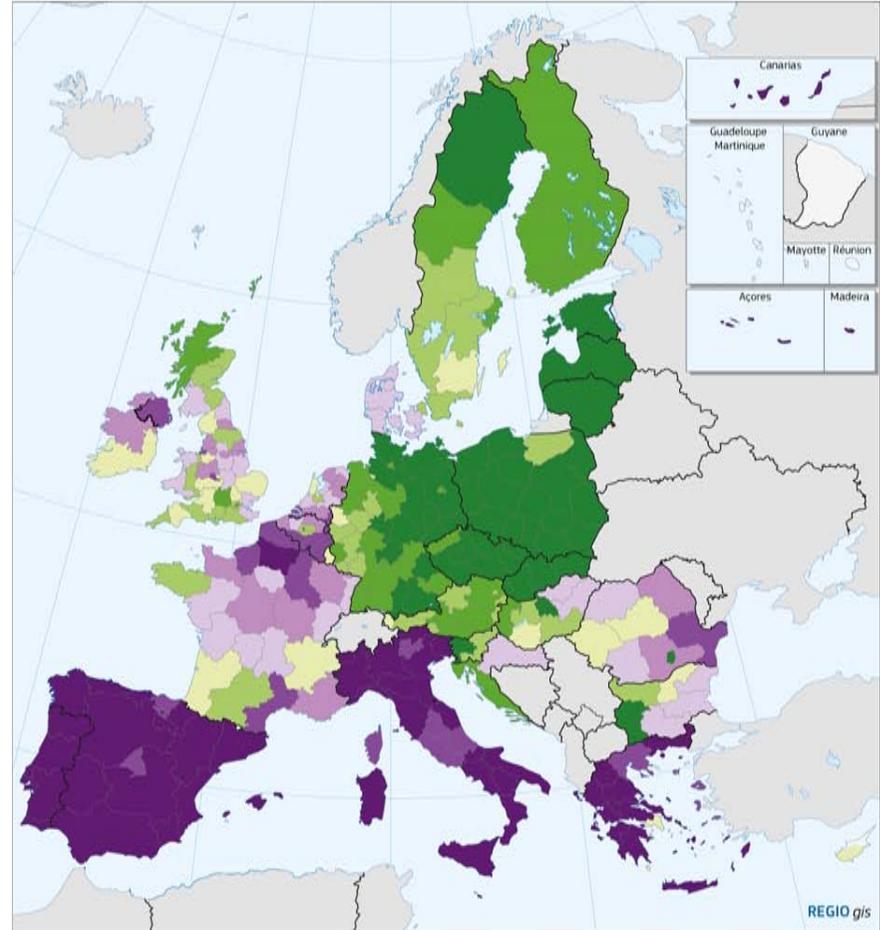
<span style="color: green;">■</span> < 13	<span style="color: purple;">■</span> 25 - 28
<span style="color: forestgreen;">■</span> 13 - 16	<span style="color: darkpurple;">■</span> 28 - 36
<span style="color: limegreen;">■</span> 16 - 19	<span style="color: black;">■</span> > 36
<span style="color: yellow;">■</span> 19 - 22	<span style="color: lightgrey;">■</span> no data
<span style="color: pink;">■</span> 22 - 25	

EU-28 = 28.4  
ISCED level 5 and 6

Source: Eurostat

0 500 Km

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Map 1.18 Population aged 25–64 with low education, 2013

% of total population aged 25–64

<span style="color: green;">■</span> < 13	<span style="color: purple;">■</span> 25 - 28
<span style="color: forestgreen;">■</span> 13 - 16	<span style="color: darkpurple;">■</span> 28 - 36
<span style="color: limegreen;">■</span> 16 - 19	<span style="color: black;">■</span> > 36
<span style="color: yellow;">■</span> 19 - 22	<span style="color: lightgrey;">■</span> no data
<span style="color: pink;">■</span> 22 - 25	

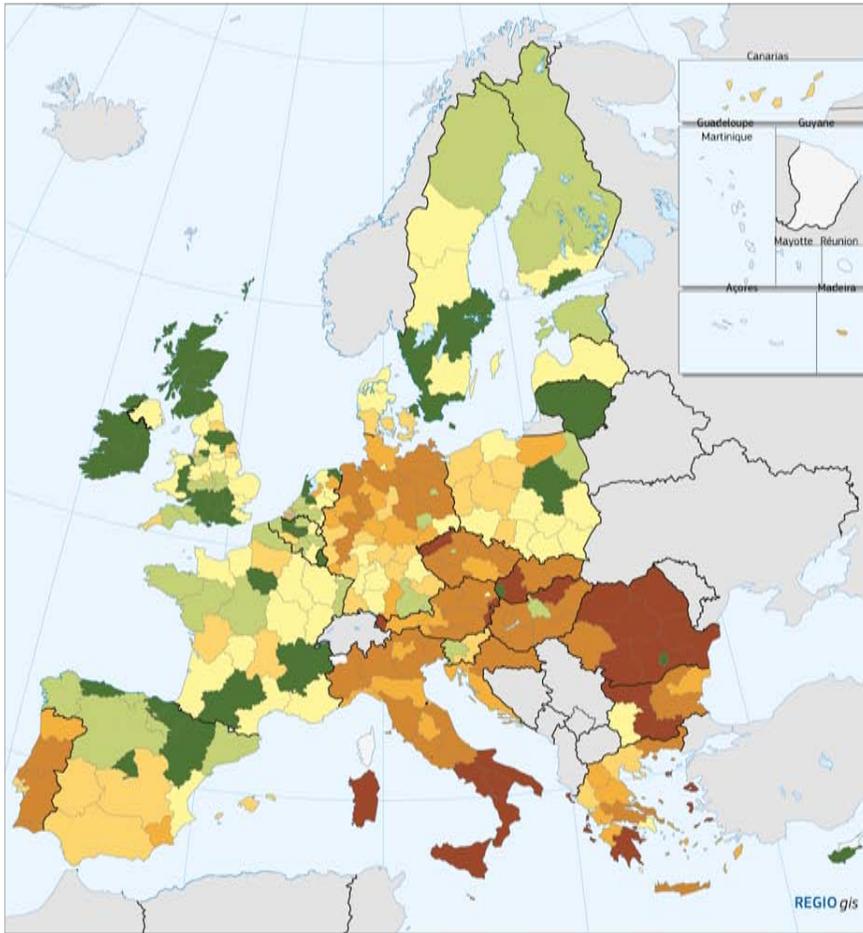
EU-28 = 24.8  
ISCED levels 1 and 2

Source: Eurostat

0 500 Km

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Map 1.19 Population aged 30-34 with tertiary education, average 2011-2013

% of population aged 30-34

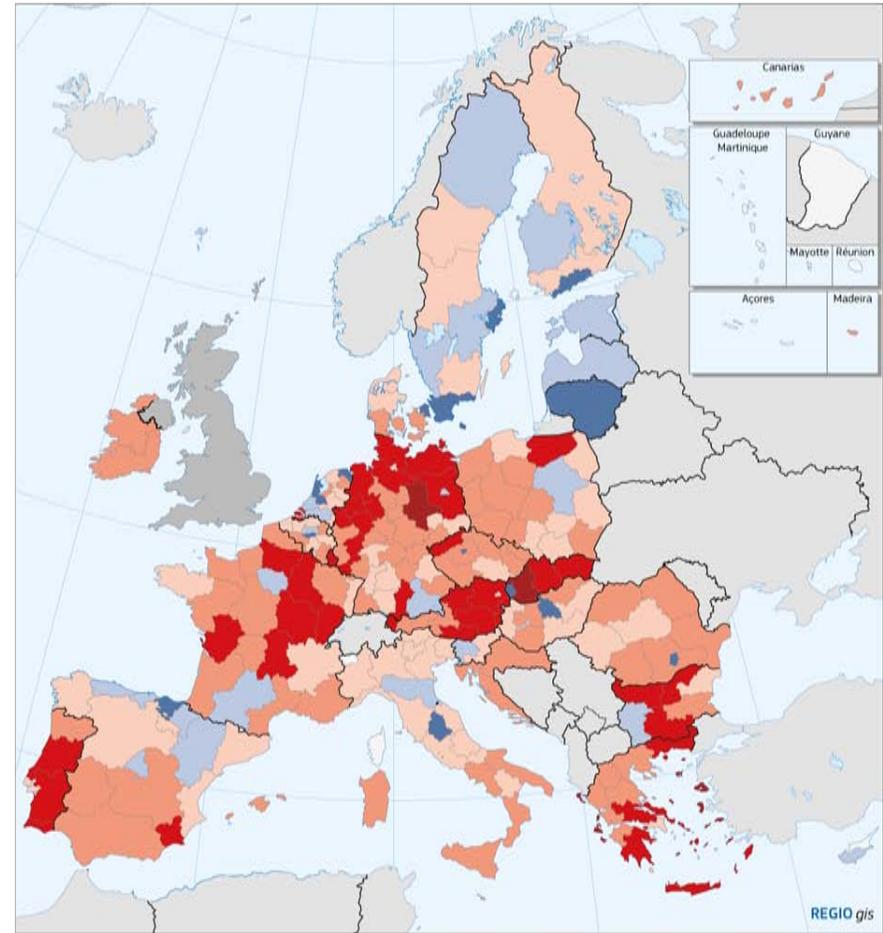
■ < 20	■ 35 - 40
■ 20 - 25	■ 40 - 45
■ 25 - 30	■ > 45
■ 30 - 35	■ no data

EU-28 = 35.7  
 ISCED levels 5 and 6  
 The Europe 2020 target is 40%.

Sources: Eurostat, DG REGIO

0 500 Km

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Map 1.20 Population aged 30-34 with tertiary educational attainment, average 2011-2013 — Distance to national 2020 target

Percentage point difference

■ < -21	■ 0 - 7
■ -21 - -14	■ > 7
■ -14 - -7	■ no national target
■ -7 - 0	■ no data

EU-28 = -4.3  
 ISCED levels 5 and 6  
 Blue regions have reached the target.  
 Red regions have not reached the target.

Sources: Eurostat, DG REGIO

0 500 Km

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**Table 1.7 Population aged 30–34 with a tertiary education. average 2013**

	More developed	Transition	Less developed	EU-28
Population aged 30–34 with tertiary education. 2013	41.3	32.3	28.9	36.8
% point change 2008–2013	5.7	1.1	8.1	5.8
% point change 2000–2008	9.3	9.1	8.5	8.6
Distance to national target (% point difference)	1.0	12.2	8.7	4.3
% of regions* that have reached national target	27	0	6	17

\* Includes only regions with data and a national target

Source: Eurostat and DG REGIO calculations

## Research Framework Programmes

Research Framework Programmes are the main means of providing support for research and innovation across the EU. Their primary objectives are to strengthen the EU's scientific and technological base and its international competitiveness through research cooperation with partners in other countries.

**The 7<sup>th</sup> Research Framework Programme (FP7)** with a budget of some EUR 50 billion for 2007–2013 was aimed at making the EU the leading research area in the world by supporting research excellence wherever it took place.

Support was provided for a range of activities such as encouraging greater involvement of SMEs in research activities, supporting the creation of large-scale, pan-European research infrastructure<sup>1</sup> and the optimal use of existing facilities and equipment. The concern was also to strengthen the R&D potential of regions by encouraging the emergence of research clusters (involving the triple helix of researchers, businesses and the public authorities) through the Regions of Knowledge initiative and by supporting research centres of excellence in Convergence regions through the Research Potential initiative.

**Horizon 2020, the EU's new programme for research and innovation**, will run from 2014 to 2020 with a budget of nearly EUR 80 billion (at current prices), supplemented by the private investment that it is expected to attract. Its intention is to link research and innovation by supporting scientific excellence, industrial leadership and measures to tackle social challenges. The goal is to help produce world-class science in the EU, remove barriers to innovation and make it easier for public and private sectors to work together in producing innovation.

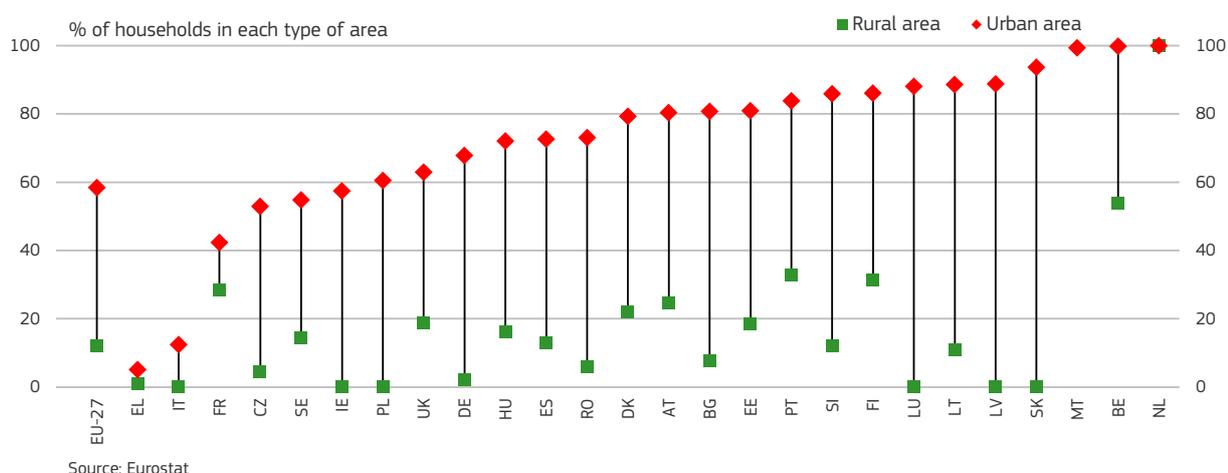
Horizon 2020 brings together all EU-level funding for research and innovation in a single programme, covering the current 7<sup>th</sup> Framework Programme, the innovation activities of the Competitiveness and Innovation Framework Programme and the European Institute of Innovation and Technology. The intention is to provide seamless funding for innovative projects from the laboratory to commercial exploitation and to bring together previously separate activities to better tackle societal challenges as regards health, clean energy and transport.

All forms of innovation are covered, including in services and social innovation and support is also given for developing the market for innovations and for devising relevant legislation on public procurement, standard setting and so on.

The aim is to attract the best researchers regardless of where they are located, and funding will continue to be allocated on the basis of competitive calls for proposals without taking account of the regions from which the proposals come. Such an approach, however, needs to be complemented with measures to ensure that funding is open to a wide range of applicants, especially in the less developed regions. Support will, therefore, be provided to regions under Cohesion Policy to help them develop their capacity for research and innovation.

As in the previous programming period, some of the research funded will be on regional issues. Research in Socio-economic Sciences and Humanities, with a budget of EUR 623 million for 2007–2013, therefore, included studies of regional performance, smart specialisation, social innovation, urban problems and rural regions under pressure from globalisation as well as of social cohesion in cities. Horizon 2020 will continue to support studies of these kinds under 'Societal Challenges', as well as research into innovative spatial and urban planning to create sustainable and inclusive environments.

1 European Commission, ESFRI — *European Strategy Forum for Research Infrastructures*. <http://cordis.europa.eu/esfri/road-map.htm>.

**Figure 1.18 Households with Next Generation Access (NGA) broadband connection by type of area, 2012**

age points, followed by the more developed regions (5.7 percentage points). In the transition regions, the distance to the national target did not narrow substantially between 2008 and 2013 when it was still 12 percentage points as compared with only 1 percentage points for the more developed region and 9 percentage points for the less developed ones. This implies that, on present trends, the targets are likely to be reached in more and less developed regions, but that more needs to be done in transition regions to reach the target.

## 10. Gaps in the digital and transport networks are being filled, but more remains to be done

### 10.1 Digital networks are spreading, but unevenly

Access to high capacity telecommunication networks is a key factor of competitiveness and economic growth. The provision of digital services and the capacity to operate successfully in a global business environment increasingly rely on fast and effective broadband connections. ICT infrastructure is therefore a major determinant of the development potential of EU regions. The most prosperous regions are in general already well-endowed in this regard, though

there are still serious gaps in many of the less prosperous ones.

The extent of broadband coverage has increased significantly in the EU in recent years. In 2012, 96% of households in the EU-27 had access to at least one fixed broadband network<sup>11</sup>, while, as regards wireless technologies, High Speed Packet Access (HSPA) is available to 95% of them and there is full coverage of high capacity KA-band satellite broadband in all but four Member States (Estonia, Latvia, Lithuania and Sweden). However, coverage is much higher than take-up and in 2012 only around 70% of households with access (67% of the total) had a fixed broadband subscription.

Disparities are also pronounced between regions, especially urban and rural ones. In 2012, 9.1 million homes in the EU still did not have fixed broadband coverage and over 90% of these were in rural areas. Coverage was below 40% in such areas in Poland and Bulgaria. Coverage is almost complete in most urban areas and cities, though there are a number of areas with a coverage of below 90%, most of them in northern parts of Sweden and Finland and in southern and Eastern Europe, and a few where it is below 75%, all of them in Poland.

<sup>11</sup> European Commission (2013), Communications Committee Working Document.

The gap is much wider for Next Generation Access<sup>12</sup> (NGA) (Figure 1.18). In 2011, 78% of rural households in the EU had access to standard broadband but only 12% to NGA. Contrary to the situation for standard broadband, regions lagging behind are mostly located in the EU-15 Member States. While coverage is at or near 100% in the Netherlands, Belgium and Malta, it is below 40% in France, Ireland, Italy, Greece, Poland and Cyprus. There is no access to NGA for homes in rural areas in Luxemburg, Ireland, Italy, Cyprus, Slovakia, Latvia and Poland and only marginal coverage in Germany.

Household take-up of broadband has increased significantly in recent years along with coverage. While in 2009, only around 56% of households in the EU had a broadband subscription, the figure was more than 76% in 2013. However, large differences remain between regions (see Map 1.21). In Severozapaden (Bulgaria), Kentriki Ellada, Nisia Aigaiou Kriti (Greece) and Nord-Est (Romania), the take-up rate was below 50% in 2013 while in Flevoland, Utrecht (Netherlands), London, South West (UK), Helsinki-Uusimaa (Finland) and Bremen, it was over 90%.

The same picture emerges for businesses. Between 2010 and 2013, the proportion of companies with 10 or more persons employed in the EU-28 with a broadband subscription increased from 84% to 90%. In Finland, France and Denmark, the take-up rate was over 96%. By contrast, the take up rate was just below 80% in Bulgaria, Greece, Croatia and Poland and only 61% in Romania.

## 10.2 Road network in central and eastern member states still considerably less developed

In 1955, only a few links of the TEN-T core road network allowed people to travel at an average speed of over 80km per hour (see Map 1.22). The vast majority of links had an average speed of below 70 km an hour. In 1970, the situation had improved substan-

tially with many links in Germany, Italy, the Benelux and the UK having average speeds of over 80 km per hour though few or none at all in the rest of the EU, including in the central and eastern countries.

The gap between the north-west of Europe plus Italy and the rest had widened further by 1980, with many links in the former having an average speed of over 90 km per hour. Portugal, Greece and the central and eastern Member States did not have a single link with an average speed of over 80 km per hour and some had speeds of below 60. In Spain, the only link with a speed of over 80 km per hour was Valencia to Barcelona.

By 1990, average speeds increased further but the gaps between countries remained. By 2000, the average speed in Greece, Spain and Portugal had risen substantially, on some links reaching over 100 km per hour. By 2012, speeds on the links in Spain and Portugal had caught up with those in the highly developed Member States. These improvements in the speed of the main road network in these three countries have been largely financed by Cohesion Policy.

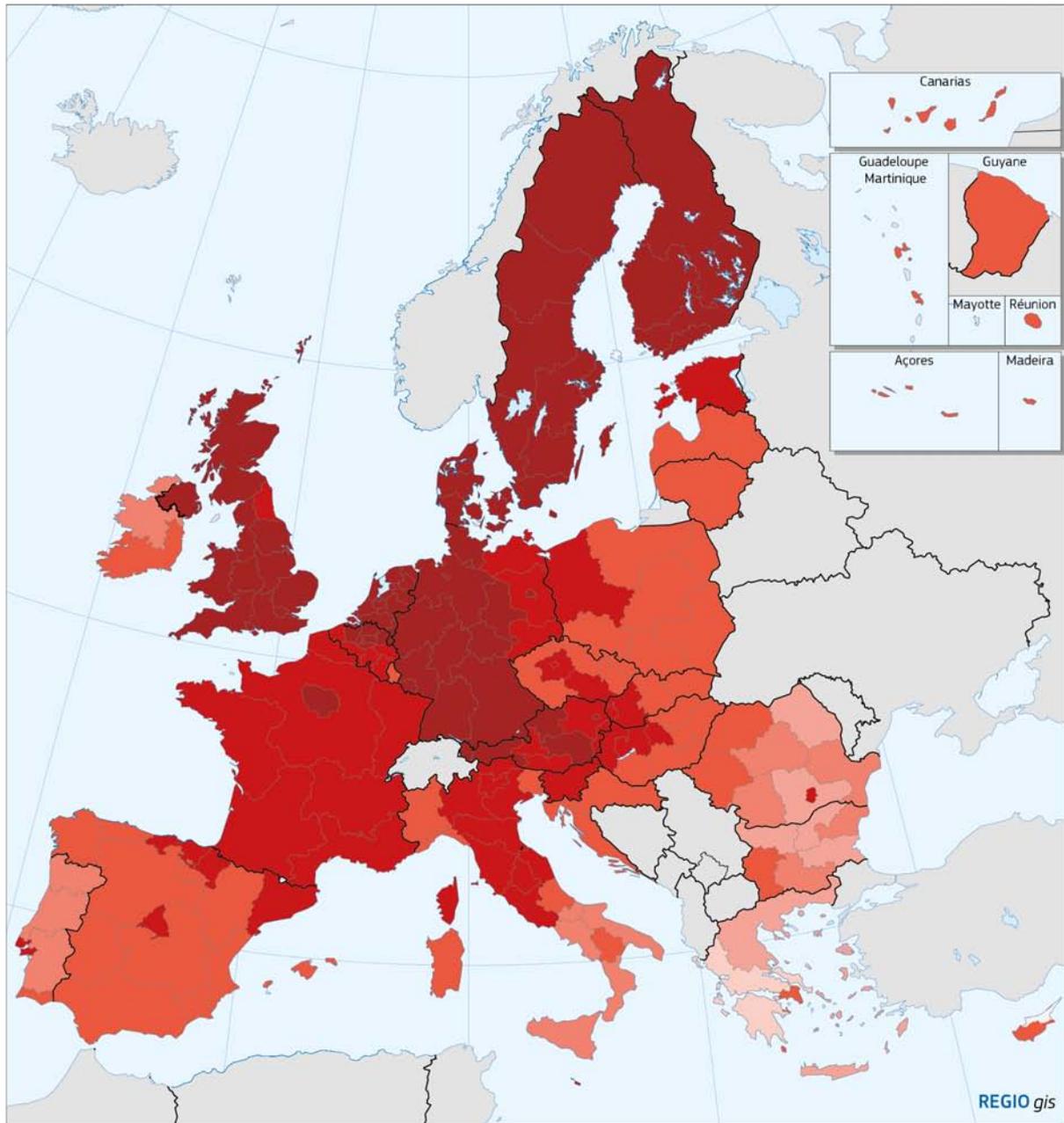
Speeds on the links in Poland, the Baltic States, Romania and Bulgaria, however, remained slow compared to the rest of the EU. The full implementation of the TENT core road network by 2030 would increase the average speeds significantly particularly in the central and eastern Member States. Both Cohesion Policy funding and the new Connecting

### The digital agenda

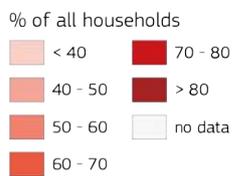
ICT is estimated to have accounted for half of productivity growth in the EU in the first decade of the present century<sup>1</sup>. Development of ICT networks is, therefore, important for economic cohesion in the Union as less developed regions tend to lag behind in broadband access. The goals of the digital agenda for 2020 are (1) that the entire EU population should be covered by fast broadband (over 30 Mbps), (2) that at least half the EU population use broadband with a speed of 100 Mbps or more and (3) to double public investment in ICT R&D.

<sup>1</sup> See Digital Competitiveness Report (2010)

<sup>12</sup> Next Generation Access Networks is wired access networks which consist wholly or in part of optical elements and which are capable of delivering broadband access services with enhanced characteristics (such as higher throughput) as compared to those provided over already existing copper networks.



Map 1.21 Households with broadband connection, 2013



EU-28 = 76

Source: Eurostat

0 500 Km

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Europe Facility are targeted at the implementation of the multimodal TEN-T core network.

### 10.3 Low speeds and low frequencies of trains in central and eastern member states limit their appeal compared to the car.

Since the 1970s, the share of passenger km travelled by train has declined as more and more people have switched to using cars. In two areas, however, rail offers an attractive as well as more resource-efficient alternative to car or air travel: medium-distance journeys and commuting to work. Conventional railways can shorten door-to-door journey times of up to 350 km as compared to air travel and high-speed rail is faster for journeys up to 800 km.

The high-speed rail network (HSL) has expanded continuously. Between 1990 and 2009, lines on which speeds can exceed 250 km per hour increased from 1,000 km to 6,000 km. Over this period, passenger km travelled on these lines increased from less than 20 billion a year to almost 100 billion<sup>13</sup>. By 2030, if completed, the planned high-speed TEN-T would extend to over 30,000 km.

There are major differences between regions, however, in the extent of both high-speed rail networks and conventional ones. In Belgium, France, Spain, Germany, Italy and the UK, large sections of the conventional rail network have been upgraded for use by high-speed trains together with new high-speed rail lines being constructed (Map 1.24).

France, Belgium, Sweden and Finland have the most km of railway lines per head of population with trains operating at speeds of over 120 km per hour. A large number of these were financed with the support of the ERDF, the Cohesion Fund, the TEN-T allocations and grants from the EIB.

Despite the significant investment in the modernisation of the rail network, there are still regional networks where train speeds are less than 120 km per

<sup>13</sup> European Commission (2009), European high-speed rail — An easy way to connect.

### Common transport policy contributes to cohesion and regional development, by improving accessibility

A fully integrated Single Market is not possible without good connections between the various parts. However, connections which cross national borders are still lacking in many cases, especially in the central and eastern Member States, dividing the centre of the EU from the periphery and hampering the further development of intra-EU trade.

The Common Transport Policy is aimed at developing affordable, competitive and energy-efficient modes of transport that can help to reduce the peripheral nature of regions located far from the centre of the EU, as well as the development of lagging regions with poor endowment of transport networks and high transport costs. It includes the development of Short-Sea Shipping, 'Motorways of the Sea', Inland waterways and the more efficient use of existing railways.

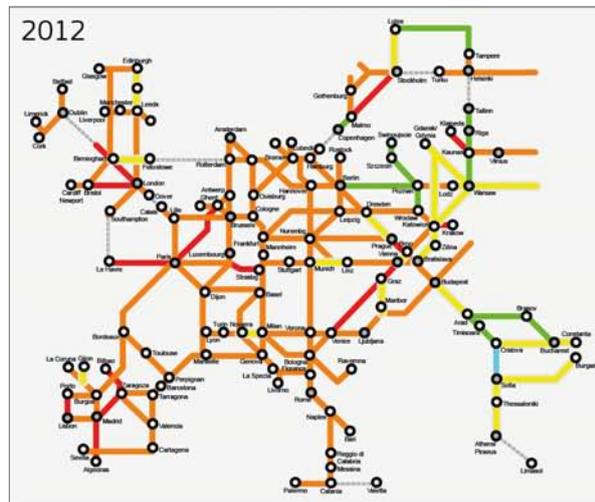
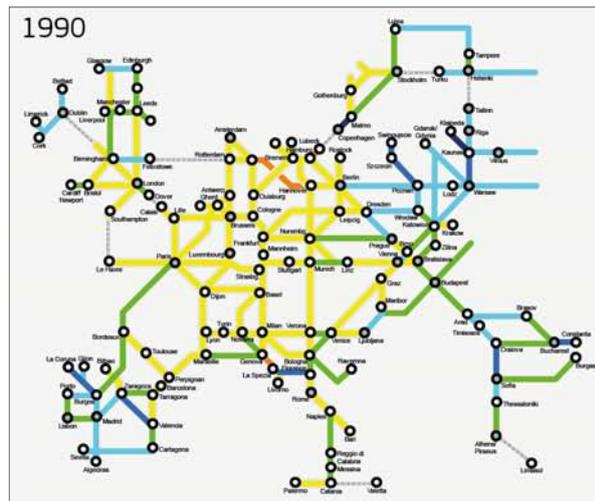
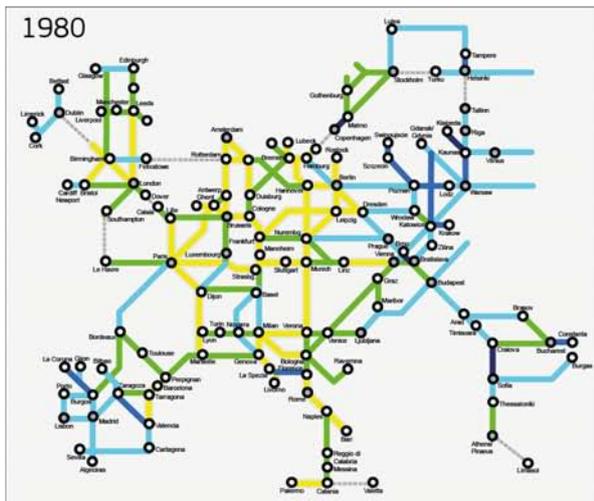
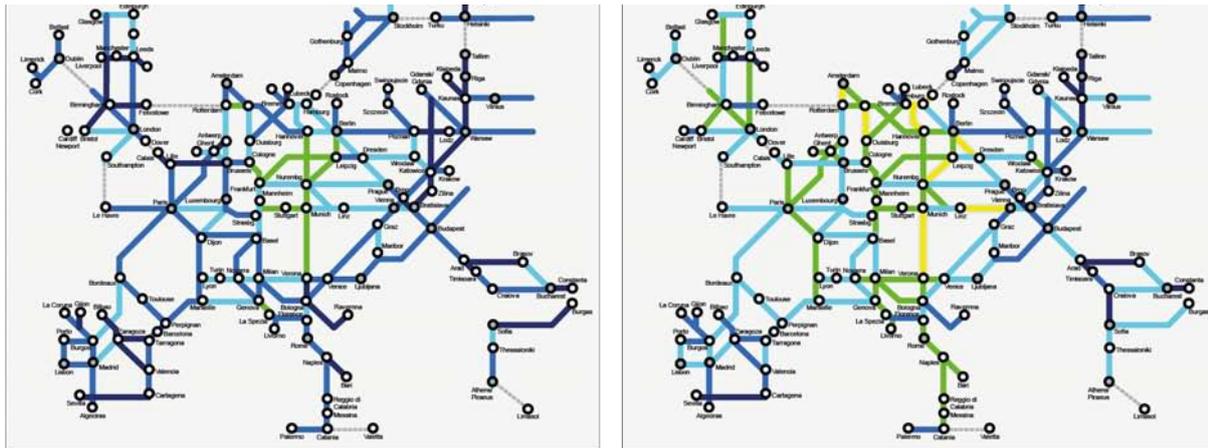
The TEN-T<sup>1</sup> consists of two layers: a core network to be completed by 2030 and a comprehensive network feeding into the core network, to be completed by 2050. The core network will provide essential support for the Single Market by facilitating the flow of goods and people around the EU, including in the less developed Member States (Map 1.22). It involves connecting 94 main European ports to rail and road links, 38 key airports with rail connections into major cities, 15,000 km of railway lines upgraded to high speed and 35 cross-border projects to reduce bottlenecks.

A new financing instrument, the Connecting Europe Facility<sup>2</sup> (CEF) will support the implementation of the TEN-T, by tripling the budget for transport infrastructure in the 2014–2020 period to EUR 26 billion, which will serve as 'seed capital' to stimulate further investment by Member States.

Experience shows that TEN-T infrastructure funding tends to have a strong leverage effect. For the next programming period, every EUR 1 million of EU funding is expected to generate around EUR 5 million from national governments or, if innovative financial instruments are used, up to EUR 20 million from the private sector.

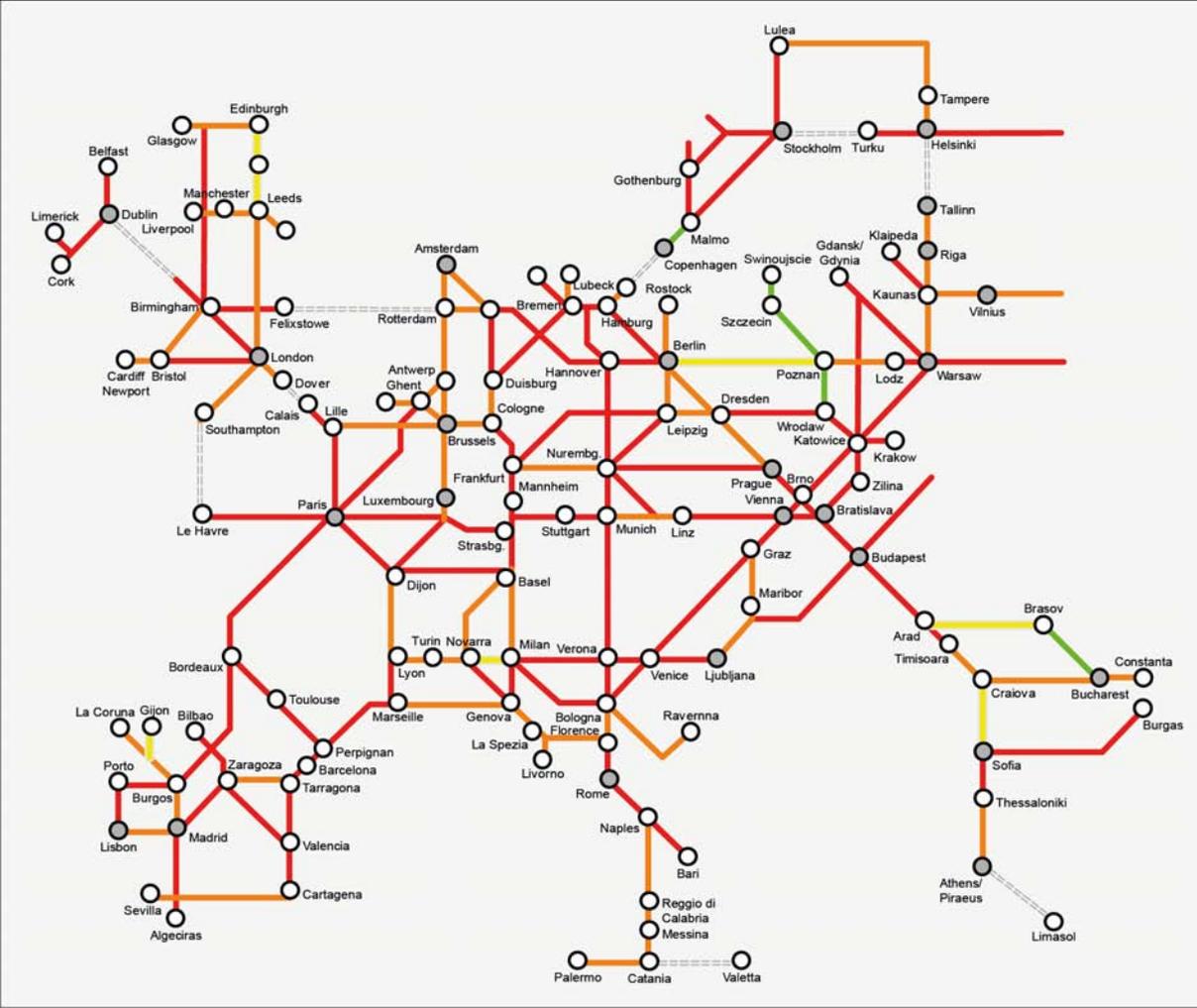
<sup>1</sup> Regulation (EU) No 1315/2013.

<sup>2</sup> Regulation (EU) No 1316/2013.



Map 1.22a Average travel speed on the core Ten-T road network, 1955–2012





Map 1.22b Average travel speed on the core Ten-T road network, 2030

- Km/h
- < 60
- 60 - 69
- 70 - 79
- 80 - 89
- 90 - 99
- 100 - 109
- >= 110

Sources: Stelder *et al.* (2013), JRC IPTS and DG REGIO calculations

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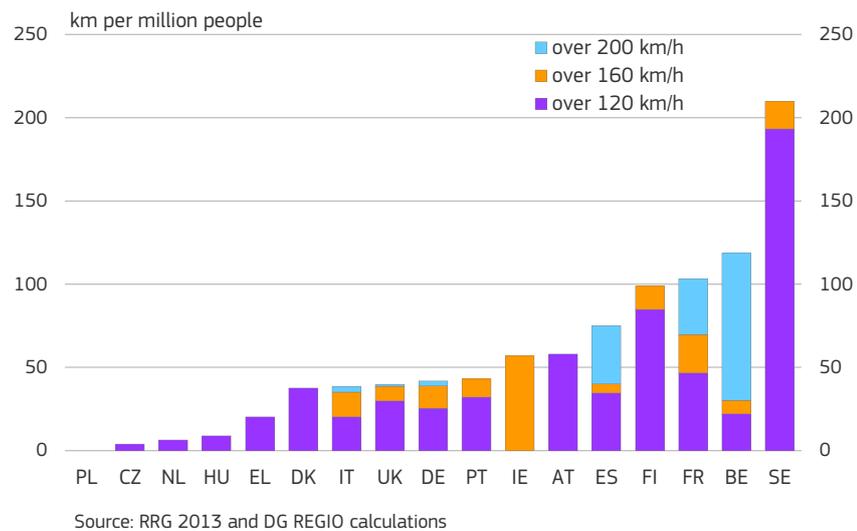
hour. These are mainly in the Baltic States, Poland, Hungary, Romania, and Bulgaria. Moreover, in few areas, such as central Poland, speeds have fallen since 1990 (Maps 1.23 and 1.24 and Figure 1.19).

The ability of railways to offer an attractive alternative to travel by car depends not only on the speed but also the frequency of trains. The average number of trains per day on rail routes in almost all the regions in the Baltic States, Poland and Ireland was less than 25 in 2010 (Map 1.25), or less than one an hour each way. With such low frequencies, most people who can afford to use a car will do so. In contrast, in Netherlands and Denmark, the average number of trains per day on the TEN-T core lines was 130 or more, which means much less waiting time, better connections and overall a more attractive offer.

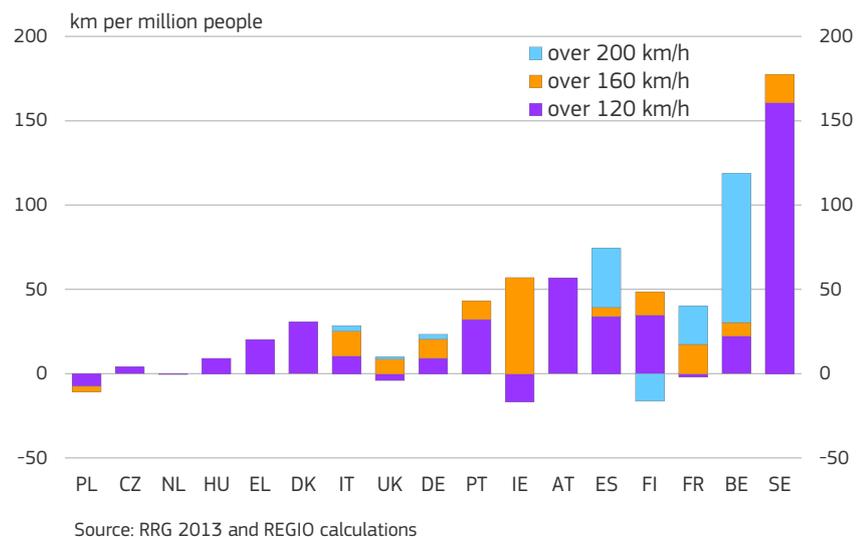
The TEN-T Guidelines set out the aim of having a true EU-wide multimodal network, including railways, by building new infrastructure but also by improving existing infrastructure. The importance attached to sustainable and cleaner modes of transport, such as rail, is reflected in the aims of the Connecting Europe Facility and in the Cohesion Fund priorities for investment in transport.

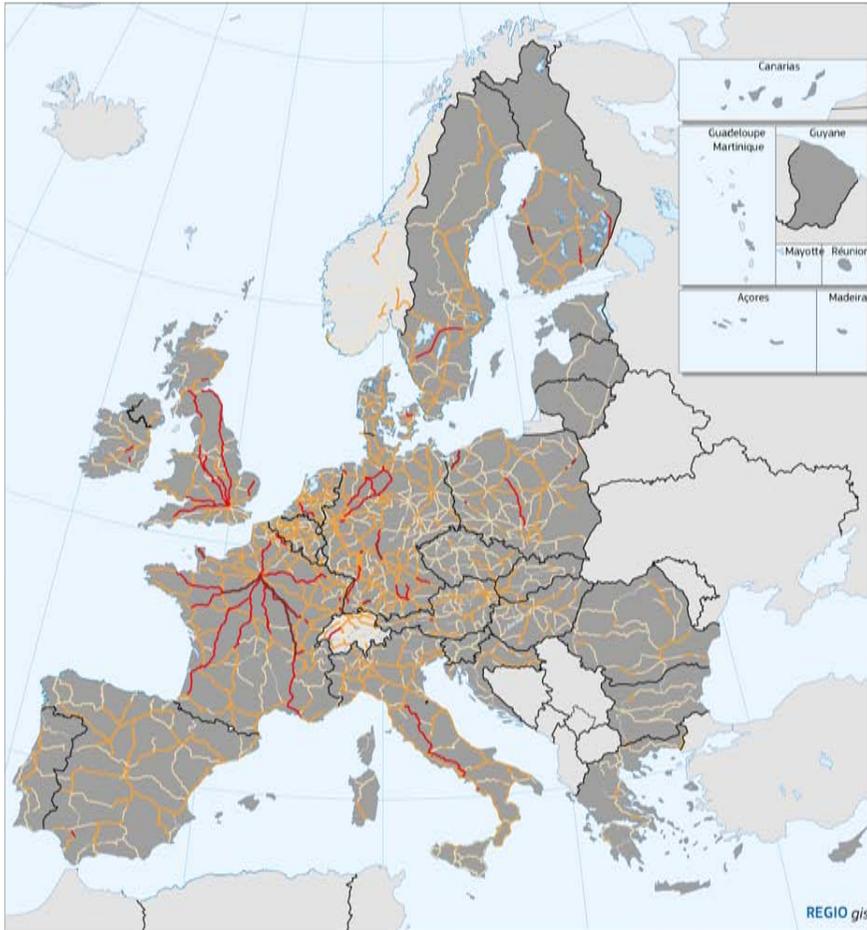
Access to passenger flights is greatest close to the major airports of London, Paris, Frankfurt and Amsterdam (at over 2000 flights a day) (Map 1.26). In the EU-15, virtually all regions have access to more than 10 flights a day within a 90 minute drive. This is not the case in Romania, Bulgaria, Poland, Estonia and Latvia, in part because the road network is of low standard, but also because of the limited demand for flights in and to some of the regions.

**Figure 1.19 Length of railway line with trains operating over 120 km per hour, 2013**



**Figure 1.20 Change in length of railway line with trains operating over 120 km per hour, 1990-2013**





Map 1.23 Highest speed on railway network according to timetables, 1990

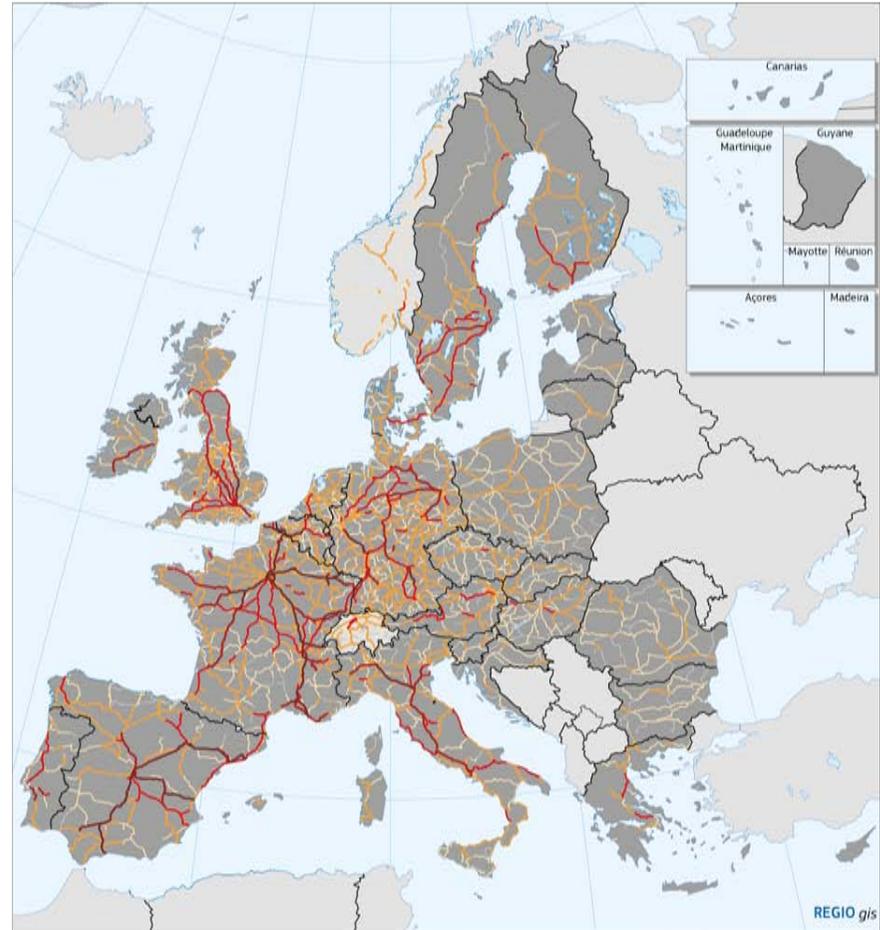
- km/h
- <= 50
  - 51 - 80
  - 81 - 120
  - 121 - 160
  - 161 - 200
  - 201 - 320

Since different train services with different speeds may operate along rail sections, the shown speeds indicate the average speed of the fastest train service. Rail sections exclusively for freight services are not shown.

Sources: RRG 2013, Railway company's timetables

0 500 Km

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Map 1.24 Highest speed on railway network according to timetables, 2013

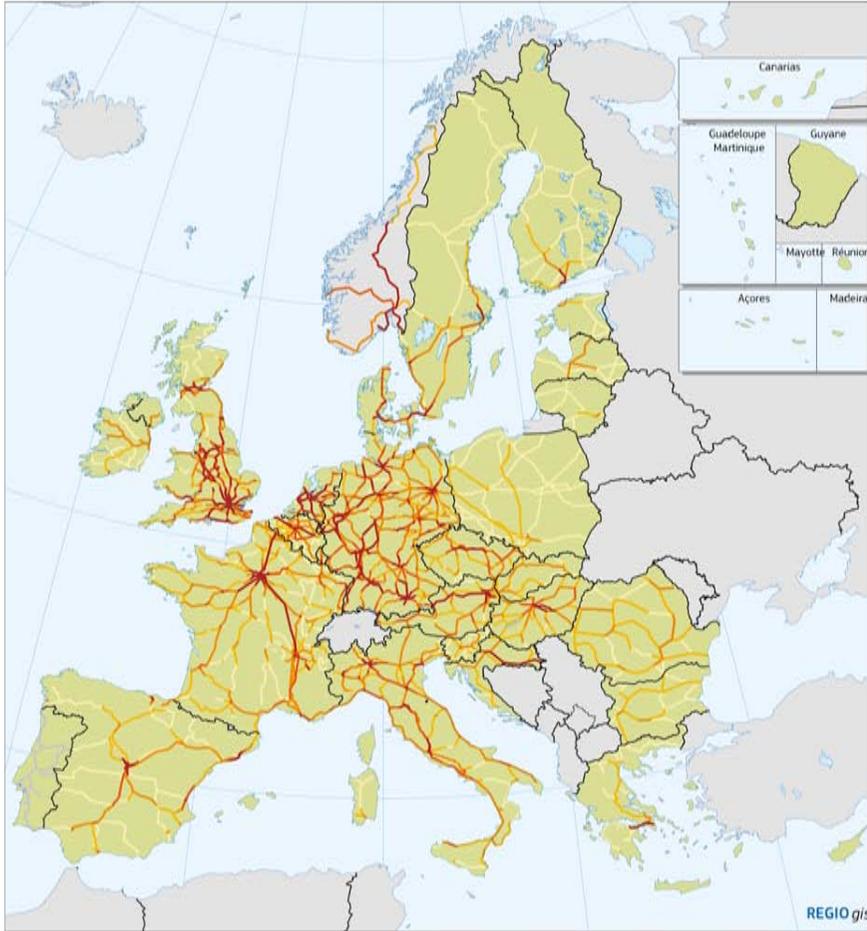
- km/h
- <= 50
  - 51 - 80
  - 81 - 120
  - 121 - 160
  - 161 - 200
  - 201 - 320

Since different train services with different speeds may operate along the same rail sections, the speeds shown indicate the speed of the fastest train service. Rail sections exclusively for freight services are not shown.

Sources: RRG 2013, Railway company's timetables

0 500 Km

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Map 1.25 Number of passenger trains on the TEN-T railway network, 2010

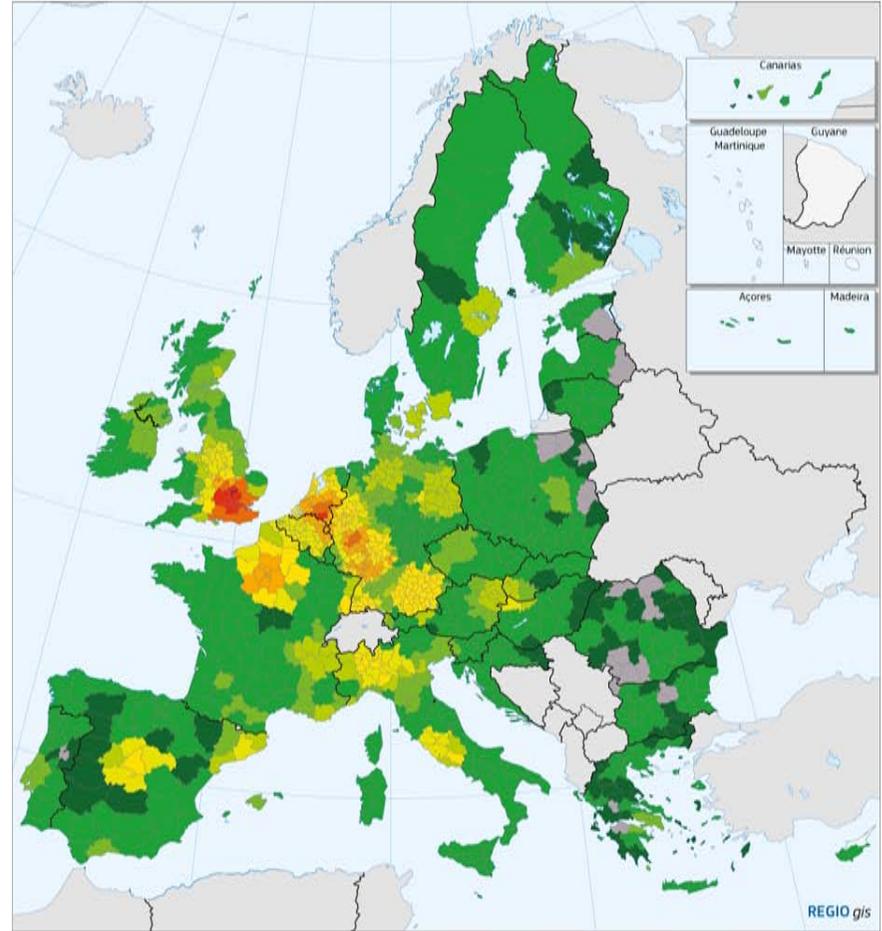
Average number per day

- 0 - 25
- 26 - 50
- 51 - 100
- 101 - 150
- > 150
- no data

Sources: Eurostat, DG MOVE, DG REGIO

0 500km

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Map 1.26 Access to passenger flights, 2012

Average number per day (population-weighted)

- Travel time to nearest airport > 90 min
- < 10
- 10 - 250
- 250 - 500
- 500 - 750
- 750 - 1000
- 1000 - 1500
- 1500 - 2000
- 2000 - 2500
- 2500 - 3000
- > 3000
- no data

Sources: Eurostat, EuroGeographics, LandScan, DG REGIO

0 500km

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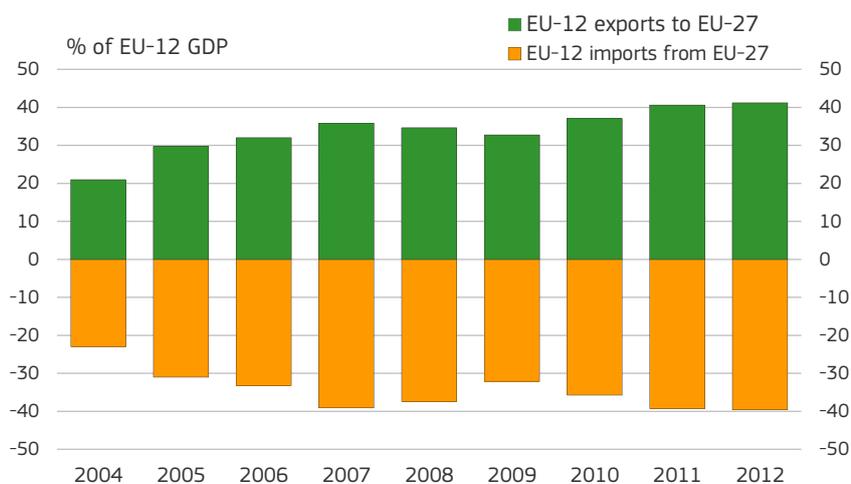
## 11. Trade and foreign direct investment stimulate growth in the EU-12

Although Cohesion Policy was created in part because of concern about the impact of the Single Market on less developed regions, the integration of the central and eastern countries has generated a strong growth of trade with the EU-15 as well as between themselves. In 2004, imports from, and exports to, the EU-27 both amounted to around 20% on average of the GDP of these countries. This figure has risen substantially since, with a small dip in 2008 and 2009 due to the crisis. In 2012, these import and export flows both represented 40% of their GDP, a doubling in 8 years. This rapid integration into the Single Market has enabled these economies to specialise and become more productive leading to higher growth rates in both the countries concerned and the EU as whole (Figure 1.21).

Foreign direct investment (FDI) has also provided an important boost to the EU-12 economies. Most of this has come from other Member States. The crisis, however, has reduced investment flows markedly. In 2007, the EU-12 received 55 billion EUR from FDI; in 2009 this had fallen to 23 billion EUR. Since then flows have increased to around 30 billion EUR in 2012, but are still much smaller even than in 2005 (Figure 1.22).

In all EU-15 and EU-12 Member States, the capital city region has a relatively large, often the largest, share of employment in foreign firms. Its greater accessibility, the concentration of head offices of large companies there and the good links to the national

**Figure 1.21 Trade between the EU-12 and EU-27 relative to GDP, 2004-2012**



Source: Eurostat

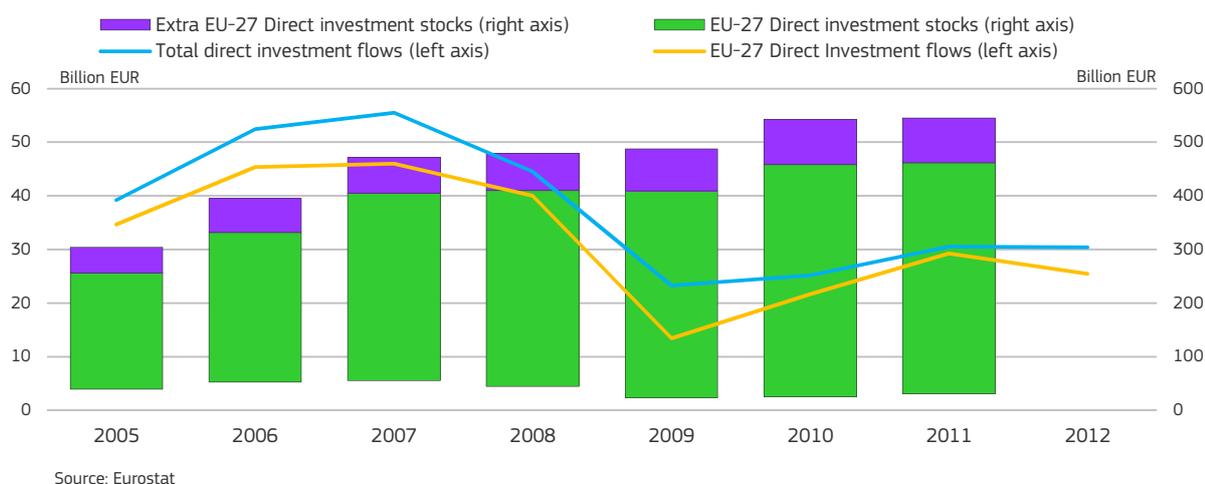
market tend to attract firms in business services especially.

Regions close to internal EU borders tend also to have a larger share of employment in foreign firms than others (Map 1.27). This is especially the case for manufacturing companies for which proximity to the rest of the EU internal market is likely to be important.

Many regions in southern Italy, southern Spain, northern Portugal, eastern Poland and eastern Hungary as well as most Greek regions have a relatively small share of employment in foreign firms. Although these regions tend to be some distance away from the largest part of the Single Market, which is a possible explanation, this has not prevented equally distant regions in Ireland, the Nordic countries and the Baltic States to have much larger shares of employment in foreign firms.

## 12. Regional competitiveness produces limited regional spillovers in EU-13

The Regional Competitiveness Index (RCI) is designed to capture the different dimensions of competitiveness at the regional level. It is based on 73 mostly

**Figure 1.22 Foreign Direct Investment in the EU-12, 2005-2012**

regional indicators that are relevant for competitiveness<sup>14</sup>.

There are eleven 'pillars' which are grouped into three sets.

- The basic pillars: (1) the Quality of Institutions, (2) Macro-economic Stability, (3) Infrastructure, (4) Health and (5) Quality of Primary and Secondary Education. These pillars are most important for less developed regions.
- The efficiency pillars: (6) Higher Education and Lifelong Learning (7) Labour Market Efficiency and (8) Market Size. These are important for all regions.
- The innovation pillars: (9) Technological Readiness, (10) Business Sophistication and (11) Innovation. These are important for intermediate and especially for highly developed regions.

To take account of the level of development of a region, the weights for each set depend on the GDP per head of the region (Table 1.8).

The index is applied to a modified set of NUTS 2 regions to try to avoid functional economic areas being divided across multiple regions. NUTS 2 regions have

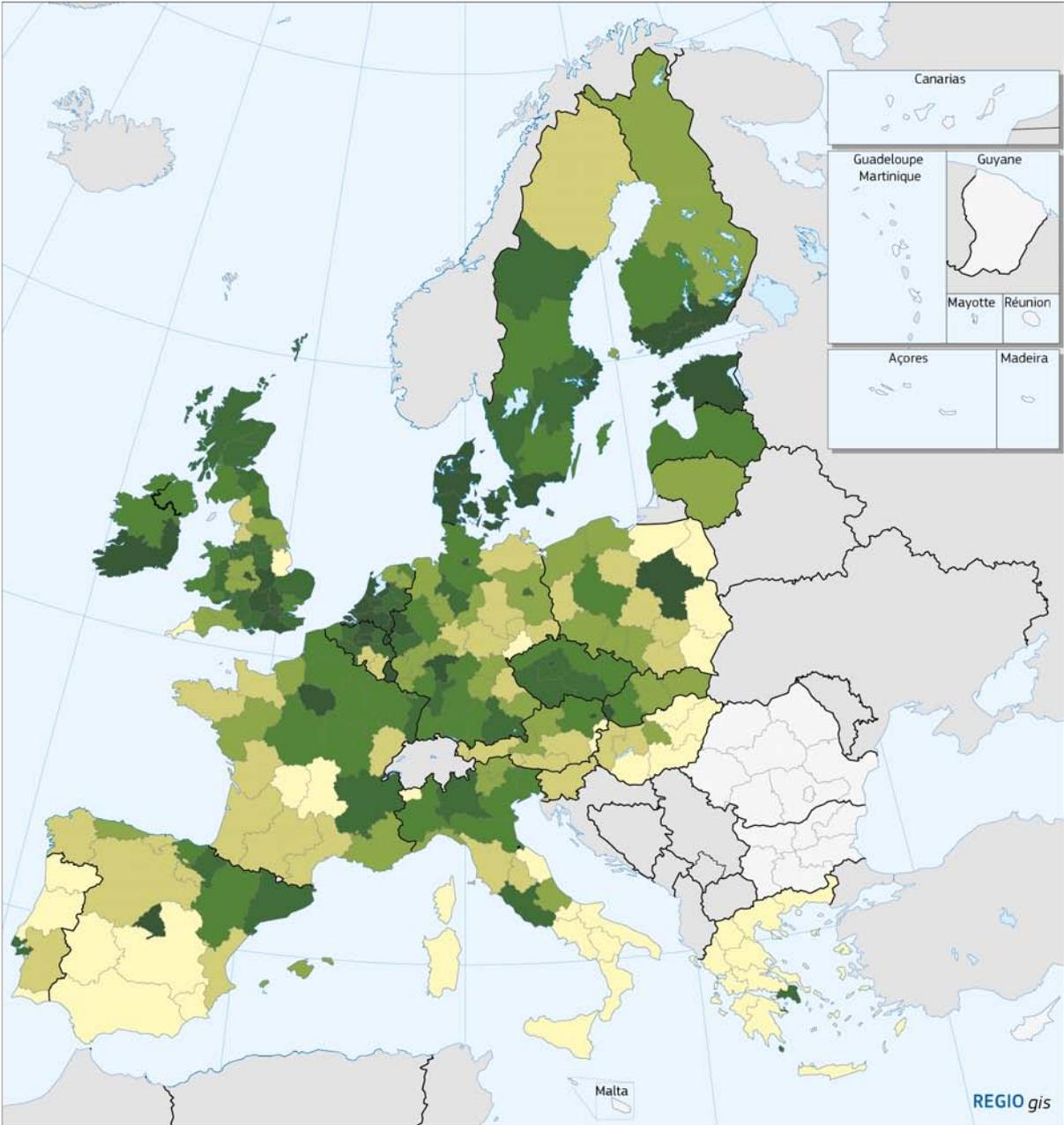
been combined for the functional economic areas of London, Brussels, Amsterdam, Vienna, Prague and Berlin.

The index provides an assessment of where competitiveness varies substantially within a country. It reveals that competitiveness has a strong regional dimension, which is important because many of the factors of competitiveness are influenced by regional and local authorities.

The index can also be a useful tool for EU Member States with large variations in regional competitiveness to consider to what extent this is harmful for their national competitiveness and whether it can be reduced, possibly with the support of Cohesion Policy. For example, the gap between the capital city region and the second most competitive region in Romania, Slovakia and France is very wide, while competitiveness in Germany does not differ markedly between regions.

The lack of regional spill-overs, in particular around the capital cities of some of the less developed Member States, was already noted in the 2010 edition of RCI. The 2013 edition confirms that being close to a competitive region in developed countries tends to improve the competitiveness of a region, but this is not the case in less developed Member States. The overall competitiveness of a country depends on the performance of all its regions and not just on

<sup>14</sup> Annoni P. and Dijkstra L. (2013).



Map 1.27 Employment in foreign firms, 2010

- % of total employment excluding agriculture
- < 3
  - 3 - 4
  - 4 - 6
  - 6 - 9
  - 9 - 17
  - >= 17
  - no data

Estimated values: DED4, DED5, DEE0, DK, FI1B, FI1C, UKD6, UKD7 and UKM regions.

Source: Weterings *et al.* (2011)

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that of the capital city region. Improving the business environment, providing an efficient transport network and good access to broadband in other regions might help to reduce the gaps in competitiveness.

The index reveals substantial differences in competitiveness in many countries (Figure 1.23). In France, Spain, the UK, Slovakia, Romania, Sweden and Greece, the variation across regions is particularly large with the capital city region almost always being the most competitive. In Italy and Germany, however, the capital city region is not the most competitive.

Earlier territorial research highlighted the existence of what was called the 'blue banana', an area extending from greater London all the way to Lombardy passing through the Benelux countries and Bavaria, as well as a pentagon formed by London, Paris, Milan, Munich and Hamburg. These areas were seen as having the highest concentrations of economic activity. This line of research emphasised a strong core-periphery pattern of economic activity in Europe.

The RCI, however, shows a more polycentric pattern with strong capital city and metropolitan regions in many parts of the EU. For example, Stockholm,

**Table 1.8 Weights used in the construction of the regional competitiveness index 2013**

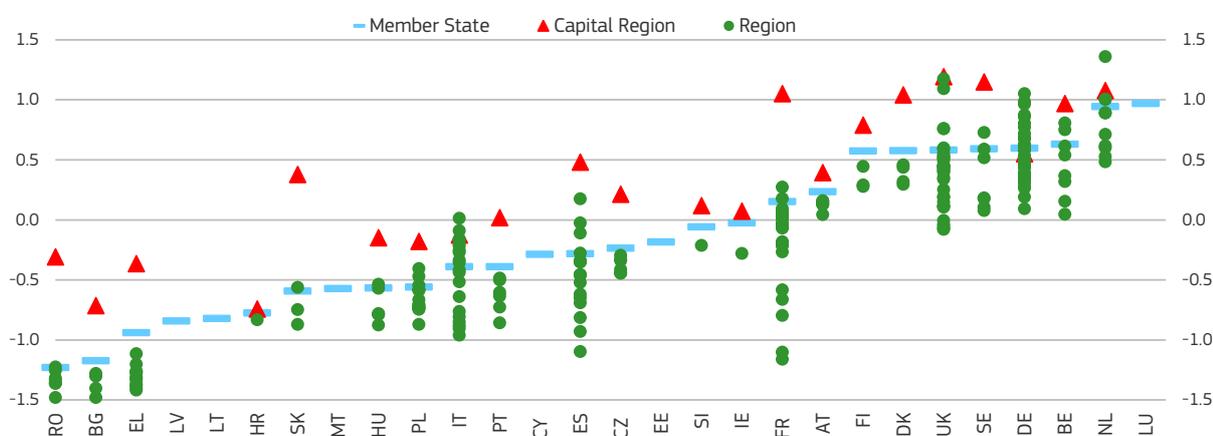
GDP per head (PPS) in 2009 (EU-28=100)	Basic	Efficiency	Innovation	Total
<50	35	50	15	100
50–75	31.25	50	18.75	100
75–90	27.5	50	22.5	100
90–110	23.75	50	26.25	100
>110	20	50	30	100

Source: Annoni, P. and Dijkstra, L. (2013)

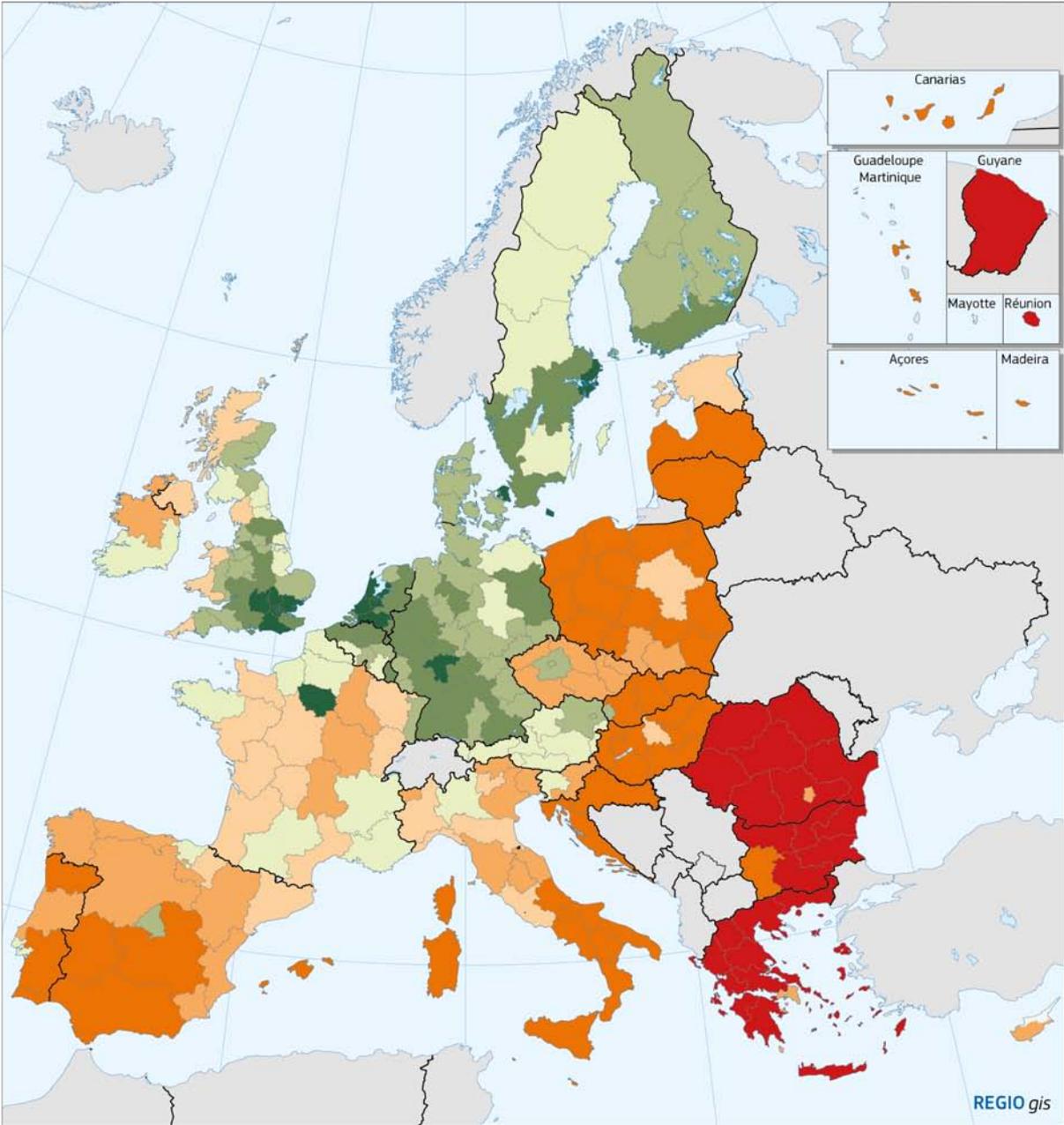
Copenhagen, Helsinki, Berlin, Prague, Bratislava and Madrid, which fall outside the areas distinguished above, all have a high level of competitiveness (Map 1.28). The RCI also shows that, in some countries, all regions have a high level of competitiveness, while in others, it is only the capital city region.

Eight out of the top-ten regions in 2010 were also in the top 10 in 2013. The most competitive region in both years is Utrecht in the Netherlands, while the London functional economic area and Berkshire, Buckinghamshire and Oxfordshire in the UK, the Amsterdam functional economic area and Zuid-Holland also in the Netherlands, Hovedstaden (which includes Copenhagen) in Denmark, Stockholm and Île de France (the Paris region) were in the top ten in both years too.

**Figure 1.23 Regional Competitiveness Index, 2013**



Source: Annoni, P. and Dijkstra, L. (2013)



Map 1.28 Regional Competitiveness Index (RCI), 2013

Index: values range from low (negative) to high (positive)

- < -1
- 1 - -0.5
- 0.5 - -0.2
- 0.2 - 0
- 0 - 0.2
- 0.2 - 0.5
- 0.5 - 1
- > 1

EU-28 = 0  
Source: Annoni, P. and Dijkstra, L. (2013)

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Cohesion Policy has helped to improve the competitiveness of many regions through for example, investment in innovation, education, health, accessibility and IT.

### 13. Conclusion

Cohesion Policy plays a key role in boosting smart growth in EU regions, especially in lagging ones. Smart growth is needed to compete in the global market. The co-financing of investment in innovation and support of SMEs can improve the competitiveness of the EU and its regions. The investment in transport, energy and digital networks helps to make the Single Market run more smoothly. It has facilitated an increase in trade between the EU-15 and EU-12 and stimulated foreign direct investment in the latter.

This chapter has shown the extent to which less developed parts of the EU have been able to catch-up with the rest in terms of GDP per head and indicated the factors responsible for this. Although regional disparities were tending to narrow in the years leading up to the global recession, this and the prolonged crisis which followed put an end to the process of convergence with rapid increases in unemployment in most regions but in the weaker ones especially.

The crisis has tended to hit the rural regions harder than others, with reductions in employment in the EU-15 being moderated by reductions in productivity but not in the EU-13 where losses in employment have been larger than elsewhere. On average, metropolitan regions have resisted the crisis better than others, particularly capital city regions in the EU-15.

The crisis affected construction and manufacturing in particular, with both employment and GVA in the former declining substantially. While employment has also declined in manufacturing, GVA increased between 2008 and 2013 in the less developed Member States.

Innovation has increased, but it remains spatially concentrated. Given the positive externalities of concentrating technological innovation in particular

places, this is in many ways desirable. Nevertheless, innovation, broadly defined to include the take-up and adaptation of new technology and know-how developed elsewhere, remains crucial to stimulating growth in all regions.

The proportion of population with tertiary education has risen significantly over time and the Europe 2020 target of 40% of those aged 30–34 having this level of education is likely to be reached, yet significant disparities remain across regions. The proportion of people participating in lifelong learning, however, is well below the target, especially in central and eastern EU regions.

The gaps in the digital and transport networks are being filled. Broadband availability is close to 100% in nearly all regions, but access to the next generation of links to the internet is largely limited to the most urbanised areas. Southern Member States have invested heavily in road, rail and air transport over the past 25 years or so, with substantial support from the ERDF and Cohesion Fund, and now have networks on a par with those in the more developed Member States. In central and eastern countries, however, more remains to be done to improve both the rail and road network, which will also help to make the airports there more accessible.

Trade and foreign direct investment, although affected by the crisis, have made a substantial contribution to growth in the EU-12 underlining the benefits of joining the Single Market.

The regional competitiveness index, which attempts to synthesise all this information, shows that regions in the EU-15 with a large city, usually, but not always, the capital, have the highest levels of competitiveness and that proximity to such a region tends to boost the competitiveness of others. In the EU-13, on the other hand, the region in which the capital city is located is always the most competitive but this has not (as yet) boosted the competitiveness of neighbouring regions. As these countries develop, and the economic and transport connections between the capital and the other regions become stronger, spillover effects are likely to emerge with growth spread-

ing out to other regions and reducing the gap with the capital city region.

Although Cohesion Policy has helped the EU and its region to promote smart growth, many more challenges lie ahead with several decades of investment necessary to complete the Single Market and the core trans-European networks and reduce large economic disparities between regions.



## ▶▶ Chapter 2: Inclusive growth

### 1. Introduction

With the introduction of the Europe 2020 strategy, the European Commission strengthened its pursuit of social goals under the heading of ‘inclusive growth’, which means growth that increases employment rates and reduces poverty and social exclusion. As the crisis has gone on, the employment rate has declined further and unemployment and poverty have increased, making it more difficult to reach the targets set.

Poverty and social exclusion are concentrated in different types of area across the EU. In less developed Member States, they tend to be higher in rural areas, while in more developed ones, they are typically higher in cities. This latter concentration of the poor and the deprived in cities where employment opportunities also tend to be concentrated, is often called the urban paradox and it has not been altered by the crisis. The crisis has, however, increased poverty and exclusion in two-thirds of Member States since 2008.

The highly uneven spatial distribution of employment opportunities and income in the EU has led to people moving both between regions within countries and between countries. This has meant that some regions have seen their population shrink continuously over many decades. In many of the less developed Member States, internal movements of population tend to be from rural regions to urban ones, in part to escape the relatively high poverty rates in the former. The EU also continues to attract migrants from outside the EU, but in some Member States they find it difficult to integrate into the labour market. Disparities in health seem to add to the shift of population within and between Member States.

Tackling issues related to inclusive growth is at the heart of Cohesion Policy. Social cohesion was an objective from the very beginning in the Treaty of Rome, the European Social Fund being created in 1958 to

help further this. It is a key dimension of a policy which, even though it is often targeted at regions, is in the end intended to improve the well-being of people throughout the EU.

Accordingly, a significant part of the financial resources allocated to Cohesion Policy is used to support such initiatives as training and education, active labour market policies and combating poverty and social exclusion of disadvantaged groups. Such measures are complementary to those implemented in other policy areas and are important for the success of these. For example, support to R&D and innovation cannot be successful if at the same time human capital is not improved. The social dimension is therefore a central part of Cohesion Policy and no less important than the economic dimension in fostering development.

### 2. Crisis wipes out most employment gains since 2000

This section describes how progress in reducing unemployment and increasing employment rates suffered a severe blow as a result of the crisis. It also considers what is required to meet the Europe 2020 targets for early school leavers and life-long learning.

#### 2.1 Employment rates declined rapidly in the regions most affected the crisis

Between 2000 and 2008, the employment rate of those aged 20–64 in the EU increased on average by 4 percentage points (Table 2.1). The crisis, however, has wiped out half the gains made over this period. The experience over the two periods in the three categories of region under Cohesion Policy, however, was not the same. In less developed regions, the average employment rate in 2013 was below that in

**Table 2.1 Employment rate of those aged 20–64, 2000–2013, and distance to national target**

	More developed	Transition	Less developed	EU-28
Employment rate population aged 20–64, 2013	72.0	65.1	61.1	68.3
% point change 2008–2013	-1.4	-2.9	-2.7	-1.9
% point change 2000–2008	4.1	4.6	2.4	3.7
Distance to national target (% point difference)	3.2	9.3	10.5	6.7
% of regions* that have reached national target	34.6	15.4	1.4	21.7

\* Includes only regions with a national target

Sources Eurostat and DG REGIO calculations

2000 because the crisis wiped out all the previous gains. The Transition regions lost two-thirds of the previous gain, while the more developed regions lost only a third.

The crisis has, therefore, tended to widen disparities in employment rates and in 2013, rates were 11 percentage points higher in more developed regions than in less developed ones (72% and 61%). Under the Europe 2020 strategy, Member States have set national targets for the employment rate which are broadly consistent with the 75% overall target being achieved by 2020. These vary from 62.9% in Malta to 80% in Denmark and Sweden. Not all regions within countries are expected to reach the national target as they start from very different positions. Nevertheless, in the less developed regions and the Transition ones, employment rates are much further from the national targets: 9–10 percentage points as against 3 percentage points for more developed regions.

Only one in five regions across the EU has reached their national target and all but one of these are more developed or Transition regions. The 10 regions where the gap to the national target is widest are in Southern Spain and Southern Italy together with the French outermost regions of Reunion and Guyane (Map 2.1).

Significant differences in employment rates between regions are common to most countries, underlining the regional nature of labour markets, rates being less than 60% in many regions in Greece, Croatia, southern Spain and southern Italy as well as some regions in Bulgaria, Romania and Hungary (Map 2.2).

## 2.2 Unemployment highest in the EU in over a decade

The unemployment rate in the EU-28 fell from 9.3% in 2004 to 7.1% in 2008. Between 2008 and 2013, however, it rose to 10.9%, higher than at any time for which data are available (since 2000). In the EU-15, unemployment was 11.1% in 2013, which is also higher than at any time for which comparable figures are available (which in this case was 1991).

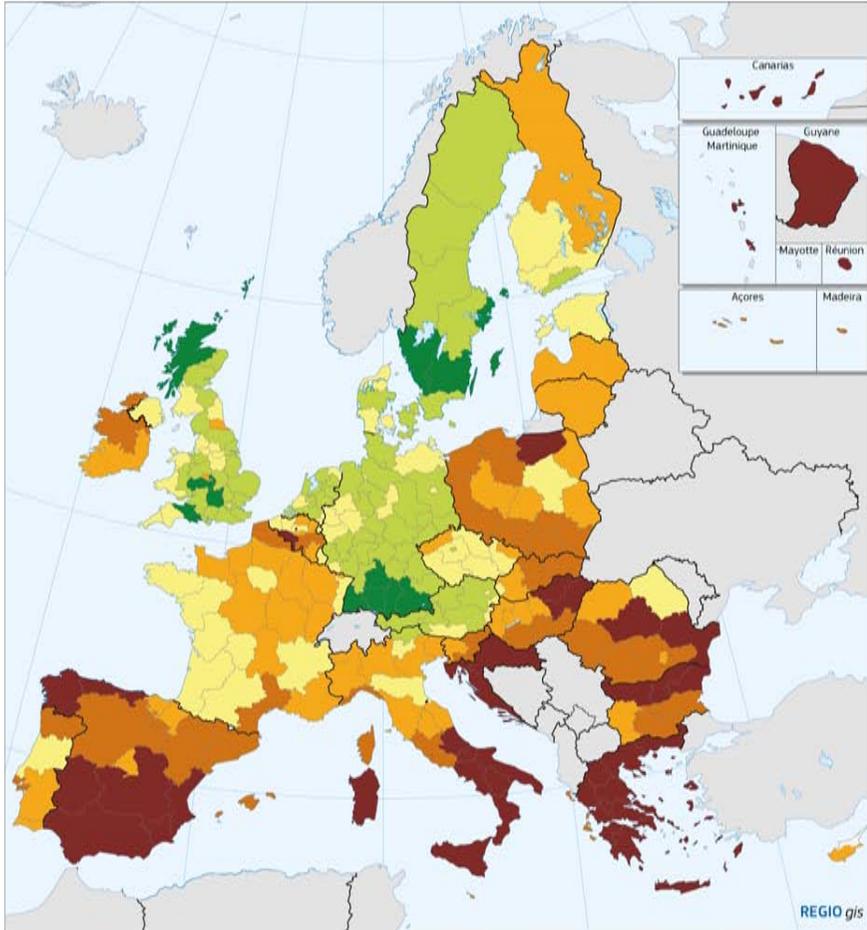
The increase in unemployment has reversed the trend towards diminishing regional labour market disparities. The rise in unemployment has been especially marked in regions in Spain, Greece, Ireland and the Baltic States, in particular (Map 2.4), taking the rate to over 18% in many cases (Map 2.3).

Between 2008 and 2013, the unemployment rate increased in 227 out of the 272 NUTS 2 regions. Virtually all of the regions where it declined were in Germany. The Transition regions had the highest unemployment rates in 2013, averaging 15% (Table

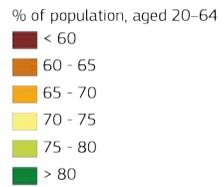
**Table 2.2 Unemployment rate by category of region, 2000–2013**

	More developed	Transition	Less developed	EU-28
Unemployment rate 2013	9.2	15.3	12.8	10.8
% point change 2008–2013	3.2	5.0	4.9	3.8
% point change 2000–2008	-0.8	-2.5	-5.8	-2.2

Sources: Eurostat and DG REGIO calculations



Map 2.1 Employment rate (20-64), 2013

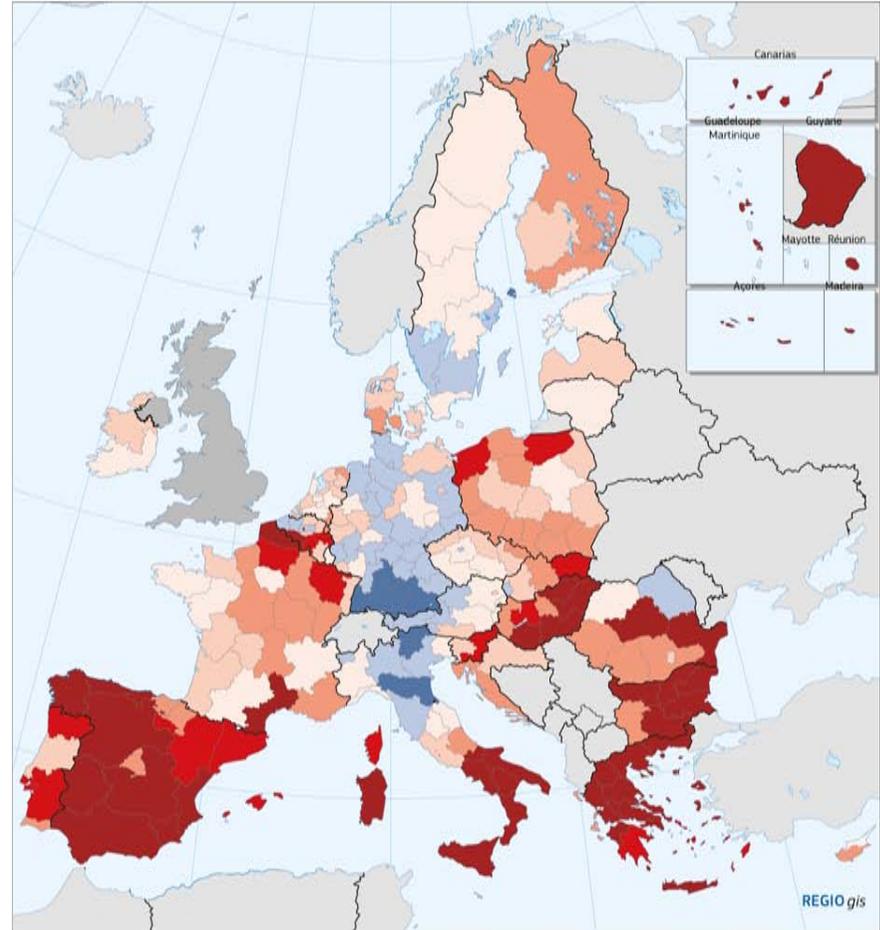


EU-28 = 68.3  
The Europe 2020 target is 75%.

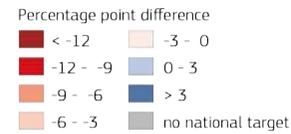
Source: Eurostat



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Map 2.2 Employment rate (20-64), 2013 — Distance to national 2020 target

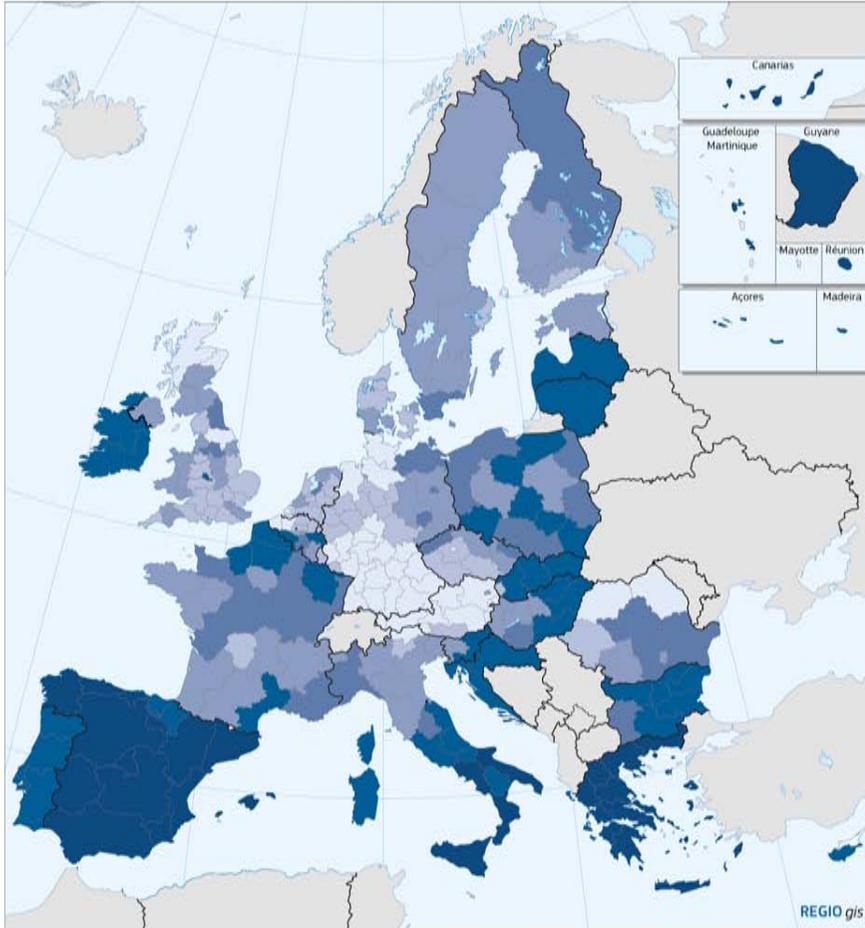


EU-28 = -6.7  
Blue regions have reached the target.  
Red regions have not reached the target.

Sources: Eurostat, DG REGIO



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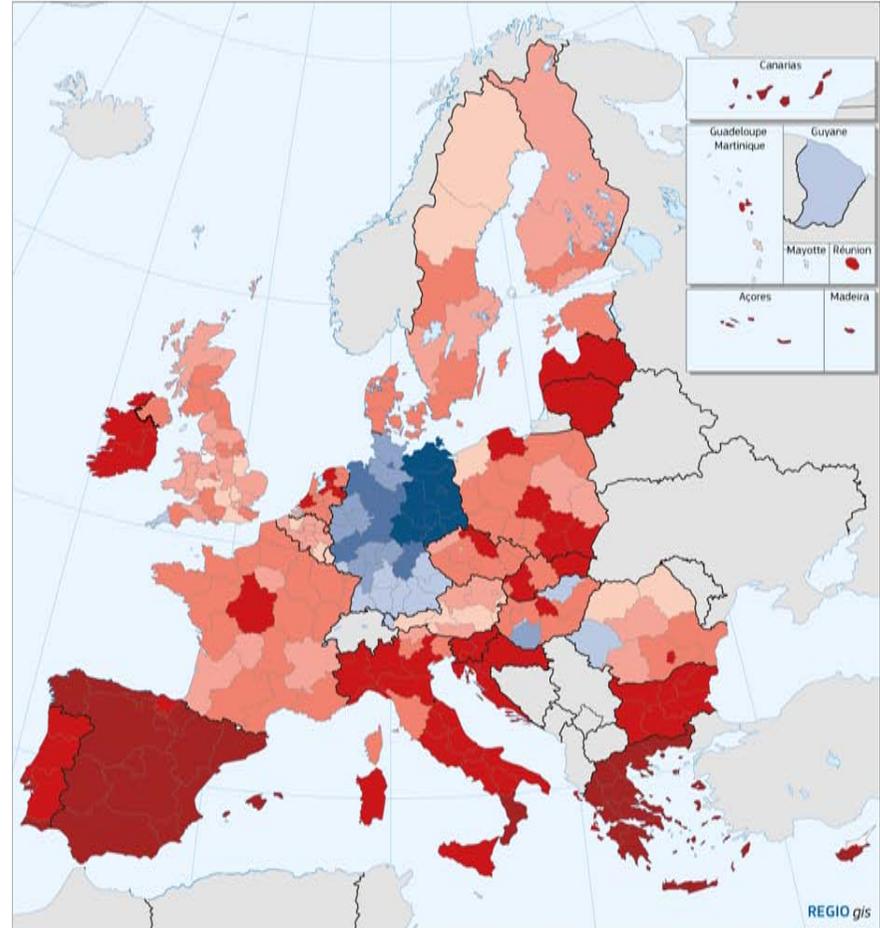
Map 2.3 Unemployment rate, 2013

- % of labour force
- < 5
  - 5 - 7
  - 7 - 9
  - 9 - 11
  - 11 - 18
  - > 18

EU-28 = 10.8  
Source: Eurostat

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Map 2.4 Change in unemployment rate, 2008–2013

- Percentage point change
- < -4
  - 4 - -2
  - 2 - -1
  - 1 - 0
  - 0 - 1
  - 1 - 2
  - 2 - 4
  - 4 - 10
  - > 10
  - no data

EU-28 = 3.8  
Sources: Eurostat, DG REGIO

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## The European Employment Strategy and the EU-level labour market policy response to the crisis

Since 1997, the European employment strategy has been aimed at creating more and better jobs by striking a balance between flexible job arrangements and secure transitions between jobs. It relies on the open method of coordination to guide employment policy in Member States. While objectives, priorities and targets are agreed at EU level, national governments are responsible for formulating and implementing specific policies with the European Commission providing advice, monitoring and help in coordination. This strategy is linked to the annual growth survey, which sets out the EU priorities for the coming year. It comprises:

- the Employment guidelines — common priorities and targets for employment policies;
- the Joint employment report which reviews the progress made;
- the National Reform Programmes;
- country-specific recommendations.

In 2012, the Commission adopted a set of proposals for action over the medium-term on three fronts — job creation, operation of the labour market and governance at the EU level. This **Employment Package** puts emphasis on skills development, including through lifelong learning, and on tackling skills mismatches. A number of initiatives were included as part of the overall package in 2012–2013:

- The **Youth Employment Package** (2012) aims to reduce high youth unemployment and social exclusion, in part through a **Youth Guarantee**. In 2013, the

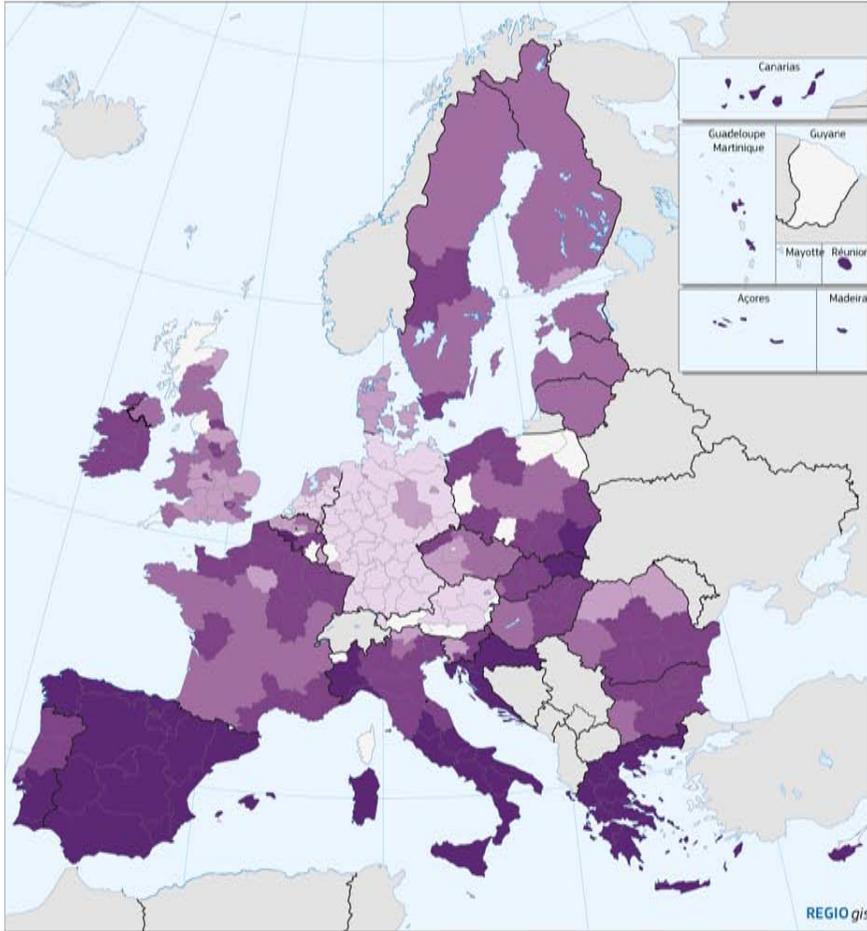
Council called on Member States to ensure that all young people under 25 receive a good quality offer of employment, continued education, an apprenticeship or a traineeship within four months of leaving formal education or becoming unemployed. Member States eligible for the **Youth Employment Initiative** are expected to draw up Youth Guarantee Implementation Plans.

- The **European Alliance for Apprenticeships** (2013) aims to improve the quality and supply of apprenticeships across the EU and change attitudes towards these.
- A **Quality Framework for Traineeships** (2013) aims to enable young people to undertake good quality work experience to increase their employability.
- The modernisation of the functioning of the pan-European job search facility (EURES) was promoted, through a proposal in 2014 for a regulation aimed at stimulating intra-EU labour mobility to reduce labour shortages in high growth areas and persistent high unemployment in other regions.
- The **Grand Coalition for Digital Jobs** bringing together companies and organisations to cooperate in developing innovative training and teaching for jobs in ICT is aimed at facilitating the certification of skills and supporting worker mobility.

In addition, in 2013 the Commission proposed to strengthen the coordination and surveillance of employment and social policies within the Eurozone to help to identify and tackle social and economic divergences.

2.2). The increase in unemployment between 2008 and 2013 in these regions and in the more developed ones was much larger than the decline between 2000 and 2008. As a result, in both groups, unemployment in 2013 was higher than in 2000. The less developed regions experienced a much bigger reduction in unemployment rates between 2000 and 2008 (of 5.8 percentage points) and while the impact of the crisis was also large (increasing the rate by 4.9 percentage points), the rate was still lower than in 2000.

Youth unemployment was 23% of the labour force aged 15–24 in 2013 (Map 2.5). One in four regions had a rate of more than 35%, the rate being particularly high in southern Member States. In most regions, however, the majority of the age group is not part of the labour force, in the sense of being employed or actively seeking work. The NEET rate (the proportion of the age group neither in employment nor in education and training) gives a more accurate picture of the situation of young people as it covers all those aged 15–24 and not just those recorded as being part of the labour force (Map 2.6). Between



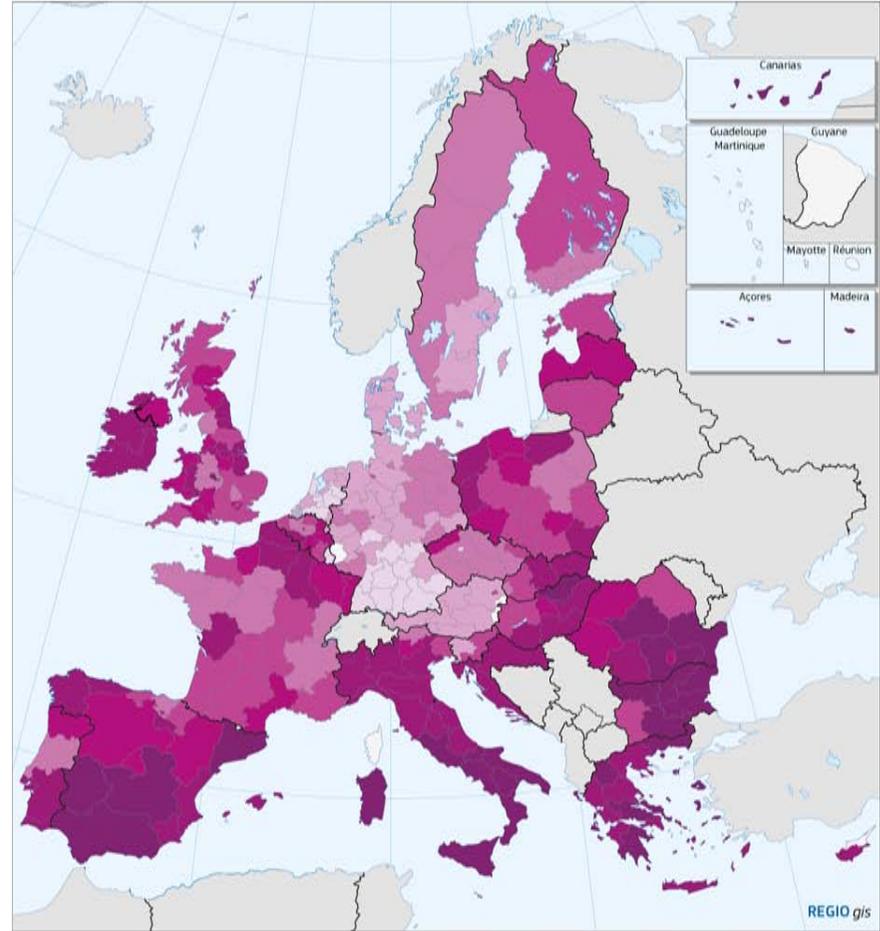
Map 2.5 Youth unemployment rate, 2013

- % of labour force aged 15–24
- < 11.2
  - 11.2 - 18.6
  - 18.6 - 24.1
  - 24.1 - 36.4
  - >= 36.4
  - no data or unreliable

EU-28 = 23.4  
 For data availability reasons an earlier year was used for 15 regions.  
 Source: Eurostat

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Map 2.6 Population aged 15–24 not in employment, education or training (NEET), 2013

- % of population aged 15–24
- < 5
  - 5 - 7.5
  - 7.5 - 10
  - 10 - 12.5
  - 12.5 - 15
  - 15 - 20
  - > 20
  - no data

EU-28 = 13  
 DE27, FRG3: 2012; UKM6: 2010  
 Source: Eurostat

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2008 and 2013, the proportion of NEETs increased by 2 percentage points in the EU-28 to 13% of the age group. The rates were over 25% in some of the regions of Bulgaria, Romania, Italy, Spain and Greece, which also recorded the largest increases over the crisis period (European Commission 2013<sup>1</sup>).

### 2.3 Women have far higher unemployment rates in southern EU regions

Unemployment of women relative to men differs markedly across the EU. Overall, the rate for women was the same as for men in 2013 though it was 0.9 of a percentage point higher in 2008. The relative decline is due to the concentration of job losses in the recession in manufacturing and construction in which comparatively few women are employed. Unemployment of women was at least 5 percentage points higher than for men in 15 regions in 2013, mostly located in Greece and Spain (Map 2.7). In contrast, it was 3 percentage points lower in 16 regions, located mainly in Ireland, Bulgaria, the UK and Portugal.

Because of differences in rates of participation in the work force, women had a lower employment rate than men in every region in the EU in 2013. The biggest differences were in Southern EU regions, especially in Malta (where the rate for women was 32 percentage points lower than for men), Greece, southern Italy and parts of Spain. On the other hand, in two regions in Finland (Åland and Etelä-Suomi) female employment rates were close to those of men.

The persistence of such large differences between employment rates for men and women will make it difficult, if not impossible, to reach the 2020 employment targets. The gap in employment rates is heavily influenced by the type of employment opportunities open to women, the wages offered and the availability and cost of childcare as well as elderly care, since caring responsibilities are still predominantly borne by women.

In terms of educational attainment, however, women outperform men in most regions. For every 100 men aged 25–64 with a tertiary qualification in 2013, there were 109 women. Over the past 20 years the proportion of women with tertiary education has caught up with and surpassed that of men. While, in 2013, there were only 98 women aged 50–54 with tertiary education per 100 men — i.e. those who mostly completed their education in the 1980s — there were 126 women aged 30–34 per 100 men (i.e. those who completed their education 20 years later in the 2000s) (Maps 2.9 and 2.10).

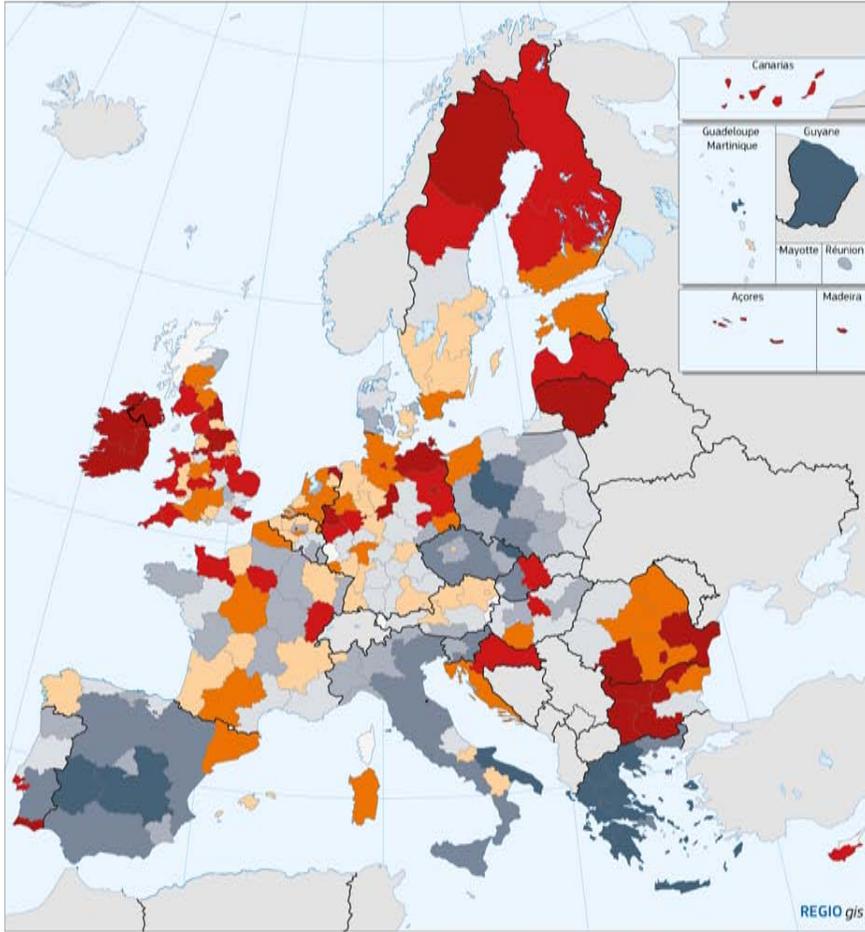
This tendency is also evident at regional level. For those aged 30–34, in nine out of ten regions, there were more women than men with a university degree or equivalent in 2013. The main exceptions are Western German regions, which have a tertiary education system that requires more years of study to graduate than in most of the rest of the EU. With the transition to the bachelor-masters system, this difference might well disappear in the future.

### 2.4 Reduction in early-school leavers is on track

Reducing the number of early school leavers (i.e. those who fail to complete upper secondary education) is critical not only to raise the skills of the work-force but also for the employment prospects and life chances of the people concerned. People with at least an upper secondary qualification are much more likely to find a job, earn a higher income and have a longer life expectancy than those with a lower level of education.

The Europe 2020 target is to reduce the share of early school leavers among the population aged 18–24 in the EU to 10% as against 11.9% in 2013, which was already significantly lower than in 2008 (14.8%). While this reduction may in part be attributable to a more difficult employment environment, there is also evidence of structural improvements and the trend is expected to continue, even if at a slower pace. In 2013, 82 out of 221 regions for which there are data and a national target (the UK has not set a target) had reached the target. Around two-thirds of these

<sup>1</sup> European Commission (2013), *Employment and Social Developments in Europe 2013*.



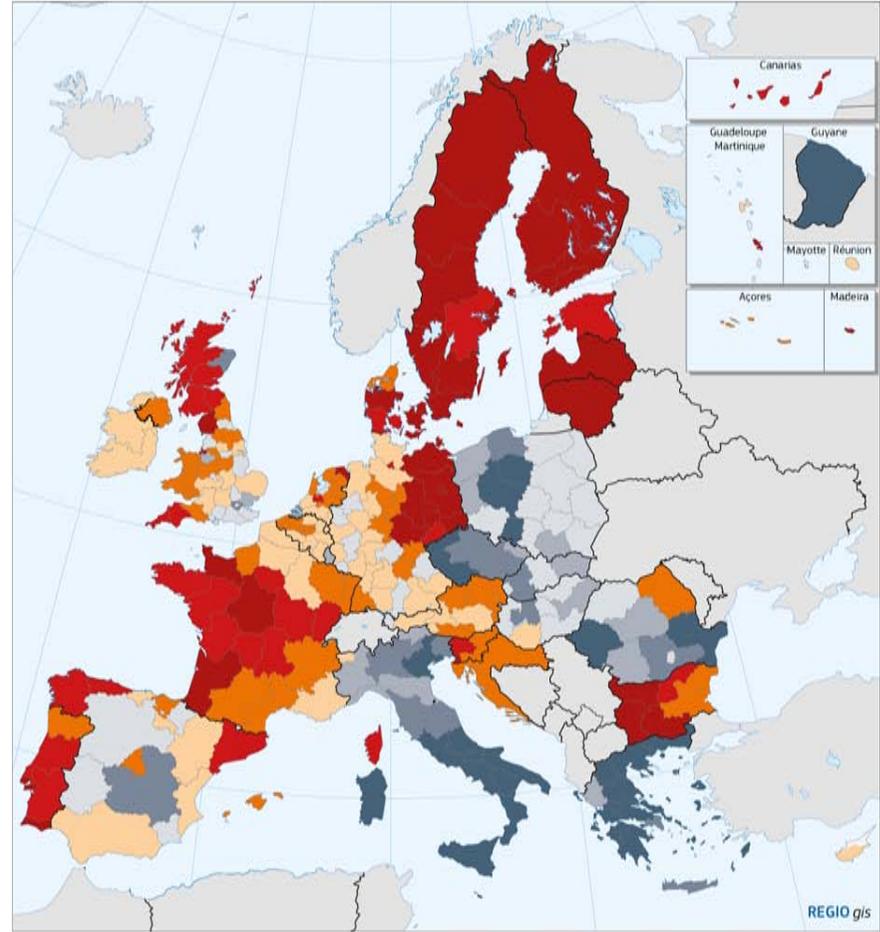
Map 2.7 Difference between female and male unemployment rate, 2013

Percentage point difference (female-male)

<span style="color: red;">■</span> < -1.8	<span style="color: grey;">■</span> 0 - 0.8	
<span style="color: darkred;">■</span> -1.8 - -1.2	<span style="color: darkgrey;">■</span> 0.8 - 1.8	EU-28 = 0
<span style="color: orange;">■</span> -1.2 - -0.6	<span style="color: blue;">■</span> 1.8 - 4	Source: Eurostat
<span style="color: lightorange;">■</span> -0.6 - 0	<span style="color: darkblue;">■</span> > 4	

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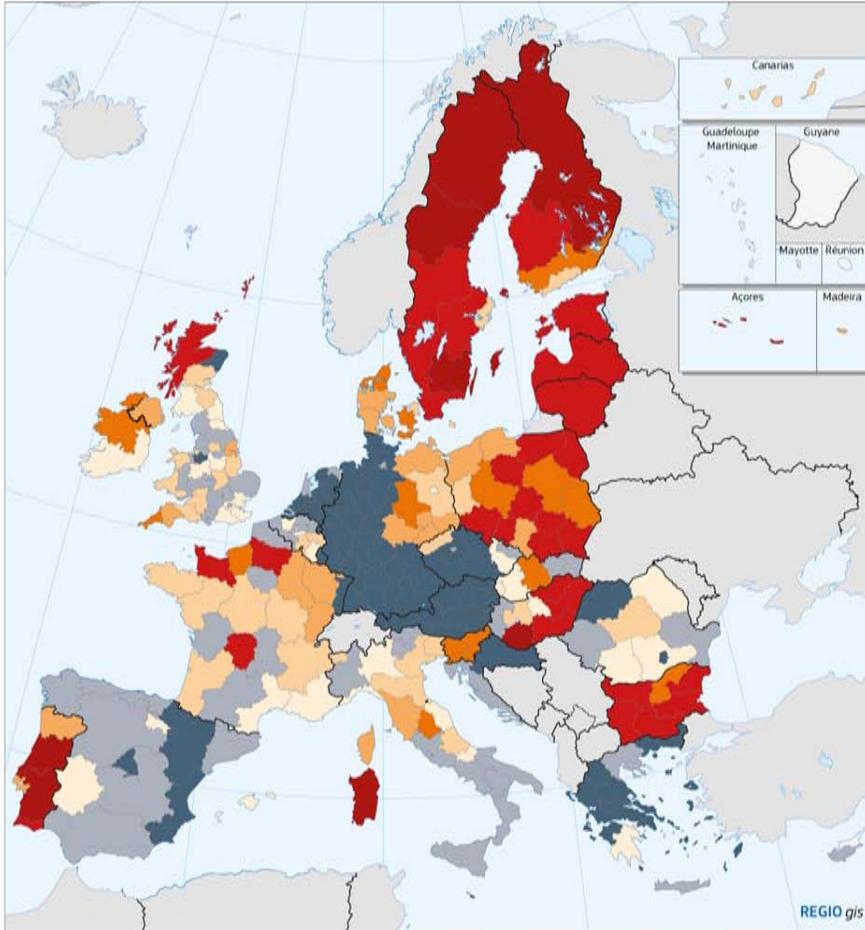
Map 2.8 Difference between female and male employment rates, 20-64, 2013

Percentage point difference (female-male)

<span style="color: darkblue;">■</span> < -18	<span style="color: lightorange;">■</span> -11.8 - -10	
<span style="color: blue;">■</span> -18 - -16	<span style="color: orange;">■</span> -10 - -8	EU-28 = -11.8
<span style="color: darkgrey;">■</span> -16 - -14	<span style="color: red;">■</span> -8 - -6	Source: Eurostat
<span style="color: grey;">■</span> -14 - -11.8	<span style="color: darkred;">■</span> > -6	

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Map 2.9 Gender balance of population aged 50–54 with tertiary education, average 2011–2013

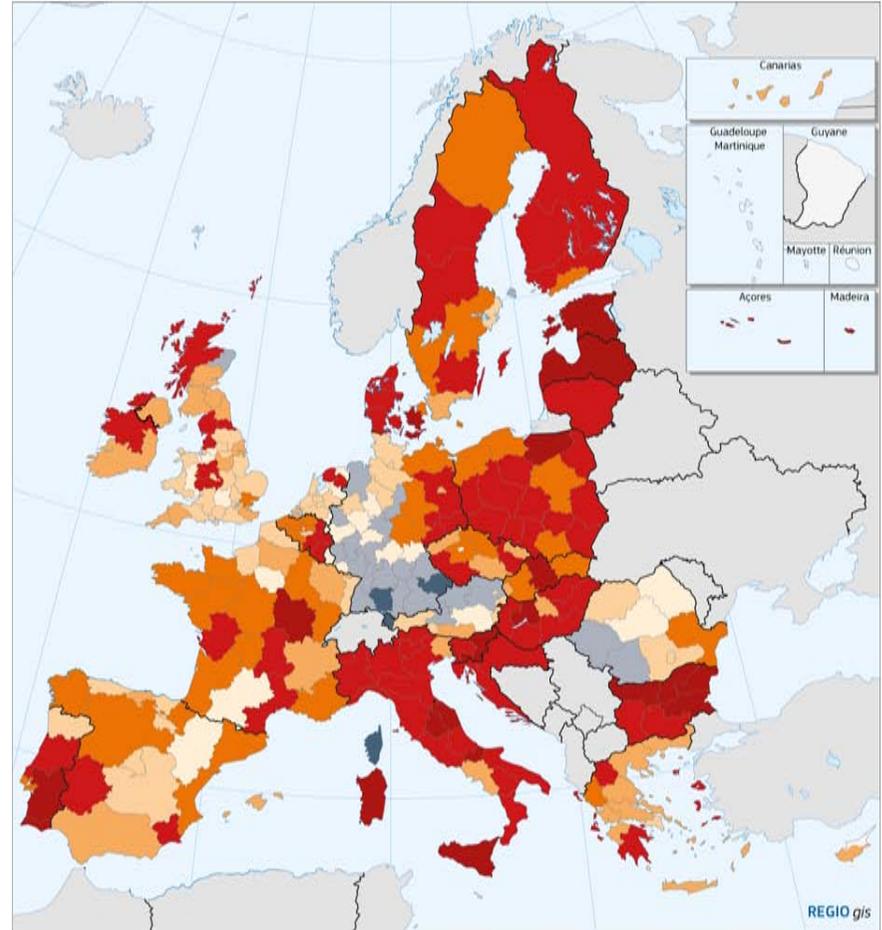
Women as % of men

<span style="display:inline-block; width:10px; height:10px; background-color:darkblue; border:1px solid black;"></span> < 85	<span style="display:inline-block; width:10px; height:10px; background-color:orange; border:1px solid black;"></span> 130 - 140
<span style="display:inline-block; width:10px; height:10px; background-color:grey; border:1px solid black;"></span> 85 - 100	<span style="display:inline-block; width:10px; height:10px; background-color:darkred; border:1px solid black;"></span> 140 - 170
<span style="display:inline-block; width:10px; height:10px; background-color:lightyellow; border:1px solid black;"></span> 100 - 110	<span style="display:inline-block; width:10px; height:10px; background-color:lightgrey; border:1px solid black;"></span> no data
<span style="display:inline-block; width:10px; height:10px; background-color:lightorange; border:1px solid black;"></span> 110 - 120	
<span style="display:inline-block; width:10px; height:10px; background-color:yellow; border:1px solid black;"></span> 120 - 130	

EU-28 = 98  
Source: Eurostat

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Map 2.10 Gender balance of population aged 30–34 with tertiary education, average 2011–2013

Women as % of men

<span style="display:inline-block; width:10px; height:10px; background-color:darkblue; border:1px solid black;"></span> < 85	<span style="display:inline-block; width:10px; height:10px; background-color:orange; border:1px solid black;"></span> 130 - 140
<span style="display:inline-block; width:10px; height:10px; background-color:grey; border:1px solid black;"></span> 85 - 100	<span style="display:inline-block; width:10px; height:10px; background-color:darkred; border:1px solid black;"></span> 140 - 170
<span style="display:inline-block; width:10px; height:10px; background-color:lightyellow; border:1px solid black;"></span> 100 - 110	<span style="display:inline-block; width:10px; height:10px; background-color:lightgrey; border:1px solid black;"></span> no data
<span style="display:inline-block; width:10px; height:10px; background-color:lightorange; border:1px solid black;"></span> 110 - 120	
<span style="display:inline-block; width:10px; height:10px; background-color:yellow; border:1px solid black;"></span> 120 - 130	

EU-28 = 126  
Source: Eurostat

0 500 Km

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**Table 2.3 Early school leavers and distance to national target, 2008–2013**

	More developed	Transition	Less developed	EU-28
Early school leavers 2013 (% population 18–24)	11.1	15.5	12.1	11.9
% point reduction 2008–2013	3.3	3.7	1.0	2.8
Distance to target 2013–2020 (%-point difference)	0.5	4.0	3.3	1.9
% of regions* that have reached national target	47	22	25	37

\* Includes only regions with data and a national target

Source: Eurostat

regions were more developed ones (Table 2.3 and Maps 2.11 and 2.12).

To boost growth and jobs and to prevent skill bottlenecks and shortages, education and training systems have to be able not only to absorb an increasing number of students but to provide good quality teaching. Surveys carried out by the OECD in this regard (Map 2.13) reveal that about 20% of the 15 year olds tested under PISA have an insufficient understanding of what they read and an even larger proportion have insufficient competence in maths. In many EU countries, there are still a large number of ‘low achievers’ in the two basic skills as well as in the third basic skill, scientific literacy.

In Bulgaria, Romania and Cyprus, the proportion of low achievers has consistently been over 30%, while in Greece, there are over 30% of low achievers in maths but less in the other two areas. By contrast, three Member States (Finland, Estonia and Netherlands) have already reached the EU 2020 benchmark of no more than 15% of low achievers in reading, maths and scientific literacy and Germany, Denmark, Ireland and Latvia are very close.

## 2.5 Lifelong learning is stagnating

Continued learning after initial education and training is necessary for people to maintain and develop their skills, to adapt to structural change and technical developments, to retain their jobs, to progress in their careers or to get back into employment. In view of its importance, a benchmark objective has been established by the Council for 15% of adults in the EU to be participating in lifelong learning by 2020<sup>2</sup>.

<sup>2</sup> European Commission (2012), *Education and training monitor 2012*.

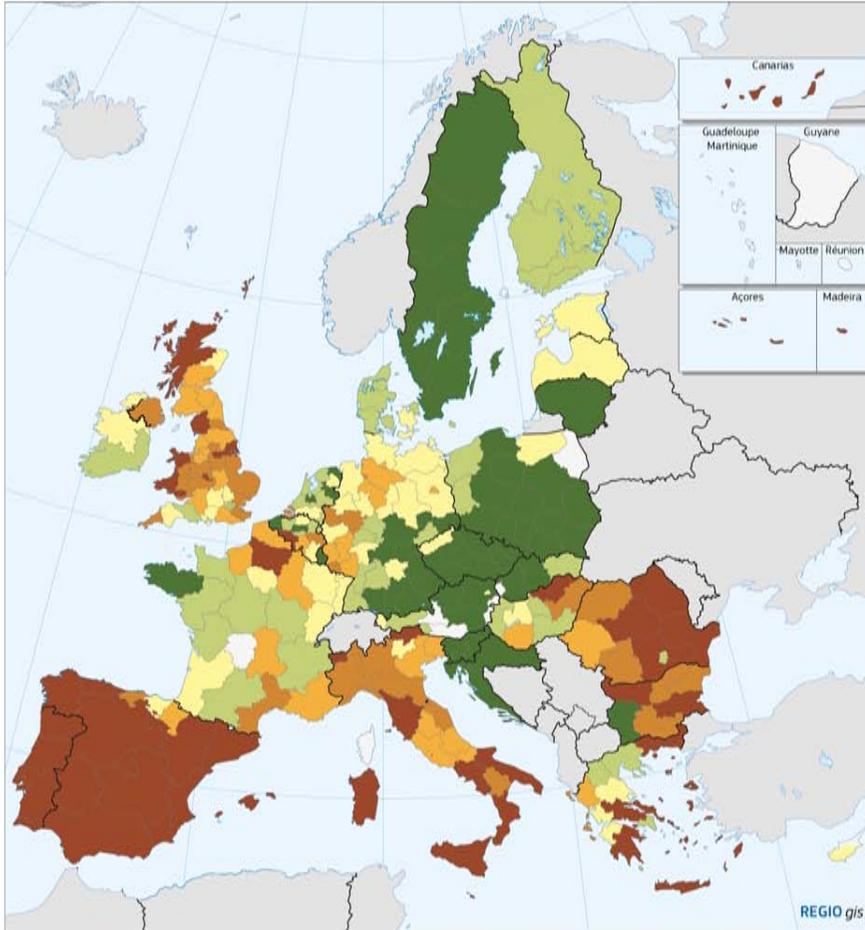
In 2013, the figure was just 10.5%, only slightly higher than in 2004 (9.1%). As a result, it may be difficult to achieve this objective. Just over one in four regions (77 out of 266) exceeded the 15% target, with regions in the three Nordic Member States having the highest figures (above 20%). In contrast, in all or most regions in Bulgaria, Greece, Romania, Hungary, Slovakia and Poland, the proportion remained below 5% (Map 2.14). The importance of improving adult learning policies is also emphasised in the country-specific recommendations issued by the Council un-

### Education and training 2020

Three benchmarks for 2020 have been set in addition to the headline targets for early-school leavers and participation in tertiary education:

- At least 95% of children between the ages of four and starting compulsory primary schooling should participate in early childhood education;
- Less than 15% of 15-years olds should have insufficient abilities in reading, mathematics and science;
- At least 15% of adults (age group 25–64) should participate in lifelong learning;
- Considerable progress has been achieved through cooperation — particularly through support of national reforms of lifelong learning, the modernisation of higher education and the development of common EU means of ensuring good quality education, transparency in qualifications and mobility between countries.

The budget for the EU programme on education and training Erasmus+ has been increased by 40% to EUR 14.7 billion in the 2014–2020 period, so providing opportunities for over 4 million Europeans to study, train, gain work experience and volunteer in another country.



Map 2.11 Early school leavers from education or training aged 18-24, average 2011-2013

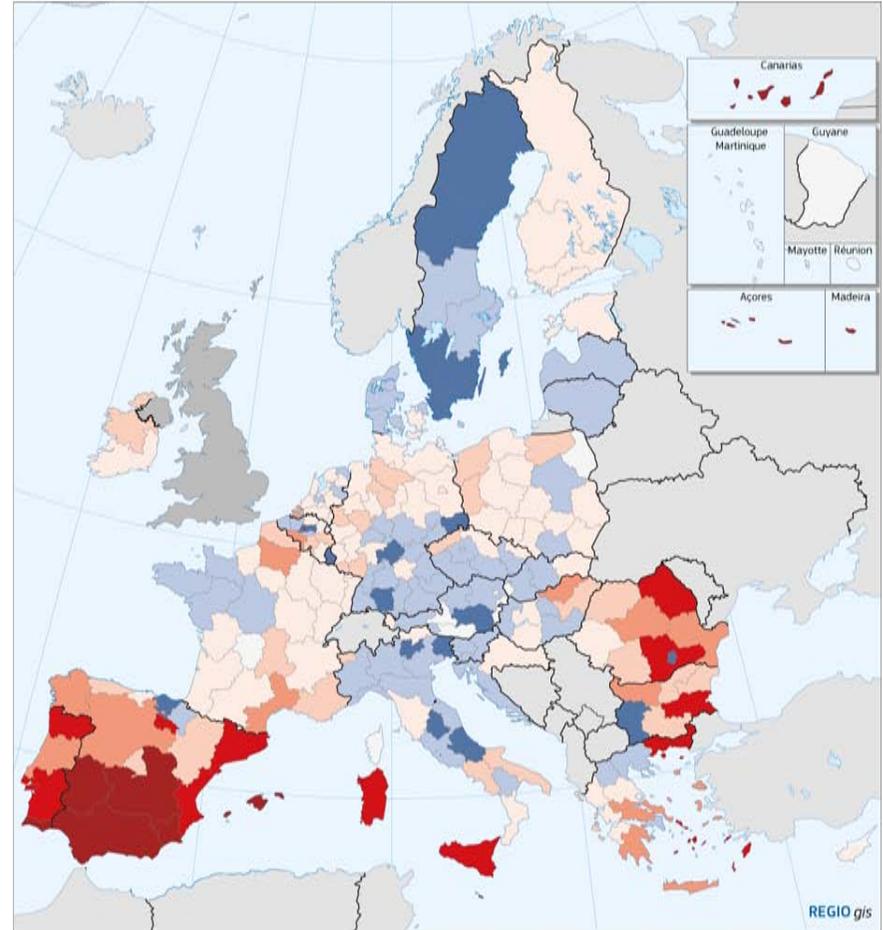
% of population aged 18-24

<span style="display:inline-block; width:10px; height:10px; background-color:darkgreen;"></span> < 8	<span style="display:inline-block; width:10px; height:10px; background-color:darkorange;"></span> 14 - 16
<span style="display:inline-block; width:10px; height:10px; background-color:lightgreen;"></span> 8 - 10	<span style="display:inline-block; width:10px; height:10px; background-color:darkred;"></span> > 16
<span style="display:inline-block; width:10px; height:10px; background-color:yellow;"></span> 10 - 12	<span style="display:inline-block; width:10px; height:10px; background-color:lightgrey;"></span> no data
<span style="display:inline-block; width:10px; height:10px; background-color:orange;"></span> 12 - 14	

EU-28 = 12.7  
The Europe 2020 target is 10%  
Sources: Eurostat, DG REGIO

0 500 Km

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Map 2.12 Early school leavers from education or training aged 18-24, average 2011-2013 — Distance to national 2020 target

Percentage point difference

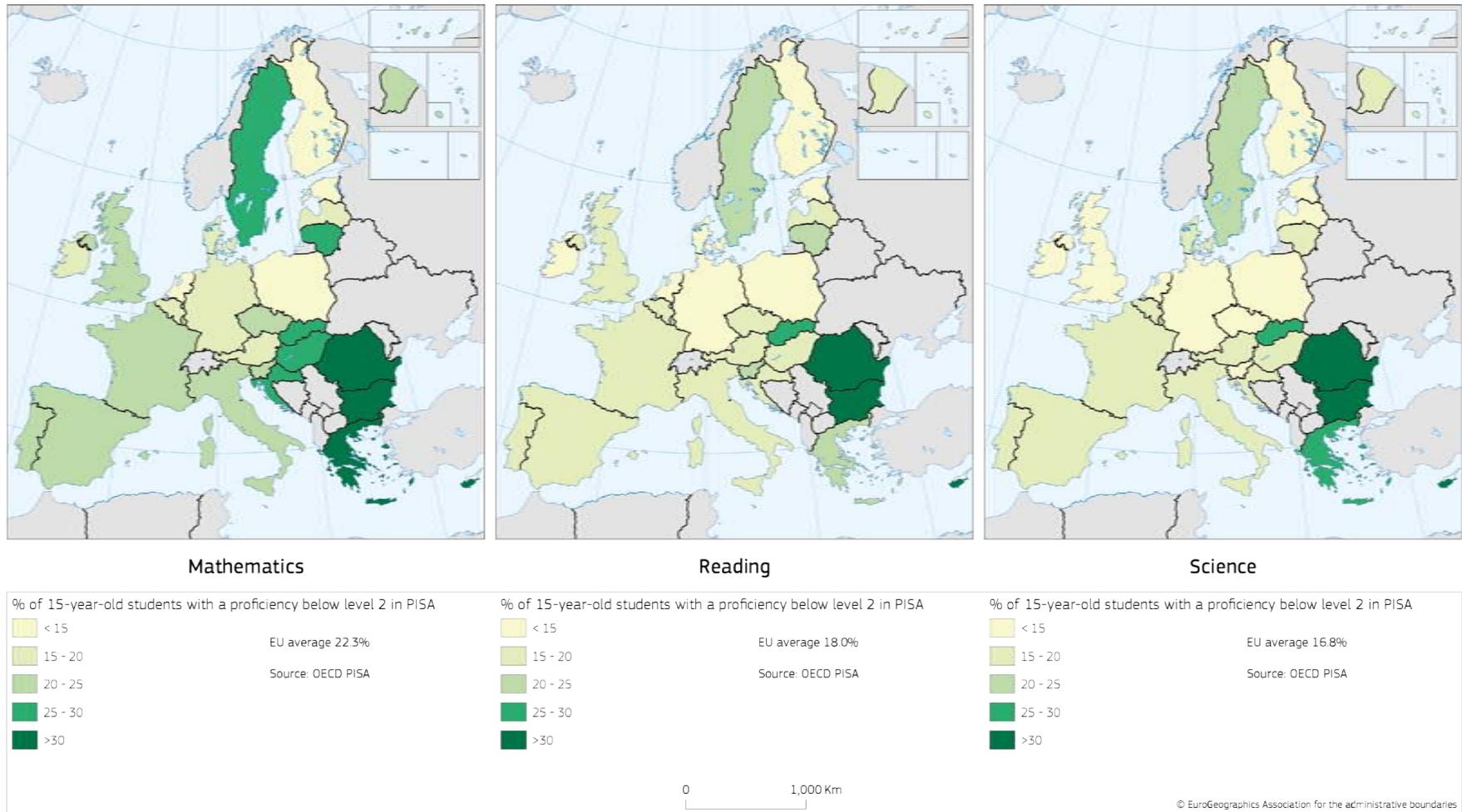
<span style="display:inline-block; width:10px; height:10px; background-color:darkblue;"></span> < -3	<span style="display:inline-block; width:10px; height:10px; background-color:darkred;"></span> 9 - 12
<span style="display:inline-block; width:10px; height:10px; background-color:blue;"></span> -3 - 0	<span style="display:inline-block; width:10px; height:10px; background-color:grey;"></span> no national target
<span style="display:inline-block; width:10px; height:10px; background-color:lightorange;"></span> 0 - 3	<span style="display:inline-block; width:10px; height:10px; background-color:lightgrey;"></span> no data
<span style="display:inline-block; width:10px; height:10px; background-color:orange;"></span> 3 - 6	
<span style="display:inline-block; width:10px; height:10px; background-color:darkorange;"></span> 6 - 9	

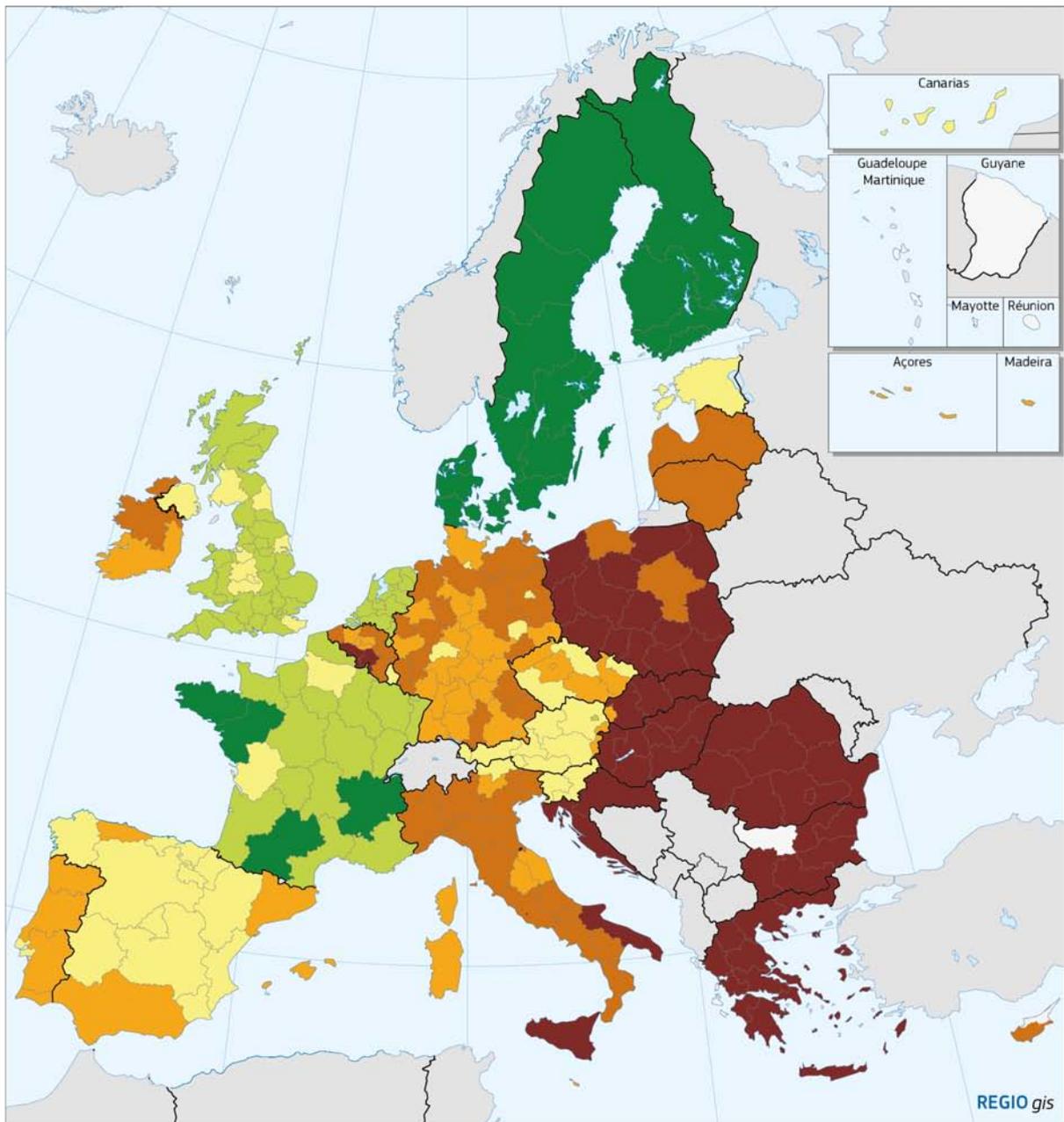
EU-28 = 2.7  
Blue regions have reached the target.  
Red regions have not reached the target.  
Sources: Eurostat, DG REGIO

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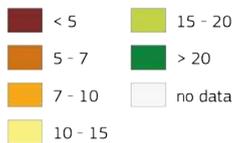
Map 2.13 The proportion of 15-year-olds with low proficiency in mathematics, reading and science, 2012





Map 2.14 Participation of adults aged 25–64 in education and training, 2013

% of population aged 25–64



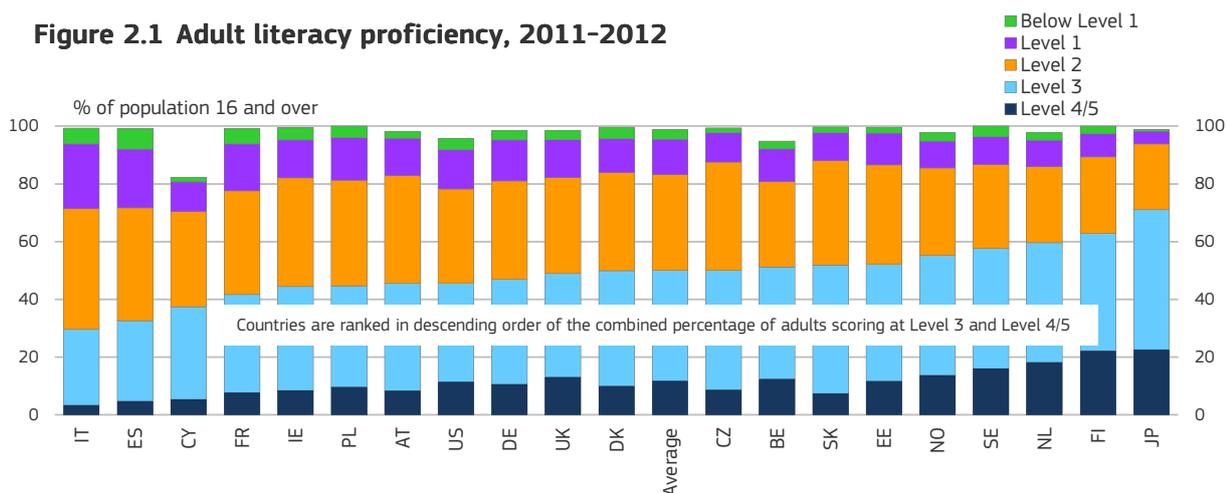
EU-28 = 10.4  
The Europe 2020 target is 15%.

Source: Eurostat

0 500 Km

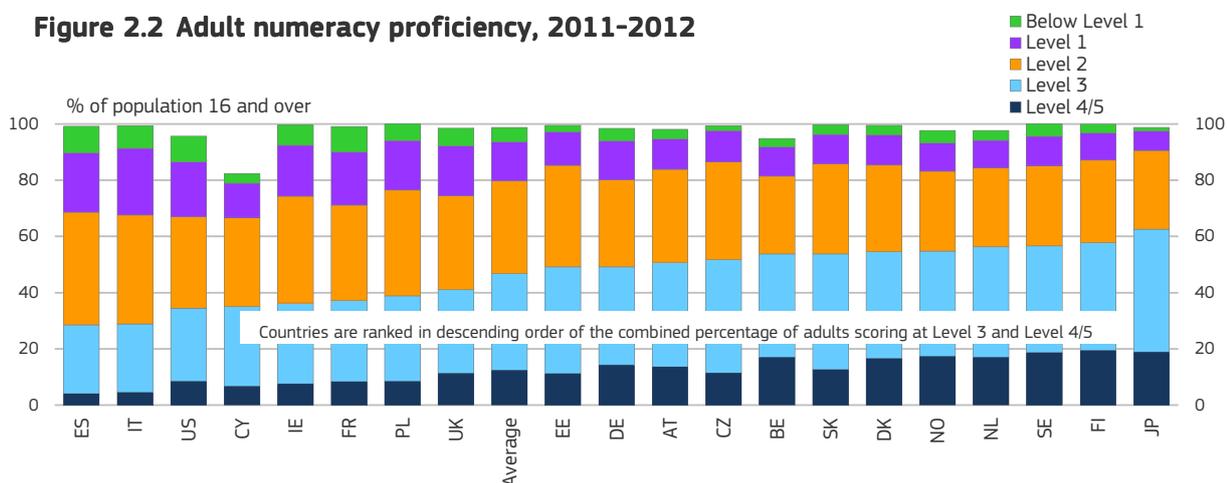
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**Figure 2.1 Adult literacy proficiency, 2011-2012**



Missing values are for adults who were not able to provide enough information to impute proficiency scores because of language or learning difficulties  
 UK includes only England and N. Ireland; BE includes only Flanders  
 Source: OECD (2013), Skills Outlook 2013

**Figure 2.2 Adult numeracy proficiency, 2011-2012**



Missing values are for adults who were not able to provide enough information to impute proficiency scores because of language or learning difficulties  
 UK includes only England and N. Ireland; BE includes only Flanders  
 Source: OECD (2013), Skills Outlook 2013

der the European Semester — which, in 2013, included a recommendation on lifelong learning for Estonia, Spain, France, Hungary and Poland<sup>3</sup>.

## 2.6 Adult proficiency in literacy and numeracy needs to be increased in several EU Member States according to OECD PIAAC

The ability to read and understand both literary and numerical information is essential for full participa-

tion in society and the economy. Without adequate skills of these kinds, people are kept at the margins of society and face significant barriers in entering the labour market.

Unfortunately in most Member States, there are substantial numbers of people who have low levels of proficiency in reading and maths, as indicated by the Survey of Adult Skills (PIAAC)<sup>4</sup> carried out by the OECD which assesses the literacy, numeracy and problem-solving ability of people aged 16 and over. The highest levels of numerical and literacy skills are in Finland, the Netherlands, Sweden and Norway to-

<sup>3</sup> [http://ec.europa.eu/europe2020/making-it-happen/country-specific-recommendations/index\\_en.htm](http://ec.europa.eu/europe2020/making-it-happen/country-specific-recommendations/index_en.htm) provides access to all CSRs.

<sup>4</sup> OECD (2013), *Skills Outlook 2013*.

gether with Japan. By contrast, levels are relatively low in Spain and Italy, where many adults struggle with the most basic skills (Figures 2.1 and 2.2). The survey shows, moreover, that high levels of inequality in literacy and numeracy skills are related to inequality in the distribution of income.

### 3. Poverty and exclusion increase due to the crisis

Ensuring inclusive growth is at the heart of the Europe 2020 strategy. It means that social policies should seek to empower people to find work, contribute to the modernisation of labour markets, invest in skills and training, fight poverty and reform social protection systems so as to help people anticipate and manage change and build a cohesive society. The aim is to ensure that the benefits of economic growth spread to all levels of society throughout the Union.

Most notably, the Europe 2020 strategy introduced a stronger focus on poverty and social exclusion. It also introduced a new summary measure of this with three indicators: being severely materially deprived, living in a household with zero or very low work intensity and being at risk of poverty (see box). This section examines, first the three underlying indicators and then the summary measure.

These indicators are all derived from data collected by the EU-SILC — EU Survey on Income and Living Conditions — the only comparable source of such data for EU Member States, though it does not as yet provide regional indicators in all Member States. (In 2014, however, the European Commission is providing support to national statistical institutes to produce more regional level data.)

Whereas, aggregate, national level indicators often hide important differences between regions or areas, a comprehensive analysis of poverty, its determinants and poverty-reducing interventions will often require a focus on poverty information that is further

geographically disaggregated. In this section, these indicators are examined primarily in relation to the degree of urbanisation, a classification which distinguishes cities from towns and suburbs and from rural areas at the local level. For ease of presentation, rural areas are combined with towns and suburbs. This enables the main types of area in which poverty and exclusion are concentrated to be identified. In Western Member States, these are mainly cities, in Central and Eastern Member States, mainly rural areas.

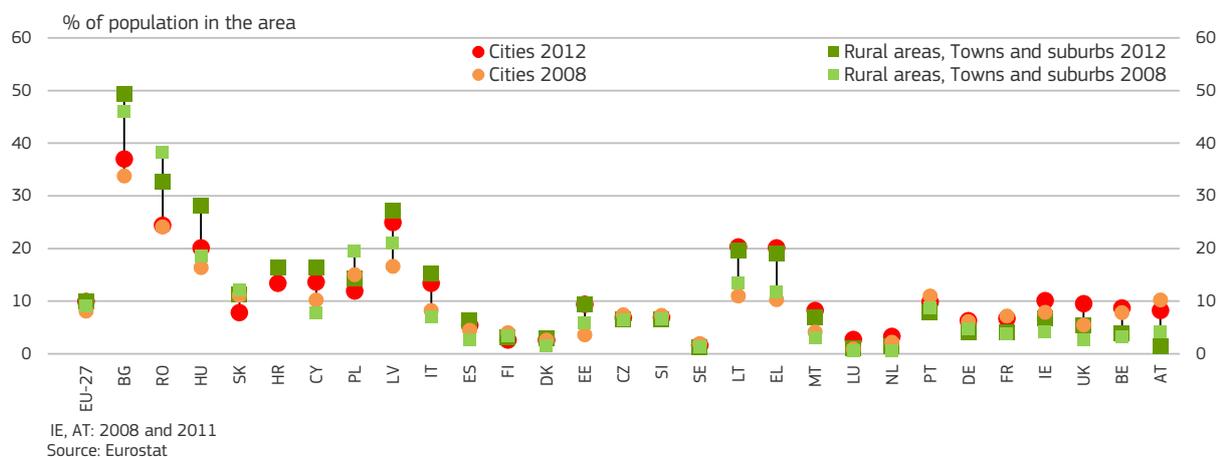
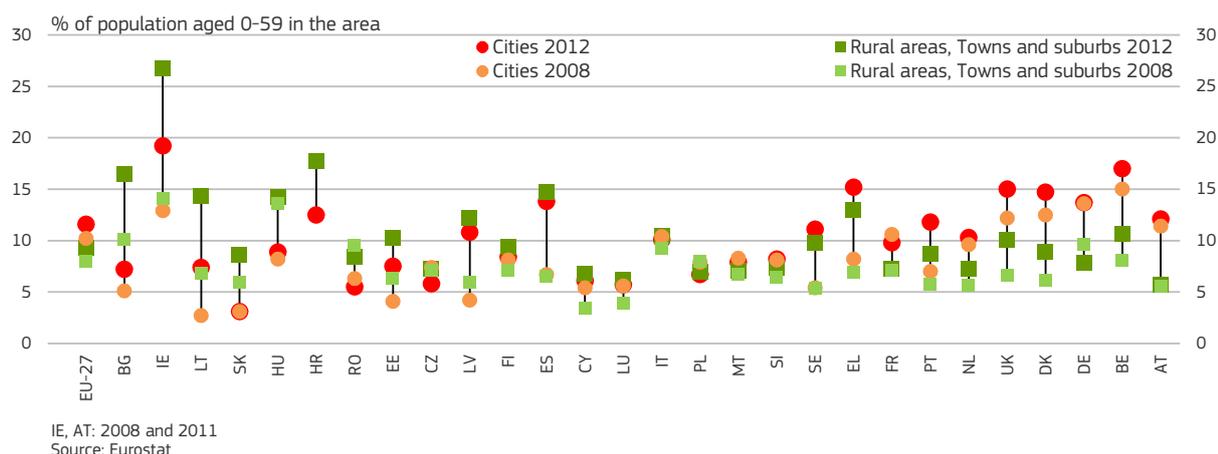
#### 3.1 Severe material deprivation is highest in the towns, suburbs and rural areas of less developed Member States

Some 11% of the population was identified as being severely materially deprived in the EU-27 in 2005. This fell to 8% in 2009 but due to the crisis increased back to 11% in 2012. There is a close link between the measure and levels of income and economic development of countries. It is highest in Bulgaria (44%), Romania (30%), Latvia and Hungary (both 26%).

In Bulgaria, Romania and Hungary, deprivation rates are much lower in cities — 12 percentage points lower in Bulgaria and 8 percentage points lower in Romania and Hungary (Figure 2.3). In cities in Austria, Ireland, UK and Belgium, by contrast, deprivation rates are between 8% and 10%, on average 5 percentage points higher than in the rest of the country.

Between 2008 and 2012, deprivation rates increased by 7–8 percentage points in Greece, Hungary, Lithuania, Latvia and Italy. In the two Baltic States and Greece, deprivation rates increased more in cities, while in Italy and Hungary they increased more in areas outside.

In Austria, Romania and Poland, deprivation rates declined by between 2 and 4 percentage points. In Poland and Romania, rates in towns, suburbs and rural areas fell by over than 5 percentage points (com-

**Figure 2.3 Share of population living in severe material deprivation by degree of urbanisation, 2008-2012****Figure 2.4 Share of population living in households with very low work intensity by degree of urbanisation, 2008-2012**

pared to 3 percentage points in cities in the first and zero in the second).

Overall, severe material deprivation remains highest in the less developed Member States, especially in rural areas, towns and suburbs. In more developed Member States, deprivation tends to be low but higher in cities than elsewhere. The crisis has led to substantial increases in deprivation in a number of Member States, but it has not altered this basic pattern.

### 3.2 Very low work intensity in more developed Member States is concentrated in cities

Compared to deprivation, very low work intensity is more evenly distributed across the EU. In 2008<sup>5</sup>, the proportion of people living in low work intensity households varied from 14% in Ireland to 5% in Cyprus (Figure 2.4). The crisis led to increases of

5 Note that these years relate to the time of the survey. The year over which work intensity is measured is the preceding calendar year, except in the UK (the previous tax year) and Ireland (the preceding 12 months).

### What does it mean to be ‘at-risk of poverty or social exclusion’ (AROPE)?

People are considered to be at risk of poverty or social exclusion if they experience one or more of the following three conditions:

- **Being severely materially deprived:** with living conditions constrained by a lack of resources as measured in terms of being deprived of four of nine items: unable to afford 1) to pay rent/mortgage or utility bills on time, 2) to keep their home adequately warm, 3) to face unexpected expenses, 4) to eat meat, fish or a protein equivalent every second day, 5) a one week holiday away from home, 6) a car, 7) a washing machine, 8) a colour TV or 9) a telephone (including mobile phone). This indicator captures absolute poverty in some degree and is measured in the same way in all Member States.
- **Living in a jobless household or household with very low work intensity:** where on average those of working-age (18–59) worked less than 20% of their potential total working hours over the past year, either because of not being employed or working part-time rather than full-time (students are excluded from the calculation).
- **Being at risk of poverty:** living in a household with an ‘equivalised disposable income’ (i.e. adjusted for the size and composition of households) below the at-risk-of-poverty threshold, set at 60% of the national median equivalised disposable income. This is a measure of relative poverty.

The total number of people at risk of poverty or social exclusion is less than the sum of the numbers in each category, as many fall into more than one of them.

between 5 and 10 percentage points by 2012<sup>6</sup> in Lithuania, Latvia, Spain, Greece and Ireland. Over the same period, there was a small decline in Poland and Germany, where the crisis had much less of an effect on employment (in Germany, the employment rate increased).

The rate of low work intensity is between 5 and 9 percentage points lower in cities than in other areas in Bulgaria, Ireland, Lithuania, Slovakia, Hungary and Croatia. In contrast, it is 5 percentage points higher in cities in the UK, Denmark, Germany, Belgium and Austria. In general, therefore, low work intensity is more prevalent in cities in more developed Member States, with the exception of Ireland. This juxtaposition of joblessness in cities with the many employment opportunities they offer is sometimes referred to as the urban paradox.

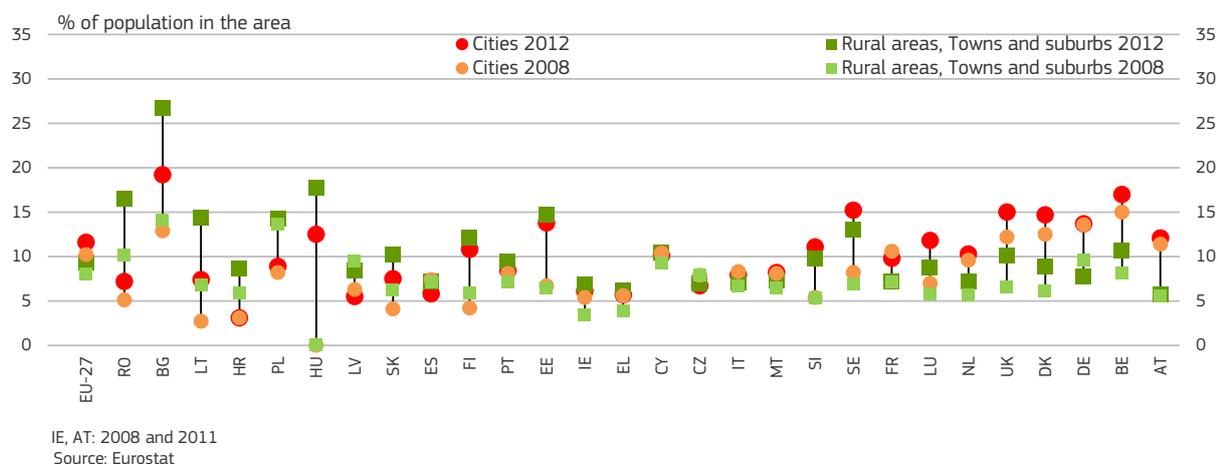
The crisis seems to have had little effect on this pattern. Increases in low work intensity were higher in cities than in other areas in Greece, Sweden, Portugal and Austria. In Germany, the rate in cities did not change but in other areas it declined by 2 percentage points. In the Czech Republic, the exact opposite occurred.

### 3.3 Higher urban risk of poverty in more developed Member States and a higher risk in towns, suburbs and rural areas in less developed Member States

The at-risk-of-poverty rate is a relative measure of poverty. Two aspects are important to take into account:

- (a) Because the poverty threshold is set at the **national** level, someone with a given level of income can be considered at risk of poverty in one country and not at risk in another where income levels are generally lower.
- (b) The at-risk-of-poverty rates are sensitive to changes in overall income. Someone whose income remains constant between two years can find themselves above the at-risk-of-poverty threshold if median income declines or below the threshold if median income increases. The decline in household income which occurred in many countries as a result of the economic recession reduced median income and therefore did not lead to as big an increase in the propor-

<sup>6</sup> For most countries, the figures for 2012 relate to the 2011 calendar year; see previous footnote.

**Figure 2.5 Share of population living in households at-risk-of-poverty by degree of urbanisation, 2008-2012**

tion of people at risk of poverty as might have been expected — indeed, in some countries it led to a fall.

For example, in Latvia, the at-risk-of-poverty rate declined from 26% to 19% between 2008 and 2012<sup>7</sup>, primarily because overall income levels fell. If the poverty threshold had remained at the 2008 level, the at-risk-of-poverty rate would have risen from 26% to 36%<sup>8</sup>.

Of the three indicators, this shows the biggest differences between cities and the rest of the country. In 15 Member States, most of them in the EU-13, at-risk-of-poverty rates were at least 4 percentage points lower in cities than elsewhere (Figure 2.5), indicating that people tend to earn more in cities than in other areas.

In 6 EU-15 Member States, on the other hand, at-risk-of-poverty rates were at least 4 percentage points higher in cities than elsewhere, highlighting the more unequal distribution of income in cities than in other areas.

Between 2008 and 2012, at-risk-of-poverty rates increased in 17 Member States in part due to the crisis. Overall across the EU, rates increased more in cities

(by 1 percentage point on average) than in other areas (0.3 of a percentage point). The difference was particularly wide in Greece, where the rate increased by 6 percentage points in cities and by 1 percentage point in other areas. At-risk-of-poverty rates in cities in Germany increased by 4 percentage points and in Austria by 6 percentage points. In the Netherlands, rates in cities increased by 2 percentage points while in other areas they fell by 4 percentage points. As a result, in 2012, rates in cities were higher than in other areas, while in 2008 they were lower.

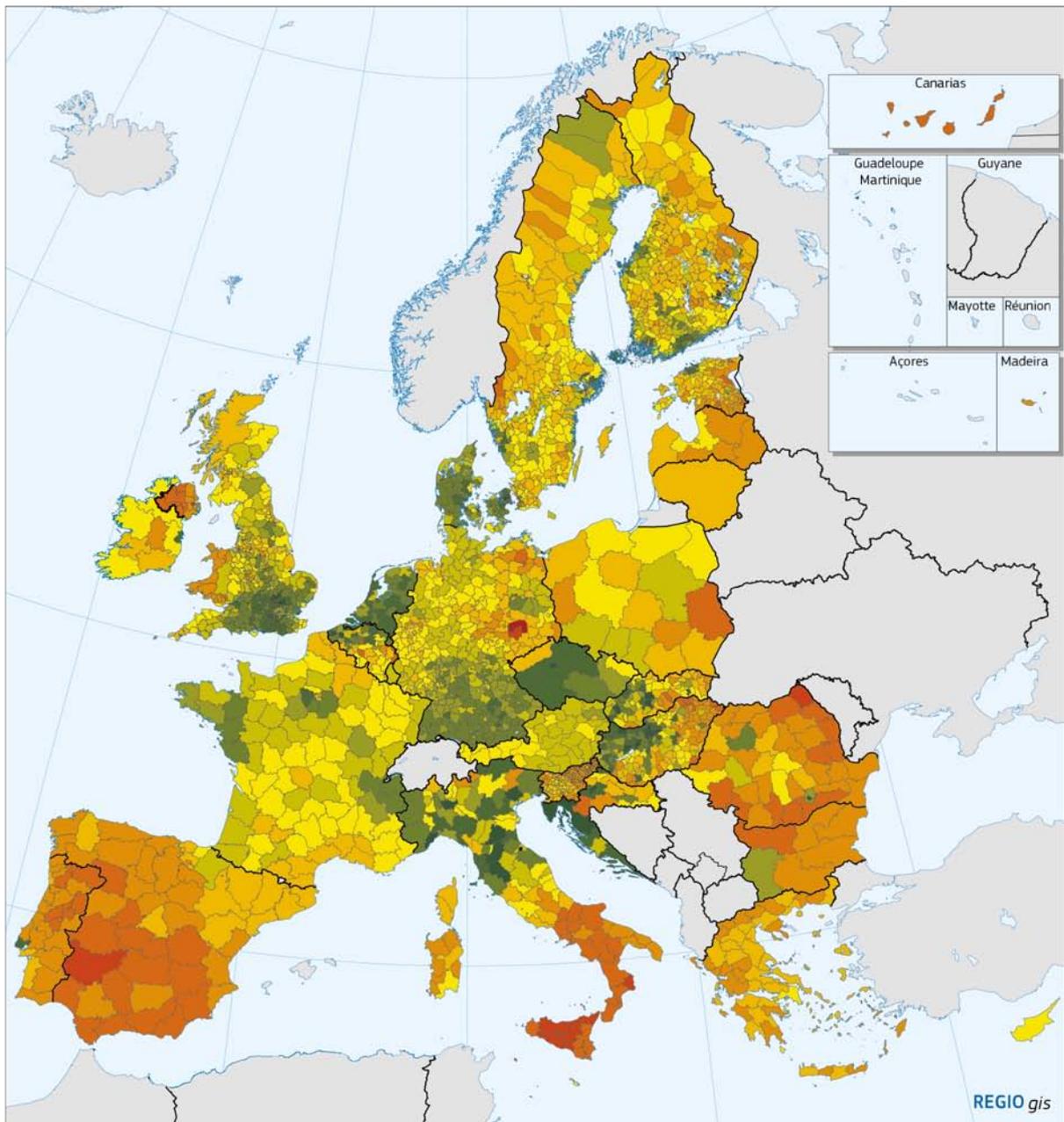
Given the marked territorial dimension of at-risk-of-poverty rates, national level indicators hide important differences. Policies addressing poverty could benefit from a more detailed geographical breakdown of the prevailing situation and of the main determinants. This is why the European Commission has launched an exercise together with ESPON and the World Bank to produce more detailed poverty Maps for each Member State (Map 2.15).

### 3.4 Cities in less developed Member States are close to the 2020 targets, while cities in more developed Member States lag behind

The Europe 2020 strategy aims to reduce the number of people at-risk-of-poverty-or-social-exclusion by 20 million relative to 2010 or to around 19.5%

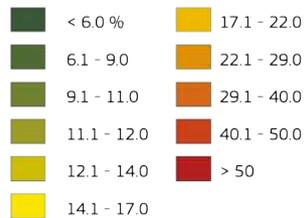
<sup>7</sup> This means between the 2007 and 2011 income years.

<sup>8</sup> This is termed the at-risk-of-poverty rate anchored at a point in time.



Map 2.15 At-risk-of-poverty rates, 2010–2011

% of total population

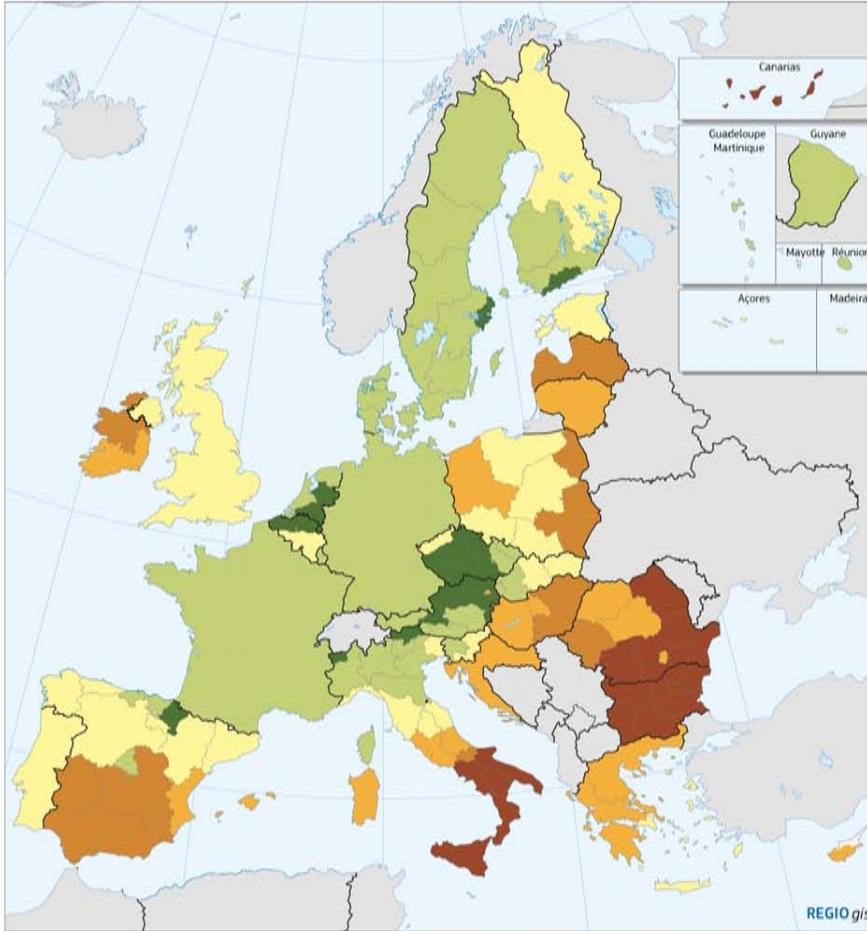


IE: 2009; EL, HU, UK: 2005; HR: 2004; AT: 2001

Sources: Eurostat, NSIs, ESPON, World Bank

0 500 Km

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**Map 2.16 Population at-risk-of-poverty-or-social-exclusion, 2012**

% of total population

- < 15
- 15 - 19.5
- 19.5 - 26
- 26 - 32
- 32 - 38
- > 38

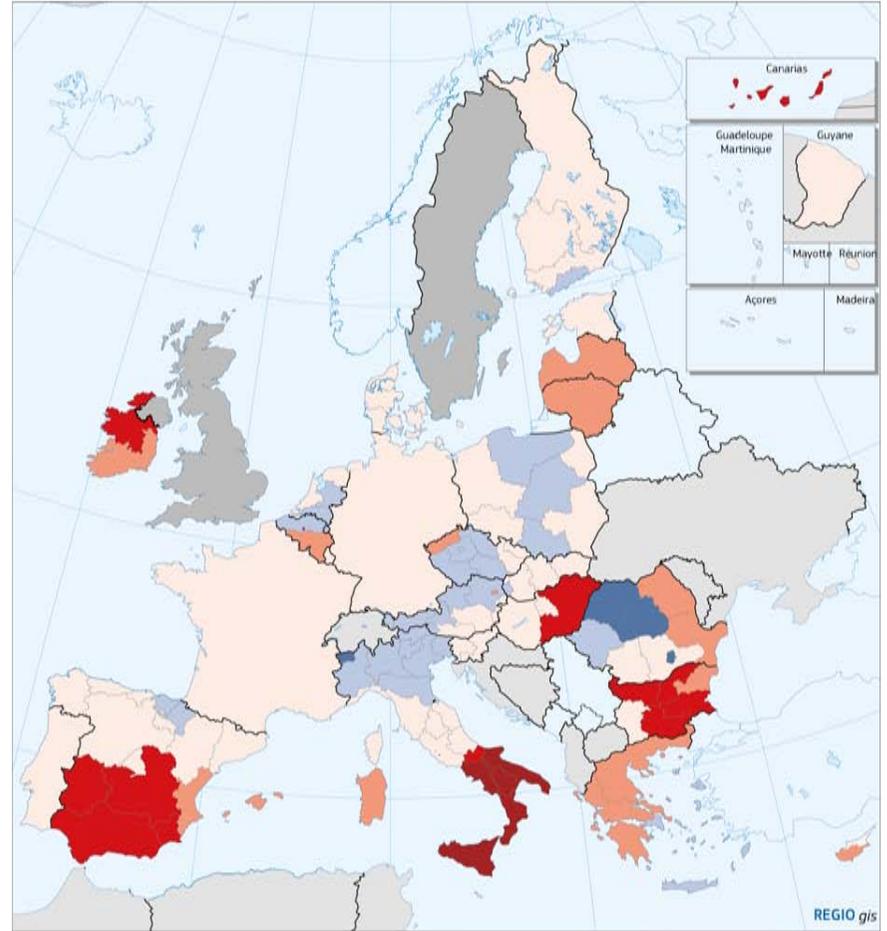
EU-28 = 24.8  
BE: 2009-2011 average; EL: 2010; IE: 2011

The Europe 2020 target is a reduction of the number of people at risk of poverty or exclusion by 20 million persons. This translates into a reduction from 23.7% to 19.5% of the total population.

Source: Eurostat

0 500Km

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**Map 2.17 Population at-risk-of-poverty-or-social-exclusion in 2012 — Distance to national 2020 target**

Percentage point difference

- < -7
- 7 - 0
- 0 - 7
- 7 - 14
- 14 - 21
- > 21
- no national target

EU-27 = 5.3

Blue regions have reached the target.  
Red regions have not reached the target.

Sources: Eurostat, MS NRPs, DG REGIO and DG EMPL calculations

0 500Km

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### Social inclusion and social protection policies

The fact that at-risk-of-poverty and social exclusion target is included in the Europe 2020 strategy is a reflection of the stronger focus on social issues in the Europe 2020 policy framework. National Governments have primary responsibility for implementing social policy reforms with regional and local authorities also playing an important role, especially in providing services. Some Member States had already taken steps to re-structure their social protection systems before the crisis and these have tended to weather the crisis better in both economic and social terms.

The European Platform against poverty and social exclusion was set up to help Member States reach their poverty and social exclusion target, including through more effective use of EU funds.

A Social Investment Package was adopted by the Commission in 2012. It has three strands, the first relating to tackling childhood disadvantage at an early stage by providing accessible and good quality education and measures to improve the economic situation of the families concerned. The second involves investing in skills, even in a climate of fiscal consolidation, by supporting training and affordable care services as well as job search assistance. The third entails simplifying the administration of benefits and making it easier to obtain support.

The European Globalisation Adjustment Fund, established in 2006, provides support to workers made redundant as a result of changes in patterns of world

trade or, more recently, because of the crisis. In the 2014–2020 period, it will also provide support for youth employment at regional level.

The PROGRESS programme (EU Programme for Employment and Social Solidarity) is an EU-wide platform for exchange and learning, aimed at producing evidence on the effectiveness of European employment and social policies as well as encouraging wider involvement, including of social partners and civil society organisations, in policy-making.

PROGRESS Micro-Finance Facility (set up in 2010 in response to the crisis) is intended to increase the availability of microfinance for people who are socially and economically disadvantaged, very small firms and social economy organisations.

In 2014–2020 period, the two parts of PROGRESS and the European Employment Services (EURES) network, form part of the new programme for Employment and Social Innovation (EaSI). This is intended to support Member States in their efforts to design and implement employment and social reforms at all levels through helping to coordinate policy and to identify, and exchange information on, examples of best practice.

The new Fund for European Aid to the most deprived (FEAD) is intended to further social cohesion through non-financial (in-kind) assistance to those experiencing the most deprivation.

of the total population. Already in 2012, most of the regions in Austria, Czech Republic, the Netherlands and the Nordic Member States as well as one or more regions in Spain, Italy, Slovakia, Slovenia and Belgium had reached this target rate (Map 2.16). (For Germany and France, a regional breakdown is not yet available, though their national rates are in both cases below the 2020 target<sup>9</sup>.)

The difference from the national target is typically widest in the less developed regions (Map 2.17). For example, in Italy, Spain, Hungary and Bulgaria, the least developed regions are all more than 14 percentage points away from their national targets, sug-

gesting perhaps that Cohesion Policy in these regions should include significant measures for reducing the number of people at risk of poverty or social exclusion.

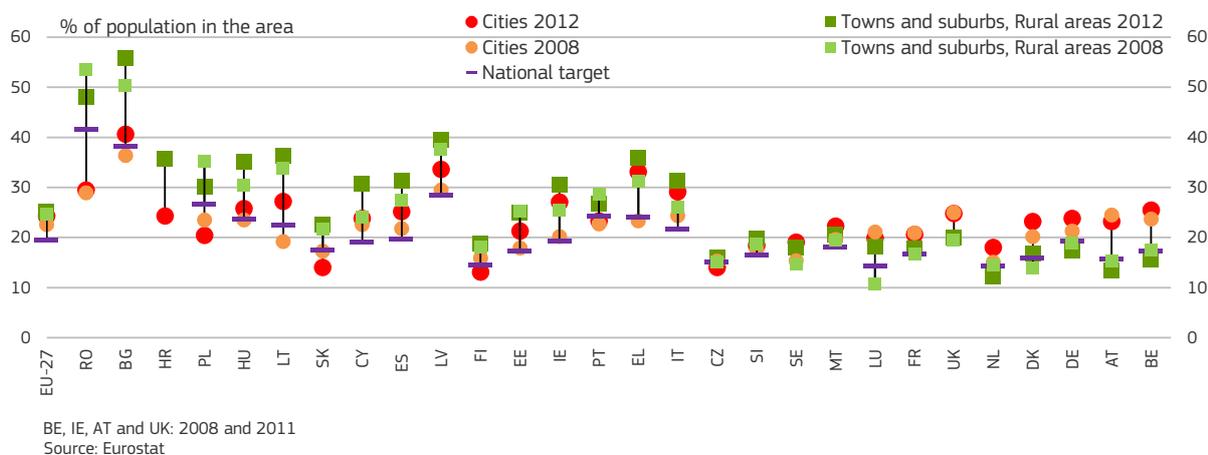
Between 2008 and 2012<sup>10</sup>, the number of people in the EU at risk of poverty or social exclusion increased by 6.5 million to almost a quarter (24.8%) of the population. Those most affected are people of working age because of the significant increase in unemployment and the downward pressure on earnings in a context of persistent job shortages.

In 2012, the rate in cities in 7 Member States was already, on average, below the respective national

<sup>9</sup> For Germany, it should be noted, the national indicator used, differently from other Member States, is long-term unemployment.

<sup>10</sup> Between the 2007 and 2011 income years.

**Figure 2.6 Share of population living in households at-risk-of-poverty or exclusion by degree of urbanisation, 2008–2012 and national 2020 targets**



### Social inclusion and social protection policies

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The new Fund for European Aid to the most deprived (FEAD) is intended to further social cohesion through non-financial (in-kind) assistance to those experiencing the most deprivation.

2020 targets (Figure 2.6). In three Member States, this was the case in ‘non-city’ areas (i.e. towns and suburbs and rural areas). (Note that the UK, Sweden and Croatia have not set national targets.) To formulate policies for reducing rates, it is important to know what type of area those at risk of poverty or exclusion are concentrated in, since, to some extent at least, the measures need to differ because of differences in the underlying factors.

### 3.5 Quality of life in European cities varies

Surveys of people’s perception of the quality of life in European cities which are carried out on a regular basis are intended to give a snapshot of opinions on a range of urban issues. The latest one for 2013<sup>11</sup> measures the satisfaction of those living in 79 cities in the EU. The responses to 7 indicators are examined below for 16 selected cities to illustrate the situation across the EU<sup>12</sup> (Figure 2.7).

Interviewees were asked to judge their satisfaction with the following features of the cities in which they lived: public transport, air quality, safety, quality of city government, job opportunities, the cost and availability of housing and the integration of foreigners. The results are plotted in spider graphs and compared with the median level of satisfaction in the EU.

They reveal wide differences between cities on how the people there view the quality of life as well as indicating the strengths of some cities and the difficulties encountered in others. Some adverse opinions reflect the impact of the crisis on people’s well-being as well as on city finances. This is more evident in cities in countries hit hard by the recession. In Athens, Oviedo and Palermo, the lack of employment opportunities is seen as the major problem. In the big cities in northern Europe — Helsinki, Munich, Hamburg, Paris and London — on the other hand, the majority consider it relatively easy to find a job. At the same time, because jobs are concentrated in these cities which attracts people to live there, this puts pressure

on housing, increases the cost and reduces levels of satisfaction.

Satisfaction with levels of safety, air quality and public transport tends to be related to the perceived efficiency of the city authorities. Cities where there is a relatively high opinion of the latter, such as Aalborg, Munich, Hamburg and Rostock, also show high satisfaction levels with the former, while the reverse is the case in Oviedo, Athens, Palermo, Paris, Madrid and Sofia where dissatisfaction was expressed with both.

### 3.6 Crime rates are higher in urban regions, border regions and tourism destinations

Criminal activity is not evenly distributed across the EU. Highly urbanised areas, tourist destinations and some border regions have considerably higher numbers of registered crimes per head than others, though these figures need to be interpreted with a great deal of caution (Maps 2.18 and 2.19). Many crimes, such as burglaries, are under-reported, while victims may live in a different region from the one where the crime was committed, such as if they were robbed when on a visit or had their car stolen, which can lead to an over-estimate of crime rates in some regions and an under-estimate in others.

Robberies are more frequent in regions with large cities, as, for example, in Belgium in the Brussels region or the regions in which Antwerp, Liege and Charleroi are situated. Burglaries also occur more often in the more urban NUTS 3 regions, such as those where Vienna or Sofia are located, than elsewhere. This is equally the case for regions with many tourists, such as those along the Mediterranean coast of France and Spain or the Algarve in Portugal. The same applies to thefts of motor vehicles, which show high rates as well in some border regions, such as those along the border between Belgium and France or between Germany, Poland and the Czech Republic.

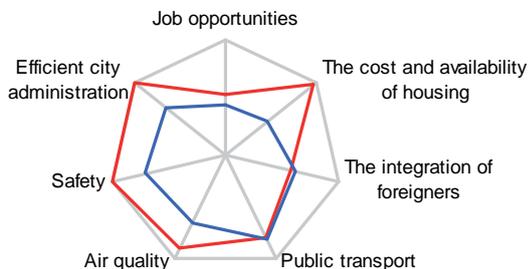
Crime can have a major impact on economic and social development, instilling fear into people and deterring entrepreneurs from starting businesses. It gives rise

11 European Commission (2013), Flash Eurobarometer 366.

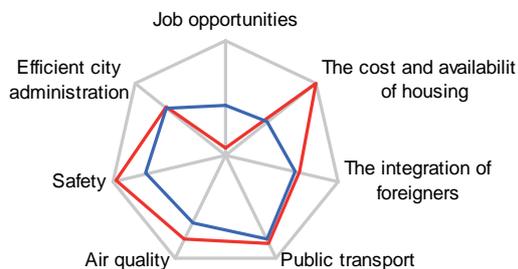
12 Responses like “do not know” have been eliminated during the elaboration of the data.

## 2.7 Level of satisfaction of residents with aspects of quality of life in selected cities, 2012

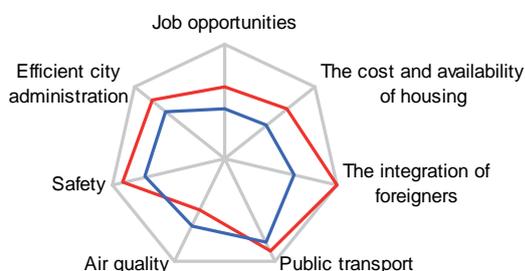
In Aalborg (DK), residents are satisfied with:



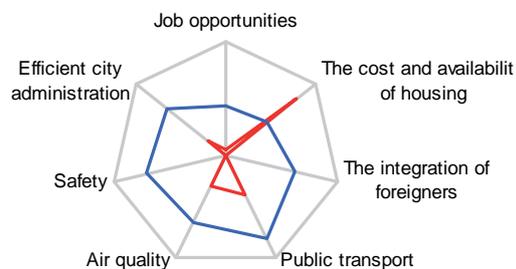
In Oviedo (ES), residents are satisfied with:



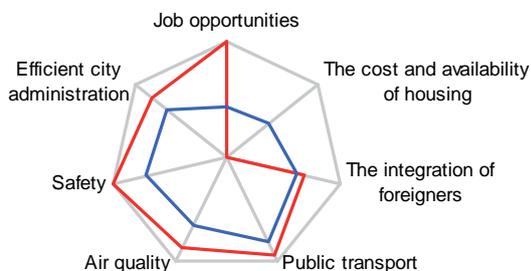
In Cluj-Napoca (RO), residents are satisfied with:



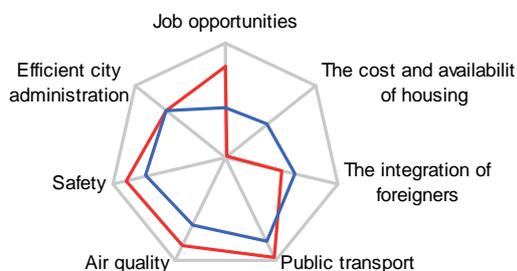
In Athina (GR), residents are satisfied with:



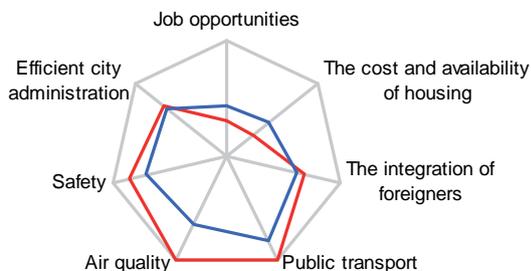
In München (DE), residents are satisfied with:



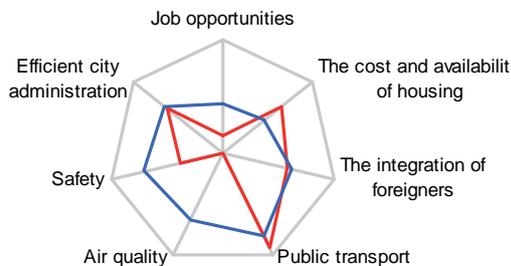
In Hamburg (DE), residents are satisfied with:



In Rostock (DE), residents are satisfied with:

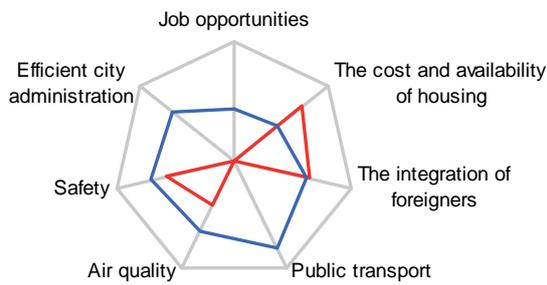


In Ostrava (CZ), residents are satisfied with:

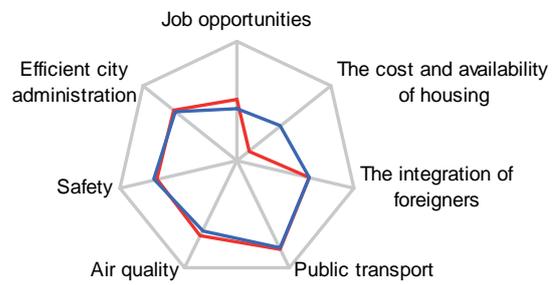


— City  
— EU Median

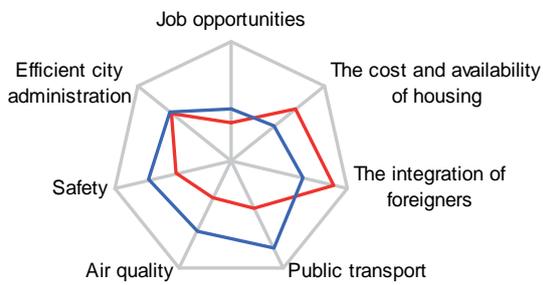
In Palermo (IT), residents are satisfied with:



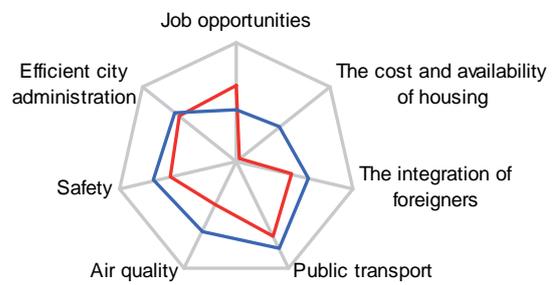
In London (UK), residents are satisfied with:



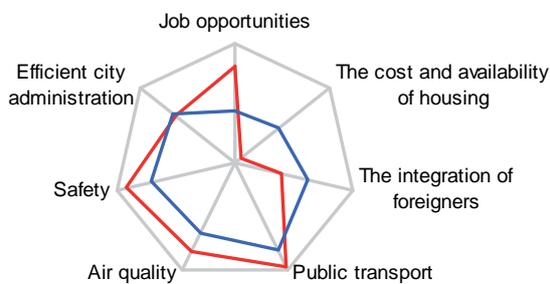
In Budapest (HU), residents are satisfied with:



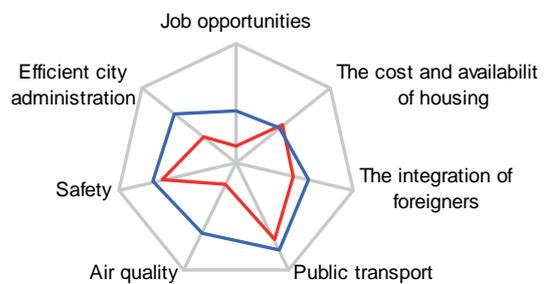
In Paris (FR), residents are satisfied with:



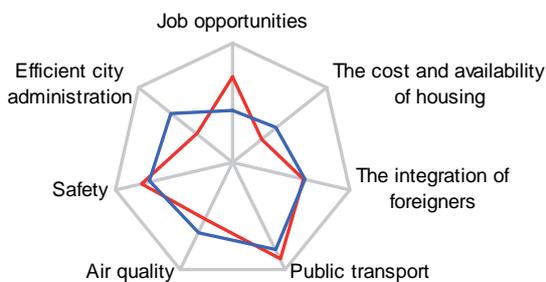
In Helsinki (FI), residents are satisfied with:



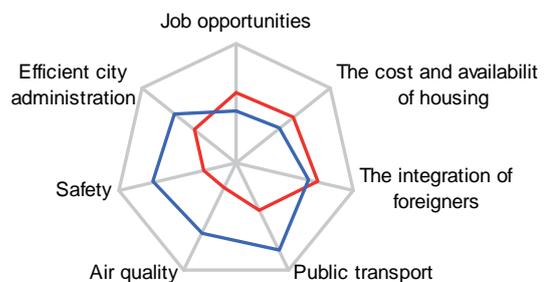
In Madrid (ES), residents are satisfied with:

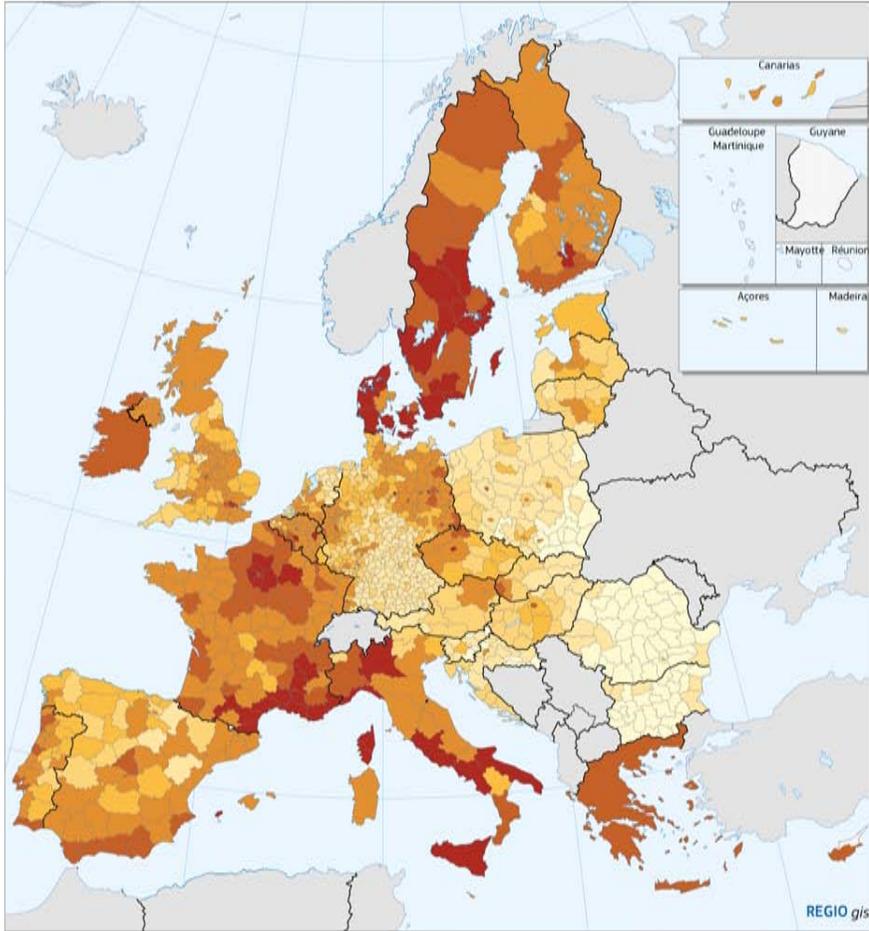


In Warszawa (PL), residents are satisfied with:



In Sofia (BG), residents are satisfied with:





Map 2.18 Recorded thefts of motor vehicles per head of population, 2008–2010

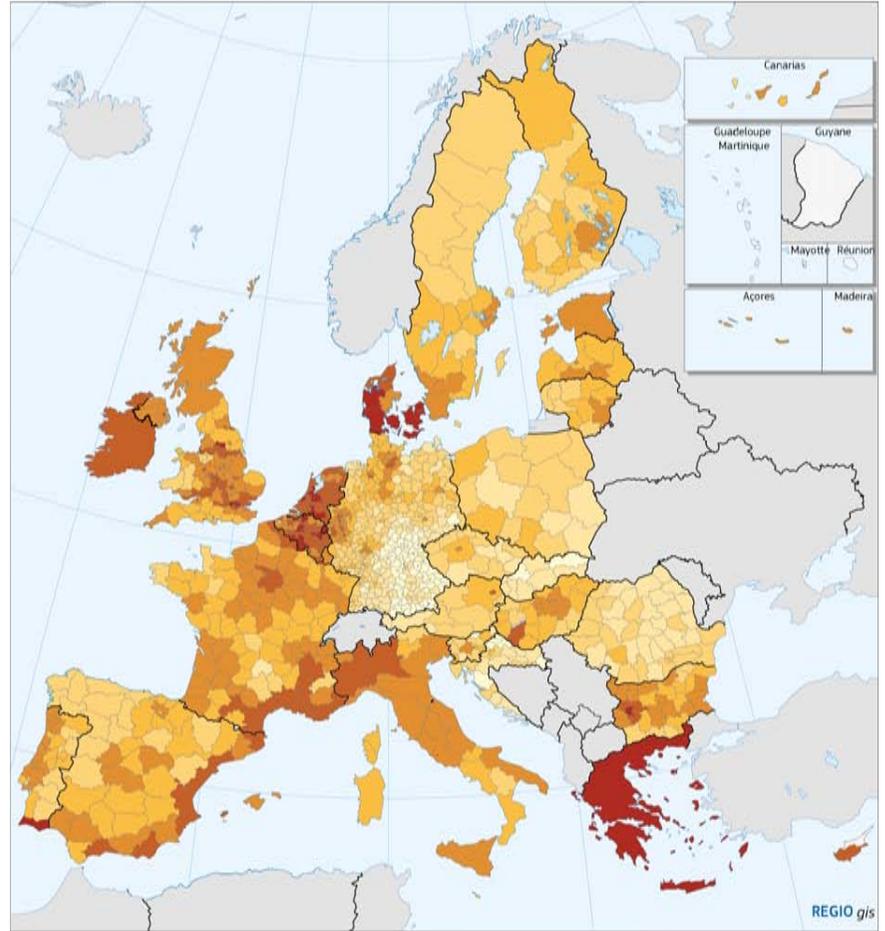
Per 1000 inhabitants

< 0.1	0.9 - 2.3
0.1 - 0.4	2.3 - 3.6
0.4 - 0.6	3.6 - 8.9
0.6 - 0.9	no data

UK: 2011–2012  
Source: Eurostat

0 500 Km

© EuroGeographics Association for the administrative boundaries



Map 2.19 Recorded domestic burglaries per head of population, 2010

Per 1000 inhabitants

< 0.3	2.1 - 3.6
0.3 - 0.6	3.6 - 7
0.6 - 1.2	7 - 14.5
1.2 - 2.1	no data

UK: 2011–2012  
Source: Eurostat

0 500 Km

© EuroGeographics Association for the administrative boundaries

to additional costs which can affect the poorer members of society in particular and discourage potential investors. Development strategies in regions with high crime rates cannot ignore these aspects.

## 4. Movement of people within and between Member States is spurred by disparities in employment, wages and health

### 4.1 The EU is highly urbanised and is still urbanising but only slowly

The change in population in the EU over the long-term gives a broader perspective to more recent tendencies, indicating whether they are part of a long-term trend or represent a break with the past. It also provides a point of comparison, in the sense of showing whether changes are unprecedented in scale or relatively minor as compared with those which have occurred over the previous 50 years. In addition, investment in large-scale infrastructure needs to be planned in the light of the likely population change over coming decades and past trends can help to project this. Rapid population growth gives rise to adjustment costs as a result of the increased need for services and infrastructure — schools, hospitals and so on — which may be difficult to finance if public funds are in short supply. Slower growth on the other hand, enables investment to be planned more easily, when, for example, a school or hospital needs renovating or replacing.

Regions losing population rapidly may need to down-scale their services and infrastructure. One in 20 NUTS 3 regions lost more than 10% of their population between 2001 and 2011, leading in all probability to an oversupply of housing, public services and so on. Several cities in Eastern Germany lost so many people that neighbourhoods were demolished to reduce the city to a more viable size.

Over the 50 years, 1961–2011, population growth in the EU was at its highest in the 1960s when the increase was 8% over the decade. Growth slowed gradually up to the 1990s to an increase of around

2% in the decade but picked up to an increase of some 3.5% between 2001 and 2011. These changes are reflected in the relative number of NUTS 3 regions with population growth of more than 10% a decade. Between 1961 and 1971, one in three grew by more than 10%, in the next decade, and in the 1980s, 1990s and 2000s less than one in 10 (Maps 2.20 and 2.21).

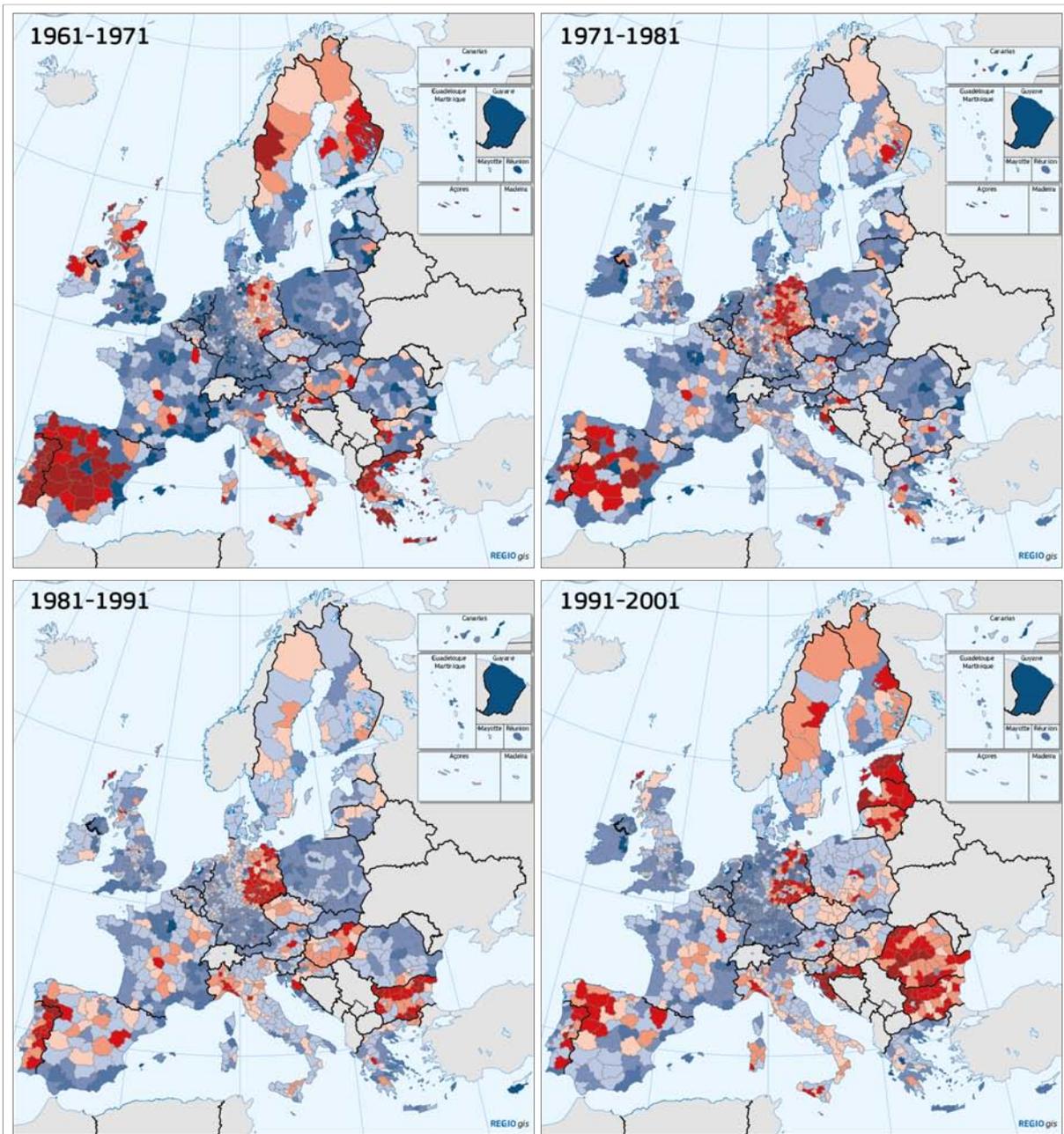
The regions with a population reduction of more than 10% a decade followed a different pattern than might be expected. In the 1960s, this occurred in 5% of regions, located primarily in Portugal, Greece and Spain. In the 1970s, the proportion fell to around 2.5% and in the 1980s and 1990s to 1.5%. In 1989, the Berlin Wall came down and there were regime changes throughout Central and Eastern Europe around the same time, leading to a substantial increase in migration. In the 1990s, just over 4% of regions lost more than 10% of their population and in the 2000s, 7%, the regions concerned being located mainly in the Baltic States, Romania, Bulgaria, Croatia and Eastern Germany.

Growth in the 1960s was mostly concentrated in the urban regions, where there was an increase over the decade of 12%, as against 9% in intermediate regions and 1% in rural regions.

After 1971, differences between growth in the EU-15 and the EU-13 became more marked. Between 1971 and 2011, population in the EU-15 grew by about 4% a decade. Growth in urban and intermediate regions was slightly above average while in rural regions, it was around half the average.

In the EU-13, population growth slowed down after 1981 and became negative after 1991. In all three types of region, population fell during the 1990s and continued to fall in rural regions in the 2000s (by 3%), while it increased in the 2000s in urban regions (by just under 1%) (Table 2.4).

These changes in population growth were accompanied by changes in the degree of urbanisation in the EU. Compared to the rest of the world, the EU, especially the EU-15, was already highly urbanised in 1961. In the 50 years since, the proportion of the



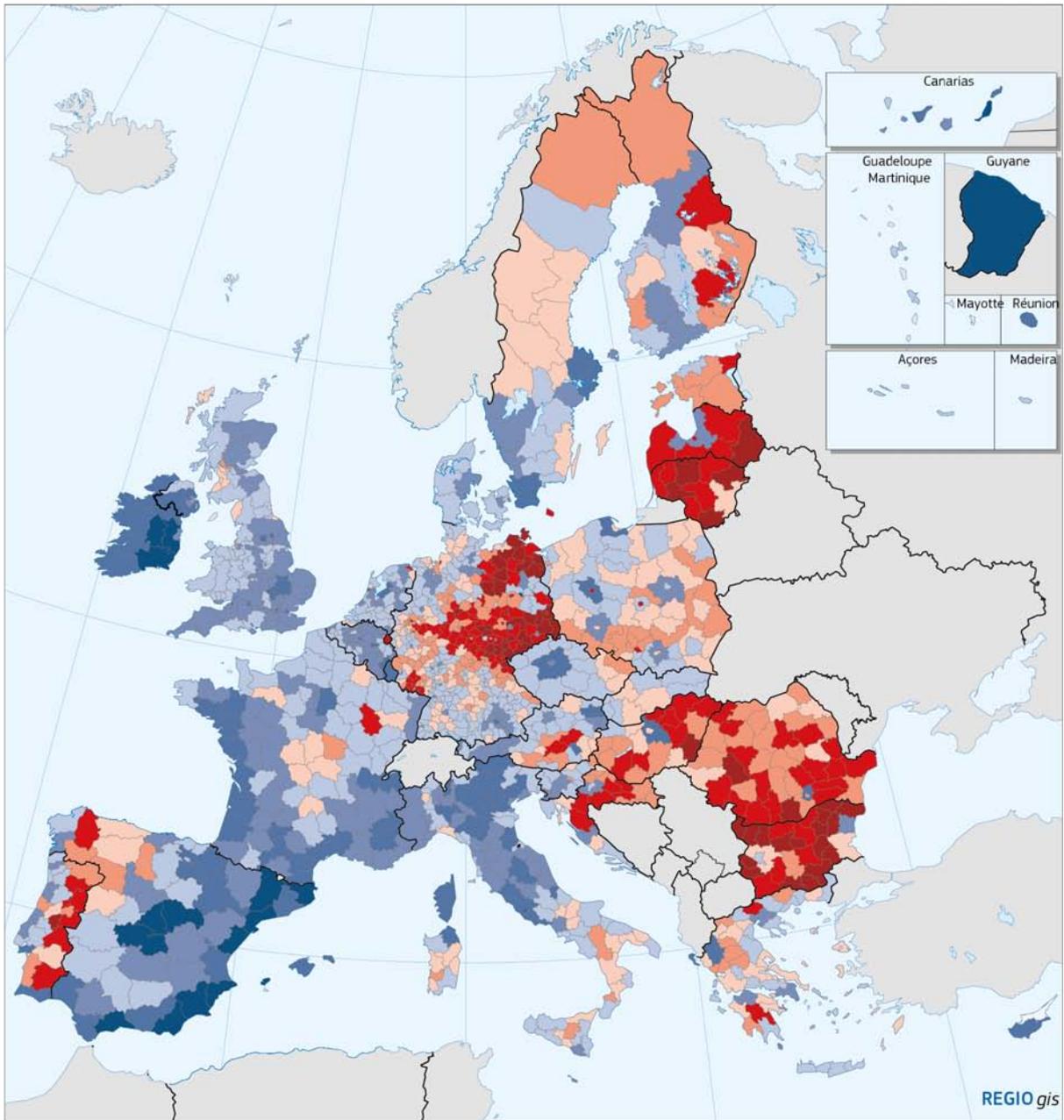
Map 2.20 Change in population, 1961–2001



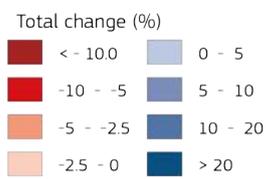
Sources: NSIs, DG REGIO

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Map 2.21 Change in population, 2001–2011



EU-28 = 3.39  
HR: 2002–2011

Source: Eurostat

0 500 Km

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**Table 2.4 Population change by urban-rural typology, 1961–2011**

<i>Population change (%)</i>	<b>Urban rural typology</b>	<b>1961–1971</b>	<b>1971–1981</b>	<b>1981–1991</b>	<b>1991–2001</b>	<b>2001–2011</b>
<b>EU-15</b>	Urban	11.6	4.4	2.9	3.6	6.4
	Intermediate	7.8	4.9	3.6	3.9	4.5
	Rural	-0.3	1.8	1.5	2.4	2.4
	<b>Total</b>	<b>7.8</b>	<b>4.1</b>	<b>2.9</b>	<b>3.5</b>	<b>5.0</b>
<b>EU-13</b>	Urban	14.9	11.0	4.5	-2.4	0.7
	Intermediate	11.2	9.6	3.5	-0.6	-0.3
	Rural	3.6	4.2	2.0	-2.8	-3.2
	<b>Total</b>	<b>8.5</b>	<b>7.6</b>	<b>3.1</b>	<b>-1.9</b>	<b>-1.3</b>
<b>EU-28</b>	Urban	12.0	5.1	3.1	2.9	5.7
	Intermediate	8.6	6.1	3.6	2.8	3.4
	Rural	1.2	2.7	1.7	0.3	0.3
	<b>Total</b>	<b>8.0</b>	<b>4.9</b>	<b>2.9</b>	<b>2.2</b>	<b>3.6</b>

Source: Time series of LAU2 population data, NSI, DG REGIO / Spatial Foresight

**Table 2.5 Population by degree of urbanisation, 1961–2011**

<i>% of total</i>		<b>1961</b>	<b>1971</b>	<b>1981</b>	<b>1991</b>	<b>2001</b>	<b>2011</b>
<b>EU-15</b>	Cities	42.4	43.6	43.4	42.9	42.2	42.3
	Towns and suburbs	27.8	29.5	31.0	31.8	32.5	32.6
	Rural areas	29.8	26.9	25.6	25.3	25.3	25.0
<b>EU-13</b>	Cities	25.4	29.0	32.6	34.2	33.9	33.8
	Towns and suburbs	19.7	21.4	23.1	24.5	25.1	25.7
	Rural areas	55.0	49.6	44.3	41.4	41.0	40.4
<b>EU-28</b>	Cities	38.6	40.3	40.9	40.9	40.4	40.5
	Towns and suburbs	26.0	27.7	29.2	30.1	30.8	31.2
	Rural areas	35.5	32.0	29.9	29.0	28.8	28.3

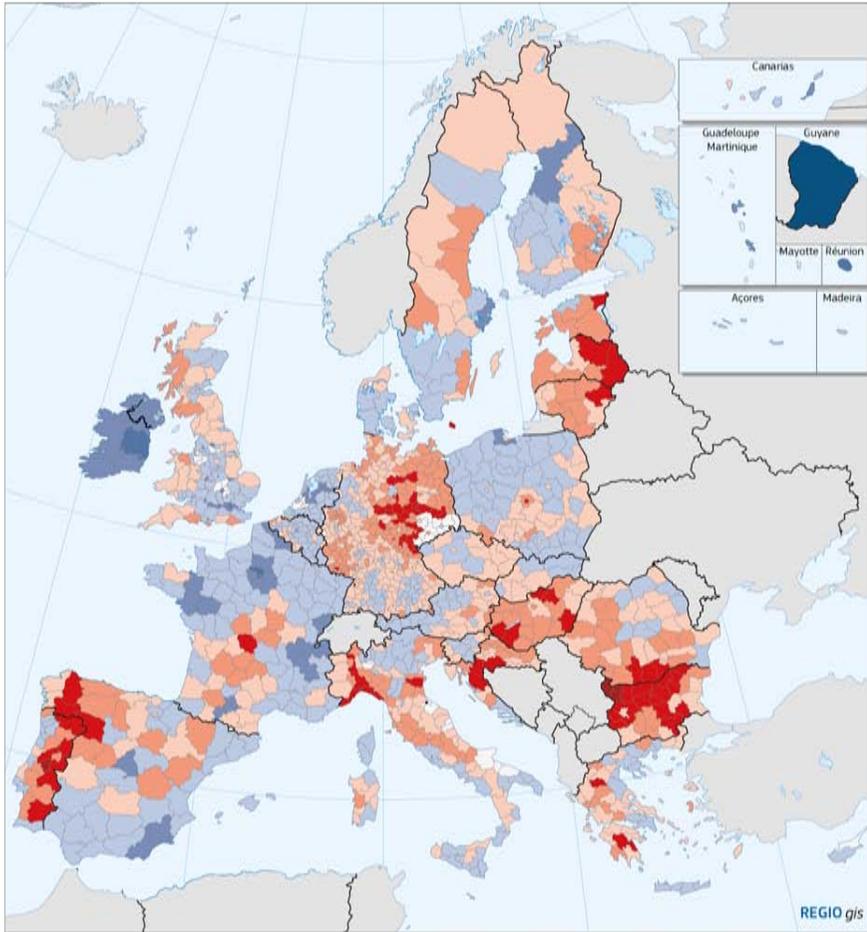
Note: only partial data for Portugal and Slovenia

Source: Time series of LAU2 population data, NSI, DG REGIO / Spatial Foresight

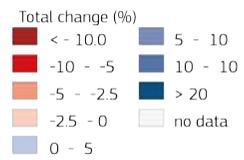
population in the EU-15 living in cities (42%) has not changed (Table 2.5). Between 1961 and 1991, the population living in towns and suburbs increased from 28% to 32% and the proportion in rural areas fell from 30% to 25%. Since 1991, the proportions have remained broadly unchanged. Accordingly, 70% of the population in the EU-15 lived in urban areas (cities, towns and suburbs) in 1961, this rising to 75% in 1991 and remaining at this level up to 2011.

In the EU-13, the degree of urbanisation is less. In 2011, 60% of the population lived in urban areas, though this was significantly more than 50 years

earlier (45%). As in the EU-15, almost all the increase occurred between 1961 and 1991, though in contrast to the EU-15, the increase occurred in both cities (from 25% to 34%) and towns and suburbs (from 20% to 25%). Between 1991 and 2011, the proportions changed relatively little, with only a small increase in towns and suburbs.



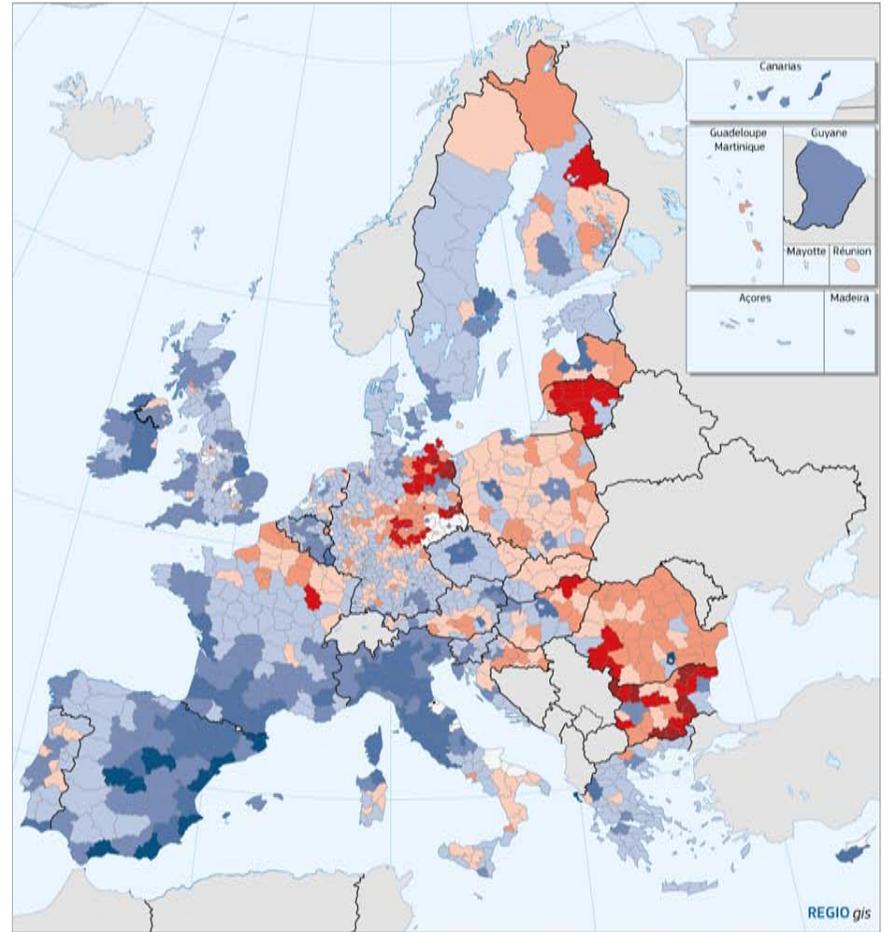
Map 2.22 Natural population growth, 2001–2011



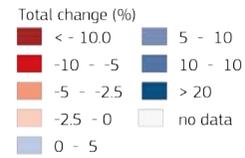
EU-28 = 0.75  
 HR: 2002–2011  
 Source: Eurostat



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Map 2.23 Net migration into NUTS 3 regions, 2001–2011



EU-28 = 2.64  
 HR: 2002–2011  
 Source: Eurostat



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**Table 2.6 Population change, natural change and net migration by urban-rural typology, 2001–2011**

<i>Total change (%)</i>		Predominantly urban	Intermediate	Predominantly rural	Total
<b>EU-13</b>	Total population change	0.6	-1.1	-3.9	-1.9
	Natural population change	-1.2	-0.7	-1.8	-1.3
	Net migration	1.8	-0.4	-2.2	-0.6
<b>EU-15</b>	Total population change	6.8	4.7	3.1	5.4
	Natural population change	2.6	0.5	-0.6	1.3
	Net migration	4.1	4.2	3.7	4.1
<b>EU-28</b>	Total population change	6.1	3.3	0.4	3.8
	Natural population change	2.2	0.2	-1.0	0.7
	Net migration	3.8	3.1	1.5	3.0

Source: Eurostat

**Table 2.7 Population age structure by urban-rural typology, 2012**

<i>% of total</i>		Predominantly Urban	Intermediate	Predominantly Rural	Total
<b>EU-13</b>	population aged 14 or less	14.0	15.0	15.2	14.9
	population aged 65 or more	15.6	14.8	15.7	15.3
<b>EU-15</b>	population aged 14 or less	16.2	15.4	15.4	15.8
	population aged 65 or more	17.2	19.3	20.4	18.5
<b>EU-28</b>	population aged 14 or less	16.0	15.3	15.3	15.6
	population aged 65 or more	17.0	18.2	18.6	17.8

MT data are 2010; DE8, ES63 and ES7 regions are 2011  
Source: EUROSTAT, DG REGIO

## 4.2 Net migration is the main source of population growth in the 2000s

Total population growth between 2001 and 2011 was modest at 3.8% in the EU-28. The contribution of natural growth (births less deaths) was small (only 0.4%), most of the increase coming from net inward migration from outside the EU (Maps 2.22 and 2.23).

Whereas migration (inside as well as from outside the EU) increased population in all types of region in the EU-15, it did so in urban regions in the EU-13 and since the natural change was negative in all three types of region, growth occurred only in urban regions (Table 2.6).

In the EU-15, the natural change in population was negative in rural regions but positive in intermediate and, most especially, urban ones, which is the main reason why population in urban regions grew twice as fast as in rural regions.

Children (those under 15) make up a smaller share of population in the EU-13 than the EU-15 and are more concentrated in rural regions in the former and urban regions in the latter (Table 2.7). The proportion of older people (those of 65 and over) is significantly higher in the EU-15 than the EU-13. In the EU-15, they are considerably more concentrated in rural regions than in the EU-13 where they are spread evenly between the three types of region.

**Table 2.8 Population change, natural change and net migration in terrestrial border regions, 2001–2011**

Total change (%)		Terrestrial Border regions	Other	Total
<b>EU-13</b>	Total population change	-3.10	-0.99	-1.89
	Natural population change	-1.66	-1.00	-1.26
	Net migration	-1.46	0.01	-0.64
<b>EU-15</b>	Total population change	4.05	5.56	5.41
	Natural population change	0.74	1.49	1.30
	Net migration	3.29	4.01	4.06
<b>EU-28</b>	Total population change	0.91	4.54	3.78
	Natural population change	-0.30	1.11	0.74
	Net migration	1.22	3.40	3.02

Source: Eurostat, DG o

### Population in the EU-13 border regions shrank over the last decade

Between 2001 and 2011, population in the ‘terrestrial’ border regions<sup>13</sup> in the EU-13 shrank by more than the other EU-13 regions (by 3% as against 1% — Table 2.8 and Map 2.24). This was primarily due to net outward migration which reduced the population by 1.5% over the period, while in the rest of the EU-13 outward migration was matched by inward. There was a natural reduction in population in both areas, but more so in the terrestrial border regions.

In the EU-15, by contrast, population increased significantly between 2001 and 2011 (by 5%) as a result of both natural growth and, more especially, net inward migration. Growth of population in the terrestrial border regions (at 4%) was only slightly less than in the rest of the EU-15 due to both a natural increase and net inward migration.

On average, terrestrial border regions in the EU-13, therefore, seem less attractive places to move to and/or to start a family in than other parts of the EU-13 or EU-15.

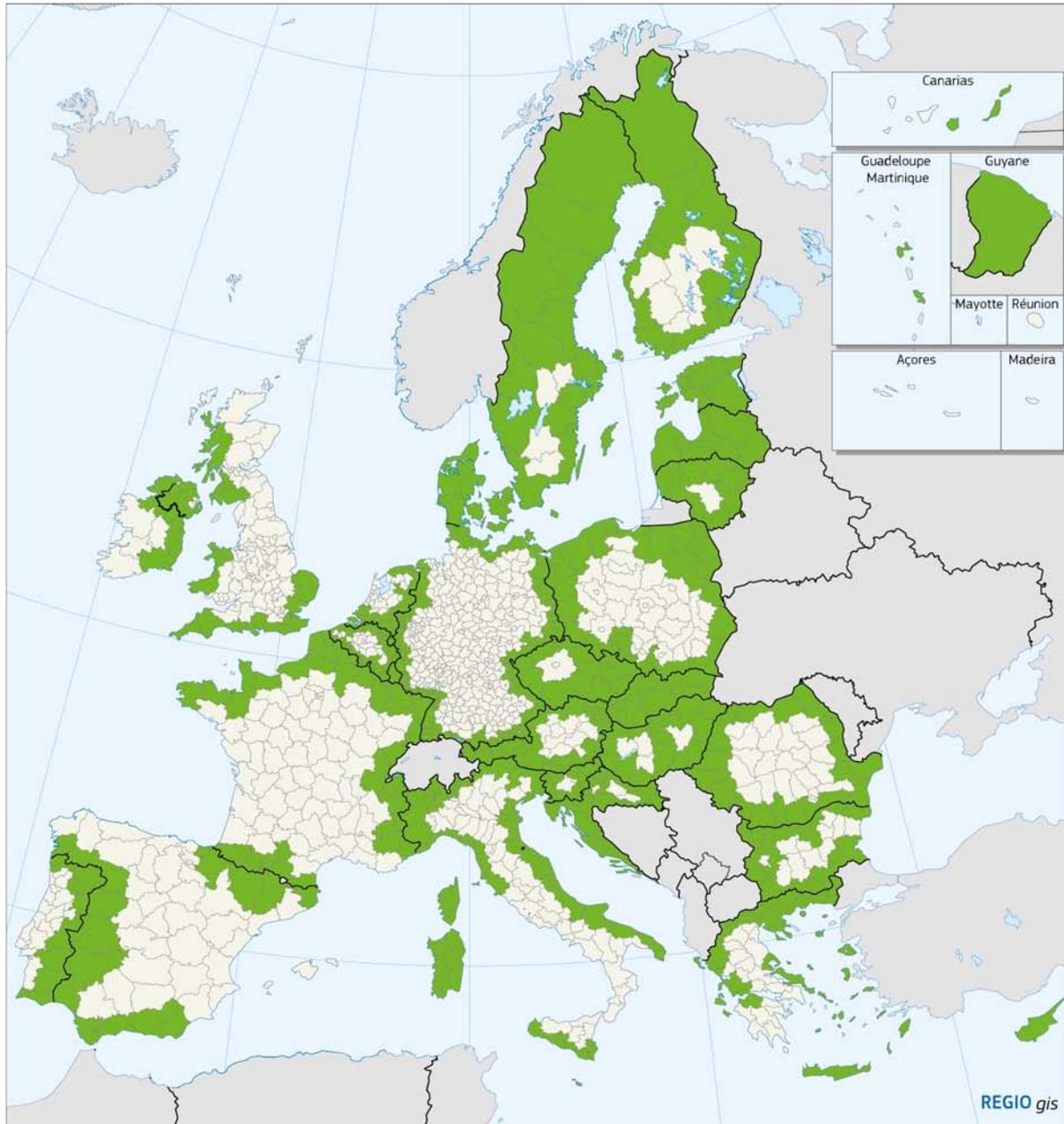
<sup>13</sup> ‘Terrestrial’ border regions, are NUTS 3 regions which are eligible for Cross-border Co-operation programmes under the ERDF Regulation, excluding those which have only a maritime border (see Dijkstra, L. and Poelman, H., [http://epp.eurostat.ec.europa.eu/statistics\\_explained/index.php/Regional\\_typologies\\_overview](http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Regional_typologies_overview)).

### 4.3 More foreign-born workers have joined the labour market with varying success

As noted above, migration is the main source of population growth in the EU, with the proportion of population born outside the EU increasing from 2.9% to 4.1% between 2001 and 2012 (Figure 2.8). The increase was particularly large in Spain (5 percentage points) and Italy (3.4 percentage points), in both cases many of the migrants coming from North Africa and Latin America.

Although mobility within the EU does not, of course, increase population in the EU as a whole, it increases it in some Member States. The proportion of people born in a different EU country than where they live increased between 2001 and 2012 from 1.4% to 2.7% (Figure 2.9). This is similar to the increase in migrants from outside the EU, though it still leaves the total proportion of EU-residents born in a different Member State smaller (2.7% as against 4.1%).

The impact of mobility between EU Member States is, however, very uneven. The share of residents born in another Member State remained stable or increased in all Member States between 2001 and 2012. In 6 Member States, however, the share remains very low with less than 0.3% of residents born in another EU Member State. In Italy and Spain, the proportion in-



Map 2.24 Cross-border cooperation regions, 2014–2020

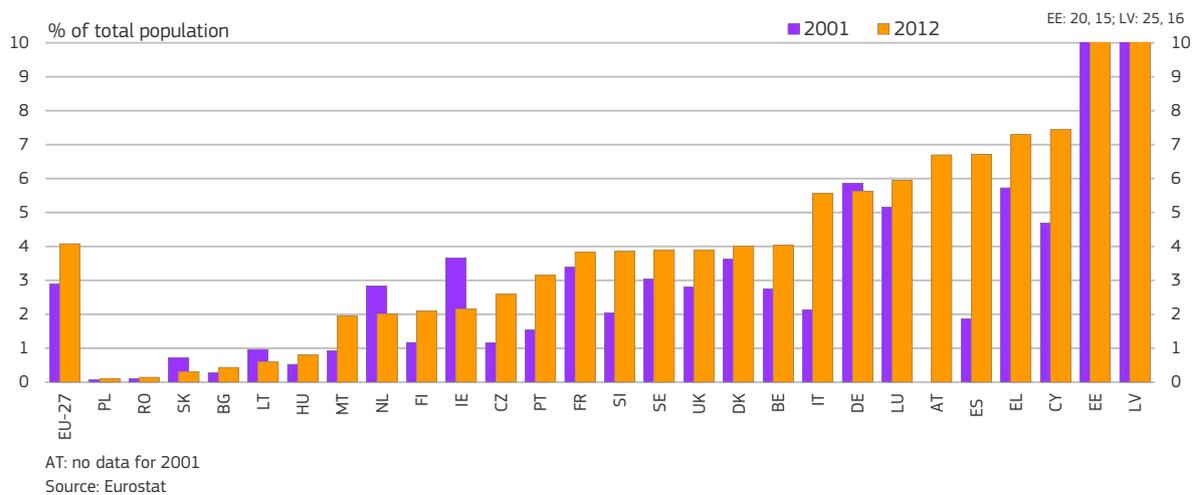
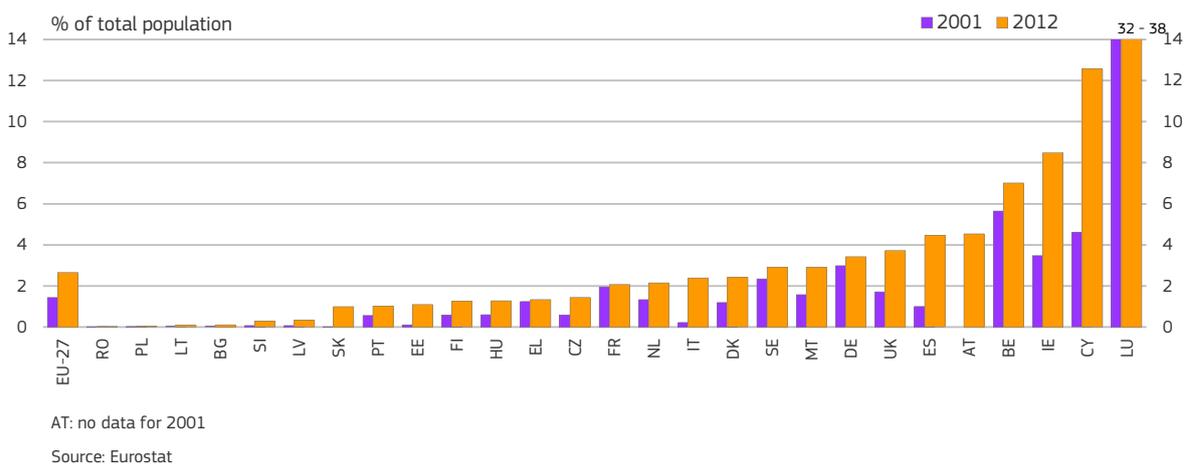
- NUTS 3 regions
- NUTS 3 border regions
- Other NUTS 3 regions

Regions eligible for cross-border cooperation funding.

Source: ERDF regulations.



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**Figure 2.8 Population born outside the EU-27, 2001 and 2012****Figure 2.9 Population born in a different EU-27 country, 2001 and 2012**

creased dramatically over the period from just 0.2% to 2.2% in the first and from 1% to 4.5% in the second, most of the increase being accounted for by people moving from Romania. In Ireland, UK, Cyprus and Denmark, the proportion doubled, in the first two, in particular, most of the increase coming from movements from Poland, the Baltic States and the other countries which entered the EU in 2004.

In 2013, the employment rate of people aged 15–64 born in the country in which they live (64.5%) was slightly lower than that of those born in a different EU Member State (66.4%), but much higher than for those born outside the EU (56%). In every EU-15

Member State, the employment rate of those born outside the EU was lower than for those from elsewhere in the EU.

In half the Member States, the employment rate of people born in another part of the EU is higher than that of the people born in the country. In the UK, Portugal, Luxembourg and Finland, it was 5 or more percentage points higher in 2013 (Figure 2.10). The differences in employment rates are in part due to differences in age composition and in some cases education level. They do, however, suggest that some of the concern about the impact of EU mobility on social expenditure is misplaced (i.e. people tend to

move to another country in order to work rather than to take advantage of social transfers).

The difference in the employment rate between people born outside the EU — i.e. migrants — and those born in the country is much bigger. In most Member States, the rate for those born outside the EU was significantly lower than for the latter in 2013, especially in Belgium, Germany, the Netherlands and Sweden, where the difference amounted to around 18 percentage points. The reasons for this are not easy to identify, but they are likely to include lack of recognition of foreign qualifications (rather than low education levels as such) and insufficient knowledge of the local language, though also in some cases discrimination. Education and training can help to reduce the gap along with employment growth. Public services could also lead by example by ensuring that they include a proportionate number of migrants among their staff.

#### 4.4 Life expectancy is high, but regional disparities persist

Life expectancy in the EU, which is a reflection of well-being, is among the highest in the world. Of the 50 countries in the world with the highest life expectancy in 2012, 21 were EU Member States, 18 of which had a higher life expectancy than the US. In the US, Hawaii and Minnesota are the only States with a

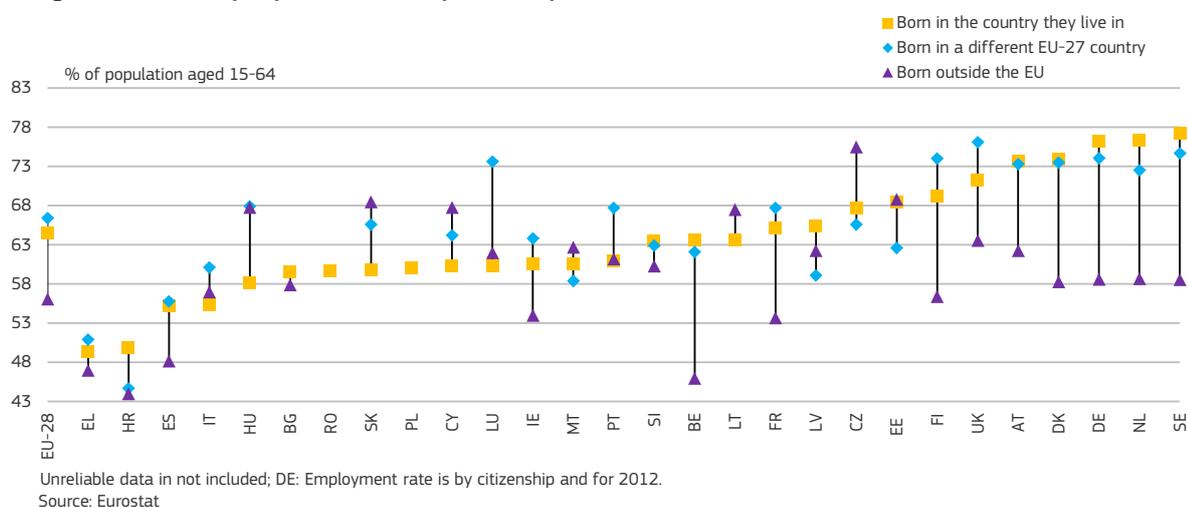
life expectancy above the EU average. In many of the southern US States, it is similar to that in Poland or Hungary (Maps 2.25 and 2.26).

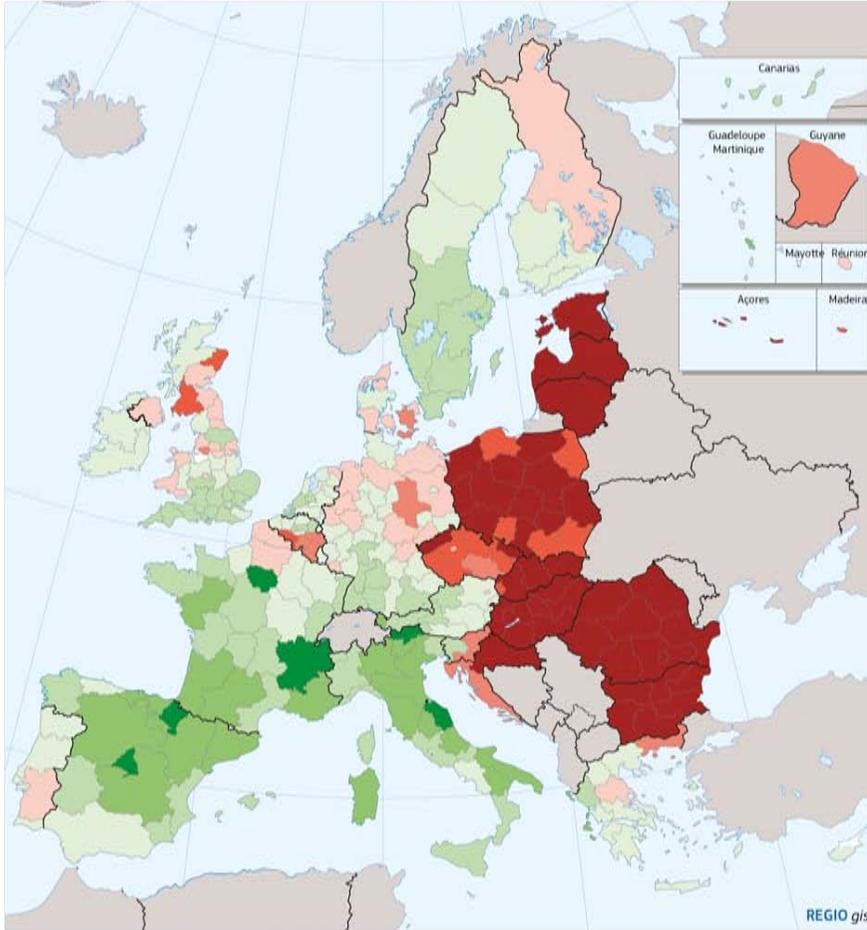
Differences between regions in the EU are marked. Life expectancy at birth is less than 74 in many parts of Bulgaria as well as in Latvia and Lithuania, while overall across the EU it is over 80 years in two out of every three regions. In 17 regions in Spain, France and Italy, it is 83 years or more.

Differences in infant mortality (Map 2.27) and road fatalities (Map 2.28) are two major reasons for regional disparities in life expectancy at birth. In 2012, in Sud-Est in Romania and Yugoiztochen and Severozapaden in Bulgaria and Guadeloupe, infant mortality was over 10 deaths per 1000 live births, while in 13 regions elsewhere in the EU, it was less than 2. The EU average in 2012 was 4.

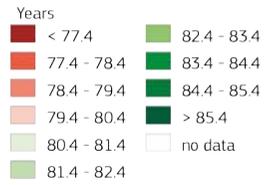
In 39 regions, the number of road fatalities per head was less than 30 per million inhabitants in 2012 compared to an EU average of 56. These regions were primarily located in the UK, the Netherlands and Sweden and included 11 capital city regions and several other highly urbanised regions. In part, the large number of capital city regions in the list is because vehicles cannot drive quickly there and at low speeds they are far less likely to cause a fatal accident.

**Figure 2.10 Employment rate by country of birth, 2013**





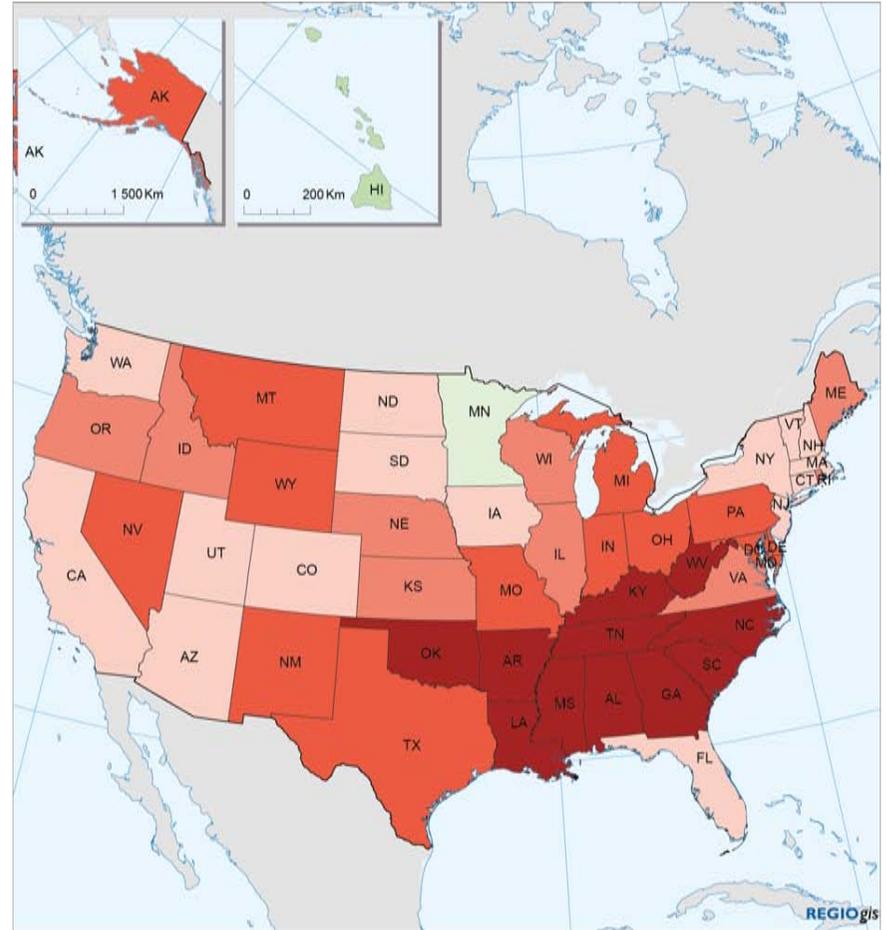
Map 2.25 Life expectancy in the EU, 2011



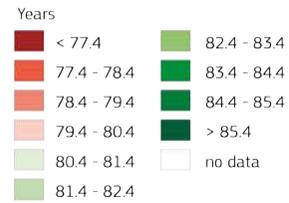
EU-28 = 80.3  
 BE, IT, UK: 2010  
 Source: Eurostat



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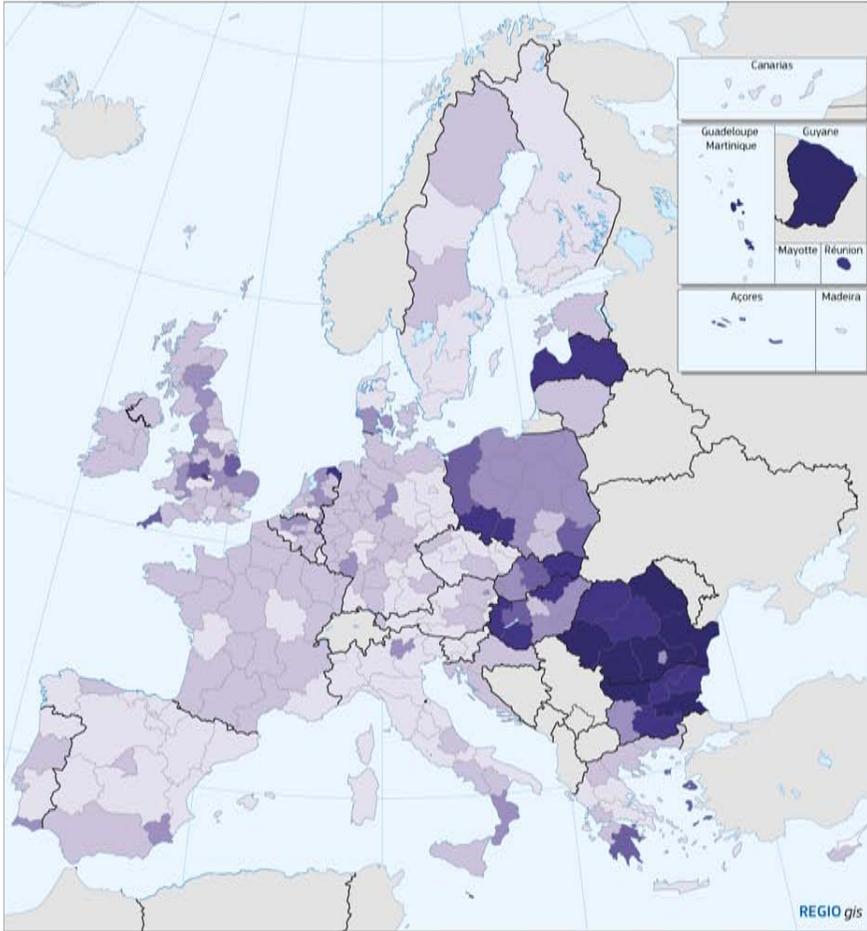


Map 2.26 Life expectancy in the US, 2010



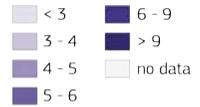
US average: 78.6  
 Source: Measure of America





Map 2.27 Infant mortality rate, 2012

Deaths under 1 year of age / 1000 live births

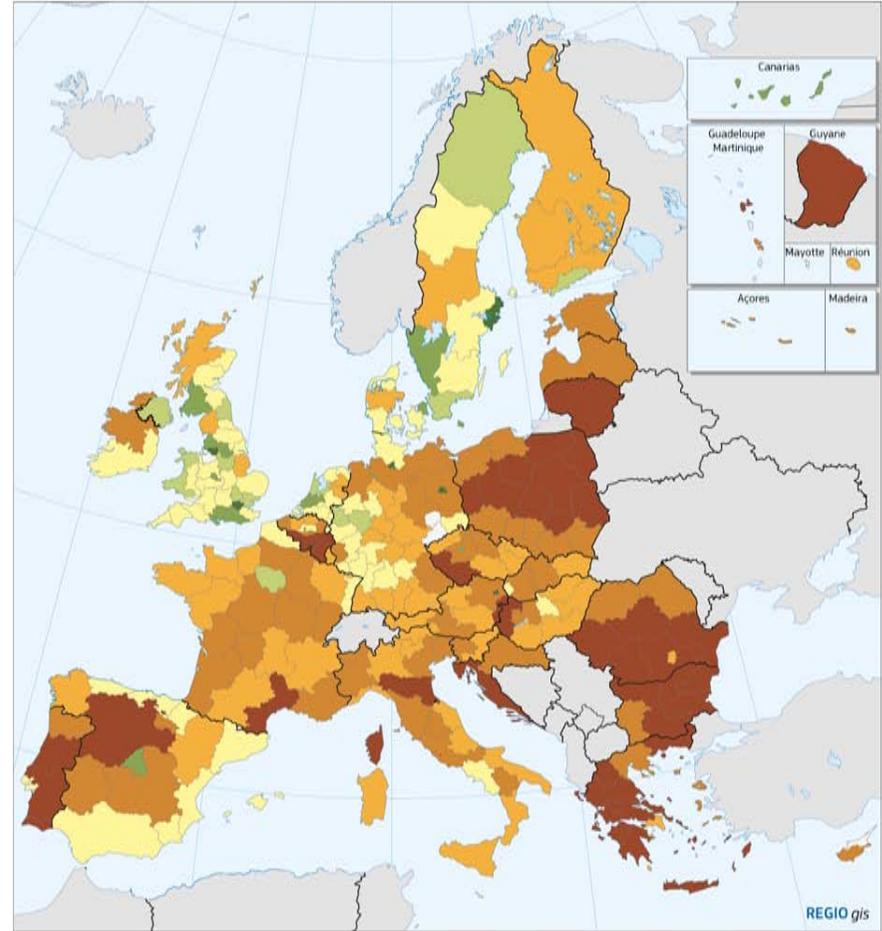


EU-27 = 3.9  
EU-27, IE: 2011

Source: Eurostat



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Map 2.28 Road fatalities, 2012

Deaths per millions inhabitants



The EU target for 2020 is a reduction of 50% relative to 2010: 30 road fatalities per million inhabitants.  
Note: reference year is 2012 or most recent.

Sources: DG MOVE, Eurostat



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### EU Health Strategy

Considerable disparities between regions in health exist across the EU. The health of people in less developed regions tends to be significantly worse than in others, though there are also pockets of poor health in more developed regions. A Treaty objective is to reduce such disparities.

Over the past decade, infant mortality has declined in many of the less developed regions, leading to a reduction in regional inequalities in this respect across the EU (the Gini coefficient falling by 13% between 2000 and 2010), though inequalities remain wide.

The Commission Communication (EC 2009<sup>1</sup>) on health inequalities highlighted the fact that people with lower education, a lower level of occupation or lower income tend to die younger and are more likely to have health problems<sup>2</sup>.

A number of barriers still exist to accessing health services, specifically, the cost, distance, waiting time, a lack of cultural sensitivities and discrimination. Distance is a particular issue in some sparsely-populated, mountainous or remote regions as well as on islands. The need for patients to pay for health services at the time of provision can also limit access, especially for people who are socially or economically disadvantaged.

The EU Health Strategy proposes 'smart' investment in health through:

- spending more effectively, but not necessarily in larger amounts, on sustainable health services;
- promoting a healthy life-style;
- extending the coverage of health services as a way of reducing inequalities and social exclusion.

In addition, as a result of the cross-border health-care Directive, it has become easier to obtain healthcare throughout the EU, especially in border regions.

1 COM(2009) 0567 final.

2 Mackenbach J. (2006).

In 23 regions, the number of road fatalities per head was over double the EU average: 138 or more per million inhabitants in 2012. These regions were mainly in Belgium, Bulgaria, Greece, Portugal and Romania. The European Road Safety Action Programme, 2011–

2020 has a target of halving road deaths in the EU over this period, which means a reduction to around 30 fatalities per million (the rate is below this at present in only 39 of the 272 NUTS 2 regions as noted above). The programme calls for safer roads, education and training for road users, better enforcement, vehicle safety measures, smart technology and better protection of road users at particular risk.

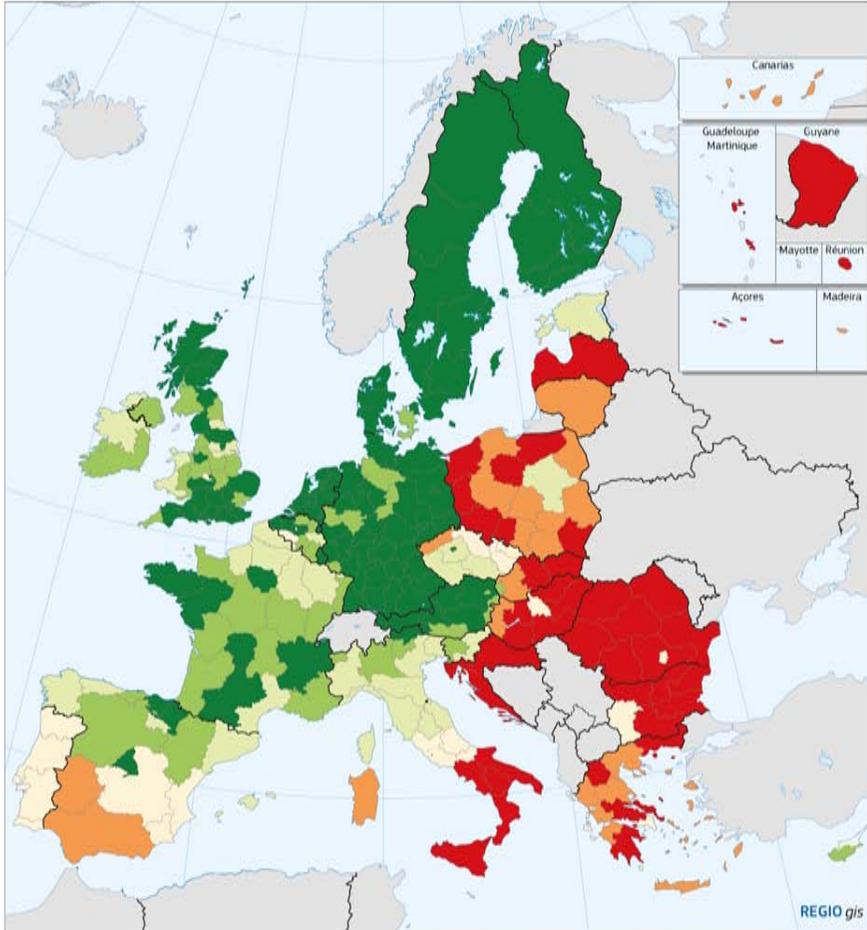
High life expectancy combined with a low fertility rate is the reason why the proportion of population aged 65 and over is growing in the EU. In 2012, the proportion was 18% as against 16% in 2000. In many regions the proportion was much larger. In almost a third of regions, primarily located in Germany, Italy and Greece, it was 20% or more. In Liguria in Italy and Chemnitz in Germany, it was over 25%. Between 2000 and 2012, the proportion increased in 9 out of every 10 regions, the largest rise occurring in Brandenburg close to Berlin (from 15% to 22%).

### 4.5 Human development is improving in Central and Eastern Member States, but the crisis reduced it in Spain, Greece and Ireland

Given such a wide variety of indicators, it is difficult to fully assess the social issues in a region. To distil a simple, yet comprehensive picture a composite indicator, such as the EU Human Development Index (EU HDI)<sup>14</sup>, can help to show the situation in regions at present and how it has changed since 2008.

The index is based on six indicators which capture health, education and income/employment. The two health indicators are life expectancy adjusted for health satisfaction and infant mortality. The two education indicators are the share of people aged 18–24 not in employment, education or training (NEETs) and the share of population aged 25–64 with a tertiary education degree. The two income/activity indicators are gross adjusted disposable household income per head in PPS terms ('adjusted' in the sense of including social transfers in kind such as government-pro-

14 Developed by the Joint Research Centre and the DG for Regional and Urban Policy. See Hardeman S. and Dijkstra L. (2014).



Map 2.29 EU Human Development Index, 2012

0 = low level of human development, 100 = high level of human development

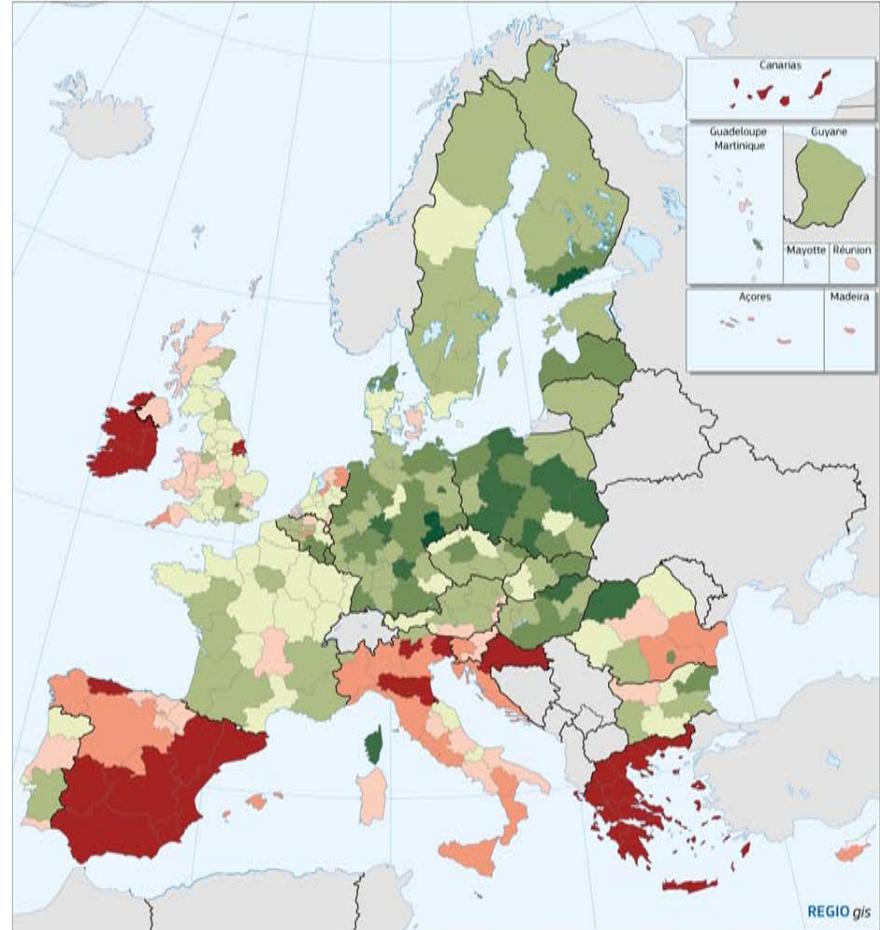
- < 40
- 40 - 45
- 45 - 50
- 50 - 55
- 55 - 60
- >= 60

EU-28 = 54

Source: Hardeman, S. and Dijkstra, L. (2014)

0 500km

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Map 2.30 Change in EU Human Development Index, 2008–2012

Change in index

- < -4
- -4 - -2
- -2 - 0
- 0 - 2
- 2 - 4
- 4 - 6
- 6 - 8
- > 8

EU-28 = 0.01

Source: Hardeman, S. and Dijkstra, L. (2014)

0 500km

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vided education and healthcare services or childcare) and the employment rate of population aged 20–64.

In 2012, human development was considerably lower than average in most central and eastern regions, Southern Italy and Greece (Map 2.29). A number of central and eastern regions, however, score well, with the index in Estonia and the capital city regions of Poland, Czech Republic, Slovakia, Hungary, Romania and Bulgaria being close to or above the EU average.

In Austria, Germany, the Netherlands and the Nordic Member States, the index was high, indicating a good balance between health, education and income. In the UK, France and Belgium, the situation varies, with some regions scoring highly and others below average, while in Spain and Italy, the divide is more marked, especially between the north and south in the latter.

The changes between 2008 and 2012 are striking, with a pronounced deterioration in the index in Greece, Ireland, Spain and Croatia and parts of Italy and to a lesser extent in some regions in the Netherlands, the UK and Denmark (Map 2.30).

In contrast, the index increased considerably in all German and Polish regions, which were less affected by the crisis. At the same time, many regions in countries which were affected by the crisis nevertheless showed an increase in the index, including in the three Baltic States, Finland, Sweden, Slovakia, Hungary and Czech Republic as well most regions in Romania and Bulgaria.

The EU HDI provides an alternative view of development showing the progress made in the capital regions in the Central and Eastern Member States and highlighting the continuing problems in Greece and Southern Italy. As an indicator, it comes closer than GDP to the issues that concern people: health, education, income and employment opportunities.

## 5. Conclusion

Between 2000 and 2008, many regions and cities in the EU were able to achieve growth which was inclu-

sive. Employment rates increased, while poverty and exclusion were reduced.

The crisis has, however, led to a significant deterioration in the situation since 2008, eliminating many of the gains in increasing employment and reducing unemployment achieved over the previous 8 years. While there are the first signs of recovery, it will take time for these to give rise to significantly higher employment rates and to reduce poverty and social exclusion.

On some fronts, however, progress is continuing despite the crisis. For example, the number of early school leavers has continued to fall and the Europe 2020 target may be reached even perhaps before 2020. The gender gap in unemployment has been closed, though largely because of a big increase in unemployment among men rather than any major fall in the rate for women, which remains high in many southern regions.

Poverty and social exclusion vary between types of region in different ways across the EU and the crisis has not changed this. Cities in less developed Member States tend to have lower poverty and exclusion rates than other areas, while the reverse is the case in cities in more developed Member States. In some countries, the concentration of poverty in cities is linked to the presence of a large number of migrants from outside the EU who are poorly integrated into the labour market.

The wide disparities in job availability, wages and standards of living will continue to encourage people to move in search of better opportunities and a higher quality of life, which emphasises the importance of ensuring that they have the same access to employment as those already living in the areas concerned.

Cohesion Policy can play an important role in helping to achieve the Europe 2020 targets considered here, by, in particular, co-financing education and training and providing support for measures to overcome obstacles to growth, so increasing the rate of job creation as well as wages and income levels in lagging regions. At the same time, it can help to ensure that

women have the same opportunities for employment and advancement as men, through for example, co-financing the expansion of childcare facilities. It can also help to ensure that men and women wherever they live have access to a high standard of health-care through supporting investment in hospitals and other medical facilities.

## ▶▶ Chapter 3: Sustainable growth

### 1. Introduction

Cohesion Policy has invested a large share of its funds to encourage a shift towards a more sustainable mode of development in EU regions. It has co-financed the installation of main water supply to improve drinking water quality and urban waste water treatment plants, invested in solid waste management and recycling schemes and contributed to increased energy efficiency by for instance supporting the modernisation of heating systems in private and public buildings or resource efficient urban transport. It has also contributed to protecting the environment by helping to set up a network of protected natural areas as part of Natura 2000.

Nevertheless, substantial challenges remain to reduce the environmental impact of economic activity and improve the quality of ecosystems.

With the growing awareness of the consequences of climate change, the EU has committed itself to limiting greenhouse gas emissions and reducing consumption of fossil fuels. To this end, an increasing share of Cohesion Policy funding is being allocated to help bring about a shift to a low-carbon economy, by, in particular, providing more support for the production of renewable energy and improving energy efficiency. Since climate change is likely to increase the risks of natural hazards such as fires, droughts and floods, leading to more frequent disasters, funding has also been allocated to mitigating these risks, and efforts will continue to be made to ensure that this is used in the most resource-efficient way.

Cohesion Policy also has indirect effects on the environment and sustainability, since helping regions to develop and improve their transport infrastructure may lead to higher energy use. It is becoming increasingly important to mainstream environmental considerations under the Cohesion Policy. Investment in energy efficiency can help to offset this along with

judicious choice of the infrastructure that is supported. Similarly, a growing economy can lead to changes in land use. With the right national, regional and local policies, changes can be limited and concentrated in areas with good access to public transport, such as by redeveloping brownfields or by encouraging new developments to locate close to existing public transport routes.

Preserving nature and natural resources, saving energy, expanding renewable energy and green technologies, mitigating and adapting to the effects of climate change and investing in disaster risk management are not only necessary to address environmental challenges but they can also provide new jobs and growth opportunities. The conservation and enhancement of natural assets is also necessary to safeguard 'ecosystem services' on which many economic activities implicitly rely, i.e. the services provided by nature itself such as for instance clean air and waters or natural ways of protecting against disasters and their consequences. Safeguarding the continued provision of these 'services' results in cost-savings to the economy as they contribute avoiding the costs for cleaning up contaminated land or polluted rivers and preventing or mitigating costly (sometime man-made) natural disasters such as floods or landslides.

EU Member States and regions vary markedly as regards their pursuit of sustainable development. In some case, this is because of differences in the geographical context or in the endowment of natural assets, in others it reflects differences in environmental pressures and natural resource management. Significant improvements could, therefore be made by identifying what kind of action is required in what type of region.

This chapter covers four major issues — first, climate change and the progress towards the Europe 2020 targets, secondly, energy efficiency, air quality and transport, thirdly, resource efficiency, especially

of land use and, fourthly, potential ways of reducing environmental impact and maintaining or improving ecosystems and the services they provide. It ends by showing how other EU policies linked to sustainable growth are affecting cohesion.

## 2. The EU needs to mitigate and adapt to climate change

A world-wide process of climate change is currently underway as a consequence of increases in greenhouse gasses in the atmosphere from human activities. Since the late 19<sup>th</sup> century, the Earth's atmosphere and oceans have steadily become warmer and this is projected to continue and even to quicken in the coming years. Since the early 20<sup>th</sup> century, the Earth's mean surface temperature has increased by almost 1°C, with two-thirds of the increase occurring since 1980.

Climate change affects our economies, societies and ecosystems in many different ways. It has a strong territorial dimension. Its effects vary significantly across regions, which differ in both their exposure to climate change and their ability to cope with it, reflecting their different physical, environmental, social, cultural and economic characteristics. In general, urban areas have increased in temperature more than non-urban areas. Given the historical trend in Europe towards increasing urbanisation, ever more people and assets are being put at risk from suffering the consequences of this temperature rise. Regions also contribute to their own climate, in the sense that, for example, the temperature in cities is partly the result of land use and land cover, which implies that the climate change they experience is, to some extent, within their control.

Together exposure and sensitivity determine the potential effect of climate change on a region. Regions, however, also differ in their capacity to adapt to climate change and counteract its effects, and any assessment of a region's overall vulnerability to change has to take this into account as well.

The ESPON Climate project<sup>1</sup> provides such an assessment, based on projections of climate change and climate variability generated by the CCLM climate model<sup>2</sup> (Map 3.1). Given these projections, the potential effect of climate change has been assessed for each EU region on the basis of its exposure and sensitivity to change and its capacity to adapt, as gauged from several indicators of its physical, environmental, social, economic and cultural features (e.g. projected changes in the number of summer days above 25°C coupled with the number of people of 65 and older living in hot parts of urban areas and the proven ability to cope with heat).

The results highlight the large variations in the potential impact of climate change on regions. While, as might be expected, 'hot spots' are mostly located in the South of Europe, other types of region (such as mountainous or densely populated coastal ones) are also particularly affected because of a rise in sea levels or their economic dependence on summer and/or winter tourism. Some areas in northern Scandinavia are affected as well, mainly because of the sensitivity of the environment and the vulnerability of infrastructure to floods.

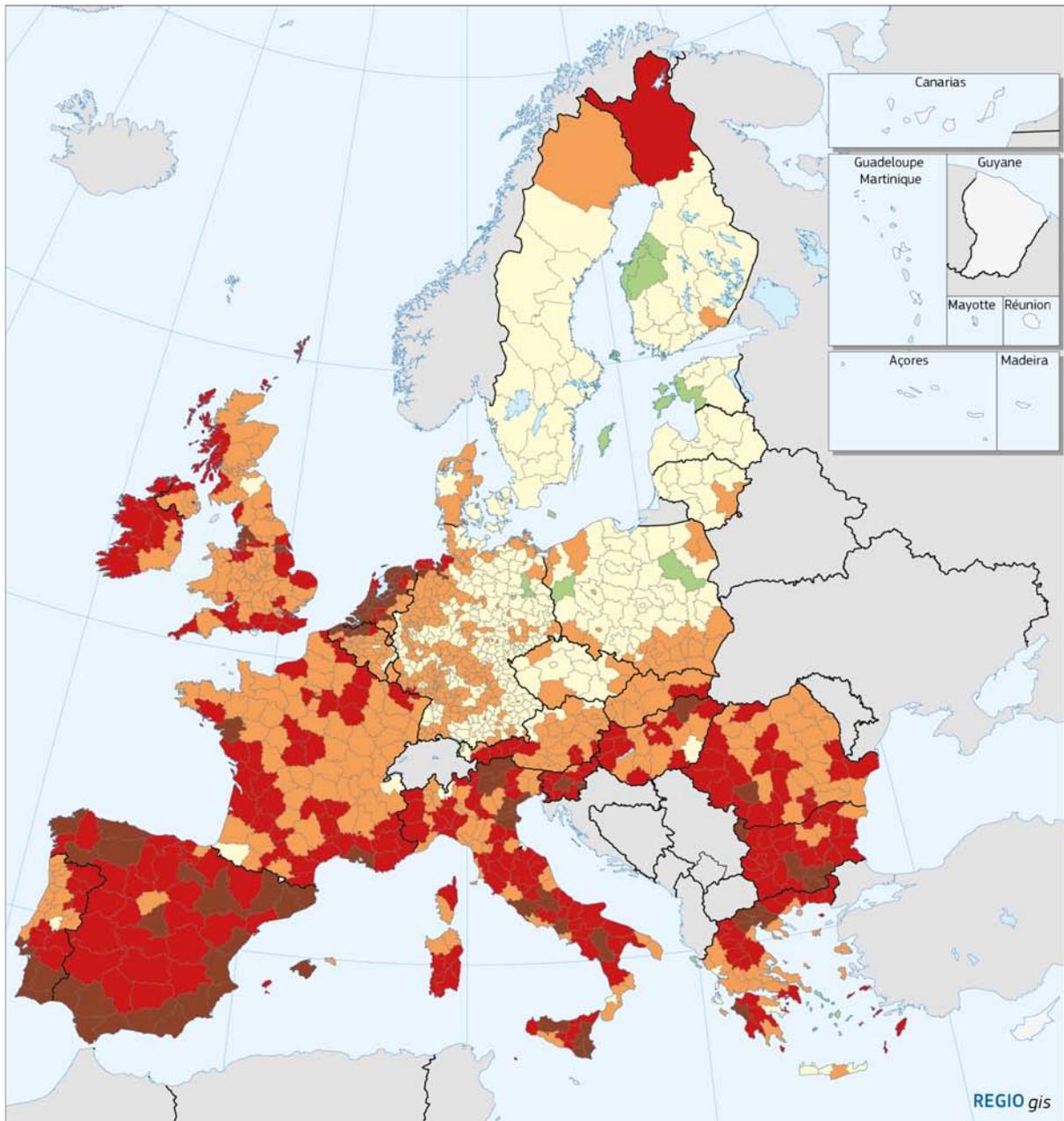
The general north-south divide in the effects which emerges, however, not only reflects the impact of climate change itself but also the greater capacity of Scandinavian and Western European countries to adapt to it. A medium-to-high impact can, therefore, be expected in large parts of South-East Europe as well as the Mediterranean regions.

### 2.1 The EU needs to reduce its greenhouse gas emissions to reach the 2020 targets

The EU has taken a number of steps to reduce greenhouse gas emissions while at the same time developing adaptation strategies to help strengthen resilience to the inevitable effects of climate change. It

1 ESPON (2011), *Climate Change and Territorial Effects on Regions and Local Economies in Europe*.

2 CCLM is a non-hydrostatic unified weather forecast and regional climate model developed by the Consortium for Small scale MOdelling (COSMO) and the Climate Limited-area Modelling Community (CLM).



**Map 3.1 Potential vulnerability to climate change**

- Low positive impact (-0.1 > -0.27)
- No/marginal impact (> -0.1 < 0.1)
- Low negative impact (0.1 < 0.3)
- Medium negative impact (0.3 < 0.5)
- Highest negative impact (0.5 - 1.0)
- no data

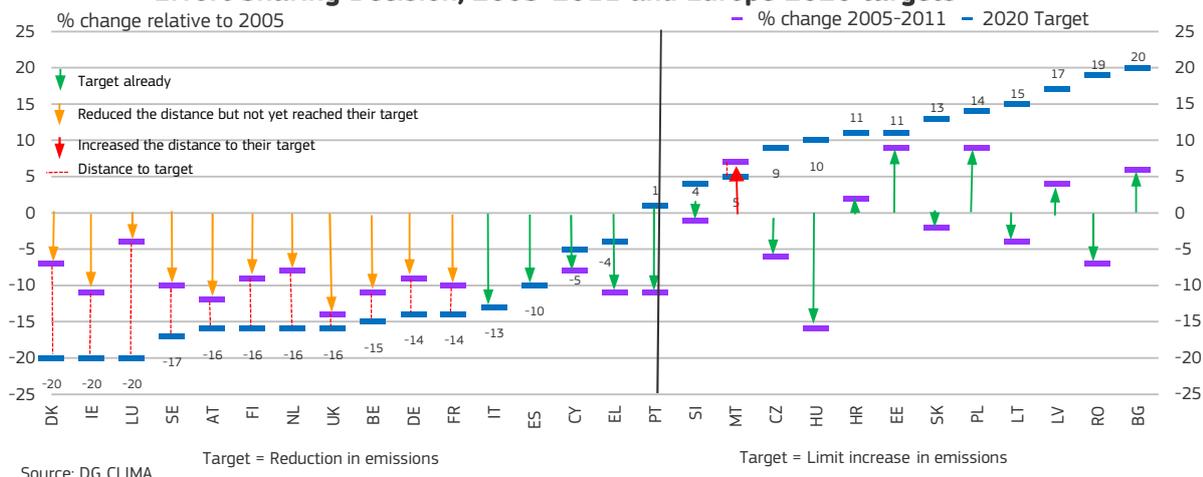
The potential impact was calculated as combination of regional exposure to climate change and the most recent data on weighted dimensions of physical, economic, social, environmental and cultural sensitivity to climate change.

Source: ESPON Climate Project, 2011

0 500 Km

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**Figure 3.1 Change in greenhouse gas emissions in areas covered by the Effort Sharing Decision, 2005-2011 and Europe 2020 targets**



has, in particular, encouraged moves towards an energy-efficient, low carbon economy by setting '20-20-20' targets for 2020 — i.e. reducing greenhouse gas (GHG) emissions to 20% below 1990 levels<sup>3</sup>, raising the share of EU energy consumption produced from renewables to 20% and improving energy efficiency by 20%. These are now included as headline targets in the Europe 2020 strategy. It has also set a further goal of progressively reducing EU GHG emissions by 80–95% of 1990 levels by 2050<sup>4</sup>.

EU initiatives to reduce GHG emissions include the EU Emissions Trading System (ETS), a market instrument for allocating and exchanging emission quotas. This is complemented by the Effort Sharing Decision under which Member States have adopted binding annual targets for reducing emissions from housing, agriculture, waste and transport (other than aviation) which are not covered by the ETS and which account for around 60% of the EU's total emissions. The national targets which relate to the period 2013–2020 are differentiated according to levels of GDP per head, ranging from a 20% reduction in emissions

(compared to 2005) in the most developed Member States to a 20% increase in the least developed.

Cohesion Policy cannot directly contribute to the ETS. But it can play a significant role in reducing GHG emissions in sectors included in the "Effort Sharing Decision". For instance, Cohesion Policy supports initiatives to insulate public building and so reduce GHG emissions in the housing sector. It also provides funding for cleaner public transport and more efficient management of waste both of which should help to lower GHG emissions.

The reduction in GHG emissions in the areas covered by the Effort Sharing Decision has been substantial in some Member States (Figure 3.1). Between 2005 and 2011, it amounted to 16% in Hungary and over 14% in the UK. In a number of EU-12 countries, however, the reduction has been more modest, reflecting their high rate of economic growth up until the crisis. Emissions, moreover, have increased significantly in Poland and Estonia (by 9% in both). Since 2008, however, the economic downturn has generally served to moderate emissions.

The distance from the various national targets also varies markedly between countries. Several countries

<sup>3</sup> The EU also offered to reduce emissions by 30% if other major emitting countries committed to making their fair share of reductions.

<sup>4</sup> Note that these targets are set on a production basis which means emissions arising from within the borders of the EU. However, with globalisation, an ever-increasing proportion of emissions is emanates from regions outside the EU while being a result of EU imports. Indeed, since 1990, net-emission transfers from the Annex 2 countries of the Kyoto Protocol to non-Annex 1 countries have increased fourfold. For details see: Petersa, G, P. *et al.* (2010).

### Production-based and consumption-based emissions

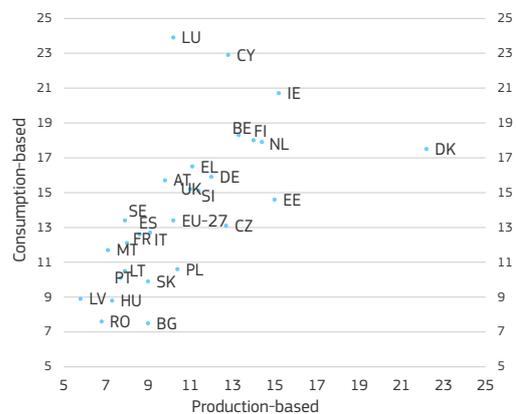
In greenhouse gas emissions accounting, the level of emissions can be calculated on the basis of either production or consumption. Production-based emissions are calculated from the fossil fuel usage in various types of activities (e.g. industry, agriculture, energy). Consumption-based emissions account for the GHG generated when producing the goods and services which meet domestic final demand in a country (i.e. household consumption, government consumption, and investment), regardless of which country actually emitted the substances concerned<sup>1</sup> (Figure 3.2).

For a given Member State, production-based and consumption-based levels of emissions can be quite different. For instance, production-based emissions can be low for a country in which few polluting activities are located while its consumption-based emissions could be high if it imports goods and services the production of which generated large amounts of greenhouse gases.

This is illustrated in the following graph in which production-based emissions are plotted against consumption-based emissions for each EU-27 Member State. While there is an obvious positive relationship between the two types of emission, it is far from one to one. For

example, in Luxemburg production-based emissions are close to the EU-27 average but consumption-based emissions are the highest in the Union. Conversely for Denmark, production-based emissions are very high but consumption-based emissions are much smaller. It is, nevertheless, the case that in general, highly developed Member States record the highest levels of emission on both a production and consumption basis.

**Figure 3.2 Greenhouse Gas emissions, tons of CO2 equivalent per head, 2008**



Source: JRC

<sup>1</sup> See Arto, I., *et al.* (2012).

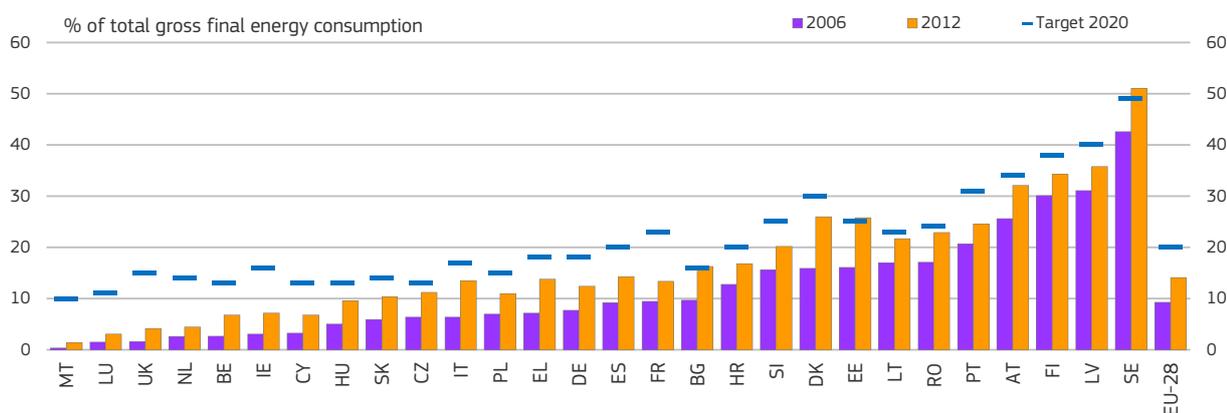
have already more than achieved their target, such as Hungary or Romania, which committed themselves to limiting emissions to no more than 10% and 19%, respectively, above 2005 levels, and where they have actually declined. In other countries, the target has not yet been reached but emissions have started to fall, such as in Sweden, where the target was a reduction of 17% and emissions have fallen by 10% relative to 2005. In Malta, on the other hand, emissions have risen above the target. Luxembourg, Denmark, Ireland and the Netherlands are furthest from their targets, while the UK (which needs to reduce emissions by a further 2%) and Austria, Belgium and France (which need a further 4% reduction) are closest<sup>5</sup>.

<sup>5</sup> GHG emissions are closely related to economic activity. The current high level of uncertainty about future economic trends, therefore, makes it difficult to judge the capacity of the Member States to meet their 2020 targets on the basis of their present level of emissions, even in the case of those where emissions are already below the target.

## 2.2 The EU needs to increase the use of renewable energy to reach the 2020 targets

The EU has agreed to source at least 20% of its final energy consumption from renewable energy by 2020. Under the Renewable Energy Directive, Member States have committed to increasing the share of renewable energy in energy consumption by 2020 to targets ranging from 10% in Malta to 49% in Sweden.

The share is already large in some Member States, amounting to almost 51% in Sweden and around 36% in Latvia (Figure 3.3), though it is small in others, such as Malta, and Luxemburg, where it is less than 4%. Renewables are expected to play an increasing role not only in supporting the transition to

**Figure 3.3 Share of renewable energy in gross final energy consumption, 2006, 2012, target 2020**

Source: Eurostat

a low carbon economy but also in improving energy security.

Member States also vary widely as regards the present share of renewables in relation to their target. The UK, France and the Netherlands need to increase the use of renewables by almost 10 percentage points or more to reach their targets. On the other hand, three countries, Bulgaria, Estonia and Sweden, have already reached their targets, and Romania, Lithuania, Austria and the Czech Republic are close to reaching them. Considerable efforts remain to be made in a number of Member States to reach their targets. There is concern, however, that the currently low price of fuel, and carbon in general, does not provide a sufficiently strong incentive to invest in renewable energy. This is partly due to the fact that, because of the slowdown in economic activity triggered by the crisis and the resulting fall in emissions, the ETS has experienced a growing surplus of allowances. Moreover, in the longer term, this could reduce its ability to meet more demanding emission reduction targets in a cost-effective way. The Commission has therefore taken the initiative to postpone the auctioning of some allowances.

The largest sources of renewable energy in the EU are biomass and hydropower (which in 2012 pro-

duced respectively around 83 and 29 million tonnes of oil equivalent — Mtoe), followed by wind power (17.7 Mtoe), biogas (12 Mtoe), solar energy photovoltaic, 5.8 Mtoe and geothermal, 5.7 Mtoe. While hydropower and geothermal are restricted to particular locations, wind and solar power, biomass and heat pumps can be used more widely, though the potential to produce energy from either varies markedly between regions. The ability to make full use of renewable energy potential also depends on the existing regional transmission, distribution and storage infrastructure, as well as the pattern of demand<sup>6</sup>. Larger shares of renewable energy supply, which in many cases provides intermittent power, will require improved infrastructure and solutions to its effective integration into the network.

Coastal regions generally have a much greater potential than others for producing energy from wind power, especially those around the North Sea or the southern part of the Baltic. Some islands in the Mediterranean have high potential too. The cost of producing energy from wind power is also lower where the wind is consistently strong enough to produce electricity.

The most suitable areas for using solar power are in the southern and western parts of Europe, where

<sup>6</sup> Another consideration would be the environmental effects of the renewable energy. For example, combustion of biomass leads to emissions of PM which is carcinogenic, so it should be accompanied by strict emission limits.

### The territorial dimension of the Climate change and energy package

The climate change and energy package takes specific account of the level of economic development of Member States in setting the targets for GHG emissions outside the emissions trading mechanism and for renewable energy.

Renewable energy sources contribute to diversifying the energy supply in the EU and to improving the competitiveness of some regions by stimulating the growth of new industries and helping to create jobs and export opportunities. In addition, the proposed energy projects of common interest, with an allocation of EUR 5.1 billion as part of the Connection Europe Facility, can potentially make an important contribution to improving energy security and competitiveness in areas where commercial viability is not attractive enough.

Investment in energy efficiency, such as in reducing the energy used by heating systems, can also bring substantial benefits to those living in cities by improving air quality. The revised Energy Performance of Buildings Directive (EPBD) adopted in 2010, which is not yet fully implemented, should further improve air quality in cities by cutting energy consumption.

In the case of urban transport, the regulations establishing performance standards for light duty vehicles have led to substantial reductions in GHG emissions, reflected in a decline of average CO<sub>2</sub> emission of new vehicles from 172 grams per km in 2000 to 135.7 grams in 2011. Such a reduction also benefits public health and ecosystem health by cutting air pollutants such as NO<sub>2</sub> and PM<sub>10</sub>.

Regional and local authorities are important active stakeholders in the process. The effectiveness of climate and energy policies depends on the active support of regional and local authorities, which are responsible for building permits and spatial planning. The authorities are also responsible for public buildings, and in some cases for public housing, which need investment to increase their energy efficiency.

The White Paper on adapting to climate change<sup>1</sup> champions a local, place-based approach to adaptation, which in practice means local authorities cooperating to design and implement joint sustainable climate and energy policies for sustainable transport, improving energy efficiency in buildings and district heating, developing renewable energy sources and distributed energy generation.

Smart Cities and Communities European Innovation Partnership (SCC) is intended to increase inter-linkages between energy production, distribution, and use; mobility and transport; and information and communication technologies (ICT). In addition, the Covenant of Mayors is a European-wide movement supporting local and regional authorities in achieving the European 2020 climate and energy policy objectives. As well as saving energy, the aim of the signatories is to help create skilled and stable jobs; a healthier environment and quality of life; increased economic competitiveness and greater energy independence. To date there are more than 5,000 signatories and over 200 supporting bodies, meaning that it effectively covers nearly 170 million people in Europe.

<sup>1</sup> COM(2009) 147 final.

the sun is at its strongest (Map 3.2, which indicates the suitability of areas for solar power<sup>7</sup>). Northern, central and eastern Member States are less suitable, though solar panels can be installed on the roofs of buildings of all types, industrial and commercial as well as residential, to provide power directly to users without effectively taking up space. While large-scale photovoltaic systems, or solar farms, require more space, they produce energy more efficiently and their

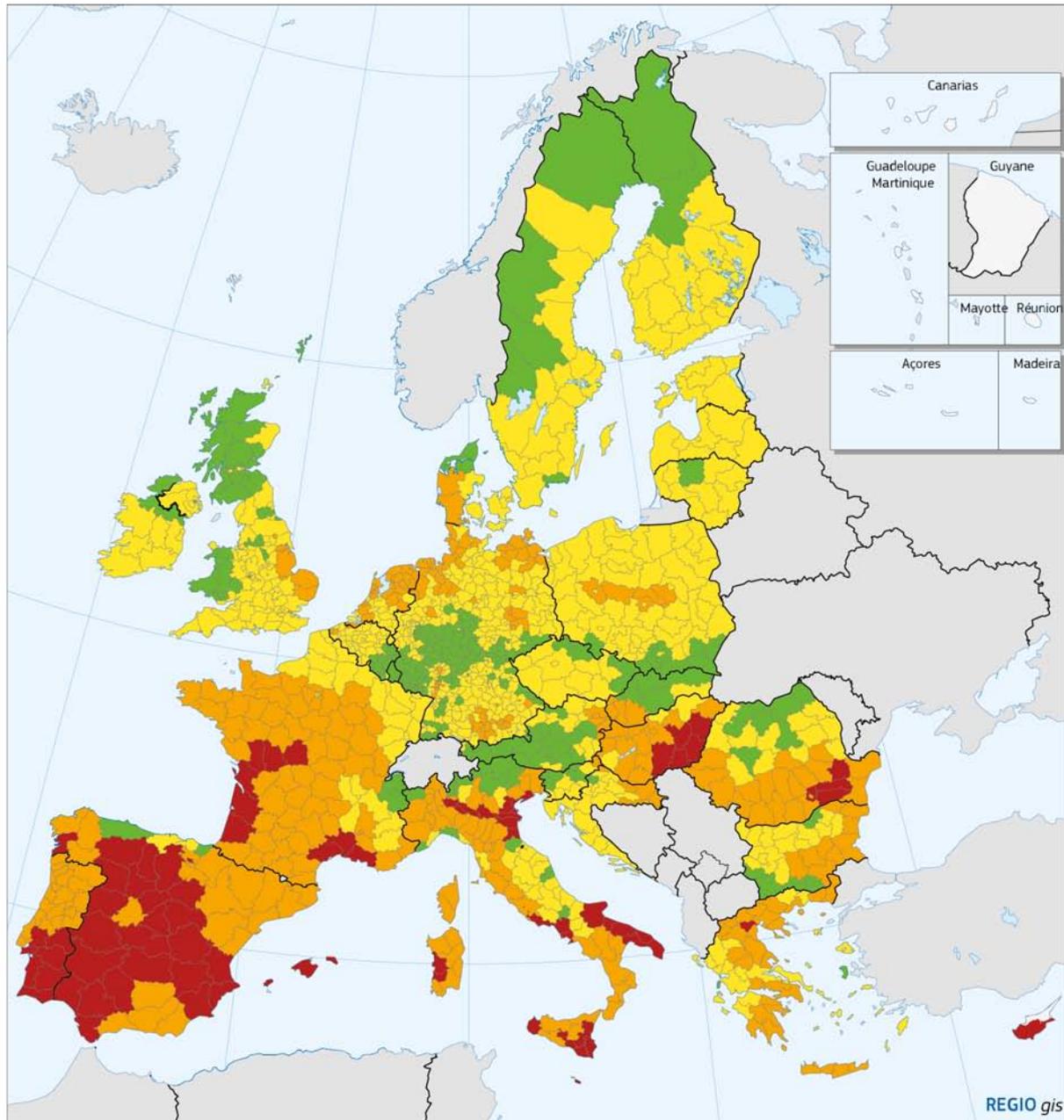
<sup>7</sup> Suitability takes into account factors both restricting the development of solar power and supporting it. The criteria include high solar radiation, smooth slopes, distance from densely populated settings, proximity to roads and electrical grids. Protected areas, forests, water bodies and land already developed are defined as not being suitable.

impact on the environment can be reduced by locating them on unused, or low-yield, farm land.

### 2.3 EU needs to adapt to more frequent and disastrous natural hazards

The number and costs of disasters caused by natural hazards<sup>8</sup> has increased in Europe in recent years. This is due not only to climate change, which is likely to increase the frequency, intensity and duration

<sup>8</sup> SWD(2014) 134 *Overview of natural and man-made disaster risks in the EU*.



Map 3.2 Average suitability for photovoltaic systems at NUTS 3 levels

- Suitability levels
- Very low suitability
  - Low suitability
  - Moderate suitability
  - High suitability

Suitability considers high solar radiation, smooth slopes, distance from densely populated settlements, proximity to roads and electrical grids the presence of protected areas as well as artificial areas, wetland and water bodies and forests.

Source: JRC

0 500 Km

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of weather-related events in future years, but also to human and economic activity including a higher take-up of land<sup>9</sup>.

The most frequently-occurring natural hazards in the EU are heat waves, storms, earthquakes, floods, droughts and forest fires. Heat waves have caused by far the largest number of human casualties over recent years<sup>10</sup>. Extremes of high temperature<sup>11</sup> have become more frequent and are likely to become even more frequent and intense with climate change.

To measure the potential impact, an urban heat stress indicator has been developed (by the JRC in Ispra) for a number of cities in the EU which takes account of both the natural risk and the capacity to mitigate it<sup>12</sup>. This shows that the highest potential impact is in the Mediterranean regions in Spain, southern France, Italy and Greece, which tend to have a low capacity to adapt. This applies equally to cities in Eastern Europe, though these are much less exposed to heat. Regions in central and northern Europe, on the other hand, have low risk and high capacity to adapt.

The rise of temperature in cities is not only due to global warming but also to the way they have developed. In particular, increases in temperature also depend on land use in the city, the energy efficiency of the buildings and the main modes of transport. These are aspects which fall directly under the remit of Cohesion Policy.

Forest fires are frequent in Europe, with an average of 70,000 fires occurring every year. Over recent years, forest fires have destroyed over half a mil-

lion hectares of forest and other wooded land annually, mainly in the Mediterranean. The largest fires have occurred in Portugal (in 2003 and 2005), Spain (2006) and Greece (2007). While forest fires at some level are important for the long-term sustainability of forests, they are also a cause of human casualties, though much less so than heat waves, and lead to substantial economic loss — amounting to an estimated EUR 7 billion over the period 1998–2009 according to the EEA.

Pressure on water resources has increased in the EU and large areas are now more frequently affected by water shortages and droughts, not only in the drier areas but also in more humid parts. Droughts can have severe effects on agriculture, tourism and energy as well as on freshwater and related ecosystems as they often reduce river flows, lower lake and groundwater levels, dry wetlands and lead to a deterioration in the quality of water. Also, oceans and seas around Europe are increasingly suffering from the impacts of climate change, affecting in turn sectors such as fisheries, aquaculture, and tourism.

According to various climate projections, the frequency of water shortages and droughts is likely to increase significantly in the future as a result of climate change and the resulting higher average temperatures. Such events are also expected to extend beyond southern Europe increasingly affecting other parts of the EU. Moreover, demand for water in dry periods often exceeds availability and the need to ensure adequate water supplies to vulnerable ecosystems is frequently neglected.

Together with storms, floods cause the largest economic losses. Many parts of the EU areas have been affected by floods in recent years, such as the Elbe Basin, the French and Italian Alps, the Po Valley, the banks of the Rhine in Germany, France and the Netherlands, regions of the low Loire in France and Mecklenburg-Vorpommern as well as western Poland. Several regions in Slovakia and the Czech Republic are also particularly exposed to the risk of floods.

River flooding can be particularly damaging in urban areas to both infrastructure and human life. The

9 EEA (2010), *Mapping the impacts of natural hazards and technological accidents in Europe*.

10 For the period 1998–2009, the EEA reports 576 disasters due to natural hazards causing almost 100,000 fatalities, of which over 77,500 were due to heat waves, *ibid*.

11 Extreme temperatures are relative to the usual weather conditions in a given area, so there is no universal definition of a heat wave. There are, however, proposals for a generic definition — e.g. the European Climate Assessment and Dataset project defines a warm spell as a period of at least six consecutive days in which the mean daily temperature exceeds the 90th percentile of the average daily temperature in the 1961–1990 period. The World Health Organisation's (EuroHEAT project proposed a similar definition of a heat wave as 'a period when maximum apparent temperature and minimum temperature are over the 90th percentile of the monthly distribution for at least two days' (*ibid*).

12 Lung T., *et al.* (2013).

impact of floods on major cities in the EU has been assessed by the JRC-ISPRA, using an indicator which takes account of both the risk of floods and the capacity of cities to mitigate and recover from them<sup>13</sup>. The indicator shows a wide variation in exposure to floods between cities, in part depending on their location *vis-à-vis* major waterways. The most vulnerable spots, where a high risk of flooding is combined with low capacity to adapt, are in a number of regions in Romania, Poland, Latvia, Lithuania, Portugal and southern Spain.

The risk is expected to increase in the future in many coastal areas because of a rise in sea levels and temperatures. This is so for those at sea level, or less than 5 meters above this, such as regions along the Dutch coast.

In the light of this, policies for preventing and managing risk are essential to ensure that development, and economic growth, are sustainable.

### 3. Shifting to more sustainable transport can increase energy efficiency and improve air quality

The EU has taken action to improve energy efficiency through the 2011 Energy Efficiency Plan and the Energy Efficiency Directive. Energy efficiency is mainly to do with reducing energy use in buildings and transport, which in 2010, were responsible for 41% and 32%, respectively of total energy consumption in the EU.

Improving the energy efficiency of housing and buildings comes through applying both current technology and new innovations. Energy efficiency of buildings can be improved, in particular, by adding insulation and improving heating systems, though again, there are large variations across the EU in this regard, with Member States in Central and Eastern Europe, which could potentially contribute substantially to energy savings in the EU, lagging behind.

#### 3.1 Improving accessibility and energy efficiency

One of the objectives of the EU's common transport policy is to increase energy efficiency and to ensure that the transport system is a sustainable one by 2050. In order to achieve this, three broad goals have been set: (1) develop and deploy new and sustainable fuels and propulsion systems, (2) optimise multimodal logistic chains, including a shift to more energy efficient modes and (3) increase efficiency with the use of information systems and market-based incentives. Reducing the distance travelled while maintaining or improving accessibility is a means of achieving all three of these goals.

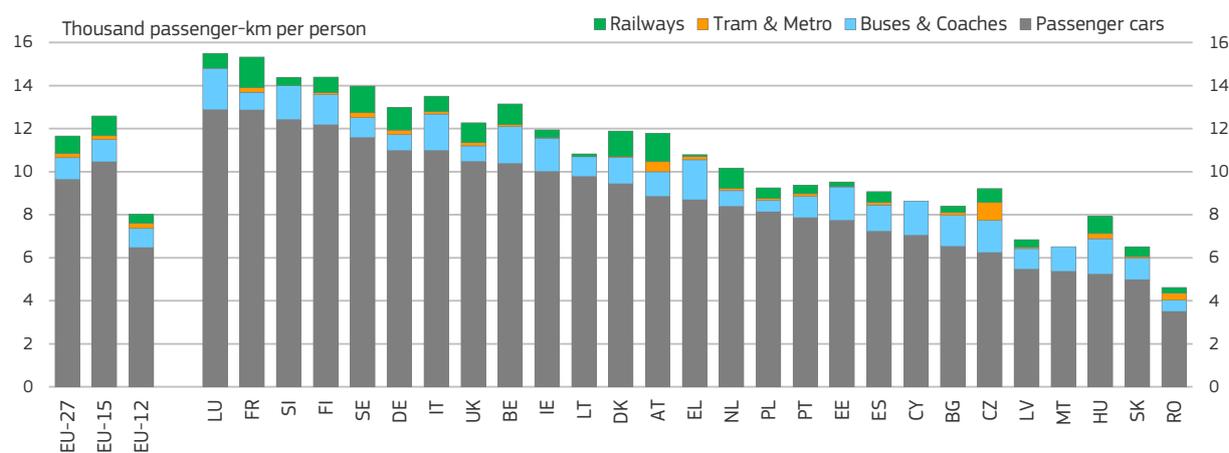
Technological advance is another way of increasing energy efficiency. The adoption of new technologies can increase fuel efficiency. A shift to more energy efficient modes of transport can help to achieve all three goals, while an improvement in the transport network can facilitate such a shift and at the same time might reduce congestion.

When people use transport, whether a car, bus, train or bicycle, they usually do so to travel to, or to *access*, a specific destination. Accordingly, transport analysis needs to distinguish how far people travel from accessibility (getting where they want to be). In some cases, distances can be reduced while accessibility is increased. When people and destinations are close to each other, as is often the case in cities, the average distances travelled tend to shrink. For example, in the Netherlands in 2011, people living in a town or city travelled an average of 26 km a day as against 30 km a day for those not living in an urban area.

Due to the shorter distances, walking and cycling are more attractive options in towns and cities than in other areas. There is also a higher demand for public transport which makes it more cost effective and energy efficient, so people use it more and their cars

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<sup>13</sup> *Ibid.*

**Figure 3.4 Passenger-km by transport mode and Member State, 2012**

Source: EU transport in figures: Statistical pocketbook 2013

less. The Dutch example also shows that people living in a very urban environment walk more (0.95 km as against 0.6 km), use public transport more (5.6 km as against 1.9 km) and use the car less (16 km as against 24 km) than those living in other areas (Statistics Netherlands 2013). These differences are reflected in the regional figures, with Amsterdam, Rotterdam and Utrecht having the shortest distances travelled and the lowest car use in the Netherlands. Although such detailed data are not available for the EU as whole, the use of more energy efficient modes of transport seems to apply in other EU cities too<sup>14</sup>. Cars tend to account for a particularly large share of travel outside cities because public transport is less efficient and distances make walking and cycling less feasible<sup>15</sup>.

In order to compare the relative importance of inland<sup>16</sup> modes of transport between countries, the data can be normalised by expressing the level of passenger distances in relation to population. Luxembourg and France registered the longest distances travelled in 2011, each of these countries averaging more than 15,000 passenger-kilometres per inhabitant (Figure 3.4). By contrast, EU-12 Member States have the

smallest amount of travel, with Romania and Malta having the lowest figures. These figures, however, reflect a range of factors, such as, the level of GDP and income, infrastructure endowment, the importance of commuting, the proximity of services to population, access to high-speed rail links and the existence of international transport corridors running through the country.

Between 1995 and 2011 there was a marked increase in the use of cars in many of the Member States that have joined the EU since, particularly in Lithuania, Poland, Slovenia Estonia and Bulgaria. There was also a substantial increase in the use of cars in Greece (Figure 3.5). This increase in car use has been accompanied by a significant reduction in the use of public transport in the EU-12, especially in Slovakia.

By contrast, the use of cars declined in the UK and the Netherlands, in the former accompanied by an increase in rail travel.

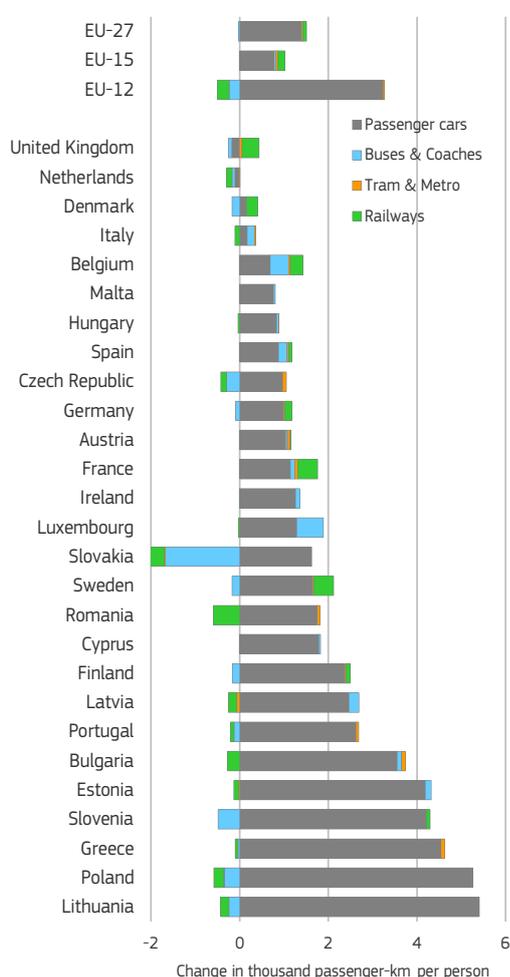
Cars account for a sizable proportion of passenger transport in all Member States for which data are available, considerably larger than rail, and buses and coaches. In 2011, cars accounted for 84% of all inland passenger km travelled in the EU, though the figure varies markedly between Member States (from 91% in Lithuania to 64% in Hungary) reflecting

<sup>14</sup> EEA (2013), *A closer look at urban transport — TERM 2013*.

<sup>15</sup> See also ESPON, 2013, TRACC.

<sup>16</sup> It should be underlined that the analysis above refers only to inland transport by car, bus or train and that a significant proportion of international passenger travel, and in some countries national travel, is accounted for by maritime and air transport (Eurostat (2011)).

**Figure 3.5 Change in passenger-km by transport mode and Member State, 1995-2011**



Source: EU transport in figures: Statistical pocketbook 2013

differences in infrastructure and geography (Figure 3.6).

Buses accounted for 9% of passenger km travelled on average, the share varying from 3% in the Netherlands to 25% in Hungary, while trains accounted for just 7%, though the figure varies according to the state of the rail network and its extent. In France, Austria and Sweden, which have fast and frequent trains, around 10% of travel is by rail, while in Greece, Estonia, Lithuania, where the network is

limited and trains slow and not very frequent, relatively few journeys are made by train.

Most freight transport in the EU (75%) is by road (Figure 3.7). In some countries, such as Greece and Spain, the large share of freight carried by road is partly due to the lack of inland waterways and a limited rail network (other than high-speed). In Latvia and Estonia, on the other hand, over 50% of freight goes by rail, partly reflecting imports by this means from Russia. Inland waterways are used more than elsewhere to transport goods in Romania, the Netherlands and Belgium because of navigable rivers and canals.

Strategies for improving the efficiency of transport need to differ between regions. In Western regions as well as in some of the more developed parts elsewhere, there is already a well-developed road network. Policies here should therefore focus on shifting to more energy efficient modes of transport. In many less developed regions, on the other hand, a good standard road network and connections to the rest of the EU are still lacking.

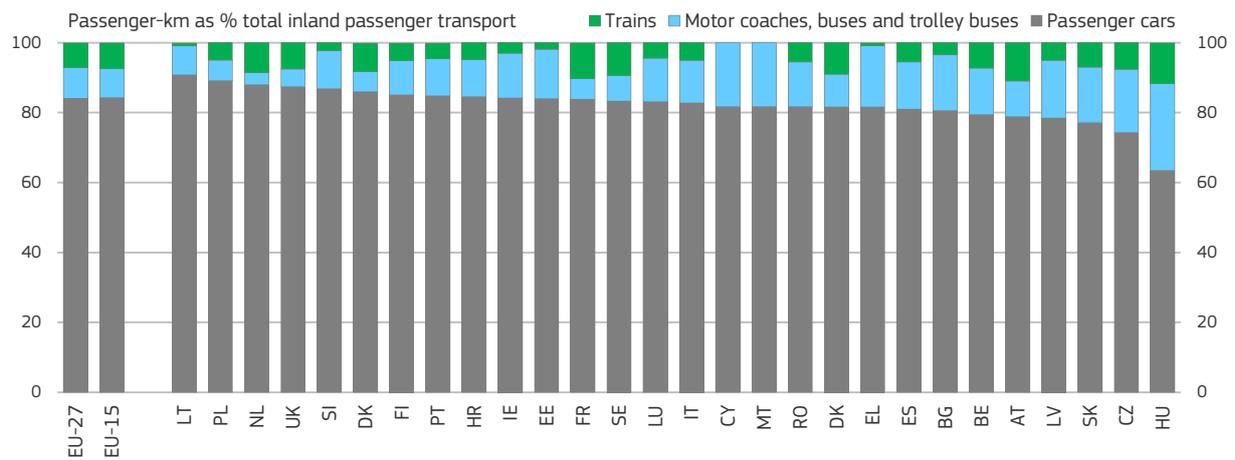
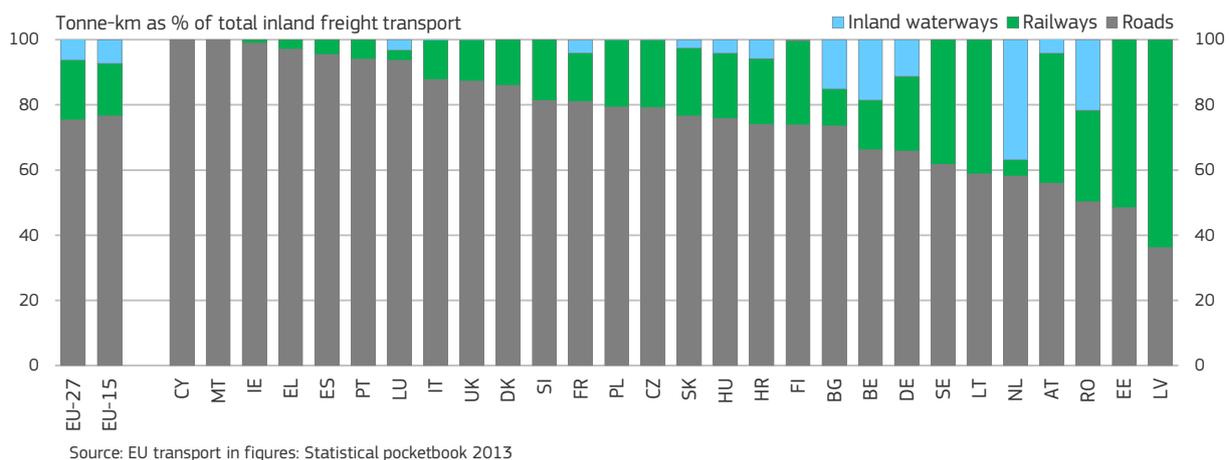
### 3.2 Large cities provide better access to public transport

Public transport varies from city to city across the EU in terms of the scale and frequency of service and the forms it takes<sup>17</sup>. Up until recently, it was difficult to compare the public transport available in different cities because there was no common definition of a city and data on public transport was limited. These difficulties are starting to be overcome<sup>18</sup>.

The EU-OECD definition, referred to earlier in this report, provides a harmonised way of delimiting urban centres, cities and their commuting zones, while more and more public transport operators now give free access to their data in a common format (GTFS, as used by Google maps). These data can then be combined with high-resolution population distribu-

<sup>17</sup> EEA (2013), *A closer look at urban transport*, TERM 2013.

<sup>18</sup> Dijkstra L. and Poelman H. (2014).

**Figure 3.6 Passenger travel by transport mode, 2011****Figure 3.7 Freight transport by mode, 2011**

tion data<sup>19</sup> and a digital map of streets to produce the first harmonised analysis of access to public transport in European cities.

The analysis distinguishes two modes of public transport:

- Medium-speed modes: buses and trams;
- High-speed modes: metros and trains.

Ease of access is defined for each mode:

<sup>19</sup> Using 100 m population grids, neighbourhood or enumeration areas and the Urban Atlas, a new European collection of urban land use maps of all European agglomerations.

- a five minute walk for medium-speed modes;
- a ten minute walk for high-speed modes.

Frequency of service is defined on the basis of the average number of departures an hour between 7 am and 8 pm on a normal weekday:

- very high: access to more than ten departures an hour for both medium- and high-speed modes;
- high: access to more than ten departures an hour for one mode but not both;

### Improving access to public transport in Athens

Since the 1990s, over EUR 4 billion has been spent on the Athens Metro rapid transit system, which serves the Athens conurbation and parts of East Attica, much of it financed under Cohesion policy (by the ERDF and Cohesion Fund as well as by EIB loans) with the main aim of reducing traffic congestion<sup>1</sup>. Before the metro, public transport consisted only of buses and the Athens-Piraeus electric rail line.

The metro has improved the quality of life in Athens considerably, reducing traffic congestion and smog levels and cutting journey times markedly. It has also helped to reverse the decline in public transport use, the number of passengers increasing by 50% between 1992 and 2008.

Prior to the construction of lines 2 and 3 of the metro, only 8% of the population in the Athens urban centre had access to a very high frequency public transport service, much less than in Berlin, Stockholm, Copenhagen, Brussels or Marseille (30% in each). This was increased to almost 20% after the construction of the lines.

<sup>1</sup> European Commission (2009), *Good practice in urban transport — Athens Metro*.

- medium: access to between four and ten departures an hour on one or both modes, but no access to more than ten departures and hour;
- low: access to less than four departures an hour for one or both modes, but no access to more than four departures an hour.

The proportion of people that have easy access to public transport, broken down by frequency of departures, can be compared across a number of European cities. In 12 out of 14 large urban centres examined (Figure 3.8), between 60% and 84% of the population had access in 2012 to a high frequency service. The proportion of population with very high access was more variable, ranging from over 30% in five centres and less than 10% in three. Dublin has the smallest proportion with access to a high frequency

### Urban mobility package

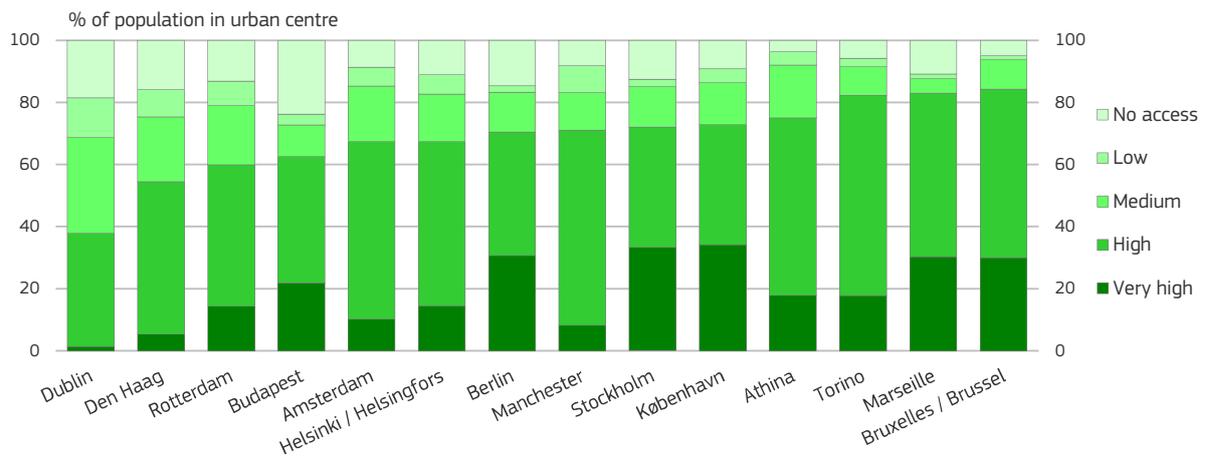
A successful European transport policy, cannot ignore the urban dimension. Cities are important nodes of the European transport system and most trips originate or end in urban areas. Furthermore, many of the negative effects of transport (like congestion and pollution) occur mainly in urban areas. According to the latest Eurobarometer Survey<sup>1</sup>, half of all Europeans use a car every day (50%), which is more than the proportion who cycle (12%) or use public transport (16%) combined. On the other hand, a substantial majority of Europeans believe that air pollution (81%), road congestion (76%), travelling costs (74%), accidents (73%) and noise pollution (72%) are serious problems in cities.

With the Urban Mobility Package, the Commission is reinforcing its support for urban transport in the 2014–2020 programming period. Urban mobility planning is intimately linked to achieving EU policy objectives for a competitive and resource-efficient European transport system, but the organisation of urban mobility is primarily a responsibility of authorities at the local level. For many years, EU initiatives on urban mobility have primarily sought to support efforts at city level by taking action in areas with clear EU added value. The present package invites Member States to:

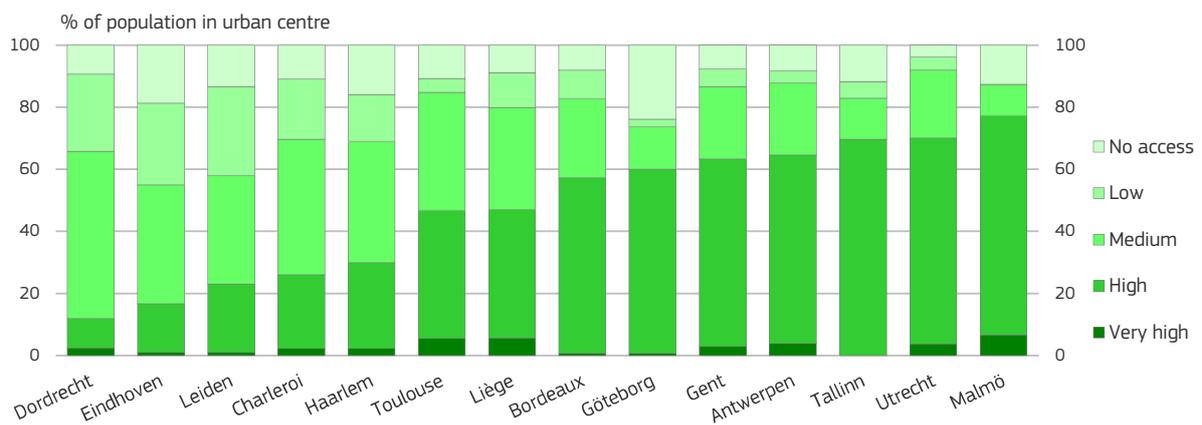
- conduct a careful analysis of the present and future performance of urban mobility in the light of key EU policy goals;
- ensure that sustainable urban mobility plans are developed and implemented;
- review the technical, policy-based, legal, financial, and other tools at the disposal of urban planning authorities.

The central element of the package is the “Together towards competitive and resource-efficient urban mobility” Communication, which is accompanied by an annex that sets out the concept of sustainable urban mobility plans and by four staff working documents on urban logistics, urban access regulations, deployment of ITS solutions in urban areas and urban road safety.

<sup>1</sup> European Commission (2013), *Attitudes of Europeans towards urban mobility*.

**Figure 3.8 Access to public transport in large European cities, 2012**

Source: Dijkstra, L. and Poelman, H. (2014)

**Figure 3.9 Access to public transport in large European cities, 2012**

Source: Dijkstra, L. and Poelman, H. (2014)

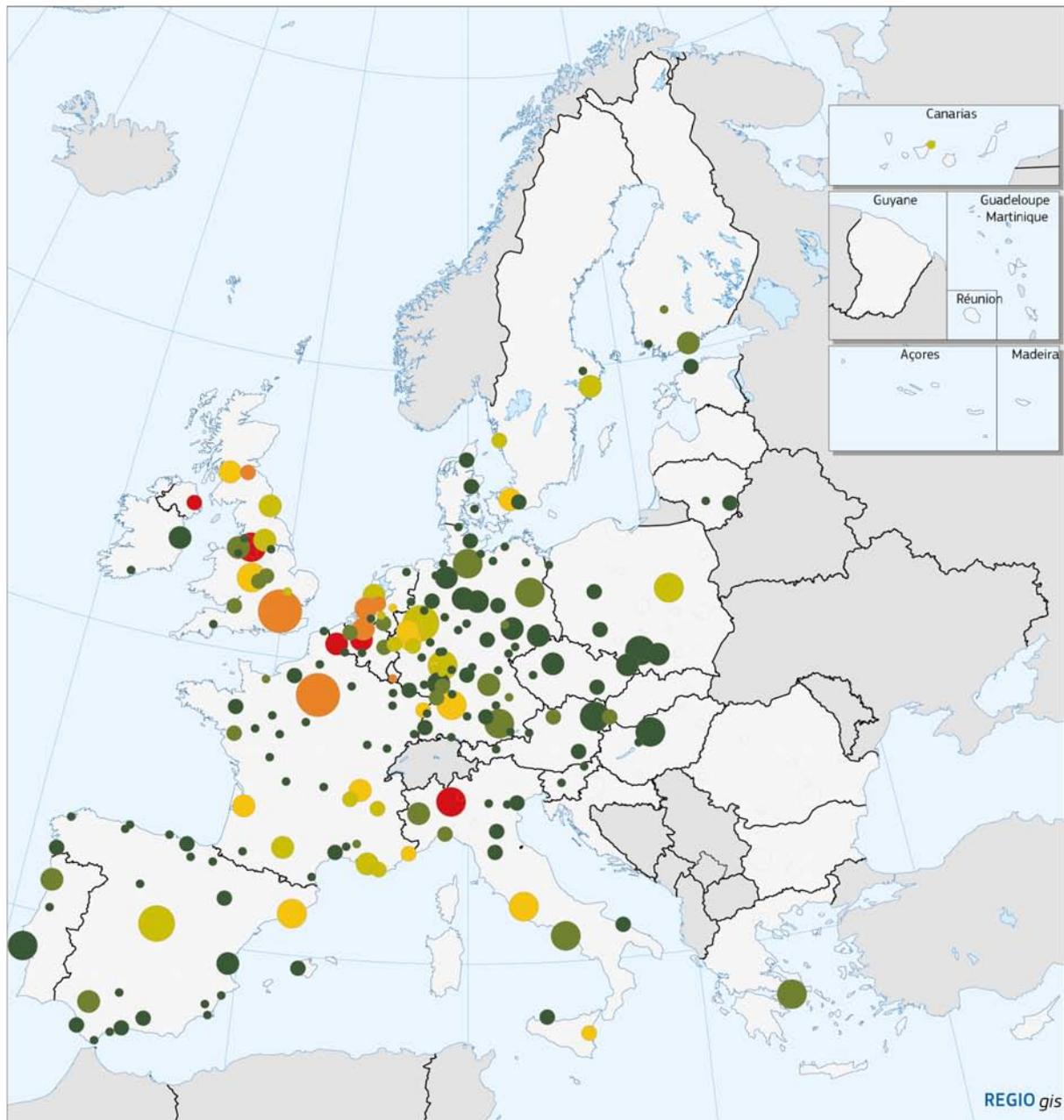
service (38%), much less than Stockholm (71%) or Brussels (84%), which are of similar size.

The Hague and Amsterdam also score relatively low on this measure, though in Amsterdam the construction of a metro should increase the proportion substantially. Public transport services in the Dutch cities have to be seen, however, in the light of the extensive use of bicycles, which reduces the demand for them. The urban centre of Manchester, which covers most of Greater Manchester, has a small proportion of the population with very high access given its size.

In 9 of the 14 mid-sized urban centres (Figure 3.9), access to a high frequency public transport service in 2012 varied between 12% and 60% of the population, the proportion with very high access not exceeding 7% in any of them. In general, therefore, public transport services are much more frequent in larger urban centres.

### 3.3 Congestion is high in several of the large EU cities

Efficiency of transport networks is a main priority for transport policy at EU level as expressed in



**Map 3.3 Congestion on the high-speed road network in Functional Urban Areas (FUA), 2012**

Congested as % of total network

- ≤ 5%
- 5.1% - 10%
- 10.1% - 15%
- 15.1% - 20%
- 20.1% - 25%
- > 25%
- no data or no high-speed roads

FUA population

- 250,000 - 500,000
- 500,001 - 1,000,000
- 1,000,001 - 2,500,000
- 2,500,001 - 5,000,000
- 5,000,001 - 7,500,000
- 7,500,001 - 12,000,000

Roads with maximum speed of at least 100 km/h.  
FUAs with at least 250,000 inhabitants and with total length of high-speed roads at least 100 km.

Sources: TomTom, JRC, DG REGIO

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the European Commission's *Roadmap to a Single European Transport Area — Towards a competitive and resource efficient transport system*<sup>20</sup>. The existing routes in the road transport network vary significantly in terms of the volume of traffic carried and, consequently, capacity utilisation and congestion<sup>21</sup>.

Congestion is estimated to cost over EUR 110 billion a year in the EU67. It also has a range of indirect adverse effects, such as increased fuel consumption, air pollution and noise as well as affecting the quality of life and access to shops and other services<sup>22</sup>. Congestion is severe in several large cities (Map 3.3). In Brussels, Milan, Lille and Manchester, over 25% of high-speed roads are congested. This could be reduced by the introduction of congestion charging — which the OECD has recommended in several countries — to encourage people to adjust the time they travel, the route they take and/or the mode of transport they use.

### 3.4 Air quality can still be improved in many places in the EU

Air quality is a key aspect of well-being that can affect human health and the environment. In the EU, emissions of many air pollutants have declined substantially over the past decade, reducing exposure to substances such as sulphur dioxide (SO<sub>2</sub>), carbon monoxide (CO) and lead (Pb). However, some air pollution problems persist in a number of regions in the EU where air quality is regularly lower than the standards specified in EU Directives. This is especially true of cities, where the majority of people live.

At present, airborne particulate matter (PM<sub>10</sub>)<sup>23</sup>, ground-level ozone (O<sub>3</sub>) and nitrogen dioxide (NO<sub>2</sub>) remain the most problematic pollutants in terms of harm to health. Despite the emission of many pollut-

ants from industry, agriculture, transport and housing being regulated by EU Directives<sup>24</sup>, many Member States do not comply with air quality limits which are intended to be legally binding. Measured concentrations of PM<sub>10</sub> and O<sub>3</sub> have shown no significant reduction in recent years. The Air Quality Guideline level for PM<sub>10</sub> set by the World Health Organisation (WHO) of 20 µg/m<sup>3</sup> is regularly exceeded all over Europe in rural as well as urban areas. In many EU cities, PM<sub>10</sub> concentrations have not changed since 2000 or so.

Regions most affected by high PM<sub>10</sub> concentrations are those in the Po Valley in Italy, in southern and central Poland, the Czech Republic, Slovakia and Bulgaria (Map 3.4). High concentrations of O<sub>3</sub> occur mostly in the southern EU, notably in Northern Italy, where the target level is exceeded for 25 days a year or more (Map 3.5).

Although the EU has not reached its interim environmental objective set to protect sensitive ecosystems from acidification, the area affected by excessive acidification from air pollution was reduced considerably between 1990 and 2010, as a result mainly of previous measures to mitigate SO<sub>2</sub> emissions. The area of sensitive ecosystems in the EU affected by excessive atmospheric nitrogen, however, diminished only slightly between 1990 and 2010<sup>25</sup>, and ambient O<sub>3</sub> concentrations still reduce vegetation growth and crop yields<sup>26</sup>.

Other sources of pollution are also monitored. In particular, the EU has tackled emissions of mercury which is a global pollutant (i.e. circulating between air, water, sediments, soil and living organisms) causing significant harm to human health, by launching a strategy in 2005 which included 20 measures to reduce emissions, cut supply and demand and protect against exposure, especially to methylmercury found in fish.

20 COM(2011) 144, *White Paper: Roadmap to a Single European Transport Area*.

21 Christidis P. and Ibañez Rivas J., N. (2012).

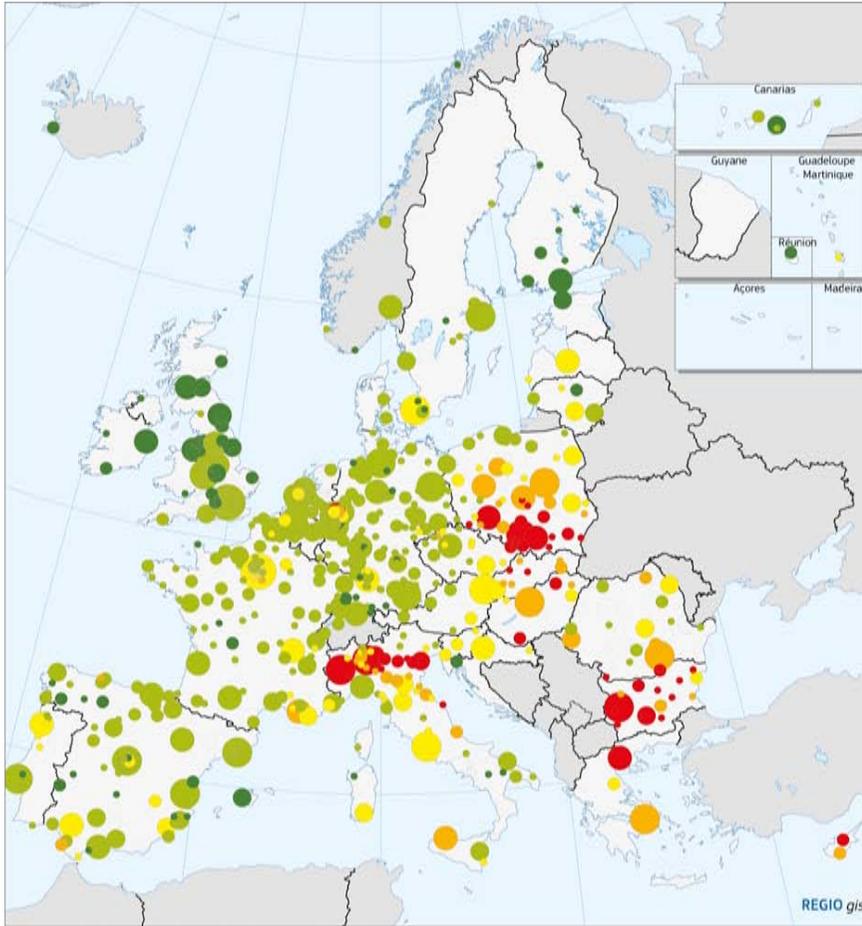
22 OECD-ECMT (2007), *Managing Urban Traffic Congestion*.

23 PM<sub>10</sub> (PM<sub>2.5</sub>) is particulate matter with an aerodynamic diameter of 10 (2.5) µm or less, suspended in the air. While EU Directives impose limits on the concentration in terms of PM<sub>10</sub>, concentration in terms of PM<sub>2.5</sub> is not regulated, despite of the fact that these particulates are even more dangerous to human health since they penetrate deeper into the lungs.

24 Directive 2010/75/EU on industrial emissions, Directive 2001/81/EC on national emission ceilings and Directive 2008/50/EC on ambient air quality.

25 Nitrogen (N) compounds and ammonia (NH<sub>3</sub>) are now the principal acidifying components in the air. In addition to its acidifying effects, N also contributes to the excess supply of nutrients in terrestrial and aquatic ecosystems, leading to changes in biodiversity.

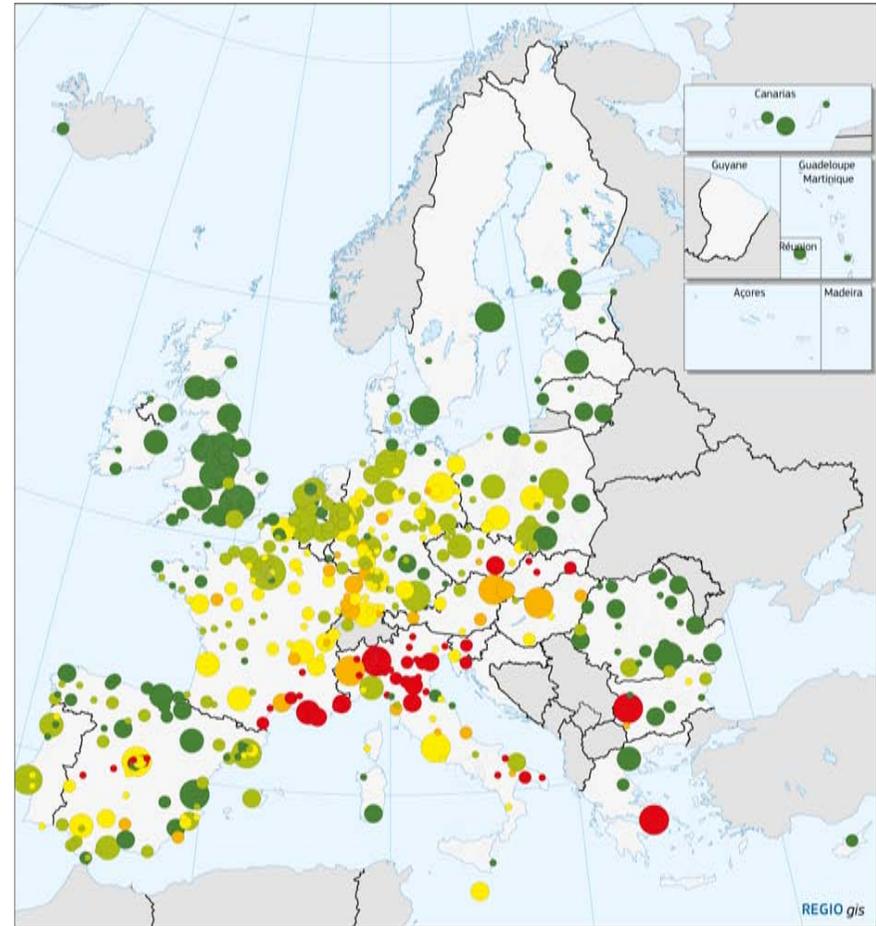
26 Crop losses and the associated economic loss were estimated for 23 horticultural and agricultural crops in 2000 to amount to the equivalent of EUR 6.7 billion (see Holland *et al.* (2006).



**Map 3.4 Concentration of airborne particulate matter (PM<sub>10</sub>), 2011**

Daily average concentration (µg/m <sup>3</sup> )	City population	
● < 21	○ < 100,000	
● 21 - 31	○ 100,001 - 250,000	
● 31 - 44	○ 250,001 - 500,000	Note: Average for measuring stations within city boundaries.
● 44 - 67	○ 500,001 - 1,000,000	Sources: EEA, DG REGIO
● > 67	○ 1,000,001 - 5,000,000	
○ no data	○ > 5,000,000	

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**Map 3.5 Concentration of ground-level ozone (O<sub>3</sub>), 2011**

Number of days with > 120 µg/m <sup>3</sup>	City population	
● ≤ 5	○ < 100,000	
● 5 - 14	○ 100,001 - 250,000	
● 14 - 23	○ 250,001 - 500,000	Note: Average recorded by measuring stations within city boundaries.
● 23 - 32	○ 500,001 - 1,000,000	Sources: EEA, DG REGIO
● > 32	○ 1,000,001 - 5,000,000	
○ no data	○ > 5,000,000	

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## 4. Making cities more attractive can boost EU Resource Efficiency

Cities are significantly more efficient in terms of energy use and land use than other areas. Energy consumption by private households in cities tends to be lower because a larger proportion of people live in apartments or terraced housing which are more efficient in terms of heating than freestanding houses. For example, in the Netherlands, gas and electricity consumption per head is twice as high in freestanding houses than in apartments. The difference is big enough to show up even at the regional level. The NUTS 2 regions in which Amsterdam and Rotterdam are located accordingly have the lowest gas and electricity consumption per head in the Netherlands<sup>27</sup>.

### 4.1 Cities use land more efficiently

An even stronger example of the efficiency of urban living is the impact on land use. On average, urban areas use only around a quarter of built-up land (i.e. land with a building on it) per person living there than rural or intermediate areas. This is shown by the JRC using high-resolution satellite imagery to detect built-up areas, whether the buildings in question are residential, commercial, industrial, agricultural or a mix of different types (Table 3.1 and Maps 3.6 and 3.7). This pronounced difference applies to both the EU-15 and the EU-13.

The reasons are twofold: a more efficient use of land by people and businesses in urban areas and more industrial and agricultural buildings in other areas. Accordingly, the growth of population and economic activity in cities has a smaller impact on land use than the same growth elsewhere.

#### Large cities use land more intensively than smaller cities

The same conclusion results from using a slightly different indicator, that of soil-sealing (imperviousness), which shows that where population densities are higher, the amount of soil sealed (i.e. concreted over)

<sup>27</sup> Unfortunately, such detailed data is not available for the entire EU.

**Table 3.1 Built-up area per inhabitant, 2012**

(sq km per million inhabitants)

	Predominantly urban	Intermediate	Predominantly rural
EU-28	97	230	368
EU-15	94	221	372
EU-13	126	260	362

JRC European Human Settlement Map and DG REGIO calculations.

per head is smaller. Larger cities, which typically have higher concentrations of population, therefore, tend to be more efficient than smaller ones (Figure 3.10).

#### Land in the centre of large cities is the most intensively used

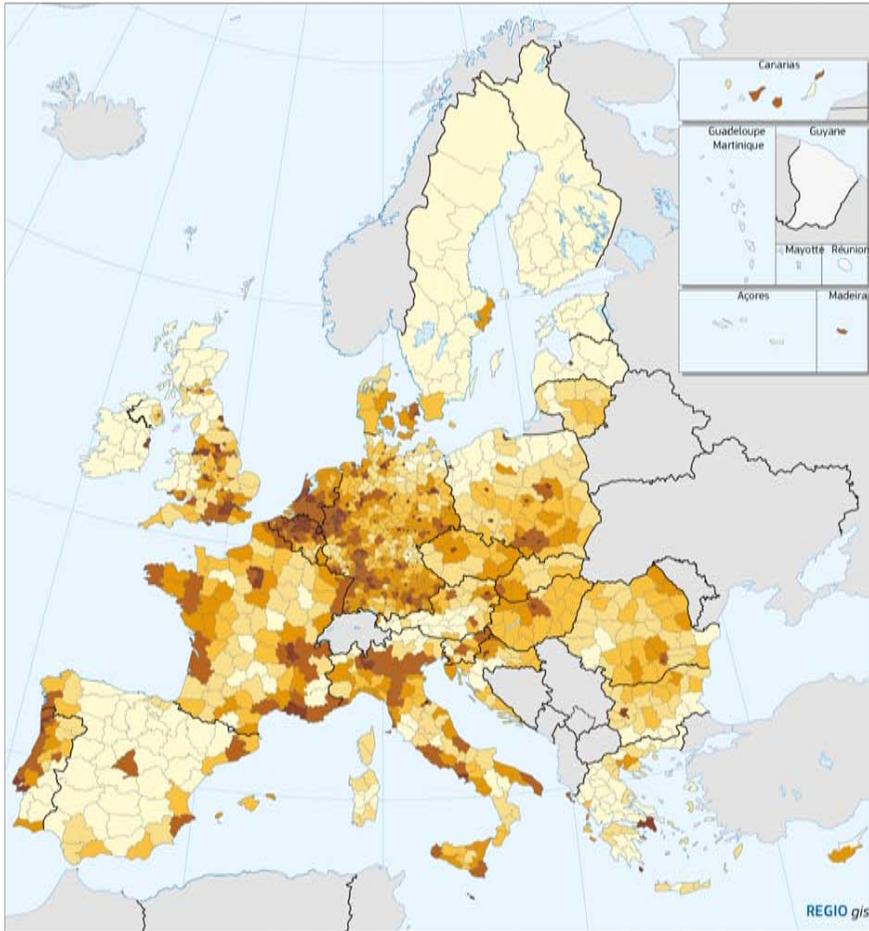
Average population densities per city, however, tend to mask a great deal of variation. Population density tends to decline the further away from the city centre an area is located. In the larger EU capitals, population densities tend to peak within a distance of 3–4 km from the centre (Figures 3.11 and 3.12)<sup>28</sup>.

The general pattern can be explained by economic theory that goes back to von Thünen, who observed that the price of land, and its corresponding use, varies according to access to the market (the city centre). The highest return to land use, therefore, tends to be close to the city centre, where shops and services are concentrated, followed by high density residential use. Returns to land use decline with the distance from the centre.

Despite this general tendency, population densities in practice differ between cities of similar size. For example, Paris peaks at a density of 520 inhabitants per square km, while London peaks at just under 300. Madrid, Athens and Berlin peak at 650, 400 and 290, respectively.

In the medium-sized capital cities, the peaks tend to be lower. Stockholm, Vienna and Brussels have a peak of between 300 and 400 inhabitants per square

<sup>28</sup> In the majority of the cases, the city centres themselves are actually not as dense as the immediately surrounding areas. This is due to a high share of commerce and services, and in some cases as well, depopulated historical centres.



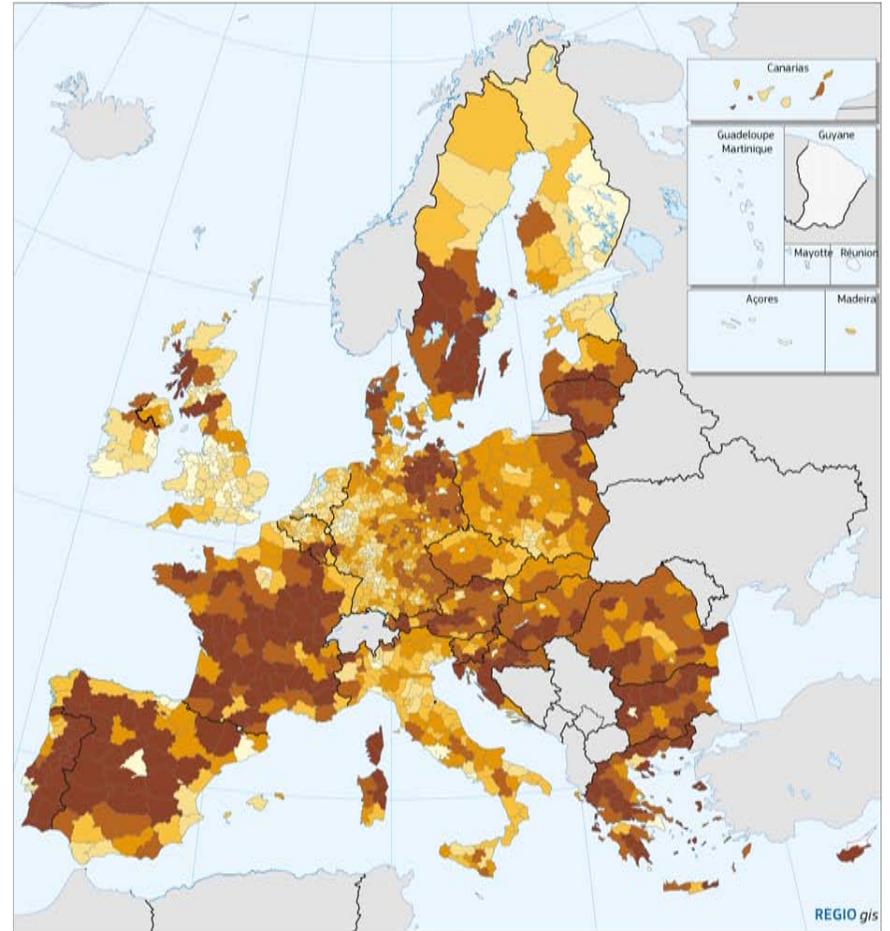
Map 3.6 Relative size of built up areas, 2012

- < 2.0
- 2.0 - 2.6
- 2.6 - 3.3
- 3.3 - 4.2
- 4.2 - 7.0
- >= 7.0

Source: JRC European Human Settlement Map based on GHSL automatic extraction of built-up areas from satellite imagery of 2.5m resolution.

0 500km

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Map 3.7 Built-up area per head, 2012

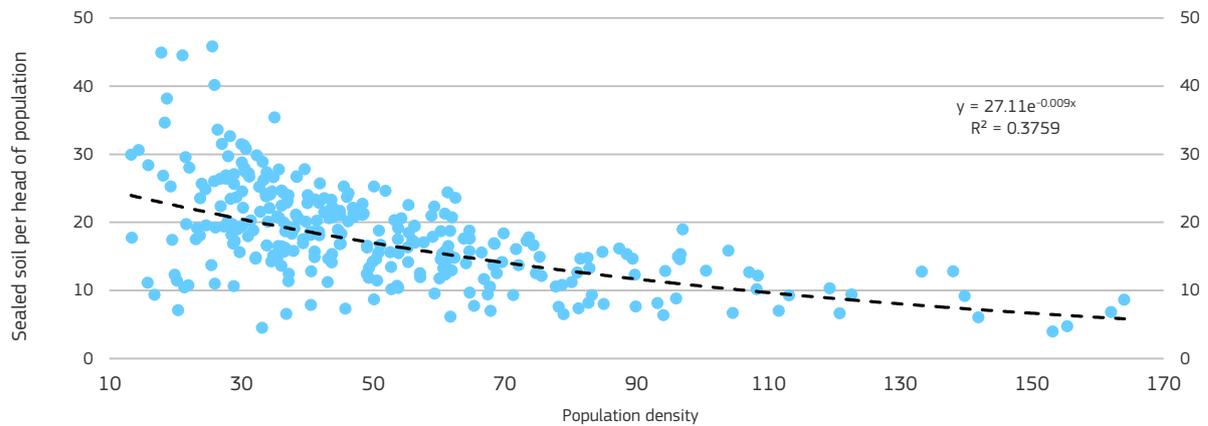
- < 96.4
- 96.4 - 158.5
- 158.5 - 223.5
- 223.5 - 294.9
- 294.9 - 404.5
- >= 404.5

Source: JRC European Human Settlement Map based on GHSL automatic extraction of built-up areas from satellite imagery of 2.5m resolution.

0 500km

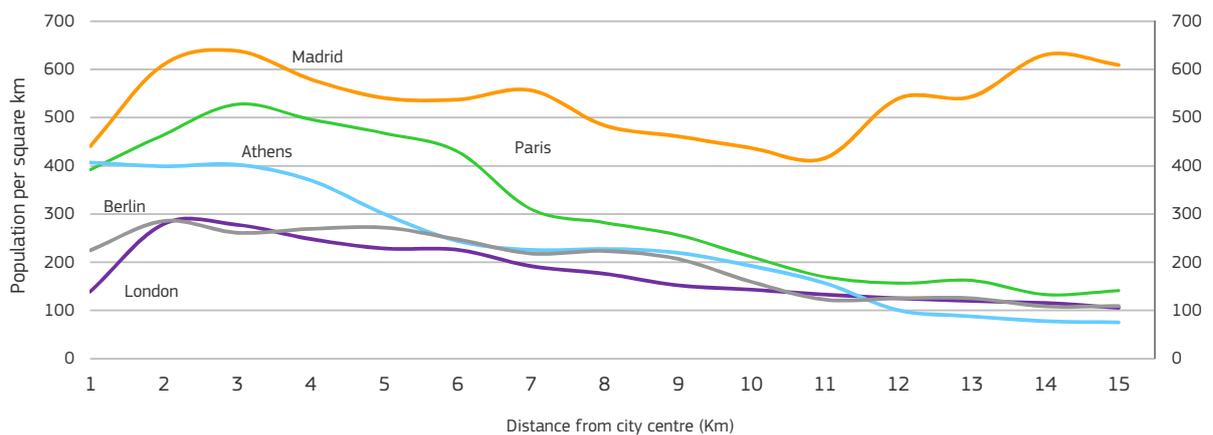
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**Figure 3.10 Relationship between population density and sealed soil per head of population in functional urban areas, 2006**



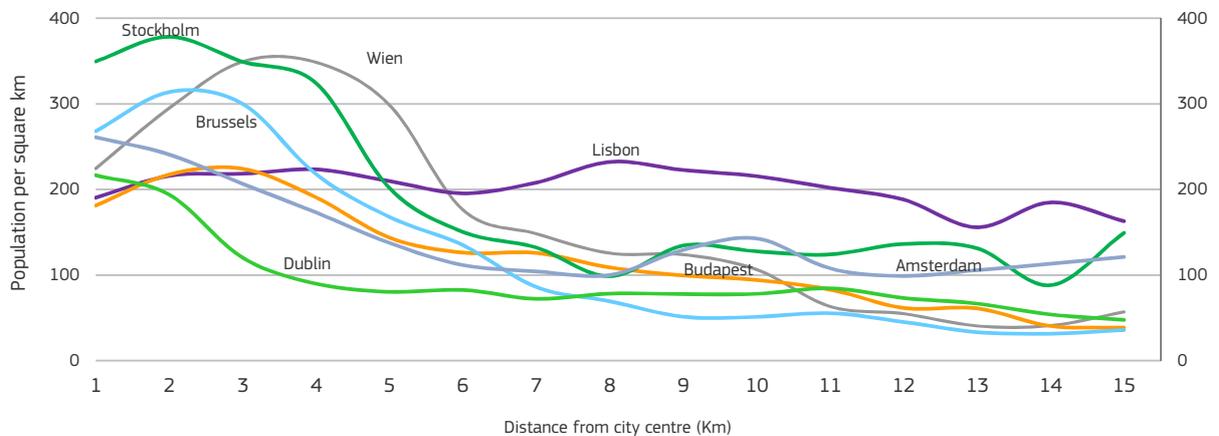
Source: Batista e Silva, F. et al. (2012)

**Figure 3.11 Population density profile of selected large European capital cities, 2006**



Source: Batista e Silva, F. et al. (2012)

**Figure 3.12 Population density profile of selected large European capital cities, 2006**



Source: Batista e Silva, F. et al. (2012)

km, Lisbon, Dublin, Amsterdam and Budapest, between 200 and 300.

After peaking, population density falls, more or less abruptly, towards the periphery. This is clearly the case for Paris, Athens, Vienna, Budapest, Stockholm, Brussels and Dublin. Secondary peaks are also evident in some places, such as in Madrid, Lisbon and Amsterdam, which could be related to the existence of 'satellite' urban centres in the vicinity of the main agglomeration.

### Urban population growth and changing land use intensities

A new analysis shows how a number of cities have changed in terms of land use and population between the 1950s and 2006 (Map 3.8). The most rapid changes occurred in the 1960s and 1970s which saw

high population growth and an even faster expansion of built-up areas. For example, in Palermo, the built-up area tripled between 1955 and 1984, while its population increased by only 26%. In the following two decades, the pattern of change was different: built-up areas increased by 9% and population shrank by 3%.

In Helsinki, the built-up area almost doubled between 1950 and 1984, while its population grew by 25%. In the following two decades, population and built-up area increased by 12% in both cases, leaving land-use intensity unchanged.

In contrast, in Vienna, the built-up area increased by only 15% between 1955 and 1997, while population shrank by 5%. In the following decade population grew by 7%, while the built-up area increased by only 4% leading to higher land use intensity.

#### The urban atlas shows faster changes in Central and Eastern cities

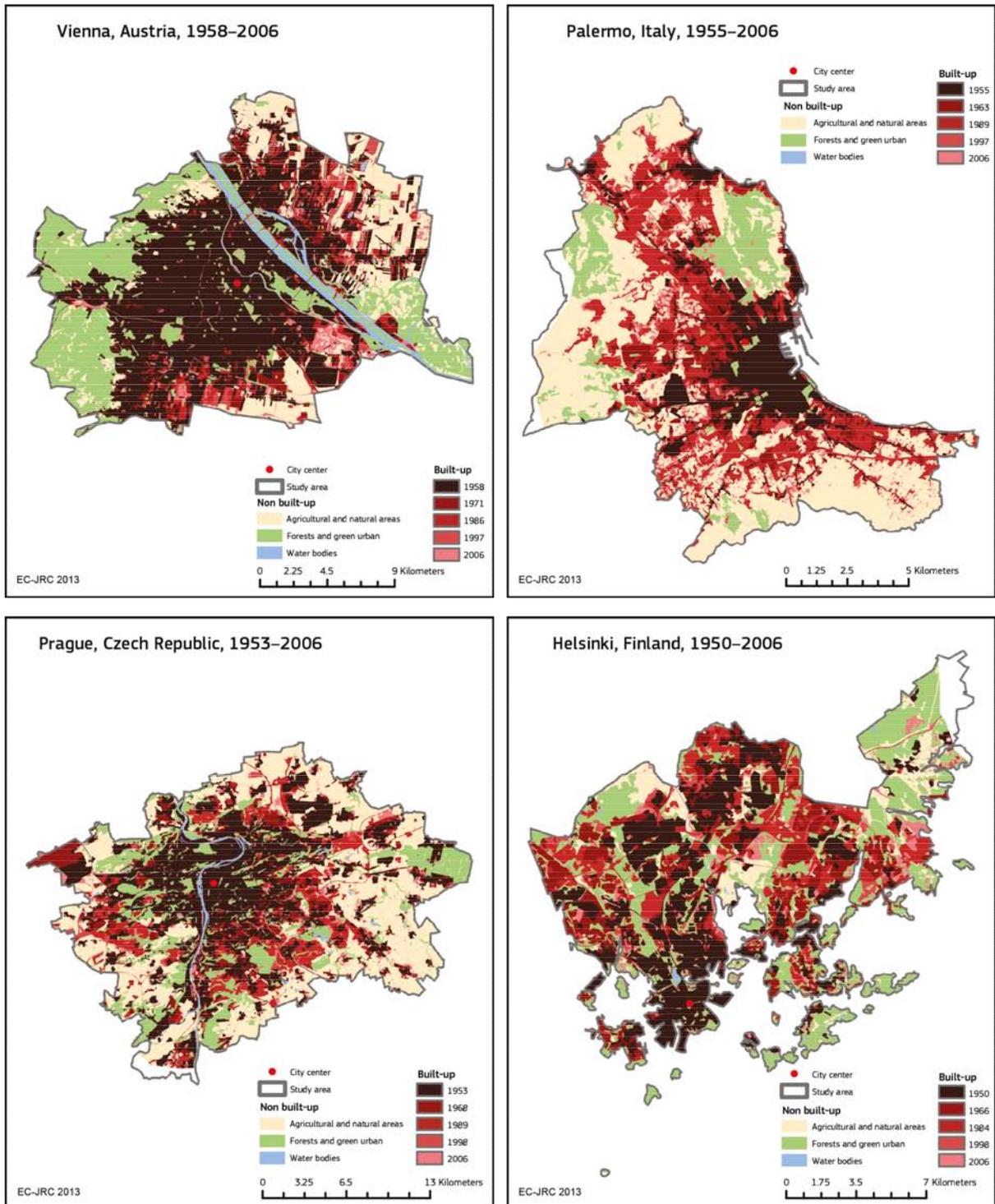
The Urban Atlas provides reliable, comparable, high resolution land use maps for 408 European cities and their surroundings for the reference years of 2006 and 2012<sup>1</sup>. It was created to fill a gap in knowledge of land use in European cities. It uses images from satellites transformed to detailed land use maps to allow land use comparisons not only between cities but also over time and to enable analysis of land use changes to be made so increasing understanding of urbanisation trends.

The latest analysis of the Urban Atlas comprises a sample of land use maps (2012) for five European cities with their respective changes in land use over the period 2006–2012. The results for 2012 demonstrate a variation in the intensity of land use between the five cities, as a result of different spatial patterns, urban forms and development potential. Bratislava seems to use land most intensively, followed by Edinburgh and Prague, while Munich and Bucharest use land least intensively. In most of the cities, industrial, commercial, public and military units consume half as much land or less as residential areas. This is not the case, however, in Bratislava, where the use of land by the two is much the same.

Over the period examined, in most of these cities, built-up areas tended to expand while at the same time there was growth of population, except in Bratislava (Map 3.9). The most significant changes in land use during 2006–2012 were in cities in Central and Eastern Europe, like Prague and Bucharest, where their rapid growth was associated with a similarly rapid increase in built-up areas. Both faced a marked rise in population and in both, agricultural, forest and other natural areas were reduced to accommodate housing and economic activities.

Hotspots of change in land use are more evident than in Bratislava, where new built-up areas were developed close to major transport routes, despite a decline in population. On the other hand, in Munich and Edinburgh, there were only limited changes in land use between 2006 and 2012 and both became more compact and sustainable. In both cities, wetlands and areas of water were expanded in contrast to the other cities which lost natural environment areas under the pressure of economic activities. Understanding trends in urbanisation and their effects across Europe is therefore crucial for maintaining economic and social cohesion and sustainable development. Urban Atlas is a significant contribution in this regard.

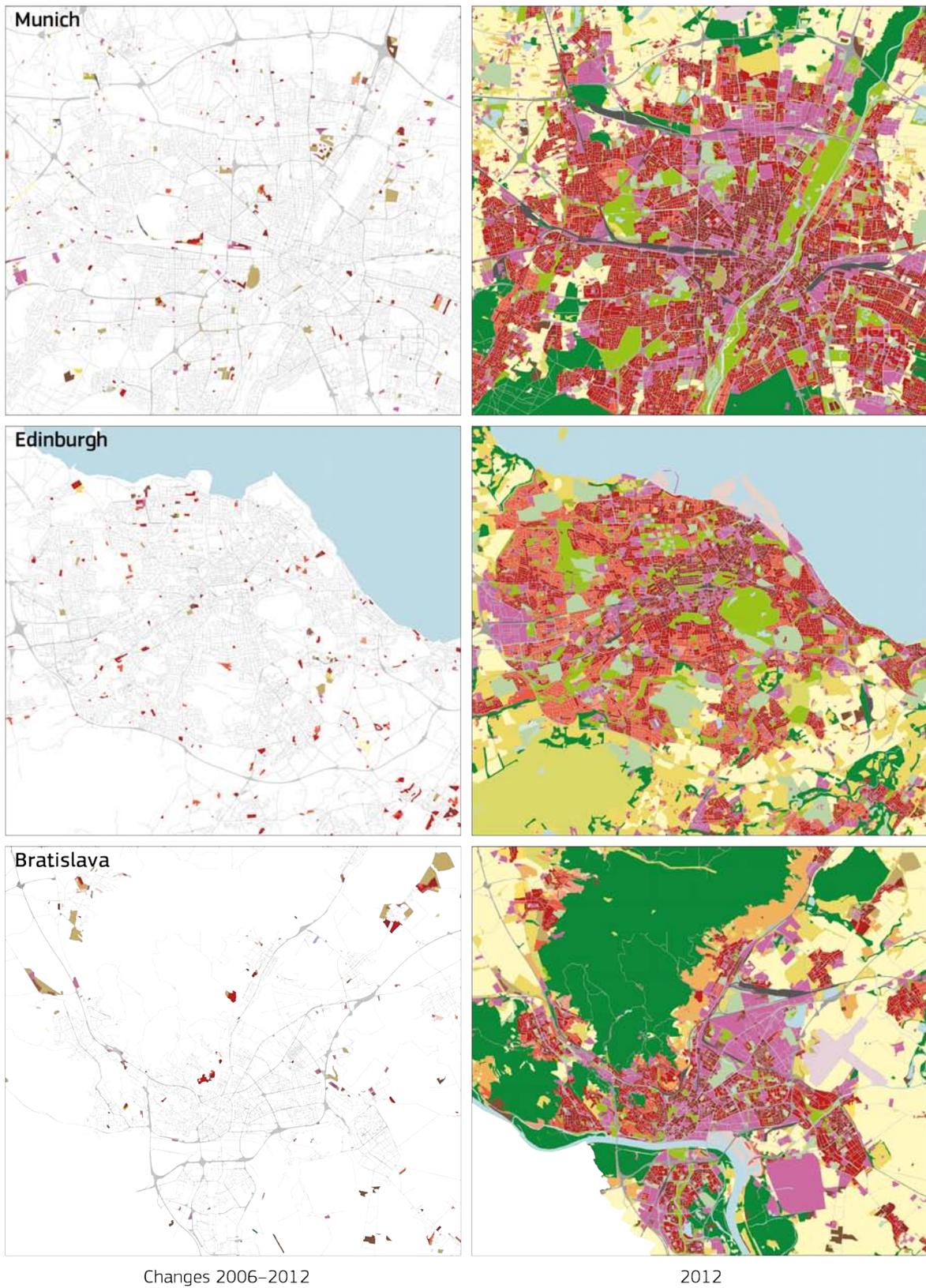
<sup>1</sup> The Urban Atlas is a joint initiative between ESA, DG ENTR (Copernicus), DG REGIO and EEA

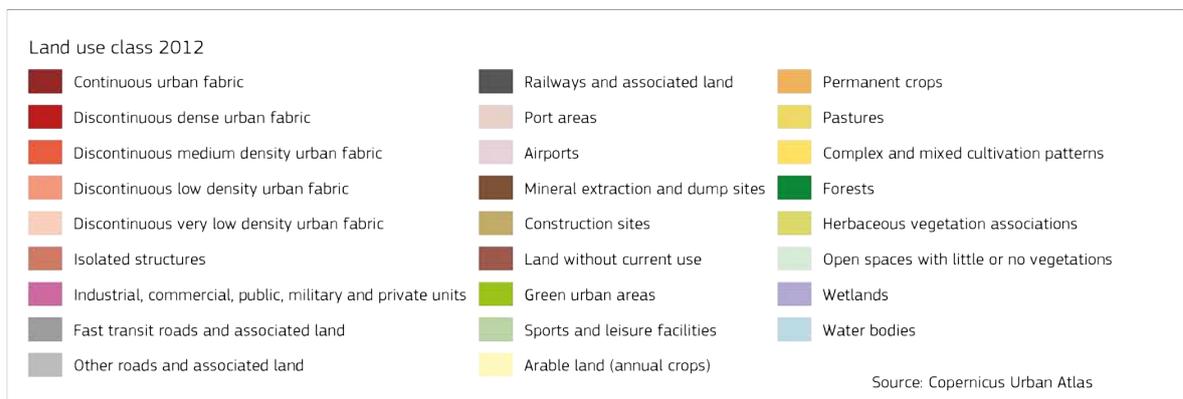
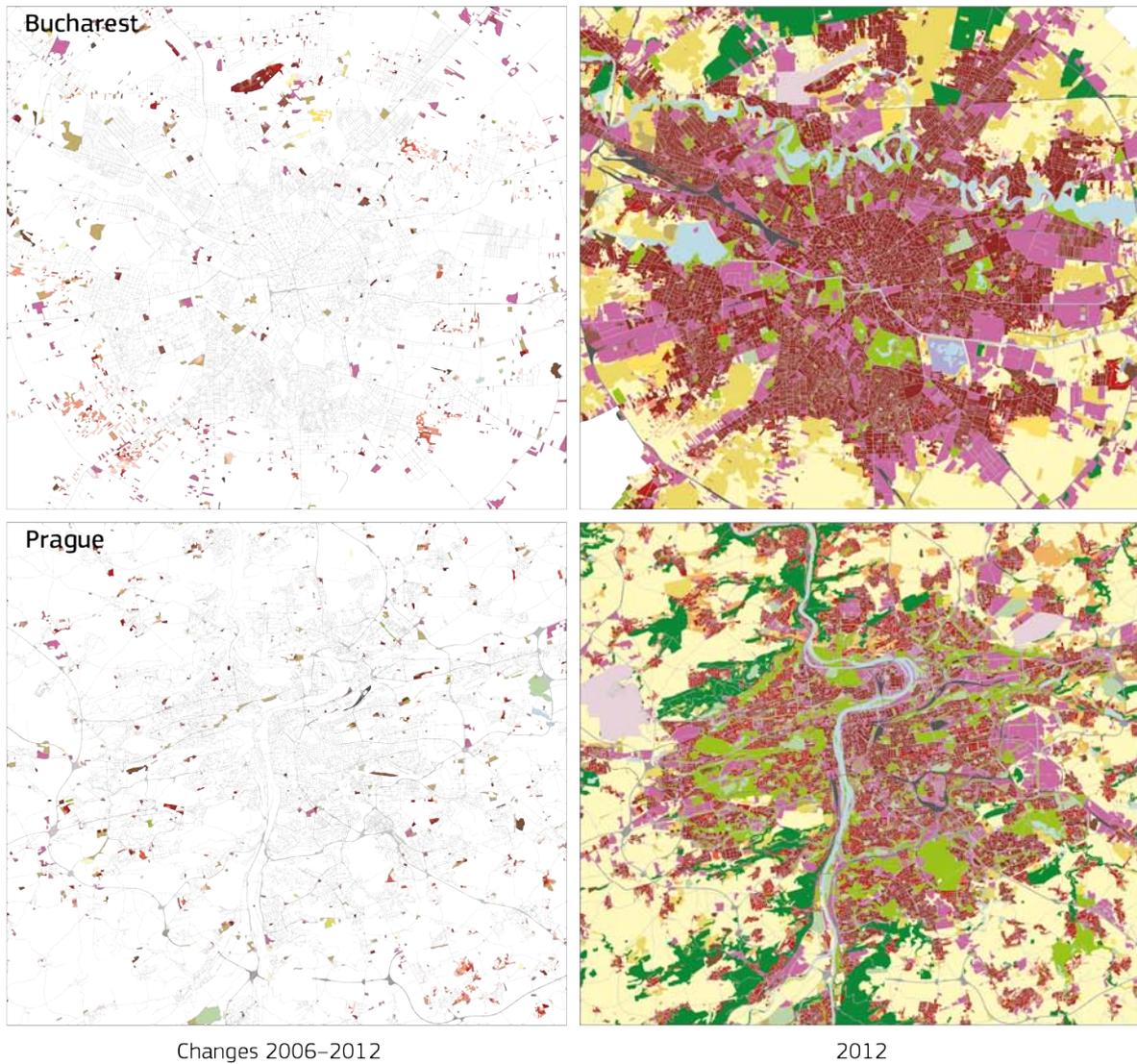


Map 3.8 Growth of built-up areas in Vienna, Palermo, Prague and Helsinki, 1950s–2006

Sources: JRC, Copernicus Urban Atlas

Map 3.9 Change in land use in Bucharest, Prague, Munich, Edinburgh and Bratislava, 2006–2012





Comparing the land use intensity of Palermo, Vienna, Helsinki and Bratislava between the 1950s and 2000s, shows a rapid convergence of built-up areas relative to population to about 9000 inhabitants per square km by the 1980s and very little change since.

The revival of many EU urban centres during the 1990s and 2000s has allowed cities to reclaim brownfield sites and reuse abandoned buildings, increasing the vitality of city centres without expanding the built-up area.

## 4.2 National and local policies can shape the location and land use intensity of new developments by promoting more compact cities

Compact cities can offer major savings in terms of infrastructure and travel time, so reducing the damaging environmental effects of built-up areas and high energy consumption. Matsumoto<sup>29</sup> has defined the following key features of compact cities:

- Contiguous development patterns: new urban development is typically located at the fringes of existing urban areas and urban sprawl is avoided.
- Dense built-up areas: urban land is used intensively, with more residents and more activities in a given size of built-up area.
- High levels of accessibility: mass-transit links ensure a high-level of mobility in the urban areas and a mixed use of land ensures that people enjoy fast access to services.

These features were taken into account in using the Land Use Modelling Platform to define two scenarios of future land use<sup>30</sup>: a business-as-usual one and a compact city one. Both scenarios incorporate estimates of the impact of Cohesion Policy (based on the RHOMOLO results) and improvements in accessibility. Cohesion Policy support for investment in specific policy areas is also allowed for (e.g. in R&D facilities, health and education, waste and wastewater treat-

ment, and urban regeneration). The main difference between the two scenarios is that in the first no specific urban land use policies are assumed to be put in place, while in the second a policy in favour of more compact cities is assumed.

Comparison of the two scenarios indicates many benefits from developing compact cities. Although in both scenarios, the intensity of land use continues to fall, the reduction is less in the compact city one, in which, in addition, there is less urban fragmentation, more infill development and the emergence of large city centres. In the business-as-usual scenario, there is more urban sprawl and more use of cars, with consequently higher energy consumption, illustrating the fact that such a pattern of development tends to lock people into a car-dependent lifestyle.

## 5. Improving Eco-systems and reducing environmental impacts can make the EU more efficient and a better place to live

### 5.1 Preserving water quality and protecting species and habitats

Water is, of course, a key natural resource which plays a central role in the functioning of the biosphere and in supporting all forms of life as well as being vital for agriculture and many other economic activities. In addition, freshwater and coastal ecosystems serve a range of regulating functions, such as controlling floods and breaking down pollutants. They are also essential to the health of marine ecosystems.

However, water resources are under increasing pressure, often as a result of human activity. Such pres-

<sup>29</sup> OECD (2012), *Compact City Policies*.

<sup>30</sup> Batista e Silva, F. *et al.* (2013).

sure has different origins. Changes in land use and the development of economic activities is often accompanied by pollution and landscape interventions. The latter implies canalisation, disconnection of flood plains, reclamation of land, the construction of dams, and the extension of impervious surfaces, all of which alter the hydrological system. For instance, urbanisation tends to be accompanied by soil sealing and modifications to the existing sewerage and drainage systems that increase the risks of flooding and affect habitats and the aquatic environment. Water reserves are also often subject to extreme abstraction, due, for example, to the heavy use of water for irrigation by agriculture in some parts of the EU, especially during the summer, so increasing the risk of drought. Climate change exerts additional pressure since it is likely to increase the frequency and severity of both droughts and floods, as well as the temporal distribution of water availability, especially in areas where gradual snowmelt and water recharge becomes dominated by rapid thawing and flash floods. This calls for investment in disaster risk management.

Performance in preserving aquatic ecosystems varies considerably across the EU. In a number of regions, many water bodies have been subject to various kinds of action which have affected their hydrology (the movement, distribution and quality of water) or their morphology (through straightening water courses, canalisation or disrupting the connection to flood plains). This is particularly so for most regions in Belgium, the Netherlands, the Czech Republic, Germany, Poland and Hungary. In France, Sweden, Spain and the UK, water bodies in many regions have also been affected by such pressure<sup>31</sup> (Map 3.10). Many of the changes date back to the early industrial era, such as the straightening of the Rhine (which occurred between 1817 and 1876), or earlier, such as the reclamation of land from the sea in the Netherlands.

The quality of water and the ecological status of aquatic ecosystems are also affected by pollution-causing nutrient enrichment in particular. More than half of the surface water bodies (lakes, rivers, wet-

lands and groundwater under the surface) in the EU are reported as not meeting the standards defined by Good Environmental Status (GES)<sup>32</sup> or Good Environmental Potential (GEP) and require remedial measures being taken to meet the EU Water Framework Directive objectives<sup>33</sup>. The worst cases are in the north-west of the EU, where over 90% of water bodies are in a poor ecological state, mainly as a result of intensive agriculture, resource-intensive industries and high-population density.

## 5.2 The treatment of urban wastewater is necessary for ensuring high quality of water

Wastewater also poses significant pressure on the aquatic environment because of the organic matter and nutrients as well as hazardous substances and metals that it contains. Nutrient pollution is the main cause of eutrophication (excessive algae growth and oxygen depletion) and one of the biggest threats to reach good status of both fresh and marine waters. Appropriate collection and treatment of wastewater is therefore essential to preserve the quality of water reserves (from surface water to reservoirs supplying clean drinking water), bathing water and marine ecosystems. Proper sanitation is also a basic human right and essential to human health, which has been recently highlighted again by the first European Citizen's initiative (ECI) 'right2water'<sup>34</sup>. The EU Urban Wastewater Treatment Directive makes it mandatory to collect and treat wastewater in all settlements and areas of economic activity with the equivalent of over 2,000 inhabitants<sup>35</sup>.

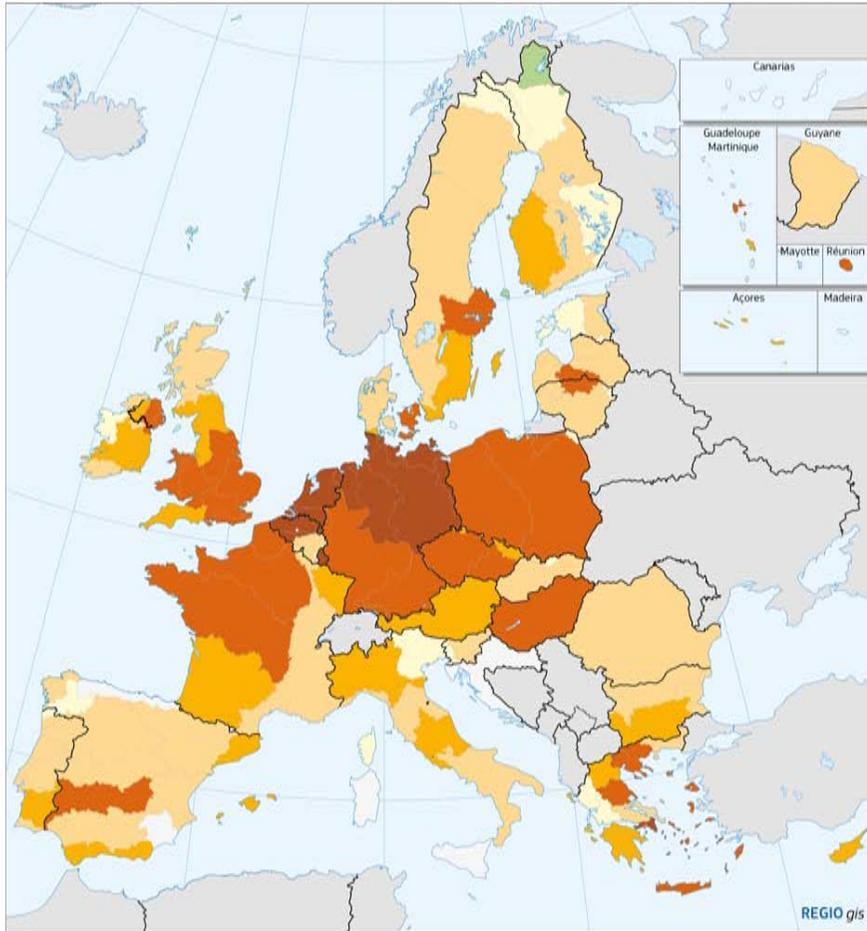
<sup>32</sup> The Water Framework Directive classification scheme for water quality includes five status classes: high, good, moderate, poor and bad. 'High status' is defined as the biological, chemical and morphological conditions associated with no or very low human pressure. Assessment of quality is then based on the extent of deviation from these reference conditions. 'Good status' means 'slight' deviation from the reference conditions. The definition of ecological status takes into account specific aspects of the biological quality elements, for example "composition and abundance of aquatic flora" or "composition, abundance and age structure of fish fauna" (see WFD Annex V Section 1.1 for the complete list).

<sup>33</sup> *Ibid.*

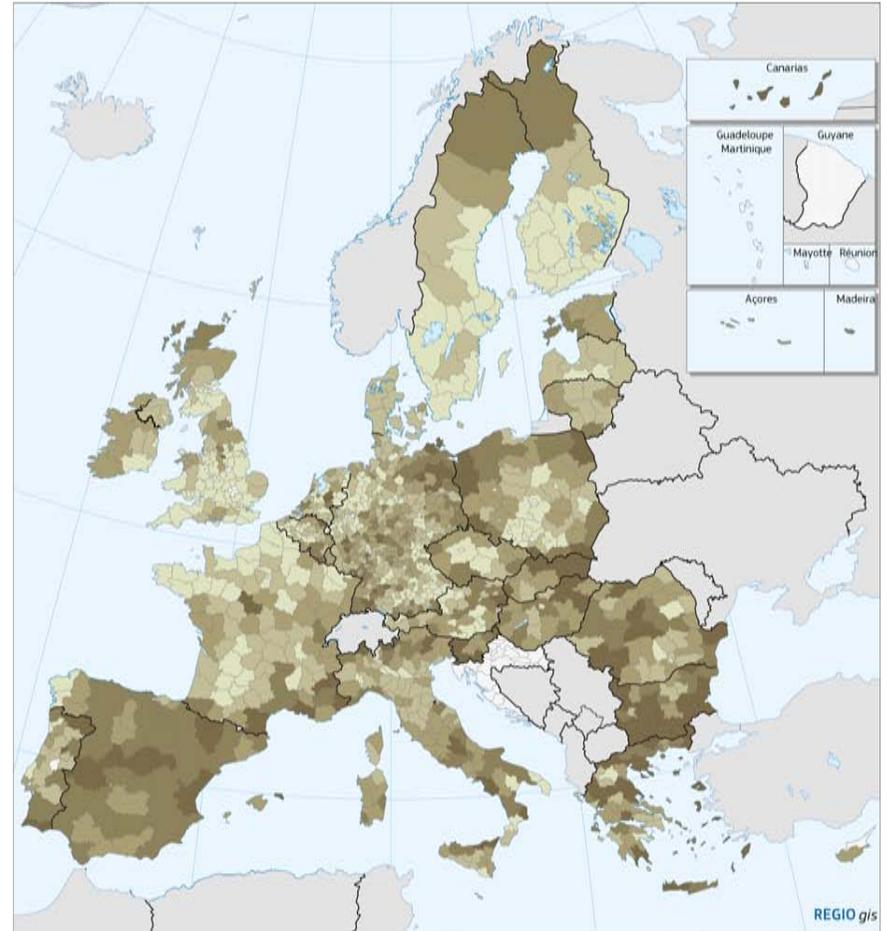
<sup>34</sup> COM(2014) 177 final.

<sup>35</sup> The concept of population equivalent takes account of the load generated by the resident population, the non-resident population (largely tourists), and the industries covered by Art.11 of the Directive.

<sup>31</sup> EEA (2012), *Water resources in Europe in the context of vulnerability*.



Map 3.10 Main water bodies with less than good ecological status or potential



Map 3.11 NATURA 2000 areas, 2012



## Environmental policy and EU territories

EU environmental policy is pursued through Action Programmes. The 7<sup>th</sup> Action Programme, *Living well, within the limits of our planet*<sup>1</sup>, is the most recent. It draws on a number of recent environmental initiatives, including the Resource Efficiency Roadmap, the 2020 Biodiversity Strategy and the Low Carbon Economy Roadmap, in order to reduce environmental disparities across the EU. The policy is implemented through various means (initiatives, taxes, Directives, charges, emissions' trading, green procurement and networks) and has significant effects on less developed regions as well as on different types of area (urban, rural, marine, island, mountain etc.) and social groups (such as the unemployed).

The EU environmental policy supports the installation of green infrastructure<sup>2</sup> as they can provide ecological, economic and social benefits through natural means. It can avoid relying on infrastructure that is expensive to build and is particularly important in cities<sup>3</sup>, where it can deliver health-related benefits such as clean air and better water quality.

Creating green infrastructure can also generate a greater sense of community and combat social exclusion and isolation as well as opportunities for connecting urban and rural areas and providing attractive places to live and work in<sup>4</sup> together with more jobs<sup>5</sup>.

1 <http://ec.europa.eu/environment/newprg/>.

2 COM(2013) 249 final.

3 COM(2005) 718 final.

4 Reports, studies and review documents supported by the European Commission: <http://ec.europa.eu/environment/nature/ecosystems/studies.htm>.

5 See case examples of GI creating jobs in table 2 of Commission Staff Working Document SWD(2013) 155 final.

Natura 2000<sup>6</sup> areas are designated to protect EU most threatened habitats and species, but they also provide opportunities, for the development of tourism, recreation, agriculture, forestry sustainable fisheries and aquaculture as well as nature-based means of controlling floods, adapting to climate change and producing other ecosystem services, the total benefits amounting to an estimated EUR 200–300 billion a year<sup>7</sup>. The establishment of NATURA 2000 is not yet complete but considerable progress has been achieved with more than 15% of the EU's territory proposed for conservation under the network (Map 3.11).

Investing in Natura 2000 on land and at sea can also be an opportunity for advancing cross-border and multi-region cooperation, for example in respect of the strategy for the Danube strategy or mountain ranges (e.g. the Alpine-Carpathian Corridor Project has helped greatly to reduce the fragmentation of the landscape in Austria, Czech Republic and Slovakia through the construction of 'green bridges' and the creation of suitable habitats).

The impact of legislative and regulatory measures (e.g. Directives and EIA standards) on economic and social cohesion is more ambiguous<sup>8</sup>. On the one hand, the improvement of the environment in less favoured regions increases their attractiveness for external investors and for tourism and helps to strengthen their regional identity. On the other hand, the economic and financial implications of legal provisions can constrain development in both the short and longer-term.

6 Natura 2000 is an EU wide network of nature protection areas established pursuant to the Birds and Habitats Directives.

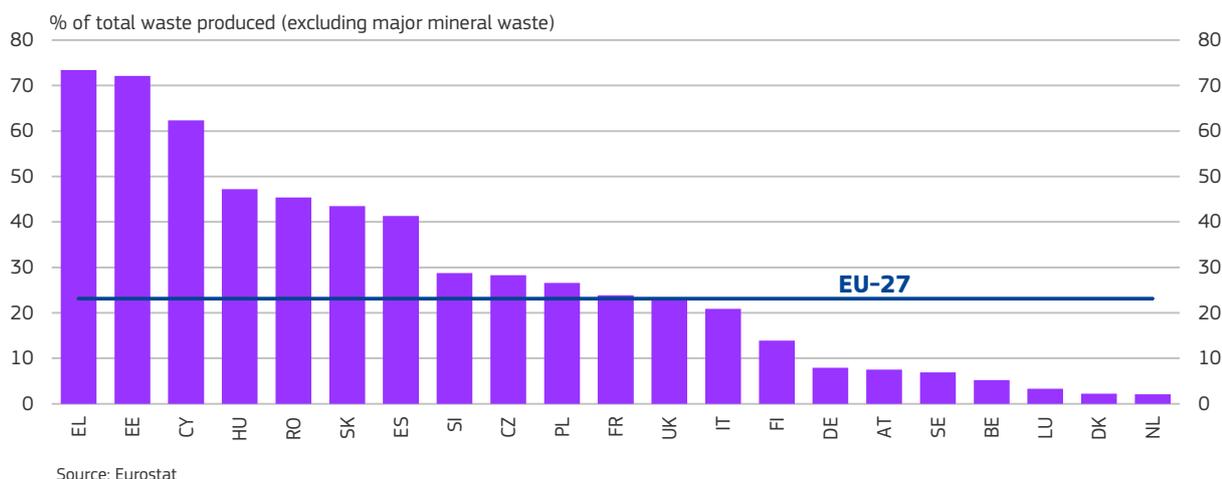
7 According to recent Commission study *The Economic benefits of the Natura 2000 Network*.

8 Robert, J. *et al.* (2001).

The level of required treatment depends on the sensitivity of the area for discharges of waste water. Primary (mechanical) treatment removes part of the suspended solids and required in areas for which discharges of waste water do not adversely affect the environment ('less sensitive areas', rather exceptional and due to specific local conditions), secondary (biological) treatment decomposes most of the organic matter but retains some of the nutrients and is the minimum requirement in all 'normal areas', while tertiary (advanced) treatment removes almost all the

organic matter and required in the 'sensitive areas', characterised by increased risks for adverse effects from discharges or requiring specific protection such as drinking water abstraction areas.

In general high compliance rates are seen in the older Member States, with frontrunners such as Austria, Germany and the Netherlands having largely implemented the Directive. However, there are still a few 'older Member States' facing serious compliance gaps, including Italy, Spain, Belgium and Luxembourg

**Figure 3.13 Share of waste landfilled in selected EU Member States, in 2010**

mainly in relation to non-appropriate treatment and consequently causing significant pollution pressures for the areas into which the concerned discharged waste waters drain. The picture is different for those Member States that joined the EU in 2004 and later, partially explained because they are still benefitting from transition periods agreed in the Accession Treaties. There are still regions where there is no or only partial collection of waste water. For instance in Member States such as Bulgaria, Cyprus, Estonia, Latvia and Slovenia less than 30% of the generated waste water is collected in a proper way (Maps 3.12 and 3.13)<sup>36</sup>. On average, in newer Member States about 40% of the waste water is subject to secondary treatment, with high rates above 80% seen in Czech Republic, Hungary, Lithuania and Slovakia. Only 14% of the waste water discharged in sensitive areas in the newer Member States is subject to the required tertiary treatment.

### 5.3 Solid waste management improving but there is still a long way to go in many EU regions

Solid waste affects human health and the environment as it generates emissions of polluting substances into the air, soil, surface water and groundwater. It also presents major management challenges as the quantity of waste produced per person has stead-

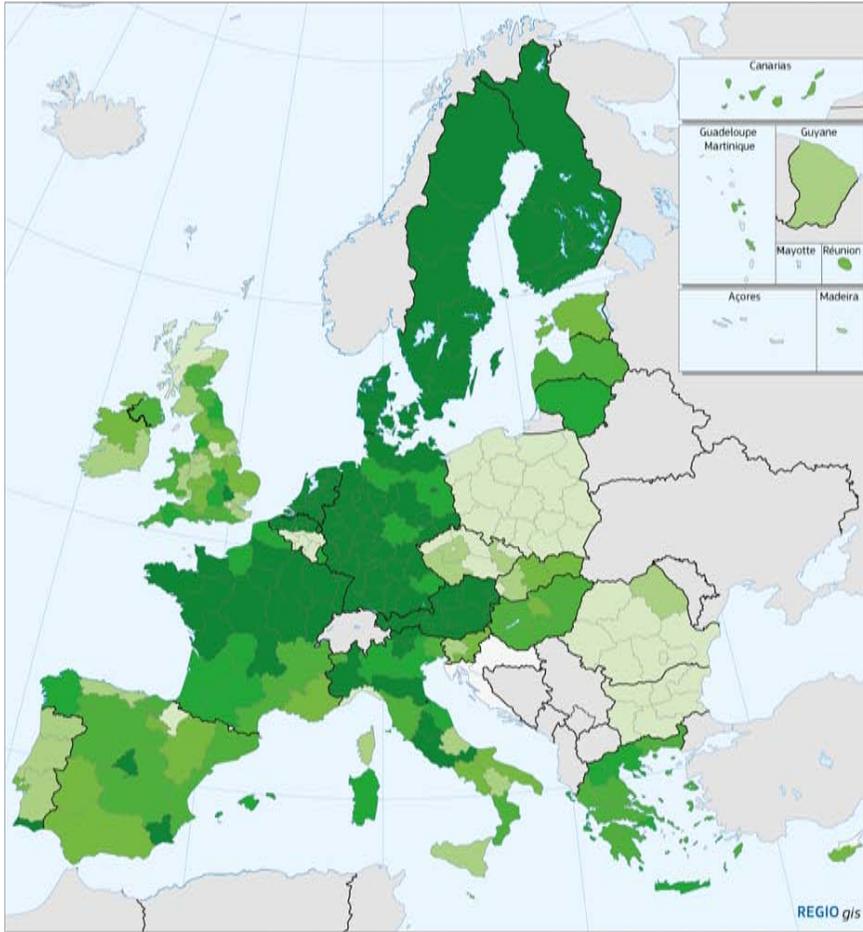
ily increased over time. Recycling and exploiting the energy potential of waste have therefore become important.

In 2010, around 4.5 tonnes of waste per person were generated in the EU-28. Much of this is produced by construction and demolition, mining, quarrying and manufacturing. Households also generate a substantial amount of waste, on average 436 kg per person in 2010. Marine litter, escaping from waste management system, is growing concern.

The total amount of waste generated in the EU has, however, declined over time. Between 2004 and 2010, the amount of waste produced per person in the EU fell by 7.1%, though there are wide variations between Member States. The amount increased by most in Greece, Denmark, Finland, Portugal, The Netherlands, Sweden, Latvia, Belgium, France and Luxemburg, while it declined significantly in Malta, Croatia, Austria, Romania, Hungary, the UK, Ireland, the Czech Republic and Spain.

Increasingly, waste is recycled or diverted for energy recovery. From 2004 to 2010, the proportion of waste recycled increased from 44% to 52%, while the proportion incinerated with recovery of energy also rose slightly (from just over 3% to just under 4%). The increase in recycling has been stimulated by EU and national legislation, landfill taxes and dump-

<sup>36</sup> COM(2013) 574 final.



Map 3.12 Urban wastewater with more stringent treatment, 2010

% of collected wastewater

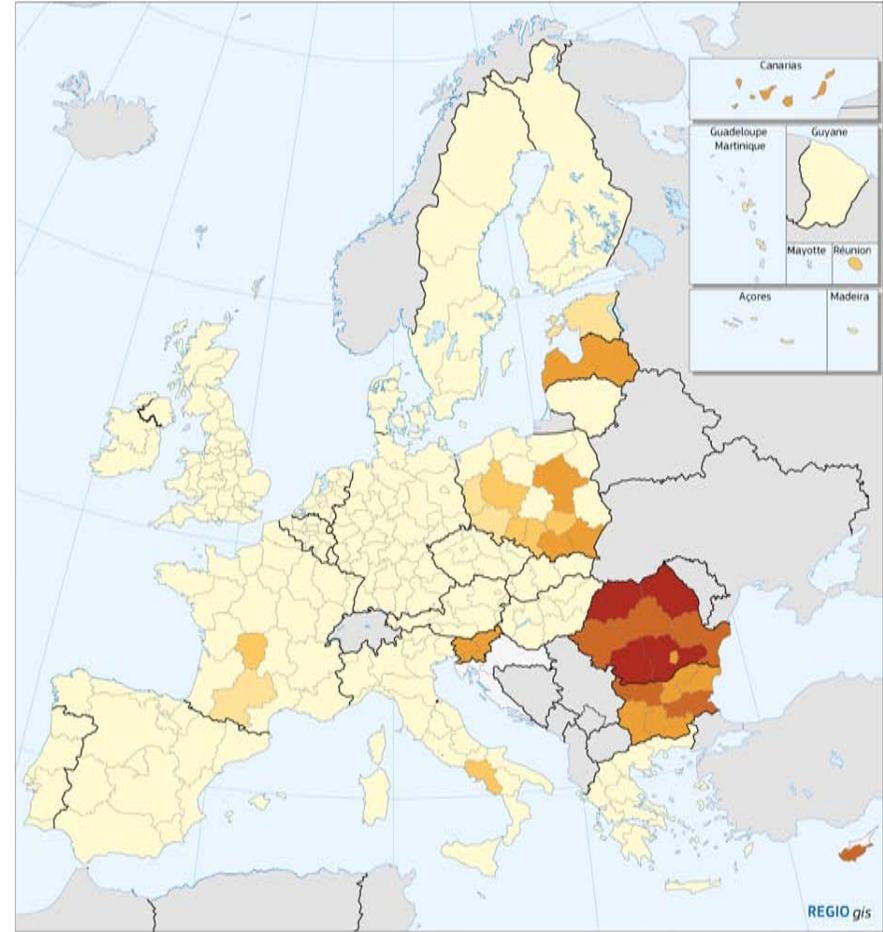
<span style="display:inline-block; width:10px; height:10px; background-color:#d9ead3;"></span> < 10	<span style="display:inline-block; width:10px; height:10px; background-color:#41ab5d;"></span> 75 - 90
<span style="display:inline-block; width:10px; height:10px; background-color:#74c476;"></span> 10 - 25	<span style="display:inline-block; width:10px; height:10px; background-color:#1b9e77;"></span> > 90
<span style="display:inline-block; width:10px; height:10px; background-color:#a1d99b;"></span> 25 - 50	<span style="display:inline-block; width:10px; height:10px; background-color:#f0f0f0;"></span> no data
<span style="display:inline-block; width:10px; height:10px; background-color:#41ab5d;"></span> 50 - 75	

EE, CY, LV, LT, HU, NL, PT, RO, SI, SK, FI: 2009

Sources: EEA, DG REGIO

0 500Km

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Map 3.13 Urban wastewater not collected, 2010

% of generated load

<span style="display:inline-block; width:10px; height:10px; background-color:#fff2cc;"></span> < 2.5	<span style="display:inline-block; width:10px; height:10px; background-color:#c43a21;"></span> 25.0 - 50.0
<span style="display:inline-block; width:10px; height:10px; background-color:#fdb462;"></span> 2.5 - 5.0	<span style="display:inline-block; width:10px; height:10px; background-color:#a50020;"></span> > 50.0
<span style="display:inline-block; width:10px; height:10px; background-color:#fdae61;"></span> 5.0 - 10.0	<span style="display:inline-block; width:10px; height:10px; background-color:#f0f0f0;"></span> no data
<span style="display:inline-block; width:10px; height:10px; background-color:#d73027;"></span> 10.0 - 25.0	

EE, CY, LV, LT, HU, NL, PT, RO, SI, SK, FI: 2009

Not collected by collecting systems nor treated by individual or other appropriate systems.

Sources: EEA, DG REGIO

0 500Km

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ing fees as well as by rising prices for recycled materials and energy.

In 2010, the proportion of waste disposed of in landfill is still around 23% in the EU-27<sup>37</sup> (Figure 3.13). There are, however, marked variations across Member States. More than 70% of waste is still landfilled in Greece and Estonia while this share is above 40% in Cyprus, Hungary, Romania, Slovakia and Spain. Less than 5% goes to landfill in Belgium, Luxembourg, Denmark and the Netherlands.

## 5.4 Sound ecosystems offer many vital services

Among their many functions, such offering habitats for various species of wildlife, ecosystems provide services for people<sup>38</sup>. These range from clean drinking water to good air quality and from the pollination of crops to the regulation of water flows. Ecosystems in coastal and marine regions produce services by providing food and natural barriers to floods. Forests and woodland help to regulate water flows, capture carbon and air pollutants from the atmosphere and prevent soils from being eroded. Wetlands have the capacity to improve the quality of water and regulate flows, diminishing the risk of floods. Ecosystem services are vital for human life, and sustaining their provision, as well as protecting natural capital, is increasingly recognised by EU policies as being important for tackling potentially changing conditions in future years.

One way of protecting natural capital is the conservation of biodiversity through establishing nature protected areas, such as the EU Natura 2000 sites, which are a particular form of green infrastructure<sup>39</sup>. The services that biodiversity provides, however, do not stop at the borders of protected areas. Many are produced outside nature sites from other forms of green infrastructure. Urban forests provide cheap and

accessible recreational space for people. Floodplains, often on grasslands and pastures, provide protection against floods during periods of high water. Forests and woodland help to regulate water flows, capture carbon and air pollutants from the atmosphere and prevent soils from being eroded. This green infrastructure provides a wide range of benefits to people and is often an economically viable alternative to man-made solutions. For instance, there are many examples where the rehabilitation of flood plains and wetlands has proved to be a more efficient and cheaper means of reducing the risk of floods than the construction of barriers.

The provision of ecosystem services has a strong regional dimension. It is highly dependent on the local context and varies with the endowment of natural capital and green infrastructure. The development model followed by modern economies has reduced dependence on nature to produce such services. While a few services such as food and timber production are maintained, many ecosystem services have been put at risk by industrialisation. Agricultural intensification, for example, is partly responsible for the loss of bees and other species which are essential to pollinate crops and maintain production levels<sup>40</sup>. Air pollution, e.g. NH<sub>3</sub> from the use of fertiliser and manure handling in agriculture, can lead to acidification and eutrophication. As a result, ecosystem services are mainly produced at present in regions where rural areas, mountains, wetlands, forests or coastal areas are important.

The potential capacity to produce ecosystem services in NUTS 2 regions is illustrated by Map 3.14 by means of a composite indicator, TESI — a total ecosystem services index, based on 13 individual indicators, each measuring the capacity to provide a particular service (production of food, livestock, water and timber; regulation of air, climate, soil quality, water and water quality; pollination, erosion, coastal areas protection and provision of recreational services). Four of the indicators reflect provisioning services: the goods or products we obtain from ecosystems. Eight indicators refer to regulating services: the benefits we obtain from an ecosystem's control of natural processes. One indicator refers to a cul-

<sup>37</sup> Data on mineral waste are still of low data quality and have therefore been omitted from the calculation.

<sup>38</sup> An ecosystem is a dynamic complex of plant, animal, microorganism communities which interact with the non-living environment as a functional unit. Humans are an integral part of ecosystems.

<sup>39</sup> Green infrastructure can be defined as natural land areas, working landscapes and other open spaces enhancing the capacity of ecosystems to provide goods and services.

<sup>40</sup> Zulian, G. *et al.* (2013).

tural service: recreation, which is a non-material benefit obtained from ecosystems<sup>41</sup>.

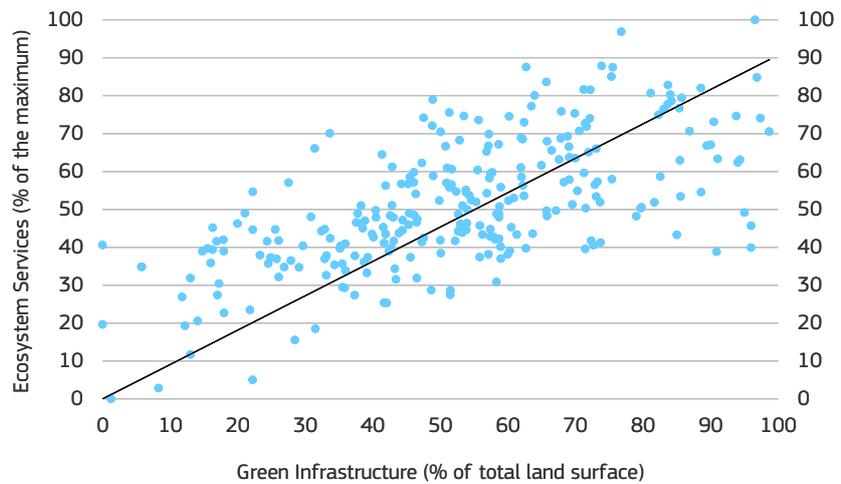
In general, regions with a low TESI, where a large part of the land area is taken for producing crops and urban development have less land left where ecosystems, such as forests and wetlands, can provide their services. By contrast, regions with a higher TESI have a wider and more balanced array of ecosystem services. The difference between medium and high TESIs results from more or less productive ecosystems. For example, wetlands and forests often generate higher levels of service than grass- or shrub-land.

As indicated above, green infrastructure comprises all natural, semi-natural and artificial ecosystems. There is a strong positive relationship across the EU between the area of a region covered by green infrastructure and its capacity to provide ecosystem services (Figure 3.14). Investing in green infrastructure should therefore increase such services.

Map 3.15 shows that even in regions where land is predominantly used for growing crops many ecosystem services can still be present. For instance, a recent study in the UK indicates that converting comparatively small amounts of land from agricultural use to open-access recreation leads to a relatively modest loss in farm produce but generates much larger social benefits<sup>42</sup>.

In order to identify properly the types of action capable of increasing the benefits from the ecosystem, demand aspects also need to be taken into account.

**Figure 3.14 Green infrastructure and the delivery of ecosystem services**



Source: Maes, J. et al. (2012)

Demand for ecosystem services tends to rise as population density increases or human settlements are established. The action required to increase ecosystem services therefore differs between places, according to the specific features of the locality. This often implies a need to consider much smaller areas than NUTS 2 regions, as illustrated by the following examples relating to improving air and water quality.

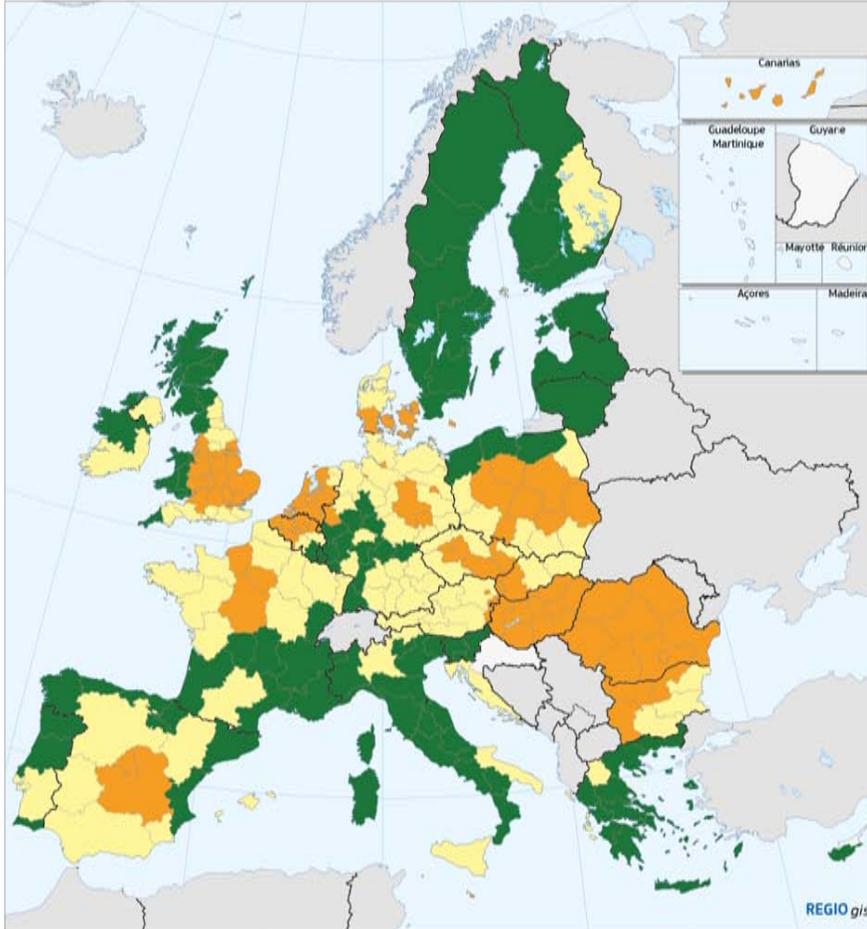
### Air quality is still too low in many EU cities

As noted above, air pollution is a major environmental concern in cities across the EU. The removal of air pollutants and dust from the atmosphere is an ecosystem service provided to a large extent by forests and other wooded lands<sup>43</sup>. Regions in North Sweden and Finland have many such areas and so have a high capacity for providing this service. However, given their low population density, demand for the service in these regions is low especially compared with urban areas. It is therefore in the latter that policy action to increase the capacity of ecosystems to reg-

41 Details concerning the methodology are described in Maes, J. *et al.* (2011), and Maes, J. *et al.* (2012). Note that the TESI indicator has not been agreed in the context of the Mapping of Ecosystem Services (MAES).

42 Bateman IJ., *et al.* (2013).

43 The difference between forests and other wooded lands is the extent of canopy coverage. Although there is no general EU definition for these land categories, the FAO definition of “forest” requires a minimum of 30% tree canopy cover, whilst “other wooded land” has a canopy cover between 10 and 30%.



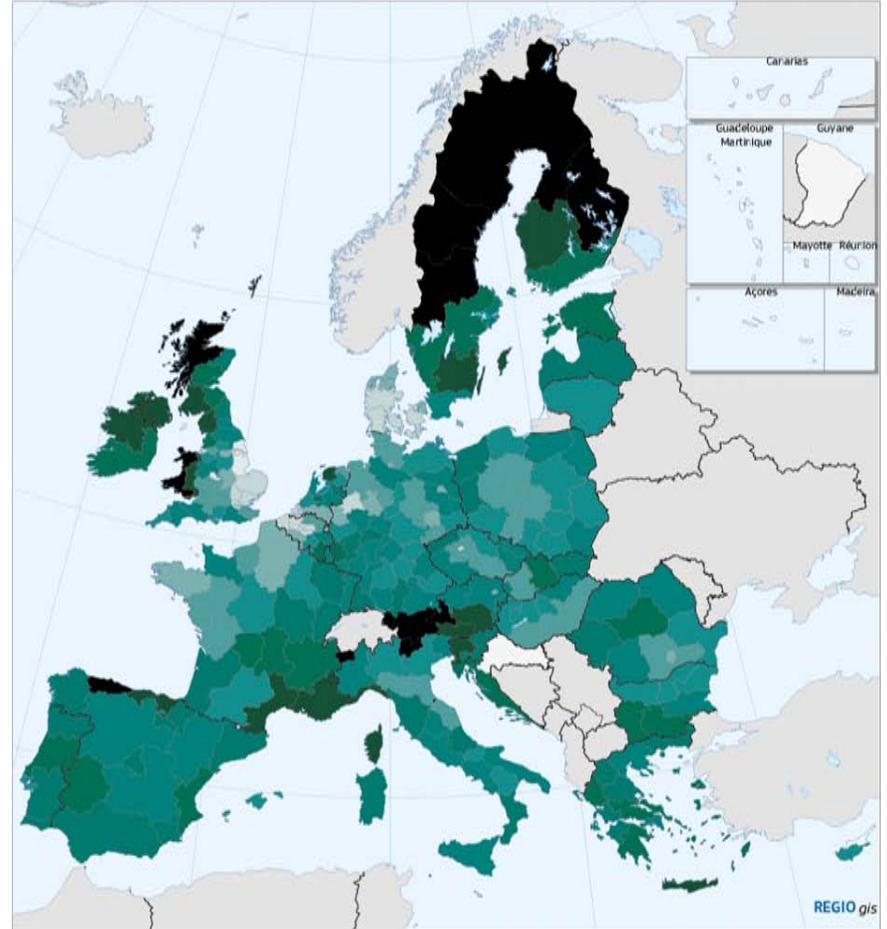
Map 3.14 Capacity to deliver ecosystem services — TESI index

- Low capacity
- Medium capacity
- High capacity

Source: JRC

0 500km

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Map 3.15 Green infrastructure

- % of total surface areas
- <10
  - 10 - 20
  - 20 - 30
  - 30 - 40
  - 40-50
  - 50 - 60
  - 60 - 70
  - 70 - 80
  - 80 - 90
  - >90

Source: JRC

0 500km

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ulate air quality should be concentrated<sup>44</sup>. This can be done by investing in green infrastructure such as urban parks and green spaces, so that trees can help to reduce temperature, contribute to natural urban ventilation (dispersion of air pollutants) and remove pollutants such as NO<sub>2</sub> from the atmosphere. As just planting trees can also cause local hotspots of (other) air pollutants (e.g. PM) if not done properly, such action, however, needs to be part of an integrated strategy for improving air quality in EU cities.

Computer models which include data on air quality as well as details of green urban areas can be used to quantify the amount of pollutants that can be removed from the atmosphere by this means. The economic benefits of removing air pollutants can then be calculated by estimating the reduced costs of pollution to society not accounted for in the market price of goods and services, like electricity and transport, responsible for pollution.

The capacity of cities in the EU to regulate air quality differs greatly. This is illustrated by the example of nitrogen dioxide (NO<sub>2</sub>), which is a major air pollutant released during the burning of fossil fuels. Map 3.16 illustrates how urban green areas contribute to NO<sub>2</sub> removal in larger urban zones across the EU.

The removal capacity of NO<sub>2</sub> per inhabitant differs widely between larger urban zones, depending primarily on the ratio between forested areas and population. Most large urban zones in Scandinavia, in Central and Eastern Europe (with the exception of Bulgaria and Romania), in Germany have a relatively high capacity to remove NO<sub>2</sub> per inhabitant. The removal capacity is much less in Southern Europe (except in Portugal) but also in Northern Italy and the UK.

In many EU cities NO<sub>2</sub> concentrations are high (Map 3.17), especially in the larger ones. For example, Milan and Madrid have high concentrations and a low removal capacity. Some cities like Berlin and Stockholm have a high removal capacity, which explains in part why their concentrations are lower than

in other large cities. But these cities can also benefit from investment in removal capacity to further reduce concentrations, such as in green infrastructure like suburban woods, parks or green roofs<sup>45</sup>.

### Floodplains can regulate water flows and improve quality efficiently

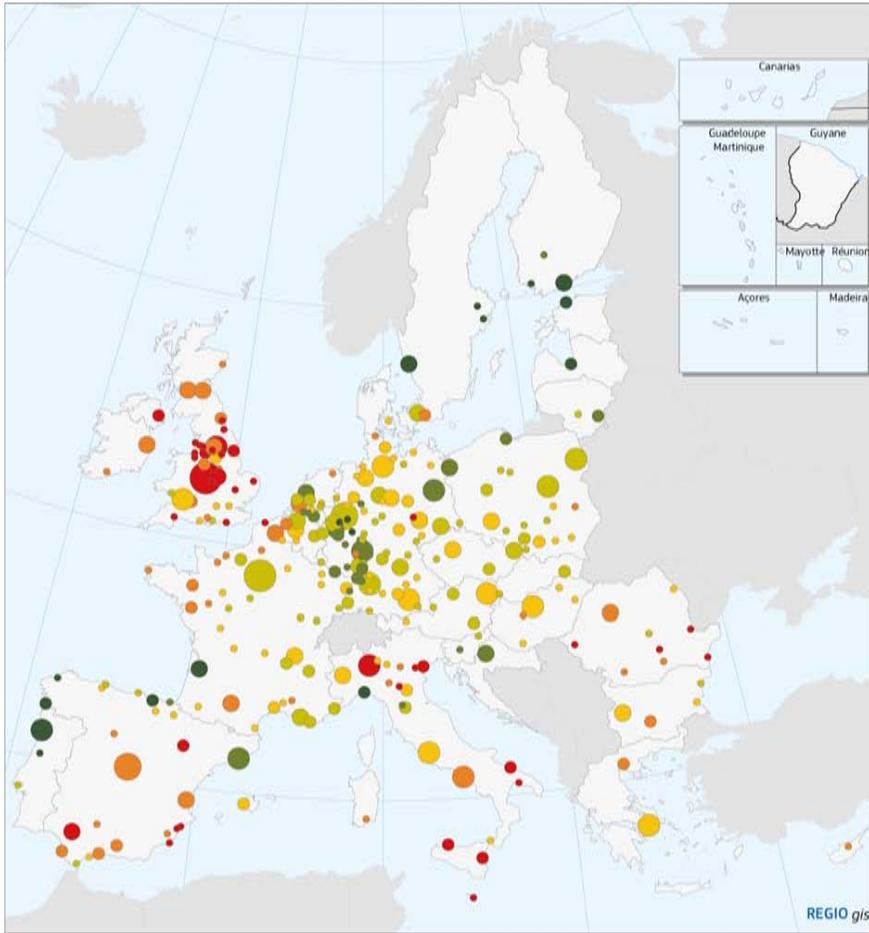
Floodplains are land areas bordering seas, lakes and rivers that are subject to recurrent flooding. If managed properly, floodplains can produce important ecosystem services. First and foremost, they prevent downstream areas from being flooded and so play an essential role in reducing the risk of disasters. Floodplains and wetlands also provide other services, in particular by purifying water, as they are very effective in retaining, processing and removing pollutants, sediments and excess nutrients, which avoids pollution downstream and more importantly, helps to provide clean water. As well as acting as natural water storage reservoirs and treatment plants, floodplains also provide a habitat for many species of flora and fauna and so are key to preserving biodiversity.

Water purification is another less known ecosystem service provided by floodplains. Floodplains are particularly efficient in combating excessive nitrogen loading from artificial fertilisers and the combustion of fossil fuels, which affects the quality of water in many places and is a major cause of water pollution. Excess nitrogen runs into rivers, streams, lakes and further downstream into estuaries and coastal zones causing eutrophication which results in excessive algae and, on occasion, in harmful cyanobacterial harmful algal blooms (CyanoHABs).

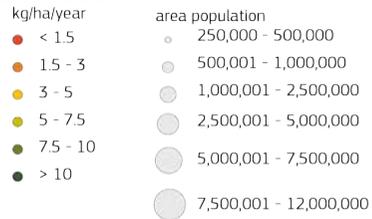
Once a floodplain is flooded during high water, it starts removing nitrogen. Using floodplains as temporary reservoirs at times of peak flow can, therefore, substantially increase the capacity of rivers to retain, process and remove nitrogen from water. For instance, model simulations show that reconnecting floodplains to rivers in areas where this is possible

<sup>44</sup> Forests, even in sparsely populated areas, obviously remain key natural assets to provide services such as climate regulation, CO<sub>2</sub> absorption, regulation of the hydrologic cycle and habitats for migratory birds.

<sup>45</sup> A green roof is one that is partially or completely covered with vegetation. It serves several purposes such as absorbing rainwater, providing insulation, creating a habitat for wildlife, and helping to lower urban air temperatures so mitigating the heat island effect.



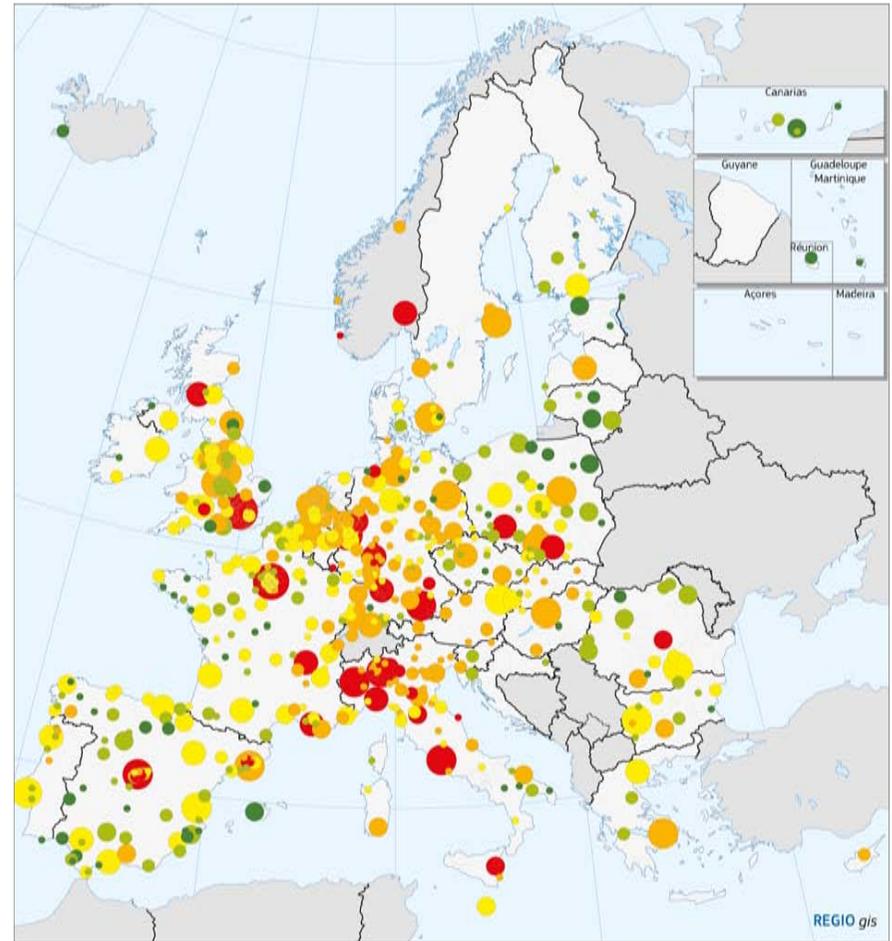
**Map 3.16 Capacity of ecosystems to remove nitrogen dioxide (NO<sub>2</sub>) in functional urban area**



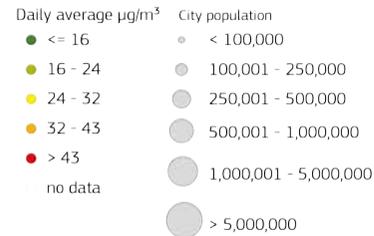
Source: JRC

0 500 Km

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**Map 3.17 Concentration of nitrogen dioxide (NO<sub>2</sub>), 2011**

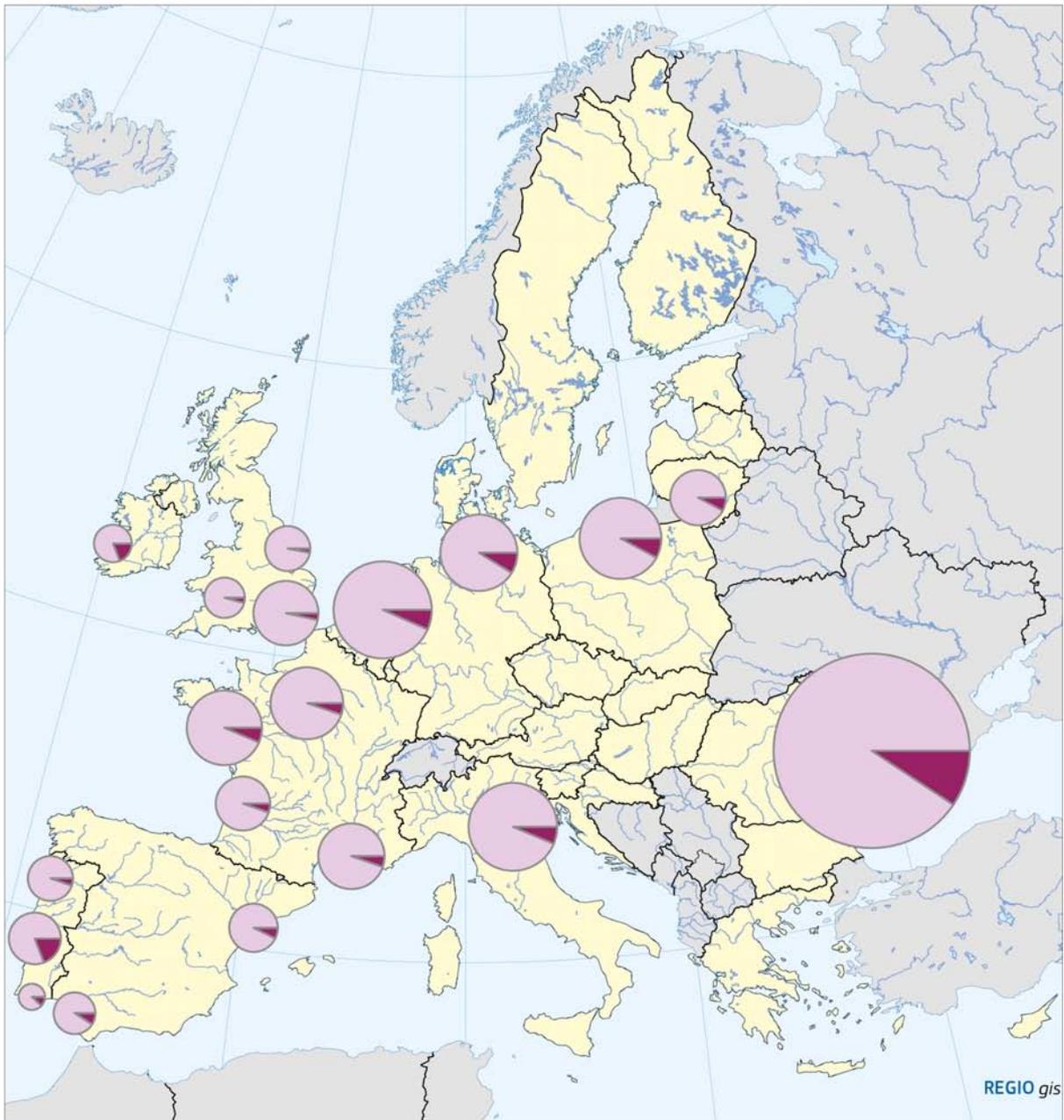


Note: Average recorded by measuring stations within city boundaries

Sources: EEA, DG REGIO

0 500 Km

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Map 3.18 Nitrogen discharge and retention from Europe's major rivers

Tonnes/year



Discharge  
Retention

Sources: JRC and EEA

0 500 Km

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is expected to reduce the total nitrogen load of river basins to European seas by 7% on average<sup>46</sup>. As Map 3.18 shows, a number of river basins in the EU such as the Rhine or Meuse, can provide such a service to densely populated areas and cities. (The map shows the total nitrogen discharge of major European rivers and simulates the potential retention of nitrogen under a scenario of implementing a floodplain strategy.)

## 6. Conclusion

Cohesion Policy has a major role to play in helping EU regions to adopt more sustainable modes of development and address the many environmental challenges they face in the future. The analysis set out in this chapter has highlighted the wide variations in the performance of EU regions with regards issues related to environment.

The impact of climate change will differ considerably from one region to another, according to its location but also to the main economic activities situated there, the features of its human settlements (e.g. urban as opposed to rural) and the characteristics of its population (e.g. young or old). This implies a need to adopt adaptive measures tailored to the local context in order to limit the devastating impact of climate change in all, but especially the most vulnerable regions.

EU regions can also play a major role in limiting the extent of climate change by contributing to the targets set out in the EU Climate and Energy Package. In particular, Cohesion Policy can help national, regional and local public authorities to reduce GHG emissions in the sectors not covered by the emissions trading scheme such as transport and buildings. It can also support the expansion of renewable energy supply and contribute to increase energy efficiency, notably in public buildings and public transport.

Many of such measures aiming for transport, energy efficiency and renewable energy fit also well in Air Quality Plans under Directive 2008/50/EC to reduce concentrations of Particulate Matter, NO<sub>2</sub> and ozone,

leading to better health for citizens and less damage to crops, buildings and ecosystems.

Although the situation has improved over time, substantial efforts remain to be made to enhance the treatment of urban wastewater in many EU regions, both in the EU-12 and the EU-15. The same holds for waste management. Considerable progress has been made to increase recycling and energy recovery and to reduce landfill, but some regions still need major investment to increase their capacity to treat waste in a way which is less damaging to the environment.

In addition, Cohesion Policy can help EU regions to increase the quality of their environment. This is not only necessary to improve well-being in general but it can also lead to substantial benefits as sound ecosystems generally have positive effect on health and offer vital services such as clean drinking water, breathable air, carbon sequestration or regulation of water flows. Cohesion Policy can help to improve air quality in the urban centres where it is needed and to restore the capacity of ecosystems to deliver their services where these have deteriorated. In this perspective, supporting investment in green infrastructure is particularly appealing since it is often an effective and cost-efficient solution while at the same time it contributes to achieving the objectives which the EU has set for limiting biodiversity loss.

<sup>46</sup> Maes J. *et al.* (2012).

## ▶▶ Chapter 4: Public investment, growth and the crisis

### 1. Introduction

The financial and economic crisis which started in 2008 had a dramatic impact on public finance all over Europe. Contraction of economic activity reduced the tax base and hence public revenue at a moment where expenditure was rising as a result of the counter-cyclical measures put in place in the Member States, the rise in unemployment and the support given to the banking system.

This has led to a significant increase in public deficit and public debt in most Member States which triggered a counterbalancing move of the fiscal stance towards consolidation, starting in early 2010. This translated into a reduction in public expenditure in a number of European countries. Growth enhancing public expenditure in areas such as education, R&D, ICT and transport infrastructure has been particularly affected compared to other items of public expenditure.

This has substantial implications for Cohesion Policy, which provides support for national, regional and local authority investment in growth enhancing area. Policy measures financed by Cohesion Policy have to be complementary with those initiated by Member States. Their effectiveness is put at risk if the resources allocated by the Member States to this type of expenditure are not sufficient.

Secondly, in a context where Member States reduce growth-enhancing expenditure, the role of Cohesion Policy becomes critical for financing public investment, which is important for maintaining growth potential and so for creating the conditions for successful and sustainable fiscal consolidation and reduction in debt in the future. The stance of fiscal policy and public finance developments at various levels of government in the Member States are therefore major elements of the context in which Cohesion Policy is

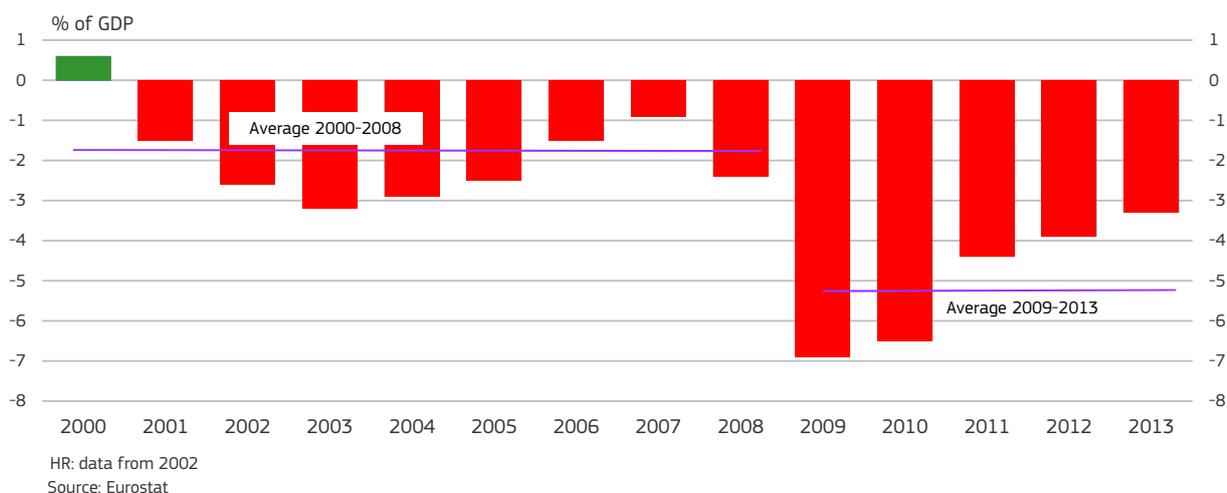
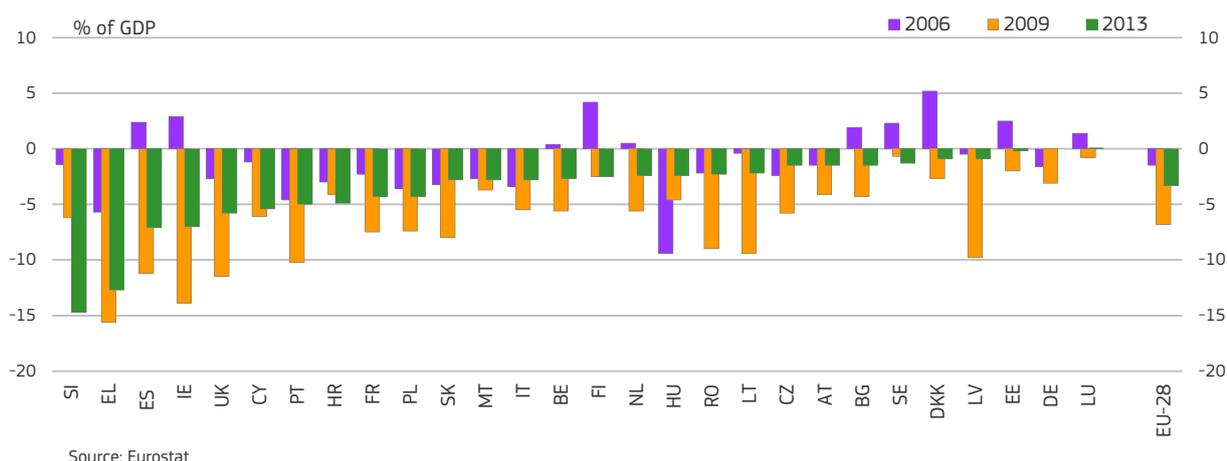
operating that determine its capacity to deliver results.

### 2. The share of growth enhancing spending in public expenditure has decreased

#### 2.1 The crisis pushed up government deficits

Public finances in the EU significantly worsened after the onset of the financial and economic crisis that started in September 2008 (Figure 4.1). From 2000 to 2008, the public sector balance in the EU-27 fluctuated around an average deficit of 1.9% of GDP, with a surplus of 0.6% of GDP in 2000 and a maximum deficit of 3.2% in 2003. Starting in 2008, the average deficit began to increase sharply, reaching 6.9% of GDP in 2009. In 2010, the deficit stabilised at 6.5% of GDP and was then progressively reduced to 4.4% of GDP in 2011, 3.9% in 2012 and 3.3% in 2013, largely because of the fiscal consolidation measures implemented from 2010 on.

The same broad pattern is evident in most Member States, though there are considerable variations between them in the scale of the changes. The deterioration in public finance was much more severe in some Member States than in others (Figure 4.2). In Spain and Ireland, a surplus of 2–3% of GDP in 2006 was transformed into a deficit in 2009 of around 11% in Spain and 14% in Ireland. There was also a dramatic increase in the deficit in Greece, from 5.7% of GDP in 2006 to 15.6% in 2009, as well as in Latvia, from 0.5% of GDP to 9.8% over the same period. In Luxemburg and Sweden, there was only a small change in the balance and in Hungary, where there were serious budgetary problems before the crisis struck, the deficit was reduced by fiscal con-

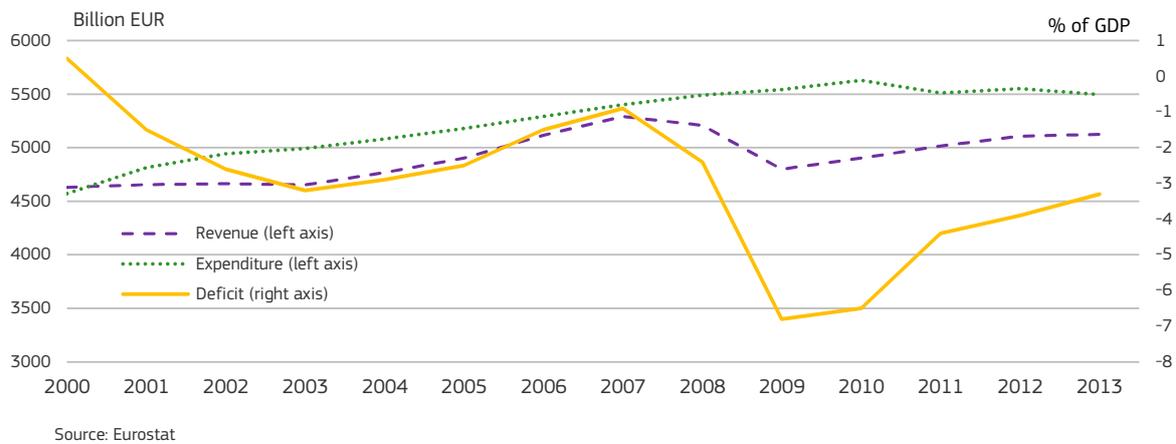
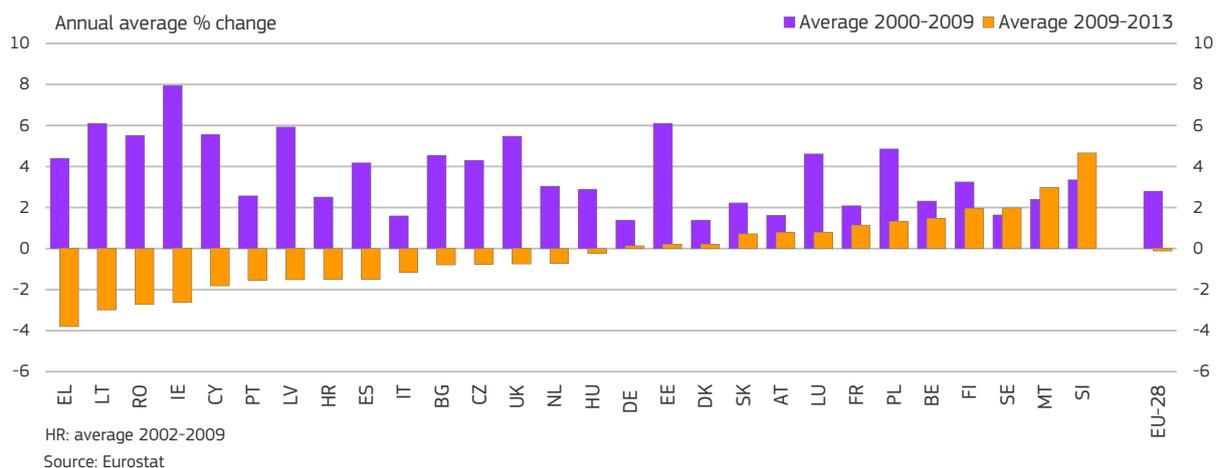
**Figure 4.1 General government balance, EU-27 average, 2000-2013****Figure 4.2 General government balance in Member States, 2006, 2009 and 2013**

solidation measures from 9.4% of GDP in 2006 to 4.6% in 2009.

In 2013, the deficit was largest in Slovenia (14.7% of GDP) and Greece (12.7%), followed by Spain (7.1%) and Ireland (7%), while Luxembourg was in surplus (0.1%) and Germany on balance (0%). The deficit was lower than 1% in Denmark, Latvia and Estonia. The dramatic increase of the public deficit in 2009 was due to a large extent to the sharp decline in Government revenue that followed the reduction in economic activity resulting from the financial crisis and global recession (Figure 4.3). Government revenue in the EU-27 in real terms fell on average by 5.3% in 2009. It then

increased in the three subsequent years (by 1.9% in 2010, 2.9% in 2011 and 1.4% in 2012), mostly because of the slight improvement in the economy (which expanded the tax base) together with increases in tax rates as well as measures to improve the collection of taxes in a number of Member States.

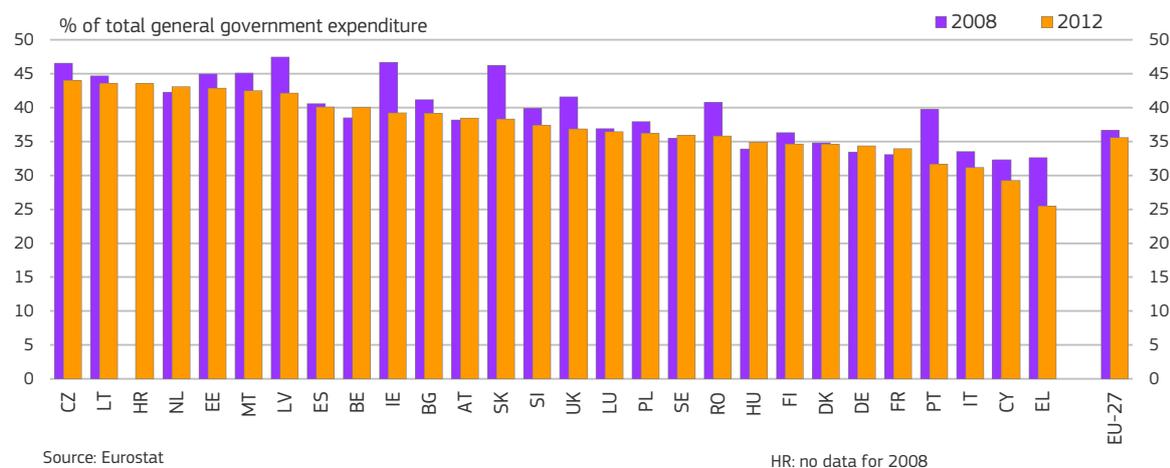
Government expenditure in the EU increased steadily in real terms during the years preceding the crisis, rising on average by 2.4% per year between 2000 and 2008. It then increased by 3.6% in 2009 and 1.2% in 2010 before declining by 1.5% in 2011 and then overall stabilising in 2012 and 2013 with nevertheless a slight downward trend. The expansion in

**Figure 4.3 General government expenditure and revenue and general government balance, EU-27, 2000-2013****Figure 4.4 Annual average change in general government expenditure, in real terms, 2000-2009, 2009-2013 (%)**

2009 reflects the combined effect of the automatic stabilisers which led to an increase in social transfers resulting from rising unemployment and the policy decisions providing substantial support to banks in difficulties as well as the fiscal stimulus packages put in place at the end of 2008. The subsequent movements reflect the fiscal consolidation programmes, which started to be implemented in 2010.

The same broad pattern of change applies to the majority of Member States, although there were significant variations between countries in the scale of movements (as highlighted in Figure 4.4). After growing at a moderate rate up to the onset of the crisis in

most countries, government expenditure declined in real terms in 15 countries between 2009 and 2013. The decline was particularly pronounced in Greece, Lithuania, Romania and Ireland (where expenditures respectively fell on average by 3.8%, 3.0%, 2.7% and 2.6% a year between 2009 and 2013). In other Member States, public expenditure also declined though at a slower pace, below 2%, reflecting the EU-wide policy of fiscal consolidation. Public expenditure was on an upward trend since 2009 in 13 Member States, in general those where the impact of the crisis was less dramatic.

**Figure 4.5 General government expenditure on growth-friendly categories, 2008 and 2012**

## 2.2 Public investment supports economic growth

It is commonly accepted in the economic literature that government expenditure may have an impact on economic activity in the short run and growth in the longer run, though there is no precise relationship between the former and the latter because it depends on a large number of factors. There is an overall consensus, however, that efficient regulation, an effective and a well-functioning public administration, and well-targeted and tailored public expenditure all are essential to the smooth functioning of modern economies by providing essential infrastructure and public services, ensuring the rule of law and enforcing property rights.

Such services include education and support for R&D both of which are important for long-term growth. Both, however, are likely to experience under-expenditure without government intervention since individuals when making their spending decisions will not tend to take account of the wider benefits to society and the economy which such expenditure gives rise to.

Recent research suggests that government expenditure can act as an important stimulus to the economy during a period of recession when the private sector is reluctant to invest and when its impact on economic activity is, accordingly, likely to be greater. It also suggests that it can have significant cross-border ef-

fects at such a time, leading to growth being spread through trade linkages across the EU economy, just as the depressing effects of fiscal consolidation can equally be spread from one Member State to others (see Box for a summary of the economic literature on these various effects of government expenditure).

## 2.3 Public expenditure increased, but now come down

As highlighted above, some categories of public expenditures are considered to be growth-friendly, in the sense that they can increase the rate of growth in the future. This is the case as regards expenditure on, for example, education, health care, environmental protection, transport, R&D and energy<sup>1</sup>.

The deterioration in public finances and the fiscal consolidation measures which began to be implemented at the end of 2010 have resulted in significant changes in the composition of public expenditure in a number of Member States. In particular, growth-friendly expenditure has been cut back disproportionately as part of fiscal consolidation measures<sup>2</sup>.

1 European Commission (2012), *The Quality of Public Expenditures in the EU*, where spending is analysed on the basis of Eurostat data on the "Classification Of the Functions Of Government" (COFOG).

2 For the sake of this analysis, growth friendly expenditure correspond to the following COFOG categories: Economic affairs (which mostly consist of transport and energy), environmental protection, health and education. Note that R&D in those sectors is included.

### The economic literature on the effect of government expenditure on growth

There is wide agreement on the essential role of governments in investing in infrastructure and on the positive effect of this on economic growth (see e.g. Gramlich (1994)). There is equally broad agreement that government intervention is needed to correct the tendency for the private sector to under-invest in education and R&D, because of a failure to take account of the social as well as the private returns. While there is a vast literature linking public support to education with growth, the fact that the links tend to be very long-term makes it difficult to identify them in the data. Nevertheless, the evidence points to a positive impact that expenditure on education has for growth (see Blankenau *et al.* (2007)).

Whereas the positive effect of R&D on productivity growth is beyond doubt (see Griliches (1994)), it is more difficult to assess the effect of public support for R&D. This is, first, because of a need to allow for possible 'deadweight' effects arising from the fact that the expenditure on R&D might have taken place even without government support (see, for example, Bronzini and Lachini (2011), who find that subsidies do not alter the behaviour of large firms). Secondly, even if a positive effect is observed, it is difficult to determine whether the resulting increase is compensating for underinvestment as predicted by theory or for other market failures such as difficulties of SMEs accessing finance for R&D. This is still an open question on which there is intensive research.

The impact of public expenditure on economic activity in the short term involves estimating the 'fiscal multiplier', as first formalised by Richard Kahn (a student of J.M. Keynes) in 1931, which is defined as the change in output resulting from a given change in government expenditure, taxes or a combination of both. The recent global recession has sparked renewed interest in estimating the size of this multiplier.

Estimates of the multiplier vary over time and between economies and depend on the type of model applied and the assumptions made. In broad terms, the size of the multiplier seems to be affected by factors such as the presence of financial friction, the credibility of the policy action concerned and its permanent or temporary nature, its composition, the presence or absence of market rigidities, the size of automatic stabilisers, the type of monetary policy in force, the degree of openness of the economy and the exchange rate regime (European Commission Report on Public Finances in EMU 2012).

The many estimates of the fiscal multiplier vary markedly in terms of size. Some estimates put it at less than one (see e.g. Barro (1981), Perotti (2005) and Barro and Redlick (2011)), others at greater than one (Blanchard and Perotti (2002), Beetsma and Giuliadori (2011) and Ramey (2011)) and even as high as 1.6% (Beetsma, Giuliadori and Klaassen (2008)). Some analysis even point to negative multipliers (see e.g. Giavazzi, Jappelli and Pagano (2000), Giudice, Turrini and In't Veld (2007) or Di Comite *et al.* (2012)).

On the theoretical front, until recently most models were unable to produce multipliers significantly larger than one (see e.g. Aiyagari, Christiano and Eichenbaum (1992), Baxter and King (1993), Ramey and Shapiro (1998) and Cogan *et al.* (2010)) due to the neo-classical features incorporated in them. Specifically, an expansionary fiscal policy is offset by consumers being assumed to take account of the future taxes they will need to pay to service increased public borrowing and so limiting any increase in their spending. Equally, increased borrowing to finance additional government expenditure is assumed to push up interest rates, so reducing — or 'crowding out' — private investment. The multiplier is, therefore, reduced as a consequence.

More recent models, however, suggest that the multiplier in periods of economic downturn may be higher than during periods of growth (as high as 2.5 as against 0.6, according to Auerbach and Gorodnichenko (2013)). This asymmetry arises from certain features of recessions which are embedded in the new models — in particular, households being unable to borrow (Krugman and Eggertsson (2012)), downward rigidity of nominal wages and financial friction (or the costs involved in making a transaction) — which tend to increase the multiplier in downturns as compared with periods of expansion.

In addition, particular focus has been put by some authors on the difficulty of reducing interest rates below zero so making monetary policy ineffective. Recent estimates of new-Keynesian models incorporating this feature are that the multiplier in such periods is between 3 and 5 because private investment and consumption are not crowded out by public spending (Christiano *et al.* (2011), Eggertsson (2009), Woodford (2011)). Accordingly, an increase in government expenditure can have a major effect on economic activity when monetary policy can do little.

Recent research in the European Commission (In 't Veld (2013)), moreover, highlights the importance of cross-

border spill-over effects through trade linkages from fiscal consolidation which reinforce the negative impact on output.

The greater than expected impact of public expenditure on output during recessions has been corroborated by recent empirical studies (e.g. Corsetti *et al.* (2012), Auerbach and Gorodnichenko (2012a), Baum *et al.* (2012)). These conclude that earlier research may well have underestimated the effects of fiscal policy on output in recessions and overestimated it in expansions (Auerbach and Gorodnichenko (2012b) and Blanchard and Leigh (2013)).

This would imply not only that an expansionary fiscal policy was more effective in stimulating growth during a recession than previously thought, but also that fiscal consolidation during such times entails bigger downward pressure on economic activity. At the same time, the effects of consolidation on growth need to be weighed against the importance of restoring sound public finances. As demonstrated by experience, Member States which have accumulated large amounts of debt can be subject to sudden reversals of market sentiment which could turn into outright financial crises if sizeable corrective measures are not taken.

Growth-friendly expenditure as a share of the total decreased in the EU-27 as a whole between 2008 and 2012, from 36.7% to 35.6% (Figure 4.5). The drop was particularly severe in Portugal (-8.1 percentage points), Slovakia (-7.9), Ireland (-7.4) and Greece (-7.2). The share increased in only 7 Member States, generally those which were less affected by the crisis and where fiscal consolidation was limited.

## 2.4 Public investment increased and then dropped

The crisis has had a major effect in reducing private sector investment (Figure 4.6). Public investment (here defined as gross fixed capital formation of General Government), which had remained fairly stable for a decade, increased significantly between 2007 and 2009, performing a counter-cyclical role by compensating, at least in part, for the decline in private investment. Since 2010, however, public in-

vestment has fallen while private investment has continued to decline due to sluggish growth prospects. According to the latest Commission forecasts for 2013 and 2014, investment in the EU-27 will reach historically low levels for General Government (in 2014) having done so in respect of the private sector in 2013.

## 3. Regional and local authorities play a key role in public expenditure and investment

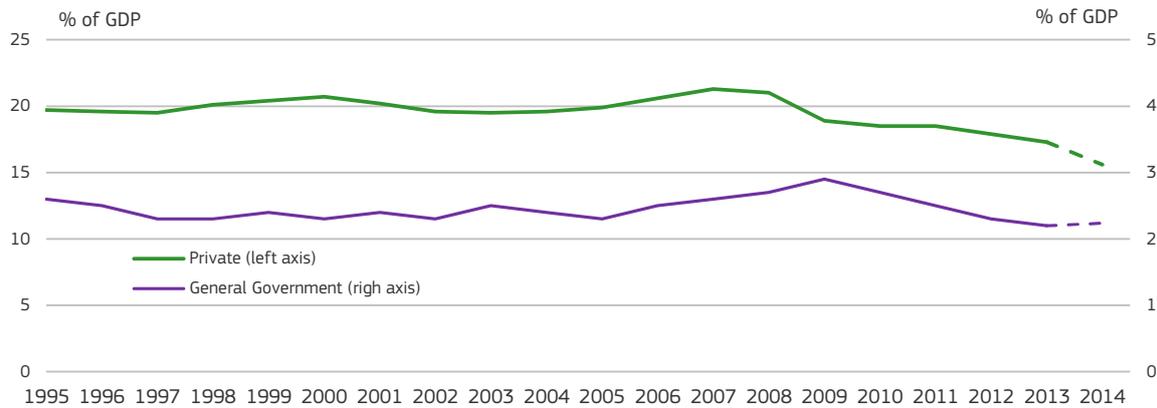
### 3.1 Regional and local authorities are responsible for a large share of public expenditure

The share of sub-national expenditure in total general government spending has increased in most EU countries over the past few decades as the role of regional and local authorities in delivering public policies has increased. Nevertheless, the share varies considerably between countries, largely reflecting differences in the institutional setting and the degree of decentralisation. Sub-national levels of government tend to be most important in Federal States, like Austria, Belgium and Germany or in countries like Spain and Sweden where there is high degree of decentralisation. It is important to note, however, that responsibility for undertaking expenditure is not necessarily synonymous with decision-making powers<sup>3</sup>.

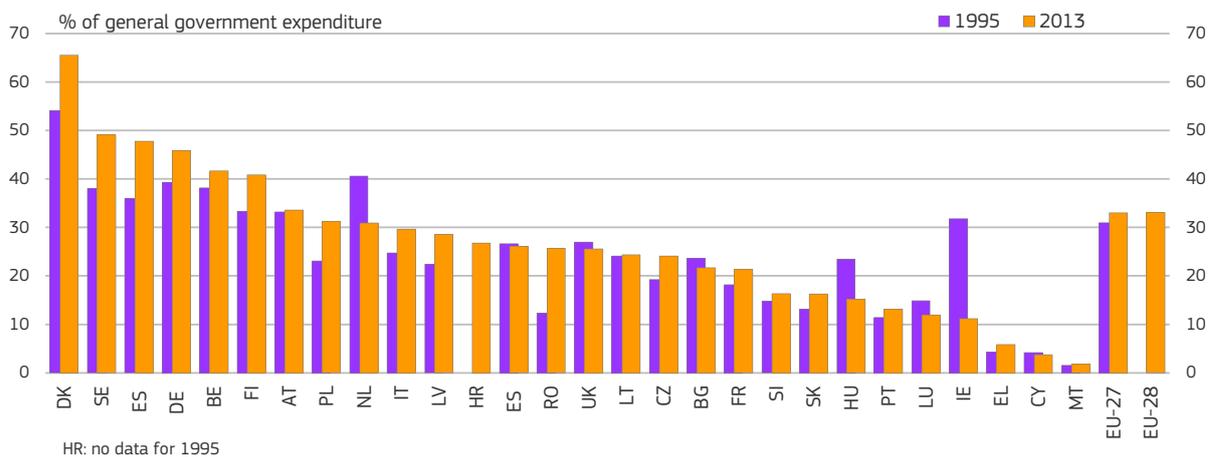
Regions and local authorities are responsible for around 66% of total public expenditure in Denmark and for almost 50% in Sweden and in Spain. In Greece, Cyprus and Malta, they are responsible for less than 6% (Figure 4.7). Overall in the EU-27, the share of sub-national authorities increased by 2 percentage points between 1995 and 2013, with much bigger increases in Spain, Romania, Denmark and Sweden, and significant reductions in Ireland and the Netherlands.

In relation to GDP, sub-national government spending averaged 16% in the EU-28 in 2013, ranging from

<sup>3</sup> European Commission (2012), *Report on Public Finances in EMU 2012*; Governatori, M. and Yim, D. (2012).

**Figure 4.6 Public and private Gross Fixed Capital Formation, EU-27, 1995-2014**

Source: Eurostat

**Figure 4.7 Sub-national government expenditure, EU-28, 1995 and 2013**

HR: no data for 1995

Source: Eurostat

less than 1% in Malta to almost 38% in Denmark (Figure 4.8).

### Types of expenditure carried out by sub-national levels.

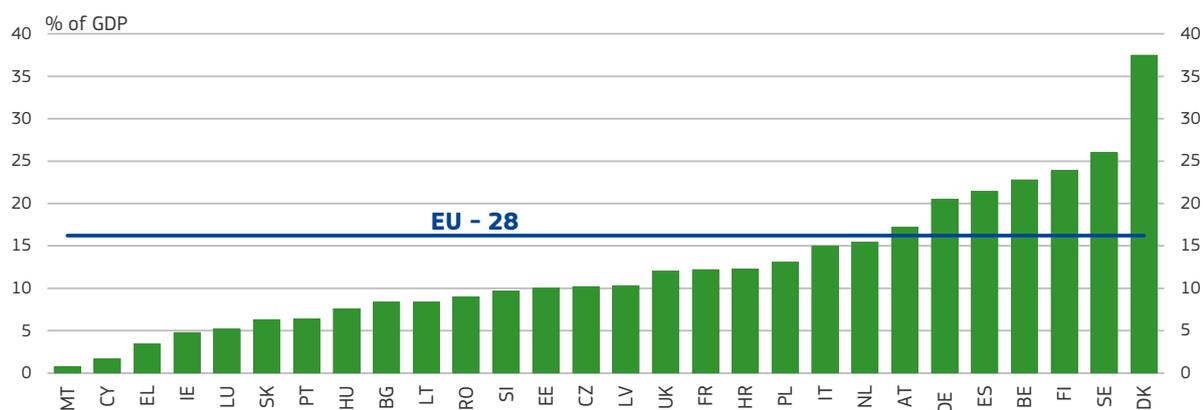
The expenditure of sub-national authorities is concentrated in particular areas, most especially in education, social services and housing, but also in healthcare, transport and communications<sup>4</sup> (Table 4.1). There are, however, large variations between

Member States, reflecting the degree of decentralisation, the peculiarities of federal systems and the particular responsibilities entrusted to sub-national authorities.

In some countries, Denmark in particular, a large share of sub-national expenditure goes on social services, while in others, this is much less the case, such as in Italy, where the share is only 5% and where instead much more goes on healthcare.

The overall expenditure of sub-national authorities is higher than that of central governments on many public services, such as education, cultural activities,

<sup>4</sup> Transport and communications are included as part of 'Economic affairs' in the COFOG classification of expenditure, which also includes support to enterprises.

**Figure 4.8 Sub-national government expenditure, EU-28, 2013**

Source: Eurostat

water supply, public lighting and other community amenities and environmental protection (Table 4.2). In some Member States, public expenditure in these areas is almost entirely carried out by sub-national levels of government, though in many cases financed nationally through transfers from central government, which are often earmarked for these services<sup>5</sup>. This, for example, is the case for housing in Belgium, Estonia, Latvia, Lithuania and Spain and environmental protection in Spain, Greece and Cyprus. Expenditure at the sub-national level on education is particularly high in Spain and Germany, on healthcare in Denmark, Spain, Sweden, Italy and Finland, and on economic affairs in Spain, Germany, Belgium and Italy. Apart from Denmark, social protection, however, remains largely centralised in Member States.

Sub-national levels of government are responsible for a large share of growth-enhancing expenditure, as defined above (on education, healthcare, environmental protection, transport, R&D and energy). Overall, in 2011, they carried out over 46% of such expenditure in the EU-27, this accounting for 38% of their total spending.

The sub-national responsibility for the expenditure concerned, however, varies markedly between countries (Figure 4.9). On average, sub-national government spending amounted to around 8% of GDP in

the EU-27 in 2012 but as much as 14% of GDP in Sweden and Denmark and as little as 0.3% in Cyprus and Malta. In eight Member States, sub-national governments were responsible for more than 50% of the growth-enhancing expenditure of General Government, the figures being highest in Sweden, Italy, Spain, Denmark and Finland.

### 3.2 Regional and local authorities manage the majority of public investments

Sub-national governments contribute significantly to public investment<sup>6</sup>. In 2013, around 55% of total public investment in the EU-28 was carried out by sub-national authorities (Figure 4.10). The share was particularly large in Germany, Belgium, Finland and France (over 65%). There are only a few Member States — Greece, Cyprus and Malta, especially — where sub-national governments account for only a minor share of public investment. These are generally countries where sub-national authorities are responsible for a very small share of total public expenditure.

Nevertheless, the share of sub-national authorities in public investment has declined since 2000 in 14 Member States, most especially in Ireland where it

<sup>5</sup> For example, healthcare in Denmark or Sweden. Note that earmarked transfers are not the general norm and often co-exist with general transfers.

<sup>6</sup> Defined as the sum of Gross Fixed Capital Formation of the General Government and capital transfers paid by the public sector.

Table 4.1 Sub-national governments expenditure by function, 2013

	Total	Social protection	Education	General public services	Health	Economic affairs (including transport)	Housing and community amenities	Recreation, culture and religion	Public order and safety	Environment protection
<i>% of total sub-national governments expenditure</i>										
Belgium	100	20	32	17	1	15	2	6	4	3
Bulgaria	100	8	32	10	9	12	14	5	1	9
Czech Republic	100	6	32	13	3	22	4	8	2	10
Denmark	100	55	10	4	22	4	1	2	0	1
Germany	100	25	22	23	2	12	2	4	7	2
Estonia	100	8	35	8	18	13	7	8	0	3
Ireland	100	19	23	6	0	20	13	5	3	11
Greece	100	19	2	35	0	17	4	7	1	16
Spain	100	7	18	28	24	10	2	4	4	3
France	100	18	15	16	1	13	15	10	3	8
Croatia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Italy	100	5	7	14	48	13	4	2	2	5
Cyprus	100	0	0	43	0	0	27	16	0	14
Latvia	100	11	37	9	9	12	11	7	2	2
Lithuania	100	14	34	7	18	9	3	4	4	8
Luxembourg	100	7	15	24	0	15	9	13	2	15
Hungary	100	13	29	21	8	12	6	6	0	5
Malta	100	0	0	59	0	10	0	4	4	23
Netherlands	100	15	29	8	2	17	3	9	7	10
Austria	100	20	19	15	22	13	3	4	1	2
Poland	100	13	29	11	14	16	5	7	2	3
Portugal	100	7	12	32	6	17	8	10	1	7
Romania	100	15	20	10	13	18	10	7	1	6
Slovenia	100	11	37	10	11	11	5	9	1	5
Slovakia	100	8	40	14	0	15	8	6	1	8
Finland	100	25	17	14	30	7	1	4	1	0
Sweden	100	27	21	12	27	6	3	3	1	1
United Kingdom	100	30	27	9	0	7	11	3	9	4
<b>EU-27</b>	<b>100</b>	<b>20</b>	<b>20</b>	<b>17</b>	<b>13</b>	<b>11</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>4</b>

Expenditure of local and state levels are not consolidated.

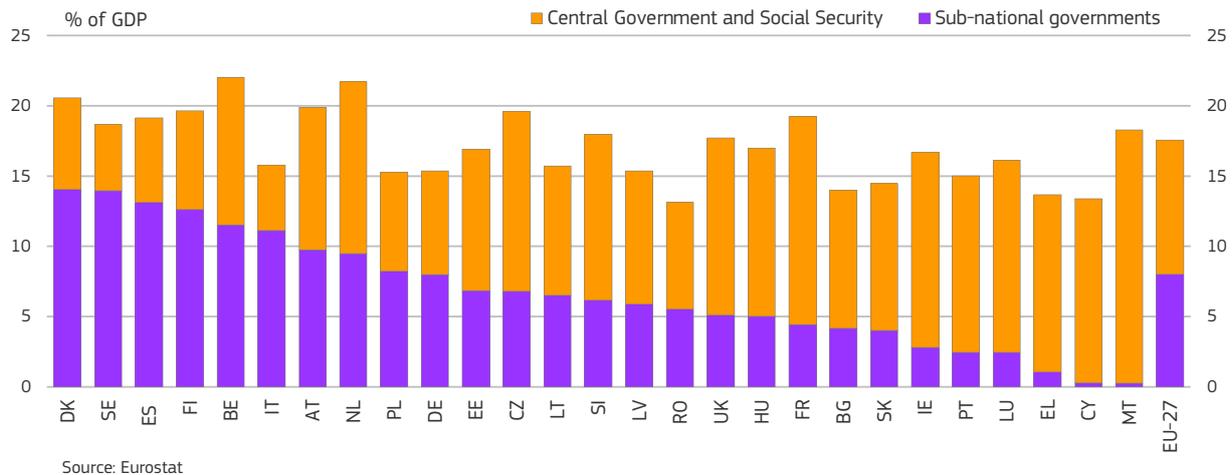
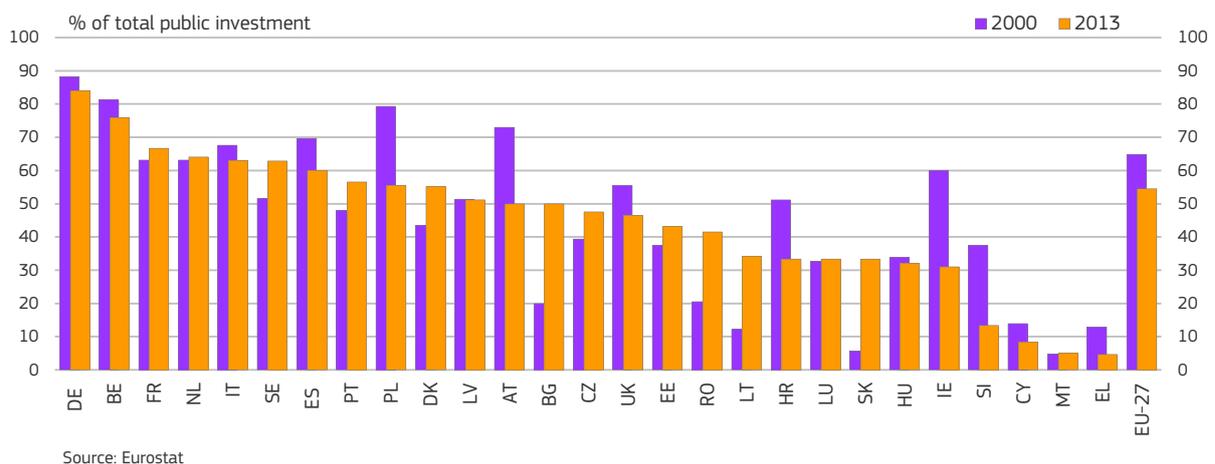
Source: Eurostat.

Table 4.2 Sub-national governments expenditure by economic sector, 2013

*(% of total general government expenditure)*

	Total	Social protection	Education	General public services	Health	Economic affairs (including transport)	Housing and community amenities	Public order and safety	Recreation, culture and religion	Environment protection
Belgium	30	22	83	15	3	47	100	46	94	87
Bulgaria	14	4	62	4	10	15	91	4	42	84
Czech Republic	22	4	48	25	3	40	59	11	30	69
Denmark	44	54	46	7	98	42	60	9	49	56
Germany	38	21	95	55	7	59	82	90	93	76
Estonia	22	6	53	15	23	27	97	1	44	33
Ireland	11	5	19	5	0	25	67	10	33	62
Greece	5	3	1	4	0	17	57	1	37	90
Spain	40	9	96	36	94	30	97	45	82	95
France	19	8	28	24	1	39	88	20	77	87
Croatia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Italy	24	3	24	17	78	45	64	12	49	86
Cyprus	4	0	0	7	0	0	16	0	28	91
Latvia	25	9	52	19	21	21	92	9	50	17
Lithuania	22	11	58	7	20	27	97	19	44	80
Luxembourg	10	1	15	18	0	19	43	10	37	63
Hungary	16	7	45	17	8	16	58	2	30	56
Malta	2	0	0	7	0	1	0	2	4	13
Netherlands	25	12	49	13	3	43	84	37	80	91
Austria	28	13	48	36	37	37	74	14	69	71
Poland	25	8	48	21	28	42	77	15	78	78
Portugal	11	2	12	11	6	36	86	3	63	87
Romania	21	10	64	13	26	16	78	5	70	64
Slovenia	16	5	41	16	10	27	60	7	44	63
Slovakia	15	3	48	14	0	23	69	3	38	55
Finland	33	19	50	37	61	32	53	18	65	29
Sweden	42	27	74	28	84	35	89	15	70	57
United Kingdom	23	20	42	17	0	26	39	40	44	57
<b>EU-27</b>	<b>28</b>	<b>14</b>	<b>53</b>	<b>26</b>	<b>27</b>	<b>40</b>	<b>63</b>	<b>37</b>	<b>69</b>	<b>78</b>

Expenditure of local and state levels are not consolidated  
Source: Eurostat.

**Figure 4.9 Growth enhancing expenditure, 2012****Figure 4.10 Sub-national governments investment, 2000 and 2013**

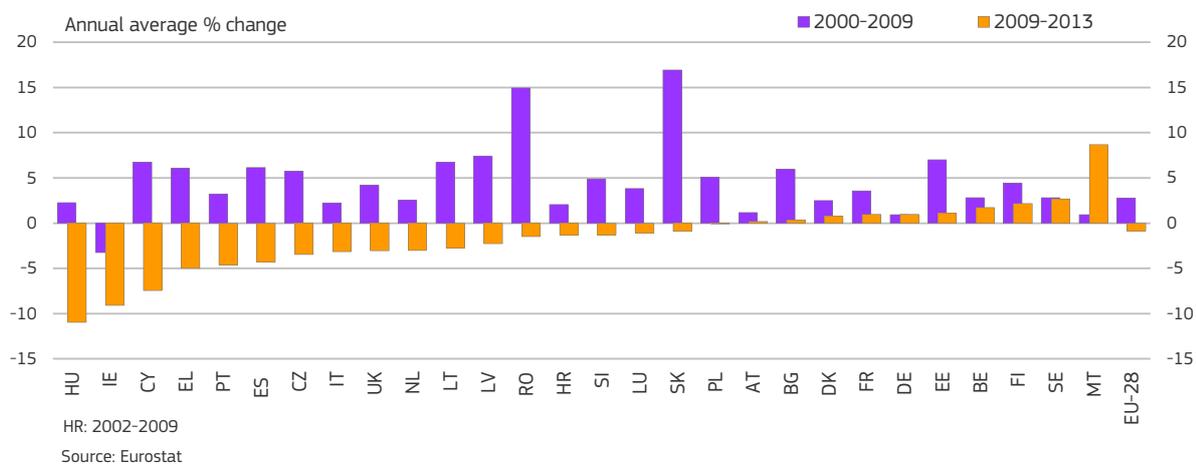
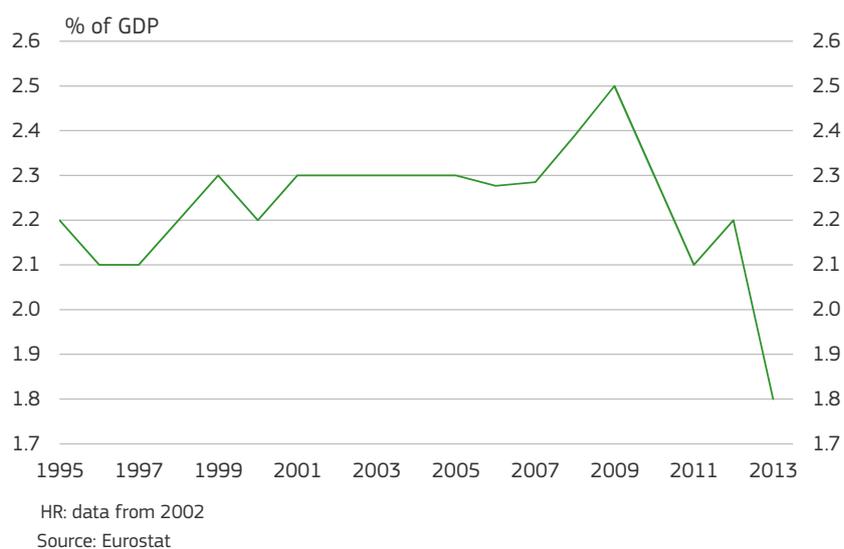
fell from 60% to 21% in 2013. As shown in the next section, this is to a large extent a consequence of fiscal consolidation measures implemented in response to the financial and economic crisis.

### 3.3 The crisis ended a period of sustained growth of public expenditure by regional and local authorities

From 2000 up until 2009, public expenditure at the sub-national level in the EU fluctuated around an average of just under 16% of GDP. In real terms, it grew at an average rate of 2.8% a year. In 2009,

it increased by 3.4%, partly as a result of the fiscal stimulus package as well as the additional demands on social services. Fiscal consolidation measures implemented from 2010 on brought growth to an end, expenditure remaining unchanged in 2010 and then declining by 0.5% in 2011, 0.8% in 2012 and 2.2% in 2013.

A similar pattern of change is evident in most Member States. Except in Malta and Germany, growth in public expenditure at sub-national levels has been cut back in all countries (Figure 4.11), in a number of them — such as Hungary and Ireland, where it de-

**Figure 4.11 Average annual change in sub-national government expenditure, in real terms, 2000-2009 and 2010-2013****Figure 4.12 Sub-national government investment, EU-27, 1997-2013**

clined by 11% a year and 9% a year between 2010 and 2013 — substantially so.

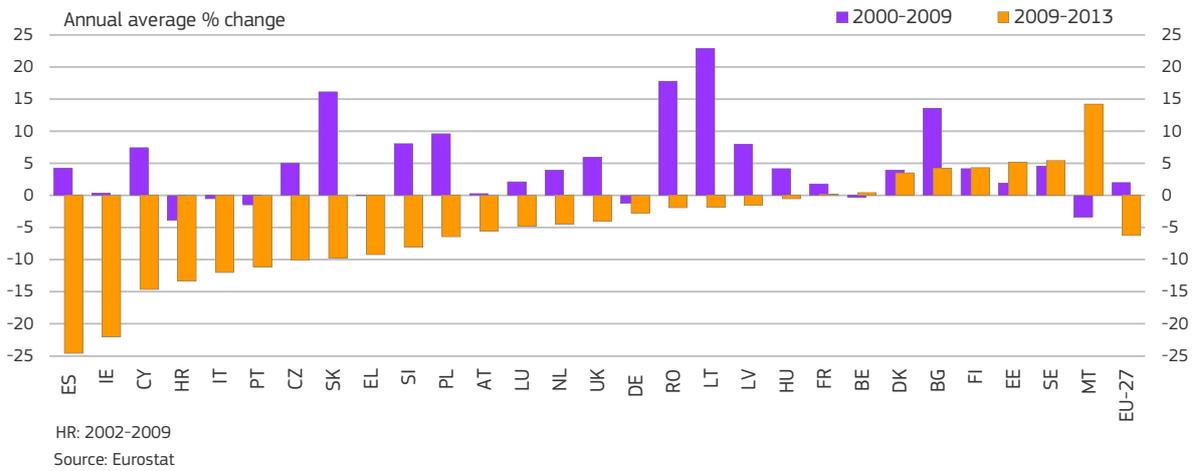
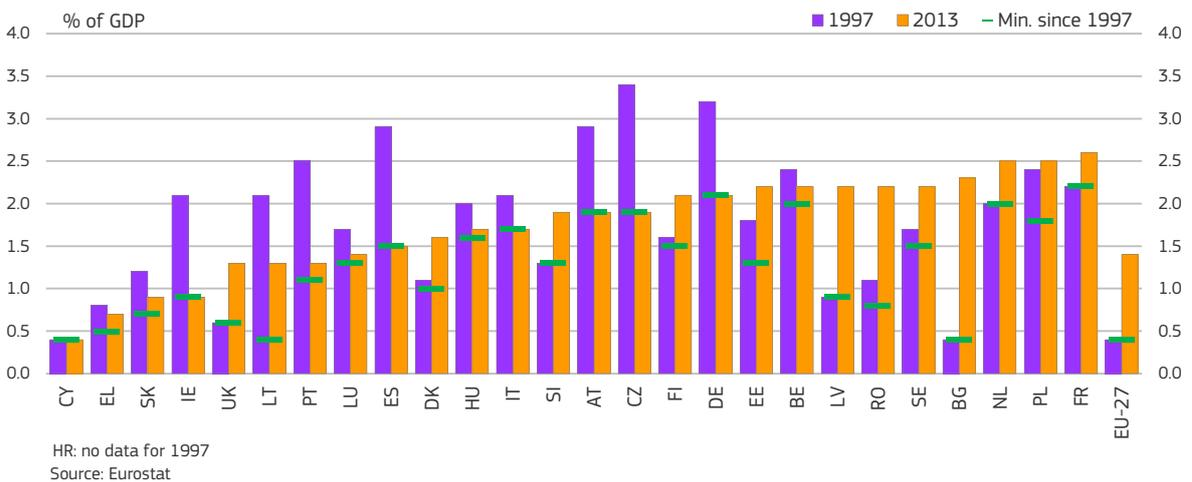
The capacity of sub-national authorities to contribute to public investment in particular has been significantly affected by the fiscal consolidation packages implemented across the EU. Public investment at sub-national levels in the EU-27 increased steadily from the mid-1990s on to stabilise at around 2.3% of GDP between 2002 and 2007 (Figure 4.12). It then rose to 2.5% in 2009, partly as a result of stimulus measures. From 2010, when fiscal consolidation

measures began to be introduced, to 2013, it declined sharply to 1.8% of GDP, much lower than the level observed in 1997. In real terms, sub-national public investment in the EU fell by 7.2% in 2010, 5.9% in 2011, 3.3% in 2012 and 8.6% in 2013.

Between 2009 and 2013, public investment at the sub-national level declined in real terms in 20 Member States. In most of the others, it continued to grow

though at a slower pace. Growth was higher than before the crisis only in Belgium, Finland, Estonia, Sweden and Malta (Figure 4.13). The turnaround was most striking in Spain, where sub-national public investment increased by more than 4% a year in real terms between 2000 and 2009 and then declined by more than 22% a year between 2009 and 2013. It also fell significantly in Ireland (by 18% a year), Cyprus, (16%), Slovakia (13%) and Portugal (12%).

These reductions imply that in 2013 public investment was lower relative to GDP than at any time

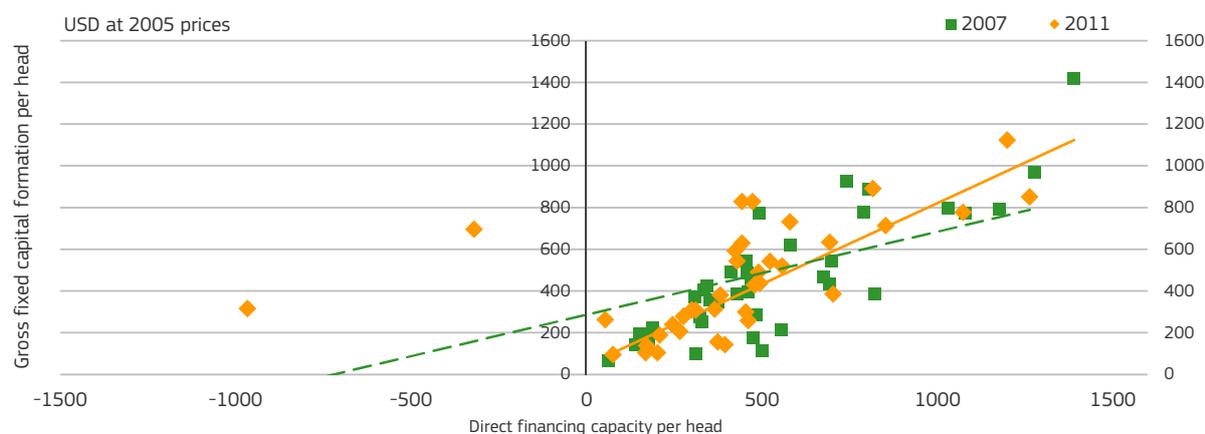
**Figure 4.13 Average annual change in sub-national government investment, volume, 2000-2009 and 2009-2013****Figure 4.14 Sub-national government investment, 1997, 2013 and historical lows**

since 1997 in seven countries of the EU-27, most notably in Spain (where it fell from 4.3% of GDP in 2009 to 1.5% in 2013) and Ireland (where it declined from 3.5% of GDP in 2008 to 0.9% in 2013) (Figure 4.14).

### 3.4 Investing during times of crisis: direct financing and regional and local investment

As indicated above, sub-national public investment has been severely affected by the crisis and the fiscal consolidation measures implemented in response to

it. A study carried out by OECD (with a contribution from the European Commission) found that the OECD countries that faced the most serious economic difficulties over the period 2007–2011 saw the largest reductions in sub-national investment. A new indicator of direct-financing capacity, designed to measure the funds available to sub-national governments to finance investment without going into debt, shows that their capacity declined significantly over this period. As shown by Figure 4.15, capacity is closely correlated with spending on investment, which indicates that sub-national governments that generate the fiscal capacity to spend on investment tend to do so.

**Figure 4.15 Sub-national direct financing capacity and public investment in OECD countries, 2007 and 2011**

Analysis of recent trends in sub-national finances shows that these were reduced significantly by the crisis. Expenditure on social services and transfers to companies, however, were maintained and even increased in some cases, so reducing the 'fiscal space' left for public investment.

Sub-national authorities were also faced by a worsening of borrowing conditions. The introduction of rules governing their borrowing or a tightening of those already in place which occurred in many OECD countries as part of fiscal consolidation measures further reduced their capacity to invest.

The OECD has highlighted the likelihood that this capacity will continue to be restricted over the medium-to-long term. In such a context, the institutional setting is likely to play an important role as regards both revenue (the income likely to be generated by local taxes) and expenditure (their spending responsibilities). In most OECD countries, demographic trends are likely to generate fiscal pressure on sub-national governments responsible for spending on healthcare and social services.

Central governments are well aware of future challenges likely to be faced by sub-national authorities and have introduced measures to control their revenue and debt levels in a number of countries. In several countries too, governments are seeking to gain economies of scale in public service provision by

merging local authorities or establishing more co-operation between them. However, in countries where sub-national governments have major responsibility for expenditures in areas where pressure is likely to increase, further efforts will be needed to maintain their ability to provide high-quality services in the medium-to-long term.

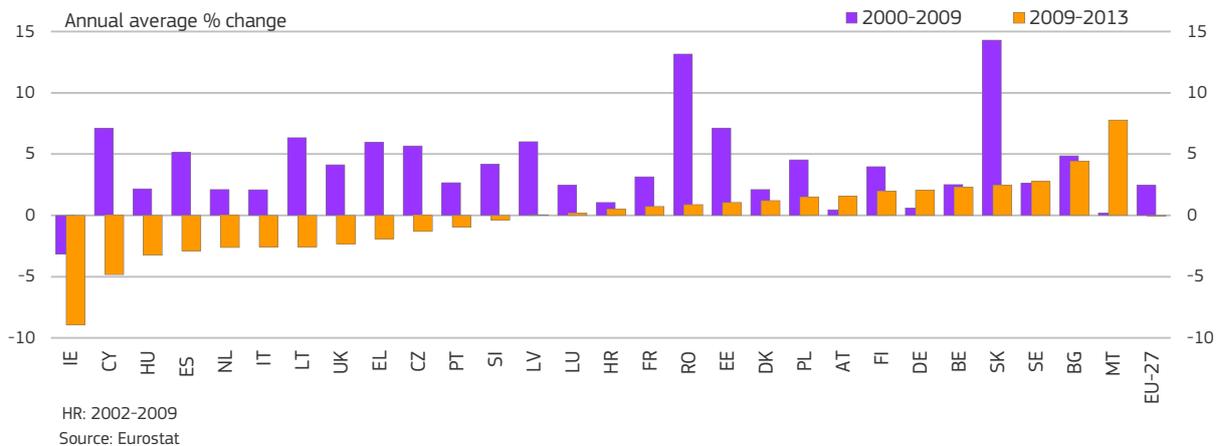
### 3.5 Revenue at sub-national level relies primarily on transfers

Revenue of sub-national governments in the EU has been significantly affected by the crisis. While their revenue increased relatively consistently at a rate of around 2.5% a year in real terms on average between 2000 and 2009, it decreased by 0.1% a year between 2009 and 2013.

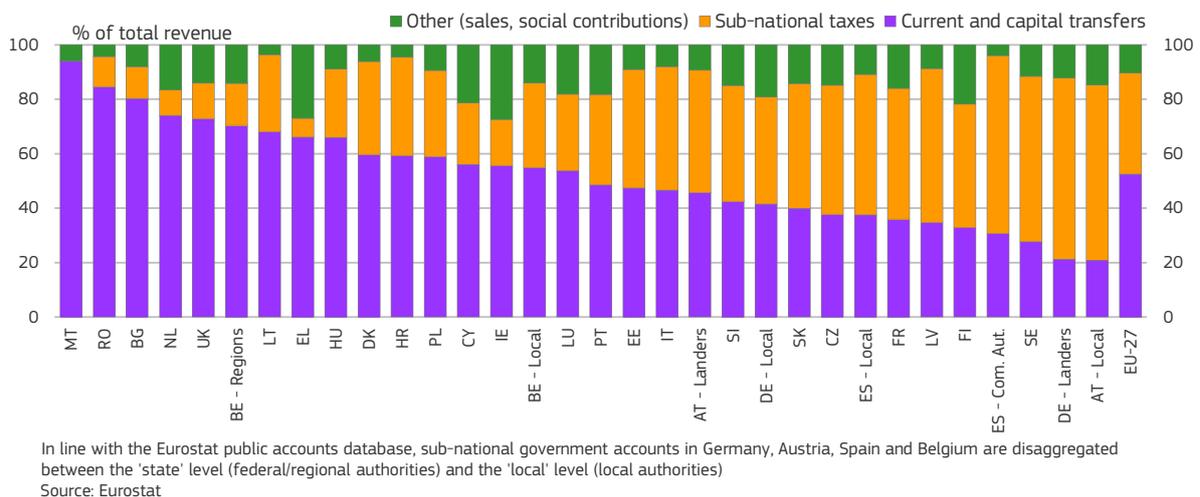
Over these four years, sub-national government revenue declined in 12 Member States (Figure 4.16). The fall was particularly large in Ireland, Cyprus, Hungary and Spain. In the other countries, revenue continued to grow but at a much slower pace than before the crisis. The only exceptions are Austria, Germany, Sweden and Malta where the growth of revenue was higher after 2009 than before.

The causes of these changes in sub-national government revenue differ between countries, depending on the sources of revenue. The main sources across

**Figure 4.16 Annual average change in sub-national government revenue in real terms, 2000-2009 and 2009-2013**



**Figure 4.17 Sources of sub-national government revenue, 2013**



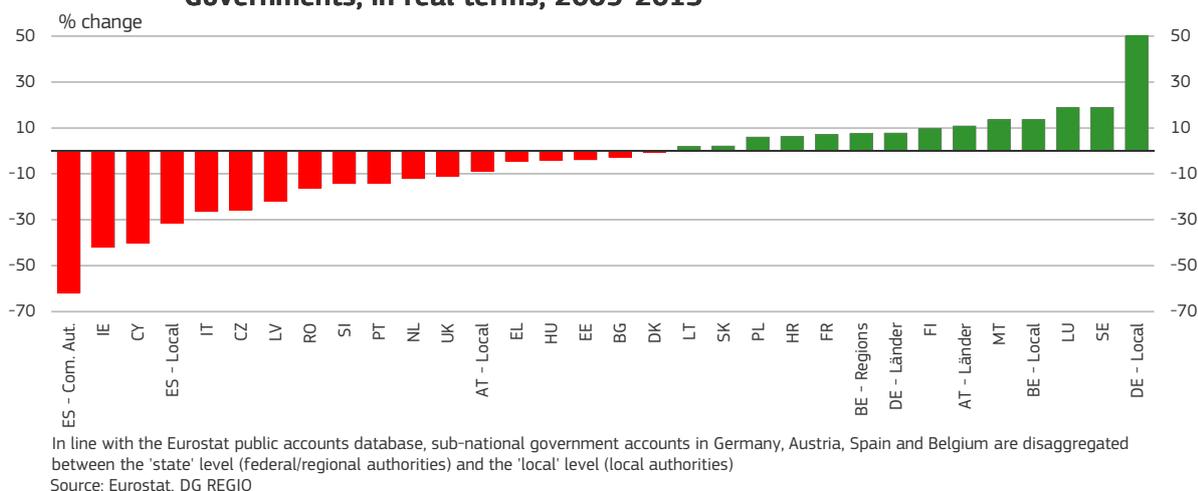
the EU are current and capital transfers from central government (Figure 4.17). This is especially the case in Malta, Romania, Bulgaria and the Netherlands. In Germany, Austria, Spain and Sweden, in contrast, it is local taxes, reflecting the much greater degree of autonomy of sub-national authorities in the latter than the former. Transfers also provide a means of maintaining central government control over local expenditure.

In some cases, the decline in revenue after 2008 mostly stems from a reduction in income from local

taxes, as for instance in the UK.<sup>7</sup> But in many Member States, it is due to a cut in transfers from central government (Figure 4.18). However, transfers go in both directions, since revenue from local taxes or sales by local authorities (such as of housing) can be transferred to central government. In some Member States, these transfers are significant and need to be taken into account when assessing changes in sub-national government income. In most of the Member States which were hit hard by the global recession, net transfers from the central government to local authorities were reduced significantly between 2009

<sup>7</sup> In many instances, revenue from local taxes is largely controlled by central government which sets limits on the tax rates that can be imposed.

**Figure 4.18 Change in net transfers between central and state and local Governments, in real terms, 2009-2013**



and 2012. This was particularly the case in Spain in respect of net transfers to regional authorities which were reduced by 96% in real terms, as a result of both transfers from central government being reduced markedly (by 42%) and transfers from the regions to the centre being increased substantially (from only just around EUR 1.4 billion to EUR 32.2 billion at 2005 prices). A similar trend, but with less of a reduction, was also registered by Spanish local authorities. There was equally a significant reduction in Ireland, Czech Republic, Latvia and Italy. By contrast, central governments provided increased support to local and regional authorities in 14 countries, especially in Germany (both for Länder and local authorities), Lithuania, Sweden and Luxembourg. It is no coincidence that in most of the countries in which net transfers to sub-national authorities increased, the recession was of limited duration and there was less need for fiscal consolidation.

### 3.6 Public deficit and public debt of sub-national governments

As for all parts of the public sector in the EU, public finance at the sub-national level deteriorated significantly following the onset of the financial and economic crisis<sup>8</sup>. While a small deficit of 0.1% of GDP

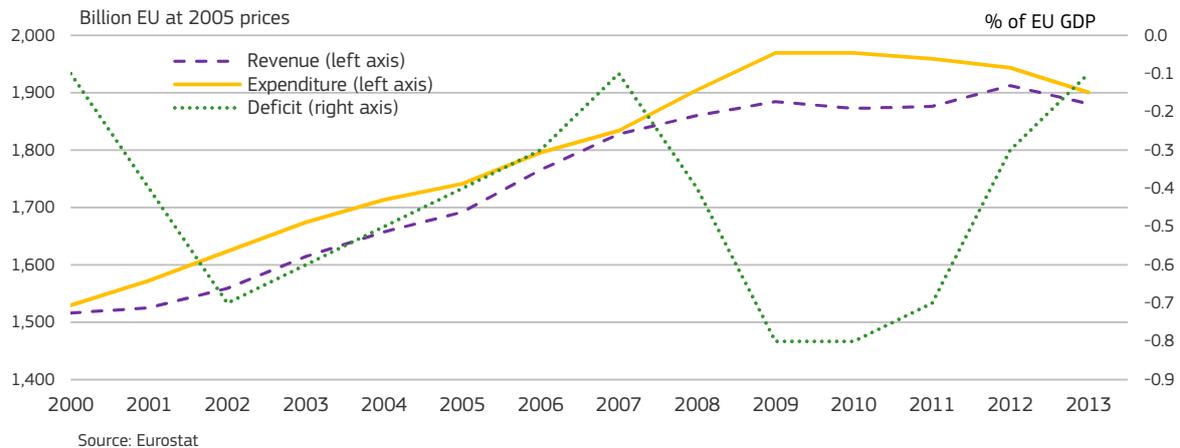
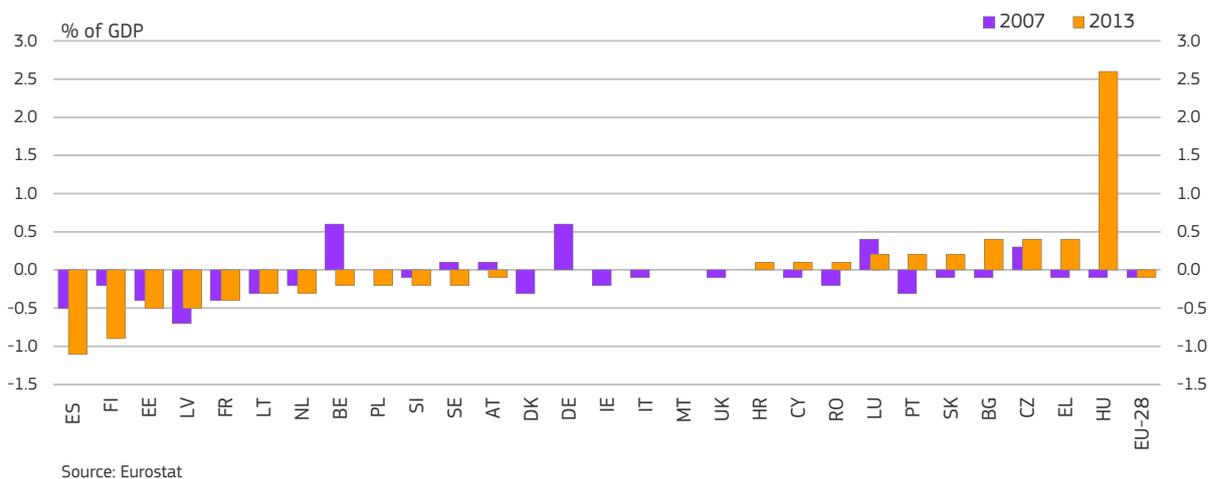
<sup>8</sup> Note that, because of transfers between various levels of government, the extent of public deficit at the sub-national level should not be interpreted as their contribution to the general government deficit.

was observed in 2007, public finance at sub-national level was in deficit to the tune of 0.8% of GDP in 2009 and 2010. This deterioration was mainly due to a fall in revenue in 2008 and 2009 (Figure 4.19), stemming mainly from the reduction of transfers from the central government. Fiscal consolidation measures then began to have an effect and the deficit was progressively reduced to 0.1% of GDP by 2013 returning to its 2007 level.

The deterioration of sub-national public finance is more significant in some Member States, particularly in Belgium, Spain, Finland and Germany where the deficit increased by more than 0.5 percentage points between 2007 and 2013 (Figure 4.20). In a few others, on the other hand, public finance at sub-national level improved, as in Hungary, Bulgaria, Portugal and Greece.

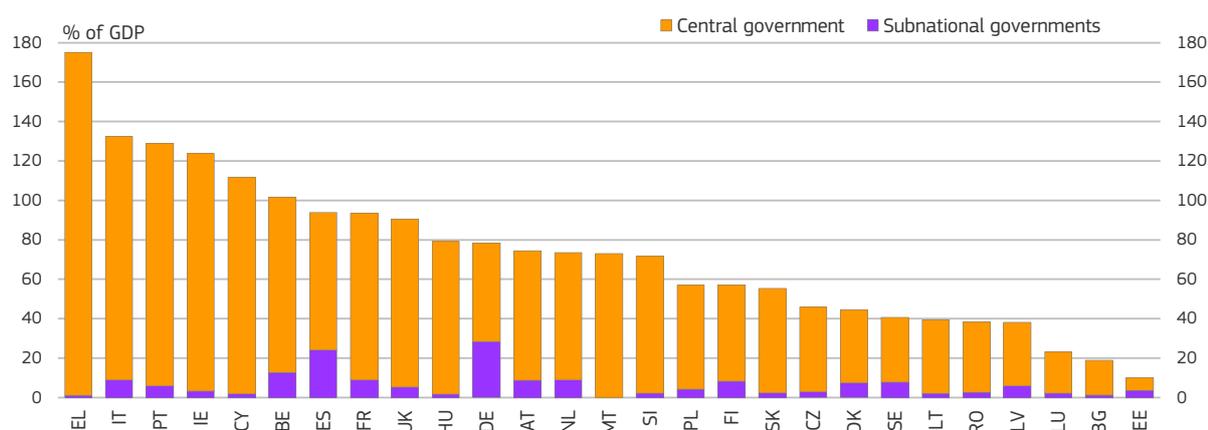
In 2013, the deficit at sub-national level was largest in Spain and Finland (1% of GDP), while at the other extreme there was a surplus in Hungary (2.6% of GDP) and Greece, Czech Republic and Bulgaria (0.4% of GDP).

The result of the increase in government deficits over the crisis period, at national as well as sub-national level, has been to raise accumulated public debt levels dramatically, which in overall terms rose by as much as 30 percentage points of GDP (from around 58% of GDP to over 87%) over the period 2007–

**Figure 4.19 Sub-national government expenditure and revenue and sub-national governments deficit, EU-27, 2000–2013****Figure 4.20 Sub-national government financial balance, 2007 and 2013**

2013. The increase occurred mainly during the recession years of 2008–2010, and the fiscal consolidation measures implemented since then in most Member States have reduced the pace of increase. The rise has been most pronounced in the Member States suffering the biggest contraction in economic activity, most of which have been subject to a macroeconomic adjustment programme — by close to 100 percentage points of GDP between 2007 and 2013 in Ireland, over 60 percentage points in Portugal and Greece and over 50 percentage points in Spain and Cyprus.

Despite regional and local authorities being responsible for around 30% of total General Government expenditure and about 60% of General Government investment, the increase in public debt, as in the deficit, principally stems from central government activities. The overall indebtedness of local authorities and regions without major legislative powers in the EU is below 10% of GDP in all Member States. While debt at sub-national level has increased significantly in some countries, such as Poland, Slovenia, Bulgaria and Latvia, it has been from a very low level in relation to GDP, so limiting the rise in absolute terms. In some countries (such as Hungary as indicated above),

**Figure 4.21 Consolidated General Government gross debt, 2013**

Source: Eurostat

local authorities have even been able to reduce their indebtedness over the crisis period.

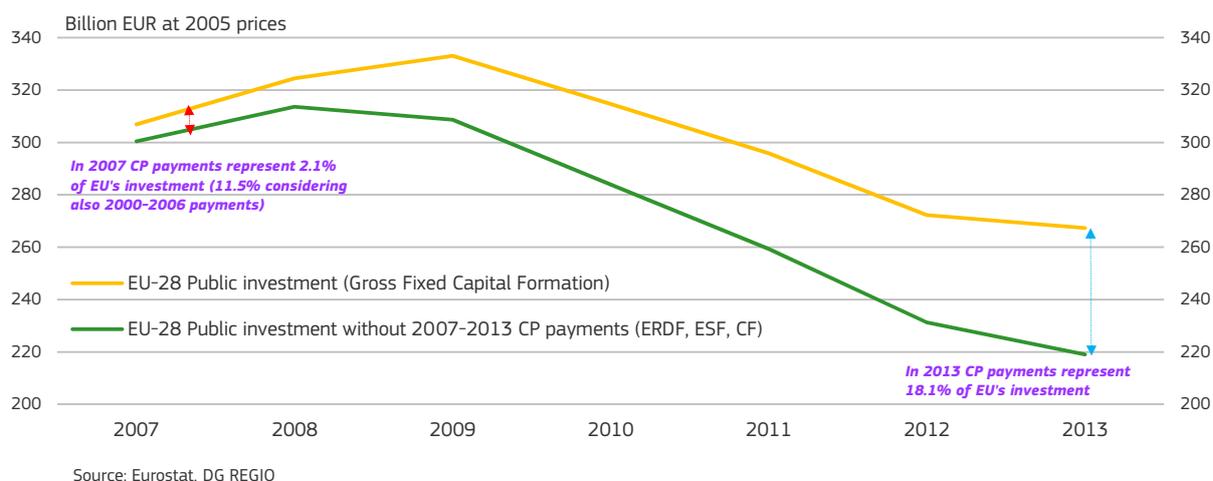
The deterioration in public finances has, however, hit some regional governments hard. In particular, the debt of Spanish regions in 2013 was over 20% of GDP (Figure 4.21) and almost four times larger in 2013 than before the crisis. This is of concern because of the critical importance of regions in Spain for growth-enhancing expenditure and the provision of health and education. In addition, in Belgium, the debt of the three regions has almost doubled over the crisis period though it remains relatively low. On the other hand, the debt of regional governments in the two other federally-organised Member States, Germany and Austria, which have been less affected by the crisis, has declined since 2010.

Nevertheless, in Germany, sub-national public debt amounts to around 30% of GDP and accounts for over a third of the total debt of the public sector, the only country apart from Spain, where debt at this level represents more than 20% of the total. In both cases, sub-national debt is held predominantly by regional authorities (the Landër in Germany and Comunidades Autónomas in Spain), the debt of local government remaining relatively small. The latter is equally the case in other Member States, especially in the more centralised ones.

#### 4. Contribution of Cohesion Policy to public investment in the Member States

As shown above, public investment has declined significantly since 2009. As a consequence, the importance of Cohesion Policy for the financing of public investment programmes has increased further in the crisis years. For many Member States, especially those facing a reduction in revenue and increase of social spending, Cohesion Policy has become the main source of financing for public investment.

During the 2007–2013 period, the allocation of Structural Funds and Cohesion Fund and the related national co-financing amounted on average to around 0.55% of the EU-27 GDP each year. Despite the amount being relatively small in relation to national public accounts indicators, the macroeconomic implications of the ERDF, the ESF and the Cohesion Fund are significant, especially when compared to public investment (Figure 4.22). From 2010 to 2013, these funds represented the equivalent of around 14% of expenditure on public capital investment in

**Figure 4.22 Contribution of Cohesion Policy (CP) to public investment, EU-28, 2007-2013**

the EU and to around 21.5% of total fixed public investment<sup>9</sup>.

The ratio of funding to total public investment varies substantially across Member States, which mostly reflects the differences in aid intensity between regions and the scale of public investment in each Member State. The highest ratios are in Member States which are recipients of the Cohesion Fund and the ERDF under the Convergence Objective (Figure 4.23). In Slovakia, Hungary, Bulgaria and Lithuania, funding amounted to more than 75% of public investment. The lowest ratios are in Luxembourg, Denmark and the Netherlands, countries with no Convergence regions.

The role of Cohesion Policy in supporting the capacity of Member States to carry out growth-enhancing investment implies that it has a direct link to macro-economic policy issues. Cohesion Policy, accordingly, affects budgetary issues in the Member States not only because it provides additional resources to finance public expenditure but also because Member States have to co-finance EU programmes and re-

spect the principle of additionality<sup>10</sup>. The current financial and economic crisis has highlighted the need to reinforce coherence between Cohesion Policy and the renewed EU economic governance system. This has led to the adoption of a series of reforms (described in Chapter 6 below) intended to reinforce the linkages between the two.

## 5. Investment, state Aids, and EIB Loans

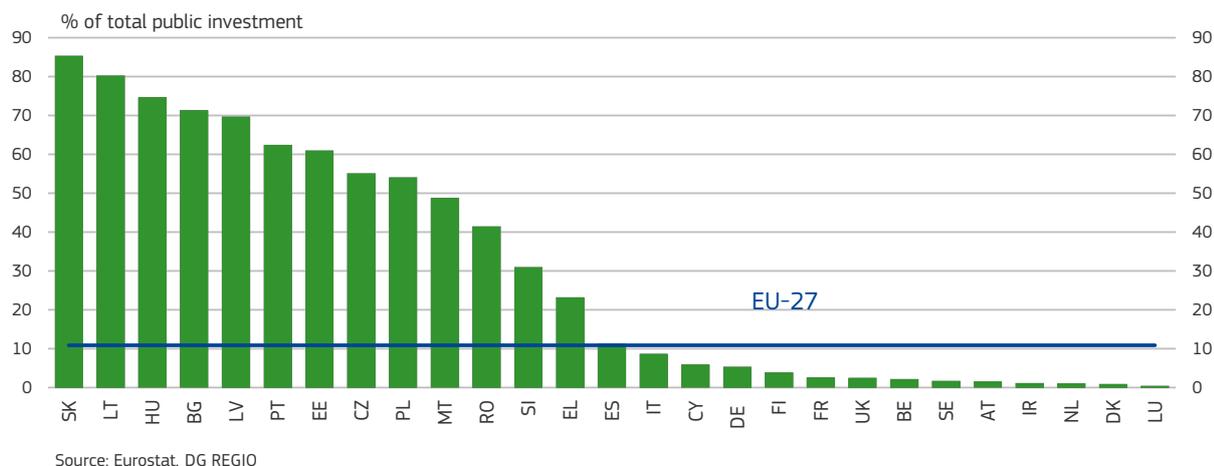
### 5.1 Competition policy

Competition policy is intended to ensure that firms have an equal opportunity to compete wherever they are located and from whichever Member State they originate. As government intervention is necessary in some cases, however, the Treaty provides for situations where State aid is considered compatible with competition in the internal market. A number of exemptions to the general prohibition on aid are, therefore, specified. Accordingly, State aid can be used, for example, to provide risk capital and funding to contribute to the pursuit of the Europe 2020 objectives by encouraging the adoption of more innovative and greener technology.

<sup>9</sup> Total public capital investment is equal to the sum of public fixed investment (Gross Fixed capital formation of the General Government) and capital transfers paid by the general government. Please note that the percentages reported have to be considered as ratios, as the expenditure co-financed by SF is not entirely captured by the two public investment indicators proposed in this section. Capital transfers include capital support to financial institutions.

<sup>10</sup> Under the principle of additionality, Member States commit to avoid replacing national funding with EU funds and to maintain a certain level of spending on public investment.

**Figure 4.23 Share of ERDF, ESF and Cohesion Fund allocations and national co-financing in total public investment, average 2011–2013**



In 2011, State aid amounted to EUR 64.3 billion, or EUR 128 per head of population. In the three years 2009–2011, it averaged 0.6% of EU GDP per year, as the measures to combat the crisis pushed it up from 0.4% in the period 2006–2008.

State aid differs between Member States, varying in the 2009–2011 period from 2.2% of GDP per head in Malta to just 0.1% of GDP per head in Bulgaria.

### Regional aid

The Commission Guidelines on national regional aid for 2007–2013 set out the principles for determining whether or not aid for the economic development of disadvantaged areas, and specifically support of investment in new enterprise creation which it entails, is compatible with the internal market rules. This, therefore, allows higher intensity of aid in regions with lower GDP per head and in the outermost regions. For the 2014–2020 period, the Commission has adopted new Guidelines on national regional aid, which are part of a broader strategy to modernise methods of state aid control. These are aimed at fostering growth in the Single Market by encouraging more effective aid measures and at focusing Commission enforcement on cases with the biggest impact on competition.

The new Guidelines 2014–2020 are to:

- increase the overall share of regions where regional aid can be granted from the current level of 46.1% to 47.2% of the EU population, mainly as a response to the crisis;
- reduce the aid measures subject to Commission scrutiny as more aid categories will be exempted from the obligation to notify the Commission beforehand, allowing Member States to spend small aid amounts with limited administrative burden;
- subject large aid measures to in-depth assessment of their incentive effect, proportionality, contribution to regional development and effects on competition;
- adopt a stricter approach to aid for investment by large enterprises in the more developed assisted areas;
- in outermost regions and sparsely populated areas, maintain and simplify the possibility for Member States to grant operating aid to companies;
- leave unchanged the maximum ‘aid intensities’ for the least developed regions. For other assisted regions, intensities are reduced slightly, by 5 percentage points, given the reduction in EU regional economic disparities and the need to avoid

subsidy races between Member States in times of tight budgetary constraints;

- strengthen the anti-relocation provisions by not allowing regional aid to the same or a similar activity to be relocated within the European Economic Area (EEA).

### Aid in disadvantaged regions

The Treaty on the Functioning of the EU (in Article 107(3)(a)) allows aid that promotes the economic development of areas where the standard of living is abnormally low or where there is serious under-employment ('category a' regions — Map 4.1). In practice, the areas concerned are defined as NUTS 2 regions with a GDP per head of less than 75% of the EU-25 average, which broadly correspond to Convergence regions (including Phasing-out regions). In 2011, aid in these regions amounted to almost EUR 15.2 billion.

Aid in 'category a' regions increased by a quarter between 2009 and 2011 (from EUR 14 billion), though the longer-term trend is downwards (from an average of EUR 17 billion in 2003–2005 to EUR 13 billion in 2006–2008). The level of aid in such regions differs between Member States, reflecting differences in regional policy, the extent to which aid is used to support development and the size of the eligible population.

### Differentiated state aid possibilities for islands, sparsely populated areas and other regions categorised by geographical isolation

The Treaty on the Functioning of the EU (in Article 107(3)(c)) allows aid to be used to facilitate the development of certain other areas, where it does not significantly affect competition ('category c' regions). The areas concerned include those regions with a GDP per head below the EU-25 average, those with unemployment over 15% higher than the national average or those undergoing major structural change or in serious relative decline, as well as regions with low population density, islands with a population of

5,000 or less, regions similarly isolated geographically and regions neighbouring 'category a' regions. Aid in 'category c' regions totalled around EUR 2.9 billion in 2011 (i.e. just over a quarter of that in 'category a' regions) and was down by 39% from 2008.

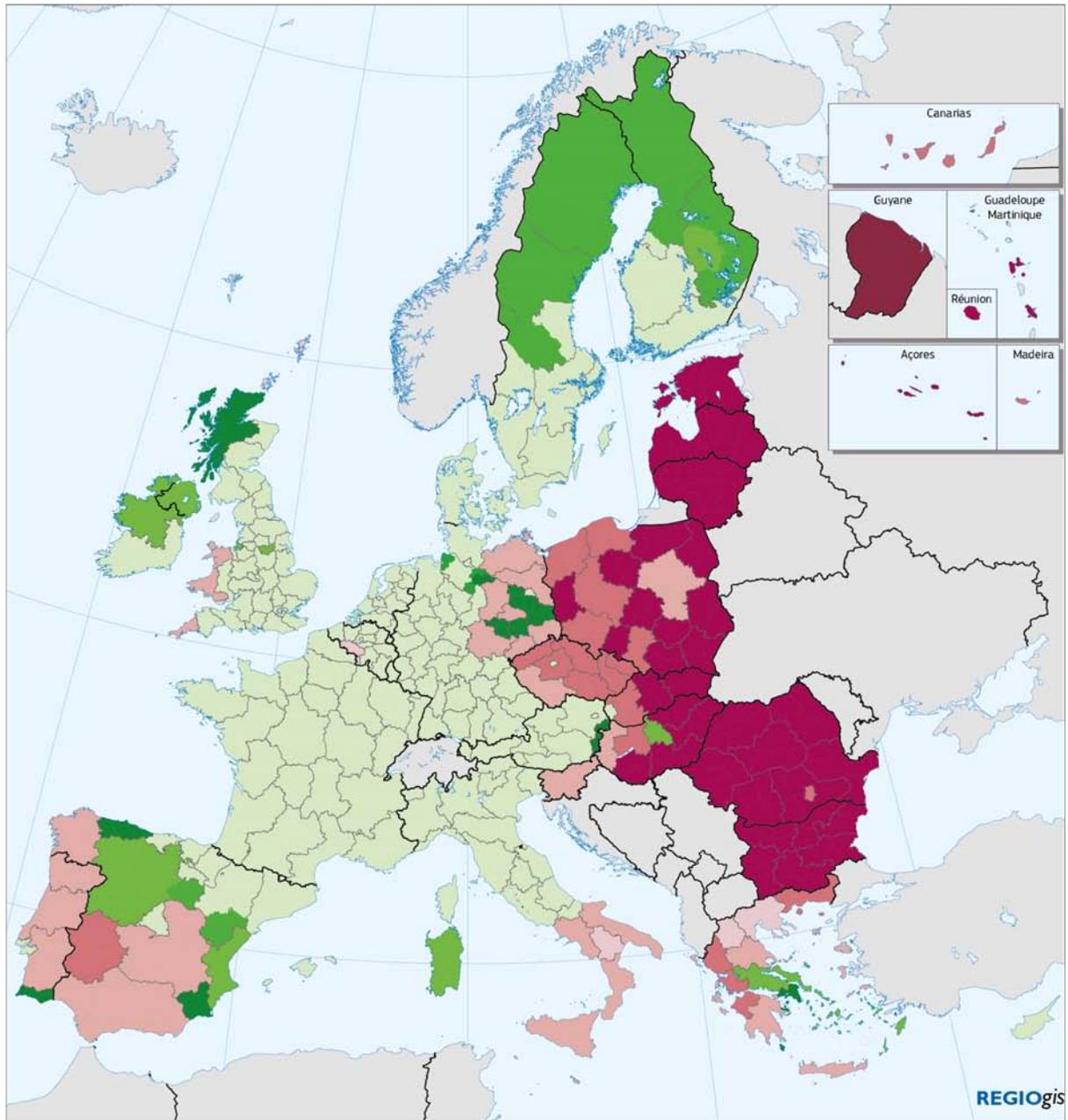
### State aid and the Lisbon objectives

The General Block Exemption Regulation (GBER) was introduced in 2008, giving automatic approval for a range of aid measures without the need for prior notification. Such a block exemption does not have a spatial dimension since it applies to all regions. The current GBER will be extended until the end of 2014 when the Commission will adopt a new GBER, introducing new categories of aid measures without the need for prior notification. The GBER covers aid to SMEs, research, innovation, regional development, training, employment and risk capital, as well as for environmental protection, entrepreneurship, business start-ups in assisted regions and issues such as the difficulties of women entrepreneurs to access finance.

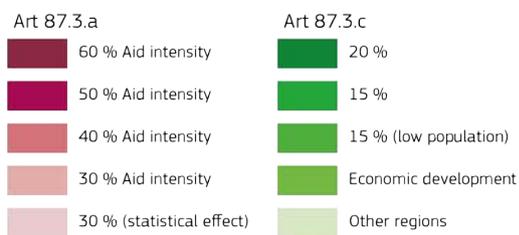
The reform introduced by the GBER was aimed at redirecting aid towards the Lisbon objectives by encouraging Member States to focus on assistance that will be of real benefit to competitiveness, job creation and social and economic cohesion. At the same time, it reduced the administrative burden for public authorities, aid recipients and the Commission alike. The GBER unified and simplified previous rules, and enlarged the categories of state aid covered by the exemption. Almost 41% (EUR 17.2 billion) of aid to industry and services was already block exempted in 2011 under the previous regulations as compared with 19% (EUR 11 billion) in 2008 and 6% (EUR 3 billion) in 2006.

## 5.2 European Investment Bank

European Investment Bank loan operations are directed towards the political priorities established by the EU. The 2013–2015 operational strategy of the EIB combines lending, blending lending with EU fund-



Map 4.1 Regional Aid 2011–2013



Source: DG COMP



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ing, and advisory work to respond to the objectives of EU Cohesion Policy and Europe 2020.

The strategy has been updated in response to the crisis and is focused on (though not limited to) smart growth. The contribution of EIB is multi-faceted, encompassing support for infrastructure projects for growth and cohesion including the completion of the TENs and the deployment of broadband technologies. Supporting SMEs (especially in knowledge-based activities) is also a central objective, as they are considered to be crucial for growth, employment and innovation in the EU. The EIB provides support for sustainable and resource efficient transport, energy efficiency and renewable energy production as well.

In response to the crisis the EIB is providing EUR 60 bn additional lending i over the period 2013–2015, increasing the target for loans given from a EUR 42 bn to EUR 62 bn in 2013, and EUR 60bn in both 2014 and 2015. This will enable the Bank to increase its activity in four priority areas: innovation and skills, SME access to finance, strategic infrastructure and increased investment to meet the EU’s resource efficiency objectives.

The European Commission and the EIB have also developed a number of joint financial instruments where the lending provided is blended with EU funding to support the pursuit of Europe 2020 targets.

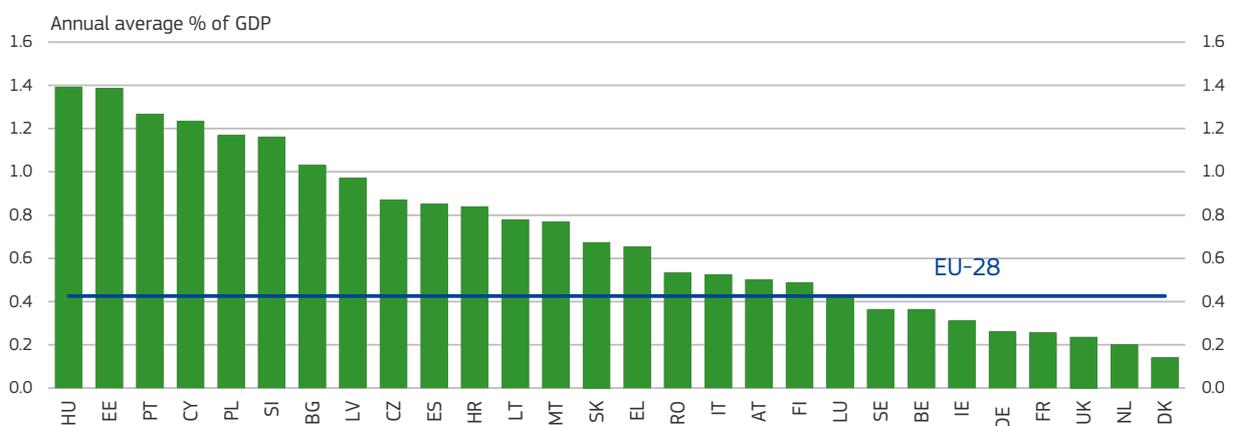
These have a leverage effect on funding and help to increase the impact for final recipients.

In the 2007–2013 programming period, around EUR 20 bn has been invested in the Structural Programme Loans instrument, which combines loans with grants (Figure 4.24).

The Bank’s activities also include managing the JASPERS technical assistance facility which provides support to EU Member States to improve the quality of the major projects submitted for grant financing by the Structural and Cohesion Funds. From its inception in 2006 up until the end of 2012, a total of 226 JASPERS-supported projects in 12 countries were approved, involving investment totalling EUR 39 bn (EUR 10 bn in 2012).

In addition, the Bank, together with the European Commission and the Council of Europe Development Bank, set up the JESSICA initiative (Joint European Support for Sustainable Investment in City Areas) which is intended to provide reimbursable finance for financing revenue-generating urban projects through the Urban Development Funds. By the end of 2012, a total of 75 JESSICA evaluation studies had been commissioned and 18 holding funds had been set up with finance totalling EUR 1.7 bn and covering 54 regions. 37 Urban Development Funds had been established with finance amounting to around EUR 1.4 bn.

**Figure 4.24 European Investment Bank loans by Member State, 2007-2013**



Source: EIB, Eurostat, DG REGIO

## 6. Conclusion

The financial and economic crisis has led to a severe deterioration of public finance in most EU Member States. Public deficits increased sharply in 2009 resulting in the adoption of fiscal consolidation measures across the EU starting in 2010. As a consequence, public expenditure was reduced in a number of Member States while the rate of growth was limited in the others.

The various categories of public expenditure were not all affected, however, in the same way. Growth-friendly public expenditure and public investment were particularly targeted by fiscal consolidation measures, public investment in the EU-27 being expected to fall to historically low levels in 2014.

This is particularly true for sub-national levels of government which are responsible for a large share of growth-friendly public expenditure and public investment. Since 2010, public investment at sub-national level has fallen significantly in the EU-27, declining back to 1997 levels. The biggest reduction is in Spain where sub-national public investment fell by 24% a year on average between 2009 and 2012.

In such a context, the role of Cohesion Policy in supporting growth-enhancing public expenditure in a number of Member States has become of major importance and by far the main source of financing for public investment. Given this, the role of Cohesion Policy in helping the Member States to pursue a dynamic way out of the economic crisis and achieve the Europe 2020 objectives is becoming ever more crucial. The tendency for public investment in Member States to be reduced is equally a concern because it calls into question their ability to respect the principle of additionality and to co-finance Cohesion Policy programmes in the future.

# Chapter 5: The importance of good governance for economic and social development

## 1. Why should the EU focus on good governance?

There are two opposing views among economists of the link between good governance and economic and social development. The first sees good governance as a by-product of development. The second regards good governance and efficient institutions as a necessary condition for strong economic and social development. It considers that countries can remain stuck in a low-growth, low-quality institutional equilibrium and that a shock may be needed to move them out of it<sup>1</sup>.

A growing body of research endorses the second view and emphasises the beneficial effect that efficient institutions can have not only on economic growth but also on innovation and entrepreneurship, health, well-being and the reduction of poverty as well as on the impact of Cohesion Policy<sup>2</sup>. As a result, it is now widely accepted that *'high-quality, reliable public services and legal certainty (are) a major precondition for economic success'* and that *'... weak administrative and judicial capacity as well as legal uncertainty constitute key impediments in addressing economic development challenges'*<sup>3</sup>.

One of the major aims of the process involved in accession to the EU is to ensure that the rule of law, equality before the law and non-discrimination are firmly entrenched in the legal framework and practices of the countries applying for entry. These conditions for membership continue to apply after accession and all governments are expected to make sure that they do so.

At a time when Member States are facing increasing pressures on public budgets, the challenge of ensuring high-quality public services requires technologi-

cal and organizational innovation to boost efficiency. This applies both to delivering public services and designing and implementing high quality public investments.

Good governance, legal certainty and high quality regulations are essential for a stable business environment. The institutions that govern economic and social interactions within a country need to fulfil a number of key criteria. These include the absence of corruption, a workable approach to competition and procurement policy, an effective legal environment, and an independent and efficient judicial system. Moreover, strengthening institutional and administrative capacity, reducing the administrative burden and improving the quality of legislation underpins structural adjustments and fosters economic growth and employment<sup>4</sup>.

The modernisation of public administration was one of the five policy priorities identified in the Annual Growth Survey in 2012, 2013 and 2014<sup>5</sup> since it is seen as a key requirement for the success of the Europe 2020 agenda. The reform of public procurement, digitisation of public administration, reduction of the administrative burden falling on individuals and SMEs and increased transparency are regarded as part of such modernisation<sup>6</sup>. Emphasis is also given to the fight against corruption and improving both public authorities and the judiciary.

This chapter provides an overview of the performance of public institutions in general focussing on the ease of doing business, corruption and governance at the national and regional level and concludes by high-

1 Acemoglu, D. and Robinson, J. (2012).

2 Rothstein, B. (2011); Rodriguez-Pose, A. and Garcilazo, E. (2013), OECD (2013).

3 Commission Staff Working document SEC(2010) 1272.

4 The World Economic Forum's Global Competitiveness report has "quality of institutions" as the first pillar of assessment.

5 The 2013 Annual Growth Survey and the Economic Adjustment Programmes highlighted the link and stressed the need for Member States to increase the efficiency and effectiveness of public services as well as the transparency and quality of public administration and the judiciary.

6 COM(2013) 453 final.

### Definitions of good governance

There are a number of different ways of defining and identifying good governance. A relatively straightforward one focusses on the ease of doing business. This is the case of the World Bank's Doing business reports, which argue that governments can facilitate economic growth by providing a simple and transparent regulatory system, so that businesses can concentrate on their core activities and need only to devote a fraction of their resources to complying with administrative procedures.

Transparency International, on the other hand, focusses primarily on corruption, which is defined as the abuse of entrusted power for private gain. Corruption, it is argued, hurts anyone who depends on the integrity of people in authority and goes well beyond limiting economic development to damaging health, trust and well-being.

A more targeted approach is adopted by Bo Rothstein (2011), who argues that good governance means the impartial exercise of public power. This focuses on how policies are implemented rather than on their substance as such and clearly means that there is no place for corruption, 'clientelism', favouritism, discrimination and nepotism. The benefit of such a focussed approach is that it facilitates monitoring and targets interven-

tions on ensuring that public institutions operate impartially.

A broader approach is taken by the Worldwide Governance Indicators, also published by the World Bank, which defines governance as "*the traditions and institutions by which authority in a country is exercised. This includes (a) the process by which governments are selected, monitored and replaced; (b) the capacity of the government to effectively formulate and implement sound policies; and (c) the respect of citizens and the state for the institutions that govern economic and social interactions among them*"<sup>1</sup>.

A new European regional indicator combines the approaches of Rothstein, Transparency International and the World Bank, taking account of regional survey results that capture people's experience of corruption and the impartiality of public services as well as national level Governance indicators.

Although the differences in definition are salient, the results generated by the different measures are highly correlated which indicates that they all tend to capture the same deficiencies in governance.

1 Kaufmann, D. *et al.* (2010)

lighting the link between good governance and the implementation of Cohesion Policy.

## 2. Doing business is easier in the North of the EU

Good business regulation allows companies to focus their time and energy on doing business without losing time on complying with red tape. The best countries to do business in are not the ones without rules and regulations but those where these are clear and easy to comply with.

The World Bank's 'Doing Business' indicator is based on the notion that regulations should be 'S.M.A.R.T' — Streamlined, Meaningful, Adaptable, Relevant and

Transparent. The indicator combines 10 aspects<sup>7</sup> to assess the way that business regulations affect SMEs in 189 countries and essentially measures their complexity and the costs they impose as well as the strength of legal institutions.

According to the indicator, Denmark is rated as the most 'business-friendly' country in the EU (in 5<sup>th</sup> place overall) and Malta the least friendly (in 161<sup>st</sup> place)<sup>8</sup>. The 10 most business-friendly Member States (all in the top 30 worldwide) are the three Nordic countries, the three Baltic States, the UK, Ireland, Germany and the Netherlands. The five least friendly are Malta, Croatia, the Czech Republic, Romania and Greece.

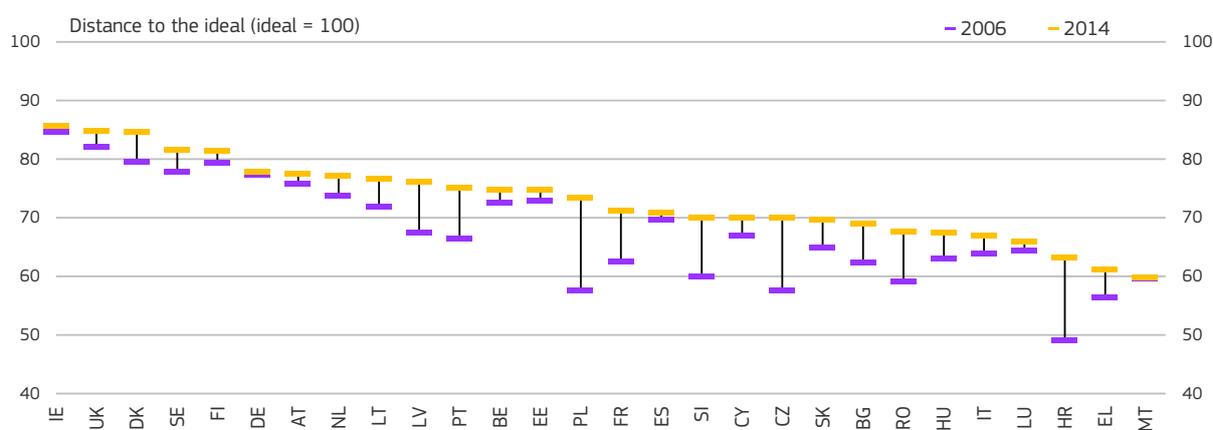
7 These are starting a business, dealing with construction, enforcing contracts and resolving insolvency, getting electricity, registering property, getting credit, protecting investors, paying taxes, trading across borders.

8 World Bank, *Doing Business 2014*.

**Table 5.1 Starting a business in 2014**

Country	Rank	Procedures (number)	Time (days)	Cost (% of income per head)	Paid-in Min. Capital (% of income per head)
Lithuania	11	4	6.5	0.9	0
Ireland	12	4	10,0	0.3	0
Czech Republic	146	9	19.5	8.2	29.5
Malta	161	11	39.5	10.8	1.5
EU-28	70	5.4	12.9	4.4	10.4

Source: Doing Business 2014, World Bank

**Figure 5.1 Ease of doing business, 2006-2014**

LU: 2007, CY: 2009, MT: 2012

Source: Doing Business 2014, World Bank

### Ease of doing business varies within a country

The World Bank now assesses the ease of doing business in different locations in a growing number of countries. The variation in Italy, in particular, is marked. For example, to obtain the construction permits to build a warehouse requires 164 days in Bologna at a cost equivalent to 177% of income per head but 208 days in Potenza at a cost of 725% of income per head. Enforcing a contract takes an average of 855 days and costs 22% of the claim in Turin as compared with 2022 days and a cost of 34% of the claim in Bari. Starting a business varies from 6 days in Padua to 16 days in Naples, while registering a property takes 13 days in Bologna but 24 days in Rome.

Important elements included in the indicator are the amount of time, the number of procedures and the costs and capital needed to start a business. In the EU, this requires an average of 13 days and 5.4 separate procedures and costs the equivalent of 4.4% of national income per head with minimum paid-in capital amounting to 10% of the latter. The difference between Member States is substantial. In Lithuania and Ireland, half the number of procedures are required at a fraction of the cost compared with the Czech Republic and Malta (Table 5.1).

Between 2006 and 2014, all Member States improved their position in relation to the ideal as regards the ease of doing business (measured as 100 in Figure 5.1, i.e. where the best approach is adopted for all aspects). The biggest improvements occurred in a number of the countries furthest from the ideal — Croatia, Poland, the Czech Republic and Slovenia,

## E-Government and public e-Tendering can improve the ease of doing business and reduce costs

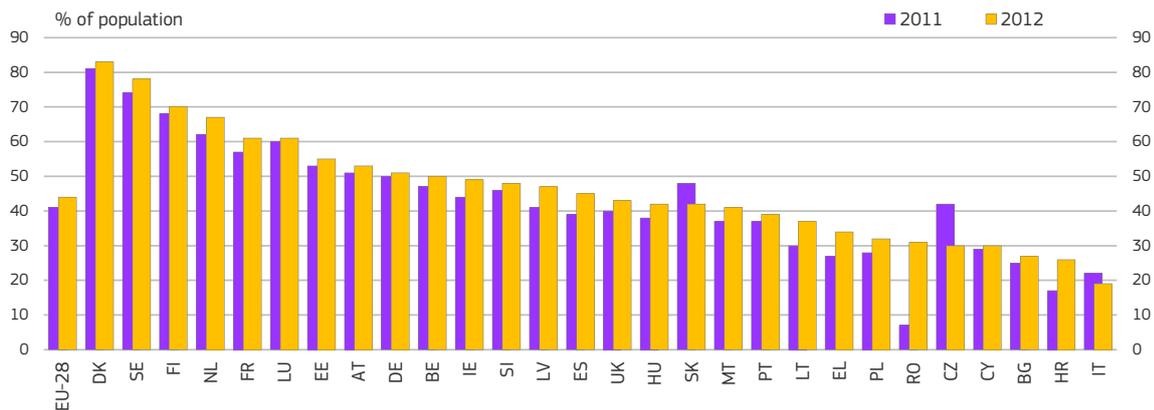
E-Government allows public authorities to provide services more transparently and more cost-effectively. The EU's Digital Agenda for Europe includes the goal of increasing the use of e-Government services to 50% of EU citizens by 2015.

In 2012, 44% of the population in the EU made use of e-Government services. Between 2011 and 2012, the share increased in all but three countries (Figure 5.2). The increases were biggest in Romania (+24 percentage points), Croatia (8 percentage points) and Greece (7 percentage points), but the overall shares remain small. Italy had the smallest share of people using e-Government services in 2012 (18%), which was smaller than in 2011.

The adoption of e-procurement — the use of electronic communication by government to buy supplies and services or to tender for public works — can generate significant savings for European taxpayers. As part of the modernisation of European public procurement, the Commission has accordingly proposed to make e-procurement the standard method in the EU by mid-2016.

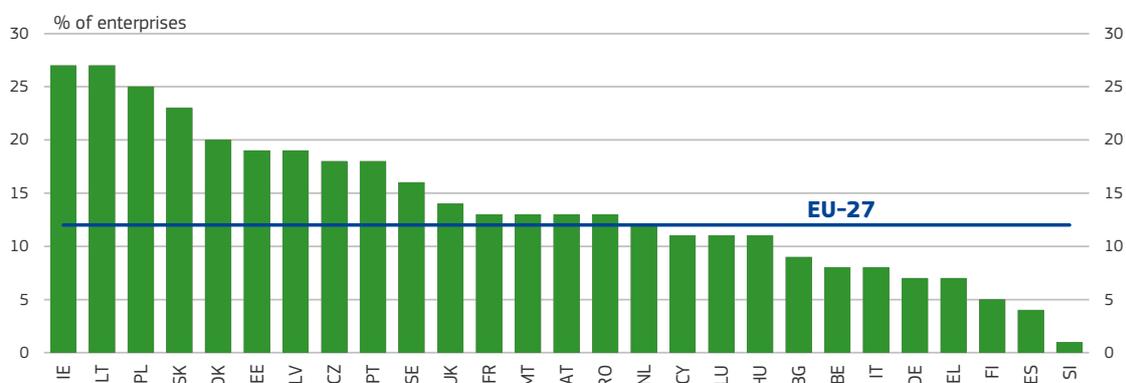
Despite the benefits, e-procurement is still in its infancy in the EU. It was used in only 5–10% of procurement procedures in 2012 and only 12% of enterprises across the EU used the Internet when tendering (Figure 5.3). In only four Member States (Ireland, Lithuania, Slovakia and Poland) was the proportion above 20%.

**Figure 5.2 e-Government usage by citizens, 2011-2012**

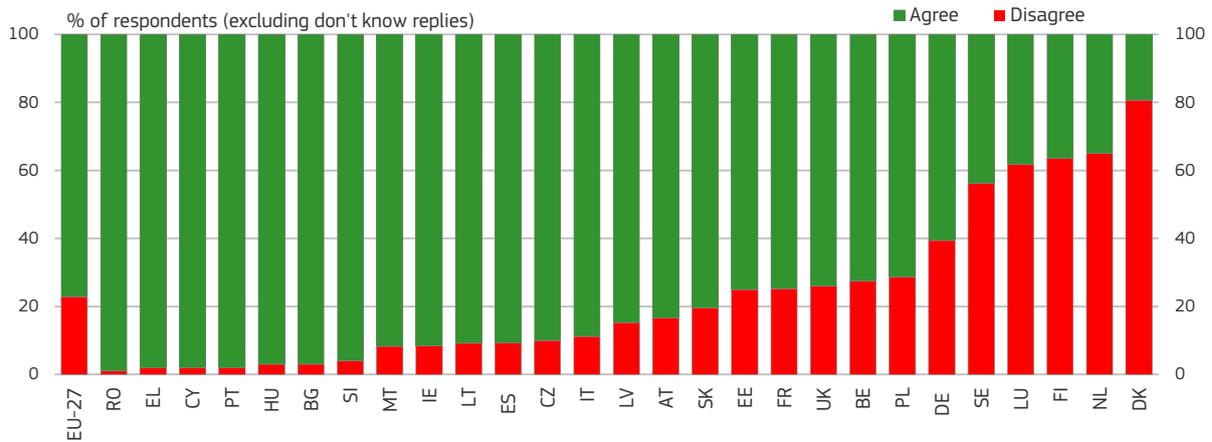


Source: Eurostat

**Figure 5.3 Enterprises using the internet in public e-Tendering, 2012**



Source: Eurostat

**Figure 5.4 Perception of corruption as a major problem by Member State, 2011**

Source: Eurobarometer 374, 2011

though Portugal, France and Romania also showed large improvements.

The ease of doing business, however, also varies between places within countries as a result of differences in the way national regulations are implemented (see Box). There is a need, therefore, to reduce differences in the ease of doing business not only between countries but also between regions or cities within countries.

### 3. Most Europeans think corruption is wide spread and a major problem

The recent EU Anti-Corruption report<sup>9</sup> emphasises that corruption affects all Member States, but that it cannot be addressed by a one-size-fits-all policy because of the big difference in the nature and extent of corruption between Member States. Corruption harms the Union as a whole. It distorts the Single Market, reduces public finances and lowers investment levels. The issue is particularly relevant for cohesion, since less developed regions and Member States tend to score poorly on corruption and governance indicators.

The majority of the EU population see corruption as a major problem in their country (Figure 5.4). In all but five Member States (the Nordic countries, the Netherlands and Luxembourg), over 60% of people see corruption as a major problem, the proportion varying between 61% (in Germany) and 99% (in Romania).

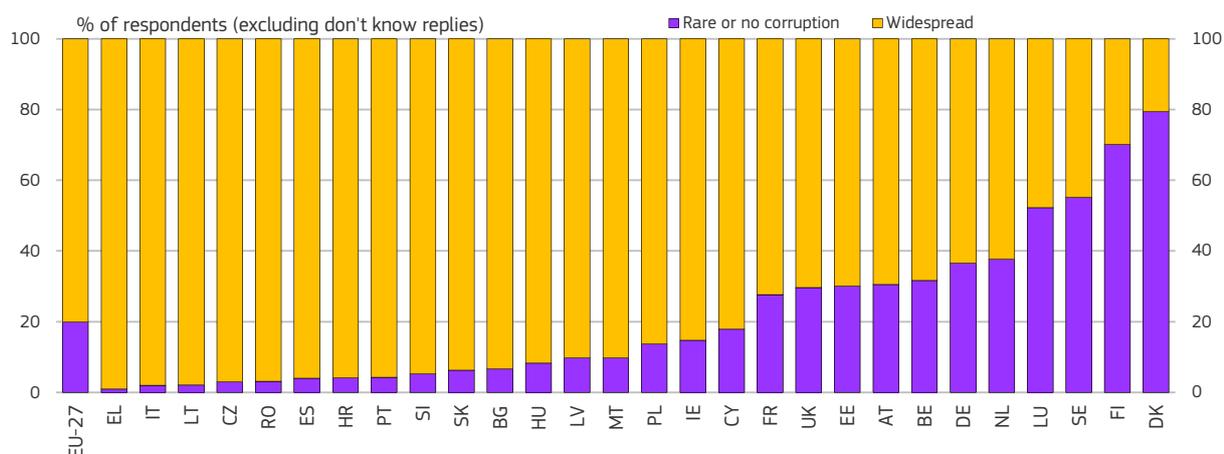
In 2013, four out of five people in the EU considered that corruption was widespread in their country (Figure 5.5). As in 2011, the Nordic countries had the lowest perceptions of corruption. In half of the Member States, nine out of ten people thought that corruption was widespread or very widespread.

The perception of corruption, however, can be heavily influenced by recent political scandals or by the financial and economic situation, which is less the case for direct experience of corruption or witnessing it at first hand. Only 8% of people in the EU surveyed had experienced or corruption or witnessed it in the previous twelve months. The figure, however, was significantly higher in 9 Member States, ranging from 12% in Cyprus to 25% in Lithuania.

Despite the view that corruption is widespread and problematic, in a global perspective most EU Member States score relatively well on the Corruption Perception Index<sup>10</sup> (CPI), created by Transparency

9 COM(2014) 38 final.

10 This index averages the standardised scores of up to 13 surveys of citizens and businesses on the perception of corruption in the public sector. A high score means a low perception of corruption.

**Figure 5.5 Perception of the extent of corruption by Member State, 2013**

Source: Eurobarometer 397, 2013

**Table 5.2 Estimated direct costs of corruption in public procurement in 8 selected Member States**

	Direct costs of corruption (in million EUR)	% of the overall procurement value in the sector in the 8 Member States
Road & rail	488–755	1.9% to 2.9%
Water & waste	27–38	1.8% to 2.5%
Urban/utility construction	830–1141	4.8% to 6.6%
Training	26–86	4.7% to 15.9%
R&D	99–228	1.7% to 3.9%

Source: PwC EU Services and Ecorys

International<sup>11</sup> and covering 177 countries (Map 5.1). The top 20 least corrupt countries according to the 2013 index include 8 EU Member States (the three Nordic Member States, the Benelux countries, Germany and the UK). Seven Member States, however, have relatively low scores and are ranked between 57 and 80. These, in descending order, are Croatia, the Czech Republic, Slovakia, Italy, Romania, Bulgaria and Greece.

In addition, the study *Identifying and reducing corruption in public procurement in the EU*<sup>12</sup>, commissioned by the European Commission at the request of the European Parliament shows that about 20% of the GDP of the EU is spent through public procurement (EUR 2.4 trillion at 2010 prices). Given these figures, the EU anti-corruption report concluded that public

procurement is a hot spot for corruption. The study focussed on a number of areas in which considerable amounts of EU funding are spent through public procurement, in particular road and rail transport, water and waste management, urban and public utility construction and training. Table 5.2 shows the estimated effect of corruption in these areas.

Corruption varies between policy areas, some being more prone to fraud than others (Table 5.3). Training is the most vulnerable, the estimated loss of public funds from corruption ranging from just under 5% of the total spent to almost 16%.

The study also examined several types of indicator — or ‘red flags’ — which signal corruption, the most common one being bid rigging where competitors collude to ensure that one of them wins the contract being tendered. In the case of training, the most common ‘red flag’ are kick-backs, or payments to the

11 As also mentioned in the study prepared by PwC EU Services and Ecorys (2013a).

12 PwC EU Services and Ecorys (2013b).

**Table 5.3 Type of corruption by policy area**

	Bid rigging	Kick-backs	Conflict of interest	Deliberate mismanagement
Urban/utility construction	19	14	11	3
Road & Rail	10	8	4	1
Water & Waste	15	6	3	0
Training	1	3	2	1
R&D	12	4	2	0
Total	57	35	22	5

Source: PwC EU Services and Ecorys

public officials awarding the contract. A conflict of interest in procurement occurs when public officials or their family members own shares in the winning company. If a public official ignores that a contractor overtly does not execute a required task, this is considered as deliberate.

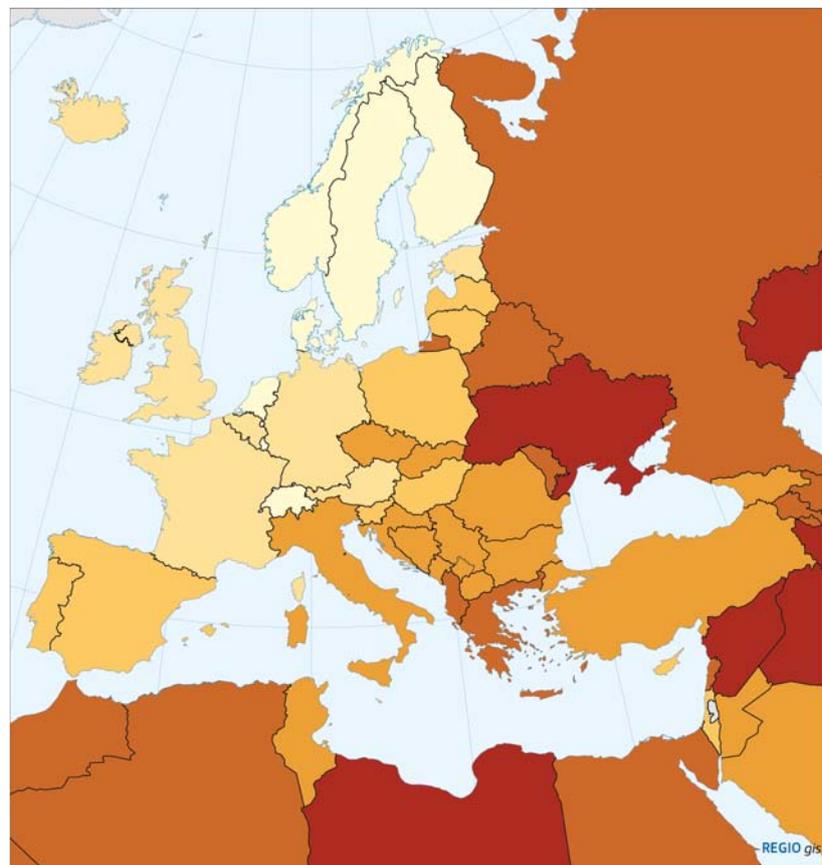
vide high standard public services, the efficiency and independence of the civil service and the ability to manage the creation and implementation of public policies), is especially relevant for economic development and varies considerably between EU Member

The study also concluded, however, that EU-funded projects are less prone to corruption because of the management and control systems which are required to be implemented and the anti-fraud measures covering EU-funded expenditure.

#### 4. Governance indicators vary between and within EU Member States

The World Bank Governance Indicators, which cover over 200 countries, consist of six measures: Political stability, Government effectiveness, Regulatory quality, Rule of law, Control of corruption and Voice and accountability.

The indicator of Government effectiveness (which measures public perception of the government's capacity to pro-



**Map 5.1 Corruption Perceptions Index, 2013**

Index  
 ■ < 28  
 ■ 28 - 40  
 ■ 40 - 53  
 ■ 53 - 65  
 ■ 67 - 78  
 ■ > 78

Perceived level of public sector corruption.  
 Source: Transparency International

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States (Figure 5.6). It shows the three Nordic countries as having the most effective governments and Romania, Bulgaria, Greece and Italy as having the least effective. It also shows little change for most Member States between 1996 and 2012 and an improvement in Lithuania, Bulgaria, Latvia and Croatia, if from a low starting-point. It shows, however, a significant deterioration in government effectiveness in Greece and Spain, which might be a result of the economic crisis.

The 'Rule of law' indicator, which measures public perception of how laws are implemented and how well they are enforced, also varies between Member States and in a very similar way to how government effectiveness is perceived. The three Nordic countries have again the highest scores and Romania, Bulgaria, Greece and Italy the lowest, along with Croatia. There are similarities as well in the changes which occurred between 1996 and 2012, with significant improve-

ments in Bulgaria and Croatia — though the score in both remaining low — as well as in the three Baltic States, and a significant deterioration in Greece and Spain, as well as in Italy.

#### 4.1 Some regions have a far higher (or lower) quality of government

As indicated above, there are variations across regions in the way that national regulations are implemented, which reflect differences in the efficiency of regional and local authorities. These differences are also important to take into account when assessing the quality of governance in relation to economic and social development.

A new regional index, constructed by the Gothenburg Institute of Quality of Government, enables this to be done (Map 5.2). The results are disturbing, in that 15% or more of respondents in many regions in Bulgaria, Romania, Hungary and Italy report that they had personally paid a bribe in the preceding 12 months. The perceived quality of government varies markedly between regions in Italy, Spain, Belgium, Romania and Bulgaria. In the first three, it was rated to be lowest in the less developed regions, implying perhaps that they may be stuck in a low-administrative quality, low-growth trap. In Romania and Bulgaria as well as Hungary, the capital city region was more poorly rated than others, reflecting perhaps the greater opportunities for corruption there.

In the countries with the highest perceived quality of government — the three Nordic countries and the Netherlands — there were no great differences between regions.

The situation in the outermost regions differs between countries. While the Portuguese ones are rated the same as the national average (Acores) or higher (Madeira), the Spanish (Canarias) and the four French ones are rated below.

The results of the 2013 survey are much the same as for 2010<sup>13</sup>, which, when it was published, spurred

#### Ways of tackling corruption

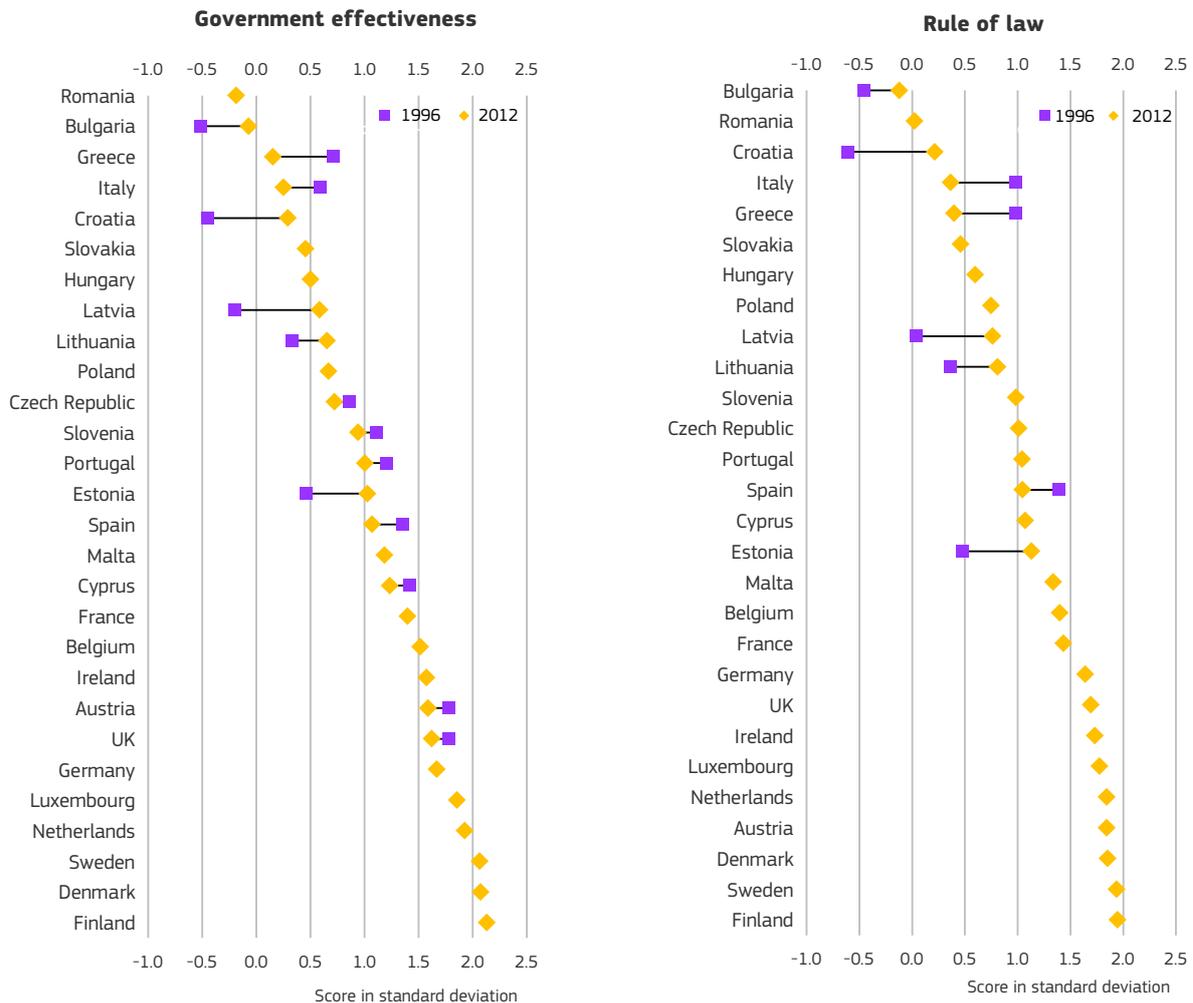
A recent study by ANTICORRP, which analysed corruption in Romania, Hungary and Estonia, underlines the fact that an anti-corruption policy to be effective needs to be part of a broader strategy of improving governance. Repression, special legislation or an anti-corruption agency does not by itself automatically have a significant impact on corruption. Nor is it easy for an outside body to do much directly though it can help to influence things.

A good starting-point for reducing corruption is to reduce the administrative opportunities for discretionary behaviour. E-Government and public e-tendering can help in this regard, as can administrative reforms to cut red tape and streamline regulations. Improving the ease of doing business can, therefore, also help to combat corruption in part by limiting the opportunities for it to occur.

The participation and cooperation of the private and voluntary sectors can increase the social pressure against corruption. Concerned individuals can also help to maintain an independent judiciary and a high level of public accountability. The media are particularly important since they can act as a watchdog over governance, though they need to be economically independent and pluralistic to do so.

<sup>13</sup> Due to slight changes in the methodology the two surveys are not fully comparable.

**Figure 5.6 World Bank Indicators, 1996-2012**



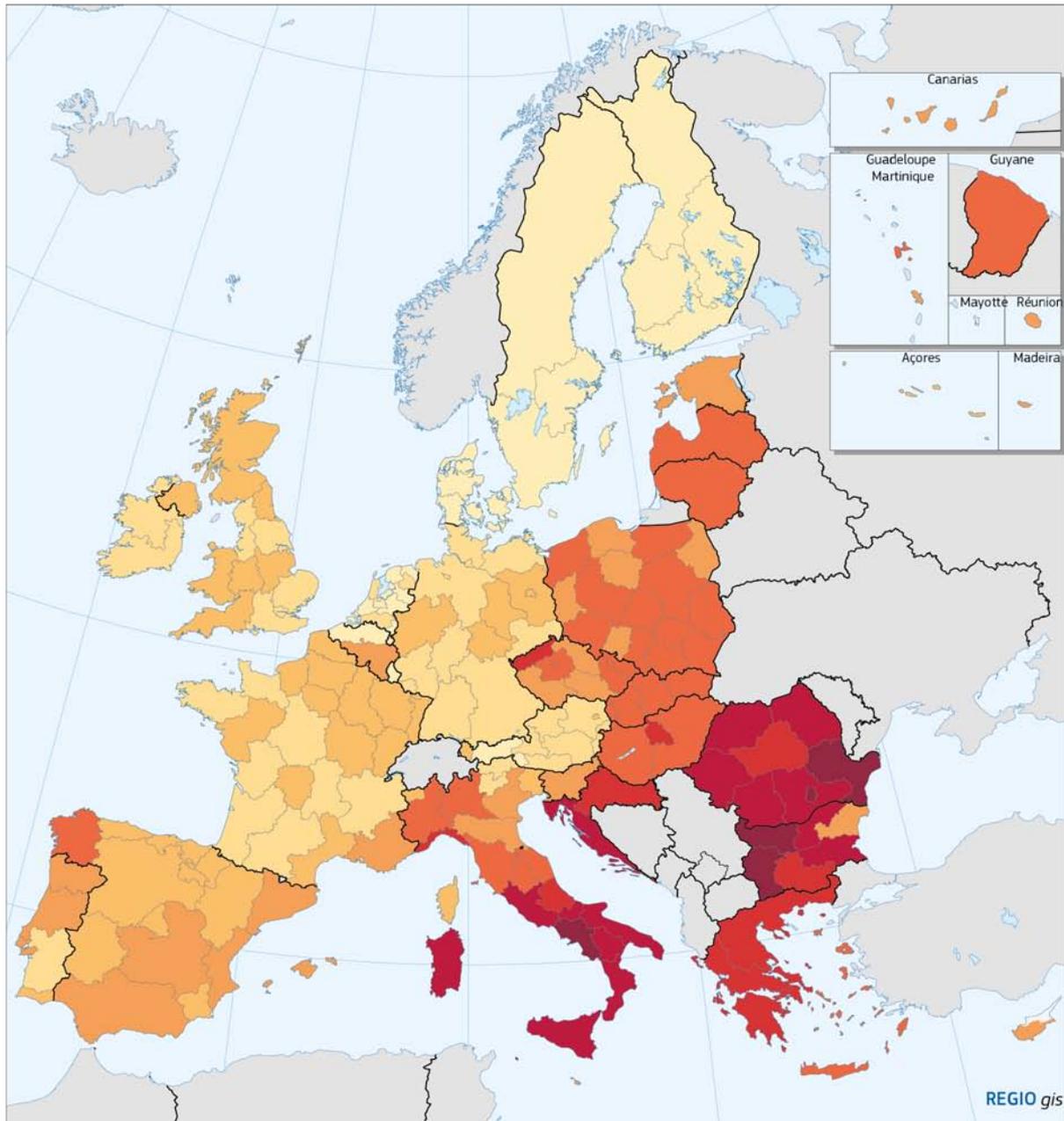
Data for 1996 is only shown if difference is statistical significant  
Source: World Bank

a lot of research on the link between the quality of government in regions and their rate of innovation, entrepreneurship and growth. Some of the key findings of this research are set out in the OECD 2013 report *Investing Together*, which concluded that a low quality of government hinders economic development and reduces the impact of public investment. This applies equally to the investment co-financed under Cohesion Policy, implying that its effect on regional development could be enhanced by improvements in the quality of governance. Such improvements, however, will not necessarily come about merely through the passage of time but are likely to

require concerted efforts at all levels of government as well as the active involvement of the public and the media.

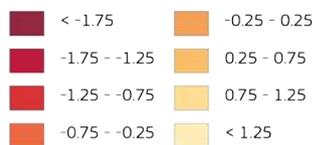
#### 4.2 The authority of EU regions is growing

There is a trend towards regionalisation in many parts of the EU. According to the regional self-rule index (see Box), regions in many Member States have become more autonomous over the past 50 years, especially in Italy, Belgium and Spain as well



**Map 5.2 European Quality of Government index, 2013**

Standard deviation, range from poor quality (negative) to high quality (positive)



Note: EU = 0

Source: ANTICORRP, based on World Bank data and a regional quality of government survey, Charron, N. *et al.* (2014).

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### How is the European quality of Government index constructed?

This index, commissioned by DG Regional and Urban Policy and first published in 2010, combines World Bank Governance indicators at the national level with a survey that captures regional variations within each country. As a result, the national average of the regional indices equals the World Bank Governance score.

It has been updated to 2013 with the support of the 7<sup>th</sup> Framework Programme<sup>1</sup>. The survey focuses on the public services which are often controlled locally or regionally (law enforcement, education and healthcare) and which are more likely to vary between regions. Questions cover the quality and the impartiality of these services as well as the perception and personal experience of corruption.

The questions<sup>2</sup> include **among others**:

- How would you rate **the quality** of public education in your area?
- Certain people are given **special advantages** in the public health care system in my area;
- All citizens **are treated equally** by the police force in my area;
- In the past 12 months have you or anyone living in your household paid a **bribe**.

<sup>1</sup> It is based on a survey of 85 000 respondents covering 24 countries and 212 regions. See ANTICORRP [www.anticorpp.eu](http://www.anticorpp.eu).

<sup>2</sup> See Charron, N. (2013) and Charron, N. *et al.* (2014) for more info.

as Scotland in the UK, in all of which there were high levels of self-rule at regional level (Map 5.4).

The degree of self-rule also increased substantially in regions in the Czech Republic, Slovakia, Poland, Greece and Finland but, nevertheless, remained relatively low.

In German and Austrian regions, there were only minor changes, though the level of self-rule was already high in 1960. No real change occurred in regions in England, Sweden, mainland Portugal, Croatia and Bulgaria.

In 2011, the regional self-rule index was highest in the Federal States of Germany, Austria and Belgium (Map 5.3). It was second highest in 'Regional States', which are more centralised than federal ones, but less so than unitary ones. It was particularly high in the most autonomous regions, such as Åland in Finland, Scotland in the UK, Navarra in Spain and Açores and Madeira in Portugal. The index was lowest in Bulgaria, mainland Portugal and Ireland<sup>14</sup>.

In addition to the degree of self-rule, the regions covered by the index also differ in the size of their population. In Germany, France, Italy, Spain and Poland, all or virtually all the regions have a population of over one million. In the UK, however, as well as in Bulgaria, Croatia and Finland, the majority of regions distinguished have a population below 250,000.

In 2011, regions in around half the Member States had some autonomy over borrowing. It was greatest in the German Länder and the Italian regions, which in both cases can borrow without restriction, while regions in France, the Netherlands, Hungary and Sweden, as well as Scotland, can borrow without prior authorisation of the central government but within specified limits. For regions in the Czech Republic, Croatia, Poland, Romania, Spain and England, as well as for Wales, borrowing requires both prior authorisation and is limited in amount. In the other 9 Member States which have regions, these are not able to borrow at all.

In 2011, only Navarra and the Basque provinces in Spain had a high level of fiscal autonomy, in that they were able to decide the base and the rate of at least one major tax (personal income, corporate, value added or sales tax). A few other regions (the other Spanish regions, Belgian and Italian regions, Åland in Finland, Açores and Madeira in Portugal, the Län in Sweden and Scotland) were able to set the rate of at least one major tax, if within limits, but not the base. The German Länder were able to decide the base and the rate of minor taxes, while regions in Croatia, France, Hungary, Italy, Netherlands, Romania, Slovakia and England were able to set the rate, but not the base.

<sup>14</sup> The three Baltic States, Luxembourg, Slovenia, Cyprus and Malta did not have regions in 2011 according to the regional definition used by the researchers (average population of min 150,000).

### The regional self-rule index

The index captures the area over which a government exercises authority, the extent of this (degree of independence) and the spheres of action over which it is exercised.

The territorial scope of authority distinguishes self-rule (a government exercising authority within its own jurisdiction) and shared rule (a government co-exercising authority over a larger jurisdiction of which it is a part).

The extent of authority measures the degree to which a government has independent legislative, fiscal and

executive responsibility, the conditions under which it can act unilaterally and its capacity to override central government decisions.

The spheres of action indicate the range of policies over which a regional government has authority — taxation, borrowing and constitutional reform, in particular.

The regional self-rule index covers five dimensions (see below).

#### Dimensions of regional authority (self-rule)

Self-rule	The authority exercised by a regional government over those who live in the region
Institutional depth	The extent to which a regional government is autonomous rather than appointed by the national government
Policy scope	The range of policies for which a regional government is responsible.
Fiscal autonomy	The extent to which a regional government can independently tax its population.
Borrowing autonomy	The extent to which a regional government can borrow
Representation	The extent to which a region has an independent legislature and executive

Source: Hooghe, L. *et al.* (forthcoming).

In Bulgaria, the Czech Republic, Denmark, Finland (apart from Åland), Greece, Hungary, Ireland, Poland, mainland Portugal, Romania, Northern Ireland and Wales, the base and the rates of all local or regional taxes are set by central government.

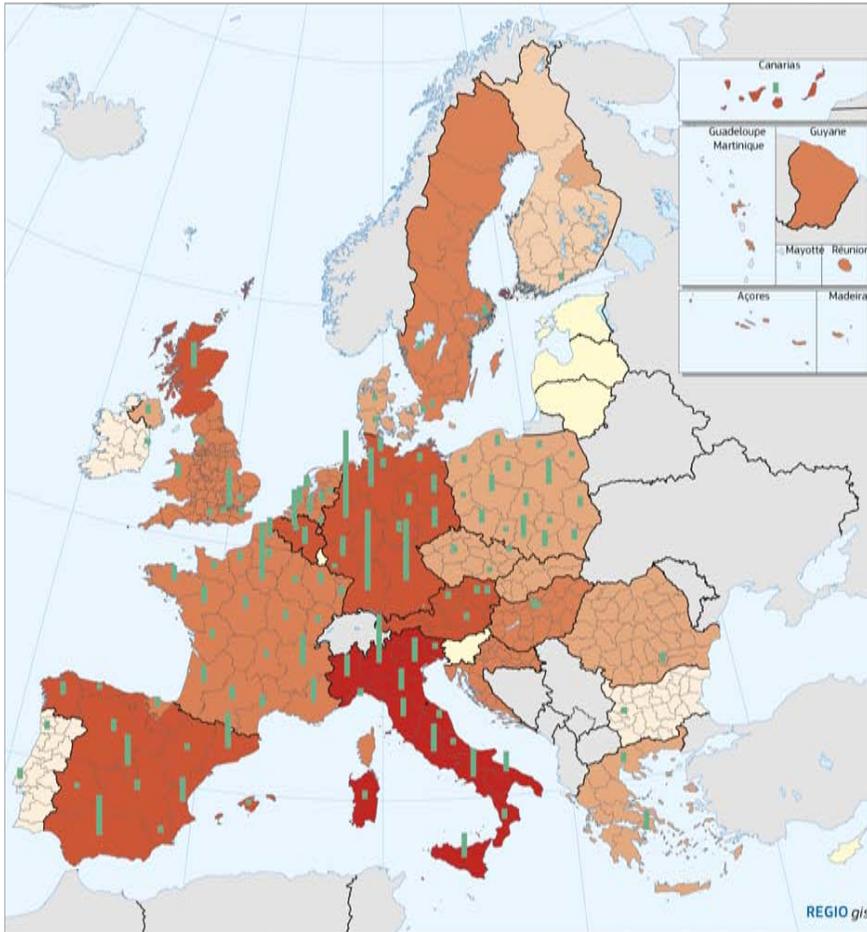
The regional self-rule index covers the changes up to 2011 and shows that the crisis has had an effect on this. In some cases, regions have been granted more powers and responsibilities, while in other cases central governments have increased their control over regional authorities, by, for example, limiting their capacity to borrow money.

A point to note, however, is that the index does not capture the full extent of decentralisation as it does not measure the degree of self-rule of local authorities. Given the growing role of cities and metropolitan areas in governance, this is an aspect which the Commission intends to investigate further.

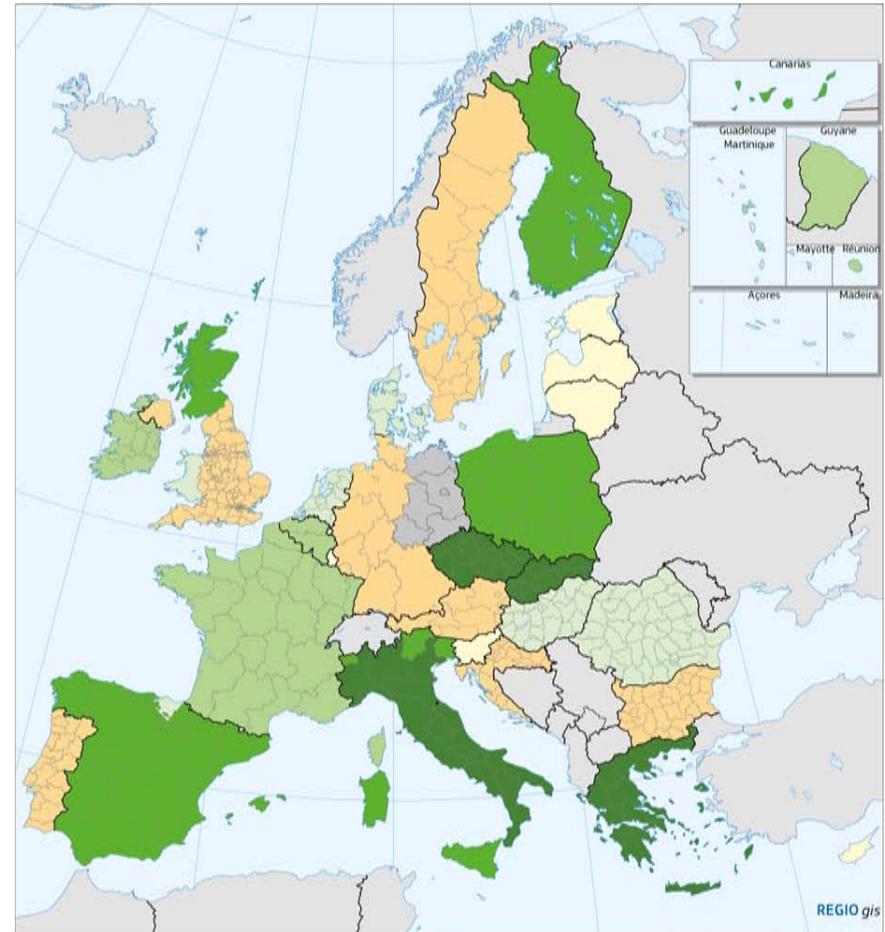
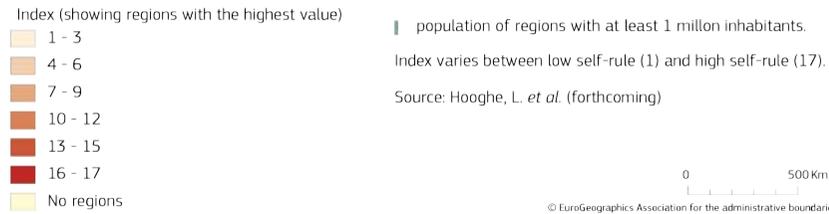
## 5. Poor governance limits the impact of Cohesion Policy

A lower standard of governance can affect the impact of Cohesion Policy both directly and indirectly. In the first place, it can reduce expenditure if programmes fail to invest all the funding available. Secondly, it can lead to a less coherent or appropriate strategy for a country or region. Thirdly, it may lead to lower quality projects being selected for funding or to the best projects not applying for support at all. Fourthly, it may result in a lower leverage effect because the private sector is less willing to co-finance investment.

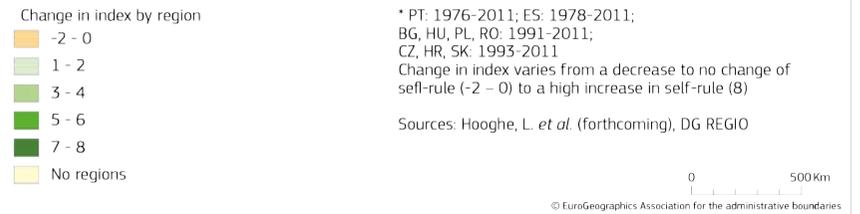
A poor quality governance system is not the same as one which is corrupt or fraudulent, although it may be both. Nor does it necessarily involve illegalities. A slow decision-making process, badly organised public consultations, a focus on short-term electoral gain over a longer-term development strategy and frequent changes in policies and priorities can be perfectly legal but they, nevertheless, tend to undermine the impact of Cohesion Policy.



Map 5.3 Regional self-rule index, 2011



Map 5.4 Change in regional self-rule index, 1960-2011\*



## OECD principles on effective public investment: a shared responsibility across levels of government

The OECD has recently approved a set of principles for public investment which, for the first time, cover sub-national governments, so recognising the important and growing role of regional and local authorities in planning and implementing public investment. The recommendations need to be seen in the context of the crisis, which has reduced public investment in many countries and put more emphasis on ensuring value for money. These principles will be monitored every three years by the OECD committees and though not legally binding, they have some moral force.

Effective public investment requires close co-ordination across levels of government to bridge information, policy or fiscal gaps which may occur. It also requires the capacity at different administrative levels to design and implement public investment projects. The principles, therefore, relate to how to coordinate public investment across levels of government, how to strengthen the capacity to carry it out and how to ensure a sound framework for planning it.

Since public investment projects are rarely planned, financed and implemented by a single authority, different levels of government at various stages of the process are involved which accordingly need to work together. Public investment also tends to require involvement at local level even when carried out by central government since it is essential to take account of local needs, possible bottlenecks and particular territorial factors if it is to be effective. Accordingly, even if they have no funding or decision-making responsibilities, local authorities can increase (or reduce) its results and impact.

To help countries address these challenges, the OECD has developed a set of Principles on Effective Public Investment Across Levels of Government. The goal is to help governments at all levels to assess the strengths and weaknesses of their public investment capacity and to set priorities for improvement. The Principles are combined into three groups, which represent systemic multi-level governance challenges for public investment:

- a) **Co-ordination challenges:** Cross-sector, cross-jurisdictional, and intergovernmental co-ordination is necessary but difficult in practice. The constellation of actors involved in public investment is large and their interests may need to be aligned.
- b) **Capacity challenges:** Where the capacity to design and implement investment strategy is weak, poli-

cies may fail to achieve their objectives. Evidence suggests that public investment and growth outcomes are correlated with the quality of government, including at the sub-national level.

- c) **Challenges in framework conditions:** Good practice in budgeting, procurement and regulation is integral to successful investment but is not always consistent across levels of government.

### OECD Principles on effective public investment across levels of government

OECD Member countries should take steps to ensure that national and sub-national levels of government use resources for public investment on territorial development effectively, in accordance with the Principles set out below:

Coordinate public investment across levels of government and policies:

- Invest using an integrated strategy tailored to different places.
- Adopt effective means of coordination across national and sub-national governments.
- Co-ordinate among sub-national governments to invest at the relevant scale.

Strengthen capacity for public investment and promote policy learning across levels of government:

- Assess upfront the long-term effects and risks of public investment.
- Encourage stakeholder involvement throughout the investment cycle.
- Mobilise the private sector and financing institutions to diversify sources of funding and strengthen capacity.
- Reinforce the expertise of public officials and institutions throughout the investment cycle.
- Focus on results and promote learning.

Ensure sound framework conditions for public investment at all levels of government:

- Develop a fiscal framework adapted to the investment objectives pursued.
- Require sound, transparent financial management.
- Encourage transparency and strategic use of public procurement at all levels of government.
- Strive for quality and consistency in regulatory systems across levels of government.

More information at: <http://www.oecd.org/gov/regional-policy/oecd-principles-on-effective-public-investment.htm>.

## 5.1 Poor governance can slow down investment, leading to funding losses

According to the latest data available (21 May 2014), Member States, on average, had absorbed (or spent) only 68% of the EU funds available for the 2007–2013 period<sup>15</sup>. Romania had absorbed only 46% of funds and Slovakia, Bulgaria, Italy, Malta and the Czech Republic, less than 60%. By contrast, Finland, Estonia, Latvia and Portugal had absorbed over 80%. The slow rates of absorption in the countries concerned could be due to a number of reasons, not least a lack of competence in Managing Authorities, or Governments more generally, or insufficient staff. Whatever the reason, it could mean that Member States are unable to spend the funding available to them in the time allowed and accordingly lose some of it (under the decommitment, or ‘n+2’, rule) or spend the funding inefficiently in an attempt to spend it in time.

Relating the rates of absorption of funding to the World Bank Government effectiveness index suggests that there may be a link (Figure 5.7). Seven Member States are below average for both government effectiveness and absorption (EU-27 average is 68%), while 10 are above average for both. On the other hand, Estonia, Lithuania and Portugal have the highest absorption rates but a government effectiveness rate which is below average, if only just. It is possible that being small and having a limited number of Managing Authorities facilitates achieving a high absorption rate, though this does not seem to have helped Malta or Latvia.

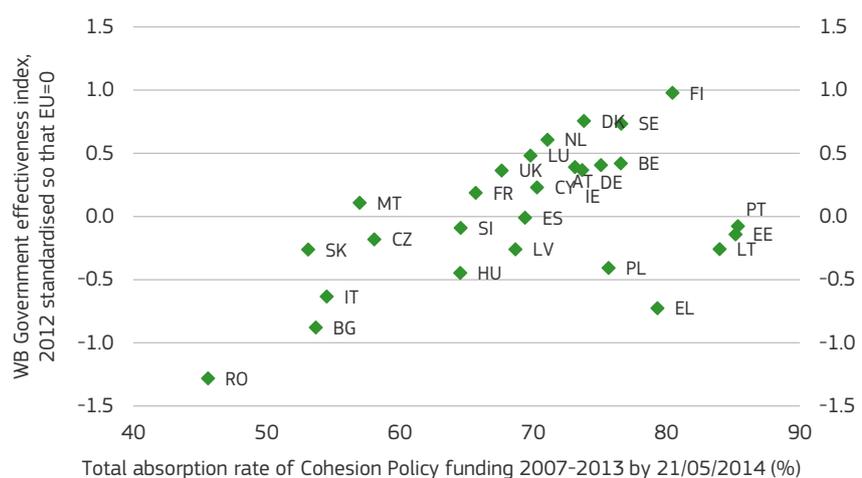
Many of the difficulties of managing Cohesion Policy programmes are

of an administrative nature related to human resources, management systems, coordination between different bodies and the proper implementation of public procurement. Overall staff numbers vary widely between Managing Authorities, which differ too in the extent to which they rely on in-house as opposed to outside staff and whether there are dedicated or partially-dedicated personnel in particular roles (managing, certifying, auditing and implementing).

Problems caused by simply not having enough appropriately qualified personnel can be long-term and systemic (as in Bulgaria or Romania, for example) or temporary (as in the case of auditing in Austria). High turnover of staff is a recurrent problem at all administrative levels, particularly in some EU-12 countries. In several countries, funding for technical assistance is used to pay salaries or even bonuses to strengthen particular functional areas (which has prompted the launching of a study by the Commission to clarify the situation).

The adoption of modern management systems to provide incentives for good performance and to hold managers accountable for results is patchy. In some countries, systems to avoid conflicts of interest or

**Figure 5.7 Absorption of Cohesion Policy funding and Government effectiveness, 2014**



Source: World Bank and SFC

<sup>15</sup> In the sense of claiming and receiving payment for expenditure carried out under the Structural Fund and Cohesion Fund programmes. These figures include advance payments.

prevent corrupt practices by public officials are weak. Computerised methods to improve efficiency and transparency in the use of EU funds are well developed in a number of countries but almost non-existent in others. In general, financial monitoring and control systems function well, but those monitoring outcomes and results work less well, though there are several examples of good practice which can be built on in the present programming period.

Strategies developed to meet EU policy objectives are sometimes not adhered to because of political pressure. In some countries, particular efforts are needed to strengthen both project pipelines (selection criteria, project preparation and tendering) and implementation (contracting and project management).

In a number of Member States, it has proved difficult to carry out major projects within the time limits set for expenditure to be eligible for co-financing. A common problem is that regional and local authorities have limited capacity to prepare and implement complex projects, so that efforts to build capacity need to be targeted at all administrative levels and not just the national.

Systematic weaknesses in all aspects of public procurement are the single most common cause of the irregularities found during audit, resulting in suspension of payments and financial correction. Several Member States have demonstrated limited capacity to implement the Environmental Impact Assessment and Strategic Environmental Assessment Directives as well as to apply State Aid rules correctly, with EU-12 countries usually requiring more support (which is also likely to be the case for Croatia in the new period). Frequent problems occur, in particular, in respect of railways, solid waste, wastewater, RTDI, ICT and financial instruments.

Problems of coordination can occur between different national horizontal (i.e. sectoral) programmes as well as between national and regional programmes. In addition, the delegation of tasks by Managing

Authorities to intermediate bodies can become overly complex and dilute accountability.

## 5.2 Poor governance can reduce the leverage effect of Cohesion Policy

Spending the funding available is a necessary but not sufficient step for achieving a strong impact of Cohesion Policy. This also depends on what the funding is spent on, whether the projects concerned deliver value for money and whether there is general confidence that they will be completed.

The skill and intent of the politicians and the national and regional authorities responsible for managing the funds are important here. The lack of skills can be overcome by training and hiring more staff, so long as the need to do so is recognised<sup>16</sup>. The deliberate intent of a government and/or an authority to pursue goals other than providing the public goods and services needed by people is more difficult to combat — a situation described by Barca<sup>17</sup> as state capture.

High quality governance creates a virtuous cycle, in which people trust the government to make the right choices and to spend their taxes in the most cost-effective way which leads to wide participation in public calls for tender, so keeping down costs, and to business investment taking account of government policy<sup>18</sup>.

Low quality governance, on the other hand, creates a vicious cycle, in which trust in government breaks down, taxes are evaded, corruption is no longer reported, participation in public calls for tender declines as businesses assume they need the right connections or bribes to get contracts and the climate for investment is uncertain because of the unpredictability of government policy. To break such a vicious cycle, an outside shock or external support for local forces seeking to improve the quality of governance is often needed.

<sup>16</sup> Rodríguez-Pose, A. and Storper, M. (2006).

<sup>17</sup> Barca, F. (2009).

<sup>18</sup> Acemoglu *et al.* (2012)

### The quality of government as a determinant of the effectiveness of Cohesion Policy

In a recent study carried out by Rodríguez-Pose and Garcilazo (2014), real growth of GDP per head between 1995 and 2006 in EU-15 regions was analysed with the aid of an econometric model using panel data analysis. The aim was to identify the underlying determinants and to assess the role of Cohesion Policy expenditure, the quality of government and the interaction between the two. The results indicate that expenditure had a significant impact on the growth of GDP per head and in the regions that received a substantial amount of funding (mostly the less developed ones) the higher the quality of government, the greater the impact.

Recent empirical research<sup>19</sup> shows the important role of the quality of government as a direct determinant of economic growth as well as a moderator of the efficiency of Cohesion Policy expenditure. According to the findings of the research, improving the quality of government in lagging regions is a fundamental precondition for increasing the impact of Cohesion Policy (see Box). The greater emphasis in the new programming period on improving the administrative capacity to manage funding and making this a condition for receipt of support is in line with this.

They also suggest that low quality of government is an obstacle that cannot be overcome by increasing spending and that improving the quality of government is essential for Cohesion Policy to have its full impact.

## 6. Conclusion

The ease of doing business, the level of corruption and the quality of governance varies substantially across EU Member States and regions. This limits the growth potential of those where governance is below average and hinders the proper functioning of the Single Market. Many people in the EU are seriously concerned about corruption even in countries with

a good reputation for combating it and limiting the abuse of public power.

A wide range of indicators suggest that in a number of Member States (in the EU-15 as well as the EU-13) and regions, especially the less developed ones, the system of governance is of low quality, which hinders social and economic development and limits the impact of Cohesion Policy. The regional dimension of governance is of increasing importance in many parts of the EU as the authorities concerned acquire more autonomy and more responsibility for public expenditure. The principles of effective investment developed by the OECD in recognition of the major role of local and regional authorities in this respect indicate how the most impact can be obtained from investment spending.

The Commission along with the OECD and other international organisations has recognised the importance of improving governance at all levels across the EU and has taken steps on several fronts to this end, including through the new anti-corruption report and a stronger emphasis on this in the annual growth survey and in Cohesion Policy in the new period (see next chapter).

<sup>19</sup> Rodríguez-Pose, A. and Garcilazo, E (2013).



# ▶▶ Chapter 6: The evolution of Cohesion Policy

## 1. Introduction

Although the origins of Community policies to tackle regional disparities can be traced back to the Treaty of Rome, Cohesion Policy was only really initiated in 1989. In the years before, the Community funds with territorial impact (i.e. the European Regional Development Fund (ERDF), the European Social Fund (ESF) and the European Agriculture Guidance and Guarantee Fund (EAGGF) financed predetermined national projects with little European or subnational influence. In the 1980s, a series of events triggered a policy change, most notably the Single European Act, the EU accession of Greece, Spain and Portugal and the adoption of the Single Market programme. This resulted in 1988 in the first regulation integrating the Structural Funds under a common policy umbrella to further economic and social cohesion. Key principles were introduced at the same time, such as concentrating support on the poorest parts of the EU, multi-annual programming, a strategic orientation of investment and the involvement of regional and local partners. It also resulted in a significant increase in funding for the period 1989–1993 compared to the past.

The Maastricht Treaty which entered into force in 1993 established a new instrument, the Cohesion Fund. The Cohesion Policy regulation adopted for the period 1994–1999, which also included the Financial Instrument for Fisheries Guidance, incorporated the key principles of concentration of resources, multi-annual programming and additionality of EU funding. It also strengthened the rules on partnership and evaluation. The financing allocated to Cohesion Policy was doubled and covered a third of the EU budget.

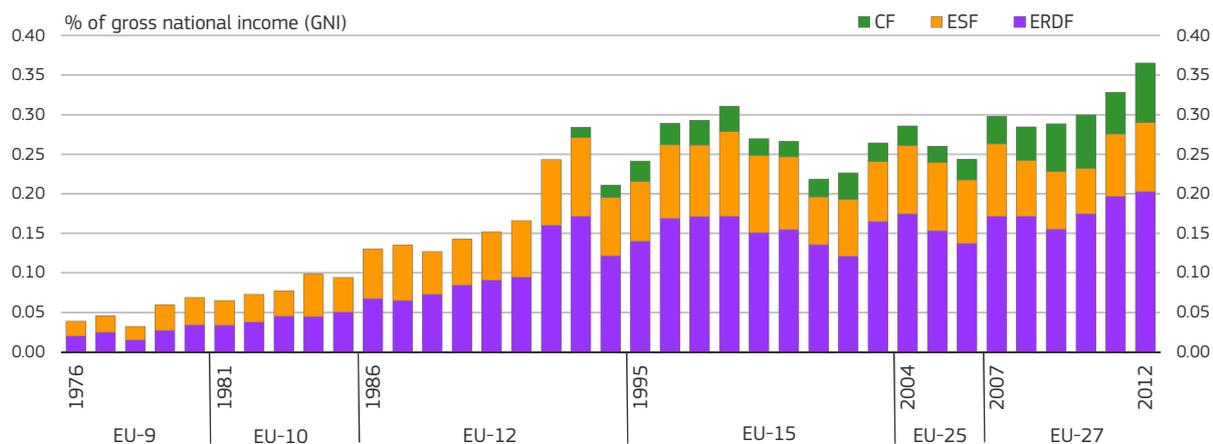
The 2000–2006 period began with Member States agreeing the ‘Lisbon Strategy’ (in March 2000) with its focus on growth, employment and competitiveness which became the leitmotiv of many EU policies and triggered a shift in Cohesion Policy towards

more emphasis on innovation. The period also saw the biggest ever enlargement of the EU, with 10 new Member States joining in May 2004. These added 20% to the EU’s population but only 5% to its GDP. The enlargement accordingly increased disparities in income and employment across the EU since the average GDP per head in the new countries in PPS terms was less than half the existing average and only 56% of their population of working age were in employment as compared with 64% in the existing Member States.

With the accession of Bulgaria and Romania, the 2007–2013 period brought the highest concentration ever of Cohesion Policy funding on the poorest Member States and regions (81.5% of the total). In line with the ‘Growth and Jobs’ agenda launched in 2005, a quarter of the financial resources were earmarked for research and innovation and around 30% for environmental infrastructure and measures to combat climate change. Other important changes introduced to make Cohesion Policy more efficient and sustainable included the promotion of financial engineering instruments and the creation of technical assistance facilities to help Member States to prepare major projects of high quality.

This chapter reviews the evolution of Cohesion Policy from 1989 to 2013. The first section describes the changes in the funding and the geography of the policy. The second section describes how the goals of the policy have evolved over time and the economic arguments underlying these goals.

**Figure 6.1 Cohesion Policy expenditure in the EU, 1976-2012**



Source: DG BUDG, AMECO and DG REGIO

## 2. As the funding grew, the geography became simpler

### 2.1 Cohesion Policy expenditure increased as a share of GNI

Cohesion Policy absorbs a relatively small share of EU Gross National Income (GNI), reaching a high of 0.36% in 2012. Nevertheless, over the last two decades, Cohesion Policy has become the main source of EU funding for the Union’s policy agenda. At the same time, the accession of less developed Member States and widening regional disparities have increased the challenges to be tackled.

The balance between the three funds (ERDF, ESF and Cohesion Fund) which finance Cohesion Policy depends primarily on the investment needs of the less developed regions and Member States. In the 1970s and early 1980s, before the Cohesion Fund was introduced, overall expenditure was low and split more or less evenly between the ESF and ERDF (Figure 6.1). With the accession of Greece, Spain and Portugal, their need for more infrastructure investment led to an increase in the relative amount of funding allocated to the ERDF.

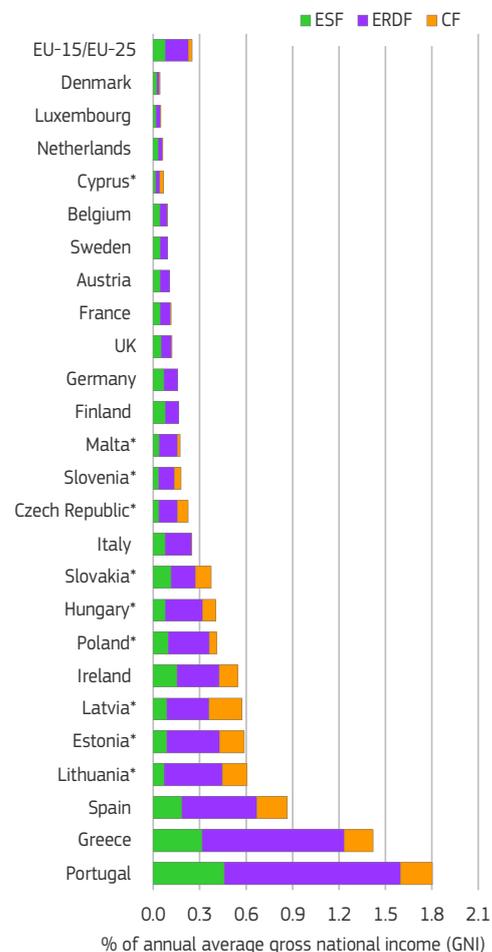
In the 1990s, the Cohesion Fund was introduced to increase the support for investment in transport

**Figure 6.2 Cohesion Policy expenditure by Member State, 1990-1999**

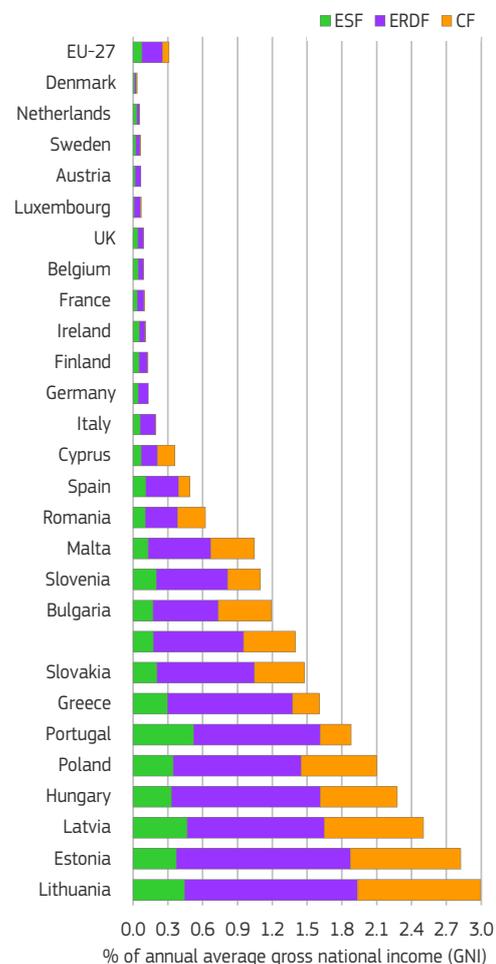


\* from 1995 onwards

Source: DG BUDG, AMECO, DG REGIO calculations

**Figure 6.3 Cohesion Policy expenditure by Member State, 2000-2006**

Source: DG BUDG, AMECO, DG REGIO calculations

**Figure 6.4 Cohesion Policy expenditure by Member State, 2007-2012**

Source: DG BUDG, AMECO, DG REGIO calculations

and environmental infrastructure in countries with low GNI. Up to 2006, the amount involved was only around 0.03% of EU GNI. Between 2007 and 2012, expenditure financed by the Cohesion Fund doubled as a share of GNI as a result of the EU enlargements of 2004 and 2007 and the entry of 12 countries with very poor infrastructure endowment.

### Cohesion Policy in the 1990s

In the 1990s, Cohesion Policy expenditure relative to EU GNI increased by 150% with much of the increase occurring in the least developed Member States: from

1% to 2.3% of GNI in Portugal, from 1% to 1.8% of GNI in Ireland, from 0.6% to 1.7% in Greece and from 0.3% to 0.9% in Spain (Figure 6.2). The remaining Member States received funding of between 0.05% and 0.2% of their GNI during the 1990s.

### Cohesion Policy since 2000

Cohesion Policy expenditure between 2000 and 2006 (Figure 6.3) remained relatively high in Portugal (1.8% of GNI), Greece (1.4%) and Spain (0.9%). In the 10 Member States which joined the Union in 2004, which had only a limited time to carry out Cohesion

Policy expenditure before the end of the period, the amount varied between 0.2% of GNI and 0.6%, except for Cyprus (0.1% of GNI).

Cohesion Policy expenditure between 2007 and 2012 was higher in relation to GNI, partly because a large part of the funding for the 2000–2006 period was spent in the three years 2007 to 2009 on top of spending from the funding for 2007–2013 (Figure 6.4). Expenditure in the three Baltic States amounted on average to between 2.5% and 3% of their GNI a year over this period, while in Hungary, it represented 2.3% of GNI and in Poland, 2.1%, more than in any of the Member States in the 2000–2006 period.

In Portugal, expenditure under Cohesion Policy increased slightly to 1.9% of GNI a year and in Greece, to 1.6%, while in Malta, Slovenia, Bulgaria, the Czech Republic and Slovakia, it amounted to between 1% and 1.5% of GNI.

The EU-15 with the exception of Portugal, Greece and Spain received between 0.03% and 0.2% of their GNI a year.

## 2.2 The geography of the policy became simpler between 1989 and 2013

From 1989, regions were categorised into different groups in terms of policy objectives and the scale of funding received. There have been three tendencies

since then: (1) the maintenance of continuity in the support provided, (2) a reduction in the categories of regions and (3) a shift to a simpler geographical coverage.

### Continuity

There has been continuity in the way that regions receiving the most support are defined. These were categorised as ‘Objective 1’ up to 2006, ‘Convergence’ up to 2013 and ‘less developed’ from 2014, but in each case, they have been defined as those with GDP per head in PPS terms below 75% of the EU average. The regions in question, which have consistently been defined in nearly all cases at the NUTS 2 level, are a mix of administrative and purely statistical entities, which as such do not necessarily correspond with functional labour markets, functional economic urban areas or political jurisdictions.

The population covered by the category concerned has fluctuated over the five programming periods (Table 6.1). In the first two periods, 25% of EU population lived in Objective 1 regions. The enlargement in 2004 increased the proportion to 34%. Then convergence of GDP per head towards the EU average of some of the regions covered reduced the proportion to 32% in the 2007–2013 period, despite the accession of Romania and Bulgaria and the extension of support to them. Continuing convergence has led to

**Table 6.1 Population by category of region, 1989–2020**

<i>% of EU population</i>	<b>1989– 1993</b>	<b>1994– 1999</b>	<b>2000– 2006</b>	<b>2007– 2013</b>	<b>2014– 2020</b>
Objective 1 (1989–2006)					
Convergence (2007–2013)	25.4	24.6	34.1	31.7	25.4
Less Developed (2014–2020)					
Objective 6		0.4			
Transition Regions		0.3	2.9	7.3	13.5
Objectives 2 (1989–2006) — 5b (1989–1999)	21.7	25.0	15.2		
Objectives 3 (1989–2006) — 4 (1989–1999)	74.6	75.0	63.0		
Regional Competitiveness and Employment (2007–2013)					
More developed (2014–2020)				61.0	61.0
Cohesion Fund*		16.9	30.9	34.3	25.8
Population of	EU-12	EU-15	EU-25	EU-27	EU-28

\*In 2007–2013, Spain received transitional support. Population share without is 25.1%.

Source: DG REGIO

Cohesion Policy Objectives, 1989–2020					
Objective	1989–1993	1994–1999	2000–2006	2007–2013	2014–2020
1	Development and structural adjustment of regions where development is lagging behind			Convergence	Less developed
Ex 1		1994–1996 Abruzzo	Phasing-out Objective 1	Phasing-out and -in	Transition
5b	Promotion of rural development	Development and structural adjustment of rural areas <sup>1</sup>	Objective 2: supporting the economic and social conversion of areas facing structural difficulties;	Regional competitiveness and employment	More developed
2	Converting the regions, frontier regions or parts of regions seriously affected by industrial decline	Converting the regions or parts of regions seriously affected by industrial decline			
3	Combating long-term unemployment	Combating long-term unemployment and facilitating occupational integration	Objective 3 Training systems and employment policies		
4	Occupational integration of young people	Adapting the workforce to industrial changes			
6		Development and structural adjustment of regions with an extremely low population density	Part of Objective 1		
Number of categories <sup>2</sup>	5	7	4		

1 From 2000 onwards, part of the support for rural development was financed by the second pillar of the Common Agricultural Policy outside Cohesion Policy programmes

2 Not including Community Initiatives or the Territorial Cooperation Objective.

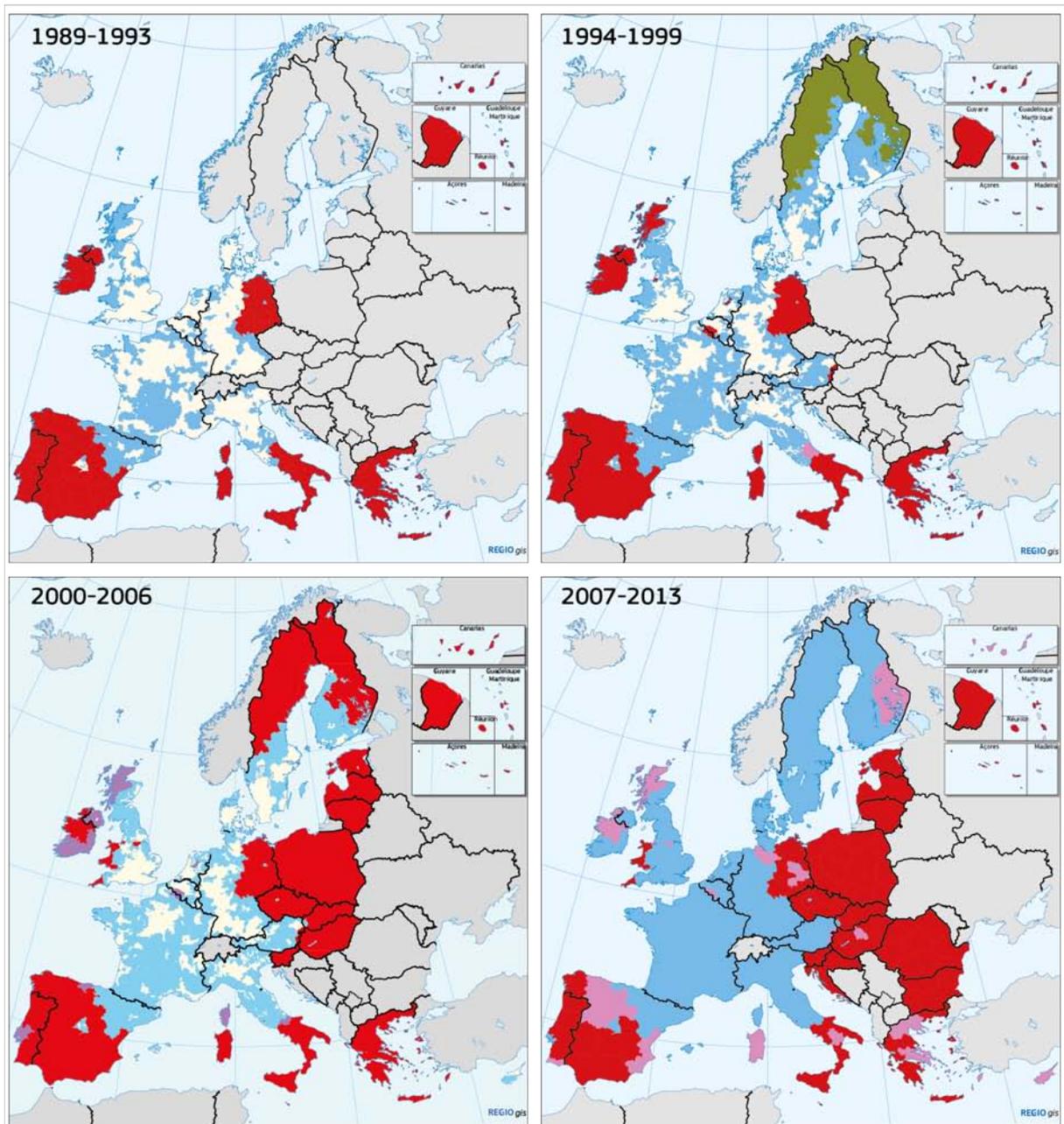
a further reduction in the proportion to 25% for the 2014–2020 period, back to what it was 25 years ago.

### Reduction in categories of regions

The categories of region since 1989 have been reduced from five in 1989–1993 and seven in 1994–1999 to three in 2007–2013 and 2014–2020 (see Box and Map 6.1). In the 1989–1993 period, there were three categories specifically aimed at reducing regional disparities: Objective 1 to assist less developed regions, Objective 2 to support the economic conversion of areas seriously affected by industrial decline and Objective 5b to help the development of rural areas. The last two categories could overlap and typically covered much smaller areas than NUTS 2 regions, identified as having the most pressing prob-

lems. The other two categories covered the whole of the EU outside Objective 1 regions: Objective 3 to provide support for combat long-term unemployment and Objective 4 for the integration of young people into employment.

These categories remained in force in the period 1994–1999 period, when EU enlargement in 1995 to include Austria, Sweden and Finland led to the creation of a new category specifically to provide support to the last two countries: Objective 6 to assist regions with an extremely low density of population. In addition, the first Transition category was created for Abruzzo to provide a measure of support in order to reduce the economic effect of Objective 1 status and funding being withdrawn.



Map 6.1 Regions eligible for Structural Funds (ERDF and ESF) by category, 1989–2013

- Less developed regions (Objective 1 / Convergence)
- Transitional support (Phasing-out / Phasing-in)
- Objective 6 (northern sparsely populated areas)
- Other eligible areas (Objective 2 / 5b / RCE)

New German Länder: 1990–2013;  
 AT, FI, SE: 1995–2013;  
 CZ, EE, CY, LV, LT, HU, MT, PL, SI, SK: 2004–2013;  
 BG, RO: 2007–2013;  
 HR: from 1/7/2013;  
 Partly eligible areas are included (1989–2006).  
 Boundaries of non-members as of 1/1/2013.

Source: DG REGIO

© EuroGeographics Association for the administrative boundaries

In the 2000–2006 period, Objective 5b was amalgamated into Objective 2, the aim of which was generalised to cover the support for the economic and social conversion of areas, again typically much smaller than NUTS 2 regions, facing the most pressing structural problems of whatever kind. At the same time, the transition category was extended to support the ‘phasing-out’ of regions that received Objective 1 funding in the previous period but in which GDP per head had risen above the 75% threshold. Objective 3 and 4 were combined and continued to cover all the non-Objective 1 regions.

In the 2007–2013 period, Objective 1 was renamed ‘Convergence’ and Objective 2 and 3 were combined under the term ‘Regional Competitiveness and Employment’. The Transition category was expanded to cover both ‘Phasing-in’ and ‘Phasing-out’ regions, the former being those in which GDP per head had risen to more than 75% of the EU-15 average, the latter those where it was still below 75% of the EU-15 average but above 75% of the new EU-27 average resulting from the entry of the 12 central and eastern European countries. The funding provided to these, while being much smaller than to Convergence regions, was significantly larger than that available to Regional Competitiveness and Employment regions.

For the present 2014–2020 period, three categories remain but their names have been changed again to ‘Less developed’, ‘Transition’ and ‘More developed’. The Transition category now covers all regions with GDP per head between 75% and 90% of the EU-27 average, though regions which were Convergence ones in the previous period receive more funding than the others.

### A shift to a simpler geographical coverage

The proportion of EU population in what are now termed ‘Less developed’ regions increased with the 2004 enlargement from 25% of the EU-15 population to 34% of the EU-25 population. Despite the entry of Romania and Bulgaria in 2007 and of Croatia in 2013, the convergence of GDP per head towards the EU average in many of the regions led to the population in those remaining with GDP per head below

the 75% threshold falling to 32% of the EU-27 total in 2007 and then to 25% of the EU-28 total in 2014.

Under Objective 2 (and Objective 5b up to 1999), the approach was, as noted above, to concentrate support on the areas with the most pressing needs, which were often very small, sometimes even parts of a municipality. Such ‘micro-zoning’ often made the design and implementation of programmes difficult because to tackle the development problems concerned effectively in many cases required investment in neighbouring areas and not just in the small areas eligible for support. In 2007, ‘micro-zoning’ was, therefore, dropped and the ‘Regional Competitiveness and Employment’ category was created to cover all regions apart from the Convergence Band Transition ones. This continues to be the case in the 2014–2020 period, though the names of the categories have been changed.

In the 1994–1999 period, the Cohesion Fund covered Ireland, Spain, Portugal and Greece, which accounted for 17% of the EU-15 population. In the next period,

### Macro-regional cooperation

Macro-regional strategies are a new way of supporting territorial cooperation, representing a joint response to common environmental, economic or security related challenges in a particular area. Though no additional EU funding is provided, help is given in directing Cohesion Policy programmes to the pursuit of shared goals.

Two macro-regional strategies have been agreed so far, one for the Baltic Sea Region (adopted in 2009) covering the environment, economic development, accessibility and security, and the other for the Danube region (adopted in 2011) focused on connectivity, the environment, prosperity and capacity building. There are now over 100 flagship projects in the Baltic Sea Region and 150 projects are in the process of being implemented in the Danube Region out of 400 (involving expenditure of EUR 49 billion) which are being considered.

The European Council has invited the Commission to present an EU Strategy for the Adriatic and the Ionian Region by the end of 2014.

## Territorial Cooperation programmes started in 1989 with INTERREG

### INTERREG I (1990–1993)

The INTERREG Initiative was launched in 1990 in order to help tackle the disadvantages created by national administrative boundaries separating neighbouring regions in the emerging Single Market. It focussed purely on cross-border cooperation with an allocation of EUR 1.6 billion (at 2011 prices) or just over 2% of total Cohesion Policy funding. It included 31 Operational Programmes in internal and external border regions and provided support to over 2,500 projects.

### INTERREG II (1994–1999)

The INTERREG II Initiative, from 1994 to 1999, had a larger budget of EUR 4.9 billion (again at 2011 prices) and extended the scope of territorial co-operation. The number of cross-border programmes almost doubled from 31 to 59 as a result of the accession of Austria, Finland and Sweden in 1995 and the creation of a dedicated instrument for cooperation between regions either side of external borders. Programmes were also extended to cover support for education, health, media services and language training. In addition, a transnational strand was created to support cooperation

across large contiguous areas and the exchange of information and sharing of experience in regions in the different countries concerned.

### INTERREG III (2000–2006)

The 2000–2006 period saw a further enlargement of the EU and increase in the number of border regions. The budget for INTERREG III was increased to EUR 6.2 billion, with funding for transnational cooperation increased by EUR 890 million and that for interregional cooperation reduced (by EUR 150 million).

### Territorial Cooperation (2007–2013 and 2014–2020)

In the 2007–2013 period, Territorial Cooperation was distinguished as an objective of Cohesion Policy and was allocated a budget of EUR 8.9 billion (including support for the Instrument for Pre-Accession, IPA, and European Neighbourhood Partnership Instrument, ENPI), or 2.5% of the total.

For 2014–2020, the budget has been maintained in real terms despite a slight reduction in the overall budget for Cohesion Policy.

**Table 6.2 Funding on territorial cooperation, 1989–2020**

<i>EUR billion at 2011 constant prices</i>	1989–1993*	1994–1999	2000–2006	2007–2013	2014–2020
Cross-border	1.64	3.64	3.90	6.60	6.62
Transnational		0.71	1.60	1.80	1.82
Interregional		0.55	0.40	0.45	0.50
Total	1.64	4.90	6.20	8.88	8.94
Share of Cohesion Policy funding (%)	2.2	2.1	1.9	2.5	2.8

\* Refers to 1990–1993

Source: Structural Funds Annual Reports, Ex-post evaluation of INTERREG and SFC

these four countries remained eligible, though support was withdrawn from Ireland in 2003 as growth had raised its GNI well above the 90% threshold. The 10 countries that joined the EU in 2004 also became eligible for support, increasing the coverage to 31% of the EU-25 population. In the 2007–2013 period, the entry of Romania and Bulgaria increased the population covered to 34% of the EU-27 total, though

support for Spain was phased out because of the increase in its GNI. In the 2014–2020 period, the Cohesion Fund covers Greece, Portugal and all 13 countries that have joined the EU since 2004, which together account for 26% of the EU-28 population.

**Table 6.3 Distribution of funding between categories of regions, 1989–2020**

%	1989–1993	1994–1999	2000–2004	2004–2006	2007–2013	2014–2020
Less developed	73.2	61.6	63.6	63.2	59.0	53.5
Transition	0.0	0.2	2.6	2.0	7.5	10.8
More developed	23.6	27.4	24.3	19.1	12.9	16.5
Cohesion Fund	3.1	10.8	9.4	15.7	20.7	19.2
Less developed and Cohesion Fund	76.4	72.4	73.1	78.9	79.7	72.8
Total	100	100	100	100	100	100
EU	EU-12	EU-15	EU-15	EU-25	EU-27	EU-28

Source: Structural Funds Annual Reports, SFC and DG REGIO calculations.

**Table 6.4 Annual aid intensity by category of region, 1989–2020**

<i>EUR per head at 2011 constant prices</i>	1989–1993	1994–1999	2000–2004	2004–2006	2007–2013	2014–2020
Less developed *	110	210	259	179	188	180
Transition		49	67	67	101	66
More developed	13	32	29	29	21	22
Cohesion Fund ***	36	54	48	49	60	62
Total **	42	86	89	83	100	84
EU	EU-12	EU-15	EU-15	EU-25	EU-27	EU-28

\* ERDF+ESF

\*\* ERDF+ESF+CF

\*\*\* In the period 2007–2013, Spain received phasing-out support. The aid intensity excluding Spain was 76.

Source: Structural Funds Annual Reports, SFC and DG REGIO calculations. Annual deflator of 2%.

## 2.3 Funding remains concentrated on the less developed regions

From 1989 onwards, the EU Budget became a multi-annual one. This facilitated the adoption of a long-term perspective for the programmes funded under Cohesion Policy. The first period was five years (1989–1993), the second six (1994–1999) and the third and subsequent periods seven. The bulk of funding has consistently been allocated to the less developed regions (Table 6.3). If the Cohesion Fund is included, the share going to these regions has changed very little since 1989, from 76% in 1989–1994<sup>1</sup> to 73% in 2014–2020, though with a high of just over 80% in 2007–2013.

The aid intensity in less developed regions (funding relative to the population covered) started out at EUR 110 per person (at 2011 constant prices), increased to EUR 259 in the EU-15 in the 2000–2006 period,

declined to EUR 188 in the 2007–2013 period and has been reduced further to EUR 180 per person for 2014–2020 (Table 6.4).

The Cohesion Fund had an aid intensity of EUR 54 per person (at 2011 prices) when it was first introduced in the 1994–1999 period. With enlargement in 2004, it fell to just below EUR 50, though it was increased to EUR 60 in the 2007–2013 and to EUR 62 per person for 2014–2020.

The aid intensity in Transition regions started at the relatively low level of EUR 49 per person in 1994–1999 (when only Abruzzo was covered) and was increased to EUR 101 in the 2007–2013 period, but it has been reduced to EUR 66 per person for the 2014–2020 period.

Aid intensity in the more developed regions for 2014–2020 as in the previous period is slightly over

<sup>1</sup> Data on funding distribution by type of region is not available prior to 1989 as no regional categorisation was used prior to 1989.

EUR 20 per person, compared to around EUR 30 in the 1994–1999 and 2000–2006 periods<sup>2</sup>.

## 2.4 The European Structural and Investment Funds and Cohesion Policy

The funding allocation to the five ESI funds has grown since 1989–1993 period as the EU expanded and the challenges facing the ESI funds intensified from EUR 75 billion to EUR 460 billion in the 2007–2013 period (Table 6.5).

The total for the 2014–2020 period is lower at EUR 400 billion. The total and the distribution between the funds may still change as Member States can shift funding from the first pillar of the Common Agricultural Policy (CAP) to the European Agricultural Fund for Regional Development (EAFRD) (or vice versa) and from the ERDF to the ESF depending on their investment needs and priorities.

The way this funding is coordinated has evolved over time. Until the 2000–2006 period, funding from the EAFRD and the European Maritime and Fisheries Fund (EMFF) was often combined with ERDF and ESF funding in single programmes. In the 2007–2013 period, EAFRD and EMFF funded separate programmes to stimulate rural development and the development of areas dependent on fisheries.

In the new programming period, the European Structural Investment Funds have once again been included under the same umbrella. The partnership agreements cover all ESI funds and the common rules facilitate a more coordinated implementation.

**Table 6.5 Allocation by fund, 1989–2020**

<i>EUR billion at 2011 prices</i>	ESF	ERDF	CF	EAFRD	EMFF	Total
1989–1993	24	39	2.2	10		75
1994–1999	67	119	20	35	4.1	245
2000–2006	79	150	32	45	4.6	311
2007–2013	78	205	71	102	4.4	460
2014–2020	71	181	56	85	6.6	400

The funds are identified using their current name and that the EAFRD and EMFF had a different name in earlier periods. Cohesion Fund was only launched in 1992 and in operation in 1993.

Source: Structural Funds Annual Reports, SFC and DG REGIO calculations.

### The Common Agricultural Policy (CAP) and rural development

The first generation of rural development activities under the Common Agricultural Policy (CAP) was introduced in the 1970s in the form of measures to support structural change in agriculture and to help maintain farming in areas affected by natural constraints. Other measures followed, including support for young farmers setting up and investment in processing and marketing of agricultural products.

At the beginning of the 1990s, the policy was extended to non-agricultural, territorially oriented, activities, which were clearly linked to the economic and social development of rural areas and enabled farmers to diversify into other activities. The introduction of support for LEADER, a ‘bottom-up’ approach to implementing local development strategies, was supplemented by measures help maintain the cultural and natural heritage and to improve local infrastructure and basic services in rural areas.

Under the Agenda 2000 reform, rural development policy was established as the second pillar of the CAP with the aim of contributing to the economic, social and cultural development of rural areas in the EU.

For the period 2007–2013, a more strategic approach was introduced in respect of rural development programmes. The budget for rural development totalled EUR 96.3 billion including amounts resulting from transfers from pillar I of the CAP to rural development (under the ‘modulation’ system).

Although cohesion is not an explicit policy goal of the CAP, it is intended to take account of ‘*the particu-*

<sup>2</sup> The aid intensity of more developed regions covers Objective 2 and 3 in 2000–2006 and Objective 2, 3, 4 and 5b in 1994–1999. Objective 2 and 5b were geographically more concentrated and so the areas eligible for support had much higher aid intensities than reported here.

*lar nature of agricultural activity, which results from the social structure of agriculture and from structural and natural disparities between the various agricultural regions*<sup>3</sup>. Its aim is to ensure economic and social progress in agriculture and rural areas while providing support for the supply of reasonably-priced food to EU consumers.

In addition, the regulation governing the Agricultural Fund for Rural Development (EAFRD) links rural development to economic and social cohesion, specifying that the EAFRD shall contribute to the Europe 2020 Strategy by promoting sustainable rural development throughout the EU in a manner that complements the other instruments of the CAP, Cohesion Policy and the Common Fisheries Policy<sup>4</sup>.

### Economic cohesion

At EU level, the combined primary sectors — agriculture, forestry and fishing — and food represent a sizable part of the EU economy accounting for employment of 16.5 million people (7.3% of the total) and 3.7% of gross value-added (GVA) in 2011. These figures mask significant variations across countries as the agri-food sector is more important in the EU-12, particularly in respect of employment, and in rural areas.

The CAP contributes to economic cohesion through its two pillars. Direct payments help to underpin the viability of farming across the EU, and the communities which depend on it, by providing a reliable source of income for producers and making them less vulnerable to fluctuations in prices. In 2011, expenditure on the first pillar of the CAP amounted to EUR 44.0 billion<sup>5</sup>, by far the biggest proportion going on direct aids to farmers of: EUR 40.2 billion<sup>6</sup>. Expenditure on rural development, on the other hand, is intended to support the economic viability of rural areas through

financing investment, the transfer of know-how, and measures fostering innovation.

### Social cohesion

The CAP also contributes to furthering social cohesion, mainly through support for rural development. Around a third of all those at risk of poverty in the EU live in thinly populated (rural) areas, so a rural development policy is important for social inclusion. In addition to measures supporting employment both in agriculture and other sectors, support is also provided to assist the development of basic services and infrastructure. Consequently, by the end of 2012, some 127,600 young farmers had received support to start up new activities and some 34,000 villages had been renovated.

The support can also be used by Member States to help integrate disadvantaged groups, such as Roma by assisting the setting-up and development of non-agricultural businesses, job creation, investment in small scale infrastructure and local basic services, including through LEADER local development strategies.

### Territorial cohesion

In addition to its rural development ‘pillar’, the CAP has a strong territorial dimension under its first pillar through the support it gives to farmers who perform an important land management function and through the fact that agriculture, forestry and the agri-food sector still make a significant contribution to the socio-economic development of rural areas. As regards the rural development pillar, the policy includes economic, social and environmental dimensions based on a territorial approach and can help to maintain a sustainable balance between urban and rural areas.

Just over 32% of EU support for rural development was allocated to Convergence regions in the 2007–2013 period and by June 2013, over EUR 35.3 billion of the EAFRD had been spent in these, almost EUR 15.2 billion on measures to improve the environment

<sup>3</sup> Treaty on the Functioning of the European Union, Article 39(2) on Common Agricultural Policy.

<sup>4</sup> Article 2 of Regulation (EU) No 1305/2013.

<sup>5</sup> COM(2012) 484 final.

<sup>6</sup> These are largely ‘decoupled’ in the sense that direct payments support farmer incomes without being related to production, in return for them respecting standards of food safety, environmental protection and animal welfare and keeping the land in good condition.

and countryside, nearly EUR 12.9 billion on improving the competitiveness of agriculture and forestry, EUR 5.1 billion on improving the quality of life in rural areas and encouraging diversification of the rural economy and almost EUR 1.2 billion on LEADER.

### The new CAP reform and its contribution to cohesion

The CAP continues to be divided into two pillars in the 2014–2020. The total budget amounts to EUR 252 billion for direct payments (pillar I) and EUR 95 billion for rural development (pillar II). The direct payment system includes new elements that are intended to increase the contribution of CAP to Cohesion Policy, such as through a more balanced, transparent and fairer distribution of direct payments between farmers and between countries. Direct payments will, moreover, be more targeted, by, for example, providing an additional payment to all EU young farmers and potentially to specific regions with natural constraints.

An important change, which is directly linked to EU cohesion objectives concerns the new rural development framework, in which rural development policy is partly harmonised and coordinated with other ESI funds with the aim of improving the chances of achieving the Europe 2020 objectives.

In the new programming period, Member States are formulating their rural development strategies on the basis of 6 priorities, one of which, in line with cohesion objectives, is the '*promotion of social inclusion, poverty reduction and economic development of rural areas*'. In addition, innovation, safeguarding the environment and adapting to climate change are cross-cutting objectives which all programmes are pursuing.

This stronger strategic focus should enable policy to be better targeted on areas and groups of people in need, so improving its effect on cohesion.

### The Common Fisheries Policy and Integrated Maritime Policy

The European Maritime Fisheries Fund (EMFF) aims to ensure that fishing is carried out in a sustainable and efficient way and that the fisheries and aquaculture industry is both economically viable and competitive, providing a decent standard of living for those who depend on it. The fund was set up in 1994 and was initially called the Financial Instrument for Fisheries Guidance (FIFG), becoming the European Fisheries Fund in 2007 and the EMFF in 2014.

The European Maritime and Fisheries Fund (EMFF) provide financial support for the implementation of the Common Fisheries Policy. The first three pillars of the Fund focus mainly on helping the EU fishing fleet and related sectors, such as aquaculture, inland fishing and the processing of the products produced, to adapt to change.

The fourth pillar of the EMFF provides support for the development of coastal areas dependent on fisheries in order to ensure their long-term economic viability. Accordingly, the EMFF helps to tackle the socio-economic disparities of coastal communities with a high dependence on fisheries, which have gradually declined in recent years because of over-fishing and increased global competition.

In the 2007–2013 period, the fourth pillar (of the then EFF) provided EUR 0.6 billion support to the development of coastal areas dependent on fisheries so as to ensure their long-term viability. In 2010, there were 93 coastal NUTS 3 regions where employment in fishing accounted for over 5% of jobs and 25 regions where the gross value-added generated by fishing accounted for over 10% of the total. The extent of dependency is declining in terms of both jobs and value-added as fishing is displaced by others activities. The Fund provided support to projects that add value to fisheries and aquaculture products, create or maintain jobs, encourage entrepreneurship and innovation and improve the quality of the coastal environment.

In the 2007–2013 period, Convergence regions received around 75% of the EUR 4.4 billion funding,

allocated on the basis of the historical share of support for fisheries in Cohesion Policy. For other regions, the allocation took account of sector-specific criteria, such as employment in the sector and the structural adjustment needed.

The 2014–2020 period relies exclusively on sector-specific criteria for distributing the budget with the aim of ensuring a more balanced distribution of funding and avoid absorption problems in Convergence regions where fisheries are less important.

One important feature of the ESI funds that is likely to play an important role in coastal communities is Community-led Local Development, which will allow local communities to combine the funds for supporting fisheries-oriented action with broader strategies to diversify the economies of areas still dependent on fishing.

The Integrated Maritime Policy, launched in 2012, is aimed at providing a more coherent approach to maritime issues. It calls for increased coordination between different policy areas while safeguarding biodiversity and protecting the marine environment. A central theme is economic growth based on various maritime sectors, including blue energy (such as off-shore wind power), aquaculture, maritime, coastal and cruise-ship tourism, marine mineral resources and blue biotechnology, sectors which are interdependent and rely on common skills and shared infrastructure such as ports and electricity distribution networks. The Policy also covers horizontal measures such as maritime spatial planning, integrated surveillance and marine know-how which can improve the management of oceans. In March 2013, the Commission proposed legislation to create a common framework for maritime spatial planning. Once in place, this can provide businesses with the legal certainty they need to invest.

## 2.5 Aid intensities in less developed regions rose up to 2000–2006 and have since declined

Aid intensities in less developed regions in the different Member States mirror the trend at EU level.

Between 1989 and 2006, they increased in all Member States (see Figure 6.5, where the size of bubbles shows the share of national population in less developed regions). Belgium and the Netherlands each had one less developed region in 1994–1999, which became Transition regions in 2000–2006. In France and UK, the proportion of population in less developed regions was very small throughout the period. In Greece, Portugal and Ireland, all the population lived in less developed region in the 1989–1993 period, but by 2000–2006, the proportion in Ireland

### The European Globalisation Adjustment Fund (EGF)

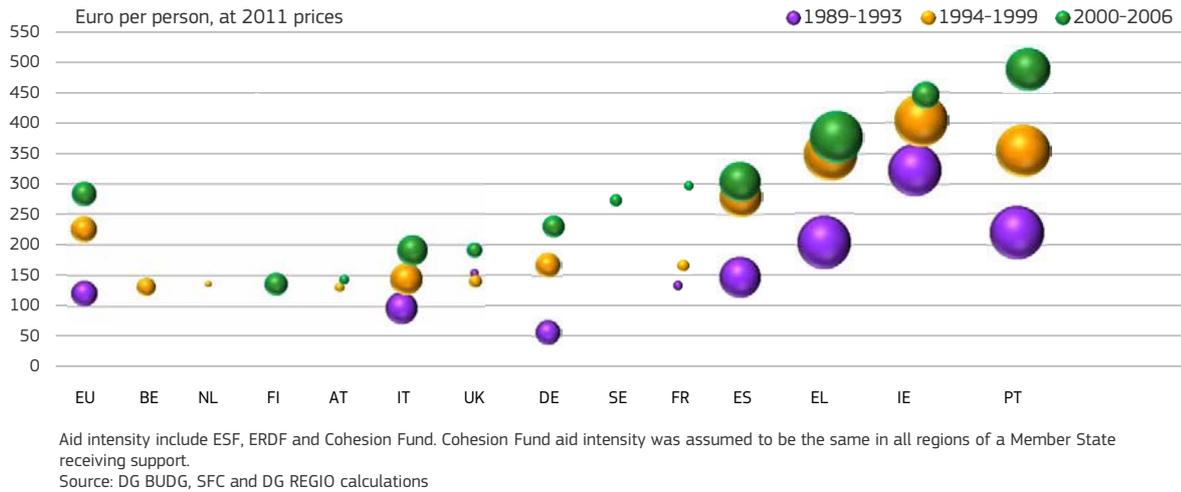
The European Globalisation Adjustment Fund was set up in 2006 to provide support to workers losing their jobs because of globalisation. More recently, it has been extended to workers made redundant as a result of the crisis. Workers are eligible for support when a large company closes down, a sector is affected by trade developments or production is moved abroad. The EGF cannot be used to keep companies in business or to help them modernise or restructure.

In general, EGF support can be requested only when more than 1,000 workers are made redundant by a single company or in a particular sector concentrated in a region or in a few neighbouring regions. Between 2007 and 2013, 128 requests for support from the EGF were received and almost EUR 0.5 billion was paid out to help close to 100,000 workers.

The projects supported consist mainly of those aimed at helping workers to find a new job or set up in business for themselves, by providing career advice, mentoring and coaching, training, mobility and relocation allowances and business advice.

For the 2014–2020 period, the EGF has a maximum budget of EUR 150 million a year, double that of the previous period, and a co-financing rate of up to 60%. The self-employed and workers on fixed-term contracts made redundant are also eligible for support. In addition, between 2014 and 2017, in regions with high youth unemployment, the young unemployed can receive support in equal numbers to workers being assisted by the ESF in the normal way.

**Figure 6.5 Annual aid intensity in less developed regions by Member State, 1989–2006**



had fallen to 27% and in Portugal to 66%, though in Greece, it remained at 100%.

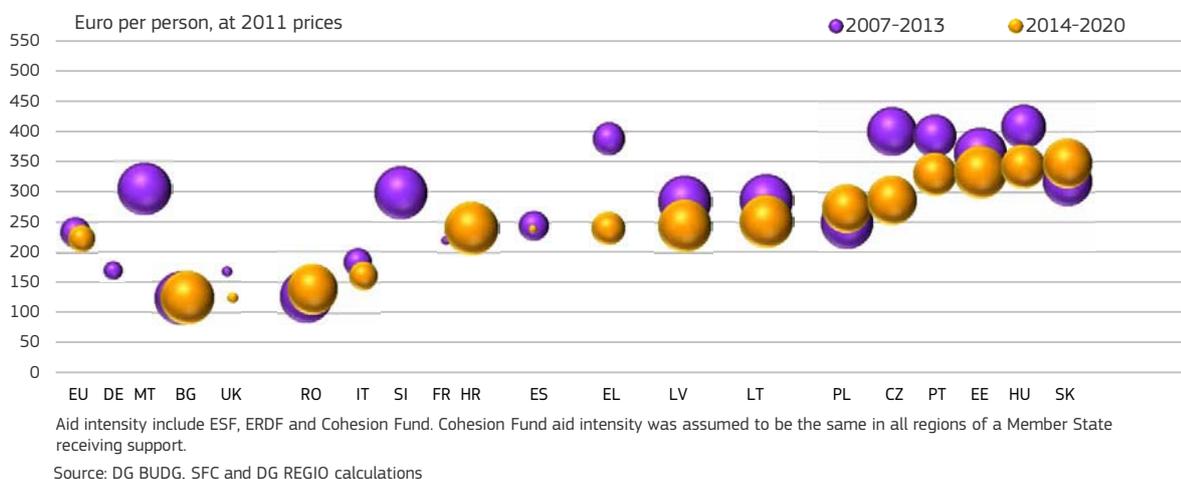
Aid intensity was highest over this period in the least developed among the regions covered. In 2000–2006, it averaged between EUR 380 and EUR 490 per head a year in Convergence regions in Ireland, Portugal and Greece, but it was below EUR 150 in Austria and Finland.

Average aid intensities in less developed regions at the EU level are lower in the 2007–2013 and 2014–2020 periods than previously (around EUR 230 a

year compared with EUR 284 in the EU-15 in the 2000–2006 period).

The aid intensities in less developed regions in the EU-27 show the influence of limiting, or capping, funding allocations to a fixed share of GDP which varies between countries, in part according to their level of development but also taking account of other factors. Capping was first introduced in the 2000–2006 period and remains in force. The purpose is to avoid financial support leading to overheating of the recipient economy as well as to ensure that Member States can absorb the resources concerned and allocate them effectively to sufficiently mature projects.

**Figure 6.6 Annual aid intensity in less developed regions by Member State, 2007–2020**



## Outermost regions

There are 8 ‘outermost’ regions in the EU, which are all located a long way from the respective countries to which they belong in the Atlantic Ocean, the Caribbean, the Indian Ocean and South America. Altogether around 4.6 million people live in these regions. Their specific situation was first recognised in a declaration attached to the Maastricht Treaty in 1992 and subsequently in an article in the Amsterdam and Lisbon Treaties.

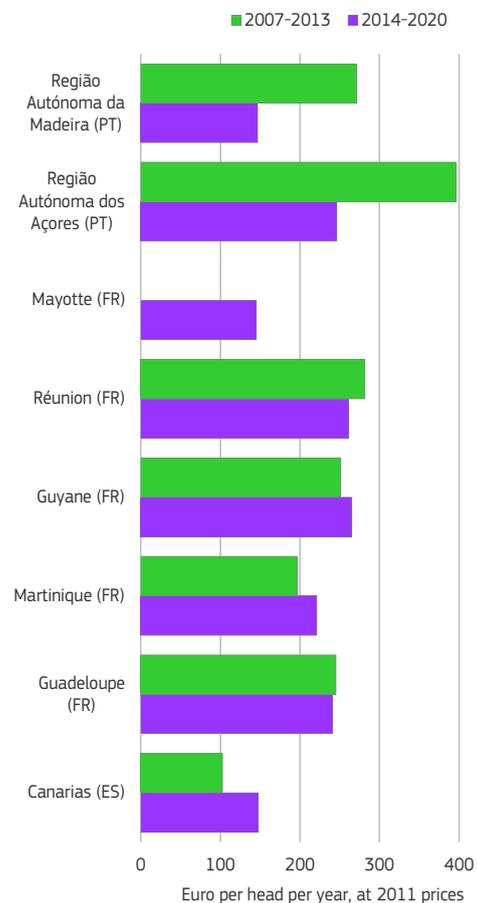
All the regions have relatively high population growth, reinforced, in most of them, by net inward migration. Except for Madeira, all of them to have a level of GDP per head below the EU average, Mayotte (situated between Madagascar and the African coast with a population of around 213,000), which joined the outermost regions on 1 January 2014, having the lowest level at around a quarter of the EU average.

Unemployment in all of them is significantly higher than in the rest of the EU, Canarias and Réunion having the highest rates at 33% and 28%, respectively, in 2012, Madeira and Açores having the lowest rates, at 15% and 17%, respectively.

In the 2014–2020 period, 6 of the 8 have been designated as ‘less developed’ regions for funding purposes, while Canarias is in the Transition category and Madeira in the more developed one.

The average aid intensity for the regions in 2014–2020 is much the same as in 2007–2013 at a little over EUR 190 per person a year (at 2011 constant prices). The level in Madeira and Açores, however, has been reduced significantly because of their higher levels of GDP per head. It has also been reduced in two of the 5 French regions (Réunion and Guadeloupe), while it has risen in Guyane and Martinique. In Canarias, it has been increased substantially from a relatively low level to one similar to that in Mayotte, the fifth French region.

**Figure 6.7 Aid intensity in the outermost regions, 2007–2020**



Source: Eurostat, SFC

As a result, aid intensities are no longer highest in the least developed regions (Figure 6.6). They are lowest, for example, in Bulgaria and Romania as well as the UK. Aid intensities might increase as a country develops and becomes more able to use funding effectively (as in Slovakia or Poland) but decline after development reaches a certain point (as in the Czech Republic).

In Slovenia, Poland and Romania, the capital city region is no longer in the less developed category in the 2014–2020 period, while in Slovakia, the Czech Republic, Hungary and Portugal, it was not in this category in 2007–2013 as well.

### 3. How have the goals changed over time?

The ambition to reduce the development gaps between regions dates back to the foundation of the European Economic Community in 1957 with the Treaty of Rome, which states: “the Community shall aim at reducing the disparities between the levels of development of the various regions”. This goal is still at the heart of Cohesion Policy. However, the Union of today is radically different than the one of 57 years ago. The various waves of enlargement have introduced new issues and new challenges as well as increasing the scale of some of the initial ones. The interpretation of the goal has also changed and is still evolving.

#### 3.1 The initial focus was on training and mobility

In the 1960s, the European Social Fund (ESF) tackled regional development gaps by providing support for the geographical and occupational mobility of workers. It helped workers in sectors that were modernising or restructuring by providing them with short-term retraining allowances and helped people, particularly those out of work, to relocate and seek jobs elsewhere through resettlement grants. In the 1960s, however, unemployment rates were low (Figure 6.8)

and most people who became unemployed quickly found a new job.

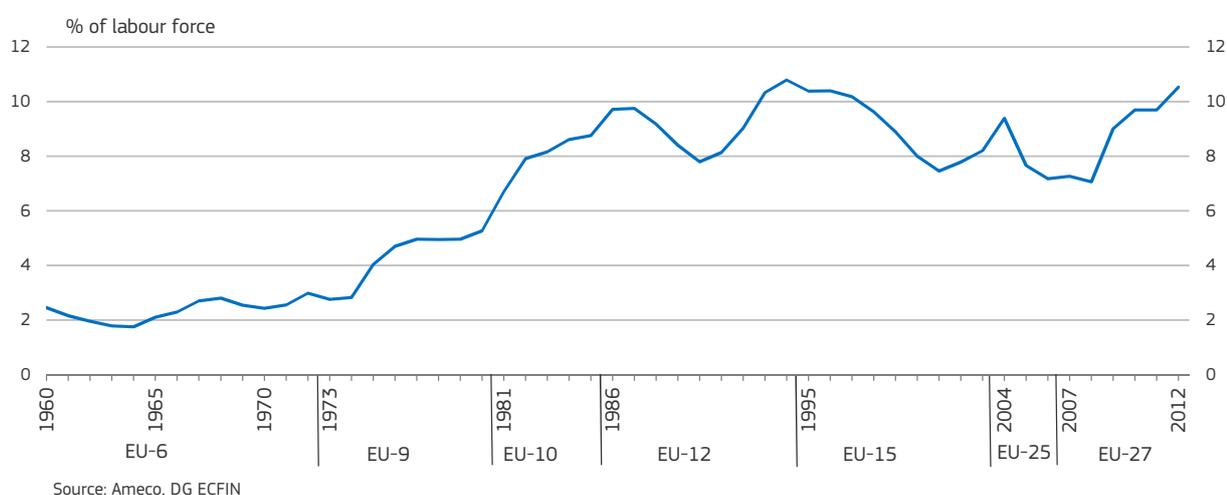
#### 3.2 The 1970s and 1980s saw structural unemployment and rapid changes in agriculture and manufacturing

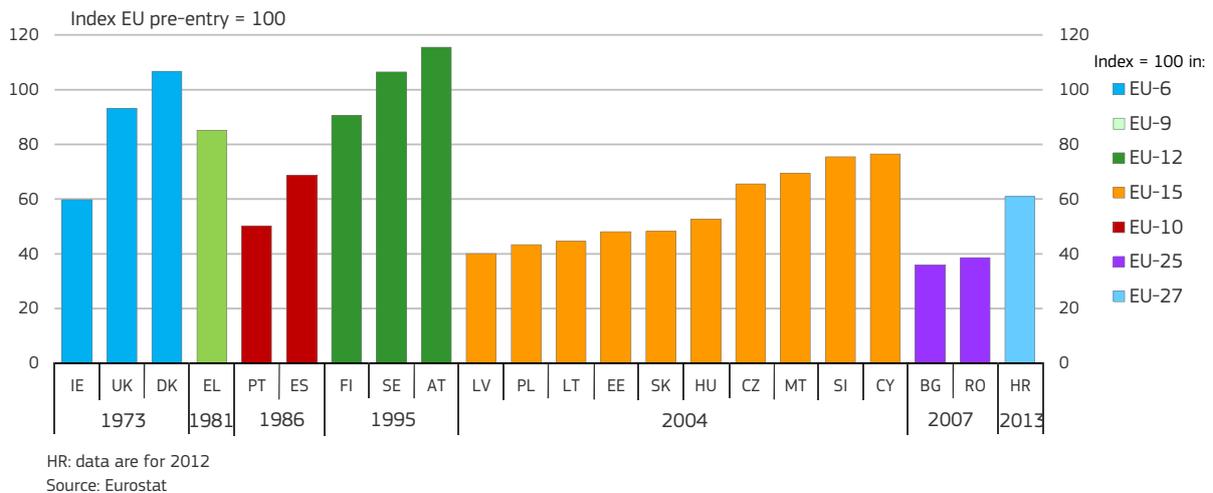
In the first part of the 1970s, there was a growing concern about job availability and the economic prospects of less developed regions. While unemployment averaged less than 3% in the EU during the 1960s, it increased from the mid-1970s on to reach 10% in the mid-1980s with over 30 NUTS 3 regions having rates above 20%. This was a reflection of a steep decline of employment in agriculture and manufacturing in many regions. As a result, the policy focus shifted to supporting regions with a large agricultural sector, those experiencing industrial decline and/or those with high structural unemployment. A high level of youth unemployment led to measures being targeted in particular on young people.

#### 3.3 The countries joining the EU in the 1980s and 2000s lacked key infrastructure

The successive waves of EU enlargement have altered the challenges for Cohesion Policy to tackle.

**Figure 6.8 Average unemployment rate, EU-6 to EU-27, 1960-2012**



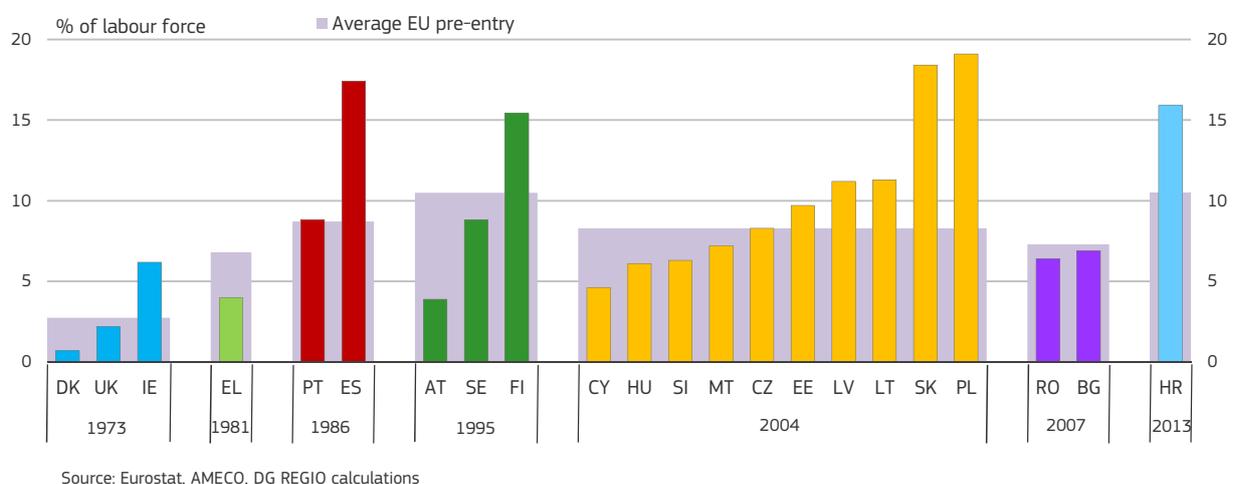
**Figure 6.9 GDP per head (PPS) per EU enlargement, 1973-2013**

While some of the acceding countries were highly developed and very similar to existing Member States, others were much less so in territorial as well economic and social terms.

In 1973, the UK and Denmark had levels of economic development similar to the six original Member States (Figure 6.9). In the UK, GDP per head in PPS terms was 93% of the then EU average, in Denmark it was 7% above the average. Unemployment was also lower than the average in both cases (Figure 6.10). Ireland, on the other hand, was much less developed with a GDP per head of only 60% of the EU-6 average and an unemployment rate twice the average.

When Greece joined in 1981, it had a GDP per head of 85% of the EU average and a lower unemployment rate. Portugal and Spain were both considerably less developed than the existing Member States when they joined in 1986, GDP per head in the first being only 50% of the EU average and in the second, 69%. Spain too had an unemployment rate of 17%, almost twice the EU average at the time. In all three countries, infrastructure was either lacking or of poor quality.

In 1995, Sweden and Austria both had above average levels of GDP per head and below average unemployment, while in Finland, GDP per head was not

**Figure 6.10 Average unemployment per EU enlargement, 1973-2013**

far below the EU average (90%) but the unemployment rate was 15%, well above the EU average at the time (10%). Though the enlargement did not pose new challenges for Cohesion Policy, it did increase the territorial diversity of the EU adding more mountainous areas and sparsely populated areas in the far north.

The 2004 enlargement posed a far greater challenge in that the 10 new Member States had a GDP per head of between 40% and 76% of the EU average. Five of them had unemployment rates above the EU average — in the case of Poland and Slovakia, double the average. The standard of infrastructure in all the countries was also far lower than in most of the existing Member States (see Chapter 2).

When Romania and Bulgaria joined in 2007, they were the least developed countries to enter the Union, with GDP per head of less than 40% of the EU average and infrastructure of a far lower standard than in the rest of the EU.

In 2013, Croatia joined the EU with a GDP per head of 61% of the EU average and an unemployment rate of 16%, substantially higher than the average of 10%.

### 3.4 Improving transport and environmental infrastructure

With the creation of the Cohesion Fund in 1992, improving transport and environmental infrastructure became explicit goals of Cohesion Policy.

The Cohesion Fund was set up as an accompanying measure to the establishment of the Single Market. It was intended to ensure that all Member States, including those which were on the periphery of the EU and were lagging behind in terms of economic development, were able to share in the growth stemming from the removal of barriers to competition in the markets concerned. Moreover, as the Maastricht criteria limited public debt and public deficits, it was harder than before for countries with poor infrastructure endowment to catch up with the rest of the EU.

The support provided was, therefore, aimed at helping the countries to do this by contributing to the cost of extending and improving their transport networks and environmental infrastructure and so remove obstacles to their economic and social development. At the same time, the investment concerned was also designed to further the Single Market project — and ultimately Economic and Monetary Union — by improving transport links with the rest of the EU and ensuring a minimum standard of infrastructure across the EU.

Unlike the ERDF, the focus from the start was on the situation at national rather than at regional level and on the gap between the lower income countries and the rest of the EU rather than on disparities between regions. Accordingly, eligibility for receipt of Cohesion Fund support was couched in national terms — having a Gross National Income (GNI) per head of less than 90% of the EU average.

In practice, the Cohesion Fund has helped lower income countries to comply with environmental Directives relating to clean drinking water, urban wastewater and solid waste disposal. The goal of facilitating compliance with EU environmental Directives in Member States with a GNI below 90% extends beyond the goal of reducing regional disparities in development and is, accordingly, an additional objective of Cohesion Policy.

The concentration of support on transport and environmental infrastructure has remained since the creation of the Cohesion Fund. The characteristics of the countries receiving support, however, have changed markedly as indicated above in terms of both the level of economic development and need for infrastructure.

### 3.5 The Lisbon and Gothenburg Agenda

The Lisbon Strategy, adopted in 2000, was aimed at boosting the competitiveness and knowledge-intensity of the EU economy by among other things increasing investment in innovation. The strategy was re-launched in 2005 with a stronger focus on growth and jobs and the introduction of national reform pro-

grammes to ensure greater coherence and greater ownership of the strategy.

The Gothenburg Strategy adopted in 2001 focussed on sustainable development, i.e. meeting the needs of the present without compromising the ability of future generations to meet their own needs. This was followed by a more comprehensive Sustainable Development Strategy for an enlarged EU in 2006.

The link between Cohesion Policy and the Lisbon and Sustainable Development Strategies was strengthened for the 2007–2013 programming period. New ‘earmarking’ requirements ensured that a large part of Cohesion Policy funding went to support projects that contributed to the two strategies, marking a further shift towards aligning Cohesion Policy with the overall policy agenda of the EU.

The primary goal of reducing economic disparities, however, remained intact in the process. The bulk of funding continued to go to less developed regions (see above) and the earmarking requirements were less stringent for these than for more developed regions.

### 3.6 Europe 2020, poverty reduction, climate change mitigation and beyond GDP

Compared to the Lisbon agenda, Europe 2020 added two new elements to the policy agenda of the EU, poverty reduction (see Chapter 2) and a stronger emphasis on sustainability (see Chapter 3). This has led to a change in the goals of Cohesion Policy and to the way policy is implemented, with a greater stress on action aimed at achieving multiple goals.

This strategy has five headline targets set at the EU and the national level, yet these issues also differ within Member States. Each of these headline targets follows a different spatial logic.

In some case, the spatial concentration makes matters worse. For example, the concentration of poverty and social exclusion in small areas has strong negative externalities. In other cases, the spatial concen-

tration can be positive, in the case of innovation, or neutral, in the case of GHG emissions or renewable energy. In the case of education the impact of spatial concentration is mixed. A high concentration of early school leavers is likely to generate negative externalities, but a concentration of tertiary educated generates positive externalities. The latter is perhaps impossible to avoid as many tertiary educated will move to large cities in search of more interesting job opportunities.

The consequences of the spatial concentration of high (or low) employment rates are ambiguous. The clustering of high employment rates may lead to labour and skill shortages which can only be resolved through people moving long distances. The clustering of low employment rates is likely to depress wages and have negative externalities. Yet the inevitable differences in size and economic structure of labour market areas and in labour market regulations mean that identical employment rates are unrealistic. In short, both large disparities in regional employment rates and zero disparities are likely to produce negative externalities. The optimal situation is to have limited employment rate disparities avoiding both depressed and overheated labour market areas.

The way public policies can tackle these issues also changes from one area to another. Reducing poverty requires a different approach in areas with a high poverty rate than in one with an average rate. Reducing greenhouse gas emissions efficiently needs different policies in urban areas than in rural ones. Policies to boost innovation or enhance education should take into account the current and the potential economic specialisation of the region or city.

The differences between the EU targets and the national targets reflect both a sense of realism, an understanding of the externalities of concentration and likely future developments.

For example, the 2020 index based on the distance to the EU targets for smart and inclusive growth (Map 6.2) and the 2020 index based on the national

targets<sup>7</sup> (Map 6.3) show that overall, the distance to EU targets varies more with wide distances for the less developed Member States. The average distance to the EU target is, therefore, relatively wider for Greece, Romania, Bulgaria, Hungary, Croatia, Poland and Italy.

The distance to national targets tends to be a little smaller as Member States have opted to aim for a lower and more realistic target for R&D expenditure if their starting level is low, which is the case in most less developed countries. This suggests both a sense of realism and that spatial concentration of R&D can be beneficial.

For the employment, education and poverty or social exclusion national targets, however, Member States with the lowest rates have often opted for ambitious targets, which implies that a substantial effort is needed to achieve them. This shows that lagging Member States are eager to catch up with the rest of the EU and recognise the potential negative externalities of the spatial concentration of low employment rates, low educational attainment levels and high rates of poverty or social exclusion.

The national targets for GHG emissions in the effort-sharing mechanism involve a reduction for the more developed Member States which have far higher emission levels per head than less developed Member States which are allowed a moderate increase. This is a fairer distribution of effort than specifying equal cutbacks which recognises that it does not matter where GHG emissions occur.

### 3.7 Beyond GDP: poverty, human development and well-being

The Treaty expresses the aim of reducing regional disparities in development but does not define, except in very broad terms, what kinds of disparity are being referred to. For many years, the focus was primarily on reducing disparities in GDP per head and unemployment rates. Over time, however, attention

was extended to other aspects of development, such as environmental quality, sustainability, poverty and social exclusion.

This can be seen as part of a more general move towards better defining the way that development should be measured. The Stiglitz, Sen and Fitoussi report on the measurement of economic performance and social progress (2009) provides an excellent summary of what we know and what needs to happen next. It emphasises that indicators should not be confined to averages but cover their distribution across the population. For example, growth of average income can in some cases be a result of increases for a minority of the population and the majority might even experience a reduction. This can, therefore, give rise to a disconnect between what official statistics show and what most people experience, which tends to undermine their trust in the indicators concerned.

In parallel with the Stiglitz, Sen and Fitoussi report, the European Commission published the 'GDP and beyond' communication<sup>8</sup> in the same year. This identified five key ways of improving the measurement of progress, including complementing GDP with environmental and social indicators and the better reporting of distributional and inequality aspects.

In line with this, there has been a growing demand that Cohesion Policy should 'also move beyond GDP'<sup>9</sup>. Already in the 2007–2013 period, many different measures of progress were taken into account in deciding the most appropriate priorities and the strategies for pursuing them<sup>10</sup>. For the 2014–2020 period, the European Commission has requested the World Bank and ESPON to produce detailed maps to identify the high-poverty areas on which policy should be targeted.

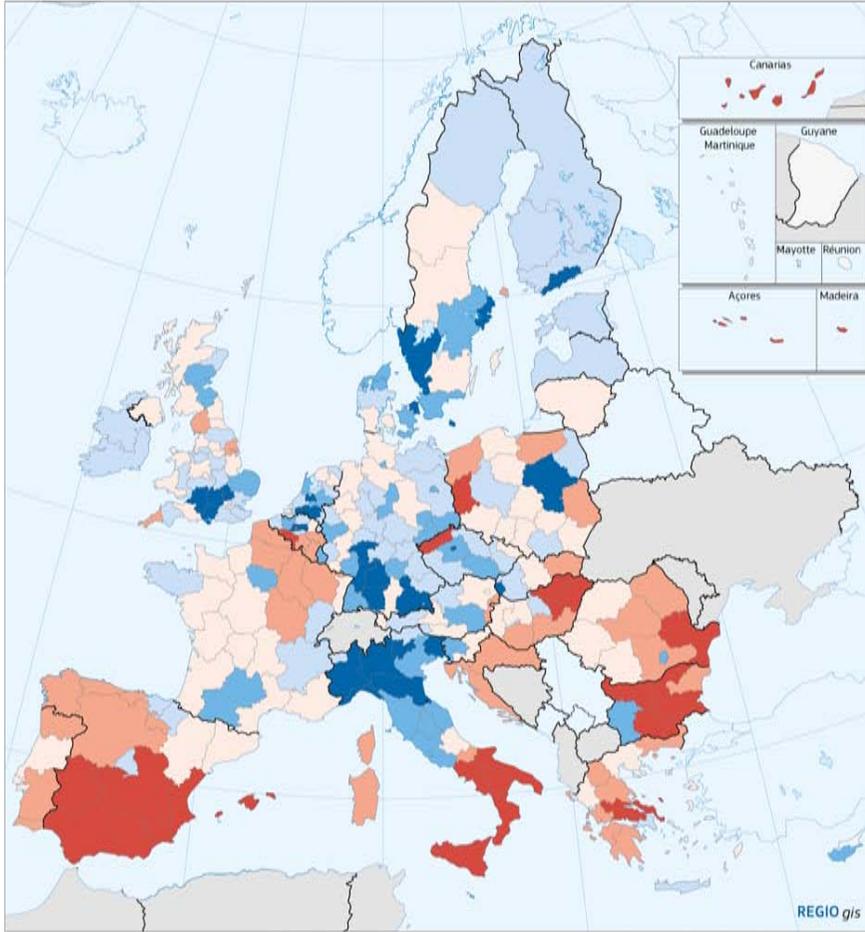
Nevertheless, the categorisation of regions and the Cohesion Policy funding they are eligible for in the period 2014–2020 were still based primarily on GDP. A prerequisite for considering other indicators which could be used to do this is a time series of

<sup>7</sup> For Member States that did not select a national target for an indicator, a target was imputed based on the targets of MS with a similar rate in 2009. For more information see (Athanasoglou and Dijkstra (2014)).

<sup>8</sup> GDP and beyond, COM(2009) 433 final.

<sup>9</sup> Green Paper on Territorial Cohesion, COM(2008) 616 final.

<sup>10</sup> 5<sup>th</sup> Cohesion Report, COM(2010) 642 final and SEC(2010) 1348.



Map 6.2 Europe 2020 Index, 2011 — Distance to EU targets

Index of distance to national targets

- < 0.60
- 0.60 - 0.70
- 0.70 - 0.80
- 0.80 - 0.90
- 0.90 - 0.95
- > 0.95

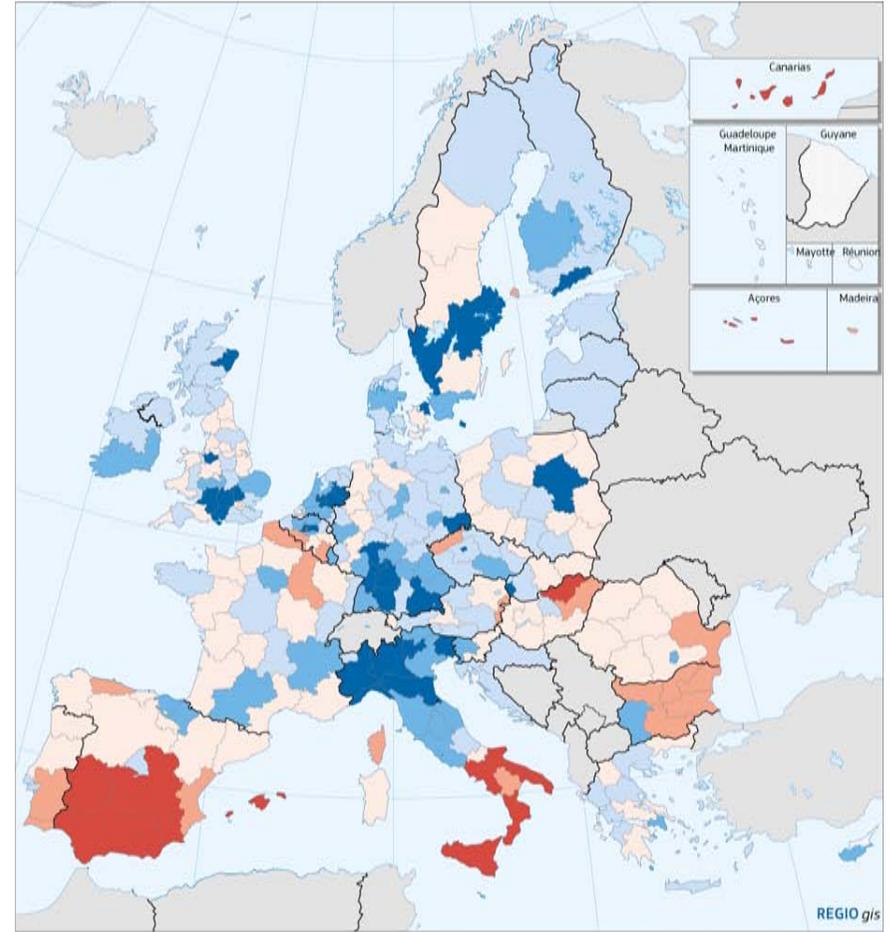
Low = far from target  
High = close to target  
EU average = 0.82

This index takes into account the following indicators:  
Employment, R&D spending, Education (ESL and TERT)  
and fighting poverty and social exclusion (AROPE).

Sources: Athanasoglou, S. and Dijkstra, L. (2014)

0 500 Km

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Map 6.3 Europe 2020 Index, 2011 — Distance to national targets

Index of distance to national targets

- < 0.60
- 0.60 - 0.70
- 0.70 - 0.80
- 0.80 - 0.90
- 0.90 - 0.95
- > 0.95

Low = far from target  
High = close to target  
EU average = 0.82

This index takes into account the following indicators:  
Employment, R&D spending, Education (ESL and TERT)  
and fighting poverty and social exclusion (AROPE).

Sources: Athanasoglou, S. and Dijkstra, L. (2014)

0 500 Km

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### Committee of the Regions and the territorial dimension of Europe 2020 and other EU policies

According to the Committee of the Regions (CoR), a 'territorial dimension' should be included in the design and implementation of the Europe 2020 strategy. The targets should, at least partly, be defined at regional level and progress indicators should be established to enable regions to monitor their progress in achieving them.

In the Committee's view, giving regions and local authorities a stronger role in the conduct of Cohesion Policy and in implementing Europe 2020 would increase ownership and help to make public investment more effective, though it is recognised that to achieve this also requires a further improvement in their administrative capacity. The CoR also pleads for strengthening the long-term regional investment focus and making it more crisis-resistant.

The Committee's view is based on a series of 'works'<sup>1</sup> including a survey among Regional and Local authori-

1 CoR works on the mid-term assessment of Europe 2020 have included 7 Flagship Initiative conferences and surveys as well as 4 specific workshops/seminars involving more than 1750 participants as well as a broad survey among local and regional authorities with more than 1000 respondents (<http://portal.cor.europa.eu/europe2020/Pages/welcome.aspx>).

ties (LRAs), which found strong support for the Europe 2020 strategy among the 1000-plus respondents but in which many pointed to the lack of a strong territorial dimension in the strategy and of a clear role for LRAs. The LRAs indicated that they wanted to be more involved in all stages of the policy process and for cross-border interdependencies to be taken into account.

A large majority of LRAs responding stated that the targets should be regionally differentiated, but there was no consensus on how this should be done. Three alternative ways were suggested — that targets should be the same as the national ones, higher for more advanced regions or higher for lagging ones. The CoR pleads on this basis for a mixed approach combining both national and regional target setting differentiated by indicator and by country.

Following the Commission's guidance on how territorial impact should be assessed, the Committee has adopted a Territorial Impact Assessment strategy, which aims to take account of the territorial impact of EU policies on LRAs and to increase the visibility of territorial impact assessment in the pre-legislative and the legislative process.

reliable official statistics at regional level. This is one of the reasons for the Commission investing in better regional indicators of poverty and social exclusion as part of the EU Statistics on Income and Living Conditions (EU-SILC). The combination of a better territorial understanding of the EU (through regional and local typologies) and better measurement of income distribution, inequalities and poverty can provide an appropriate framework for Cohesion Policy to take explicit account of these aspects<sup>11</sup>.

### 3.8 What are the goals of Cohesion Policy?

The above overview of how the goals of Cohesion Policy have evolved over time can be summarised as follows. The reduction of regional disparities in devel-

opment is and remains a central goal and most of the funding has consistently gone, and continues to go, to the least developed regions. The nature of regional disparities being tackled, however, has changed over the years. The initial focus on unemployment, industrial reconversion and the modernisation of agriculture has broadened to include disparities in innovation, education levels, environmental quality and poverty, as reflected in the division of funding between policy areas. The process of reinterpreting development disparities is ongoing and may lead in future to a stronger focus on disparities in overall well-being.

In addition to the goal of reducing regional disparities, Cohesion Policy has become more closely aligned with the overall policy agenda of the EU. In the 1990s, Cohesion Policy funding began to be used as well to improve the trans-European Transport Network in support of the Single Market and to im-

11 Progress on GDP and beyond, Commission Staff Working Document SWD(2013) 303.

prove and extend environmental infrastructure to help Member States to comply with EU environmental Directives. Although investment in transport infrastructure might have contributed to a reduction in economic disparities, investment in environmental infrastructure had little impact on the economic development of the regions concerned. Accordingly, improving environmental infrastructure can be seen as an additional goal of Cohesion Policy. The adoption of the Lisbon and Gothenburg strategies led to a stronger emphasis on innovation and sustainability and Europe 2020 has resulted in the goals of Cohesion Policy being extended to reducing poverty and social exclusion. The closer alignment of the policy to EU objectives has also influenced the way in which goals are pursued. For example, the measures adopted to boost smart growth have to take account of their impact on sustainability and inclusion.

The pursuit of EU-wide objectives is to a large extent compatible with reducing regional disparities, in the sense that, for example, supporting innovation or the sustainability of development in weaker regions is an important means of achieving this end.

The closer link to the overall EU policy agenda also underlines the fact that Cohesion Policy is not exclusively focussed on the less developed regions but it supports investment in all regions which is aimed at furthering common EU objectives.

## 4. The economic rationale underlying the policy has become more integrated

Identifying and understanding the economic rationale for policy intervention can help to define the goals of Cohesion Policy more precisely and to identify the best policies for reaching those goals. The preceding section showed how the general aims expressed in the Treaty have been interpreted over the years, taking account of the challenges faced by both existing Member States and by the countries joining the EU.

The concern here is with the underlying reasons for regional disparities in economic development. These,

it should be emphasised, can differ between regions in different parts of the EU and are likely to change over time. For example, the reasons for lagging development in regions in the UK are different from those in regions in Romania, and the reasons for lagging development in regions in Spain or Portugal today are not necessarily the same as they were in the 1980s.

In the discussions surrounding Cohesion Policy, there are three main strands of thought about the factors which the policy should be aimed at tackling. They can be characterised as those that focus on the ‘first nature’ determinants of development — i.e. those that are largely inherent in the country or region concerned — those that focus on the ‘second nature’, or human-constructed or influenced, determinants, and perhaps most importantly in the recent past, those that focus on the impact of trade and economic integration on development.

The distinction between first and second nature determinants is somewhat blurred. Some factors cannot be changed at all (such as the presence of mountains) and are clearly inherent. Others can change but only over the very long-term, such as the rural or urban nature of a region or the pattern of settlements, and might be considered as inherent from a policy perspective to all intents and purposes. Yet others might be capable of being changed more quickly, though still only over a long period of time, such as the broad structure of economic activity (which is likely to reflect the inherent characteristics of regions) or the education attainment level of the work force, but are more open to policy influence even if any changes achieved over the medium-term (within say a programming period) are likely to be relatively small. Still other factors can be changed relatively quickly, such as access to broadband, and clearly belong to the second nature group of determinants.

### 4.1 Cohesion Policy has moved beyond first nature determinants of growth

At the origin of many budget policies for transferring income from leading to lagging regions is the notion that economic activity, and so the capacity to

## Territorial Cohesion and the Lisbon Treaty of 2007

With the entry into force of the Lisbon Treaty in 2009, territorial cohesion was explicitly added to the goals of economic and social cohesion, though it was already an implicit objective of policy. Concluding the debate launched by the Green paper on territorial cohesion, the Fifth Cohesion Report summarised the changes introduced by the increased emphasis on territorial cohesion as reinforcing (1) the importance of access to services, (2) sustainable development, (3) functional geographies and (4) territorial analysis. Since 2010, the European Commission has taken action to address all four of these issues.

### (1) Access to services

Both Europe 2020 and the Budget for 2014–2020 include specific action to improve digital and physical access to services. The Digital Agenda for Europe is aimed at ensuring that everyone in the EU has access to a fast broadband connection by 2020 and that one in two EU residents uses e-Government services by 2015.

Between 2014 and 2020, the Connecting Europe Facility will invest EUR 32 billion in transport infrastructure, EUR 9 billion in energy infrastructure and EUR 9 billion in broadband and digital services. This can help, for example, to reduce driving times to the nearest hospital, which may be located on the other side of a national border, increase the availability and reliability of energy networks and improve access to online services.

### (2) Sustainable development

Sustainable growth is at the core of Europe 2020 and Cohesion Policy. In the 2014–2020 period, at least 20% of the ERDF in more developed regions and 6% in less developed region has to be invested in measures which improve energy efficiency and expand renewable energy supply.

### (3) Functional geographies

Functional geography captures the spatial extent of a policy issue, for example, managing a river basin or a labour market area. Using functional geography can enhance the efficiency of public policies, even though it often calls for more coordination across administrative or political boundaries.

In the 2014–2020 period, a new measure has been introduced to facilitate the use of functional geography: integrated territorial investment which is intended to make it easier to implement an integrated strategy in a specific area, such as a metropolitan area or a cross-border area.

To obtain a better understanding of the functional geography dimension, the Commission has developed a number of new harmonised territorial definitions:

- Together with the OECD, it has created a new harmonised definition of a city and its commuting area, which shows that the latter, especially in large cities, often cross NUTS 2 boundaries and even national borders.
- Combining the approach used for the urban-rural regional typology developed in 2010 (EC 2010) and the new city definition, it has also defined a new local typology, the degree of urbanisation, which distinguishes rural areas, towns and suburbs, and cities. This allows for a better monitoring and understanding of the different policy issues facing all types of area, rural as well as urban.

To give these local and regional typologies more stability and visibility, the Commission intends to include them in an annex to the NUTS regulation.

### (4) Territorial analysis

A better understanding of different geographical areas across Europe can help to identify and select the right policy responses and to assess the impact of EU policies with a territorial dimension, as underlined by Member States in the Territorial Agenda and the Committee of the Regions.

Since 2010, the Commission has significantly improved the amount of sub-national data available from official statistics through Eurostat and from other sources with the help of the Joint Research Centre, Copernicus, the European Space Agency, ESPON, the European Environmental Agency, the World Bank, the OECD and external contractors. This has led to better data on a wide range of issues including poverty, well-being, health, air quality, innovation, access to public transport and the structure of settlements, but more remains to be done to complete the picture and provide more detail.

To support the assessment of territorial impacts<sup>1</sup>, the European Commission has invested in better modelling capacity, and projections at sub-national level across the EU can now be generated by a new regional economic model RHOMOLO and a land use model LUISA, while projections of population and education levels have also been improved and updated.

<sup>1</sup> See also Commission (2013), Staff Working Document SWD(2013) 3 final *Operational guidance on how to include a territorial dimension in the Commission's Impact Assessments*.

generate income, will always be depressed in some regions. This is typically justified by first nature arguments to do with the inherent features of regions that policy cannot change or at least only very slowly, such as, for example, their geographic remoteness.

These arguments have frequently been made over the years in relation to regional development in the EU. The Treaty refers to a number of places as worthy of particular attention: *'rural areas, areas affected by industrial transition, and regions which suffer from severe and permanent natural or demographic handicaps such as the northernmost regions with very low population density and island, cross-border and mountain regions'*. Some have argued that these types of area merit separate permanent funds to compensate them for their 'first-nature' handicaps.

Those responsible for the design of Cohesion Policy, however, have tended to resist such arguments. Although they may seem appealing and may have merit in individual cases at a given point in time, they cannot be generalised as condemning a particular type of region to lagging development for ever. Many places have managed to overcome these 'first nature' obstacles and have succeeded in achieving a relatively high rate of growth and becoming 'high income' regions. In a 21<sup>st</sup> century economy, the inherent characteristics in question can be as much a stimulus to growth as an obstacle. This is why Cohesion Policy has focussed more on the 'second nature' determinants of development which policy can affect rather than being content merely to compensate regions for their supposed disadvantages, though at the same time recognising that these 'disadvantages' need to be taken into account when designing the shape of the policy to be pursued.

It has also focused from the beginning on the third set of determinants of development, the closer economic integration of regions across the EU. Indeed, the whole rationale for Cohesion Policy since it was initiated has been to strengthen the capacity of regions to develop in the context of a Single Market in which goods and services are traded freely across national borders.

## 4.2 Cohesion Policy can boost growth through investment in second nature determinants of growth

Economic theory and empirical evidence suggest several possible reasons for lagging development, which can be identified to lesser or larger degree as second nature determinants.

### (1) Under-investment in public capital stock

A lack of public capital stock due to inadequate public investment historically can underlie a significantly lower level of development. For example, most of the regions in central and eastern Europe that used to be behind the iron curtain have a much poorer endowment of infrastructure. In some countries, public investment has been relatively concentrated in the regions which include the capital city or are close to it and regions far from the capital tend to have lower levels of capital stock which may hinder their development. For example, the capital city region may have a disproportionately large concentration of universities and research centres as compared with other parts of the country.

### (2) Low accessibility

The location of a city or region relative to others determines to a large degree how accessible it is. For example, the accessibility by road to the rest of the EU will always be less in Northern Finland and Sweden than in Luxembourg, regardless of the level of investment in transport infrastructure.

Nevertheless, the accessibility of some regions or cities is considerably less than it could be if transport links were better. Improving transport connections would allow producers situated there to compete more effectively in the Single Market, while at the same time providing easier access to their markets for producers situated elsewhere so increasing competition. This would tend to lead to the economic convergence of less developed regions insofar as the costs of producing there were lower. In addition, the closer

economic integration which would result would tend to lead to higher overall economic growth in the EU.

(3) Human capital

The quality of the labour force has a major effect on productivity and so economic development. High levels of human capital mean that workers are more efficient and more innovative. In addition, high levels of human capital can increase the flexibility and adaptability of the labour force. This makes it easier for an economy to shift to new opportunities as the market evolves.

(4) Innovation

Introducing new products on to the market, using new processes to produce them and making organisational and marketing improvements can have a substantial effect on economic development. In the long run, innovation is the main driver of economic growth. For regions distant from the knowledge frontier adopting and adapting innovations developed elsewhere can help them to catch up.

(5) Low institutional quality

Economic research has undergone an 'institutional turn' in recent years with a great deal of work highlighting the key role played by the quality of government and the institutional capacity of public administrations in boosting development. This line of research and the evidence it has produced demonstrate that low quality of government can obstruct development and that countries and regions can get stuck in a low-quality and low-development trap. Most of this research focusses on developing countries, though it is evident that it can also apply to Europe.

In addition to the direct benefits that a high-quality administration can generate, it can also increase its capacity to identify the right investment mix and use funding efficiently.

(6) Agglomerations and clusters

A further reason for under-development is the absence of agglomerations which can house economic activity and generate the economic advantages, or economies, of people and businesses being concentrated in a particular place (urbanisation economies). There are, in addition, economies to be gained from producers in the same economic sector or in linked activities being located in close proximity to each other (in clusters or industrial districts).

Urbanisation economies obviously depend on the presence of a large city or several cities located close to one another. Clusters or industrial districts do not necessarily require the presence of a large city, but they do require a sufficient concentration of enterprises to generate externalities.

Regions could be affected by the under-development of one, or more, of these factors. Cohesion Policy was created to assist lagging regions to reduce their development gap compared to the rest of the EU and it can help to overcome most of the reasons for under-development.

The major challenge is to identify the appropriate policy mix for tackling the factors responsible for lagging development, which in practice is done jointly by the Commission and the regions and Member States concerned through dialogue with each other. Depending on the region, the policy mix may need to focus on human capital, institutions, infrastructure or innovation or, more usually, some mix of these. The OECD, for example, has emphasised that investment in transport infrastructure needs to be accompanied by other measures to improve the productivity of the firms in the region which is being made more accessible, in order to avoid it losing more of the local market to producers elsewhere than it gains from being able to export more easily to other regions.

The aim of reducing under-development should not be misunderstood as an ambition to equalise the level of development in all regions. This would be an impossible and inefficient goal. Some regional differences in productivity, employment and education

will always remain, but these should not be considered problematic if they do not lead to differences in well-being or standards of living. Cohesion Policy cannot entirely overcome the lack of agglomeration economies — urbanisation economies, in particular, cannot be created without a large city. It can, however, facilitate the emergence of these economies in existing cities or in a polycentric network of cities. The benefits from agglomeration might, therefore, be realised through cooperation between towns or cities or by establishing links between urban centres or even between urban and rural areas.

The spatial concentration of a sector or linked economic activities can occur outside large cities. Although some people question whether public policy can create clusters or industrial districts, measures to improve the business climate and stimulate innovation might lead to agglomeration economies emerging in some regions without large cities.

The impact of agglomeration economies on regional disparities, however, should not be exaggerated. Within the EU, there are many regions with high productivity without a large city and many regions with low productivity despite the presence of a large city. The main reasons for regional differences in economic development are to do with the capital stock, technology and human capital; not the presence or absence of a city.

### 4.3 Cohesion Policy supports market integration and can help less developed regions grow faster

Regional disparities can be viewed as inefficient or efficient depending on what determines these disparities. If inefficient disparities can be removed, they will boost overall growth. Trying to remove efficient disparities, however, will result in a sub-optimal allocation of resources and so reduce overall growth.

This is particularly relevant in the discussion surrounding the expected impact of the Single Market. In part, Cohesion Policy was motivated by a fear that lagging regions would lose when joining the Single

Market. Three economic theories can be linked to radically different views on this.

Neo-classical economic theory would predict that capital would flow to the least developed regions because it would generate the highest returns there. For example, it would expect foreign direct investment (FDI) to go to less developed Member States so boosting their growth rate. Investment in the public capital stock might lag behind because of the low level of income in the country, so that it might not, for example, be able to afford to invest in good transport infrastructure to connect the economy to the Single Market. This could depress the return on private investment and slow down the inflow of FDI. According to this theory, Cohesion Policy could help to alleviate the funding difficulty and so accelerate the process of convergence.

When the Single Market was being created, a new theory emerged. New trade theory, based on earlier work by Kaldor and others on increasing returns to industrial production and developed in the 1980s by Paul Krugman, emphasised that economies of scale mean that regions with a large share of a particular industry tend to benefit more from trade, what is termed the home market effect.

Many supporters of Cohesion Policy, since they considered that lagging regions would lose out because they lacked economies of scale, viewed the funding provided under the policy as compensation for regions likely to face economic decline as a result. So instead of working with market forces, Cohesion Policy was seen as working against them. Accordingly, Cohesion Policy was not expected to reduce regional disparities, but merely to compensate the regions experiencing relative if not absolute economic decline. The same argument can be found in the World Bank Development Report of 2009.

The new economic geography, which was developed in the 1990s by Krugman and others has links with the new trade theory but is more nuanced as regards the benefits of trade. While it recognises the importance of increasing returns to scale, it points to the costs of congestion and other factors that encourage the dispersion of economic activities and the shift of

**Table 6.6 Cohesion Policy funding by broad policy area in EU-15, 1989–2013**

% of total	Less developed and Cohesion Fund regions				Other regions			
	1989–1993	1994–1999	2000–2006	2007–2013	1989–1993	1994–1999	2000–2006	2007–2013
Business support (including RTDI)	31.5	33.0	28.0	34.4	48.1	31.1	29.2	33.8
Infrastructure (Transport, Energy, Telecom, Social infrastructure)	36.3	26.1	30.9	23.2	5.2	1.5	13.4	13.2
Human Capital (labour market, education, social inclusion etc.)	20.6	24.7	24.5	22.3	39.0	56.8	45.8	34.6
Environment	1.6	14.3	14.0	15.4	7.6	9.8	8.6	14.2
Other	9.7	1.9	0.8	0.4	0.0	0.8	1.1	0.3
Technical assistance	0.4	0.0	1.8	4.3	0.0	0.0	1.8	3.8
<b>TOTAL</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: Structural Funds Annual Reports, SFC and DG REGIO calculations

producers out of centres where economic activity is concentrated after a certain point.

According to this theory, lagging regions might benefit from being part of a Single Market but this is not automatically the case since much depends on the economic conditions in these regions, especially the business environment, in relation to those in more developed regions. It is, therefore, considered that Cohesion Policy can potentially help to reduce regional disparities but should find ways to work with market forces to strengthen their effect in reducing disparities.

For example, Cohesion Policy can help to improve the business environment in lagging regions so increasing the likelihood that they will be more likely to benefit from trade integration. Equally, it can support improvements in transport and digital connections, enabling scale economies to be achieved through increased trade and inward investment. Last, but not least, Cohesion Policy can also help to alleviate some of the congestion costs in the fast-growing, lagging regions by investing in better public transport and improvement in urban mobility; thus helping to prolong this growth by reducing its negative externalities.

## 5. The division of funding between policy areas has evolved as the goals of the policy have changed

The way that funding is divided between the broad policy areas supported by Cohesion Policy depends on the types of region concerned and their needs and priorities. Investment in infrastructure has consistently been higher in less developed regions than in others (Table 6.6). In the EU-15, the share of funding allocated to non-environmental infrastructure, amounted to 36% in the 1989–1993 period, though it fell to 23% in the 2007–2013 period as transport networks were completed. At the same time, support for environmental infrastructure increased from the 1994–1999 period on following the introduction of the Cohesion Fund, which raised environmental investment from less than 2% of Cohesion Policy funding in 1989–1993 to 14% in the next period and 15% in 2007–2013.

In the other EU-15 regions, the share of investment in (non-environmental) infrastructure rose from 5% in 1989–1994 to 13% in 2007–2013, in part due to increased investment in renewable energy from 2000 on, while environmental investment also increased, from 8% to 14% of total funding.

By contrast to infrastructure, investment in human capital was consistently higher as a share of total funding in the other EU-15 regions than in less de-

**Table 6.7 Cohesion Policy funding by broad policy area in acceding countries, 2004–2013**

<i>% of total</i>	EU-10 2004–2006	EU-12 2007–2013
Business support (including RTDI)	14.2	25.6
Infrastructures (transport, energy, telecoms, social infrastructure)	41.5	36.1
Human Capital (labour market, education, social inclusion)	14.8	12.5
Environment	27.3	20.8
Other	0.1	0.0
Technical assistance	2.1	5.0
<b>Total</b>	<b>100.0</b>	<b>100.0</b>

Source: Structural Funds Annual Reports, SFC and DG REGIO calculations.

veloped ones, though it varied between periods. It increased from 39% of total funding in 1989–1993 to 57% in 1994–1999, mirroring a reduction of similar size in the share going to business support. It then declined to 46% in 2000–2006 and 35% in 2007–2013 as support, first, for infrastructure and then for the environment increased. On the other hand, the share going to business support rose slightly from 31% in 1989–1994 to 34% in 2007–2013.

In less developed regions in the EU-15, the share of funding going to human capital fluctuated less between periods, varying between 21% and 25% and accounting for 22% of the total in 2007–2013. The share of funding going to the business support was much the same as in the other EU-15 regions over the last three programming periods, accounting for 34% of funding in 2007–2013 after falling to 28% in the previous period.

The distribution of Cohesion Policy funding between policy areas in the countries that acceded to the EU in 2004 and 2007 is very different from that in the EU-15, even in the less developed regions (Table 6.7). These countries have allocated a much larger share of funding to infrastructure and the environment (in practice, mostly environmental infrastructure), especially in the period 2004–2006, reflecting the very low levels in terms of quality as much as amount, and, consequently, their far greater need for investment to comply with EU Directives (see below).

As a consequence, the share of funding allocated to business support (26% in 2007–2013) and human capital (13%) was substantially lower than in the EU-15, though there was some shift from infrastructure

to business support in the 2007–2013 period (from 14%).

## 6. The impact of the crisis on the 2007–2013 period

The economic and financial crisis hit the operational programmes planned for the 2007–2013 programming period early on. Although EU regional policy is designed as a long-term structural policy, action was required to adapt to a widely different economic context and to respond to unexpected challenges.

At the operational level, a number of programmes experienced a mismatch between the funding allocated and the demand for it or a radically different local context. For instance, a decline in demand for support was registered in certain policy areas and an increase in others. In many programmes, there were problems finding the necessary national or regional co-financing and coping with exchange rate variations (in Poland and the UK especially), though there were also reductions in construction costs which reduced the cost of some projects (such as in Bulgaria and Poland).

A number of innovative measures, both regulatory and at the programme level, were implemented to accelerate the disbursement of the Structural Funds and to make them more flexible and responsive, especially in the most vulnerable Member States. The Commission provided support to Member States on

### Financial instruments in 2007–2013

Financial instruments (FIs), in the sense of revolving or recyclable funding to complement non-refundable grants, have been part of Cohesion Policy since the 1994–1999 programming period and have expanded in terms of variety, scope and amount since then. The flexibility which they involve in providing support to Member States and regions has been especially important in the uncertain economic circumstances of the past few years.

FIs have to conform to the logic and legal framework of Cohesion Policy, including shared management and the principle of subsidiarity. Policy intervention occurs mostly in regions where there are obstacles to development in the form of low administrative capacity, a shortage of entrepreneurs, underdeveloped financial markets and so on. FIs can help to tackle these obstacles by:

- providing a range of forms of financial support, including equity, loans, guarantees and micro-finance to enterprises (primarily SMEs) as well as for urban development and energy efficiency or renewable energy projects;
- enabling public resources to be used more efficiently by drawing on commercial practices and expertise and by attracting private capital, in part by absorbing some of the risks of investment;
- enabling the same funds to be used several times over so increasing their effects, which is particularly important in times of budget constraints;
- giving an incentive to recipients to use the funding efficiently in order to be able to pay it back.

As the use of FIs has increased during the 2007–2013 period, there has been a growing need to learn from experience and adjust the legal framework, harmonise the rules and offer more detailed guidance on their de-

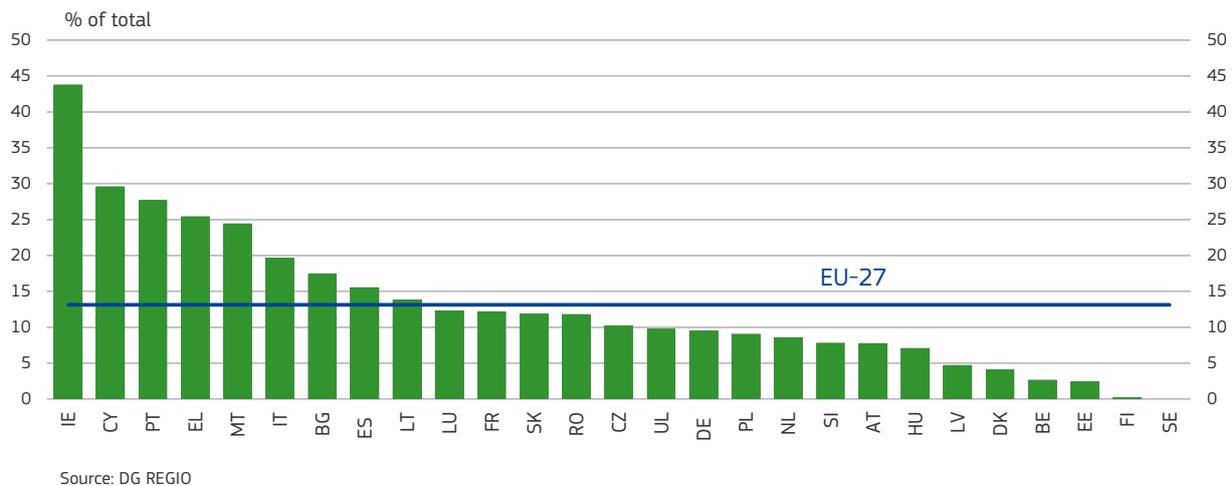
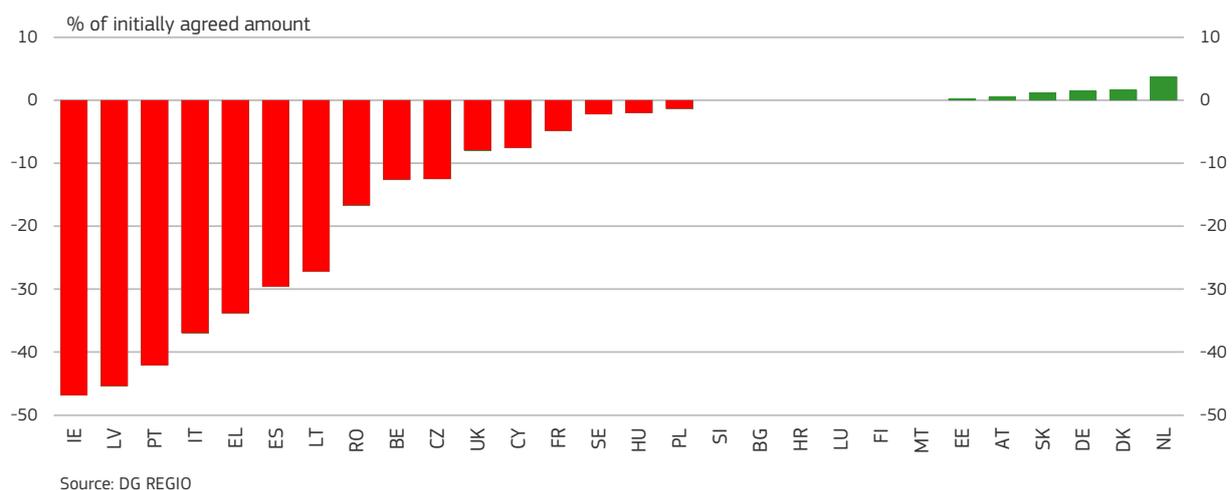
ployment. Audits carried out by the Commission, Court of Auditor reports and studies and observations by the European Parliament and the institutions involved in the management of FIs have pointed to the challenges that need to be tackled before FIs can fully affect the pursuit of Cohesion Policy objectives. Since the 2007–2013 legislation came into force, the Commission has taken several steps (by amending the regulations, issuing guidance notes, carrying out evaluations and offering technical assistance) to strengthen and clarify the rules on FIs.

According to the latest data reported by Member States, around 5% of ERDF allocations for 2007–2013 had been committed to more than 900 FIs in 175 OPs in 25 Member States (all except Ireland and Luxembourg) by the end of 2012. Support from the ERDF and, to a minor extent, the ESF, amounted to EUR 8.4 billion, most of it going to enterprises. Over 144,000 separate instances of investment projects in businesses had occurred and over 40,000 gross jobs were reported to have been directly created through FIs.

Some EUR 744 million of the Structural Funds has also gone to co-finance FIs providing funding for urban development and energy efficiency and renewable energy projects in 19 Member States. Recent data indicate that on average each EUR 100 of the Structural Funds going into FIs have led to EUR 150 of national public and private co-financing. This rate should increase over time as the funds are recycled. Data also indicate, however, that almost EUR 8 billion of OP funding remained in FIs and had still to reach final recipients at the end of 2012. In a number of Member States, efforts, therefore, need to be stepped up to ensure that this funding reaches final recipients by the end of 2015 (i.e. the date by which funding for the 2007–2013 period has to be spent).

reprogramming, including in the form of Task Forces (e.g. to help Greece implement the EU-IMF adjustment programme and speed up its absorption of EU funding). In February 2012, action teams were set up in 8 Member States (Ireland, Italy, Latvia, Lithuania, Portugal, Slovakia and Spain as well as Greece), with representatives of national authorities and Commission officials.

Almost 13% of the total funds (EUR 45 billion) has been shifted from one policy area to another since 2009 to meet the most pressing needs and to strengthen particular interventions which had shown themselves to be effective (Figure 6.11). The main increases in funding were for R&D and innovation, generic business support, sustainable energy, roads and the labour market, in particular measures to increase youth employment. The main reductions were

**Figure 6.11 EU funding reallocated between policy areas, end-2013****Figure 6.12 Reduction in national co-financing for the 2007-2013 period up to end-2013**

on ICT services, environmental investment, railways, training, education and capacity building.

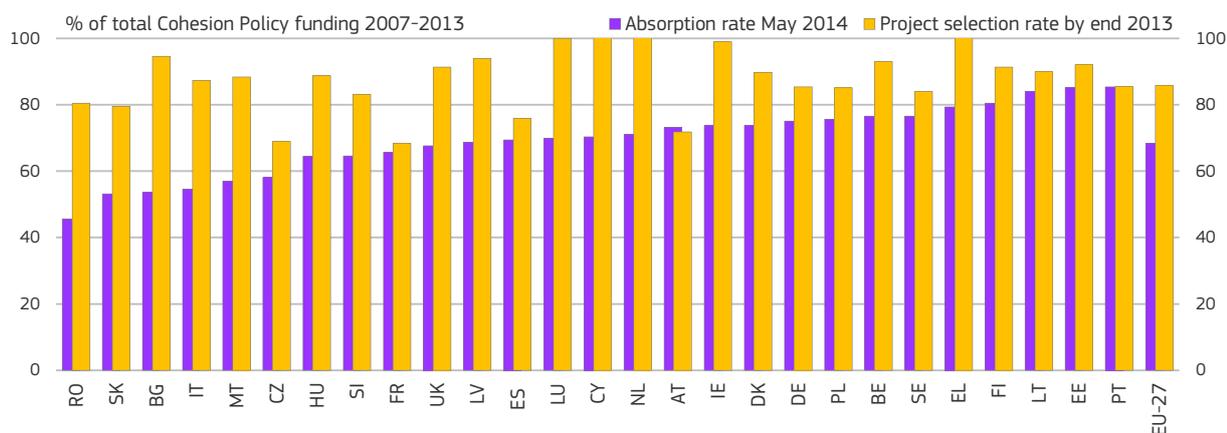
By 2013, about EUR 17 billion of EU financing had been targeted for accelerated delivery or reallocation, which might help around 1 million more young people and 55,000 SMEs.

The Commission has encouraged simplification or rationalisation of national and regional procedures to ensure faster implementation of programmes by paying advances to public authorities and increasing those to enterprises under state aid schemes (in 10

Member States). In order to improve the cash flow of managing authorities, the Commission has provided additional advance payments of EUR 7 billion<sup>12</sup>.

In addition, national co-financing rates have been reduced for a number of Member States, especially those most affected by the crisis, to take pressure off national budgets (Figure 6.12). This has reduced the national public spending requirement significantly from EU 143 billion to EUR 118 billion, i.e. a reduction of 18%, which has cut the overall amount of

<sup>12</sup> This amount includes the additional pre-financing introduced by Council Regulation (EC) No. 284/2009 as well as another EUR 775 million provided by amending regulation (EU) No 539/2010, which was also intended to improve liquidity for Member States.

**Figure 6.13 Absorption of funding and project selection by Member State for the 2007-2013 programming period**

Source: SFC

public investment carried out but which has helped to secure the completion of projects already planned and to improve cash flow in the countries concerned.

The EU has also approved further reductions in national co-financing by temporarily increasing EU co-financing rates by 10 percentage points for Member States with the greatest budget difficulties (the so-called 'top-up' for countries with adjustment programmes). The 'top-up' provision has enabled payments to be made to these countries at an earlier time than originally anticipated, so easing the pressure on national budgets and providing much-needed liquidity. By the end of 2013, almost EUR 2.1 billion had been paid as 'top up'.

Major results are still expected from the 2007-2013 Cohesion Policy programmes over the next 18 months. By end-2012, the projects selected were reported to account for around EUR 292 billion, or 84% of available EU funding. In some Member States, however, there are serious delays in both project selection and initiation, especially in areas such as RTDI, railways, ICT and broadband, energy and capacity building, where authorities have less experience or projects are relatively complex to carry out.

Recent payments data underline the need for efforts to complete the 2007-2013 programmes to be stepped up. By May 2014, EUR 108 billion, or 32% of total funding available for the period, was still left to

be paid by the Commission to Member States. Lower payment rates were registered for Romania, Slovakia, Bulgaria, Italy and Malta (Figure 6.13). While there is an inevitable delay between expenditure taking place on the ground, it being declared to the Commission and payment being made, there is a growing risk that some Member States and regions will lose a large amount of funding because of not being able to complete programmes by the end of 2015. There is a serious possibility, therefore, that they will fail to achieve their intended policy aims unless things speed up markedly.

## 6.1 ESF and the reaction to the crisis<sup>13</sup>

The role of the ESF in response to the crisis varied across the EU according to the way labour markets were affected, the support already in place and the specific measures implemented in the different countries.

### Labour market developments

The impact of the crisis on employment differed significantly between Member States, reflecting the way different sectors were affected by the crisis as well as the policy responses to it. Over 5 million jobs were lost in the EU-27 between the third quarters of

<sup>13</sup> Metis GmbH and wiiw (2012).

2008 and 2009, though these were unevenly spread across Member States. After 2009, developments in countries continued to diverge, with some experiencing economic growth and others further decline. As employment has fallen less than GDP over the crisis period in a number of countries, the full impact of the economic downturn may still be to come.

### National policy responses and the role of the ESF

When the crisis began, a European Economic Recovery Plan was launched which included recommendations for labour market policy measures in Member States. In most countries, recovery packages were introduced to counter the effects of the recession. A range of active labour market measures were implemented, including short-time working arrangements, temporary wage subsidies, reductions in non-wage labour costs, increased public sector employment and training programmes. The last accounted for around a third of the increased expenditure, while a quarter went on employment initiatives and smaller amounts on direct job creation and business start-ups.

The ESF provided support to training, in particular, giving the opportunity of those on short-time working arrangements to upgrade their skills at the same time. It also co-financed measures to create or maintain employment, such as apprenticeship schemes and recruitment incentives.

Some shifts in the allocation of funding occurred in Member States over the period in response to the crisis, partly to assist sectors that were badly affected (such as construction and parts of manufacturing). Indeed, one effect of the crisis has been to raise awareness of the consequences of a severe economic downturn for employment in major sectors of the economy as well as for particularly vulnerable social groups.

## 7. Conclusion

The above represents an overview of how the goals of Cohesion Policy have evolved over time and how

they have become more closely linked to the overall strategy of the EU. This has had clear repercussions on the types of action supported by Cohesion Policy with an increasing share going to environmental projects and more funding being linked to the Lisbon, Gothenburg and the Europe 2020 strategies.

The geography of Cohesion Policy has been simplified since 2007 to ensure that it can cover all regions while increasing the efficiency of implementation.

Successive enlargements have changed the challenges which Cohesion Policy is aimed at tackling and increased the difficulty of overcoming them. Not only have they led to regions with low levels of development being added to the EU, but they have increased its territorial diversity.

With the introduction of territorial cohesion as an explicit objective in the Lisbon Treaty, Cohesion Policy has placed a stronger emphasis on sustainability and access to basic services, on the need to take account of functional geography and on the importance of territorial analysis. This is mirrored in the increased focus on sustainable growth in Europe 2020 and in the recognition of the importance of moving beyond GDP when assessing territorial development. ESPON has responded to the need for more territorial analysis with support for applied research targeted on relevant issues.

The debate on how to measure progress and how Cohesion Policy should respond to this is still ongoing. The outcomes of this debate are likely to influence the shape of Cohesion Policy after 2020 as well as perhaps how policy is implemented in the current period.



# ▶▶ Chapter 7: Impact of Cohesion Policy

## 1. Introduction

A number of sources provide information on the effect of Cohesion Policy on the objectives of the programmes which it co-finances. These give an indication of the extent to which Cohesion Policy is successful in achieving these objectives as well as the broader policy goals of strengthening the capacity of national and regional economies for sustainable development and furthering economic, social and territorial cohesion.

In the first place, there is quantitative information on the direct outcomes of the projects and measures supported from the physical indicators which are monitored by Managing Authorities responsible for the programmes. The indicators are usually in the form either of the output produced (such as the number of new businesses helped to start up, the length of road or railway constructed or the number of people trained) or the results which they have given rise to (such as the time or travel costs saved as a consequence of a new city ring-road being opened, the number of people connected to main drainage and an effective system for treating wastewater or the number of people trained who succeed in getting jobs).

Secondly, there is the evidence from evaluations of particular programmes or interventions in particular policy areas (such as support for enterprise development or RTDI) which are aimed at assessing the effectiveness of the funding provided in achieving both the immediate objective of the measure (such as increasing the investment of the companies supported or their expenditure on R&D) and the wider aim of strengthening the development potential of the places concerned (such as through increasing the competitiveness of the businesses located there or the skills of the work force).

Thirdly, there is the evidence from macroeconomic models which attempt to capture the way that economies function in order to estimate the effect of Cohesion Policy, and the programmes it supports, on the main economic variables, in particular, on GDP, employment and trade performance. This they do essentially by simulating the way the economy would have developed (or is likely to develop in the future) in the absence of Cohesion Policy which can then be compared with the way that it actually developed (or is projected to develop). To do so requires incorporating in the model the evidence from evaluations and other studies on both the immediate and wider effects of policy interventions on company investment, RTDI, the skills and productivity of the labour force as well as of businesses, the reduction in transport costs from the new roads, railways and other infrastructure built and so on.

Last but not least, there are smaller independent research studies which mostly use econometric techniques to assess the overall effects of Cohesion Policy on regional developments.

All four sources are important for assessing the overall impact of Cohesion Policy on its objectives. The sections below summarise the available evidence in these four areas. The focus is on the last programming period, 2007–2013, though evidence is also referred to from earlier years, not least because the 2007–2013 period does not formally finish until the end of 2015 and programmes are still underway. More fundamentally, many of the projects supported are long-term ones intended to affect the structure of economies, to change the way that businesses operate and individuals behave and perform and to strengthen the capacity to sustain growth. Accordingly, the observable effects in terms of an improvement in economic performance will materialise only after a number of years and the data to detect them will come available even later.

## 2. The results of programmes in 2007–2013

This section provides an overview of the results reported by Cohesion Policy programmes in their annual implementation reports. The first section covers the ERDF and Cohesion Fund, the second the ESF.

### 2.1 The European Regional Development Fund and Cohesion Fund

As noted above, the programmes co-financed under Cohesion Policy in the 2007–2013 period are still underway and many projects are still to be completed. Nevertheless, it is possible to identify the outcomes up to the end of 2012 (the 6th year of the period and the latest date for which data are available) from the support provided by the ERDF and Cohesion Fund on the basis of the physical indicators of the output and results of the expenditure undertaken which are maintained by Managing Authorities. The data that they have reported is summarised below, focusing on the core indicators which are intended to be comparable across programmes so that the data can be aggregated both at the national and EU level.

#### Gross jobs directly created

The data reported on programmes indicate that up to the end of 2012, when in most countries half or less of the funding available for the period had been spent, some 593,954 jobs had been directly created across the EU by ERDF co-financed interventions. This represents 43% of the target set at the beginning of the period, suggesting that by the end of 2015 there might be close to 1.4 million new jobs as a direct result of ERDF support. Many of these jobs were created — some 320,000 overall — in the less developed (Convergence) regions where there is a particular need for employment, and where, if the targets are met, the figure could reach 900,000 by the end of 2015.

These figures, it should be emphasised relate to gross jobs — i.e. they do not take account of any

jobs displaced — and essentially refer to the additional number of people employed in the projects supported, or in most cases, in the enterprises receiving support. Many of these jobs might well have been created in the absence of support, in the sense that, for example, companies might have gone ahead with their investment plans even if they had not received public funding, though perhaps on a smaller scale with a smaller work force. Nevertheless, a substantial number of the additional jobs almost certainly would not have been created without EU support. The evaluation evidence summarised below indicates that this is the case. Moreover, the figures do not include jobs indirectly created as a result of the projects undertaken and the improvements in competitiveness which they give rise to, which, as the macroeconomic models show, are likely to materialise in the longer-run.

#### Examples of enterprise support schemes

**Greece:** Funding was provided to around 1,300 SMEs under the JEREMIE financial instrument scheme, mainly in the form of loans, so helping them to overcome the tight borrowing limits imposed by the financial market.

**Portugal:** Up to mid-2013, some 9,458 companies had been supported by business aid schemes co-financed by the ERDF and 952 new businesses had received financial help to start up, 448 of them in high-tech or knowledge intensive sectors.

**Belgium:** Financial instruments, in the form of risk capital, loan-guarantees, micro credits and ‘mixed products’, which were co-financed by the ERDF, helped 571 new businesses to start up and 671 firms to expand up to the end of 2012, over 10 times the number assisted by investment grants.

**Bulgaria:** Under the JEREMIE scheme, some 1,388 SMEs had received low-interest loans by the end of 2012, helping to them to overcome the squeeze on credit in the financial market.

**Malta:** The First Loan Portfolio Guarantee scheme, co-financed by the ERDF, had provided funding to 533 SMEs by mid-2013, so alleviating their difficulties of borrowing on the financial market.

## Enterprise support

A large number of the jobs created were in SMEs which received a major proportion of the support provided, in the main to improve their efficiency through helping them to invest in new machinery and equipment or to develop new products. In total across the EU, some 200,000 projects to support investment in SMEs were undertaken up to the end of 2012. In addition, almost 78,000 new firms across the EU were helped to start up by the financial assistance received from the ERDF as well as by the advice and guidance provided by business support centres also funded by the ERDF (see Box for specific examples of the measures supported).

An increasing amount of the support provided was in the form of financial (engineering) instruments, such as loans, interest-rate subsidies or venture capital, which have the advantage of helping firms overcome constraints on borrowing while being repayable (and perhaps even yielding a rate of return), so potentially enabling the funding going into them to be used

multiple times. Because they are repayable, they also give the companies receiving support an added incentive to ensure that the investment concerned is successful.

## Support for RTDI

Over 21,600 projects were co-financed up to the end of 2012 to support cooperation between research centres and businesses aimed at ensuring that the R&D undertaken in the former has the best chance of being transformed into new, or improved, products and processes which can enable enterprises to maintain or expand their market share in both the regional and wider market-place.

At the same time, support was provided to some 61,200 RTDI projects, which, together with support for other measures, led to 21,000 research jobs being created, around half of them in less developed regions.

## ICT infrastructure

The ERDF was also used in many parts of the EU to support the use of ICT by SMEs, the introduction digital means of accessing public services and investment in broadband to improve access to the internet, or in some cases to provide access where

### Examples of RTDI projects supported

**Spain:** 5,839 large projects were co-financed up to the end of 2012 to support the R&D carried out in the public sector, these representing a significant proportion of the projects initiated under the National RTDI Plan.

**France:** The ERDF provided support to the 71 '*Pôles de compétitivité*' which were set up to bring together clusters of businesses, research laboratories and universities, each specialising in a particular broad sector of activity. According to an evaluation in 2012, they had been responsible up to then for over 2,500 innovations since they were established.

**Czech Republic:** The ERDF co-financed 53 new Centres for Technology Transfer, Centres of Excellence and Science and Technology Parks.

**Slovenia:** The ERDF co-financed 8 Centres of Excellence, 7 Competence Centres and 17 Economic Development Centres up to the end of 2012.

**Romania:** 253 R&D centres were either newly built or modernised with the aid of EU funding.

### Examples of ICT projects supported

**Greece:** Almost 730,000 additional people were given access to broadband as a result of ERDF financing, most of them in the Macedonia and Thrace region, which is one of the least developed in the country, so helping to narrow the digital divide.

**Spain:** Major support from the ERDF was given to computerisation in public administration, education, healthcare and legal services as well as to the spread of ICT in SMEs.

**Romania:** Projects supported by the ERDF resulted in over 560,000 people using e-Government, e-Health and e-Learning online systems by the end of 2012.

none existed before. Up to the end of 2012, this investment had led to over 5 million additional people gaining access to broadband, around half of them in less developed regions, so reducing the digital divide which is still relatively wide in a number of countries, especially in the EU-12 and southern EU-15 Member States.

### Examples of transport projects supported

**Portugal:** The roads constructed as a result of ERDF and Cohesion Fund support include the last section of the inner ring-road around Lisbon, which carries an average of 50,000 vehicles a day and which has reduced the traffic on the main roads in the capital by 40%, so improving the urban environment.

**Bulgaria:** EU funding co-financed the construction of the second Metro line in Sofia together with 13 new stations, two on the first line and 11 on the second line. The line has relieved traffic congestion in the city and made it easier to move around it.

**Estonia:** Improvements in the rail network co-financed by the EU led to a 31% reduction in travel time up to the end of 2012; the aim is to reduce it further, by 45% overall by the end of 2015.

**Hungary:** EU funding co-financed a section of the M0 motorway around Budapest helping to reduce congestion in the city, while improvements in the rail network led to a 47 minute reduction in the average duration of journeys on TEN-T lines.

**Poland:** EU funding helped to redevelop and modernise Wroclaw airport with the construction of a new terminal fitted with modern facilities, including an automated luggage control system.

**Romania:** Some 124 km of new motorway was constructed with EU support up to the end of 2012 and an additional 387 km are expected to be completed by the end of 2015. When finished, a motorway will link the Black Sea Coast and major cities across the country, including Bucharest, Sibiu and Arad, with Hungary and the main cities in Central Europe.

## Transport

Nearly 2,550 km of new roads were constructed by projects co-financed by the ERDF and Cohesion Fund up to the end of 2012, almost all of them in less developed regions in the EU-12 where the road network is most in need of improvement after many decades of neglect. Some 1,200 km of these consisted of motorways which are part of the TEN-T system. In addition, around 17,000 km of existing roads were improved — either widened or turned into dual carriageways, for example — again mostly in the less developed regions, where in many cases, especially in the EU-12, the state of the roads and the limited number of motorways and by-passes around cities lead to heavy congestion and slow journey times. Both forms of investment have led to significant time-savings in many cases as well as improving links between centres of population and economic activity both within countries and between them. The new roads constructed have also in a number of cases taken traffic away from city centres and so reduced pollution as well as congestion and improved the quality of life there.

While relatively few new railway lines were constructed over the period up to the end of 2012, there were significant improvements made to existing lines, through electrification, the installation of modern signalling, conversion of single to dual track and so on. In total up to the end of 2012, 2,369 km of railway lines are reported to have been improved, once more mainly in less developed regions. In addition, through both the construction of new lines and upgrading existing ones, almost 1,500 km was added to the TEN-T rail network, in this case mainly in EU-15 Convergence regions. A number of public transport projects in cities were also supported over the period, perhaps most notably the Sofia metro system in the Bulgarian capital which has led to a significant reduction of congestion in the city.

A large number of other projects designed to improve the transport system, and in some cases, to reduce the damaging effects on the environment, were carried out across the EU up to the end of 2012, in respect, in particular, of urban transport, ports and airports, though their diverse nature makes it diffi-

### Improving the quality of major project applications

JASPERS (Joint Assistance to Support Projects in European Regions) has made an important contribution to improving the quality of Major Project applications in the EU-12 by helping the Member States concerned prepare projects properly, in a way which demonstrates that the expected benefits outweigh the costs.

The European Investment Bank (EIB) is the largest single co-financer of EU-funded programmes and is actively engaged in administrative capacity building initiatives in a number of countries, including Greece, Bulgaria and Romania.

Special Task Forces were set up in the previous programming period combining Member States, International Financial Institutions, the Commission and other experts to act as a 'fire brigade' for programmes with urgent problems (such as in the southern Italian regions, Bulgaria and Romania). Funds earmarked for technical assistance were used to finance reviews of particular policy areas as well as action for specific projects led by the EIB, the World Bank and the European Bank for Reconstruction and Development. In Romania, a special initiative was launched to improve public procurement procedures, involving DG Regional Policy, DG Internal Market and JASPERS.

### Examples of environmental infrastructure projects supported

**Portugal:** Some 239 wastewater treatment plants were constructed up to the end of 2012 with the support of EU funding together with around 1,425 km of main drainage pipelines, serving around 820,000 people, and 640 km of mains water supply, bringing improved drinking water to over 273,000 people.

**Italy:** Projects co-financed by the ERDF resulted in over 1 million people being connected to improved wastewater treatment facilities, around 13% of the total population in Convergence regions and nearly 40% of that in Sicily and Basilicata where most of the investment was carried out.

**Malta:** The South Sewage Treatment Plant built with the aid of EU funding, which is capable of treating 80% of the sewage generated on the island, led to the status of coastal waters in the south of the country being raised from Class 3 to Class 1 and to Malta becoming the first Mediterranean country to treat all wastewater before it is discharged into the sea.

**Slovakia:** EU funding co-financed the construction or modernisation of 89 differentiated waste collection facilities, increasing the amount of waste recovered by 15,699 tons a year.

cult to aggregate the outcomes (see Box for a few examples).

### Environmental infrastructure

Up to the end of 2012, around 3.3 million people across the EU were provided with an improved supply of drinking water as a result co-financed projects. These were for the most part in less developed regions (2.7 million of the total), especially in Convergence regions in Spain (where 1.7 million people were connected to an improved supply).

In addition, some 5.5 million people were connected to improved wastewater treatment facilities, mainly through installing main drainage and sewage treatment plants, so helping to protect the environment

and strengthening the prospects for sustainable development. These again were mainly in less developed regions in the EU-15, in Spain (where 2.2 million people were connected) and Italy (1.1 million), in particular.

Some 2,126 projects were carried out, with the support of EU funding, to recycle both municipal and industrial waste, to increase waste storage facilities and landfill capacity and to close sub-standard sites, almost all of them in Convergence regions and many in the EU-12.

Projects to implement flood prevention measures co-financed by the ERDF resulted in increased protection for around 4.2 million people across the EU in both Convergence and Competitiveness regions.

### Examples of energy projects supported

**Austria:** Projects supported led to generating capacity in 55 plants using biofuels being increased by 89 MW or by 20%, resulting in a potential reduction in greenhouse gas emissions equivalent to the CO<sub>2</sub> produced by around 33,000 cars.

**Lithuania:** 706 public buildings had been renovated and their energy efficiency increased by the end of 2012.

**Latvia:** A great deal of social housing was renovated with a view to improving energy efficiency; overall, an average reduction in heating costs of over 45% was achieved as a result of the work carried out.

### Renewable energy and increased energy efficiency

A large number of projects (some 29,358 in total) were carried out with ERDF support to increase electricity generating capacity from renewables. Over 80% of these were in less developed regions, though more in the EU-15 than in the EU-12. Altogether they resulted in generating capacity being expanded by 2,431 MW, contributing significantly to the EU-wide target of increasing the energy produced from renewables to 20% by 2020.

In addition, a great many of projects were carried out to increase the energy efficiency of apartment blocks and public buildings especially in the EU-12 countries where both types of building are heavy consumers of energy, partly because of the construction methods used and the decades of neglect during the previous regime.

### Tourism, cultural activities, social infrastructure, land reclamation and urban renewal

Projects carried out in other policy areas, in addition to those considered above, cover a range of different types, including those supporting the development and expansion of tourism, local amenities, the cleaning up of contaminated land, especially old industrial

sites, the renovation of buildings and urban areas, the construction and modernisation of hospitals, health centres, schools, community centres and other social infrastructure. While the projects are often small in scale, they can have a significant effect in improving the quality of life in local communities as well as contributing to the development of economic activities.

Because of their nature, however, the outcome of the investment carried out is in many cases difficult to capture through physical indicators — such as an improvement in the urban environment or in local amenities or the safe-guarding of cultural traditions or historical monuments, which are important to preserve for future generations as well as present ones (though they also might have the potential to attract tourists). Most of the physical indicators used in practice relate to the number of projects carried out, which, in themselves, of course, convey little about the output or the results of the expenditure concerned.

The main outcomes up to the end of 2012, insofar as they can be identified and aggregated across countries, include:

- Over 8,600 projects co-financed by the ERDF carried out across the EU to support tourism, most of them (around 75%) in Convergence regions in the EU-12, which directly created a reported 11,928 jobs in total.
- The reclamation of some 576 square km of polluted land, most of it in Convergence regions and around two-thirds in Hungary, Spain and Italy.
- The co-financing of around 3,800 projects across the EU to expand or to improve healthcare facilities, most of them in Convergence regions.
- The support of some 19,043 projects for investing in education facilities, to build new schools or colleges or to modernise and re-equip existing ones, which were almost entirely in Convergence regions, mainly in the EU-15.

### Examples of tourist, cultural, social and educational infrastructure and urban projects supported

**Italy:** The ERDF co-financed the upgrading of ICT and science facilities in 80% of all primary and secondary schools in Convergence regions in the south of the country.

**Portugal:** Under the Schools Modernisation Programme, co-financed by the ERDF, some 867 schools and facilities in schools were either newly built or expanded or renovated.

**France:** A branch of the Louvre museum was opened in Lens, in the Nord-Pas-de-Calais, with ERDF support.

**Austria:** The ERDF helped to finance the regeneration of around 28,500 square metres of public space in Vienna.

**Hungary:** Some 136 nurseries and primary and secondary schools housing over 12,000 children were renovated with ERDF support.

**Romania:** The ERDF co-financed the renovation of much of Alba Iulia in Transylvania, including the citadel, making the city one of the most attractive tourist centres in the region. As a result, the citadel museum recorded an increase in the number of visitors from 21,900 in 2010 to over 45,000 in the first 9 months of 2013 alone.

**Slovenia:** Some 146 projects were carried out to improve tourist facilities, including the renovation of 20 cultural heritage sites. Although there is not necessarily a causal link, the number of overnight stays increased from 7.6 million in 2007 to 9.5 million in 2012 and over 457,000 people visited the renovated sites.

**Slovakia:** The ERDF co-financed the expansion and modernisation of healthcare facilities, the number of hospital beds being increased by 2,022 and 664,541 patients being treated in modernised facilities.

States in the 2007–2013 period, ranging from 2% in high income countries to over 100% in low income, ‘Convergence’ ones.

ESF supported at least 19.6 million ‘participations’ (i.e. cases of participation in programmes) aimed at enhancing people’s access to employment up to the end of 2012<sup>1</sup>, around 3.3 million of whom found a job soon afterwards. In most Member States, the proportions finding a job and those still in it after 6 or 12 months have been close to the targets set<sup>2</sup>. In addition, over 497,000 cases of people attaining qualifications were reported, while nearly 42,000 people moved into self-employment.

Support was also provided to help people into employment, especially people with disabilities and other disadvantaged groups. The crisis made it more difficult in many countries for people to find jobs and remain in them and some programmes were modified as a result.

Up to the end of 2012, over 20 million young people under 25 received support, nearly 30% of the total, though in southern Member States, the proportion was smaller despite large numbers of young people not being in employment, education or training, reflecting the even larger numbers of those aged 25 and over being out of work.

Evaluations<sup>3</sup> in 5 Member States (Austria, the Czech Republic, France, Italy and Portugal) indicate that Cohesion Policy programmes strengthened their focus on young people after the crisis hit. All five gave priority to helping those at risk of leaving school early or who had already dropped out of school and four of them (all except Portugal), to young people not in education, employment or training (what are known as NEETs).

From 2009 on, more resources were used to support self-employment and business start-ups and to develop intermediate labour markets, which provide

## 2.2 The European Social Fund

### Access to employment

ESF support was equivalent to around 20% of total Active Labour Market Policy expenditure in Member

1 ESF Expert Evaluation Network (2014).

2 Although some experts argue that targets were not particularly ambitious, this needs to be balanced against the serious deterioration in the labour market situation in relation to when the targets were set.

3 ESF Expert Evaluation Network (2013).

### Youth Action Teams

In 2012, the Commission established joint Youth Employment Action Teams in the 8 Member States with the highest levels of youth unemployment. Cohesion Policy funding for the 2007–2013 period, which remained unallocated, was used to increase job opportunities for young people and to facilitate the access of SMEs to finance. Over one million young people are expected to be helped from the EUR 4.2 billion allocated (EUR 1.4 billion of which has already been committed to projects).

long-term economically inactive with work placements, training and qualifications.

### Social inclusion policies

Social inclusion was a more important objective in the 2007–2013 period than previously. The ESF gave support to measures providing ‘pathways to integration’ and the re-entry of disadvantaged groups into the labour market<sup>4</sup>.

Up to the end of 2012, EUR 12.9 billion was invested in social inclusion measures and a further EUR 10.3 billion had been committed to these<sup>5</sup>. Results are available for only a few Member States, but available figures indicate that the number finding employment has been substantial, with over 164,000 reported (though the vast majority of these are in Spain). The number gaining a qualification is also substantial, with nearly 148,000 cases of people gaining qualifications being reported.

Support was also targeted on combating poverty among the most vulnerable groups, such as migrants, ethnic minorities and single mothers, as well as helping in the fight against discrimination<sup>6</sup>. This included assisting the groups concerned to find work, campaigns among the general public to discourage discrimination, diversity seminars for employers and

human resource managers and the training of employment agency staff.

In some countries, more than half of funding went to supporting women, such as in Poland (56.5%), though in others, the proportion was much less than half (only 39.5% in the UK). At the extreme, in Spain, it is reported that up to the end of 2011, nearly 888,000 women secured a job after leaving co-financed programmes or 62% of those participating.

Compared to the 2000–2006 period, more funding, EUR 1 billion overall, was allocated to helping migrants and minorities<sup>7</sup> to find work and another EUR 5 billion to other measures targeted at them. In addition, EUR10 billion was allocated to general measures for disadvantaged groups, including migrants and minorities. Up to the end of 2012, around 6.4 million people in the two groups had participated in ESF funded programmes.

### Support to enhancing human capital

There were almost 25.9 million participations in ESF-funded measures to increase human capital up to the end of 2012.

In 13 Member States, ESF provided support for the modernisation of education and training<sup>8</sup>, over EUR 8 billion being allocated to the design, introduction and implementation of reforms. Overall, around 10% of total funding (EUR 35 billion) was allocated to education and training, while up to the end of 2010, an estimated 5 million young people, 5.5 million people with low skills, and 576,000 older people participated in co-financed lifelong learning activities<sup>9</sup>. While these figures cannot be added together because of double counting, they give indication of the scale of the numbers involved.

Although the figures vary according to the characteristics of participants and the labour market situation in the country, it is estimated that, on average,

4 ESF Expert Evaluation Network (2012).

5 This includes several reporting categories under the ESF relating to social inclusion.

6 GHK and Fondazione G. Brodolini (2014).

7 CSES (2011).

8 *Ibid.*

9 Ecorys (2012).

20–35% of participants have entered employment directly after ESF financed training.

Reflecting the focus in some Member States on young people, over 696,000 participants progressed into further education or training on leaving co-financed programmes and over 262,000 cases of people acquiring qualifications were reported. In addition, almost 236,000 participants secured employment and over 60,000 participants moved into self-employment.

### Improving institutional capacity

For the period 2007–2013, the Community Strategic Guidelines and the ESF regulation<sup>10</sup> identified good governance and capacity building as key issues that needed to be addressed, especially in less developed regions and Member States. As a result, EUR 3.7 billion of ESF funding was devoted to strengthening institutional capacity and the efficiency of public administrations and public services at national, regional and local level and where relevant, of the social partners and non-governmental organisations, with a view to reforms, better regulation and good governance. This support was organised under two headings<sup>11</sup>:

- Mechanisms for improving policy and programme design, monitoring and evaluation at national regional and local level.
- Capacity building in the delivery of policies and programmes, including as regards the enforcement of legislation.

Four Member States (Bulgaria, Romania, Hungary and Greece) set up a dedicated administrative capacity building programme, while 9 others (the Czech Republic, the three Baltic States, Poland, Slovenia, Slovakia, Malta and the UK — in Wales) included it as a priority in one of their programmes, mainly in regional programmes. Others, like Italy, combined

the two approaches with a dedicated national programme and priority axis in regional ones.

For example, the Bulgarian programme for administrative capacity includes EUR 157 million of Cohesion Policy support aimed at improving the implementation of policies and the quality of services provided to people and businesses. It is also aimed at enhancing the professionalism, transparency and accountability of the judiciary and improving human resource management and the qualifications of employees in state administration, the judiciary and civil society organisations.

The programmes are focussed on issues relating to the structure of administrations, their human resources and the systems and tools they use. Several success factors for effective administrative capacity building have been identified through detailed studies<sup>12</sup>:

- the involvement of civil society;
- a clear methodological and technical approach;
- political commitment;
- clear definition of responsibilities;
- exchange of examples of good practice at EU level;
- the use of sound monitoring and evaluation methods.

## 3. Evaluation Evidence on the impact of Cohesion Policy

### 3.1 The state of play and the challenges involved for ERDF and Cohesion Fund co-financed programmes

The figures set out above provide an indication of the scale of activity supported by Cohesion Policy and of the kinds of projects and measures co-financed. They also in some cases indicate the outcome of the expenditure incurred and the results that the interventions concerned have led to. But in themselves they do not reveal what Cohesion Policy has achieved in terms of added-value or the difference it has made to the development of regional or national economies,

<sup>10</sup> Article 3.2(b), Regulation (EC) No. 1081/2006 on *European Social Fund*.

<sup>11</sup> European Commission (2013), *Cohesion Policy: Strategic Report 2013*.

<sup>12</sup> Ecorys (2012).

### EU value added through networking and the dissemination of good practice

The EU provides support for mutual learning programmes in order to disseminate examples of good practice in public administration reform and to stimulate creative thinking on devising effective solutions to common problems across the EU.

The **European Public Administration Network** (EUPAN<sup>1</sup>) is an informal network of the Directors General responsible for Public Administration in the Member States, the European Commission and observer countries. Its mission is to improve the performance and quality of European public authorities by developing new methods based on exchange of views, experience and examples of good practice among participants.

The Commission supports a **Community of Practice on Results-Based Management**<sup>2</sup> for policy-makers and programme managers involved in the preparation, management, monitoring and evaluation of ESF programmes. A major output of the network is a source book on results-based management to guide practitioners in developing their systems in this direction.

The European Public Sector Award<sup>3</sup> (EPSA) is aimed at recognising excellence in public authorities in the EU. The award categories have raised awareness of important aspects of public administration, so encouraging governments to modernise their administrative arrangements and practices. EPSA is not only an award but by systematically collecting examples of good practice, it has built a knowledge base of how authorities can be better organised and provide better services. In total, it has compiled and assessed over 800 such examples in the last 6 years.

Under the 7<sup>th</sup> Framework Programme (FP7), the European Prize for Innovation in Public Administration was awarded to the 9 most innovative initiatives in this area, chosen from the 203 submissions received from 22 different countries, which could potentially be applied elsewhere.

1 See EUPAN, <http://www.eupan.eu/>.

2 For more information see the Community of Practice on Results Based Management (COP RBM) website, <http://www.coprbrm.eu/?q=node/1>.

3 See EPSA, <http://epsa2013.eu/>.

to the number of people employed, to the quality of life of people, to a better balance of economic activity and employment across regions or to economic, social and territorial cohesion in general.

This is partly because the figures are in gross terms and some of the outcomes listed might have occurred anyway without the financial support provided. If, for example, the ERDF, or ESF, co-finances 50% of the cost of a particular project or measure, it may be that 50% of the outcome should be attributed to the funding provided, more than this if the project would not have taken place without the funding or less than this if it would have taken place with a lower level of funding or even no public funding at all. In the latter cases, there is, what is termed, a 'deadweight' element involved, in the sense that financial support is being given to a project which would have been undertaken anyway. This element amounts to 100% of funding if the project or measure would have been undertaken on the same scale even in the absence of financial support or something below 100% if it would have been undertaken on a smaller scale.

A further complication is that the project might not have been undertaken without support but some other project of a similar type would have been. For example, giving funding to an enterprise for investment or to support jobs might mean that another enterprise does not invest or create jobs which it otherwise would have done. In this case, the funding provided has a displacement effect which needs to be taken into account when assessing its outcome.

The appropriate figure to take as a measure of the outcome of a project, or programme, and of its contribution to achieving policy objectives can be determined only by careful evaluation of the intervention — or set of interventions — concerned which attempts to disentangle the effect of the financial support given from other factors at work. This is important to do not only in order to identify what the policy measure(s) in question achieved but also in order to assess whether the funding involved was well spent and should continue to be used in the same way in the future or whether the measures concerned should be modified to make them more effective.

For ERDF and Cohesion Fund co-financed programmes over the period 2007–2013, at least 821 evaluations were undertaken in Member States<sup>13</sup>. For the ESF co-financed programmes over the same period 721 evaluations have been carried out in the Member States<sup>14</sup>. These figures are considerably more than in earlier periods. In addition, the evaluations undertaken since 2007 have for the most part been less ‘formal’ in nature, undertaken because of a wish to know more about how funding was being spent rather than simply because there was an obligation under the regulations to do so, and more directed towards building an understanding of how programmes were working. They were also in many cases focused on particular aspects of concern and on parts of programmes or individual measures or project types rather than on programmes as a whole which tend to be difficult to assess, except relatively superficially.

Most of the evaluations were not concerned primarily with the outcome of programmes as such. Many were concerned more with examining the processes and procedures involved in the administration of funding, the selection of projects to support and so on, to check whether the tasks entailed were being carried out efficiently and to identify possible improvements. Many others were concerned largely with the progress made in implementing programmes, with identifying any difficulties encountered in undertaking them and to verify that they were doing what was intended. This includes examining outcomes, though in the main on the basis of monitoring data and the kinds of indicator considered in the previous section rather than trying to distinguish the outcomes which could be attributed to the programme as such.

Only just over 20% of the evaluations of ERDF and Cohesion Fund and 23% of those of the ESF were focused on assessing the results of programmes and their effectiveness in achieving the objectives set when they were introduced. However, a much larger

proportion (around 36%) of ERDF and Cohesion Fund evaluations carried out in 2013 were aimed at doing so. This increase reflects the fact that programmes by then had been running for some time and accordingly there were more results to assess but also the growing interest in Member States with knowing more about the effectiveness of policies. Most of these evaluations were based to a large extent on analysing quantitative data to try to distinguish the effect of the funding provided from other factors influencing the outcome and to estimate the extent of any ‘deadweight’ effects.

Another promising trend is the increasing use of more rigorous techniques, such as counterfactual impact evaluation. This technique is specifically designed to isolate the impact of funding by comparing recipients of support with a ‘control’ group which did not receive support (see Box). Although the number of evaluations using such methods was small over the period as a whole (only around 4% of the total for ERDF and Cohesion Fund programmes and 5% of the total for ESF programmes), it was increasing. The increase is due partly to a series of initiatives taken by DG for Regional and Urban Policy and for Employment, Social Affairs and Inclusion (see Box), as well as an increasing concern among Member States to learn more about how well measures are working and how to improve performance.

The increased importance given to results in the new programming period, as described below, will put increasing pressure on Member States to carry out evaluations of this kind. In addition, the tight constraints on public budgets, which are set to continue for some time to come, already lend paramount importance to maximising the effectiveness of the way that funding is spent. This can only be done by having more evidence about the effectiveness of the measures supported which implies more evaluations of this kind.

The use of counterfactual methods requires an appropriate control group and sufficient data to compare behaviour and performance of this group with those in receipt of funding. This is most likely to be the case for enterprise or innovation support. It is not possible to apply to most investment in infrastruc-

<sup>13</sup> This is the estimate made from the details of evaluations carried out in their countries by the Expert Evaluation Network set up by DG Regional Policy in 2010 to monitor the performance of ERDF and Cohesion Fund programmes over the 2007–2013 period in each of the 27 Member States and to collect information on evaluation activity. Some of the evaluations were financed from funding from the 2000–2006 period (which came to an end only in December 2009). See Expert Evaluation Network (2014).

<sup>14</sup> As identified by the ESF Expert Evaluation Network at the end of 2013.

### Counterfactual evaluations

Counterfactual evaluations of interventions of the kind co-financed under Cohesion Policy essentially use the same approach as for testing new drugs or medical treatments. They involve identifying a control group which has, as near as possible, the same characteristics of the group of enterprises or individuals which receive financial support, support which can then be meaningfully compared in terms of their behaviour or performance (their profitability, for example, or their success in finding a job) with the latter. Counterfactual impact evaluations thus seek to identify net effects or impacts of interventions.

The advantage of such a method is that it increases the reliability and rigour of estimates of impact. Counterfactuals are intended specifically to answer the questions ‘what would have been the situation without the intervention?’ and, more fundamentally ‘does it work?’.

However, applying counterfactuals to Cohesion Policy is not a straightforward process. It requires careful selection of a valid control group, as well as collection of reliable data for both supported and control group entities and there are many cases where it is simply not technically possible to carry out.

Various Commission Services are therefore actively working to make these methods as accessible as possible:

- DG Regional and Urban Policy has launched a series of such evaluations to pilot the method and helped or-

ganise three summer schools to train evaluators and managing authorities, including for the ESF.

- DG Employment, Social Affairs and Inclusion took stock of existing evaluations. On this basis, practical guidance was produced and two calls for proposals for pilot evaluations launched.
- For the new programming period, both DGs have introduced requirements for the collection of relevant data. DG Regional and Urban Policy has introduced a requirement for publishing data on support to enterprises, so that third parties can access them for evaluation purposes. For privacy reasons, DG Employment, Social Affairs and Inclusion is not requiring publication of data on individuals, but has put in place requirements to record and store such data.
- DG Employment, Social Affairs and Inclusion has set up within the Joint Research Center in Ispra, Italy, a Centre for Research on Impact Evaluation (CRIE) to support Member States with methodological advice and training. DG Regional and Urban Policy is setting up a helpdesk to provide targeted advice on selected evaluations.
- DG Competition has drawn on experience in DG Regional and Urban Policy in drawing up evaluation requirements for the new state aids guidelines.

ture, though other quantitative techniques (such as cost-benefit analysis) can be applied, while in other policy areas (such as support for local communities), detailed case studies provide a potential means of assessing the results of interventions. For ESF co-financed programmes, a variety of interventions used within ESF, including training, employment incentives and labour market services (e.g. job counselling, coaching) would appear to be appropriate for a counterfactual evaluation, whereas support for systems and structures seems to be more challenging in terms of adopting a counterfactual approach.

It is equally the case that gaining a full understanding of the effectiveness of different interventions comes not only from applying the appropriate quantitative techniques but also from identifying how they achieve their results, which typically requires

detailed examination on the ground of the mechanisms and processes involved.

### 3.2 Evidence from evaluations of ERDF and Cohesion Fund programmes

The findings of the evaluations carried out over the period 2007–2013 are summarised below in respect of three broad policy areas for which it is possible to draw some general conclusions on the results of the support provided — for enterprises, RTDI and investment in transport.

## Enterprise support

A large number of the evaluations undertaken during the period were concerned with assessing the effects of the financial support given to enterprises in various forms, not least because a major part of the funding from the ERDF was allocated to such measures in Competitiveness regions in particular. The measures concerned are also to a large extent relatively straight-forward to evaluate, so long as the necessary data are available (typically from company registers but also from the companies supported themselves), which unfortunately is not the case in many instances.

A number of the evaluations carried out were based on counterfactual methods, as indicated above, the most satisfactory way of distinguishing the effects of financial support, in the sense of distinguishing the outcome directly attributable to the funding itself. The main findings are:

- in Germany, various evaluations have found that assistance to enterprises contributes to the modernisation of industry and, accordingly, further regional development, this being the case especially in the Eastern regions<sup>15</sup>;
- in Portugal, investment grants have been found to increase employment and the survival rate of companies<sup>16</sup>;
- in Italy, however, several evaluations of investment grants concluded that while they had a significant effect in improving the performance of SMEs in most cases, it was difficult to detect a positive effect on large enterprises<sup>17</sup>;
- in Hungary, financial support was found to increase the investment of firms significantly but to have less effect on value-added and profits;
- in the UK, Germany and Italy, evaluations carried out on financial instruments concluded that these had positive effects on enterprise performance, though so far there have been relatively few of them in relation to the scale of funding channelled through such instruments.

On the other hand, evaluations of enterprise support carried out in Finland<sup>18</sup>, Slovenia<sup>19</sup>, Poland<sup>20</sup> and Latvia<sup>21</sup> had more difficulty in detecting a significantly positive effect of support on the performance of enterprises. Nevertheless, the summary conclusions<sup>22</sup> that can be drawn from the evidence accumulated by counterfactual evaluations are that:

- financial support to enterprises has the effect in most cases of increasing investment, production and employment in SMEs partly as a result of overcoming the constraint they face on capital markets of accessing funding; the fact, however, that the impact varies considerably between schemes suggests that the design of support measures and the way they are implemented are crucial;
- the support provided tends to have more effect in expanding output and employment than in increasing productivity, though this may be because of the relatively short time period over which most evaluations have analysed the performance of the companies supported; the jobs created, however, seem to be of relatively high quality paid at or above the firm average and long-lasting;
- there is evidence that measures could be more cost-effective, in the sense that the amount of funding could be scaled down without markedly reducing the results achieved. There are also

15 See: Bade, F. J., *et al.* (2010), GEFRA und IAB (2010); Prognos A. G. (2011).

16 Counterfactual analysis of the impacts of support schemes to businesses in POE/PRIME 2000-2006 (May 2013) Marmede R., Fernandes T. and Alexandrino da Silva A., *Análise contrafactual dos impactos dos incentivos do POE/PRIME na sobrevivência e no crescimento das empresas*, Observatório do QREN, May 2013.

17 Among several evaluations see for instance: Polese, A. *et al.* (2011); Cles-Format-Met. (2012); Mariani, M. *et al.* (2012); Bondonio, D. and Martini, A. (2012).

18 Pietarinen M. (2012).

19 Jaklič, A. (2012).

20 Klimczak, T. *et al.* (2013).

21 Ernst & Young (2013).

22 For a summary of the evidence see Mouqué, D. (2012).

hints that the most cost-effective measure is the cheapest — the provision of advice and guidance to businesses; it is equally the case that financial instruments seem to be more cost-effective than (non-repayable) grants in the sense of having positive effects on enterprise performance, while potentially being capable of being recycled to fund additional investment;

- most evaluations have found that financial support has little effect on the behaviour of large enterprises, that it does not seem to lead to any significant improvement in performance in respect of any of the indicators examined, and that, accordingly, there is a large ‘deadweight’ element in the funding provided. This raises a serious question over whether it is justifiable to subsidise large enterprises directly. A better strategy might well be to ensure that the region — or country — concerned is an attractive place in which to do business.

### Support of RTDI

A relatively large number of evaluations have also carried out on ERDF support for RTDI, especially in Competitiveness regions where, along with enterprise support, it accounts for a significant proportion of the funding provided. Virtually all of them have concluded that the effects of intervention have been positive. This is particularly the case as regards the counterfactual evaluations undertaken, for the most part in Italy, Finland, Germany, Spain and Hungary, which in the main relate to the 2000–2006 period.

These have generally found that the support provided has increased the amount that the companies concerned spent on R&D over and above the amount of funding received (i.e. their expenditure was not only higher than it would have been had they not received support but the scale of the additional spending was larger than the funding). Moreover, as in the case of enterprise support, a number of the evaluations found that the effects on SMEs were larger than on bigger firms, in the sense that the former tended to increase their expenditure more than the latter.

The findings, however, are more variable as regards the effect on productivity and profits, which in this case, are important indicators of the success of support measures. An Italian evaluation, for example, found that while the short-term effects of subsidies to RTDI on company performance were positive, the long-term effects were limited. On the other hand, an evaluation carried out in Denmark on a measure implemented in the 1990s, though not financed by the ERDF, found that the support given to innovation consortia increased the profitability of companies receiving the support by 12% in relation to the control group (i.e. those not receiving support) over the 10 years following the intervention<sup>23</sup>. This suggests that the form which the support of innovations takes might well affect the effects that it has.

At the same time, a number of evaluations found that support had positive effects on employment in R&D activities (i.e. that it led to more research jobs, such as in Ireland) and the development of innovation clusters (as in Hungary). More generally, evaluations carried out in Germany, Italy, the UK, Portugal and Slovenia, found that support led to an increase in the capacity of SMEs to innovate, that, in other words, the increase in inputs (the greater effort put into R&D) produced more outputs which potentially improved their competitiveness.

Evaluations using other methods than counterfactual have tended to focus on other aspects of the support provided. In both Poland and Slovakia, for example, the support measures were found to lack strategic concentration which reduced their effects, while in Belgium, Sweden and Portugal, it was found that there was a limited ability to involve SMEs in the measures and so the funding failed to reach them to a large extent.

Evaluations also found that in a number of cases the agencies or centres set up to provide RTDI assistance to firms had limited capacity to do so which again reduced the effects of the funding intervention provided. This was the case in Italy, especially in the less developed regions in the south of the country, though it was less so in the more developed regions in the north. In France, an evaluation of the ‘techno-poles’

<sup>23</sup> Centre for Economic and Business Research (2010).

concluded that these centres, which received ERDF co-financing, were effective in increasing R&D activity but pointed to the need to increase their focus on innovations with commercial application instead of on basic research.

### Investment in transport

Fewer evaluations have been carried out on support for investment in transport than on either enterprise or RTDI support. This is especially the case for projects co-financed from the ERDF and Cohesion Fund for the period 2007–2013 since relatively few of them have been completed and those that have been have been in operation only for a short period — too short to properly judge their effects. Those that were undertaken during the 2007–2013 period, for the most part on investment financed from the previous period's funding, have tended to assess the effects of individual projects, such as the construction of a motorway or a railway between two points, rather than of a network as a whole. The latter is more relevant to consider since the projects in question are — or should be — planned as part of a transport system rather than individually. Indeed, treating projects in isolation is likely in most cases to lead to misleading results in terms of the effects on ultimate economic and social objectives, insofar as these arise from the overall network being in operation and it is difficult, if not impossible, in principle to isolate the effects of individual parts of this.

For example, the gains to a region of a motorway linking, say, the main city to a city elsewhere in the country will tend to depend on the state of connections to it and how easy it is to access it, which will determine the traffic which it carries and the overall savings in time and costs which it gives rise to. Its effects, therefore, cannot easily be separated from the effects of the 'feeder' roads which are constructed. Similarly, the effects of introducing a fast rail link between two cities (not necessarily a high-speed line) will depend on the ease of getting to the stations at the two ends of the line as well as to those in between, which will depend on the road and rail links to them, as well as on the ease of parking once there. Again these effects can only meaningfully be

assessed in terms of the overall system rather than simply the rail link alone.

The evaluations which have been carried out on transport networks rather than on individual projects have generally found that they have had positive effects on regional development. For example:

- in Greece, the construction of the Athens metro was found to reduce road traffic in the city significantly and to boost employment and tourism, as well as reducing pollution and improving the quality of life;
- in Lithuania, evaluation of investment in roads was also found to increase employment in the areas concerned through reducing transport costs and improving accessibility;
- in Germany and Slovenia, ERDF support for developing urban transport in a number of cities was found to increase the competitiveness of the regions concerned, partly by reducing the time and costs of travel and attracting business investment.

The evaluations undertaken, however, have also highlighted potential problems relating to the sustainability of the investment in that it was not always the case that future maintenance costs had been factored into the analysis when assessing the gains relative to the expenditure involved.

A major reason for the small number of evaluations of networks which have been carried out is the difficulty entailed, especially if the concern is with assessing the economic and social effects on particular regions or countries. Many of these effects are intangible (such as improvements in the quality of life) or extremely long-term, in the sense that they will continue to occur over many years, or even decades, and therefore difficult to measure or predict. It is easier, though not entirely straight-forward, to evaluate individual projects, especially if the exercise is limited to the more measurable and more certain aspects, such as reductions in journey times and time saved as well as a lowering of vehicle operating costs in the case of roads.

Although they were limited in scope in this way, 9 of the 10 large-scale transport projects evaluated by using cost-benefit analysis as part of the ex-post evaluation of the Cohesion Fund in the 2000–2006 period were found to yield positive net returns, in the sense that the net present value of the gains from the projects were estimated to be greater than the costs of construction, operation and maintenance<sup>24</sup>.

The only project for which benefits fell short of costs was the Madrid-Barcelona high-speed line, which might well be because of it being considered in isolation of other parts of the rail network and the effect of the completion of the network, when it occurs, on the traffic carried by the line. When the analysis was carried out, therefore, the line was operating at well below capacity partly because other lines feeding into it were yet to be completed (though also because of the effects of the recession on its use). The benefits were, therefore, depressed as a result, illustrating the importance of adopting a wider and longer-term perspective when assessing the effects rather than a narrow one.

A major conclusion to be drawn from the various evaluations, as well as from other studies of investment in transport over the years<sup>25</sup>, is that while a good transport network might be important for development, its effects depend critically on what else happens in the region or country concerned. It, therefore, needs to be seen in combination with other factors which contribute to development, such as a well-educated work force and the presence of innovative enterprises.

### 3.3 Evidence from evaluations of ESF programmes

The findings of the evaluations carried out over the period 2007–2013 are summarised below according to policy areas.

On the issue of measuring the impact of ESF interventions in a robust way, which genuinely demonstrates what difference the ESF has made to the final recipients of interventions, evaluations were generally unable to present a significant amount of compelling evidence. Nevertheless, the effects of ESF support have mostly been significant and sizeable in the limited number of robust evaluations which considered some specific ESF interventions and programmes. These show, for example, that individuals in ESF-supported interventions are more likely to find employment than control groups.

In broad terms, results in relation to Increasing Adaptability, Access to Employment, and Human Capital were felt to be good. Additionally, some examples of significant net benefit based on robust evaluations were available. The analysis around Social Inclusion was less conclusive. Limited evidence around results and little by way of evaluation evidence led typically to the assessment that ESF resources deployed for Social Inclusion were being used less coherently and with limited effectiveness. Promoting Partnerships and Strengthening Administrative Capacity are less common policy fields across Member States and there is also only limited evidence on results in these fields. However, evaluations tend to be positive about the contribution they have made to public services.

#### Enhancing access to employment

Where robust evaluations have been conducted by Member States these show that individuals in ESF-supported interventions are more likely to find employment than control groups. In Member States where evaluations have compared PES activity with ESF funded additional activity for the same client group, positive effects have been found to result from the ESF-supported intervention packages, which are

<sup>24</sup> The 10 projects were the high-speed railway line between Madrid and Barcelona; the railway line between Lisbon and the Algarve in Portugal; Thriassio-Pedio-Eleusina-Korinthos railway in Greece; the upgrading of the Bratislava Rača-Trnava railway line in Slovakia; the A2 motorway in Poland between Konin and Strykow; a 75 km stretch of the A23 motorway in Spain running from Pau in France to Zaragoza; the Agiou Konstantinou bypass in Greece; the M1 motorway in Ireland; the IX B corridor in Lithuania, including the Vilnius southern bypass; and the eastern section of the M0 Budapest ring road in Hungary.

<sup>25</sup> For example: OECD (2011), Crescenzi, R. and Rodriguez-Pose, A. (2012).

essentially providing a more intensive and higher quality service to unemployed people.

Notwithstanding this, job entry rates are typically below 50% although this varies according to the period at which these are measured following completion of a specific activity. In a number of Member States job entry rates are typically around 1 in 3 or less.

Wage subsidies have been deployed extensively since the global recession to incentivise employers to recruit the unemployed and other groups with specific disadvantages, but some evaluation evidence suggests that significant percentages of the final recipients subsequently return to unemployment. Evaluations also suggest public works and other temporary job creation measures have a poor record in terms of the percentages moving on subsequently to employment. However, stronger results are evident for training which is vocationally specific and for traineeships and work placements.

### Equality between women and men

It was a requirement of the Regulations for the 2007–2013 period that ESF programmes should take account of the gender perspective at all stages (in their preparation, implementation, monitoring and evaluation). They therefore make specific reference to measures for reconciling work and private life, increasing the participation of women in employment and reducing gender-based segregation, including narrowing the pay gap.

There is evidence from evaluations that increased attention has been paid to gender equality in ESF interventions and that in a number of Member States, they have helped to push gender equality on to the policy agenda and measures have been implemented that would not otherwise have been funded.

Because of the mainstreaming of the issue in programmes, however, it is difficult to estimate the funding that has gone to supporting equality between women and men. In terms of results however, women account for around 52% of all recipients of support, though this proportion varies from 39% in

the UK to 56.5% in Poland. Estimates of the effect on employment are not yet widely available, but in Spain, for example, 888,000 women are reported to have gone into a job up to the end of 2011 after leaving an ESF programme, just under 62% of all those doing so.

The gender equality measures supported by the ESF were aimed at achieving a number of objectives<sup>26</sup>:

- increasing the ability of women to compete in the labour market by improving their skills;
- training women and men in occupations traditionally dominated by the opposite sex so increasing their career prospects;
- assisting women to become entrepreneurs as well to provide them with care facilities to enable them to reconcile work with their family life;
- improving the quality of care services to encourage their take-up and to extend their opening times as well as to train the unemployed for care jobs;
- combating gender stereotyping and, to a lesser extent, educational gender segregation through support for public awareness campaigns, seminars to trade unions, training teachers and parents and revisions to school curricula;
- aiding poverty-stricken, vulnerable women, often suffering from multiple discrimination as well as victims of violence to help them gain skills, confidence and so economic independence.

There is evidence, in general, that the multi-dimensional strategies combining different types of intervention are becoming more important to tackle the multiple causes of discrimination or the different reasons for gender gaps. Examples include combining personal guidance or classroom teaching of practical daily skills, facilitating access to psychological support, language lessons, vocational training and help

<sup>26</sup> As indicated by an evaluation of such measures in GHK and Fondazione G. Brodolini (2011).

over job search, which is likely to be more effective than providing these measures in isolation.

At the same time, there have been significantly fewer measures aimed at influencing the social, economic or institutional context or targeted at the demand side, such as training employers or human resource managers or giving incentives to firms to employ women as managers. The evaluation carried out emphasised that there was a need to intensify such measures in order to tackle the root causes of discrimination.

### Social inclusion — migrants and minorities

A general finding from Member States evaluations is that the most effective ESF supported services are those which are designed specifically around the needs of particular groups, with training appearing as a effective measure for migrants.

More ESF support was provided to increase the labour market involvement and social inclusion of migrants and ethnic minorities in the 2007–2013 period than in the previous one. Some EUR 1.17 billion of funding was allocated to specific measures to help migrants and a further EUR 10 billion to general measures targeted at disadvantaged groups, including migrants and minorities, half of this being estimated to go on the latter. In total, therefore, just over 8% of the overall ESF budget was allocated to support for this group.

Around 1.2 million of the people concerned are reported to have participated in ESF co-financed measures up to the end of 2012 (862,000 of them migrants), though the actual figure may be some 100,000 higher because of the under-reporting of ethnic minorities, especially Roma.

An evaluation of ESF support<sup>27</sup> found that it helped people to find employment by strengthening their employability, especially their ICT and basic literacy and communication skills, as well as by encouraging them to become self-employed.

ESF support was also found to have helped to improve initial integration services, to create new networks and organisational structures and generally to improve the capacity of public bodies to assist people with a minority background. At the same time, knowledge has been gained and experience shared between public bodies and NGOs with a specialist understanding of the needs of migrants and ethnic minorities and the barriers they face in accessing the labour market.

While there are many specific measures for Roma, an ‘explicit but not exclusive’ approach has increasingly been adopted towards them so as to avoid separating them completely from other groups, which would run the risk of them becoming even further segregated. Integrating measures together seems to be most effective, linking support for education and training with access to housing, transport and health services and improvements in basic infrastructure, which are basic pre-conditions for Roma being able to find employment.

The evaluation identified a number of examples of good practice, such as in Spain, where NGOs were consulted early and remained closely involved, along with final recipients themselves, in the implementation of the measure.

## 4. The modelled impact of Cohesion Policy 2000–2006 and 2007–2013

The only way of obtaining a complete overview of the impact of Cohesion Policy on the EU economies is by means of a macroeconomic model which incorporates the available evidence on the effects of the various kinds on interventions.

<sup>27</sup> CSES (2011).

### Examples of counterfactual ESF impact evaluations carried out in Member States

An evaluation of the **2007–2013 ESF Programme for England**<sup>1</sup>, assessed the effects of interventions aimed at increasing the employability of recipients of Jobseekers Allowance (payable for up to 6 months) and Incapacity Benefit or the Employment and Support Allowance (payable typically to the longer-term unemployed) on the basis of administrative data. The large number of people covered made it possible to carry out detailed statistical analysis, distinguishing recipients in terms of their characteristics and type of support received. The evaluation found consistently positive effects in increasing access to employment which were larger for the more disadvantaged group.

An evaluation of **social integration programmes targeted at people with disabilities and ex-offenders in Lithuania**<sup>2</sup> was carried out to assess their effects in re-integrating participants into the labour market. The data used enabled those eligible for the programmes who did not participate to be identified as well as those that did. It found that the programmes increased the probability of participants finding employment, the duration of this and the earnings received. It also found that the effects on those with disabilities were greater than on ex-offenders<sup>3</sup>.

1 Ainsworth, P. and Marlow, S. (2011).

2 The interventions under evaluation were financed under the 2004–2006 programming period. However, the data used for the analysis expanded until 2010 and the study provided recommendations on how the use of the EU structural assistance might be improved during the rest of the programming period 2007–2013.

3 Public Policy and Management Institute (2012),

This section reports on a model-based<sup>28</sup> assessment of the potential impact of the Structural Funds and the Cohesion Fund during the previous programming periods 2000–2006 and 2007–2013 in the Member States which were the most important recipients of financial support. These are the three EU-15 Cohesion

28 The model used to carry out this impact assessment is an extension of Quest III containing a representation of the effect of investment in human capital and endogenous technological change, which makes it particularly suitable for the evaluation of Cohesion Policy type of structural interventions. It also includes explicit cross-country linkages through bilateral trade relationships to capture spill-over effects and the interaction between EU Member States. For a more detailed description of the model, see Varga, J. and in 't Veld, J. (2011),

countries, Portugal, Spain and Greece, which received funds over the two programming periods as a whole, together with Ireland, which was a recipient of the Cohesion Fund up to 2003, and the EU-12 Member States which received pre-accession assistance from 2001 and saw a major increase in funding after accession in 2004 or 2007 in the case of Bulgaria and Romania. They also include the eastern part of Germany and the southern Italian regions (the Mezzogiorno). (Note that a more detailed description of the macroeconomic model used to generate these estimates is set out in the next Chapter in relation to estimating the effects of Cohesion Policy funding in the present programming period which involves the same methodology — i.e. comparing developments without the funding with those with the investment which it finances.)

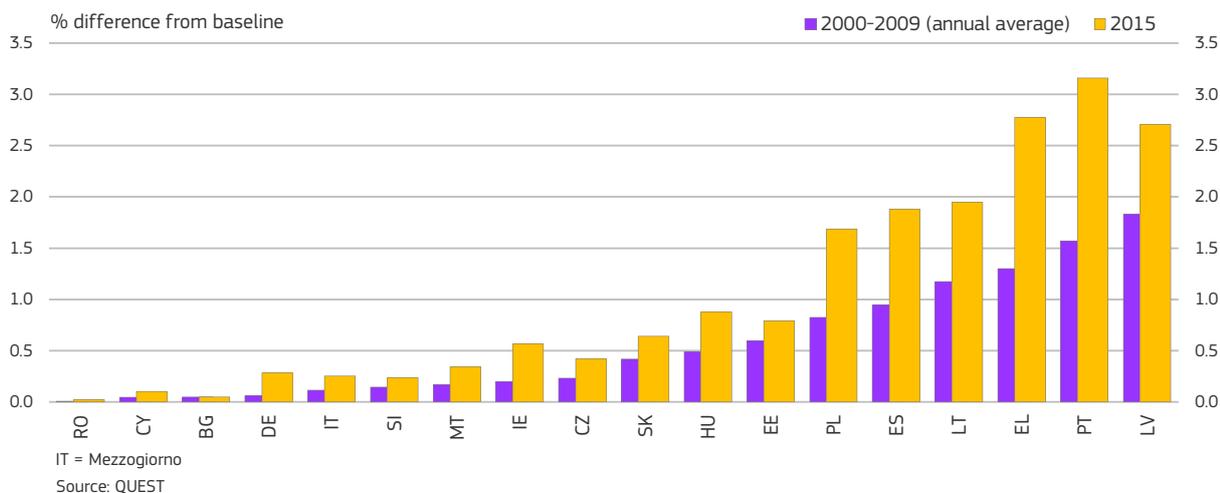
In the programming period 2000–2006, more than EUR 250 billion was spent on Cohesion Policy in the EU-15 and on pre-accession aid and structural interventions in the EU-10. Spending in the Member States listed above amounted to EUR 186 billion.

For the programming period 2007–2013, the total budget is EUR 336 billion, of which EUR 173.9 billion is allocated to the Member States that have entered the EU since 2004, EUR 76 billion to Spain, Greece and Portugal and EUR 26 billion to the Eastern German Länder and the Mezzogiorno in Italy.

Figures 7.1 and 7.2 show the potential impact of Cohesion Policy on GDP ('potential' in the sense of what it is estimated to be if the effects of funding are as assumed in the model) for the two programming periods respectively, showing in each case the average short-run impact on the one hand and the longer run impact, on the other.

These results show an unambiguously positive impact of Cohesion Policy on GDP in the Member States considered. The results of the model simulation suggest that the investment financed under Cohesion Policy during the period 2000–2009 has the potential to have increased GDP on average by up to 1.8% a year in Latvia relative to the baseline (i.e. as compared with the level of GDP in the absence of this investment), by up to 1.6% a year in Portugal and

**Figure 7.1 Estimated impact of Cohesion Policy for the 2000–2006 period on GDP**



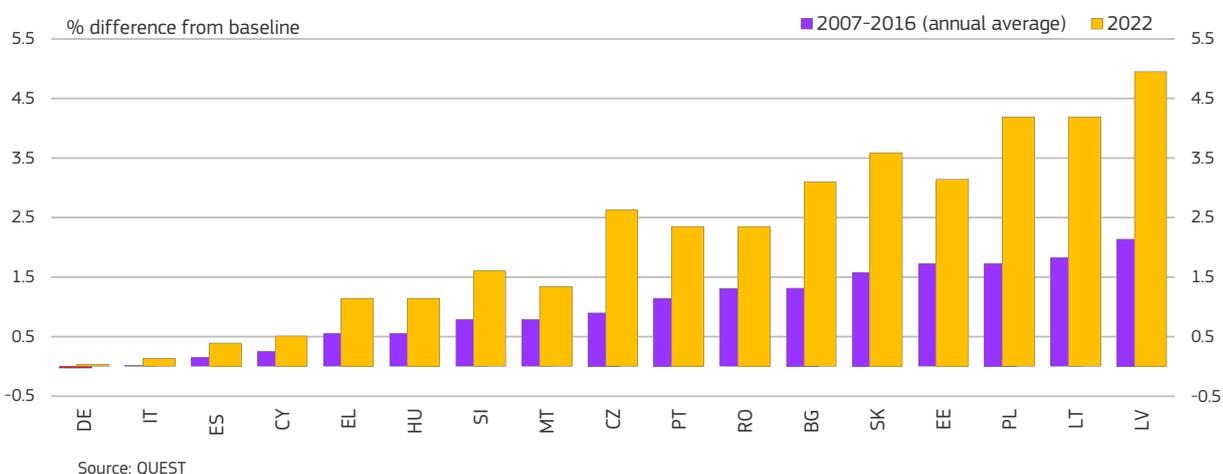
1.3% a year in Greece (Figure 7.1). Cohesion Policy programmes are also expected to improve the conditions of the labour market. Over the same period, the simulation suggests that 2000–2006 programmes increased employment by around 0.5% as compared to baseline in Lithuania and Portugal, and by 0.3% in Poland, Latvia and Spain.

Over the period 2007–2016, the average increase in GDP as a result of Cohesion Policy is estimated to amount to 2.1% a year in Latvia, 1.8% a year in Lithuania and 1.7% a year in Poland as compared with the baseline projection. In terms of employment, the average annual impact is estimated at 1%

in Poland, 0.6% in Hungary, and 0.4% in Slovakia and Lithuania.

For both periods, the impact in the medium and long-term for all countries exceeds the impact during the funding period itself. In 2015, the effect of the funding going into investment in the 2000–2009 period is to increase GDP in Spain by almost 1 percentage point more than during the period itself (by 1.9% instead of just under 1%) and in both Greece and Portugal, by over 1 percentage point (Figure 7.2), pushing the increase up to around 3% a year relative to the baseline in both countries. The impact on em-

**Figure 7.2 Estimated impact of Cohesion Policy for the 2007–2013 period on GDP**



### The Impact of Cohesion Policy: a summary of the economic research carried out

There are a great many research papers which have been produced since the mid-1990s which use econometric techniques to assess the effects of Cohesion Policy on the growth of regions and the extent of convergence of GDP per head towards the EU average. Most of them focus primarily on the earlier programming periods and on the effects of the policy on regions in the EU-15 and only a few of the most recent ones cover the EU-12 countries as well. The papers use a range of different techniques to generate estimates of the effects of policy as distinct from the many other factors at work.

Around half of the studies which have been carried out have found significantly positive effects of Cohesion Policy on EU growth<sup>1</sup>, while a quarter or so have found positive effects but less strong and not in all cases. This leaves around a quarter of the studies which have found either little effect or effects that were not statistically significant. Many of these studies, however, were published between 1996 and 2004 when there were more limited data available covering a shorter time span.

1 Bradley, J. *et al.* (2007); Cappellen, A. *et al.* (2003); De la Fuente, A. and Vives, X. (1995); Martin, R. and Tyler, P. (2006).

The great majority of the studies published since 2005, which are based on larger set of data covering a longer time period have found that the policy has had broadly positive results<sup>2</sup>. This is equally the case for studies covering EU-12 countries as well as the EU-15.

Nevertheless, while most studies find that Cohesion Policy has helped to reduce regional disparities in economic performance, they also conclude that the effects are not uniform<sup>3</sup> and that many different factors influence whether or not the policy is successful in a particular context as well as the scale of the effect. These factors relate, in particular, to the institutions in place and the efficiency of governance, the national policies pursued and the performance of neighbouring regions<sup>4</sup>. Equally, there is recent evidence that the performance of the policy is affected by the way funding is distributed and allocated between policy areas, an issue which is central to the recent reforms.

2 Midelfart-Knarvik, K.H., and Overman, H.G. (2002); Ederveen, S., *et al.* (2006); Hagen, T. and Mohl, P. (2009).

3 De Freitas, M. L. *et al.* (2003); Garcilazo, E., and Rodriguez-Pose, A. (2013).

4 Becker, S. O., *et al.* (2012)a; Ederveen, S. *et al.* (2002); Bouvet, F., and Dall'Eerba, S. (2010).

ployment also increases in time. In 2014, it reaches 1.3% in Lithuania, 0.9% in Latvia and 0.8% in Poland.

The longer-term effect of funding for the 2007–2016 period is even more pronounced, the increase in GDP in 2022 as a result of the additional investment carried out being more than double that of the average increase during the period. In both Lithuania and Poland, therefore, in 2022, GDP is raised by over 4% above what it would be without the investment concerned and in Latvia by 5%. For the same year, employment is increased by 1.8% in Poland and by 0.7% in Hungary and Slovakia.

The results of these simulations highlight the fact that the estimated gains from expenditure under Cohesion Policy build up over the years as a result of the strengthening of the competitiveness of the economies receiving support and continue well after the investment programmes concerned come to an end. During the funding period itself, therefore,

most of the effect on GDP comes from the increase in demand which the expenditure gives rise to, which is assumed to be partly crowded out as a result of the increases in interest rates, wages and prices which follow from this. In the longer-run, the effect of the investment in increasing productivity becomes stronger, leading to an increase in the potential output of economies, or their capacity to sustain growth, which means that GDP can grow without this generating inflationary pressure.

Assuming that the effects of the added investment brought about by the funding provided are as the evidence seems to indicate, the simulations, therefore, demonstrate that the strengthening of the productive potential in the economies receiving support is both long-lasting and larger in scale than the short-term effects of the stimulus to demand from the injection of finance.

## 5. Conclusion

Assessing the impact of Cohesion Policy is not an easy task. However, the progress achieved as a result of the policy are constantly monitored while the effects have been evaluated at various levels using many different methods. They generally confirm the tangible and concrete benefits that Cohesion Policy has produced and continues to produce in EU regions and cities.

The policy has led to numerous achievements. Thousands of projects have provided support for investment in SMEs or helped to start operations. Other projects have contributed to improving the capacity of the business sector to transform R&D into valuable innovation. Cohesion Policy has made it possible for millions of households and firms to connect to the most advanced ICT networks. It has financed the construction of kilometres of roads and railways, so improving transport links in areas of the EU where their absence or poor state has hindered economic development. Cohesion Policy has also contributed to improving access to the labour market across the EU and has helped to better integrate vulnerable social groups into society. It has equally worked to protect the environment, notably by co-financing the installation of environmental infrastructure in places where it would otherwise not have occurred because of lack of resources.

These achievements have helped to improve the structure of the EU economies while at the same time promoting an inclusive and sustainable pattern of development across the EU. Cohesion Policy support has significantly enhanced the performance of enterprises, especially of SMEs, and increased their investment and employment, as well as the R&D they undertake and their capacity to innovate. Investment in transport infrastructure, when carried out as part of a coherent strategy, has been shown to have a positive effect on regional development.

The changes brought about by Cohesion Policy at the micro level show up after a time at the macro level. Assessing the impact of policy on GDP growth and employment requires account to be taken of both direct and indirect effects of interventions, which can

only be done through simulating policy using macroeconomic models. Such simulations suggest that Cohesion Policy significantly contributes to increasing GDP and employment, in particular in the Member States which are the main recipients of financial support. The models also show that, in line with the long-term objectives of policy to permanently increase the productive potential of EU economies, the effect continues to build up years after the programmes have ended.

Even if the evaluations indicate that positive results have been achieved by Cohesion Policy, there is still room for improvement. In particular, the evidence underlines the importance of concentrating funding on a limited number of key priorities and ensuring that the right conditions are in place for policy to have its maximum impact. The design and implementation of the policy itself could also be enhanced by focusing more on results, setting coherent objectives and selecting clear and appropriate targets for programmes. To a large extent, these are the aims which have driven the reform underlying the 2014–2020 programmes.

## Chapter 8: Cohesion Policy in 2014–2020

### 1. Key elements of the reform

A two-year negotiation on the reform of Cohesion Policy was concluded in December 2013. As a result, the Policy will invest around a third of the EU budget in key areas in line with the Europe 2020 strategy of smart, sustainable and inclusive growth. To this end, 11 thematic objectives corresponding to the Europe 2020 priorities have been defined in the new legal framework. To maximise the impact of investment, Member States and regions need to concentrate EU funding on a limited number of these objectives in the light of the specific territorial challenges they face and their development needs.

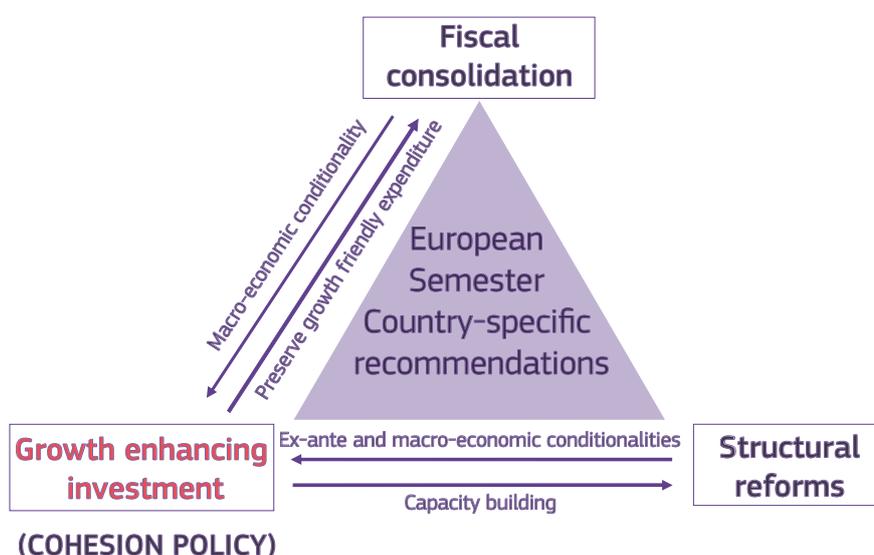
Ensuring a greater focus on the results of EU-supported investment by better indicators, reporting and evaluation is at the core of the reform. To improve performance, new conditionality provisions have been introduced to ensure that the necessary framework conditions for effective investment are in place before investment starts (ex-ante conditionality) and that the impact of cohesion funding is not undermined by an unsound fiscal and macroeconomic framework (macroeconomic conditionality).

The policy will address the needs of Member States identified in the European Semester and encourage budget consolidation, by helping to preserve growth friendly expenditure. It will provide resources to undertake structural reforms, including administrative capacity building.

Common provisions have been established for all EU funds supporting economic and social development (i.e. the ERDF, ESF, Cohesion Fund, EAFRD and EMFF) to improve coordination and harmonise the implementation of what are now termed the European Structural and Investment (ESI) Funds. This should also simplify their use by recipients and reduce the potential risk of irregularities.

More effective coordination between the ESI funds and other EU policies and instruments (such as Horizon 2020, the Connecting Europe Facility and the Competitiveness of Enterprises and SMEs programme) is another important element of the reform and the Common Strategic Framework (CSF) is intended to provide guidance on how to achieve this.

#### Cohesion Policy in the EU economic policy mix



### The Connecting Europe Facility (CEF)

The Connecting Europe Facility is a new funding instrument for transport, energy and telecommunication trans-European networks (TENs) with a budget of EUR 33 billion. The largest share — EUR 26 billion — will go to transport, while energy and telecommunications will receive EUR 5 billion and EUR 1 billion, respectively. Additional investment from private and public sources will be leveraged through the use of innovative financial instruments, such as project bonds, and these could be extended after 2016 if the evaluation of the initial phase is positive.

Investment in transport is focused on the European core network which is to be completed by 2030 as a priority, while a comprehensive network is to be completed by 2050. Projects of common interest will be carried out in cross-border areas where transport links are missing, in areas where infrastructure is lacking, and where connections between different modes of transport are inadequate and to establish interoperability. Projects are also intended to reduce greenhouse gas emissions from transport. Priority will be given to multi-modal transport corridors and ‘motorways of the sea’.

In the case of energy, the CEF will co-finance key infrastructure projects and those of common interest in order to create a power grid which can absorb the increasing amount of renewable energy required to reduce greenhouse gas emissions. A project can be of common interest if it involves at least two Member States, increases market integration and competition in the energy sector as well as security of supply, and contributes to meeting EU environmental and energy objectives.

In the case of telecommunications, the CEF will provide seed capital and technical assistance for projects to provide broadband networks and services. Most of the funding will support the provision of seamless cross-border public services such as e-Procurement, e-Health and Open Data. A minor part will be used for broadband projects in collaboration with the European Investment Bank (EIB). To be eligible, projects will need to incorporate state-of-the-art technology combined with either innovative business models or those which can be easily replicated.

To draw on EU funding, each Member State has to prepare a Partnership Agreement setting out its investment priorities and how they contribute to responding to the relevant country-specific recommendations under the European Semester and to reaching the Europe 2020 objectives, as well as the arrangements for managing the funds effectively. The procedures for programming, management, monitoring and control then need to be described in more detail in national or regional programmes.

To strengthen ‘ownership’ of the programmes on the ground, a new European code of conduct lays down the main principles of how Member States and regions should organise partnerships and gives guidance on how best to do this.

The new legislative and policy framework encourages further expansion and strengthening of the use of financial instruments as a more efficient and sustainable alternative to traditional grant-based financing in a number of areas. In addition, a number of new ways of implementing policy have been developed to tackle particular territorial development challenges, such as Integrated Territorial Investments (ITI), community-led local development (CLLD) and multi-fund programmes combining finance from the ESF, ERDF and the Cohesion Fund.

## 1.1 New geography and funding

Cohesion Policy provides financial support to help regions to overcome the obstacles to their development, whether these take the form of inadequate infrastructure or lack of capacity to innovate or to adapt to a changing global economic environment. These obstacles are present in all regions to varying degrees, though the level of financial support provided reflects their level of development and their need for financial assistance to tackle them effectively.

In the 2014–2020 period, Cohesion Policy funding will be directed towards two main goals: Investment for growth and jobs and European territorial cooperation. For the Investment for growth and jobs goal, EU funding will be concentrated (EUR 182.2 billion out of a total of EUR 351.8 billion at current prices)

### The European Union Solidarity Fund (EUSF)

The European Union Solidarity Fund (EUSF) was set up in the wake of the severe floods in Central Europe in the summer of 2002 to assist regions in both EU Member States and accession countries hit by major natural disasters which have serious effects on living conditions, the natural environment or the economy.

A natural disaster is regarded as ‘major’ if it causes damage in excess of a particular level of costs, which is specified for each country, or if it affects the majority of the population in a region and is considered to have serious and lasting consequences for economic stability and living conditions there.

The EUSF helps to finance emergency operations, such as the restoration of essential infrastructure; the provision of temporary accommodation and the cost of emergency services to meet the immediate needs of the population as well as of preventative measures, such as the construction of dams or dykes, to stop the situation from becoming worse.

Since 2002, the Fund has provided support totalling EUR 3.6 billion to help those affected by 56 disasters, including floods, forest fires, earthquakes, storms and droughts, in 23 Member States. For the 2014–2020 period, Solidarity Fund aid can be mobilised up to a

maximum annual total of € 500 million. New rules have been introduced to facilitate faster and simpler access, such as the provision of advance payments on request, to allow for quicker reaction and presence in the areas struck by disasters and to encourage Member States to implement more effective risk prevention measures. Eligibility for support has also been clarified, particularly in the case of regional disasters.

A particular focus is put on minimising the risks of disaster and investing in prevention. The benefits of this approach have been demonstrated frequently — most recently, by the floods in central Europe in 2013 which were larger in extent than those 12 years ago, but caused far less loss of life and damage thanks to the preventive measures taken. According to the World Bank, one Euro invested in prevention on average saves between 4 and 7 Euros in damage.

In the 2007–2013 period, more than EUR 5 billion was invested under the Cohesion Policy in risk prevention and for 2014–2020, it is among the thematic objectives of Cohesion Policy. In addition, a ‘floods’ Directive is to be implemented and disaster management legislation is to be revised, including better risk monitoring and closer cooperation on both prevention and response.

on the less developed regions with a GDP per head of less than 75% of the EU average, on 71 NUTS 2 regions with a population of some 128 million (i.e. 25% of the EU total), mainly located in the eastern and southern Member States (Map 8.1).

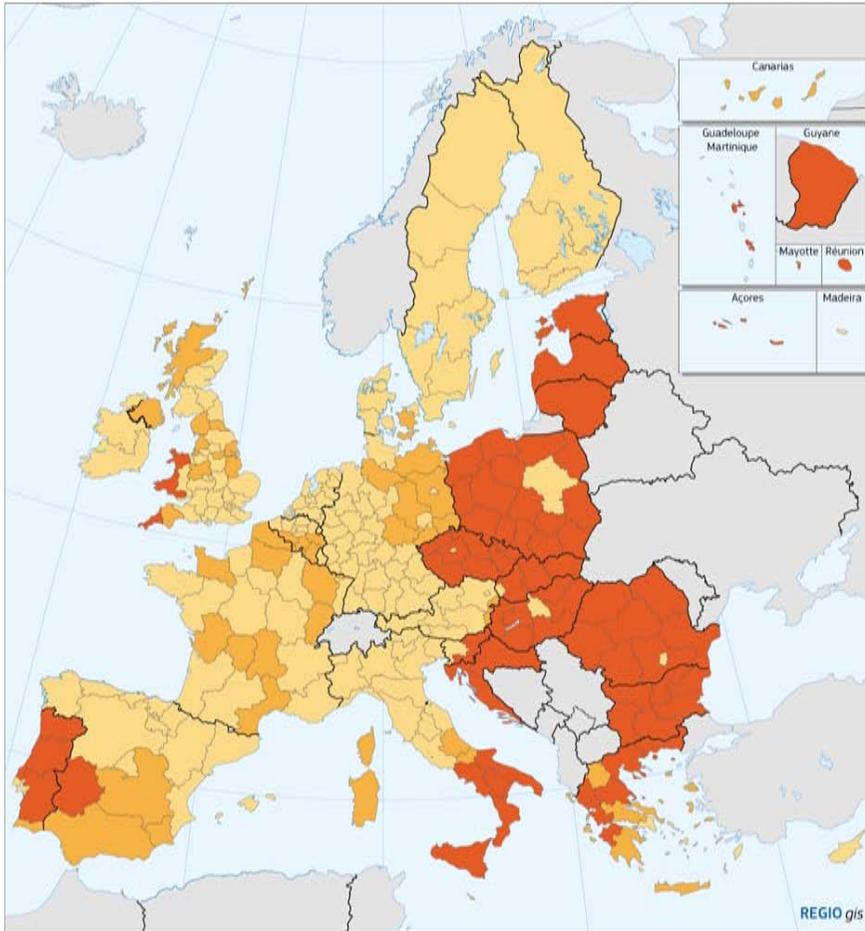
In order to support regions no longer qualifying for support under the Convergence Objective, which could be adversely affected by the sudden reduction in EU funding, and all other regions with GDP per head above 75% of the EU average but below 90% of the average, a new category of ‘transition’ regions has been established. This covers 51 NUTS 2 regions mainly located in central Europe with 68 million inhabitants representing 14% of the EU population which together receive some EUR 35.4 billion of funding.

All other regions with a GDP per head of more than 90% of the EU average (151 regions with 307 mil-

lion people or 61% of the total in the EU) will be part of a category of ‘more developed’ regions. These are mainly located in the central and northern EU Member States and receive EUR 54.4 billion.

The Cohesion Fund will continue to provide support to Member States with GNI per head of less than 90% of the EU average and to co-finance investment in environmental infrastructure and the trans-European transport networks. 14 Member States located in eastern and southern Europe, as well as Cyprus on a transitional basis, are eligible for support (Map 8.2) amounting to EUR 74.7 billion, of which EUR 11.3 billion is to be transferred to the Connecting Europe Facility<sup>1</sup>.

<sup>1</sup> In addition, a specific allocation of EUR 1.6 billion is foreseen for the Outermost and northern sparsely populated regions. The financial allocation for the European Territorial Cooperation goal amounts to EUR 9.6 billion.



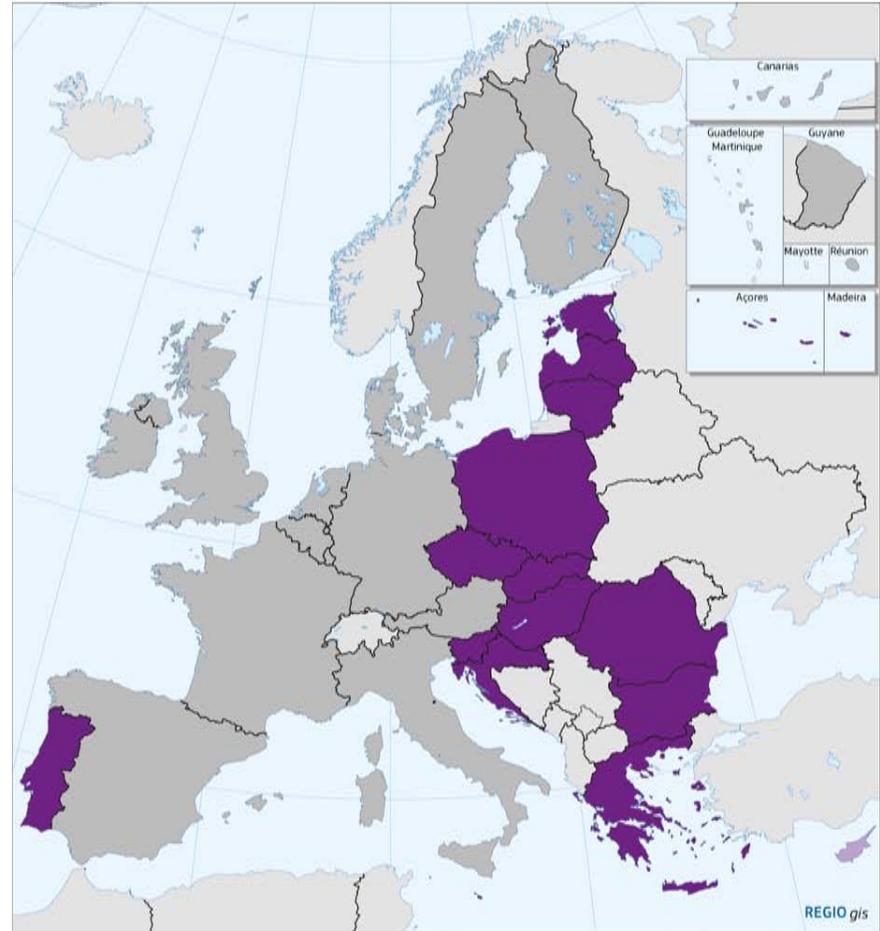
Map 8.1 Regions eligible for Structural Funds (ERDF and ESF) by category, 2014–2020

- Category
- Less developed regions (GDP per head < 75% of EU-27 average)
  - Transition regions (GDP per head between  $\geq 75\%$  and < 90% of EU-27 average)
  - More developed regions (GDP per head  $\geq 90\%$  of EU-27 average)

Sources: Eurostat, DG REGIO

0 500 Km

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Map 8.2 Countries eligible for Cohesion Fund by category, 2014–2020

- Category
- GNI per head < 90% of EU-27 average
  - Phasing-out support
  - Other Member States

GNI per head figures: average 2008–2010

Sources: Eurostat, DG REGIO

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In order to take account of the differential effect of the crisis on Member States and regions, a mid-term review of the allocation of funding between them is planned in 2016 on the basis of the then available statistics. Any modifications in the allocation will then be spread over the years 2017–2020.

To ensure that the principle of co-financing is respected but that national contributions are set at an appropriate level, maximum rates of EU co-financing have been fixed according to the level of economic development of the regions or Member States concerned. As regards the Structural Funds, these rates vary from 50% in the more developed regions to 85% in the less developed ones (Map 8.3).

## 1.2 Thematic concentration in support of Europe 2020

In the 2014–2020 period, Member States and regions need to concentrate financial resources on a limited number of policy areas which contribute to the pursuit of Europe 2020 strategy in order to maximise the impact of EU investment. This is a response to the experience of earlier periods, which showed that the impact of EU funding was more limited than expected due to resources being too widely spread.

This was due in large part to the broad scope of priorities from which Member States could select, but also to their reluctance to concentrate resources on a small number of priorities where they could have a significant impact. While the introduction of ‘ear-marking’, requiring that a certain proportion of funding was allocated to the Lisbon priorities to ensure greater focus on common EU policy objectives was a step forward in 2007–2013, the results have been mixed.

Two requirements for ‘thematic’ concentration have been introduced for 2014–2020. First, EU funds have to be focused on key areas which are line with the Europe 2020 strategy for smart, sustainable and inclusive growth and, more particularly, with the country specific recommendations issued by Council in the context of the European Semester. Secondly,

fund-specific regulations stipulate how much funding should be allocated to certain objectives.

### Targeting resources at key areas of growth

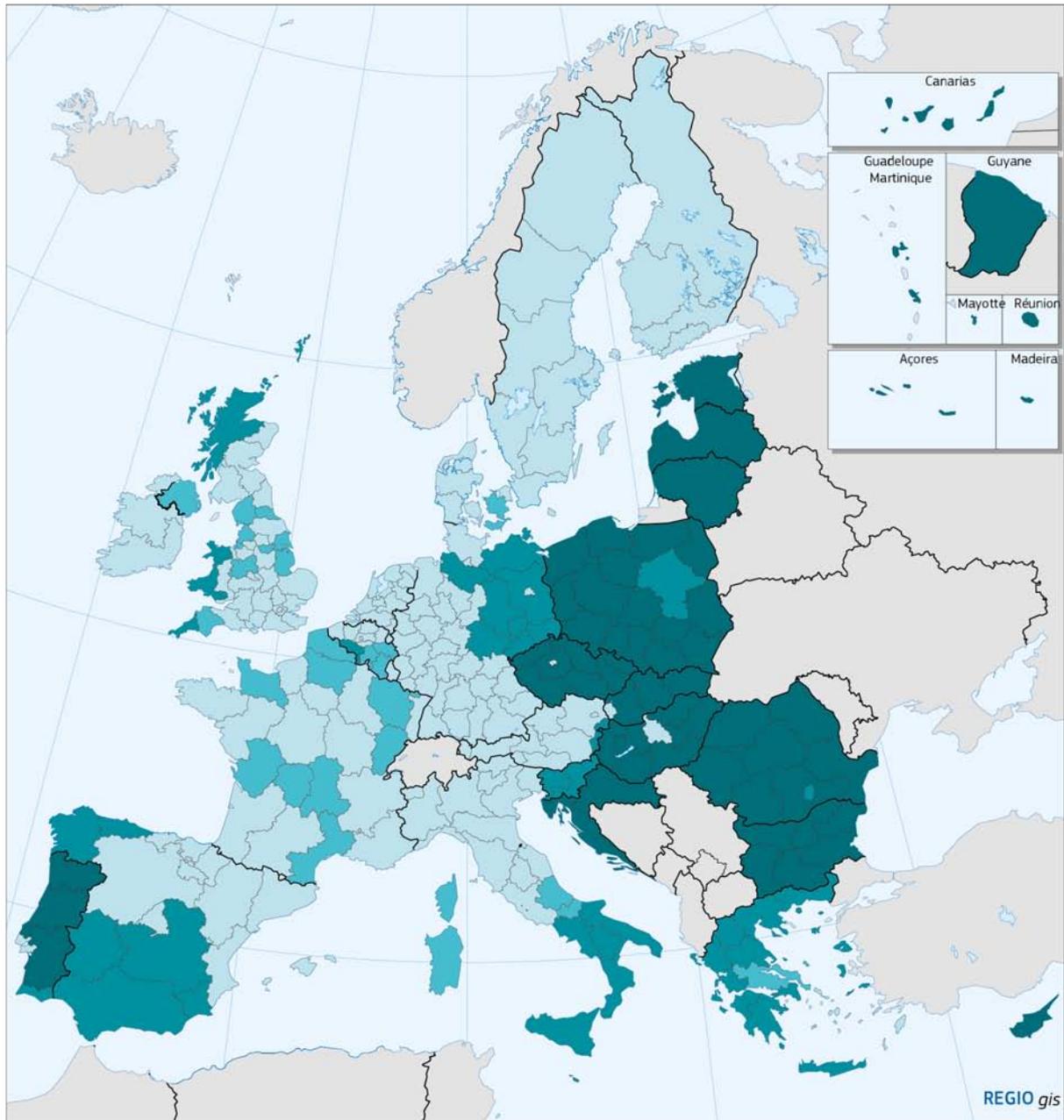
Investment financed by the ERDF has to be concentrated on four key priorities: R&D and innovation, the digital agenda, support for SMEs and the low-carbon economy. The minimum level of funding to be allocated to these is differentiated according to the level of development of the region concerned. In more developed regions, it is at least 80%, in transition regions, 60% and in less developed regions, 50%. In addition, within these amounts, at least 20% has to be allocated to a low carbon economy in more developed regions, 15% in transition regions and 12% in less developed regions (Maps 8.4 and 8.5).

In the case of the ESF, allocations have to be concentrated on up to five investment priorities under the relevant thematic objectives relating to employment, social inclusion, education and institutional capacity building. This should help to achieve more from the funding provided across the EU. It should also ensure a clearer link with the European Employment Strategy and the Integrated Guidelines on Employment.

Regions and Member States will have to make clear choices on their objectives and the concentration on a limited number of these should enable a critical mass of resources to be reached, ensuring a meaningful impact on the areas concerned in terms of growth and jobs.

### Promoting employment, education and social inclusion

In order to promote employment, education and social inclusion throughout Europe, the ESF will receive at least EUR 80 billion, slightly up in money terms on the 2007–2013 amount. The shares allocated to each Member State have been determined in terms of a proportion of the combined ESF and ERDF support which it is considered that they should receive under the Investment for Growth and Jobs goal (Table 8.1). These shares reflect the differing in-



Map 8.3 Investment for growth and jobs goal: maximum co-financing rate for Structural Funds support, 2014–2020

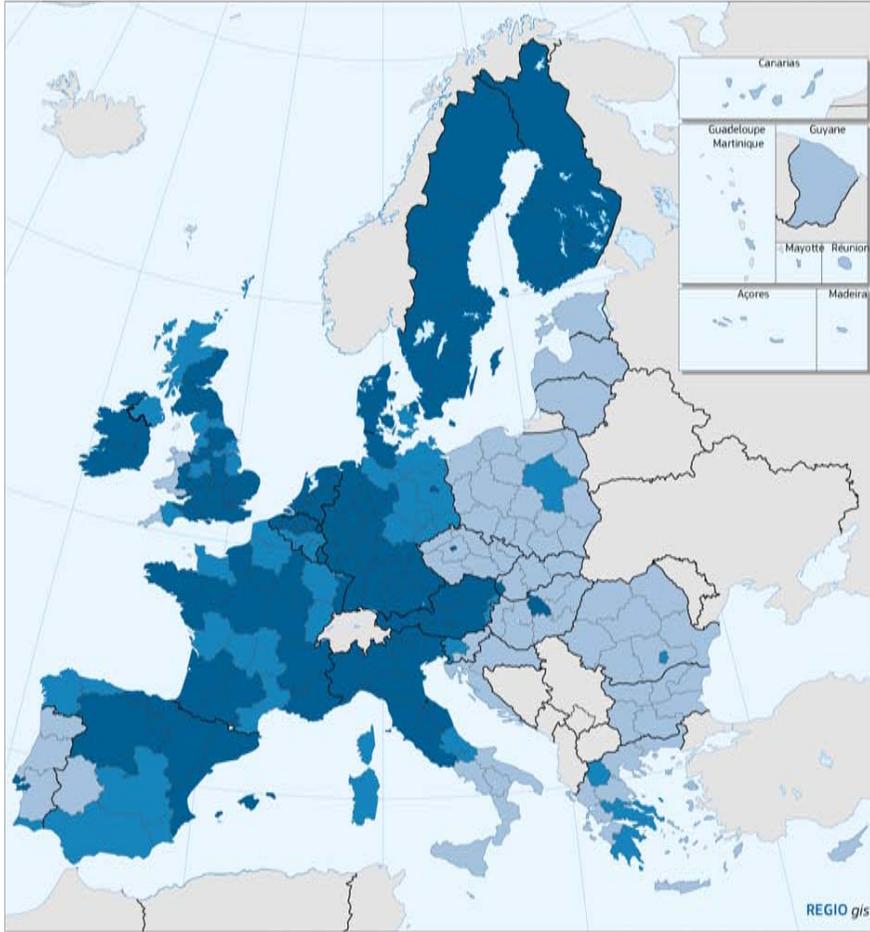


% of total investment  
Cyprus: 85% until 30/06/2017

Source: DG REGIO

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**Map 8.4 Funding for R&D&I, ICT, competitiveness of SMEs and the low-carbon economy, 2014–2020**

% of ERDF support

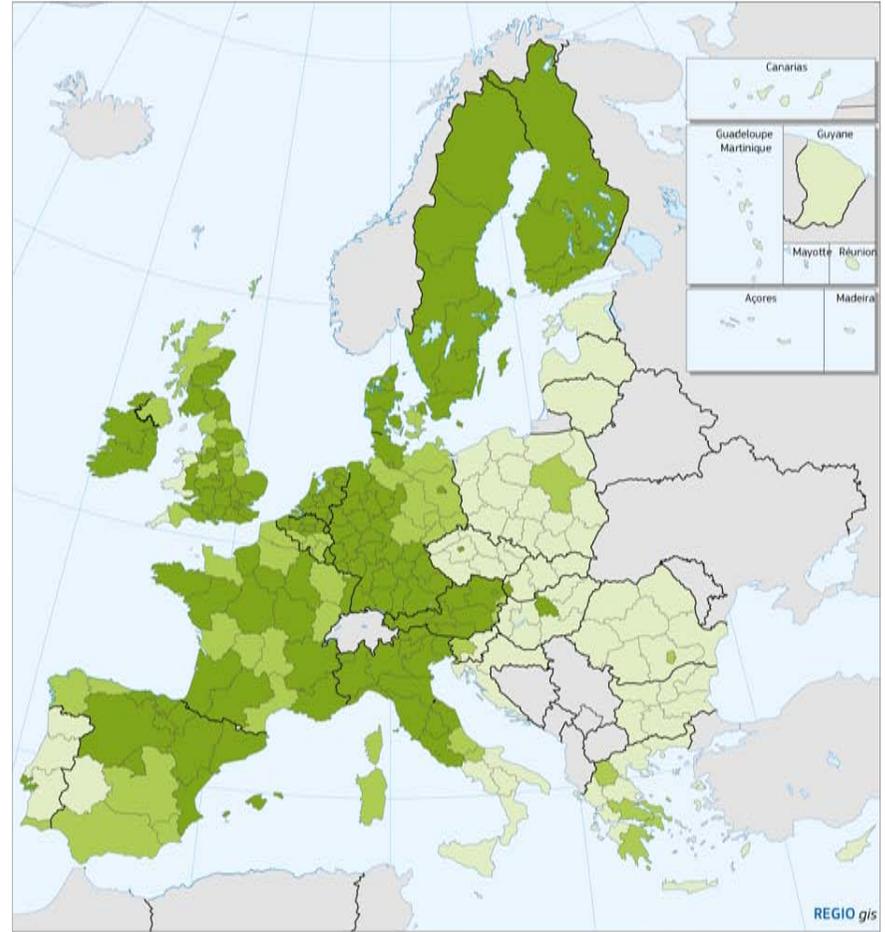
- 50
- 60
- 80

Based on minimum funding share for thematic objectives 1, 2, 3 and 4. Member States may deviate from these regional minimum shares if the national share is maintained.

Source: DG REGIO

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**Map 8.5 Funding for the low-carbon economy, 2014–2020**

% of ERDF support

- 12
- 15
- 20

Based on minimum funding share for thematic objective 4 supporting the shift towards a low-carbon economy. Member States may deviate from these regional minimum shares if the national share is maintained.

Source: DG REGIO

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vestment needs of Member States which are partly determined by their level of development. In general, less developed Member States have a wide range of infrastructure investment needs, including, for example, improved transport links, whereas for more developed ones, there is more of a need for investment in human capital.

Within the ESF allocation, at least 20% has to go to furthering social inclusion and combating poverty and discrimination.

Given the urgent priority of tackling high levels of youth unemployment in many Member States, a new Youth Employment Initiative co-financed by the ESF has been launched to help young people into employment or to receive the education and training necessary to improve their chances of finding a job. The measures included involve support for apprenticeships, self-employment and business start-ups as well as for work experience and for continued education and training. Regions eligible for support under the Initiative are those with youth unemployment rates of more than 25% in 2012 and those with rates of over 20% which are in countries where the rate increased by more than 30% in 2012 (Map 8.6).

EUR 6.4 billion has been allocated to the Initiative, at least EUR 3.2 billion of which comes from targeted investment from the ESF national allocations and the remainder from a specific EU budget line. These amounts could be increased following the mid-term review of the EU budget in 2016.

### 1.3 Strengthening the effectiveness of investment

The effectiveness of Cohesion Policy funding depends on sound macroeconomic policies, a favourable business environment and a strong institutional framework. In many sectors, a combination of strategic and regulatory conditions and public investment is necessary to tackle bottlenecks to growth effectively.

Studies, however, suggest that inappropriate policies as well as administrative and institutional constraints have limited the effectiveness of EU funding

**Table 8.1 Minimum shares of ESF support by Member State under the Investment for Growth and Jobs goal, 2014–2020**

% of ERDF+ESF			
Belgium	52.0	Lithuania	24.2
Bulgaria	28.7	Luxembourg	50.7
Czech Republic	22.1	Hungary	24.0
Denmark	50.0	Malta	21.6
Germany	36.8	Netherlands	50.0
Estonia	18.0	Austria	43.5
Ireland	51.7	Poland	24.0
Greece	28.1	Portugal	38.5
Spain	27.7	Romania	30.8
France	41.7	Slovenia	29.3
Croatia	24.6	Slovak Republic	20.9
Italy	26.5	Finland	39.5
Cyprus	30.7	Sweden	42.5
Latvia	20.7	United Kingdom	45.9

Source: Final and draft partnership agreements as of 1 June 2014.

in the past. Gaps also remain as regards the implementation of EU legislation into national law in areas directly linked to Cohesion Policy. Although there were attempts in the past to establish 'conditionalities' linked to the strategic, institutional and administrative arrangements in place, their application remained discretionary and unsystematic.

*Ex-ante* conditionalities have therefore been introduced in the 2014–2020 period to ensure that the effectiveness of EU investment is not undermined by unsound policies or regulatory, administrative or institutional bottlenecks. These conditionalities are limited in number and focus on the framework conditions that are perceived as being most relevant for investment. They are built on existing obligations that Member States have to comply with, so avoiding adding to these or going beyond requirements which already exist.

There are two types of *ex-ante* conditionality:

- Those which are connected to each of the 11 thematic objectives and the related investment priorities of funds. The identification of the conditionalities which are applicable in this respect depends on the objectives and priorities that the

programme in question has selected to focus on. They are linked to specific areas of intervention of the ESI funds and relate to effective policies being pursued, EU law affecting the implementation of the funds being transposed and adequate administrative capacity being in place (see Box 1).

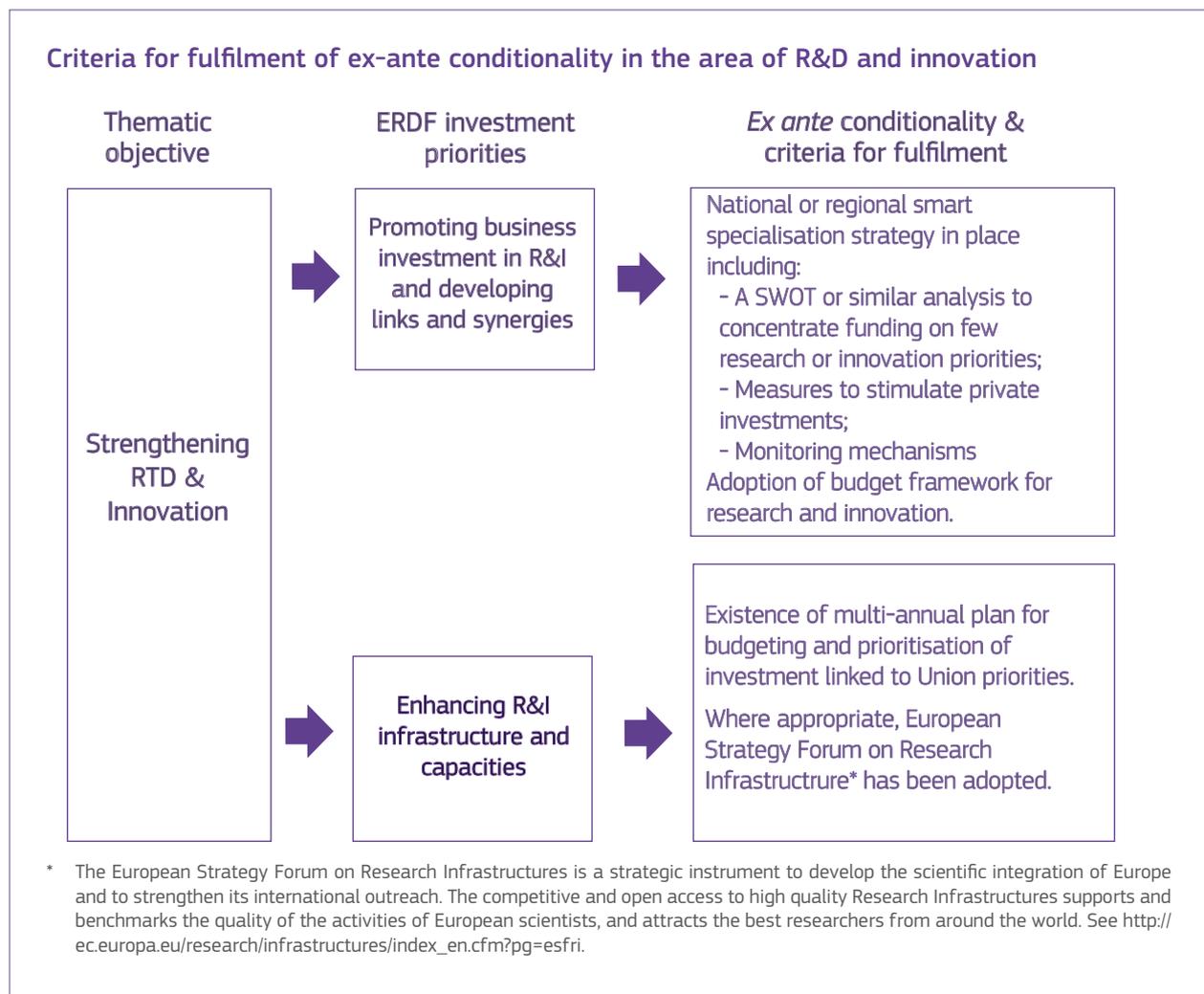
- More general ones linked to horizontal aspects which apply to all programmes to ensure that minimum requirements are in place with regard to anti-discrimination, gender equality, disability, public procurement, state aid and so on.

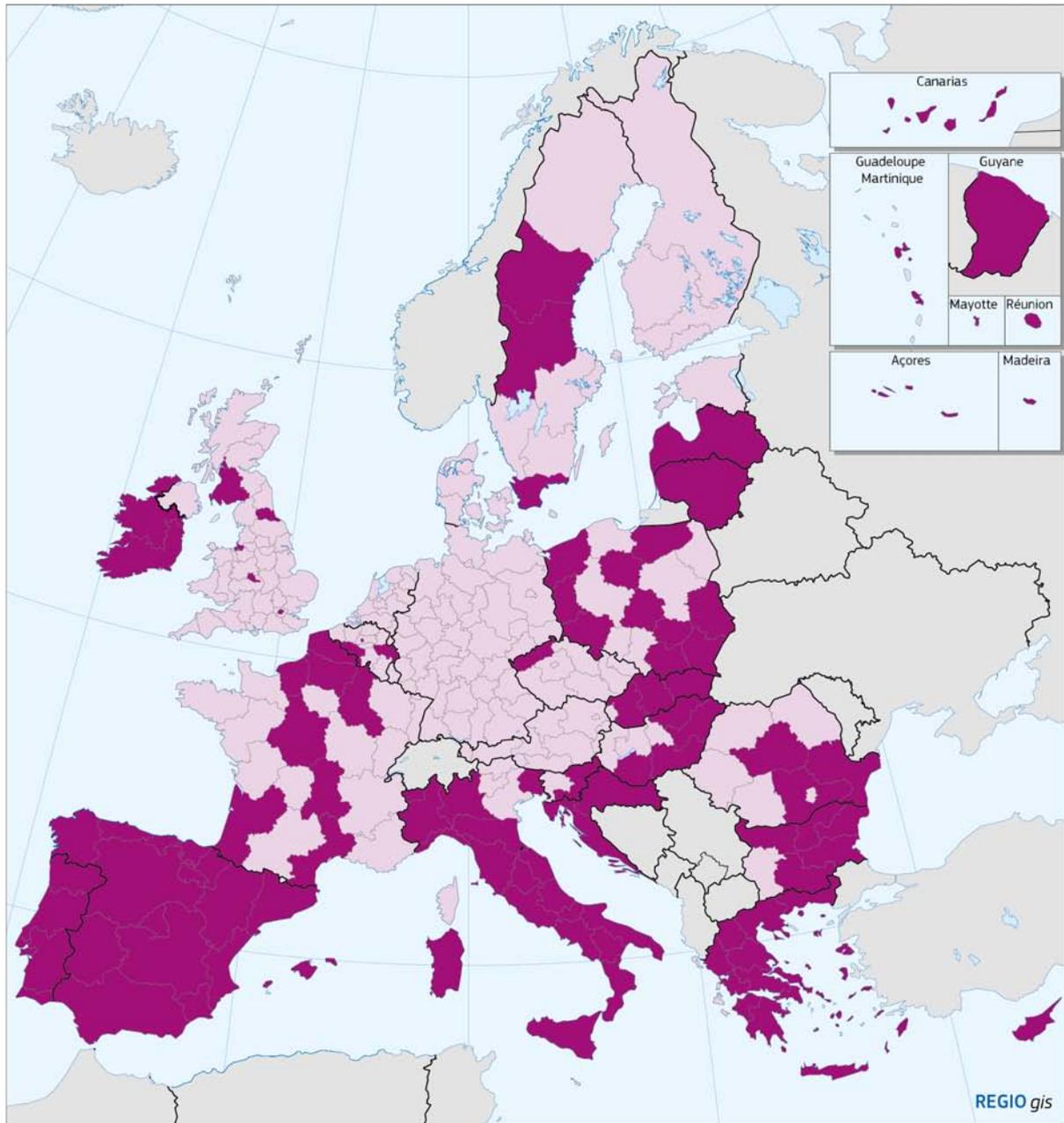
In case *ex-ante* conditionalities are not fulfilled at the stage of programme adoption as assessed by the Member States themselves and subsequently by the Commission, Member States are required to prepare action plans demonstrating how the necessary conditions will be put in place in due time so as not to

impede the effective and efficient implementation of the funds. Failure to carry out the action plan by the end of 2016 could lead to a suspension of EU payments. Non-fulfilment of critical elements which puts effective spending at serious risk could already lead to a suspension of EU funding at the stage of programme adoption by the Commission.

## 1.4 Achieving and demonstrating results

In the past, the implementation of Cohesion Policy support has focused in some places more on spending and management than on performance in terms of reaching specific objectives. Programmes have often not been sufficiently precise about the objectives they aimed to achieve and the way in which they would do so, which made it difficult to monitor them and to evaluate their performance.





Map 8.6 Youth Employment Initiative, 2014–2020

NUTS 2 regions  
■ Eligible  
■ Not eligible

Sources: Eurostat, DG EMPL

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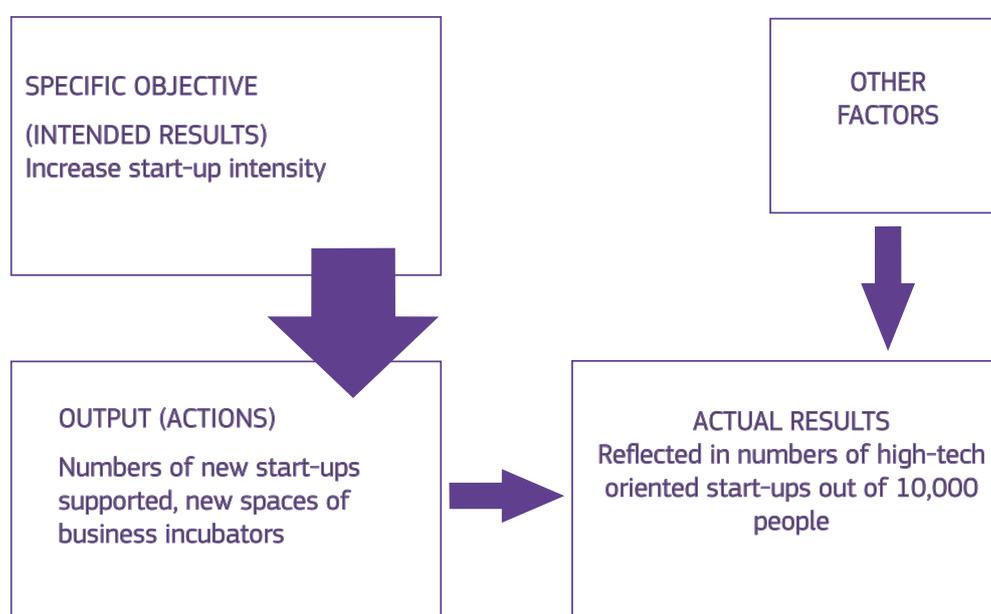
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## Intervention logic of Cohesion Policy in 2014–2020 — Example for supporting the high-tech sector in a more developed region

### Description of specific objective

The most northern region of Germany, Schleswig-Holstein, wants to increase the number of knowledge-based and technology-oriented start-ups. The *result indicator* in respect of this objective is defined as the average number of high-tech oriented start-ups relative to every 10,000 people of working age in the region who are economically active. Measured in this way, the *baseline value* in the knowledge-and technology-oriented sector in the region was 4.45 in 2011<sup>1</sup>, which is significantly below the national average.

*Target for result indicator:* The region aims to increase the number of high-tech oriented start-ups relative to every 10,000 economically active people of working age to 4.85 by 2023. The ERDF co-financed programme will be one of the ways of doing this. In addition, there will be a start-up friendly policy pursued by the region as well as private investment ('other factors').



### Description of possible action to take

There are many different ways a region could support a high level of start-ups in the high-tech sector. By analysing the weaknesses of the region and from past evaluations, policy makers concluded that the key problems were obstacles to funding and knowledge gaps.

As a consequence, the region decided to adopt two *courses of action*:

- to reduce barriers to finance in order to support knowledge sectors and attract venture capital;
- to support measures for reducing infrastructure barriers to technology as well as incubator centres.

Appropriate *output indicators* for these courses of action are the number of enterprises receiving support and the amount of private investment which arises to match public funding. These happen to be included in the list of common indicators as defined in the ERDF Regulation. In addition, four specific output indicators will be used in order to assess the number of projects supported, the number that lead to an enterprise being successfully set up, the number of knowledge-based and technology-oriented start-ups and the amount of space rented in technology and incubator centres.

*Source:* Draft of Operational Programme Schleswig-Holstein, adapted.

<sup>1</sup> Derived from an analysis carried out by the Centre for European Economic Research (ZEW Start-ups panel).

**Examples of Country-Specific Recommendations (CSRs) in 2013**

(Sub-)sector CSR	Member State	Number of Member States
Energy networks, renewables and energy efficiency	Bulgaria, Czech Republic, Estonia, Spain, Italy, Lithuania, Latvia, Malta, Poland, Slovakia, Germany, Finland	12
R&D and Innovation	Estonia, France, Luxembourg, Netherlands, Poland, Slovakia	6
Improving the effectiveness and efficiency of the public administration	Bulgaria, Cyprus, Czech Republic, Spain, Greece, Croatia, Italy, Romania, Slovakia	9
Judiciary reform	Bulgaria, Greece, Spain, Hungary, Latvia, Malta, Romania, Slovenia, Slovakia	9
Improve the business environment	Bulgaria, Greece, Spain, Hungary, Italy, Poland, Romania	7
Anti-corruption	Bulgaria, Czech Republic, Greece, Croatia, Hungary, Italy	6
Public procurement	Bulgaria, Greece, Hungary, Croatia	4
Absorption of ESI funds	Bulgaria, Romania, Slovakia	3

In some cases Member States were reluctant to set targets or they set targets that they knew would be easy to achieve and therefore were not meaningful ones against which outcomes could be assessed. This in turn has limited the ability of evaluations to measure the effects of interventions and to understand better which measures were most effective and why.

Against this background, a greater focus on results through better indicators, reporting and evaluation is at the core of the reform of Cohesion Policy.

The focus on results needs already to be built in at the stage of designing programmes. The design has to be based on a clear intervention logic starting with identifying development needs and the changes the programme is intended to bring about in order to meet these needs and going on to demonstrate how the spending planned helps to do this.

Each programme must set 'specific objectives' to define the results that are intended to be achieved while taking into account the needs and characteristics of the area to which it relates. Programme specific indicators with clear baselines and targets have to be defined to measure the deliverables which are expected to contribute to the intended changes. They have to be accompanied by common indicators to be used by all programmes which will make it possible to aggregate achievements at both national and EU level.

In order to monitor progress towards achieving the objectives and targets and in order to promote and reward good performance, a performance framework needs to be defined for each programme, consisting of milestones to be attained by 2018, targets established for 2023 and a performance reserve to be allocated in 2019 if the milestones are achieved.

The performance reserve amounts to the equivalent of 6% of national allocations by Member State, fund and category of region, EUR 20 billion in total. The key challenge for Member States and regions is to identify clear and measurable milestones and targets which are both realistic and sufficiently ambitious to be meaningful.

## 1.5 Aligning EU investment with the European semester

The new policy framework establishes a close link between ESI funds and the European semester. Relevant country-specific recommendations (CSRs), i.e. recommendations relating to structural changes which it is appropriate to bring about through multi-annual investment and which fall within the scope of ESI fund support, need to be taken into account by Member States and regions in the preparation of 2014–2020 programmes.

Many CSRs do not directly concern ESI funds (such as those relating to taxation, fiscal frameworks, public

finances related to pensions or health costs, regulatory reform of social security or internal market measures). While some of these reforms are indirectly relevant for setting the right framework conditions for ESI funds, implementing them requires policy responses other than from EU investment.

However, the 2013 CSRs also contained a significant number of recommendations which are relevant for the ESI funds. These include measures for improving research and innovation, increasing SME access to finance and business start-ups, raising energy efficiency and modernising energy networks, improving waste and water management, increasing labour market participation, upgrading education systems and reducing poverty and social exclusion.

Another important area covered by the 2013 CSRs concerns public administration, the judiciary and public service provision. Those issued included a number which specified the need to improve the effectiveness and efficiency of public administration, to increase the quality and independence of the judicial system, to combat corruption more effectively and to ensure the sound implementation of public-procurement legislation and, in some cases, more than one of these recommendations (all four in the case of Bulgaria and Greece).

Since the modernisation of public administration has become a cornerstone for the successful implementation of the Europe 2020 Strategy, the new legal framework puts a particular emphasis on institutional capacity building and administrative reform. The aim is to create institutions which are stable and predictable in their relations with the public, but also flexible enough to react to societal challenges, open to dialogue with the public and able to introduce new policies and provide better services.



## 1.6 A strategic approach to Public Administration reforms

Institutional capacity is not just a technical matter of training civil servants, it relates to how public authorities interact with businesses and people and deliver services to them. *Good governance*<sup>2</sup> is both the basis for, and the ultimate objective of, institutional capacity building, creating trust and social capital. Countries with a high level of social capital also tend to perform better economically.

Context factors are key to the design of a comprehensive strategic approach to public administration reform. They include institutional stability, stakeholder involvement, alignment of goals and effective co-operation between the various parties involved<sup>3</sup>.

Building on these factors, the conditions for success are:

- the existence of a customised, country-specific approach that clearly identifies the main weaknesses of administrations as well as the main policy areas that require administrative support;
- sufficient focus on the regional and local dimension;

<sup>2</sup> This can be defined as “the manner in which power is exercised in the management of a country’s economic and social resources for development”.

<sup>3</sup> de Koning, J., *et al.* (2006).

- the need for the process of capacity building to follow a framework of coherent reforms as opposed to being *ad hoc*<sup>4</sup>.

Member States need to adopt a strategic approach to the modernisation of public administration, as indicated in the Common Provisions Regulation of the ESI funds, based on 'principles of excellence'<sup>5</sup>.

## 1.7 Sound economic governance

Investment supported by ESI funds must take place in a sound macroeconomic framework for its impact to be maximised. This is why there needs to be a close link between ESI funding and the economic governance procedures of the Union. Since both policies have the same ultimate objective — sustainable, sustained and balanced growth — it is important that they are closely aligned.

ESI funds are mainly targeted at public investment and at tackling the economic and social challenges confronting Member States. Public investment, however, cannot be effective if public finances are not sustainable and economic policies are not sound. For instance, when countries are cut off from financial markets or forced by stringent financing conditions to introduce difficult economic reforms, it is more difficult when planning programmes to pursue a long-term investment strategy, to secure the involvement of the private sector or to ensure an appropriate level of public investment.

Where national governments fail to put in place sound economic policies or to carry out necessary structural reforms, it is likely to reduce the effectiveness of investment supported by the ESI funds. Consequently, the new policy framework establishes a direct link between the implementation of the Funds and respect for EU economic governance — or, more specifically, action taken at national level to put in place sound fiscal policies, to respond to changing economic circumstances and to carry out key structural reforms ('macroeconomic conditionality').

In this regard, it should be emphasised that the economic and fiscal policies carried out at regional level cannot be seen in isolation from those implemented at national level. The targets set for the latter at EU level apply to all tiers of government. Ensuring proper coordination between them is therefore essential to ensure consistency of the overall fiscal policy stance and equitable burden-sharing between levels of government. Macroeconomic conditionality, therefore, increases the incentive for all tiers of government to manage public finances prudently and there is a collective responsibility to ensure this.

The link between EU funding and macroeconomic governance is not new. It has been acknowledged since the Maastricht Treaty and has been enshrined in the Cohesion Fund legal framework since its creation. Moreover, in the Eurozone, new commitments have recently been made in respect of the Stability and Growth Pact and broadening and reinforcing economic policy surveillance to cope with the economic crisis (through the adoption of what is known as the 'Six Pack').

The objective of the new legal provisions on macroeconomic conditionality is to ensure, on the one hand, that the effectiveness of the ESI funds is not undermined by unsound macroeconomic policies and, on the other, that the Funds are directed to tackling emerging economic and social challenges which are long-term and structural in nature rather than short-term and cyclical.

Macroeconomic conditionality is designed to be applied in a gradual and proportionate way. The suspension of ESI funding is regarded as a last resort when a Member State reaches a significant level of non-compliance under the various EU economic governance procedures. Any suspension will be linked to the seriousness of the breach to ensure that it does not go beyond what is necessary to ensure that funding is used effectively.

Macroeconomic conditionality consists of two strands:

- (1) *Reprogramming of ESI funds*: this concerns amendments to the Partnership Agreements

<sup>4</sup> European Commission (2005).

<sup>5</sup> European Institute of Public Administration.

### The link between the macroeconomic framework and the effectiveness of ESI funds

Article 175 TFEU requires Member States to conduct their economic policies and coordinate them in such a way as to attain economic, social and territorial cohesion objectives, so establishing a clear link between national economic policies and Cohesion Policy. There are many channels which link the achievement of Cohesion Policy objectives with Member State economic and budgetary policies.

First, Cohesion Policy is aimed at fostering growth and development, notably by helping to establish favourable conditions for investment in physical and human capital and technology. Macroeconomic imbalances can jeopardise this by, for example, deterring private investment because of high inflation or high government borrowing. Secondly, according to the principle of additionality, Cohesion Policy is supposed to add resources to those invested by Member States and to complement national efforts in this respect. This implies that governments need to ensure that it is possible to maintain levels of public investment in the areas covered by Cohesion Policy. This can be seriously compromised if the need to reduce budget deficits leads to public investment being reduced.

The empirical link between the macroeconomic framework and the effectiveness of ESI funds has been

examined in a recent analytical paper<sup>1</sup>, which estimates the relationship between macroeconomic policy and indicators of development objectives using standard econometric techniques to show that:

- (I). sound fiscal policy, and more specifically smaller government deficits and debt levels relative to GDP, contribute to socio-economic development and the achievement of EU objectives in this regard;
- (II). higher government current expenditure, including on debt interest, can impede socio-economic development, while public investment (measured in terms of net fixed capital formation) is positively associated with an improvement;
- (III). the ESI funds contribute to achieving EU socio-economic objectives;
- (IV). but their effectiveness is greater when government debt levels and net foreign liabilities are low.

These findings provide support for linking ESI funds to economic governance through macroeconomic conditionality.

1 Tomova, M., *et al.* (2013).

and programmes during implementation with a view to providing targeted support to European semester CSRs in order to respond to changing economic realities, structural reform needs or emerging imbalances or to maximise the impact of the ESI funds on economic development and competitiveness. Such amendments could, for example, cover:

- support for labour market reforms that will improve its functioning, for upgrading skills and lifelong learning and for measures to increase labour market participation;
- support for measures to foster competitiveness such as for improving education and training systems or for R&D and innovation;
- support for investment in infrastructure;

- support for measures to meet climate and energy targets and objectives, such as for reducing greenhouse gas emissions, expanding renewable energy and increasing energy efficiency to reduce import dependency, lower costs and promote green growth;
- support for measures to improve the management of natural resources and the sustainability of transport systems;
- support for SMEs;
- support for measures to improve the quality of governance such as by improving administrative capacity and the data collected to monitor, assess and guide policy.

Failure of a Member State to comply satisfactorily with a request from the Commission to

### EU Budget: commitments vs. payments

The EU budget has two concepts of expenditure:

- commitments which are legal pledges that the EU will provide finance for specific programmes or initiatives, provided that certain conditions are met;
- payments which are cash or bank transfers to the beneficiaries of programmes.

Appropriations for commitments and payments often differ because multiannual programmes and projects are usually committed in the year they are decided but are paid over a number of years as the programme or project is carried out. Since not all projects are undertaken in practice or fully carried out, appropriations for payment tend to be less than for commitments.

amend its Partnership Agreement and relevant programmes could lead to a suspension of part or all of the ESI payments to the programmes concerned. Suspended payments would be released without delay once the Member State responded satisfactorily to the Commission's request. Member States would be able to continue submitting payment claims during the suspension period to avoid them losing EU funding due to the (n+3) de-commitment rule, so long as the suspension is lifted before the closure of the programme.

- (2) *Non-compliance in the context of the Union's economic governance procedures:* If a Member State (i) fails to take corrective action in response to a Council recommendation to eliminate its excessive deficit in the context of an Excessive Deficit Procedure, (ii) submits two successive insufficient corrective action plans or fails to take the recommended corrective action in the context of a Macroeconomic Imbalances Procedure or (iii) fails to comply with the policy conditionality linked to a macroeconomic adjustment programme, part or all of the commitments or payments for the programmes concerned will be suspended.

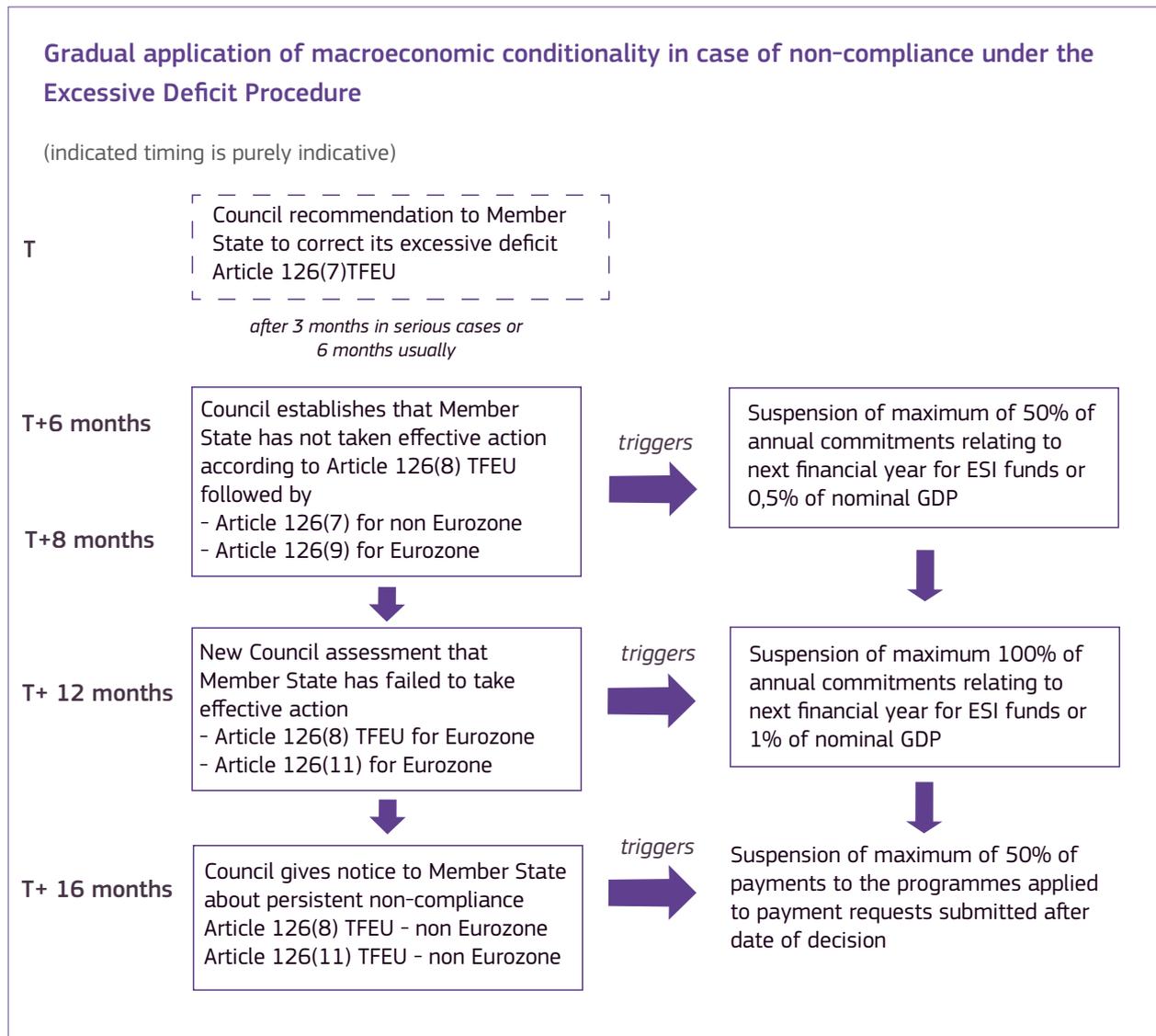
In these cases, the new policy framework gives precedence to a suspension of commitments

rather than a suspension of payments so as to limit the adverse consequences for recipients of ESI funds while maintaining an incentive for economic adjustment. ESI payments will only be suspended when immediate action is sought and in cases of significant non-compliance. A suspension of commitments, moreover, will only apply to those for the next financial year. This should not directly affect programme implementation so long as payments can continue to be made against previous commitments, which remain open for a period of three years following the year to which the budget commitment relates.

During this period the Member State can implement measures to correct its excessive deficit or excessive macroeconomic imbalance or to implement and comply with its macroeconomic adjustment programme. As soon as it is established by the Commission that the necessary corrective action has been taken, the suspension would be lifted and the commitments concerned would be re-budgeted.

The level of suspension will increase gradually in line with the seriousness of the breach to ensure a proportionate response which takes account of the degree and persistence of non-compliance and does not go beyond what is necessary to ensure the effective use of ESI funds. Equal treatment of Member States will also be ensured in line with the provisions set out in the Common Provisions Regulation.

In particular, the new policy framework provides for a 'double capping' method so as to limit the level of suspension of commitments of ESI funds to (i) a particular proportion of the funds and (ii) a particular ratio of the GDP of the Member State concerned. This is considered to be the simplest and fairest approach to ensuring equal treatment given the large differences in the scale ESI funding in relation to GDP between Member States. It was also the approach applied in the case of Hungary which was subject to a suspension of Cohesion Fund commitments in 2012.



The specific economic and social circumstances of Member States will be taken into account when determining possible suspensions. On the one hand, all economic governance procedures include derogation or escape clauses that will be activated in the case of exceptional economic circumstances or events beyond the control of policy-makers. Consequently, macroeconomic conditionality can only be triggered if these escape clauses are not fulfilled.

In addition, the legal framework allows for the economic and social circumstances of the Member State concerned to be taken into account when determining the level and scope of a possible suspension in order to avoid adding an excessive burden on those already enduring

difficult times. Mitigating factors are high levels of unemployment, poverty and social exclusion as well as a prolonged economic recession. Similarly, programmes which are considered to be of critical importance for tackling economic and social problems, such as those relating to the Youth Employment Initiative (YEI), poverty reduction or financial instruments for SMEs will be excluded from possible suspension.

### 1.8 Preserving growth-enhancing investment

Adequate levels of investment are a precondition for competitiveness and development. Public investment tends to increase the rate of return of private capital,

boosting economic growth in the long-run. In times of recession, characterised by sluggish demand, loss of output relative to potential and low private investment, public investment can stimulate growth in the short as well as long-run through its effect on demand. As indicated in Chapter 4, both public and private investment has declined significantly over the past few years reaching record low levels in some countries. Tight budget constraints and spending cuts have seriously affected growth-enhancing expenditure.

The Commission's Annual Growth Surveys of 2012 and 2013 recommended maintaining an adequate pace of fiscal consolidation while preserving investment aimed at achieving the Europe 2020 goals for growth and jobs. In 2012, the Communication from the Commission, *A blueprint for a deep and genuine economic and monetary union — Launching a European Debate*' (COM (2012) 777 final/2) emphasised that public investment is one of the relevant factors to be taken into account when assessing the fiscal position of a Member State, notably when deciding to open an Excessive Deficit Procedure (EDP). It also proposed that, when assessing Stability and Convergence Programmes, non-recurrent public investment with a proven impact on the sustainability of public finances could qualify for a temporary deviation from the medium-term budget objective or the adjustment path towards it.

Government investment projects co-financed by the EU Structural and Cohesion Funds (as well as Trans-European-Networks and Connecting Europe Facility) were considered the natural candidates in this regard, as they fall into the category of productive spending. They, therefore, support GDP potential in the medium-term and contribute to increasing growth-enabling infrastructure, human capital (through training and education), and total factor productivity (through innovation and institutional reforms). This proposal is particularly relevant in a context where a number of Member States report difficulties in continuing to co-finance Cohesion Policy programmes when they have to meet the fiscal targets under the Stability and Growth Pact (SGP).

Accordingly, an 'investment clause' for Member States has been included as part of the preventive arm of the Stability and Growth Pact (SGP), i.e. for Member States which are not in an Excessive Deficit Procedure (EDP). It constitutes a specific application of Article 5(1) of Regulation 1466/97 on the surveillance of budgetary positions and the surveillance and coordination of economic policies of Member States and is related to the existence of a large negative output gap. It allows Member States to temporarily deviate from their medium-term budgetary objective (MTO) or the required adjustment path towards this in specific adverse economic circumstances and in a context of increasing public investment. The "investment clause" is implemented in 2013 and 2014.

In addition to the 'investment clause', the SGP includes several provisions concerning the treatment of government investment. In the preventive arm of the SGP, investment receives special treatment under the new expenditure benchmark. In particular, general government gross fixed capital formation is averaged over a number of years, in order to avoid Member States being penalised if their investment fluctuates markedly from year to year. Moreover, all expenditure, including investment spending, on EU programmes fully matched by EU funding is also excluded from the increases in government expenditure under consideration.

As regards the corrective arm of the SGP, the specific Protocol on the EDP annexed to the Treaty envisages that budgetary discipline is assessed against reference values for the general government deficit and debt which do not differentiate between different kinds of expenditure. Nevertheless, public investment is one of the relevant factors that have to be taken into account in the Commission's assessment prior to the launch of an EDP. In particular, the Commission has "to take into account whether the government deficit exceeds government investment expenditure and all other relevant factors". The list of the other relevant factors includes "developments in primary expenditure, both current and capital (...) the implementation of policies in the context of the common growth strategy of the Union, and the overall quality of public finances".

## 1.9 Linking additionality verification to the stability and convergence programmes

Additionality is a core principle of Cohesion Policy intended to ensure that the funding it provides generates added-value. It means that the EU Structural Funds should complement but not replace equivalent public expenditure undertaken by Member States. Additionality is respected if the average national development expenditure in real terms per year in 2007–2013 is at least equal to the level determined at the beginning of the period, so that EU funding adds to national investment.

For the 2007–2013 period, verification in the Convergence regions (including phasing-out regions) in the 20 Member States<sup>6</sup> occurs at three points:

- *ex-ante* when the level of public expenditure to be maintained (the 'baseline') is set;
- mid-term when the level of actual expenditure in 2007–2010 is determined and the baseline is reviewed;
- *ex-post* when the level of actual expenditure in 2011–2013 is determined and related to the baseline.

The mid-term verification gave rise to three main findings<sup>7</sup>:

- The overall level of national spending on development in the Convergence regions in 2007–2010 was 7% higher than the *ex ante* level, largely because of an increase in particular Member States, mainly as a result of government efforts to mitigate the impact of the crisis or, in some cases, because of the strong economic expansion before the crisis.
- A significant number of Member States asked for their baselines for 2007–2013 to be reduced, mostly because of fiscal consolidation, though in

two cases, it was because of the *ex-ante* calculation being corrected. All of these requests were considered to be justified.

- Shortcomings were identified in the method for verifying additionality, which did not produce fully comparable results across Member States. The *ad-hoc* process required considerable resources both for the Member States and the Commission, and it was not aligned with the review of Member State fiscal plans under EU economic governance procedures.

As a result, the verification process has been reformed for the 2014–2020 period, linking it closely with EU economic governance procedures as well as simplifying it. A single indicator of total public investment (General Government gross fixed capital formation) has been chosen to measure the investment effort of national authorities, so enabling verification to be carried out transparently in the light of the room for fiscal manoeuvre of each Member State. The reform makes verification simpler, more comparable and less burdensome. Whereas up until 2007–2013, additionality was verified in every Member State with a Convergence region, in 2014–2020, it will be verified only in those where there are significant regional disparities and where a large proportion of the population live in less developed regions. This will reduce the number of countries concerned from 20 to 14<sup>8</sup>.

## 1.10 Increasing the role of financial instruments

Financial instruments represent a potentially resource-efficient way of deploying Cohesion Policy resources by providing repayable support for investment through loans, guarantees, equity and other risk-bearing instruments. Besides the obvious advantage of recycling funds over the long term, they help to reduce the dependence of firms on (non-refundable) grants and to mobilise additional private co-investment, so increasing the impact of EU funding.

6 Belgium, Bulgaria, Czech Republic, Germany, Estonia Greece, Spain, France, Italy, Latvia, Lithuania, Hungary, Malta, Austria, Poland, Portugal, Romania, Slovenia, Slovak Republic, and the UK.

7 COM(2013) 104 final.

8 The 14 are Bulgaria, Croatia, Czech Republic, Estonia, Greece, Italy, Latvia, Lithuania, Hungary, Poland, Portugal, Romania, Slovenia and Slovakia.

Financial instruments have increased markedly in importance. By the end of 2012, Cohesion Policy support for them amounted to EUR 12.6 billion in 25 Member States as against only EUR 1.2 billion in 2000–2006. In October 2013, the European Council concluded that programme negotiations should be used to increase significantly the support from the ESI funds for leverage-based financial instruments for SMEs in 2014–2020 and at least doubling support in countries where access to finance remains tight.

In order to encourage the use of financial instruments, the new framework increases the extent to which EU funding can be used to support them. In practice, this means that programme managers have the possibility of employing financial instruments to pursue all 11 thematic objectives instead of being limited to three areas as in 2007–2013 (enterprise support, urban development and energy efficiency).

Standardised, ‘off-the-shelf,’ financial instruments are also being provided for Member States with less experience of them, with pre-defined terms and conditions to facilitate rapid roll-out. Some incentives are available for financial instruments: for contributions from Operational Programmes to an EU-level financial instrument under Commission management, up to 100% of the support can come from the ERDF, ESF or Cohesion Fund, and for funding allocated to national or regional instruments under shared management, the EU co-financing rate is increased by 10 percentage points if a priority is fully carried out by such means.

The Commission and the EIB are jointly setting up a new risk-sharing instrument which combines financing from ESI funds, Horizon 2020 and the COSME programme with EIB loans to generate additional lending to SMEs (the ‘SME Initiative’).

Financial instruments can potentially increase access to finance for a wide range of organisations and individuals, including enterprises investing in innovation, households seeking to improve their energy efficiency and people pursuing their business ideas. They can also help to fund public infrastructure or other projects that comply with the strategic objec-

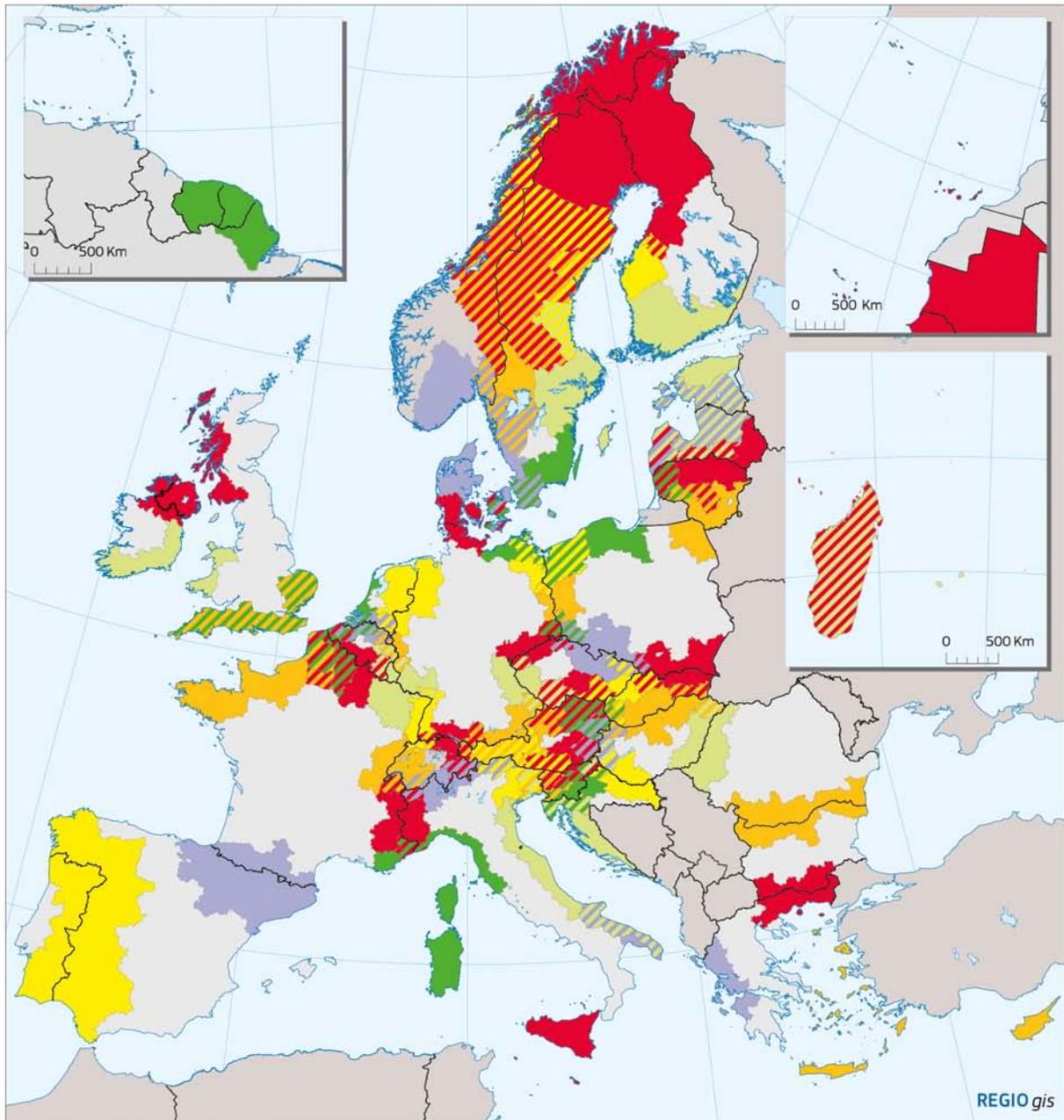
tives of Cohesion Policy and at the same time yield a financial return.

Nevertheless, financial instruments are not suitable in all circumstances. This is why their use has to be justified on the basis of an ex ante assessment to identify inter alia the market failure or sub-optimal investment situation which they are intended to correct and to verify investment needs and that a critical mass is likely to be achieved.

### 1.11 Reinforcing cooperation across Europe

European Territorial Cooperation (ETC) is one of the two main goals of Cohesion Policy in the present period, providing a framework for joint action and policy exchanges between national, regional and local actors in different Member States (Maps 8.7 and 8.8). The challenges faced by Member States and regions increasingly cut across national and regional boundaries and cooperation at an appropriate territorial level is needed to tackle them effectively. ETC can accordingly contribute to furthering the Treaty objective of territorial cohesion:

- trans-border problems (such as pollution) can be overcome most effectively by all the regions concerned cooperating to avoid disproportionate costs for some and free-riding by others;
- cooperation provides a means of sharing good practice and know-how;
- cooperation can realise economies of scale and help to achieve a critical mass, such as in relation to clusters of a particular activity;
- cooperation can improve governance through coordination of policy measures and investment which span national borders;
- cooperation with EU neighbouring countries can contribute to safety and stability and establish mutually beneficial relationships;



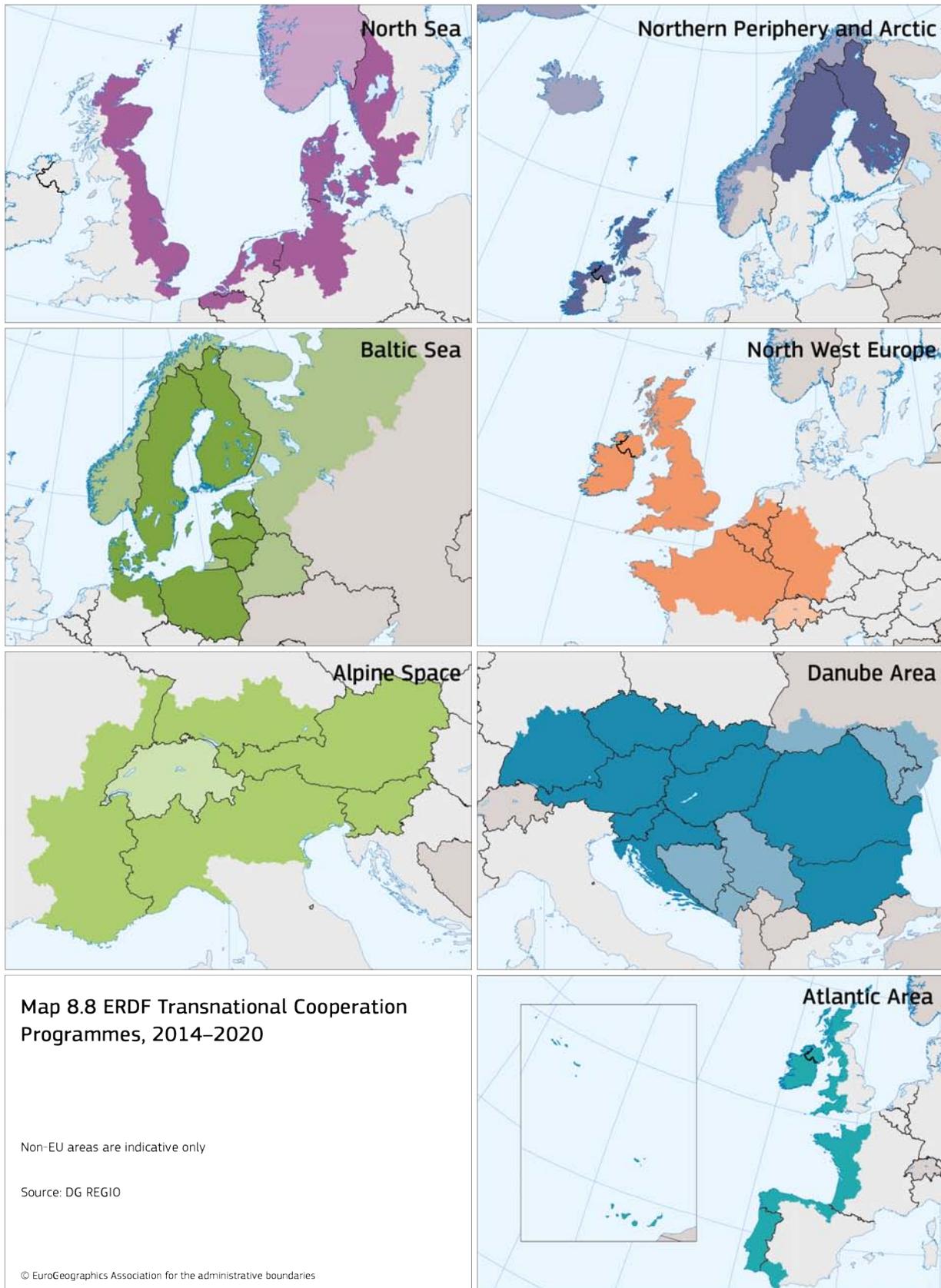
**Map 8.7 ERDF cross-border cooperation programmes, 2014–2020**

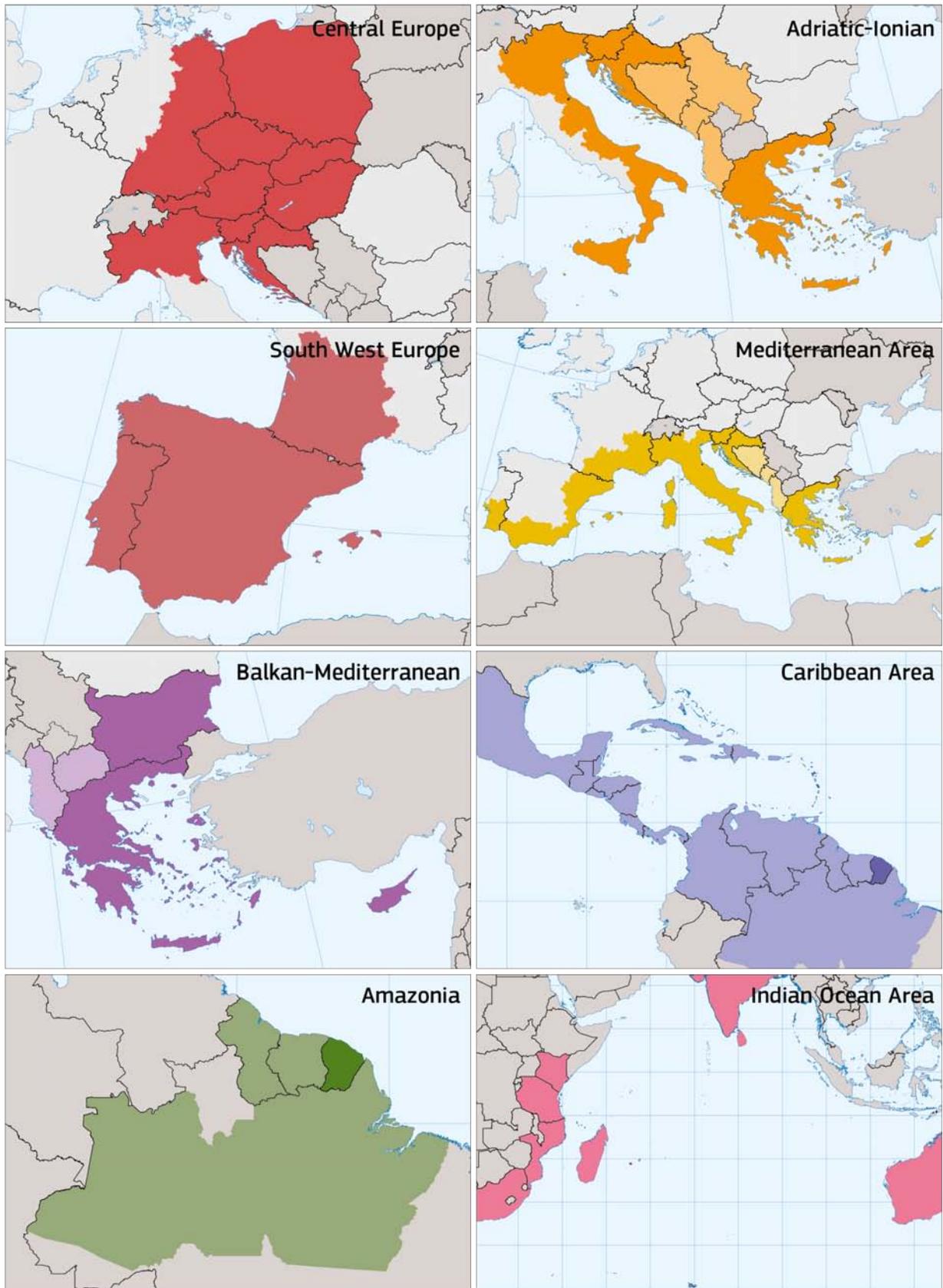
This map shows the areas of the cross-border programmes co-financed by the ERDF. Each programme area is shown with a specific colour. Hatched areas are part of two or more programme areas simultaneously.

Source: DG REGIO

0 500 Km

© EuroGeographics Association for the administrative boundaries





- cooperation between countries is essential in macro-regions, such as those around the Baltic Sea, to manage eco-systems in support of sustainable growth and employment.

The new ETC legal framework also envisages concentration of investment in particular policy areas as well as an increased focus on results, including the establishment of programme-specific milestones against which progress can be assessed. It contains new provisions to facilitate programme implementation, in particular:

- strictly defined selection criteria to ensure that funding is given to genuinely joint operations;
- a reduction in the number of authorities involved in programme implementation and a clarification of their respective responsibilities;
- simplification of the rules on eligibility and prior-written confirmation in this regard by all Member States participating (and, where applicable, third countries) for each programme to help avoid the legal uncertainties which could arise as it is carried out.

In the 2007–2013 period, at the request of the European Council, two macro-regional strategies were adopted by the Commission, one for the Baltic Sea and one for the Danube. Another two, for the Adriatic-Ionian and Alpine Regions, are under preparation. Each of these covers several Member States and regions and is aimed at increasing the coherence of policy and the overall impact of public funding.

## 2. Preliminary assessment of the programme negotiations 2014–2020

The Commission has adopted a proactive approach in the new period to try to ensure a timely start of programmes. As early as autumn 2012, the Commission sent position papers to all Member States outlining its views of the development needs and funding priorities for each of them. In addition, an informal dia-

logue took place in 2013 with most Member States to identify funding priorities at an early stage and accelerate the adoption of the programming documents as soon as possible in 2014.

At the time it adopted this report, the Commission had received all 28 Partnership Agreements (PAs) though only just over 150 of the 400 or so expected Operational Programmes (OPs). Negotiations with Member States and regions are ongoing. The following, therefore, provides only a preliminary indication of the extent to which the main elements of the reform have been incorporated in the new strategies and programmes.

### 2.1 Funding priorities in 2014–2020

Overall, around EUR 336 billion are allocated to national and regional programmes under the Investment for growth and jobs goal<sup>9</sup>. The resources are divided as follows: EUR 187.5 billion to the ERDF, EUR 63 billion to the Cohesion Fund, and EUR 85 billion to the ESF which is higher than the legally required minimum ESF allocation of EUR 80 billion<sup>10</sup>.

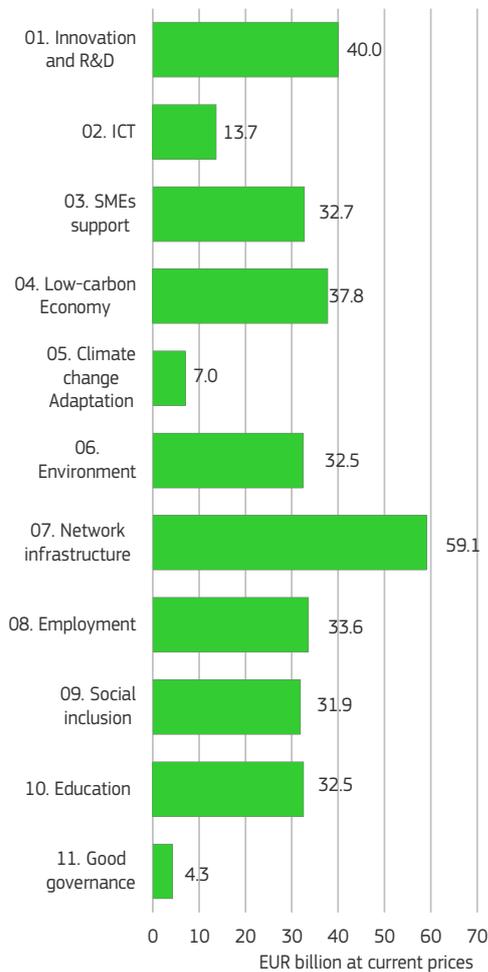
#### (i) Allocation by thematic objective (TO)

The largest allocation from the three funds is foreseen for support for transport and energy infrastructure (TO7) (EUR 59.1 billion or 18.2% of the total), followed by strengthening R&D and innovation (TO1) (EUR 40 billion, 12.3% of the total) and support for a low carbon economy (TO4) (EUR 37.8 billion, 11.6% of the total).

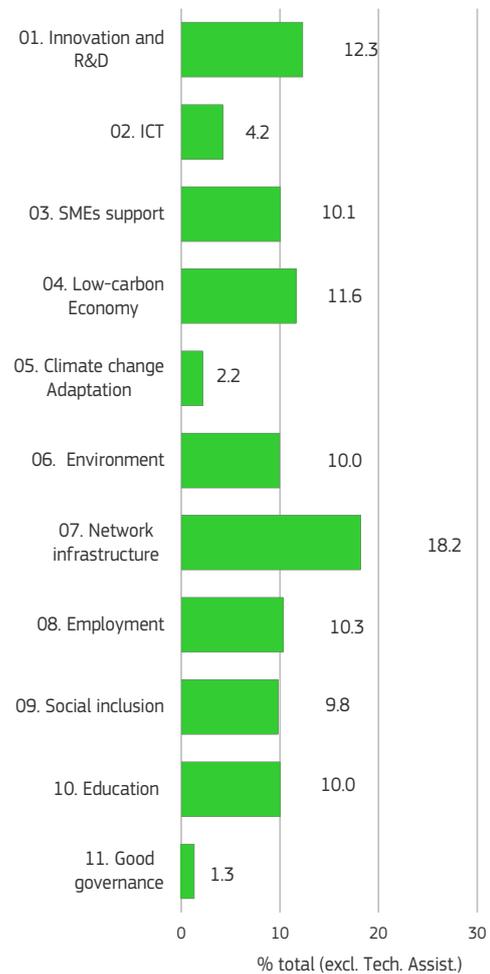
Financial allocations to support employment (TO8), SMEs (TO3), education and training (TO10), environmental protection (TO6), and social inclusion measures (TO9) are on much the same scale, around EUR 32–33 billion (or around 10% of the total), while

<sup>9</sup> The financial resources for this goal cover the ERDF (excluding support for European Territorial Cooperation), the ESF and the Cohesion Fund. Resources allocated to technical assistance are not considered in this analysis.

<sup>10</sup> The figures mentioned in this section are preliminary (state of play: 1 June 2014) and may change in the context of the ongoing programme negotiations between the Commission and Member States.

**Figure 8.1 Allocation to thematic objectives, 2014-2020**

Source: Final and draft partnership agreements as of 1 June 2014

**Figure 8.2 Allocation to thematic objectives, 2014-2020**

Source: Final and draft partnership agreements as of 1 June 2014

allocations to support the digital agenda (ICT; TO2), adaptation to climate change (TO5) and good governance (TO11)<sup>11</sup> are much smaller (Figures 8.1 and 8.2).

### (ii) Allocations to thematic objectives by Fund

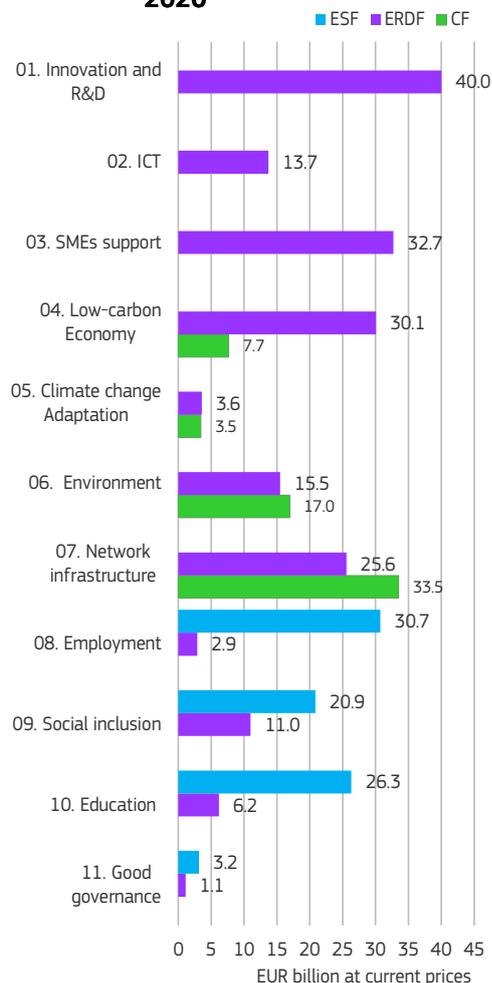
The allocation to thematic objectives from each Fund reflect the provisions of the new regulatory framework, in particular the priorities on which they are concentrated (Figures 8.3 and 8.4).

<sup>11</sup> Investments in enhancing institutional capacity of public authorities and stakeholders and efficient public administration is considered as good governance

The ERDF will be used to pursue all 11 thematic objectives, but resources are concentrated on support for R&D and innovation (EUR 40 billion, 22% of the ERDF total), SMEs (EUR 32.7 billion, 18% of the total), a low carbon economy (EUR 30 billion, 16.5% of the total), and transport and energy infrastructure (EUR 25.6 billion, 14% of the total).

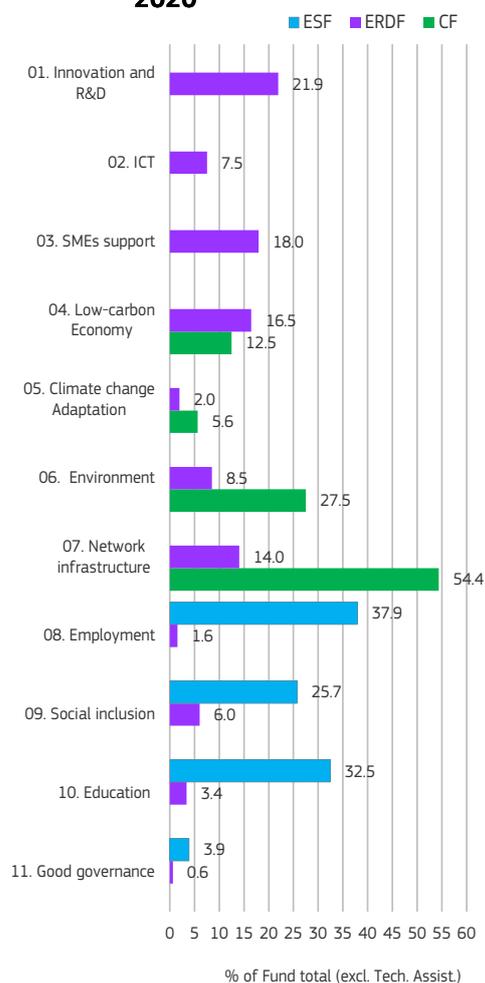
Support from the Cohesion Fund is concentrated on four objectives only (i.e. 4–7), just over EUR 33 billion being allocated to investment in transport and energy infrastructure (54% of the total), EUR 17 billion (27.5% of the total) to environmental protection

**Figure 8.3 Allocation to thematic objectives by Fund, 2014-2020**



Source: Final and draft partnership agreements as of 1 June 2014

**Figure 8.4 Allocation to thematic objectives by Fund, 2014-2020**



Source: Final and draft partnership agreements as of 1 June

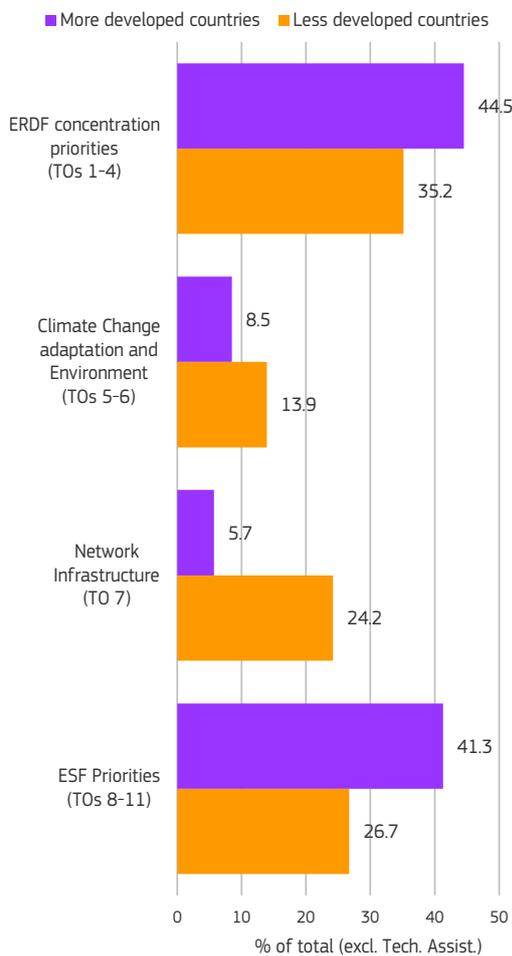
and EUR 7.7 billion (12.5% of the total) to low carbon economy.

Like the Cohesion Fund, financial support from the ESF is focused on four objectives, almost EUR 31 billion (38% of the total available) being allocated to employment, EUR 26.3 billion (32.5% of the total) to education and training and EUR 20.9 billion (26%) on social inclusion measures.

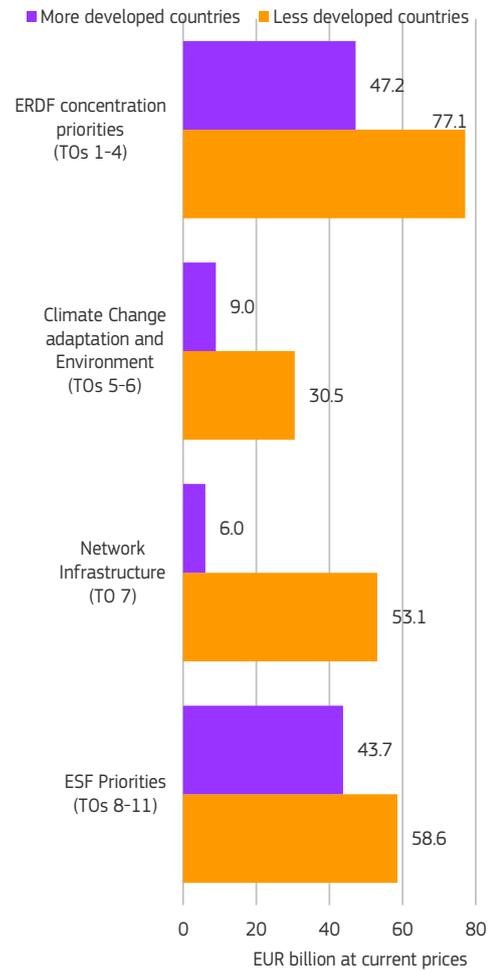
### (iii) Allocations to thematic objectives by group of countries

The relative allocation of funding to the different objectives varies significantly between more and less developed Member States<sup>12</sup>, reflecting their different levels of economic development and investment needs, though there will equally be variations

<sup>12</sup> For the purpose of this analysis the less developed Member States are taken as the countries eligible for the Cohesion Fund in 2014–2020. These are Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Malta, Slovakia, Poland, Portugal and Romania, and Slovenia. More developed Member States are those countries which are not eligible for Cohesion Fund support.

**Figure 8.5 Allocation to thematic objectives by group of countries, 2014–2020**

Source: Final and draft partnership agreements as of 1 June 2014

**Figure 8.6 Allocation to thematic objectives by group of countries, 2014–2020**

Source: Final and draft partnership agreements as of 1 June 2014

between countries in each of these categories for the same reasons (Figures 8.5).

In the more developed Member States, the share of investment in R&D, innovation, ICT, SMEs and a low carbon economy (44.5% of the total) is significantly larger than in less developed ones (35%).

The same is true for investment in employment, social inclusion, education and training and administrative capacity building (41% of the total in the more developed countries, just under 27% in the less developed).

Less developed Member States, on the other hand, have earmarked a larger share for investment in environmental protection and adaptation to climate change than more developed ones (14% as against 8.5%).

The difference is even more pronounced for transport and energy infrastructure, for which the share is almost 5 times larger in the less developed Member States than in more developed (24% as against just under 6%).

The situation is of course different in terms of the absolute amounts allocated to the various objectives

because of the much larger scale of funding going to the less developed countries. Whereas the share of investment allocated to innovation, ICT, SMEs and a low carbon economy as well as to employment, social inclusion, education and administrative capacity building is smaller in less developed Member States than in the more developed ones, the amount of funding going to these objectives is significantly larger (Figure 8.6). It is larger still in relation to the population in these countries, which is only around a third of that in the more developed ones.

#### (iv) Funding priorities 2014–2020 as compared with 2007–2013

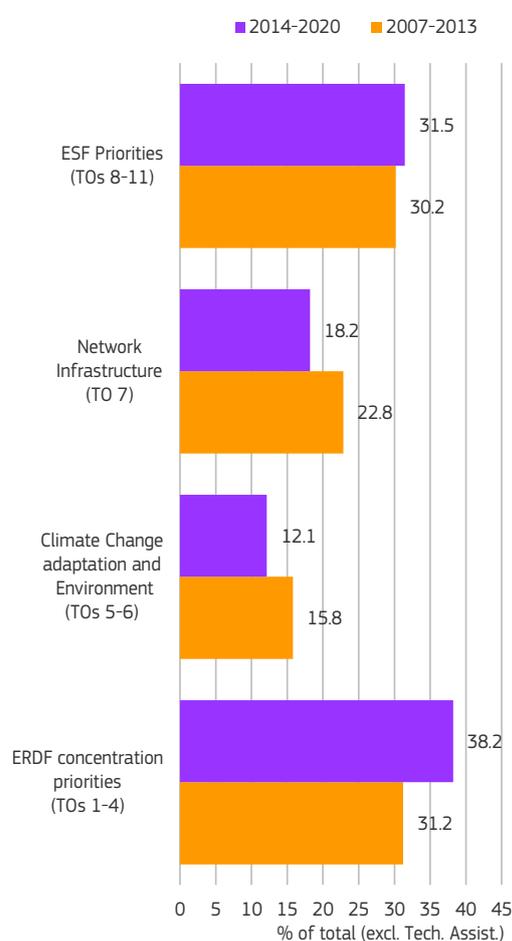
The new programming period brings a shift of funding priorities compared with 2007–2013 reflecting the close link between Cohesion Policy and the Europe 2020 strategy<sup>13</sup>.

Around EUR 124 billion is allocated to R&D and innovation, ICT, SMEs and a low-carbon economy, an increase of almost 22% compared with 2007–2013 (Figure 8.7). EUR 98 billion is to be invested in employment, social inclusion and education and training measures, slightly more than in the previous period, while almost EUR 4.3 billion is allocated to good governance (institutional capacity building and the efficiency of public administrations), 72% more than before.

On the other hand, EUR 59 billion is allocated to transport and energy infrastructure, a reduction of 21% from 2007–2013, while investment in environmental protection is down by 27%.

In short, Member States and regions will invest more in the areas identified as ERDF priorities (R&D and innovation, ICT, SMEs, and a low-carbon economy) and ESF priorities (employment, social inclusion, education and training and good governance). In turn, less funding will go to transport and environmental infrastructure.

**Figure 8.7 Allocation by thematic objective, EU-28, 2014–2020 and 2007–2013**



Source: SFC and Final and draft partnership agreements as of 1 June 2014

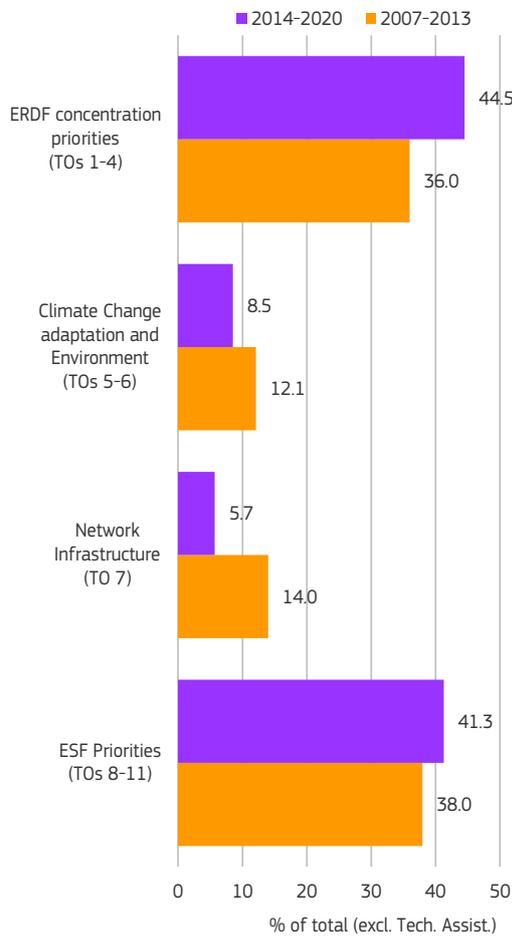
These changes are common to both less developed and more developed Member States, though the shift to ERDF and ESF priorities is more pronounced in the latter as is the reduction in funding for transport and energy infrastructure (Figures 8.8 and 8.9).

## 2.2 Aligning investment with Country Specific Recommendations

Many Country-Specific Recommendations (CSRs) relate to medium and long term challenges which need to be tackled through a combination of structural reforms and investment. Several of them are directly

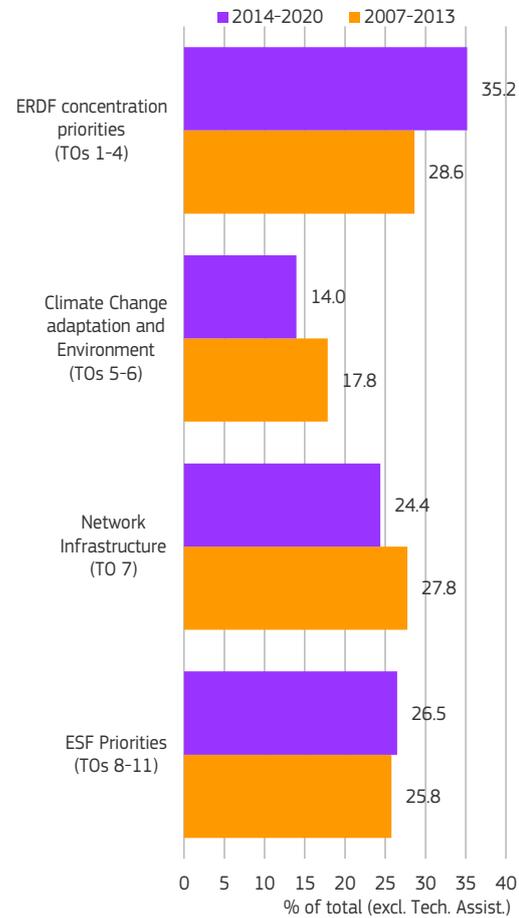
<sup>13</sup> For 2007–2013 the categorisation of expenditure by Member State, objective and Operational Programme has been used to compare with 11 thematic objectives in 2014–2020.

**Figure 8.8 Allocation by thematic objective in more developed Member States, 2014-2020 and 2007-2013**



Source: SFC and Final and draft partnership agreements as of 1 June 2014

**Figure 8.9 Allocation by thematic objective in less developed Member States, 2014-2020 and 2007-2013**



Source: SFC and Final and draft partnership agreements as of 1 June 2014

linked to the thematic objectives of the ESI funds such as the reform of labour markets, educational systems and public administration, the promotion of science and innovation, the provision of high quality social and health services or the upgrade of transport and energy infrastructure.

The Partnership Agreements (PAs) and draft Operational Programmes (OPs) generally reflect the relevant CSRs by identifying the related development and investment needs. But only in some cases are the results expected from the investment supported by the funds clearly related to the CSRs specified and there is a need for more detail on the way

that the CSRs concerned will be put into effect in the programmes. Some recommendations clearly require more than one Fund to support the intervention needed and Member States should ensure that the relevant Funds will do so.

Most Member States and regions have prepared innovation strategies for smart specialisation to accelerate economic development and to narrow the knowledge gap. It is important that these strategies focus on investments which reach a critical mass and best reflect regional potential. More emphasis needs to be put on 'soft' forms of support, on promoting market-driven research and cooperation with the

private sector instead of funding predominantly research infrastructure and equipment.

Some Member States have brought forward programmes that establish clear links between the digital economy and innovation. This is important as investment in high speed broadband and ICT is needed to overcome particular bottlenecks and to encourage market-driven solutions. For example, it is essential to focus investment in broadband on next-generation networks to ensure that less developed regions do not fall further behind. Coordination between Cohesion Policy, Horizon 2020 and other EU programmes is also critical as regards smart specialisation strategies at national and regional level.

Many Member States consider the strengthening of the competitiveness of SMEs to be central to their growth strategy and it is expected that financial instruments will play a major role in this regard. However, there is limited interest so far in the new SME Initiative. Moreover, there is a risk of 'business-as-usual' support for SMEs regardless of the sector and the activities in which they are engaged. Support should be tailored to the needs of enterprises and their growth potential to ensure a large leverage effect and a quick take-up of funding.

In the PAs of a number of Member States, energy, climate change and the environment are well integrated into their economic development strategy. Several have put specific emphasis on energy efficiency or developing renewable energy as a means of creating new businesses, jobs and export opportunities, while also reducing greenhouse gas emissions. However, the link between investment and the expected results in relation to the climate change objectives needs to be made clearer in some cases.

Given the challenges of high unemployment and increasing poverty, the focus on the inclusive growth objectives could be stronger in some PAs. The Commission is also of the view that the funding allocated to education is as yet not sufficient to achieve the priorities identified. In some PAs, low priority is given to active measures for social inclusion. To ensure better social outcomes and investment that is more responsive to social change, social policy re-

form needs to be more taken account of in programming.

Moreover, as regards the Youth Employment Initiative (YEI), relevant information in some PAs and OPs is relatively general and does not set out how this new initiative will be delivered and if and how it will support the implementation of Youth Guarantee schemes. In some programmes, the actions supported by the YEI need to be more focused on employment creation.

Despite the existence of a CSR on the integration of the Roma minority, some Member States do not plan to have a specific priority for marginalised communities, making it more difficult to assess how much funding will be allocated to this policy area. Some Member States do not sufficiently address the needs of this target group, while others need to develop their strategy and intervention logic further.

It is also important to be precise on how support from the ERDF and ESF will be coordinated, given that there is a need for an integrated approach by the two funds. This applies, for example, to education where investment in infrastructure needs to be combined with teaching and training measures to ensure that the infrastructure is used effectively.

In 2014–2020, some 88 programmes in 16 countries are multi-fund programmes, combining resources from the ERDF, Cohesion Fund and ESF. This is expected to encourage a more integrated approach and more coherence between policies, funding and priorities.

Public administration reform, with the aim of improving governance, is not another policy area as such. Rather, the quality of public administration is often key to a region or Member State being able to develop.

Administrative modernisation and the quality of justice are recognised as key factors for competitiveness and inclusive growth. Many Member States are planning measures to strengthen their public institutions and to improve their capacity to deliver effective policies, better administrative services, speedier judicial proceedings, increased transparency and

integrity of public bodies and wider participation of the public in the various phases of policy-making. Yet, in a number of Member States where a need for reform of public administration has been identified to support jobs, growth and increased competitiveness, a clear strategy is missing and objectives are incomplete and unclear. Moreover, in some of these Member States a clear political commitment to such reform is lacking.

### 2.3 Increasing the impact of investment and delivering results

Most Member States have made significant efforts to adopt measures to satisfy *ex-ante* conditionalities. It is essential that relevant criteria are met at the start of the programming period to eliminate potential obstacles to the investment undertaken being as effective as possible. The process has not been easy and, in many cases, the Commission will need to agree action plans to ensure full compliance with the requirements within well-defined deadlines.

Conditions, which Member States have found particularly difficult to meet, concern areas where coherent strategies are important such as in relation to smart specialisation. Difficulties are also evident in areas where EU Directives need to be implemented (e.g. as regards energy efficiency or environmental impact assessment) or where EU regulations need to be applied effectively (e.g. in relation to public procurement).

In some countries substantial efforts are still needed to tackle bottlenecks relating to administrative capacity. It is of key importance for the efficient management of EU funding that a clear and stable institutional and regulatory framework is in place, that skilled and motivated staff are attracted and retained and that the tools and instruments used are appropriate for the effective deployment of the funds.

Setting clear objectives is at the heart of the orientation of Cohesion Policy towards results and will be the basis against which its success will be measured. This represents a real step change. Member States and regions, however, have found it difficult to for-

mulate well-defined specific goals which the policy is aimed at achieving. Many draft programmes have continued the practice of expressing vague general aims and of listing a large number of possible actions in order to maintain maximum flexibility in the selection of projects at a later stage.

Until the objectives are expressed in an understandable and clear way, it is difficult to assess whether the intervention logic of a programme is sound and that there is a reasonable chance of the funding allocated producing the expected outputs and making the intended contribution to the pursuit of ultimate policy aims.

The performance framework is another new element. This can only be drawn up when the intervention logic of a programme, its financial structure and outputs for each priority have become clear, i.e. relatively late in the drafting of each programme. So far only drafts of these have been received by the Commission. The main challenge when formulating performance frameworks is to fix quantified targets for the indicators used at a sufficiently ambitious, but realistic, level — i.e. at a level that can be achieved if the programme performs as planned.

Partnership Agreements have in most cases been drafted after reasonable consultation with partners, although in some cases there are indications that this dialogue has been insufficient. Important stakeholders were not involved or their comments are not reflected in the versions of the documents submitted. The Commission will look very carefully at how Member States have applied the Code of Conduct on Partnership to ensure genuine participation by stakeholders.

Last but not least, the new period requires strong governance and coordination at the national and regional level to ensure consistency between programmes and support for Europe 2020 and the CSRs as well as to avoid both overlaps and gaps in

expenditure. This is important in view of the overall increase in the number of regional programmes (for ESF programmes it is almost 60% compared to 2007–2013).

### 3. Estimated impact of Cohesion Policy 2014–2020

As indicated in the previous chapter, estimating the impact of Cohesion Policy investment is difficult, not least because it affects a wide range of macroeconomic variables, including GDP, employment, productivity, the budget deficit and the trade balance which are also affected by a large number of other factors. Interventions have an impact on demand since programmes generally result in increased public expenditure though also increased private spending in many cases. They also have an impact on the supply-side since they add to investment in infrastructure, plant and equipment and technology as well as human capital — indeed, their central purpose is to increase development potential through boosting such investment.

Interventions, in addition, have direct and indirect effects. For example, transport projects boost demand directly in the short-term while improving communication links, which should, indirectly, have a positive effect on the expansion of businesses and so GDP in the longer-term. At the same time, interventions might increase the demand for labour and materials which could lead to higher wages and prices, so reducing cost competitiveness and adversely affecting GDP.

Equally, as already emphasised, the fact that economic performance is affected by a wide range of other factors means that the impact of Cohesion Policy cannot be identified simply by looking at the data for GDP and other economic variables. To do so, it is necessary to compare how the economy would have developed in absence of Cohesion Policy with how it developed in practice. This is why the use of macroeconomic models, which capture the way that economies function, is needed. (Specifically, they are used to generate a ‘baseline scenario’ — represent-

ing what would have happened without the policy — which can then be compared with the actual course of the economy.)

Macroeconomic models enable both the short-term impact of policy to be estimated and the longer-term effects which take account of improvements in the supply-side of the economy which continue after the programming period is over. They also enable the interaction between direct and indirect effects to be taken into account.

In the analysis presented below, two models are used to simulate the expected impact of the 2014–2020 programmes. The first is the QUEST III model developed and used by the Directorate General for Economic and Financial Affairs (DG ECFIN)<sup>14</sup>. Since this produces results at the national level, it is supplemented by a second model, RHOMOLO<sup>15</sup>, which is designed to estimate the impact of policy at the NUTS 2 regional level<sup>16</sup>. This incorporates several elements borrowed from economic geography. In particular, it takes a number of spill-over effects into account to capture the fact that interventions have an impact not only in the region where they are implemented but also in other regions. Such spill-over effects arise from trade linkages between regions as well as from the dissemination of technology.

In order to ensure coherence between the outcomes of the two models, RHOMOLO has been aligned with QUEST so that its regional estimates are consistent with the QUEST national estimates.

#### 3.1 Estimated impact at the national level

The estimates generated by QUEST of the effects of Cohesion Policy in the 2014–2020 period cover all 28 Member States. They indicate that the investment funded could lead EU GDP to be 0.4% higher com-

<sup>14</sup> This incorporates the latest techniques in Dynamic Stochastic General Equilibrium (DSGE) modelling, which is founded on microeconomic principles of how individuals, enterprises and other organisations are assumed to behave.

<sup>15</sup> This has recently been developed jointly by the Joint Research Centre-Institute for Prospective Technological Studies and DG Regional Policy.

<sup>16</sup> See: Brandsma, A. *et al.* (2013).

### Constructing the simulations

To carry out the simulations, Cohesion Policy interventions are grouped into five broad categories:

- Infrastructure investment, which includes investment in transport, telecommunications, energy and environmental infrastructure and is treated in the model as government investment. This is assumed to raise productivity in the medium-term through output enhancing effects, which are in turn assumed to decline slowly as the infrastructure ages.
- Expenditure on human resources, which includes spending on education and vocational training as well as on other labour market measures. This is assumed to improve the skills of the work force, though the effects of this take time to build up and the gains only become apparent in the long-term, but they are assumed to be significant and persistent. The effects decline in the longer-run as people retire.
- Support to R&D, which includes the establishment of networks and partnerships between businesses and research centres. This is assumed to reduce the fixed costs of production. It is also assumed that high-skilled workers are moved from production to R&D which initially reduces the output of goods and so GDP, but over time increases in productivity are assumed to dominate which raises output and stimulates investment. While it takes time for these effects to become apparent, the output gains in the longer-run are assumed to be significant and to continue to increase.
- Aid to the private sector, which includes support for SMEs, tourism and cultural activities. These are modelled as reductions in the fixed costs of production and have the effect of boosting growth in the short-run when spending occurs, but they are also assumed to have long-lasting effects on productivity.
- Technical assistance, which is modelled as government spending. This is assumed to have no effect

on output in the medium- and long-run (irrespective of any improvement in the governance of policy which results).

The models incorporate both short-term demand effects and longer-term supply side effects. The former arise during the period when expenditure takes place when most of the impact comes from the increase in demand, which is assumed to be partly crowded-out by increases in interest rates, wages and prices. In the medium and long-run, the productivity enhancing effects materialise, so increasing potential output and allowing GDP to grow free of inflationary pressure. The effect of the interventions, therefore, progressively builds up over time.

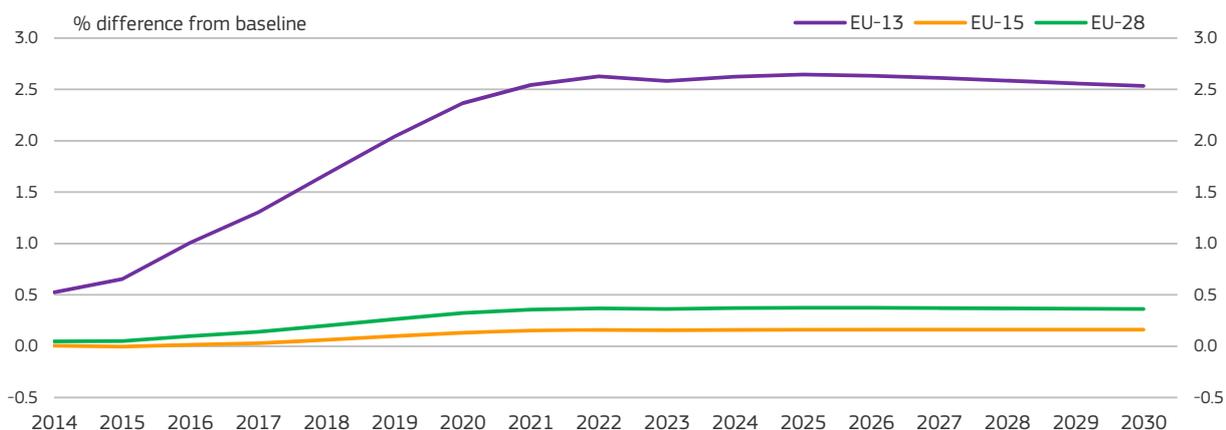
In RHOMOLO, investment in transport, as well as increasing productivity, is also assumed to reduce transport costs between regions which facilitates trade in goods and services and hence boosts economic activity.

It is assumed, in addition, in both models that Cohesion Policy expenditure is financed by contributions to the EU Budget by Member States which are proportional to their GDP and that these contributions are in turn financed through increases in taxes. The positive impact of the interventions on output and employment is, therefore, partly offset by the negative impact of these.

The two models have been used to simulate the expected impact of Cohesion Policy programmes for the period 2014–2020. Since most of the new programmes have yet to be adopted, funds are assumed to be distributed between the broad investment categories listed above in the same way as in the 2007–2013 programming period, though adjusted to take account of the features of the new period that are already known, such as the amount of funding allocated to Member States and categories of region, the concentration of the ERDF on particular objectives and the minimum shares of the ESF going to different countries.

pared with the baseline (i.e. the non-policy scenario) level by the end of the programming period in 2023 and EU-13 GDP to be 2.6% higher. EU-15 GDP, however, is estimated to be only 0.2% higher relative to the baseline (Figure 8.10).

The estimates for individual countries include spill over effects from developments in other countries. Accordingly, they do not only include the effects of the Cohesion Policy programmes carried out in the country itself but also take explicit account of the indirect effects of the programmes carried out in other countries in the form of increased exports to them.

**Figure 8.10 Estimated impact of Cohesion Policy for the 2014–2020 period on GDP**

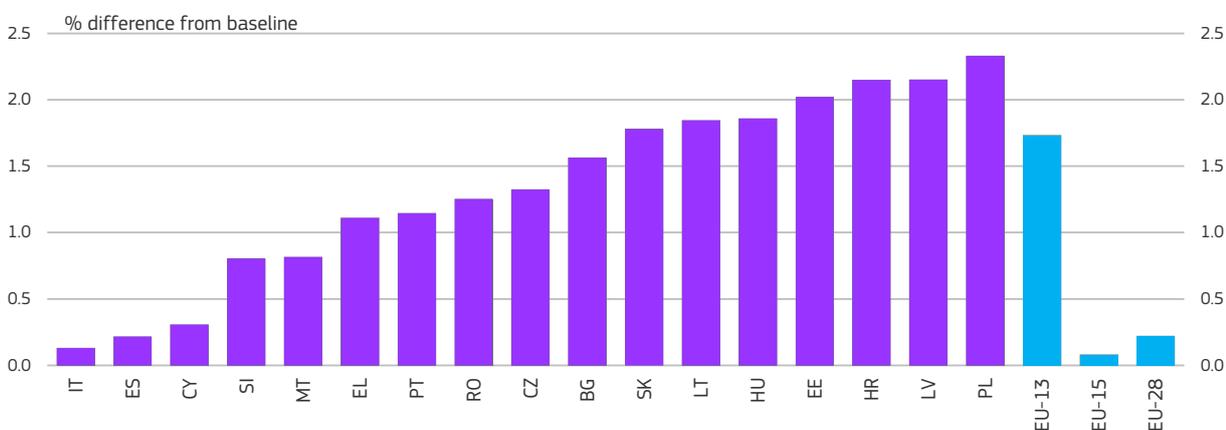
Source: QUEST 3R&amp;D simulations

They take account too of the need to finance Cohesion Policy expenditure, which is assumed to lead to taxes being higher in all Member States as compared with the situation without Cohesion Policy. These higher taxes together with the modest Cohesion Policy investment in the EU-15 explain the limited impact in the latter (which is negative in some countries where the depressing effect of taxes more than outweighs the expansionary effect of investment) (Figure 8.11).

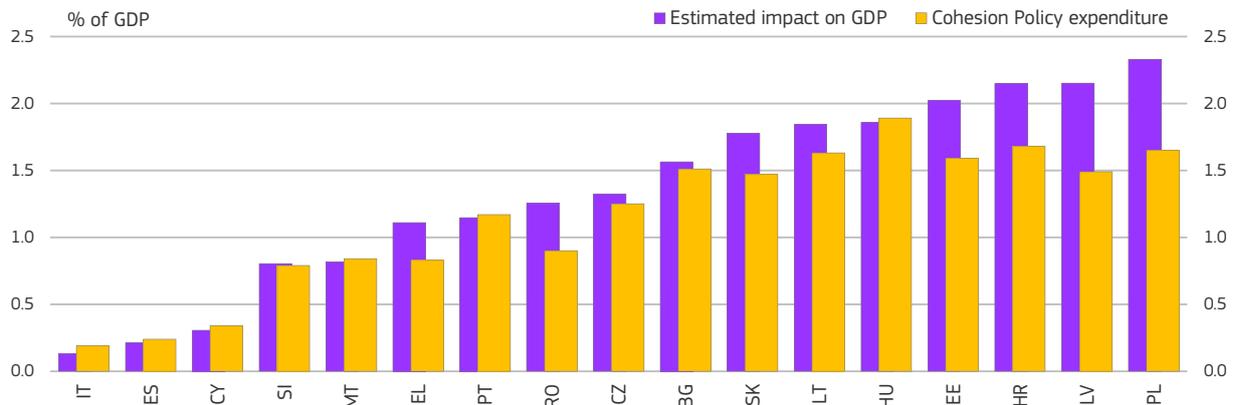
The estimated impact of Cohesion Policy programmes on the GDP of the main beneficiary countries vary considerably, largely reflecting the differing amounts of funding received (Figure 8.12). The relationship,

however, is not proportionate, reflecting other factors such as the composition of programmes. For example, the impact of programmes on GDP is estimated to be largest in Poland, where funding is less than in Hungary where the impact is estimated to be only the fifth largest. Similarly, funding in Croatia is much the same in relation to GDP as in Lithuania but the impact is estimated to be significantly larger.

The results of the simulation also highlight the fact that the impact is estimated to build up over the years and to continue after the programme comes to an end. Most of the increase in GDP during the period, therefore, comes from higher demand, which

**Figure 8.11 Estimated impact of Cohesion Policy expenditure for 2014–2020 on GDP in main beneficiary countries, average 2014–2023**

Source: QUEST 3R&amp;D simulations

**Figure 8.12 Cohesion Policy expenditure for 2014–2020 and impact on GDP in main beneficiary countries, average 2014–2023**

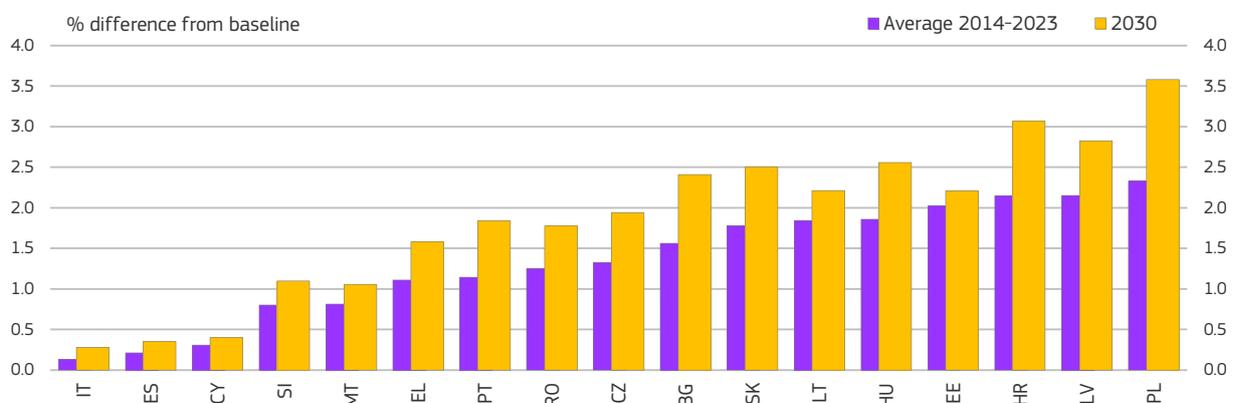
Source: QUEST 3R&D simulations, DG REGIO Cohesion spending projections and DG ECFIN Spring 2013

is assumed to be partly ‘crowded-out’ by increases in interest rates, wages and prices. It is only in the medium and longer-term that the productivity enhancing effects of Cohesion Policy materialise, increasing potential output and enabling GDP to grow free of any inflationary pressure (Figure 8.13). By 2030, the effect is to increase GDP in Poland — where the effect is largest — by an estimated 3.6% above what it otherwise would be in the absence of Cohesion Policy.

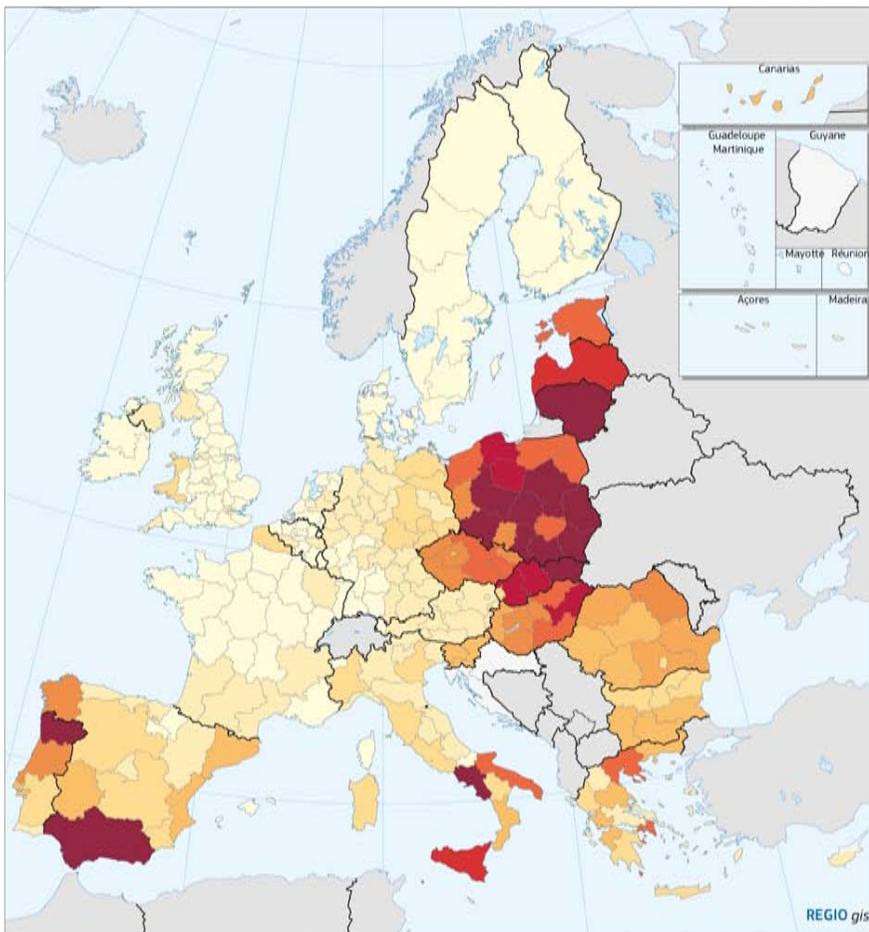
This continuing build-up over time of the impact of Cohesion Policy is also reflected in the multiplier which indicates the increase in GDP per Euro spent. For the EU as a whole, it is estimated at around 1.5 over the

2014–2023 period and up to 3.75 over 2014–2030. This illustrates the fact that Cohesion Policy not only boosts demand in the short-run but strengthens the growth potential of economies through supply-side effects which persist long after the funding has come to an end.

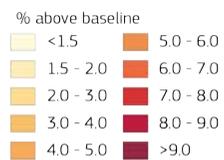
Cohesion Policy not only has a positive impact on GDP but also boosts employment. In the short-term, this is mainly a result of the increase in economic activity which the investment it co-finances give rise to. In the longer-term, the same investment tends to increase labour productivity and competitiveness through improvements in infrastructure, methods of

**Figure 8.13 Estimated impact of Cohesion Policy expenditure for 2014–2020 on GDP in main beneficiary countries in 2014–2023 and 2030**

Source: QUEST 3R&D simulations



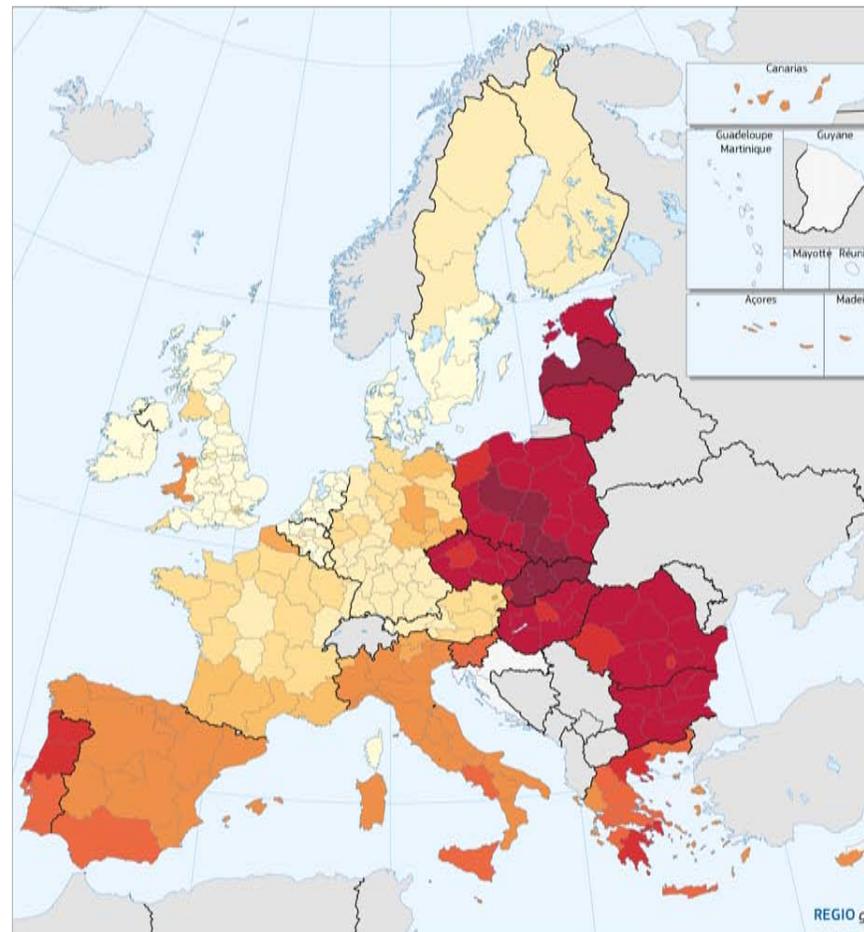
Map 8.9 Impact of interventions in transport infrastructure on accessibility, 2030



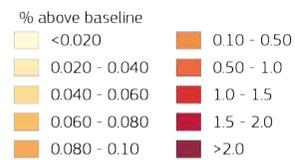
Source: RHOMOLO



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Map 8.10 Impact of interventions in transport infrastructure on regional GDP, 2030



Source: RHOMOLO



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production, the structure of industry, the skills of the work force and so on. This, accordingly, tends to lead to a further expansion of economic activity and employment and one which is likely to persist long after the initial expenditure was undertaken.

As in the case of GDP, the impact on employment is likely to be particularly large in the main beneficiary countries. For example, simulations suggest that in Poland, employment could be 1% higher than it would have been without Cohesion Policy funding during the implementation of programmes and significantly higher than this in the longer-term.

### 3.2 Estimated impact at the regional level

A model like RHOMOLO which takes account of the spill-over effects of interventions at the regional level is important for assessing the full effects of Cohesion Policy. Since regions in the EU are closely interconnected through trade, the movement of workers, flows of capital and the diffusion of technology, interventions tend to have an impact well beyond the places in which they are implemented. The inclusion of such interconnections in the model, however, makes it more complicated to interpret the results. In order to illustrate how the various mechanisms represented in RHOMOLO combine to produce their effects, three simulations each focusing on a particular area of intervention are presented below.

#### Investment in infrastructure

Much of Cohesion Policy funding goes on investment in infrastructure. For the 2007–2013 period, it accounted for around 49% of the total and it is still expected to be important in the present period. There are, however, large differences between regions, expenditure being considerably higher in less developed regions where the need is greatest. The impact of investment in infrastructure is captured by assuming that it reduces the cost of transport between regions and increases the accessibility of those where it takes place (Map 8.9 shows the estimated impact of co-financed investment on the accessibility of each

NUTS 2 region). This is largely in the less developed regions.

Improvements in transport infrastructure mean that regions have better access to EU markets which increases their exports and GDP. They also mean, however, a reduction in the price of imports, since the regions concerned are more accessible to producers elsewhere. This increases the real income of households and reduces the costs of firms producing in the region, but it is likely to mean a loss in their share of the regional market which offsets this while benefiting producers in other regions and boosting GDP there. The impact of investment in transport infrastructure, therefore, is not confined to the region where it takes place, since the improvements in accessibility lead to other regions being able to export goods more easily which boosts their GDP too. All these effects combine to produce a differential impact on GDP in the different regions across the EU (Map 8.10).

The effect of the inter-relationships between regions can be further illustrated by simulating a symmetrical reduction in the costs of transport between five Polish regions: Łódzkie, Mazowieckie, Śląskie, Kujawsko-Pomorskie and Pomorskie resulting from a transport project which improves the connectivity between them (Map 8.11).

The simulation shows that this would have a positive impact on GDP in almost all regions, though to differing extents. In the short-run (defined as the 4-year period following the completion of the project), the capital city region of Mazowieckie benefits most from the investment, mainly because it is in the centre of the 5 regions concerned and enjoys the largest increase in accessibility. In the very long-run, however (45 years after the project is completed), the positive impact spills over more to the other four regions and regions in the rest of the country also gain as a result of the increased economic activity generated. This underlines the importance of taking inter-connections between regions into account when assessing the overall impact of policy intervention.

### Investment in human resources

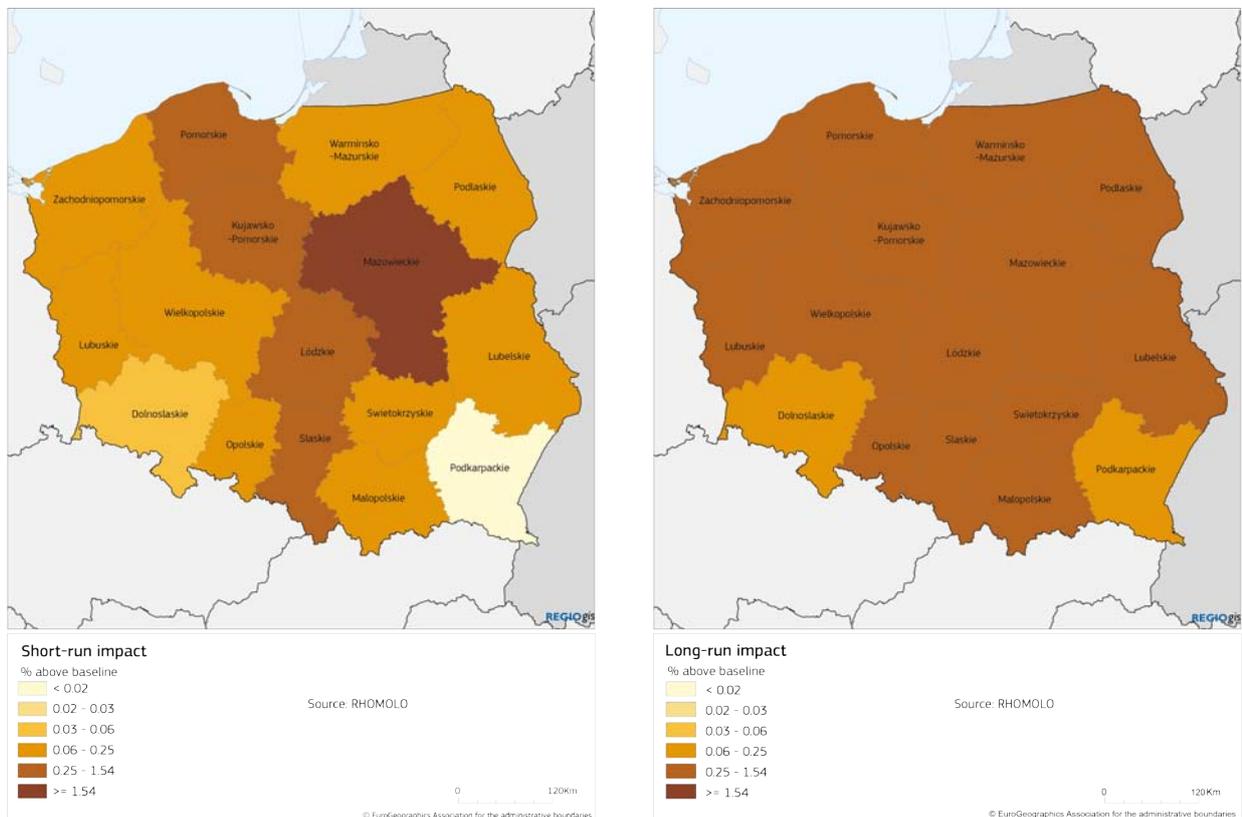
Cohesion Policy investment in human capital through various measures, which accounted for 21% of total funding for the 2007–2013 period, is projected to account for 23% in 2014–2020. To simulate the effects of this, it is assumed that an increase in expenditure on training of 1% in a region leads to increase in labour productivity of 0.3%, which increases the region’s competitiveness and so its GDP. It is also assumed, however, to increase the demand for labour (because of the lower unit labour costs from increased productivity) which in the long run pushes up wages.

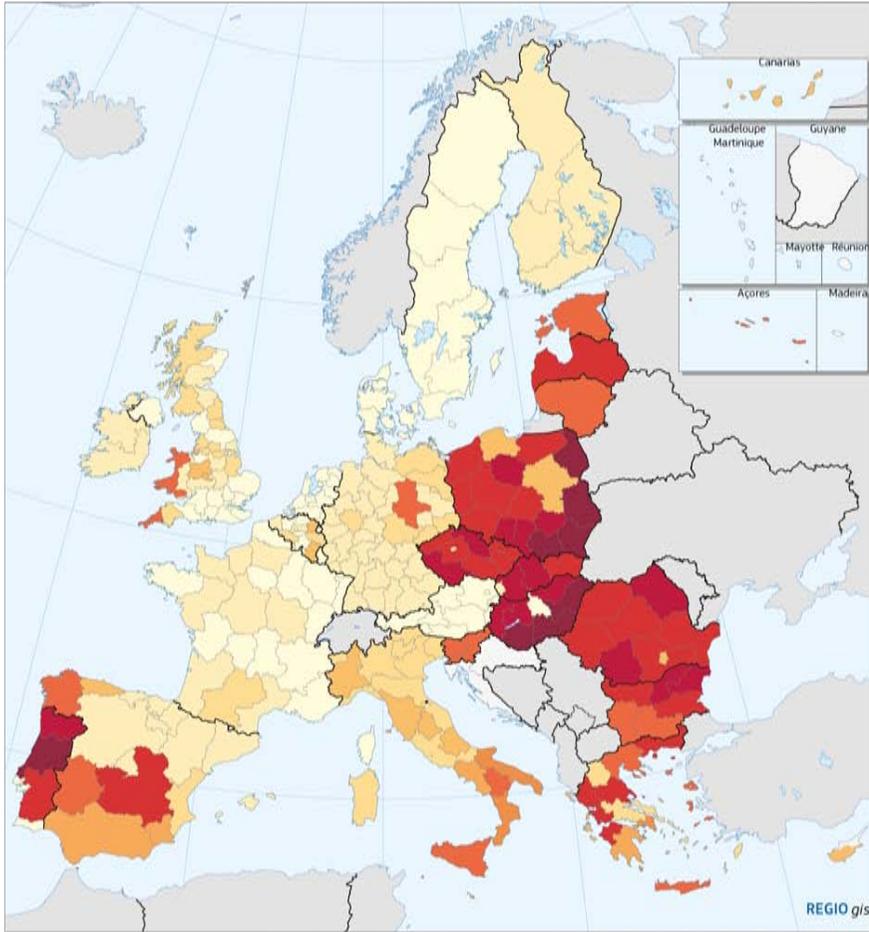
The net effect by 2030 of the investment in human capital assumed to take place over the period is significantly positive, especially in most of the Central and Eastern European Member States where it is largest in relation to GDP (Map 8.12).

The difference in the impact between regions, however, also stems from other factors. First, investment in human resources is assumed to have a larger effect on GDP in regions where the level of expenditure on education is relatively low. Secondly, regions which have a larger proportion of economic activity in labour-intensive industries (such as much of manufacturing in Central and Eastern Europe) benefit more from an increase in labour productivity.

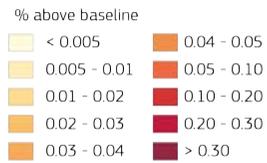
Thirdly, investment in human resources, as in infrastructure, generates regional spill-overs through trade links, so benefiting regions elsewhere. It is also, however, assumed to increase wages in the regions where it takes place, so attracting inward movements of workers from other regions, which in this case are adversely affected by the loss of the income and spending resulting from the outward movements concerned.

Map 8.11 Short-run and long-run effect of a reduction in transport costs in five Polish regions





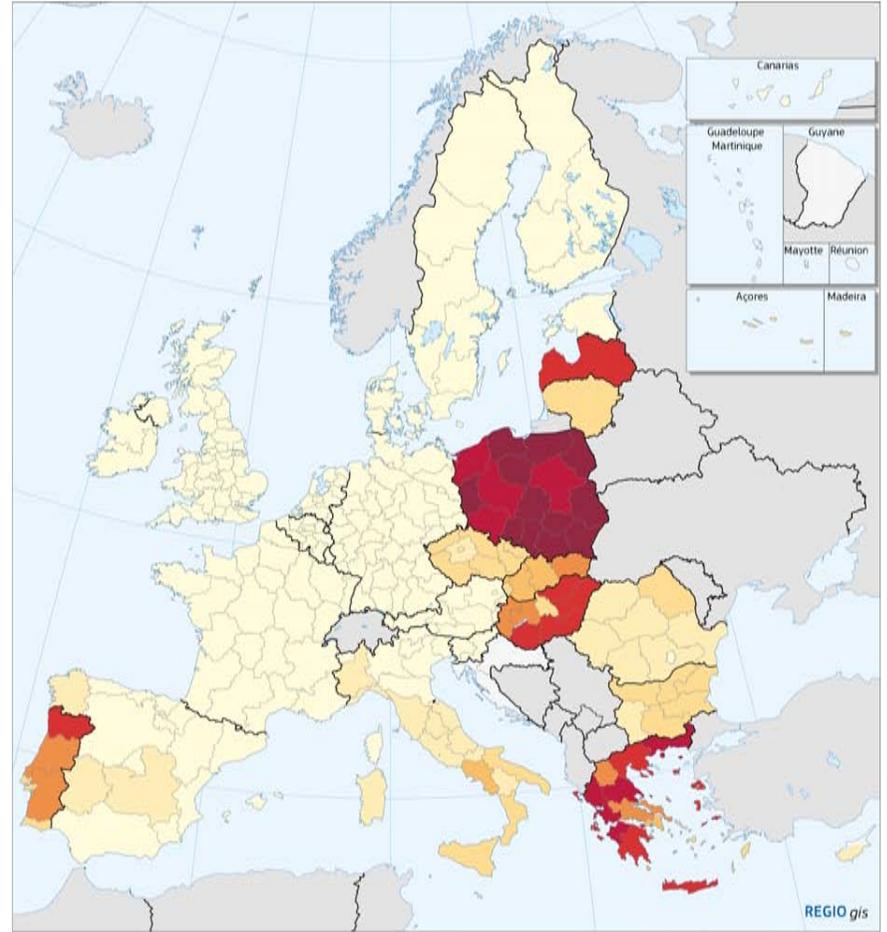
Map 8.12 Impact of interventions in human resources on GDP, annual average 2014–2023



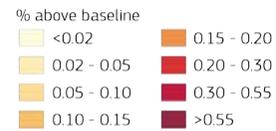
Source: RHOMOLO

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Map 8.13 Impact of interventions in R&D on GDP, annual average 2014–2023



Source: RHOMOLO

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## Investment in R&D

Cohesion Policy also funds investment in R&D, which accounted for around 12% of total funding in 2007–2013 and which is expected to increase in 2014–2020. In the model, support to RTDI is assumed to increase total factor productivity which leads to an increase in GDP both directly and indirectly through a reduction in production costs. The lower prices which result stimulate demand and accordingly the level of economic activity. As in the case of other kinds of intervention, the rise in GDP also benefits other regions through the increased demand for their exports.

The model, in addition, takes explicit account of spatial spill-overs effects specific to R&D. The assumption is that the further away a region is from the technology frontier, the greater the potential for absorbing and imitating technological advances made elsewhere. This implies not only that lagging regions catch up with more advanced ones in terms of technology but also that an increase in R&D has a bigger impact on factor productivity there.

The results of the simulation show positive effects in all regions with very few exceptions, with those in the Czech Republic, Hungary, Poland and Portugal benefiting most (Map 8.13). In Poland for instance, the increase in GDP ranges from 0.5% to 0.8% a year over the period.

The effect of interventions in R&D is assumed to build up considerably over time, reflecting the many indirect effects generated, especially from the boost to private investment and lower production costs, which mostly materialise in the long run. For example, while the short-term impact on GDP in the Podkarpackie region of Poland is estimated to be 0.8% a year on average between 2014 and 2023, by 2030, GDP is estimated to increase by 3.3% above what it otherwise would have been. In Norte in Portugal, where the estimated short-term impact on GDP is 0.2%, it is increased to 1.5% by 2030.

In general, the impact is smaller in transition regions than in less developed ones both because of the smaller funding received under Cohesion Policy and the smaller effect on factor productivity which

is assumed since they lag less behind in terms of technology.

## Combined impact of investment at regional level

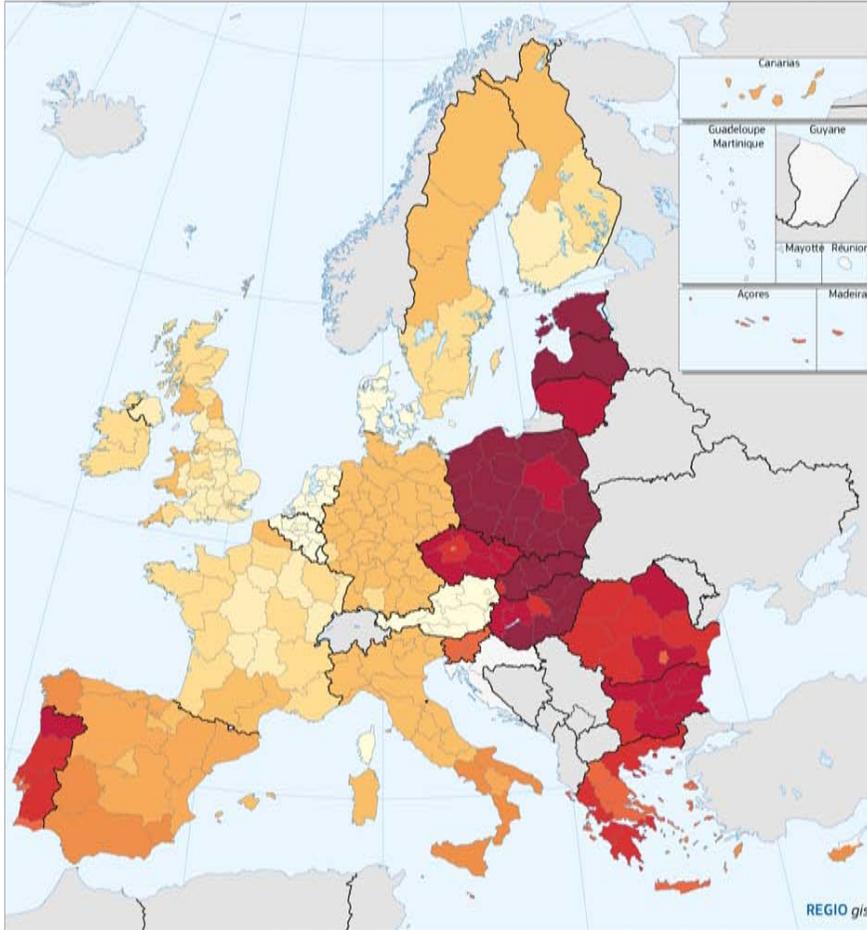
RHOMOLO can also be used to estimate the overall impact of Cohesion Policy funding in 2014–2020. This is largest in the Central and Eastern European regions over years 2014–2023 (Map 8.14). In the Polish regions of Śląskie, Podkarpackie, Małopolskie and Lubelskie as well as in Észak-Magyarország and Észak-Alföld in Hungary, GDP is estimated to be increased by over 2.5% a year on average over the period.

This mainly reflects the fact that these regions are the largest recipients of EU funding, but they also lag behind in terms of infrastructure endowment, which means that the effect of investing in this tends to be particularly large. Equally, a given amount of investment in human resources adds more to total spending on education in these regions than in more developed Member States and, accordingly, typically has a bigger effect. In addition, these regions have more employment in labour-intensive industries which increases the gain from higher labour productivity.

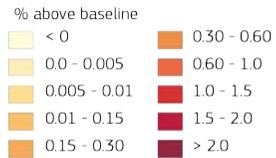
Even though regions in the more developed Member States receive much less Cohesion Policy funding, the impact is not negligible in the less developed among them. For example, GDP is estimated to increase by around 0.5% a year in Andalucía in Spain and Campania in Italy over the 2014–2023 period.

In the longer-term, the impact on GDP is much larger in all regions, most especially those in eastern, central and southern Europe, because of the effect of investment support on their productive potential. For instance, in Śląskie in Poland, GDP is estimated to be increased by 6.1% by 2030 as a result of the higher investment, over 2.5 times more than the average impact over the period itself (Map 8.15).

The long-term impact is also significant in the more developed regions, where the short-term impact on demand is small but where the effect on raising pro-



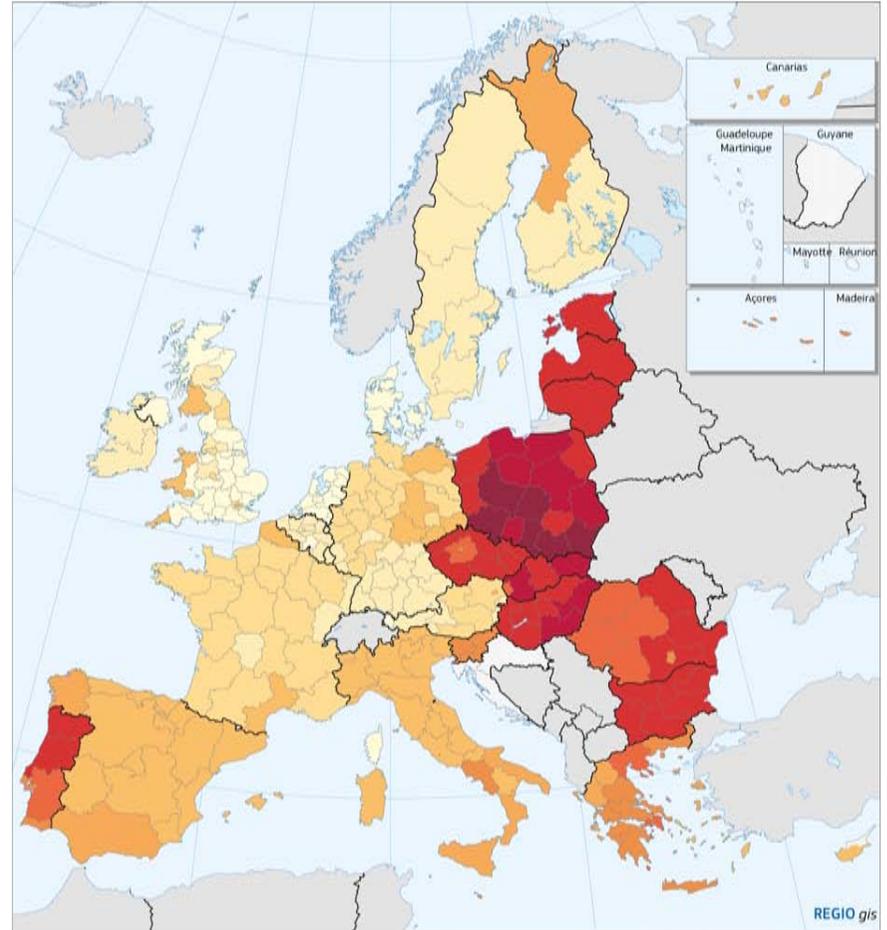
Map 8.14 Impact of the 2014–2020 Cohesion Policy programmes on GDP, annual average 2014–2023



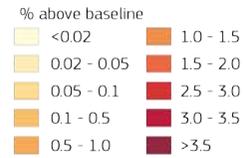
Source: RHOMOLO

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Map 8.15 Impact of the 2014–2020 Cohesion Policy programmes on GDP, 2030



Source: RHOMOLO

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ductive potential is much larger. The long-term impact, moreover, comes partly from the increased demand for their exports stemming from programmes carried out elsewhere, especially in the less developed regions, which also tends to increase in scale over time along with the growth of the latter.

These estimates, however, are based on simulations which incorporate hypothetical assumptions about the composition of the expenditure financed under Cohesion Policy. They will be updated once all the new programmes have been adopted and the breakdown between the various categories of investment has been decided. Nevertheless, they indicate that the Cohesion Policy funding made available can have a significant impact on regions across the EU, particularly on the less developed ones. Whether the impact in practice, however, is as significant as estimated above will depend to a large extent on programmes being carried out in a timely way and on the funding involved being deployed as effectively as assumed in the model.

## Bibliography

- Acemoglu, D. and Robinson, J., 2012, *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*, Random House LLC, 2012.
- Ahrend, R. and A. Lembcke, 2014, *Economic and Demographic Trends in Cities*, OECD Regional Development Working Papers, forthcoming.
- Ahrend, R., Farchy, E., Kaplanis, I. and Lembcke, A., 2014a, *What Makes Cities More Productive? Evidence on the Role of Urban Governance for OECD Countries*, OECD Regional Development Working Papers, forthcoming.
- Ahrend, R., Kim, S.J., Schumann, A., 2014b, *What Governance for Metropolitan Areas?*, OECD Regional Development Working Papers, forthcoming.
- Ahrend, R., Gamper, C. and Schuhmann, A., 2014c, *The OECD Metropolitan Governance Survey: A Quantitative Description of Governance Structures in Large Urban Areas*, OECD Regional Development Working Papers, forthcoming.
- Ainsworth, P. and Marlow, S., 2011, *Early Impacts of the European Social Fund 2007-13*, UK Department for Work and Pensions, In-House Research No 3.  
<http://research.dwp.gov.uk/asd/asd5/ih2011-2012/ihr3.pdf>
- Aiyagari, S. R., Christiano, L.J. and Eichenbaum, M., 1992, *The output, Employment and interest rate effects of government consumption*, *Journal of Monetary Economics* 30 (1): 73-86.
- Annoni, P. and Dijkstra, L., 2013, *EU Regional Competitiveness Index, RCI 2013*, JRC Scientific and Policy reports, Publications Office of the European Union.  
[http://ec.europa.eu/regional\\_policy/sources/docgener/studies/pdf/6th\\_report/rci\\_2013\\_report\\_final.pdf](http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/6th_report/rci_2013_report_final.pdf)
- Arto, I., Genty, A., Rueda-Cantuche, J. M., Villanueva A. and Andreoni V., 2012, *Global Resources Use and Pollution*, Volume 1/ Production, Consumption and Trade (1995-2008) and Volume 2/ Country Factsheets, European Commission, JRC Scientific and Policy reports, Publications Office of the European Union.
- Athanasoglou, S. and Dijkstra, L., 2014, *The Europe 2020 Regional Index*. JRC Scientific and Policy reports, Publications Office of the European Union.
- Auerbach, A. and Gorodnichenko, Y., 2012a, *Measuring the output responses to fiscal policy*, *American Economic Journal*, 4(2): 1-27.
- Auerbach, A. and Gorodnichenko, Y., 2012b, *Fiscal multipliers in recessions and expansions: Fiscal Policy after the Financial Crisis*, NBER Chapters, National Bureau of Economic Research.
- Auerbach, A. and Gorodnichenko, Y., 2013, *Output spillovers from fiscal policy*, *American Economic Association*, vol. 103(3), pages 141-46, May.
- Bade, F.J., Prognos, A. G. und NIW — Niedersächsisches Institut für Wirtschaftsforschung. 2010, *Endbericht zum Gutachten Erfolgskontrolle der einzelbetrieblichen Förderung von Unternehmen aus der GRW und dem EFRE in den Jahren 1998-2008: Wachstums- und Beschäftigungswirkungen für Niedersachsen*.
- Barca, F., 2009, *An Agenda for a reformed cohesion policy: A place-based approach to meeting European Union challenges and expectations*, Independent Report prepared at the request of Danuta Hübner, Commissioner for Regional Policy, European Commission.
- Barro, R. J., 1981, *Output Effects of Government Purchases*, *The Journal of Political Economy*, 89(6), pp. 1086-1121.
- Barro, R.J. and Redlick, C. J., 2011, *Macroeconomic effects from government purchases and taxes*, *The Quarterly Journal of Economics* 126 (1):51-102.
- Bateman, I. J., Harwood, A. R., Mace, G. M., Watson, R. T., Abson, D. J., Andrews, B., Binner, A.Crowe, A., Day, B.

- H., Dugdale, S., Fezzi, C., Foden, J., Hadley, D., Haines-Young, R., Hulme, M., Kontoleon, A., Lovett, A. A., Munday, P., Pascual, U., Paterson, J., Perino, G., Sen, A., Siriwardena, G., van Soest, D. and Termansen, M., 2013, *Bringing Ecosystem Services into Economic Decision-Making: Land Use in the United Kingdom*, Science 5 July 2013, Vol. 341 no. 6141 pp. 45-50.
- Batista e Silva, F., Lavalle, C., Jacobs-Crisioni, C., Barranco, R., Zulian, G., Maes, J., Baranzelli, C., Perpiña C., Vandecasteele, I., Ustaoglu, E., Barbosa, A. and Mubareka, S., 2013, *Direct and Indirect Land Use Impacts of the EU Cohesion Policy. Assessment with the Land Use Modelling Platform*, European Commission, JRC Scientific and Policy reports, Publications Office of the European Union, Report EUR 26460.
- Baum, A., Poplaski-Ribeiro, M. and Weber, A. 2012, *Fiscal Multipliers and the State of the Economy*, IMF Working Papers 12/286, International Monetary Fund.
- Baxter, M. and King, R. G., 1993, *Fiscal policy in general equilibrium*, The American Economic Review, Volume: 83, Issue: 3 (June), Pages: 315-34.
- Becker, S. O, Egger, P. H, and von Ehrlich, M., 2012, *Too Much of a Good Thing? On the Growth Effects of the EU's Regional Policy*, European Economic Review, vol. 56(4), pages 648-668.
- Beetsma, R. and Giuliodori, M., 2011, *The effects of government purchases shocks: Review and estimates for the EU*, The Economic Journal, Volume 121, Issue 550, pages F4-F32, February 2011.
- Beetsma, R., Giuliodori, M. and Klaassen, F., 2008, *The effects of public spending shocks on trade balances and budget deficits in the European Union*, Journal of the European Economic Association, Volume 6, Issue 2-3, pages 414-423, April-May 2008
- Blanchard, O. and Leigh, D., 2013, *Growth Forecast Errors and Fiscal Multipliers*, IMF Working Paper 13/1, Research Department, International Monetary Fund.
- Blanchard, O. and Perotti, R., 2002, *An empirical characterization of the dynamic effects of changes in government spending and taxes on output*, The Quarterly journal of Economics 117 (4): 1329-1368.
- Blankenau, W.F., Simpson, N.B., and Tomljanovich, M., 2007, *Public Education Expenditures, Taxation, and Growth: Linking Data to Theory*, American Economic Review, 97(2): 393-397.
- Bondonio, D. and Martini, A., 2012, *Counterfactual Impact Evaluation Of Cohesion Policy: Impact And Cost-Effectiveness of Investment Subsidies In Italy*, a report prepared for the Directorate General Regional and Urban Policies, European Commission..
- Bouvet, F. and Dall'Erba, S., 2010, *European Regional Structural Funds: How Large is the Influence of Politics on the Allocation Process*, Journal of Common Market Studies, Volume 48, Issue 3, pages 501-528, June.
- Bradley, J., Untiedt, G. and Mitze, T., 2007, *Analysis of the Impact of Cohesion Policy: A Note Explaining the HERMIN-Based Simulations*, Technical Note.
- Brandsma, A., Kancs, d'A., Monfort, P. and Rillaers, A., 2013, *Rhomolo — A Dynamic Spatial General Equilibrium Model for Assessing the Impact of Cohesion Policy*, Working Paper N°1/2013, Directorate-General for Regional and Urban Policy, European Commission.  
[http://ec.europa.eu/regional\\_policy/sources/docgener/work/2013\\_01\\_rhomolo.pdf](http://ec.europa.eu/regional_policy/sources/docgener/work/2013_01_rhomolo.pdf).
- Bronzini, R. and Lachini, E., 2011, *Are incentives for R&D effective? Evidence from a regression discontinuity approach*, Banca d'Italia, Working Paper 791.
- Cappellen, 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, Volume 41. Number 4. pp. 621-44.
- Centre for Economic and Business Research, 2010, *An Analysis of Firm Growth Effects of the Danish Innovation Consortium Scheme*, Danish Agency for Science, Technology and Innovation.
- Charron, N., 2013, *European Quality of Government Index (EQI)*.  
<http://nicholascharron.wordpress.com/european-quality-of-government-index-eqi/>
- Charron, N., Dijkstra, L. and Lapuente, L., 2014. *Mapping the Regional Divide in Europe: A Measure for Assessing*

- Quality of Government in 206 European Regions*. Social Indicators Research. Forthcoming.  
DOI: 10.1007/s11205-014-0702-y
- Christiano, L., Eichenbaum, M., and Rebelo, G.; 2011, *When is the government spending multiplier large?*, *Journal of Political Economy* 119(1): 78-121.
- Christidis, P. and Ibañez Rivas, J., N., 2012, *Road Congestion*, European Commission, JRC Scientific and Policy reports, Publications Office of the European Union, Scientific and Technical Research series.  
[https://ec.europa.eu/jrc/sites/default/files/congestion\\_report\\_final.pdf](https://ec.europa.eu/jrc/sites/default/files/congestion_report_final.pdf)
- Cles-Format-Met., 2012, *ERDF OP Sicily — Evaluation of supporting enterprise policy — the effects of aid measures in 2000-2006*.
- Cogan, J. F., Cwik, T., Taylor, J. and Wieland, V., 2010, *New Keynesian versus old Keynesian government spending multipliers*, *Journal of Economic Dynamics and Control* Volume: 34, Issue: 3, Pages: 281-295.
- Combes, P.-P., Duranton, G. and L. Gobillon, 2011, *The identification of agglomeration economies*, *Journal of Economic Geography*, Vol. 11, pp. 253-266
- Corsetti, G., Meier, A. and Müller, G., 2012, *What determines government spending multipliers?*, *Economic Policy* 27(72): 521-565.
- Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment.
- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.
- Crescenzi, R. and Rodriguez-Pose, A., 2012, *Infrastructure and Regional Growth in the European Union*, *Papers in Regional Science*, Volume 91, Issue 3, pages 487-513, August 2012.
- CSES, 2011, *Evaluation of ESF Support for Enhancing Access to the Labour Market and the Social Inclusion of Migrants and Ethnic Minorities*, a report prepared for the Directorate General Employment, Social Affairs and Equal Opportunities, European Commission.
- De Freitas, M. L., Pereira, F. and Torres, F., 2003, *Convergence among EU Regions 1990-2001: Quality of National Institutions and 'Objective 1' Status*, Working Papers de Economia (Economics Working Papers), Departamento de Economia, Gestão e Engenharia Industrial, Universidade de Aveiro, October.
- de Koning, J., Korolkova, K. and Maasland, E., 2006, *Evaluation of the ESF support to Capacity Building*, SEOR Rotterdam, the Netherlands.
- De la Fuente, A. and Vives, X., 1995, *Infrastructure and education as Instruments of Regional Policy: Evidence from Spain*, *Economic Policy*, 10.20, 13-51.
- Dijkstra, L. and Poelman, H. 2012, *Cities in Europe, the new OECD-EC definition*, Regional Focus RF 01/2012, Directorate-General Regional and Urban Policy, European Commission.
- Dijkstra, L. and Poelman, H., 2014, *Access to public transport in European Cities*, Regional Working Paper, Directorate-General for Regional and Urban Policy, European Commission.
- Dijkstra, L. and Poelman, H., Regional typologies overview  
[http://epp.eurostat.ec.europa.eu/statistics\\_explained/index.php/Regional\\_typologies\\_overview](http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Regional_typologies_overview)
- Di Comite, F., Giudice, G., Lendvai, J. and Toming, I., 2012, *Fiscal consolidation in the midst of the crisis, in EU Balance-of-Payments assistance for Latvia: foundations of success*, *European Economy, Occasional Papers* no. 120.
- Directive 2001/81/EC of the European Parliament and of the Council of 23 October 2001 on national emission ceilings for certain atmospheric pollutants.
- Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe.
- Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds.
- Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control).

Duranton, G. and Puga, D., 2004. *Microfoundations of urban agglomeration economies*, in: Henderson, J. V., Thisse, J. F. (Eds.) *Handbook of Regional and Urban Economics*, vol. 4. Amsterdam: NorthHolland, pp. 2063–2117.

Ecorys, 2012, *Evaluation of the ESF support to Lifelong Learning*.

Ederveen, S., Gorter, J., de Mooij, R. and Nahuis, R., 2002, *Funds and Games: The Economics of European Cohesion Policy*, CRB and Koninklijke De Swart, Amsterdam.

<http://www.enepri.org/files/CPBstudy.pdf>

Ederveen, S., de Groot, H.L.F., Nahuis, R., 2006, *Fertile Soil for Structural Funds? A Panel Data Analysis of the Conditional Effectiveness of European Cohesion Policy*, KYKLOS, Vol. 59, No. 1, 17–42.

Eggertsson, G. B., 2009, *What fiscal policy is effective at zero interest rates?* Staff Report no. 402 Federal Reserve Bank of New York, November.

Ernst & Young, 2013, *Evaluation of the impact of entrepreneurship and innovation support programmes and recommendations for improving the support system*.

ESF Expert Evaluation Network, 2012, *Final Synthesis Report on Social Inclusion*, Metis and University of Glasgow.

ESF Expert Evaluation Network, 2013, *Final Synthesis Report on Women and Young People*, Metis and University of Glasgow.

ESF Expert Evaluation Network, 2014, *Final Synthesis Report: Main ESF achievements, 2007–2013*, Metis and University of Glasgow.

ESPON, 2011, *Climate Change and Territorial Effects on Regions and Local Economies in Europe*, Applied Research 2013/1/4.

[http://www.espon.eu/main/Menu\\_Projects/Menu\\_AppliedResearch/climate.html](http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/climate.html)

ESPON, 2013, *Territorial Dimension of the Europe 2020 Strategy*, ESPON Atlas.

ESPON, 2013, *TRACC — Transport Accessibility at Regional/Local Scale and Patterns in Europe*.

European Commission, 2005, *Strengthening institutional capacity and efficiency of public administrations and public services in the next programming period (2007–2013)*, Working Note. Directorate-General Employment, Social Affairs and Equal Opportunities.

European Commission, 2005, *Thematic Strategy for the urban environment*, COM(2005) 718 final.

European Commission, 2008, *Green Paper on Territorial Cohesion — Turning territorial diversity into strength*, COM(2008) 616 final.

European Commission, 2009, *'European high-speed rail — An easy way to connect'*, DG TREN.

[http://ec.europa.eu/transport/wcm/infrastructure/studies/2009\\_03\\_06\\_eu\\_high\\_speed\\_rail.pdf](http://ec.europa.eu/transport/wcm/infrastructure/studies/2009_03_06_eu_high_speed_rail.pdf)

European Commission, 2009, *Good practice in urban transport — Athens Metro*, Ex post Evaluation of Cohesion policy programmes 2000–2006 co-financed by ERDF, Work Package 5A: Transport. Directorate-General Regional and Urban Policy.

European Commission, 2009, *White paper — Adapting to climate change: towards a European framework for action*, COM(2009) 0147 final.

European Commission, 2009, *GDP and beyond — Measuring progress in a changing world*, COM(2009) 433 final.

European Commission, 2009, *Reducing health inequalities in the EU*, COM(2009) 0567 final.

European Commission, 2010, *Europe's Digital Competitiveness Report 2010*, Publications Office of the European Union.

<http://ec.europa.eu/digital-agenda/sites/digital-agenda/files/edcr.pdf>

European Commission, 2010, *Conclusions of the fifth report on economic, social and territorial cohesion: the future of cohesion policy*, COM(2010) 642 final.

European Commission, 2010, *Fifth report on economic, social and territorial cohesion: the future of cohesion policy*, SEC(2010) 1348 final.

- European Commission, 2011, *White Paper: Roadmap to a Single European Transport Area*, COM(2011) 144 final  
[http://ec.europa.eu/transport/themes/strategies/doc/2011\\_white\\_paper/white\\_paper\\_com%282011%29\\_144\\_en.pdf](http://ec.europa.eu/transport/themes/strategies/doc/2011_white_paper/white_paper_com%282011%29_144_en.pdf)
- European Commission, 2013, *Broadband lines in the EU: situation at 1 July 2012*, Communications Committee Working document.  
[https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/COCOM%20Broadband%20July%202012%20final\\_0.pdf](https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/COCOM%20Broadband%20July%202012%20final_0.pdf)
- European Commission, 2012, *Education and training monitor 2012*, Publications Office of the European Union.
- European Commission, 2012, *Report on Public Finances in EMU*, European Economy 4|2012, Publications Office of the European Union.  
[http://ec.europa.eu/economy\\_finance/publications/european\\_economy/2012/pdf/ee-2012-4.pdf](http://ec.europa.eu/economy_finance/publications/european_economy/2012/pdf/ee-2012-4.pdf)
- European Commission, 2012, *The Quality of Public Expenditures in the EU*, Occasional Papers 125, Directorate-General for Economic and Financial Affairs, Publications Office of the European Union.
- European Commission, 2012, *5th Financial Report from the Commission to the European Parliament and the Council on the European Agricultural Guarantee Fund, 2011 Financial Year*, COM(2012) 484 final.
- European Commission, 2013, *Results of the mid-term verification of additionality 2007–2013*, COM(2013) 104 final.
- European Commission, 2013, *Green Infrastructure (GI) — Enhancing Europe’s Natural Capital*, COM(2013) 249 final.
- European Commission, 2013, *End-to-end e-procurement to modernise public administration*, COM(2013) 453 final.
- European Commission, 2013, *Seventh Report on the Implementation of the Urban Waste Water Treatment Directive (91/271/EEC)*, COM(2013) 574 final.
- European Commission, 2013, *Attitudes of Europeans towards urban mobility*, Special Eurobarometer 406, Survey conducted by TNS Opinion & Social at the request of the Directorate General for Mobility and Transport, and coordinated by the European Commission, Directorate General for Communication.
- European Commission, 2013, *Cohesion Policy: Strategic Report 2013. Factsheet: Institutional capacity building*.  
[http://ec.europa.eu/regional\\_policy/how/policy/doc/strategic\\_report/2013/factsheet13\\_inst\\_capacity\\_building.pdf](http://ec.europa.eu/regional_policy/how/policy/doc/strategic_report/2013/factsheet13_inst_capacity_building.pdf)
- European Commission, 2013, *Quality of life in cities, Perception survey in 79 European cities*, Flash Eurobarometer 366, Publications Office of the European Union, 2013.  
[http://ec.europa.eu/regional\\_policy/sources/docgener/studies/pdf/urban/survey2013\\_en.pdf](http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/urban/survey2013_en.pdf)
- European Commission, 2013, *The Economic benefits of the Natura 2000 Network*, Publications Office of the European Union.  
[http://ec.europa.eu/environment/nature/natura2000/financing/docs/ENV-12-018\\_LR\\_Final1.pdf](http://ec.europa.eu/environment/nature/natura2000/financing/docs/ENV-12-018_LR_Final1.pdf)
- European Commission, 2014, *Employment and Social Developments in Europe 2013*, Directorate-General for Employment, Social Affairs and Inclusion, Publications Office of the European Union.
- European Commission, 2014, *EU Anti-corruption Report*, COM (2014) 38 final.  
[http://ec.europa.eu/dgs/home-affairs/e-library/documents/policies/organized-crime-and-human-trafficking/corruption/docs/acr\\_2014\\_en.pdf](http://ec.europa.eu/dgs/home-affairs/e-library/documents/policies/organized-crime-and-human-trafficking/corruption/docs/acr_2014_en.pdf)
- European Commission, 2014, *European Citizens’ Initiative “Water and sanitation are a human right! Water is a public good, not a commodity!”*, COM(2014) 177 final.
- European Commission, 2010, *Member States competitiveness performance and policies*, Staff Working Document SEC/2010/1272 final.
- European Commission, 2013, *Operational guidance on how to include a territorial dimension in the Commission’s Impact Assessments*, Staff Working Document SWD(2013) 3 final.
- European Commission, 2013, *Progress on ‘GDP and beyond’ actions*, SWD(2013) 303 final.
- European Commission, 2014, *Regional Innovation Scoreboard 2014*, Publications Office of the European Union.  
[http://ec.europa.eu/news/pdf/2014\\_regional\\_union\\_scoreboard\\_en.pdf](http://ec.europa.eu/news/pdf/2014_regional_union_scoreboard_en.pdf)
- European Commission, 2014, *Overview of natural and man-made disaster risks in the EU*, Staff Working

Document SWD/2014/134 final.

[http://ec.europa.eu/enterprise/policies/industrial-competitiveness/industrial-policy/files/member\\_states\\_competitiveness\\_performance\\_and\\_policies\\_en.pdf](http://ec.europa.eu/enterprise/policies/industrial-competitiveness/industrial-policy/files/member_states_competitiveness_performance_and_policies_en.pdf)

[http://ec.europa.eu/smart-regulation/impact/key\\_docs/docs/cswd\\_ati\\_en.pdf](http://ec.europa.eu/smart-regulation/impact/key_docs/docs/cswd_ati_en.pdf)

European Commission, 2014, *Sixth report on economic, social and territorial cohesion: investment for jobs and growth*, COM(2014) 473 final.

European Environment Agency (EEA), 2010, *Mapping the impacts of natural hazards and technological accidents in Europe — An overview of the last decade*, Technical Report No. 13/2010.

European Environment Agency (EEA), 2012, *Water resources in Europe in the context of vulnerability*, EEA 2012 state of water assessment, EEA Report No 11/2012, Publications Office of the European Union.

European Environment Agency (EEA), 2013, *A closer look at urban transport — TERM 2013: transport indicators tracking progress towards environmental targets in Europe*, EEA Report No 11/2013, Publications Office of the European Union, 2013.

Eurostat, 2011, *Pocketbooks, Energy, transport and environment indicators*, Publications Office of the European Union.

Expert evaluation network on the performance of Cohesion policy 2007-2013: Synthesis of National Reports 2013, Applica and Ismeri Europa, January 2014 [http://ec.europa.eu/regional\\_policy/sources/docgener/evaluation/pdf/eval2007/2013\\_eeen\\_task2\\_synthesis\\_final.pdf](http://ec.europa.eu/regional_policy/sources/docgener/evaluation/pdf/eval2007/2013_eeen_task2_synthesis_final.pdf)

Garcilazo, E., and Rodriguez-Pose, A., 2013, *Quality of Government and the Returns of Investment: Examining the Impact of Cohesion Expenditure in the European Regions*, OECD Regional Development Working Papers, No. 2013/12, Paris.

GEFRA und IAB, 2010, *Ex post evaluation of Cohesion Policy programmes 2000–2006 financed by the European Regional Development Fund; Work Package 6c: Enterprise Support — an exploratory study using counterfactual methods on available data from Germany*, Münster, Nürnberg.

GHK and Fondazione G. Brodolini, 2011, *Evaluation of the European Social Fund's support to Gender Equality*, Final synthesis report prepared under the Multiple Framework Contract 'Provision of evaluation and evaluation related services to the Directorate-General Employment, Social Affairs and Equal Opportunities, European Commission.

Giavazzi, F., Jappelli, T. and Pagano, M., 2000, *Searching for non-linear effects of fiscal policy: Evidence from industrial and developing countries*, *European Economic Review*, vol. 44(7).

Giudice, G., Turrini, A. and in't Veld, J., 2007, *Non-Keynesian Fiscal Adjustments? A Close Look at Expansionary Fiscal Consolidations in the EU*, *Open Economies Review*, vol. 18(5).

Governatori, M. and Yim, D., 2012, *Fiscal Decentralisation and Fiscal Outcomes*, *European Economy, Economic Papers* 468, November 2012, Directorate General for Economic and Financial Affairs, Publications Office of the European Union.

Gramlich, E., 1994, *Infrastructure investment: a review essay*, *Journal of Economic Literature*, 32(3): 1176–96.

Griliches, Z., 1994, *Productivity, R&D, and the data constraint*, *American Economic Review*, 84(1): 1–23.

Hagen, T., and Mohl, P., 2009, *Econometric Evaluation of EU Cohesion Policy: A Survey*, Discussion Paper 09–052, ZEW, Mannheim.

Hardeman, S. and Dijkstra, L., (forthcoming), *The EU Regional Human Development Index*, JRC Scientific and Policy Report.

Holland, M., Kinghorn, S., Emberson, L., Cinderby, S., Ashmore, M., Mills, G. and Harmens, H., 2006, *Development of a framework for probabilistic assessment of the economic losses caused by ozone damage to crops in Europe*. NERC/Centre for Ecology and Hydrology, Report to U.K. Department of Environment, Food and Rural affairs.

Hooghe, L., Marks, G., Schakel, A.H., Chapman, S., Niedzwiecki, S. Shair-Rosenfield, S. (forthcoming). *Governance Below the State: Regional Authority in 81 Countries*. Oxford: OUP

- In 't Veld, J., 2013, *Fiscal consolidations and spillovers in the Euro area periphery and core*, European Economy, Economic Paper no. 506.
- Jaklič A., 2012, *Evaluation of measures for promoting entrepreneurship and competitiveness in Slovenia in the period 2004–2009*, Centre for international relations of the Faculty of Social Sciences University of Ljubljana.
- Kaufmann, D, Kraay, A., and Mastruzzi, M., 2010, *The Worldwide Governance Indicators: Methodology and Analytical Issues*. Policy Research Working Paper 5430, World Bank
- Klimczak, T., Miller, A., Piekutowski, J., Plawgo, B., Załęski, W., 2013, *Evaluation of direct and indirect support to the SME sector in ROP and a recommendations on the support of SMEs in the future financial perspective 2014–2020*, PSDB.
- Krugman, P. and Eggertson, G.B., 2012, *Debt, Deleveraging, and the Liquidity Trap: A Fisher-Minsky-Koo Approach*, The Quarterly Journal of Economics (2012) 127 (3): 1469–1513.
- Lung, T., Lavalle, C., Hiederer, R., Dosio, A. and Bouwer, L.; 2013, *A multi-hazard regional level impact assessment for Europe combining indicators of climatic and non-climatic change*, Global Environmental Change Volume 23, Issue 2, April 2013, Pages 522–536.
- Mackenbach, J., 2006, *Health inequalities: Europe in profile*, report commissioned by the UK Presidency of the EU, Department of Public Health, Erasmus MC, University Medical Center, Rotterdam.
- Maes, J., Paracchini, M. L. and Zulian G., 2011, *A European assessment of the provision of ecosystem services, Towards an atlas of ecosystem services*, European Commission, JRC scientific and technical reports, Publications Office of the European Union, Luxembourg, EUR 24750 EN.
- Maes, J., Paracchini, M. L., Zulian, G. and Alkemade R., 2012, *Synergies and trade-offs between ecosystem service supply, biodiversity, and habitat conservation status in Europe*, Biological Conservation Volume 155, October 2012, Pages 1–12.
- Maes, J., Hauck, J., Paracchini, M.L., Ratamäki, O., Termansen, M., Perez-Soba, M., Kopperoinen, L., Rankinen, K., Schägner, J.P., Henrys, P., Cisowska, I., Zandersen, M., Jax, K., La Notte, A., Leikola, N., Pouta, E., Smart, S., Hasler, B., Lankia, T., Andersen, H.E., Lavalle, C., Vermaas, T., Alemu, M.H., Scholefield, P., Batista, F., Pywell, R., Hutchins, M., Blemmer, M., Fannesbech-Wulff, A., Vanbergen, A.J., Münier, B., Baranzelli, C., Roy, D., Thieu, V., Zulian, G., Kuussaari, M., Thodsen, H., Alanen, E.-L., Egoh, B., Sørensen, P.B., Braat, L. and Bidoglio, G., 2012, *A spatial assessment of ecosystem services in Europe: methods, case studies and policy analysis — Phase 2*, Synthesis, PEER report no 4, Ispra, Partnership for European Environmental Research.
- Mariani, M., Mealli, F. and Pirani, E., 2012, *Gli effetti dei programmi di aiuti rimborsabili sulla crescita e la sopravvivenza delle PMI. Un disegno valutativo longitudinale applicato al caso della Toscana*, IRPET.
- Marmede R., Fernandes T. and Alexandrino da Silva A., *Análise contrafactual dos impactos dos incentivos do POE/PRIME na sobrevivência e no crescimento das empresas*, Observatório do QREN, May 2013.
- Martin, R. and Tyler, P., 2006, *Evaluating the Impact of the Structural Funds on Objective 1 Regions: An Exploratory Analysis*, Regional Studies, 40.2, 201–210.
- Metis GmbH and wiiw, 2012, *Evaluation of the reaction of the ESF to the economic and financial crisis*, a report commissioned by the European Commission, Directorate General Employment, Social Affairs and Inclusion.
- Midelfart-Knarvik, K.H. and Overman, H.G., 2002, *Delocation and European Integration — is Structural Spending Justified?*, Volume 17, Issue 35, pages 321–359, October.
- Mouqué, D., 2012, *What are counterfactual impact evaluations teaching us about enterprise and innovation support?*, Regional focus, 02/2012 December, Directorate General for Regional and Urban Policy, European Commission. [http://ec.europa.eu/regional\\_policy/sources/docgener/focus/2012\\_02\\_counterfactual.pdf](http://ec.europa.eu/regional_policy/sources/docgener/focus/2012_02_counterfactual.pdf)
- OECD, 2011, *Building resilient regions for stronger economies*, Regional Outlook.
- OECD, 2012, *Compact City Policies: A Comparative Assessment*, OECD Publishing.

<http://dx.doi.org/10.1787/9789264167865-1-en>

OECD, 2012, *Redefining urban: a new way to measure metropolitan areas*.

[www.oecd.org/gov/regional/measuringurban](http://www.oecd.org/gov/regional/measuringurban)

OECD, 2013, *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*, OECD Publishing.

<http://dx.doi.org/10.1787/9789264204256-en>

OECD-ECMT, 2007, *Managing Urban Traffic Congestion*.

<http://www.internationaltransportforum.org/Pub/pdf/07Congestion.pdf>

Parkinson, M., Evans, R., Gertheis, A., Hall, P., Hegedüs, J., Illés, I., Jones, G., Karecha, K., Lefèvre, C., Meegan, R., Ruokolainen, O., Sotarauta, M., Tönko, A. and Tosics, I., 2012, *Second Tier Cities in Europe: In An Age of Austerity Why Invest Beyond the Capitals?* ESPON Study, ESPON & European Institute of Urban Affairs, Liverpool John Moores University.

Perotti, R., 2005, *Estimating the effects of fiscal policy in OECD countries*, CEPR Discussion Paper 4842, Centre for Economic Policy Research.

Petersa, G. P. Minxb, J. C., Weberd, C. L. and Edenhoferc, O., 2010, *Growth in emission transfers via international trade from 1990 to 2008*, PNAS.

<http://www.pnas.org/content/early/2011/04/19/1006388108.abstract>

Pietarinen M., 2012, *Yritystukiselvitys (An investigation on enterprise support)*, Finnish Ministry of Labour and the Economy, Innovation, July.

Polese, A., Aniello, V., Bevilacqua, C., Cavelli, C. M., Cefarelli, P., Dell'Anno, D., Gaudino, S., Leonello, G. and Trillo, C., 2011, *ERDF OP Campania Ex post evaluation of aid schemes for enterprises 2000–2006*; report by Internal Evaluation Unit Campania, Naples.

Prognos, A. G., 2011, *Stand und Perspektiven der EFRE Förderung in Bayern — Zwischenevaluation des Operationellen Programms des EFRE im Ziel RWB Bayern 2007–2013*.

Public Policy and Management Institute, 2012, *Evaluation of social integration services for socially vulnerable and socially excluded individuals for the effective use of the EU structural assistance for the period of 2007–2013*, a report prepared for the Ministry of Labour and Social Affairs of the Republic of Lithuania (2010–2011).

PwC EU Services and Ecorys, 2013a, *Public Procurement: costs we pay for corruption. Identifying and Reducing Corruption in Public Procurement in the EU*, with support of Utrecht University. Report commissioned by the European Commission represented by the European Anti-Fraud Office (OLAF).

[http://ec.europa.eu/anti\\_fraud/documents/anti-fraud-policy/research-and-studies/pwc\\_olaf\\_study\\_en.pdf](http://ec.europa.eu/anti_fraud/documents/anti-fraud-policy/research-and-studies/pwc_olaf_study_en.pdf)

PwC EU Services and Ecorys, 2013b, *Identifying and Reducing Corruption in Public Procurement in the EU — Development of a methodology to estimate the direct costs of corruption and other elements for an EU — evaluation mechanism in the area of anti-corruption*, with support of Utrecht University. Report commissioned by the European Commission represented by the European Anti-Fraud Office (OLAF).

[http://ec.europa.eu/anti\\_fraud/documents/anti-fraud-policy/research-and-studies/identifying\\_reducing\\_corruption\\_in\\_public\\_procurement\\_en.pdf](http://ec.europa.eu/anti_fraud/documents/anti-fraud-policy/research-and-studies/identifying_reducing_corruption_in_public_procurement_en.pdf)

Ramey, V. A., 2011, *Identifying Government Spending Shocks: It's all in the Timing*, *The Quarterly Journal of Economics* 126 (1):1–50.

Ramey, V. A. and Shapiro, M. D., 1998, *Costly capital reallocation and the effects of government spending*, in *Carnegie-Rochester Conference Series on Public Policy*, vol. 48, 145–194.

Regulation (EC) 1081/2006 of the European Parliament and of the Council of 5 July 2006 on *European Social Fund* and repealing Regulation (EC) No 1784/1999.

Regulation (EC) No. 284/2009 of 7 April 2009 amending Regulation (EC) No 1083/2006 laying down general provisions on the European Regional Development Fund, the European Social Fund and the Cohesion Fund concerning certain provisions relating to financial management.

Regulation (EU) No. 539/2010 of 16 June 2010 amending Council Regulation (EC) No 1083/2006 laying down gen-

eral provisions on the European Regional Development Fund, the European Social Fund and the Cohesion Fund as regards simplification of certain requirements and as regards certain provisions relating to financial management. Regulation (EU) No 1299/2013 of the European Parliament and of the Council of 17 December 2013 on specific provisions for the support from the European Regional Development Fund to the European territorial cooperation goal.

Regulation (EU) No 1300/2013 of the European Parliament and of the Council of 17 December 2013 on the Cohesion Fund and repealing Council Regulation (EC) No 1084/2006.

Regulation (EU) No 1301/2013 of the European Parliament and of the Council of 17 December 2013 on the European Regional Development Fund and on specific provisions concerning the Investment for growth and jobs goal and repealing Regulation (EC) No 1080/2006.

Regulation (EU) No 1302/2013 of the European Parliament and of the Council of 17 December 2013 amending Regulation (EC) No 1082/2006 on a European grouping of territorial cooperation (EGTC) as regards the clarification, simplification and improvement of the establishment and functioning of such groupings.

Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006.

Regulation (EU) No 1304/2013 of the European Parliament and of the Council of 17 December 2013 on the European Social Fund and repealing Council Regulation (EC) No 1081/2006

Regulation (EU) No. 1305/2013 of the European Parliament and of the Council of 17 December 2013 on *support for rural development by the European Agricultural Fund for Rural Development (EAFRD)* and repealing Council Regulation (EC) No. 1698/2005.

Regulation (EU) No 1315/2013 of the European Parliament and of the Council of 11 December 2013 on Union guidelines for the development of the trans-European transport network and repealing Decision No 661/2010/EU Text with EEA relevance.

Regulation (EU) No 1316/2013 of the European Parliament and of the Council of 11 December 2013 establishing the Connecting Europe Facility, amending Regulation (EU) No 913/2010 and repealing Regulations (EC) No 680/2007 and (EC) No 67/2010.

Robert, J., Stumm, T., de Vet, J.M., Reincke, C.J. and Hollanders, M., 2001, *Spatial impacts of Community policies and costs of non-co-ordination*, study carried out at the request of the Directorate General for Regional and Urban Policies, European Commission.

Rodríguez-Pose, A. and Garcilazo, E., 2013, *Quality of Government and the Returns of Investment: Examining the Impact of Cohesion Expenditure in European Regions*, OECD Regional Development Working Papers, No. 2013/12, OECD Publishing.

Rodríguez-Pose, A. and Storper, M., 2006, *Better rules or stronger communities? On the social foundations of institutional change and its economic effects*, Economic Geography, Volume 82, Issue 1, pages 1–25, January.

Rothstein B., 2011, *The Quality of Government: Corruption, Social Trust, and Inequality in International Perspective*, University of Chicago Press, September.

RRG, 2013, Train speeds based on published timetables for 1990, 2000 and 2013. Final report of study for the European Commission, DG Regional Policy.

Stiglitz, E., Sen, A., Fitoussi, J.P., 2009, Report by the Commission on the Measurement of Economic Performance and Social Progress. [http://www.stiglitz-sen-fitoussi.fr/documents/rapport\\_anglais.pdf](http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf)

Szerb, L., Acs, Z. J., Autio, E., Ortega-Argiles, R. and Komlosi, E., 2013, *REDI: The Regional Entrepreneurship and Development Index — Measuring regional entrepreneurship*, Final report, 2013, Research financed by the Directorate-General Regional and Urban Policy, European Commission.

Tomova, M., Rezessy, A., Lenkowski, A. and Maincent, E., 2013, *EU governance and EU funds — testing the effectiveness of EU funds in a sound macroeconomic framework*, Economic Papers 510, Directorate-General for Economic and Financial Affairs, European Commission.

[http://ec.europa.eu/economy\\_finance/publications/economic\\_paper/2013/pdf/ecp510\\_en.pdf](http://ec.europa.eu/economy_finance/publications/economic_paper/2013/pdf/ecp510_en.pdf)

Treaty on the Functioning of the European Union, Article 39(2).

<http://ec.europa.eu/social/BlobServlet?docId=7671&langId=en>

Varga, J. and in 't Veld, J., 2011, *A model-based analysis of the impact of Cohesion Policy expenditure 2000–06: Simulations with the QUEST III endogenous R&D model*, Economic Modelling 28 (2011) 647–663.

Woodford, M., 2011, *Simple analytics of the government expenditure multiplier*, American Economic Journal: Macroeconomics, 3(1): 1–35.

[http://ec.europa.eu/economy\\_finance/publications/economic\\_paper/2012/pdf/ecp468\\_en.pdf](http://ec.europa.eu/economy_finance/publications/economic_paper/2012/pdf/ecp468_en.pdf)

World Bank, 2014, *Doing Business 2014*.

<http://www.doingbusiness.org/>

Zulian, G., Maes, J. and Paracchini M. P., 2013, *Linking land cover data and crop yields for mapping and assessment of pollination services in Europe*, Land 2, 472–492.

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