

EN



EUROPEAN COMMISSION

Brussels, 9.11.2010
SEC(2010) 1348 final

COMMISSION STAFF WORKING DOCUMENT

Accompanying the

**COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN
PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL
COMMITTEE, THE COMMITTEE OF THE REGIONS AND THE EUROPEAN
INVESTMENT BANK**

**Conclusions of the fifth report on economic, social and territorial cohesion: the future of
cohesion policy**

{COM(2010) 642 final}

TABLE OF CONTENTS

5 TH COHESION REPORT LEXICON.....	VI
GEOGRAPHICAL GROUPINGS	VII
EXECUTIVE SUMMARY OF THE FIFTH REPORT ON ECONOMIC, SOCIAL AND TERRITORIAL COHESION.....	IX
CHAPTER I: ECONOMIC, SOCIAL AND TERRITORIAL SITUATION AND TRENDS	20
1. PROMOTING COMPETITIVENESS AND CONVERGENCE.....	20
1.1. Globalisation and internal integration	20
1.2. Sources of growth.....	42
1.3. Innovation is the main driver of regional development	48
1.4. Infrastructure for the 21 st century	65
1.5. Institutions	73
1.6. Competitiveness	75
1.7. Conclusions	79
2. IMPROVING WELL-BEING AND REDUCING EXCLUSION	81
2.1. Life expectancy and health.....	82
2.2. Living conditions.....	87
2.3. Income, poverty and deprivation.....	105
2.4. UN Human Development Index and Human Poverty Index.....	114
2.5. Conclusions	117
3. ENHANCING ENVIRONMENTAL SUSTAINABILITY	120
3.1. Adapting to climate change already underway	120
3.2. Limiting future climate change	123
3.3. Improving environmental quality	133
3.4. Conclusions	136
CHAPTER II: NATIONAL POLICIES AND COHESION	138
1. INTRODUCTION.....	138
2. NATIONAL APPROACHES TO ECONOMIC, SOCIAL AND TERRITORIAL COHESION.....	139
3. PUBLIC SPENDING AND INVESTMENT IN EU MEMBER STATES	140
3.1. "Trends in public expenditure and public investment in the EU"	140
3.2. The case for public investment and the rationale for additionality	146
4. THE COMPOSITION OF PUBLIC EXPENDITURE IN THE EU.....	148

5.	PUBLIC SPENDING AND PUBLIC INVESTMENT AT REGIONAL LEVEL	153
5.1.	Decentralisation of public expenditure and investment	153
5.2.	Regional breakdown of investment	156
5.3.	Current spending and cohesion	162
6.	NATIONAL POLICIES AND THE ECONOMIC CRISIS.....	166
6.1.	The economic crisis and the national stimulus plans	166
6.2.	The effects of the economic crisis on public finances and the prospects for public investment.....	168
7.	STRUCTURAL CONDITIONS FOR SUCCESSFUL COHESION.....	171
8.	CONCLUSIONS	177
	CHAPTER III: OTHER EUROPEAN UNION POLICIES AND COHESION.....	179
1.	INTRODUCTION	179
2.	POLICIES WITH AN EXPLICIT SPATIAL DIMENSION.....	179
2.1.	Competition	179
2.2.	Transport.....	182
2.3.	Environment	183
2.4.	Maritime Policy	184
2.5.	Common Fisheries Policy.....	184
3.	POLICIES WITH A PARTIAL SPATIAL DIMENSION	185
3.1.	Research and technological development	185
3.2.	Innovation and entrepreneurship	186
3.3.	Information Society and Media	187
3.4.	Poverty and social exclusion	188
3.5.	Employment	189
3.6.	Education.....	190
3.7.	Gender equality	191
3.8.	Health	192
3.9.	The Common Agricultural Policy	193
3.10.	Climate	194
4.	POLICIES WITHOUT A SPATIAL DIMENSION	195
4.1.	Single market.....	195
4.2.	Trade	195
4.3.	Energy	196
4.4.	Economic and Monetary Union.....	196

4.5. The Lisbon Strategy	196
5. ASSESSING TERRITORIAL IMPACTS	197
6. CONCLUSIONS	199
CHAPTER IV: IMPACT OF COHESION POLICY	201
1. INTRODUCTION	201
1.1. Investing in green, smart and inclusive growth - the main lines of spending.....	202
1.2. Evaluation – understanding and finding ways to improve the effects of intervention.....	206
2. STRONGER ECONOMIES.....	210
2.1. Strengthening SMEs and competitiveness	210
2.2. More support for innovation.....	213
2.3. A variety of tools, including financial engineering.....	218
2.4. Transport infrastructure	224
2.5. Interreg and territorial co-operation	227
3. WORKING FOR THE WELL-BEING OF EU CITIZENS	229
3.1. Integration into the labour market	230
3.2. Social Inclusion	234
3.3. Demographic change	239
3.4. Equal opportunities.....	241
3.5. Local development	244
3.6. Urban regeneration	247
3.7. Rural areas	249
4. PROTECTING THE ENVIRONMENT	251
4.1. Water and waste infrastructure – a significant investment.....	252
4.2. Regeneration and environmental protection.....	254
4.3. A greener economy and long term economic development	254
4.4. Green governance.....	255
5. GOVERNANCE.....	256
5.1. Effective governance and results based management	258
5.2. Administrative costs are relatively low	260
5.3. Partnership.....	262
5.4. Institutional capacity building	263
6. CONTRIBUTING TO REGIONAL AND GLOBAL GROWTH	264
6.1. Using macroeconomic models to estimate effects	264

6.2. Macroeconomic impact of the 2000-2006 programmes.....	266
6.3. The macroeconomic impact of Cohesion Policy 2007 - 2013	269
6.4. Impact on net contributors and on the EU-27	270
7. CONCLUSIONS	272

5th Cohesion Report Lexicon

Abbreviations

Official Order	Country code	Name
1	BE	Belgium
2	BG	Bulgaria
3	CZ	Czech Republic
4	DK	Denmark
5	DE	Germany
6	EE	Estonia
7	IE	Ireland
8	EL	Greece
9	ES	Spain
10	FR	France
11	IT	Italy
12	CY	Cyprus
13	LV	Latvia
14	LT	Lithuania
15	LU	Luxembourg
16	HU	Hungary
17	MT	Malta
18	NL	Netherlands
19	AT	Austria
20	PL	Poland
21	PT	Portugal
22	RO	Romania
23	SI	Slovenia
24	SK	Slovakia
25	FI	Finland
26	SE	Sweden
27	UK	United Kingdom

- COH: Cohesion Countries including less developed plus moderately developed Member States (see below)
- CONV: Convergence regions covering the least prosperous NUTS 2 regions with GDP per head of less than 75% of the EU-25 average
- EFTA: European Free Trade Association
- EU: European Union
- OECD: Organisation for Economic Co-operation and Development
- PPS: Purchasing Power Standards
- RCE: Regional Competitiveness and Employment regions: all regions other than Converge regions and Transition regions (see below)
- TRANS: Transition regions groups phasing-in and phasing-out regions. They are called transition to highlight their intermediate stage between convergence and regional competitiveness and employment regions.

Geographical groupings

Member State groupings

By enlargement

EU-15: All Member States which joined prior to 2004: BE, DK, DE, IE, EL, ES, FR, IT, LU, NL, AT, PT, FI, SE, UK

EU-10: Member States which joined in 2004: CZ, EE, CY, LV, LT, HU, MT, PL, SI, SK

EU-12: EU-10 plus Member States which joined in 2007: BG, RO

Geographic groupings

- Central and Eastern Member States: EE, LV, LT, PL, SK, CZ, SI, HU, RO, BG
- Southern Member States: PT, ES, IT, EL, MT, CY
- Western Member States: EU15
- 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) (GDP per head below 75% of EU average)

Moderately developed Member States: (PT, MT, CZ, SI, EL, CY) (GDP per head between 75% and 100%)

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: Croatia, Turkey and the Former Yugoslav Republic of Macedonia (FYROM)

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

EFTA: EU-27 + Iceland, Liechtenstein, Norway and Switzerland

Groups of NUTS 3 regions

This report includes a wide variety of classification of NUTS 3 regions. The Directorate-General for Regional Policy will publish a Regional Working Paper with a detailed methodology for each of these classifications.

Metropolitan regions

This classification was developed in cooperation with the OECD and consists of NUTS 3 approximation of all urban agglomerations of more than 250 000 as defined by the Urban Audit's Larger Urban Zones.

Predominantly urban, intermediate, predominantly rural regions

This is 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.

Mountain regions

These are NUTS 3 regions where or 50% of the population or 50% of the area is considered mountainous.

Island regions

These are NUTS 3 regions where the majority of the population live on one or more islands without fixed connections to the mainland, such as a bridge or a tunnel.

Sparsely populated regions

Sparsely populated regions are NUTS 3 regions with a population density of less than 12.5 inhabitants per km².

Data behind the maps and NUTS 3 classifications can be downloaded here: https://circabc.europa.eu/d/d/workspace/SpacesStore/b35d4432-3434-496a-9726-641f55f8abaf/5CR_data_and_typologies.zip.

Executive Summary of the Fifth Report on economic, social and territorial cohesion

The fifth Cohesion Report is adopted in the aftermath of the worst financial and economic crisis in recent history. The EU and its Member States responded to this crisis by taking measures to keep businesses in operation and people in employment, to stimulate demand and increase public investment.

Subsequently, several governments have faced difficulties refinancing their debts due to a combination of falling revenue and increasing expenditure on welfare payments and stimulus measures. Faced with large deficits and pressure from financial markets, most EU governments are in the process of implementing fiscal consolidation measures.

In the midst of this, the EU has adopted an ambitious new strategy for long-term recovery, Europe 2020. Its key objective is smart, inclusive and sustainable growth. Even more than its predecessor, the Lisbon Strategy, Europe 2020 emphasises the need for innovation, employment and social inclusion and a strong response to environmental challenges and climate change in order to meet this objective.

The aim of this Cohesion Report is to support the Europe 2020 strategy and highlight the contribution that regions, and Cohesion Policy, can make to meet these objectives. The report argues that the Europe 2020 headline targets cannot be achieved by policies formulated at EU or national level alone. Such an ambitious agenda can only succeed with strong national and regional participation and ownership on the ground. This is one of the main lessons learnt from the Lisbon Strategy. For example, reaching the employment target of 75% in the Convergence regions would have required almost 10 million extra jobs in 2008, more than in all other regions combined.

In addition, the regional diversity in the EU, where regions have vastly different characteristics, opportunities and needs, requires going beyond ‘one-size-fits-all’ policies towards an approach that gives regions the ability to design and the means to deliver policies that meet their needs. This is what Cohesion Policy provides through its place-based approach.

The report argues that an efficient Europe 2020 strategy requires close coordination between Cohesion Policy and other EU policies. In many domains, public policies have a greater overall impact if they are closely coordinated rather than being implemented in isolation. Recent work by the OECD suggests that it is important to combine investment in transport infrastructure with support for businesses and human capital development to achieve sustainable economic and social development.

The fifth Cohesion Report is the first report adopted under the Lisbon Treaty, which added territorial cohesion to the twin goals of economic and social cohesion. To cover this, the report, first, analyses the territorial dimension of access to services. Second, it pays more attention to climate change and the environment. Third, it considers how the territorial impact of policies can be measured.

The report also includes a number of other novelties as compared with earlier reports. The analysis of regional economic disparities has been expanded to include issues relating to institutions and a new index of competitiveness is presented. Moreover, analysis of social cohesion, following the Stiglitz-Sen-Fitoussi report, covers both

objective and subjective indicators of well-being and several indicators which have never been presented at the regional level before.

The report contains four chapters. The first focuses on the economic, social and territorial situation and trends in the EU by considering how to (1) promote economic competitiveness and convergence, (2) improve well-being and reduce social exclusion, and (3) enhance environmental sustainability. The second chapter assesses the contribution of national policies to cohesion. The third chapter presents an overview of how other EU policies have contributed to cohesion. The last chapter summarises the evidence on the positive impact of Cohesion Policy in furthering cohesion objectives and highlights the areas where there is room for improvement.

Economic, social and territorial situation and trends

Chapter 1 provides an extensive overview of the situation and trends in EU regions from an economic, social and environmental perspective. All three perspectives reveal striking regional disparities from differences in productivity, to infant mortality rates and vulnerability to climate change. Many of these disparities have shrunk over the past decade, some quite quickly, but overall there remains a wide gap between the less developed and the highly developed EU regions.

Although some of these regional disparities will never (completely) disappear, many of them are inefficient, unfair and unsustainable. To achieve real progress towards the goals of smart, green and inclusive growth, these regional disparities have to be reduced.

Promoting competitiveness and convergence

The EU is not alone in facing significant regional development disparities. Many large countries such as China, India, Brazil and Russia also have wide differences in regional GDP per head and have turned to EU Cohesion Policy to learn how to reduce them.

Differences in GDP per head between the US States are relatively narrow, but the differences within the North American Free Trade Association (NAFTA), which also includes Canada and Mexico, are much larger than those in the EU. These regional disparities in NAFTA have not diminished over time. This implies that belonging to a large free trade zone alone is not sufficient to enable less developed regions to catch up, especially when the gap in infrastructure, institutional efficiency and innovation is wide.

The EU's single market has grown to half a billion people today. Such a large market creates new opportunities in terms of economies of scale and specialisation. Both can help to make EU firms highly productive and globally more competitive. The value added of EU firms lies more and more in knowledge-intensive and other services, where the EU has a competitive edge as shown by a positive and growing trade balance in services with the rest of the world.

The internal market of the EU guarantees free movement not only of goods but also of people, services and capital. This allows people to travel more easily for leisure or work. The internal market opens up new horizons for investment or retirement and allows more people to find a job and more vacancies to get filled. This increasing integration can also be seen in growing trade and financial flows. Within the EU, trade in goods and services has expanded significantly, especially between countries in the EU-12 and between the EU-12 and the EU-15. Foreign direct investment and remittances from people working in

another country have become crucial sources of capital for many of the less developed Member States. The crisis, however, has disrupted many of these flows.

Economic growth per head is linked to changes in population, employment and productivity. Since population grew only slightly in most regions between 2000 and 2007, it had little effect on regional growth and hardly any effect at EU level. Increases in employment had a strong effect in Transition regions and a moderate one in regional competitiveness and employment regions. In Convergence regions, employment made only a small contribution to growth, but the (very) low employment rates reveal a significantly underutilised resource. The main source of growth in all EU regions was higher productivity. Productivity growth was particularly high in Convergence regions fuelled by both increases within sectors (linked to innovation in the broad sense) and shifts in employment to sectors with a higher value added (restructuring). In Competitiveness regions, higher productivity came almost exclusively from innovation. Productivity growth came mostly from innovation in Transition regions, but, true to their name, was partly due to restructuring.

Innovation

To become more productive, the EU needs more innovation (in a broad sense) and more investment in education, training and life-long learning. Europe 2020 emphasises the need for more innovation. For example, only one region in ten has reached the Europe 2020 target of investing 3% of GDP in R&D.

Innovation is important for all regions, whether or not they are at the forefront of research. In regions that are not, i.e. most regions, the focus should be more on absorbing and spreading innovative practice developed elsewhere, than on radical innovations. Accordingly, these regions need to support investment in the capability of firms to internalise innovative practice and train their work force as well as helping to strengthen the links between private enterprise, research centres and government (the triple helix model).

The Europe 2020 target increasing the proportion of those aged 30-34 with a tertiary education degree or equivalent to 40% has been reached in less than one in six regions and most others will need to increase greatly the capacity of universities and the number of young people remaining in education in order to meet this target by 2020.

The Europe 2020 'early-school leaving' target of at most 10% of young people aged 18-24 with no education beyond basic schooling has been reached in one in three regions, but it will require a substantial effort in many regions to achieve it, especially in the 15 regions in Spain and Portugal where the rate is still above 30%.

In many cases, public action is necessary to ensure that these economies can exploit their assets and opportunities efficiently. Investment in innovation and education can boost economic growth markedly, but only if the right infrastructure and institutions are in place.

Infrastructure

Innovations lead to more growth if they can easily reach a large market. The infrastructure needed to reach a large market is changing as more and more services can be purchased and distributed online, providing even remote regions with direct access to an EU-wide or even global market. Within the EU, this requires establishing a single

digital market and increasing access to broadband. Broadband access, however, is far from universal. In thinly populated areas in Romania, only 13% of households had a broadband connection in 2009, compared to Finland where 77% of households in thinly populated and 84% in densely populated areas had broadband access.

Despite the growing importance of digital networks, the capacity to move people and goods by rail, road, air or water remains critically important. Transport infrastructure, however, is unevenly distributed across the EU. Most central and eastern Member States still have considerably fewer motorways than other parts of the EU and much lower speeds on their rail network. Access to air transport in most of these countries is also poor due to fewer flights and poor connections to airports.

Border regions often have lower grade transport infrastructure and less access to services and markets, especially along the external borders. This tends to reduce their GDP per head and employment rates. Cross-border cooperation can enhance welfare, but it may involve relatively high transaction costs due to different institutional systems, cultures and languages. EU support can help overcome such obstacles to bring untapped resources into use.

Institutions

Strong institutions are crucial for sustainable economic growth and social welfare. This is increasingly recognised by policy makers and researchers alike. The crisis has highlighted the need for stable macro-economic conditions, but the strategies for recovery should balance the need for fiscal consolidation with the need for sufficient levels of public investment. Wider availability and use of e-government services can also help to increase the transparency and efficiency of public administrations, and cross-border and inter-regional cooperation can help to strengthen institutional capacity.

Combined efforts to improve infrastructure, institutions and the pace of innovation can help the EU's economy become more productive and more competitive, which is key to sustaining adequate rates of growth and creating more and better jobs. To reach the Europe 2020 targets, a wide-ranging strategy is essential.

Improving well-being and reducing exclusion

Life expectancy and health

The EU has one of the highest life expectancies in the world. The average age and share of population of 65 are also among the highest in the world as a result. This has consequences for both health services and the labour force. An increase in the share of older people implies an increased demand for health and related services. As the average age of the labour force increases and people continue in employment until later in life, the demand for (re-)training will increase as may the demand for more flexible working arrangements.

Despite life expectancy being high overall, differences between regions remain relatively wide. The reasons are manifold, ranging from differences in income, education and living conditions to uneven access to high quality health care. Infant mortality, for example, is substantially higher in Romanian and Bulgarian regions, but also in some of the more remote or economically depressed regions in the EU-15. The same is true of death rates from cancer and heart disease. Road deaths per head of population differ by a

factor of ten across EU regions, not so much because of the state of the road network but because of driver behaviour and the degree of law enforcement.

Living conditions

Unemployment fell substantially between 2000 and 2008. Nevertheless, regional unemployment rates remained high in Southern Italy, Eastern Germany and Southern Spain, even before the crisis. Since 2008, unemployment has risen dramatically in many Member States, notably in Spain and the Baltic States, where average rates were around 20% by early 2010. Considerable efforts will be needed to bring people back into employment in the years to come.

Labour mobility in the EU remains low, especially compared to the US, and this alone will not reduce the large regional disparities in unemployment across the EU. Nevertheless, regions with high unemployment have experienced larger outward migration, though the pattern of migration differs between the EU-12 and the EU-15. In the EU-12, migration has tended to be into predominantly urban regions, especially capital cities. In the EU-15, there has been more migration to predominantly rural regions than predominantly urban ones. Migration from outside the EU was until recently the most important source of population growth in EU regions, but the successful integration of the people concerned remains uneven and they have considerably lower employment rates than average in many Member States.

Within one generation, women have achieved and surpassed the level of education attained by men. In virtually all EU regions, many more women aged 25-34 than men have a university degree, while for women aged 55-64, this is the case in only a small minority of regions. This tendency has not yet led to more equal employment rates. In particular in southern European regions, employment rates of women are considerably lower than elsewhere, despite significant increases over the past decade, and unemployment among women is much higher than among men.

Access to services differs in two main ways, the most important is the difference between more and less developed countries and the second is the difference between thinly and densely populated areas. In most of the more developed Member States access to services, such as education, health care or banking, is not a problem in all types of area. In the less developed Member States, however, access is more limited, especially in thinly populated areas.

Densely populated areas, however, suffer from a combination of problems in all Member States, including from crime, violence, vandalism, pollution and noise. The share of population in densely populated areas experiencing these problems is two to three times larger than in other areas. Surveys of those living in cities, accordingly, show a high level of dissatisfaction with air quality and safety and, in several cases, low levels of trust.

Poverty

Europe 2020 aims to reduce poverty and exclusion. The indicator used to monitor this combines two absolute indicators (severe material deprivation and living in low work-intensity households) and a relative one (income below the at-risk-of-poverty threshold).

Severe material deprivation is highly concentrated in the less developed Member States and regions where up to a quarter of people are indentified as being severely deprived. In the EU-12, the relative number tends to be larger in thinly populated areas, while in the EU-15 it is larger in densely populated ones.

Households with low work intensity are most common in the UK, Hungary and Ireland, where at least one in 10 lives in such a situation. In the Baltic States, Cyprus and Slovakia, by contrast, the number is less than one in 20.

The share of population with an income level that puts them at risk of poverty (less than 60% of national median disposable income) also differs markedly between countries, ranging from one in four (in Romania) to one in 10 (in the Czech Republic). But the range is far wider at regional level: from around one in 17 in two Czech regions and Trento in Italy to more than one in three in three southern Italian regions, two Spanish and one Romanian region. In several Member States, including the UK, Spain, Italy, Germany and Poland, the proportion is twice as large in the least prosperous regions than in the most prosperous ones.

Prior to the financial crisis, household income had increased markedly in many central and eastern Member States. This lifted many people out of material deprivation and increased their overall life satisfaction and happiness. Unfortunately, the crisis not only brought this increase to an end but reversed it. Consequently, it is likely to have increased deprivation, especially in the most affected countries, such as the Baltic States.

Promoting active inclusion and reducing poverty means investing in education, training and skills, modernising labour markets, training and education systems and social and health services to help people anticipate and manage change and to build a cohesive society.

Enhancing environmental sustainability

Adapting to climate change

Adapting to climate change will be most difficult in southern cities and regions and coastal and mountain areas. Even if greenhouse gas emissions were drastically reduced today, temperatures would still increase in the coming years and extreme weather events become more frequent, with more droughts, floods and reduced snow cover. Several regions which rely heavily on agriculture and winter or summer tourism are likely to have more droughts and less snow in the near future which could undermine these activities. At the same time, floods are likely to increase in other regions with many cities being particularly vulnerable.

Limiting climate change

Reaching the Europe 2020 target of 20% energy consumption from renewables will require substantially more investment in solar energy, particularly in southern Europe where there is most potential,, and in wind energy, especially along the Atlantic and North Sea coasts.

The target of reducing greenhouse gas emissions by 20% is ambitious and will require investment by both the private and the public sector. The private sector will largely be covered by the emissions trading scheme, but the public sector will still need to make substantial changes and investment to reduce emissions and energy consumption. Increasing energy efficiency will require investing in the insulation of buildings,

different heating systems, more efficient modes of transport and perhaps promoting urban living and more compact cities.

Improving environmental quality

The number of cities where waste water treatment is below EU standards has fallen over the past decade. Nevertheless, in several of the eastern Member States, more investment is still needed to comply fully with the urban waste water directive, which is why the accession treaties have foreseen a staggered transition. Though recycling of waste has increased and the use of landfills diminished, more progress in treating waste efficiently is still needed in some southern and eastern Member States.

Air quality is poor in many regions, especially in city centres and in the south, with detrimental effects on health and the quality of life. Reducing ozone levels and particulate matter in the air will require increased efforts at local and regional level. Moreover, both the Natura 2000 areas and green infrastructure in the wider countryside need to be properly managed and protected.

National Policies and Cohesion

National governments have implemented various regional development policies to further economic, social and territorial cohesion. While some Member States give priority to tackling regional disparities, others focus more on national competitiveness or on specific territorial features. Irrespective of the approach pursued, the emphasis is increasingly on *stimulating endogenous development* by providing support to areas of comparative advantage, rather than compensating regions for disadvantages.

Sub-national governments in virtually all Member States are responsible for a relatively large share of public investment. On average, some two-thirds of public investment is implemented by regional and local authorities across the EU, underlining the importance of their contribution to the Europe 2020 strategy.

Public investment is critical to improving the competitiveness of less developed regions, especially in those less well endowed with infrastructure. A number of recent studies have concluded that public investment boosts growth under certain conditions, among which good institutional governance is critical. Cohesion Policy support ensures that less developed countries and regions can maintain the rates of public investment required to increase their growth potential and equally helps them strengthen their institutional capacity.

Cohesion Policy funding means that public investment is higher relative to GDP in Cohesion countries than in the rest of the EU. The past decade has seen a positive correlation between rates of public investment and rates of economic growth, suggesting both that public investment is important for convergence and that economic growth is important for public investment.

Higher rates of public investment in Cohesion countries have mostly gone to improving infrastructure, notably transport networks, and Cohesion Policy has played a crucial role in helping to narrow the gap with more advanced parts of the EU in this respect.

Unlike in the case of their entitlement to EU funding under Cohesion, the relative prosperity of regions is not a major determinant of their access to national funds for investment, except in Germany and, to a lesser extent, in France. Other factors such as geophysical features, the extent of fiscal and political autonomy or the attraction of capital cities seem to be at least as important as cohesion objectives in determining the regional distribution of public investment.

Cohesion Policy is important for boosting the competitiveness of more advanced regions as well as less-developed ones. On average it accounts for around 25% of total public investment at regional level in non-Convergence regions in Spain and France. It totals around 15% of public expenditure on environmental protection in the West Midlands and London and some 25% of public expenditure on improving the adaptability of workers and helping disadvantaged groups find employment in Central and Northern Italy.

The economic crisis led most national governments and some regional authorities to introduce ‘*ad hoc*’ stimulus packages to mitigate the effects on growth and employment. Public investment was a major component of these packages. The legacy of the crisis, however, is a dramatic increase in government borrowing and debt. While this mostly stems from a fall in tax revenue, restoring macroeconomic stability and reducing government deficits in the coming years to more sustainable levels is likely to put pressure on public expenditure programmes and on public investment in particular.

Cohesion Policy, which accounts for a substantial proportion of financing for investment in many countries, is therefore likely to become increasingly important in the future. On the other hand, fiscal and budgetary constraints on Member States will have a significant impact on the environment in which Cohesion Policy operates. This might trigger a review of co-financing rules, which is a fundamental principle of Cohesion Policy underpinning the joint approach to EU funding and ensuring ownership of the policy on the ground.

The way that the additionality principle is verified to ensure that Cohesion Policy funding is used to support investment which is additional to what national governments would have otherwise undertaken needs to be revised. Currently, the method used is contested on grounds of reliability and lack of comparability between Member States, because of its ad-hoc nature and complexity. A reform of the system is needed to make it more reliable, transparent and straight-forward.

Structural and institutional reforms are important to maximise the impact of Cohesion Policy. However, the pace of reform over the past decade has been relatively slow and this has affected the impact of the policy ‘on the ground’. The Europe 2020 strategy has set a new framework to which Cohesion Policy needs to adapt. A key aspect of this will be to establish closer links between the design and implementation of the policy and the macroeconomic objectives and structural and institutional reforms pursued.

Cohesion Policy in the current period includes conditions linked to the macroeconomic situation only in respect of the Cohesion Fund (apart from administrative requirements on financial management and control systems). For the next programming period, the issue of whether this kind of macroeconomic conditionality should be extended, and if so how, should be explored. Whether other conditions, such as incentives for reform in areas closely linked to the operation of Cohesion Policy and which might increase its impact, and value for money, might also be usefully examined.

Other EU Policies and Cohesion

According to the EU Treaty, the design and implementation of all EU policies should take account of their effect on economic, social and territorial cohesion. Currently some policies have a clear territorial dimension, like transport or environment policy. Other policies have a partial territorial dimension, such as research, information society or health policy. Some policies do not or cannot distinguish in their implementation between different parts of the EU, for example the single market or trade.

Policies do not need to have a specifically regional thrust to be able to assess their effect on cohesion. However, it does require having a thorough understanding of the local impact of a policy, whether it is spatially targeted or not. Such assessments of the territorial impact could be carried out, prior to the approval of a policy, or as part of an ex-post evaluation.

Policies also tend to have inter-dependent effects. Without proper coordination, the impact of any one policy is likely to be severely diminished and might even be negative. The impact of policies cannot therefore be maximised if a fragmented approach is adopted and policy decisions are taken in isolation.

Infrastructure improvements, for example, do not lead automatically to higher growth and, in fact, might even result in a net reduction in economic activity in less developed regions ('leaking by linking'). Investment in infrastructure needs to be combined with investment in education, enterprise, and innovation to ensure not only that it has a positive effect on development but that this effect is maximised by taking account of the complementary effects of this other investment.

Similarly, innovation may be spatially concentrated, but its benefits are not. Investment in R&D and businesses therefore need to be complemented by investment in human capital, not only to foster the efficiency of the regional innovation process, but also to ensure that the benefits of innovation are distributed widely in spatial and social terms.

As regards R&D and innovation, Cohesion Policy needs to complement the activities carried out under the Research Framework Programme and the Competitiveness and Innovation Framework programme. This can be achieved by focusing the role of Cohesion Policy on spreading and applying examples of innovative practice across the EU at regional level ('smart specialisation') and on supporting investment in basic infrastructure, institutions and human resources in less developed regions so that they can participate fully in the knowledge economy.

Given the tightening budget constraints which will limit public expenditure over the next few years across the EU and the parallel need to support economic recovery, these limited public resources should be used to maximum effect, which, as the Europe 2020 strategy makes clear, can only happen if all EU policies are mutually reinforcing.

The Impact of Cohesion Policy

Cohesion Policy is the EU's main instrument for pursuing harmonious development across the Union. It is based on a broad vision, which encompasses not just the economic development of lagging regions and support for vulnerable social groups, but also environmental sustainability and respect for the territorial and cultural features of different parts of the EU. This breadth of vision is reflected in the variety of programmes, projects and partners that are supported under the policy.

In terms of the **regional economy**, the funding provided by Cohesion Policy over the period 2000-2006 created some 1 million jobs in enterprises across the EU, as well as perhaps adding as much as 10% to GDP in Objective 1 regions in the EU-15. As various studies indicate, this tended to boost the trade and exports of net contributor countries, which helps to offset their contribution to funding the policy. Accordingly, macroeconomic model simulations indicate that Cohesion Policy had the net effect of raising the level of GDP in the EU as a whole.

Nevertheless, there is room for improvement: grants to enterprise provide valuable support, but too often in the past there has been an over-reliance on them. The trend towards a more balanced mix, including financial engineering (loans and venture capital) as well as more indirect measures, such as advice and guidance and support for networking and clustering, is a welcome one. The European Commission, in close partnership with the EIB, is actively encouraging such diversification of support measures through initiatives such as JEREMIE, JASMINE, JASPERS and JESSICA.

In addition, Cohesion Policy investment in motorways and roads in the less developed parts of the EU-15 over many years means that the job is now largely done. Investment should shift towards more environmentally-friendly modes of transport (notably rail and urban transport systems), though in the EU-12 the need to improve all transport links remains a priority.

Cohesion Policy also supports the training of around 10 million people a year, with a strong focus on young people, the long-term unemployed and the low skilled. Through various local development initiatives, Cohesion Policy has a strong track record of cross-border co-operation, regenerating deprived urban neighbourhoods, and improving access to services in rural areas.

Involving regional and local communities can improve policies. Evaluation evidence has demonstrated that the active participation of people and organisations in projects at regional and local level, from the design to the implementation stage, is a crucial success factor. Indeed, such partnership is one of the key sources of added-value of Cohesion Policy, mobilising the skills and knowledge of those concerned to make programmes more effective and inclusive.

In terms of **protecting the environment**, more than half the Member States are tracking the reduction of greenhouse gas emissions as a target in their Cohesion Policy programmes for the 2007-2013 period.

More than 23 million people were connected to wastewater collection and treatment systems and at least 20 million people connected to clean supply of drinking water through ERDF and Cohesion Fund support in 2000-2006. As a result, Cohesion Policy has helped many regions to meet the requirements of EU environmental Directives and by so doing has helped to protect the environment and to improve the quality of life. However, the sustainability of the facilities constructed needs more carefully consideration to ensure that investment in environmental infrastructure is made with clear plans for long-term financing.

In terms of **policy management**, strong and sound administration at national, regional and local levels is important for the success and lasting effect of cohesion policy. Evaluations have found that the EU-12 countries have significantly improved administrative capacity since accession. Nevertheless, continued efforts are needed to ensure that all government levels in the EU have the necessary administrative capacity to deliver Cohesion Policy effectively.

A recurrent evaluation finding across all areas of investment was a preoccupation with "absorption", i.e., with spending the money more than focusing on what the programmes were actually designed to achieve. While the former is obviously a precondition for success, the latter is ultimately what matters. For example, monitoring systems typically prioritise spending and outputs (such as the number of people trained or kilometres of new roads constructed) rather than results (such as the number of people getting a job after training or the amount of journey time saved) let alone on impacts (the effect of a better trained work force or more efficient transport networks on regional development).

Cohesion Policy needs to cultivate a focus on performance. This has to start from programmes identifying a limited number of policy priorities (concentration) with a clear view of how they will be achieved and how their achievement will contribute to the economic, social and territorial development of the regions, or Member States, concerned.

Monitoring and evaluation systems need to be improved across the EU to track performance and to help redirect efforts as necessary to ensure that objectives are attained. This requires a clear strategic vision of what the programme aims to achieve and how success will be recognised and measured (proper target setting). It also requires a strong and reliable monitoring system, as well as greater recourse to rigorous evaluation methods, including counterfactual impact evaluation, cost benefit analysis, beneficiary surveys, as well as a more rigorous use of qualitative methods such as case studies.

Chapter I: Economic, social and territorial situation and trends

This is the first Cohesion Report adopted under the Lisbon Treaty, which added territorial cohesion to the twin goals of economic and social cohesion. To cover this new dimension, this report includes more analysis on four issues. First it examines the territorial dimension of access to services. Second, it pays more attention to the environmental dimension of sustainable development. Third it focuses on functional regions and territorial cooperation. Fourth, it considers how the territorial impact of policies can be measured.

The report also includes a number of other novelties as compared with earlier reports. The analysis of regional economic disparities has been expanded to include issues relating to institutions and a new index of competitiveness is presented. Moreover, analysis of social cohesion, following the Stiglitz-Sen-Fitoussi report and the Commission's GDP and beyond Communication¹, covers both objective and subjective indicators of well-being and several indicators which have never been presented at the regional level before.

1. PROMOTING COMPETITIVENESS AND CONVERGENCE

This section provides a broad overview of the main determinants of regional economic development. It starts by putting EU development and regional disparities into a global context and shows the impact of growing trade in goods and services on regional development. It then highlights the diverse geography of growth of the EU economy and how all types of regions have contributed to this.

The next section examines the main drivers of growth, identifying the regional sources of growth and the central and increasing role of productivity growth and identifies the sectors which have contributed most to output and employment growth.

The next three sections look at the main determinants of regional economic development: the level of innovation, the quality of infrastructure and the capacity of institutions.

The last section brings these different issues together in a new regional competitiveness index developed in cooperation with the Joint Research Centre.

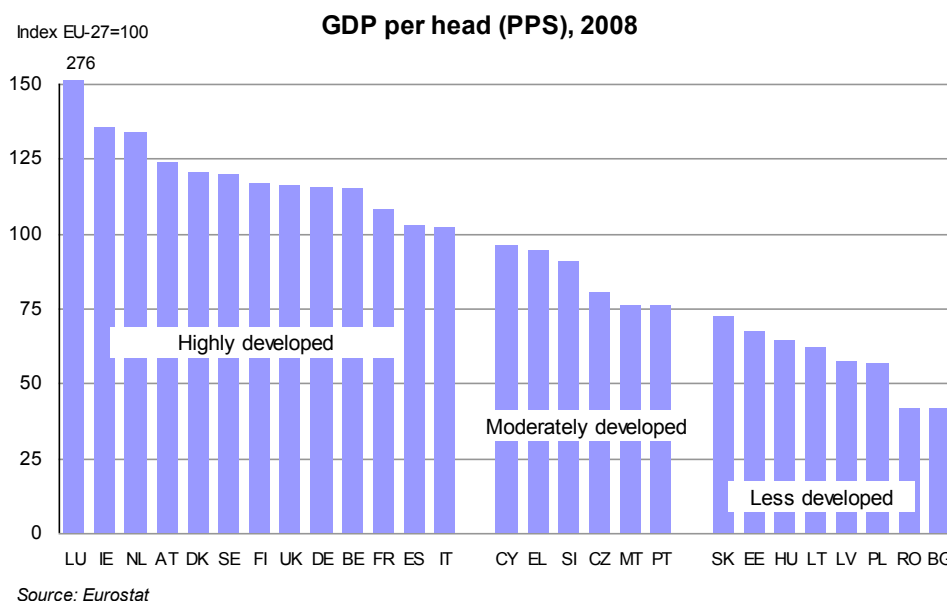
1.1. Globalisation and internal integration

Compared to the United States (US), Japan and Canada, the EU experienced higher economic growth per head² between 2000 and 2007 (Table 1.1), largely due to the higher growth rates of the less developed and moderately developed EU Member States.

¹ COM(2009) 433.

² Measuring GDP growth per head corrects for difference in population growth. It is a more comparable and more accurate measure of the additional value added created per person (Stiglitz, J., Sen, A.,

Figure 1- 1



In the highly developed EU Member States, growth rates were almost identical to those in the US, Canada and Japan.

Table 1. 1

Average Annual GDP per capita growth in real terms, 2000-2007	
Brazil*	3.1
Russian Federation	7.7
India	5.2
China	9.9
Mexico**	0.6
United States of America	1.4
Canada**	1.4
Japan	1.5
EU27	1.8
Highly developed MS	1.4
Moderately developed MS	2.9
Less developed MS	5.2

Note: * 2002-2007,** 2000-2006

Source: OECD and National Statistical Institutes

Growth of GDP per head was higher in Brazil, Russia, India and China than in the EU. However, in the less developed Member States, it was much the same as in India or Brazil

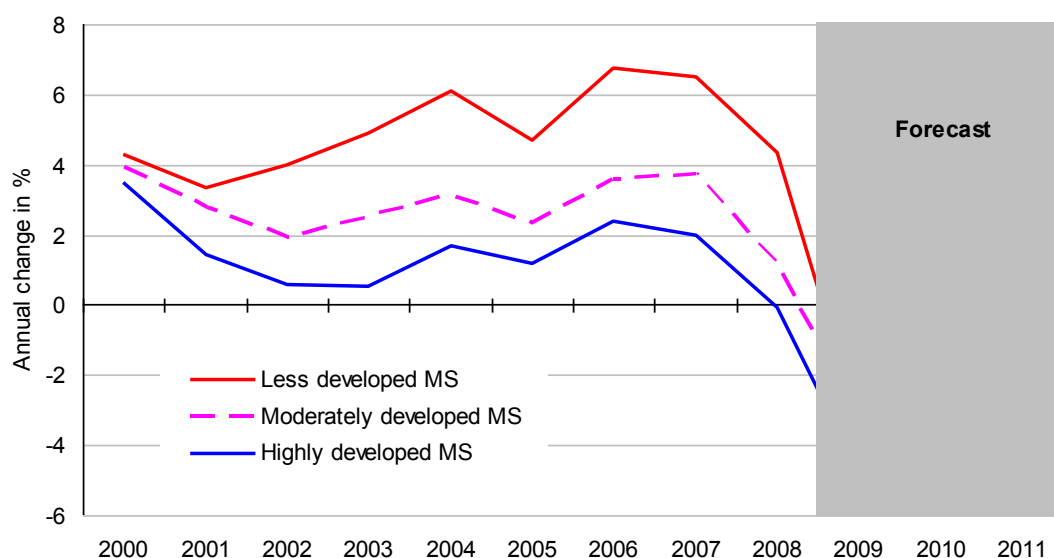
Growth in the less developed Member States was particularly high between 2002 and 2008 - almost three times higher than in the highly developed ones. This contributed strongly to regional convergence in the EU. Growth in the moderately developed Member States was also much higher than in highly developed ones, so

Fitoussi, J., *Report by the Commission on the Measurement of Economic Performance and Social Progress*. 2009.). These results may come as a surprise as the media usually only reports GDP growth, which is higher in the US than in the EU due to its higher population growth.

that as the overall gap in GDP per head between the most and the least developed countries narrowed, so did regional differentials.

Figure 1- 2

Real GDP per capita growth, 2000 - 2011



Box: Regional impact of the crisis

Although the impact of the economic crisis has been extreme in some regions, it was no worse, on average, in the less developed regions than in the highly developed ones. Accordingly, overall regional disparities have barely changed. In general, EU-12 Convergence regions seem to have been affected less than those in the south of the EU-15.

The economic crisis hit regions specialised in manufacturing, in particular. The highest increases in unemployment, however, were in regions highly dependent on construction. Regions specialised in tourism, most of them with a GDP per head below the EU average, have not yet been affected significantly, just as regions with large shares of public employment. Regions specialised in financial and business services, most of them capital city regions or buoyant metropolitan regions, have been affected to an average extent in terms of the impact on GDP and employment.

In general, more rapid recovery is projected to occur in industrial regions specialised in manufacturing and those with a large share of financial and business services, while those more dependent on tourism, construction and public administration are projected to recover more slowly.

Some 64 Convergence regions and 15 Transition regions are estimated to have fared better than the EU average during the crisis, while a number of previously buoyant regions in Ireland, the South of Finland and the North and Centre of Italy have been hit hard.

The performance of Convergence regions, however, has varied greatly. Most Polish regions have been affected relatively little, which is also the case for Greek regions specialised in tourism, the Eastern German Länder and the EU-12 capital city regions. In contrast, all three Baltic States, Western Hungarian regions, the

Italian Mezzogiorno and the South of Spain have experienced significant economic contraction. Outside the Convergence regions, some regions in the Netherlands, Austria and West and South Germany have performed better than the rest of the EU.

A relatively fast recovery is projected in some prosperous regions in Germany and the North of Belgium as well as some capital city regions in the North and the Centre of the EU. Regions in Poland are also projected to continue to perform relatively well and most other regions in the EU-12 are projected to recover quite quickly. By contrast, prospects are much less favourable for Convergence regions in Greece and, to a lesser extent, in Spain, Italy, Portugal and France.

So far, regions in Germany have managed to avoid large increases in unemployment, to a large extent because of the short-time working scheme and employers reducing working hours. Unemployment has also remained low in the North of Italy despite the depth of the recession. On the other hand, in virtually all regions in Spain, the Baltic States and Ireland, unemployment has increased dramatically. At the end of 2009, the highest unemployment rates (of between 17% and 30%) were in Southern Spain, the French outermost regions, Latvia and Brussels.

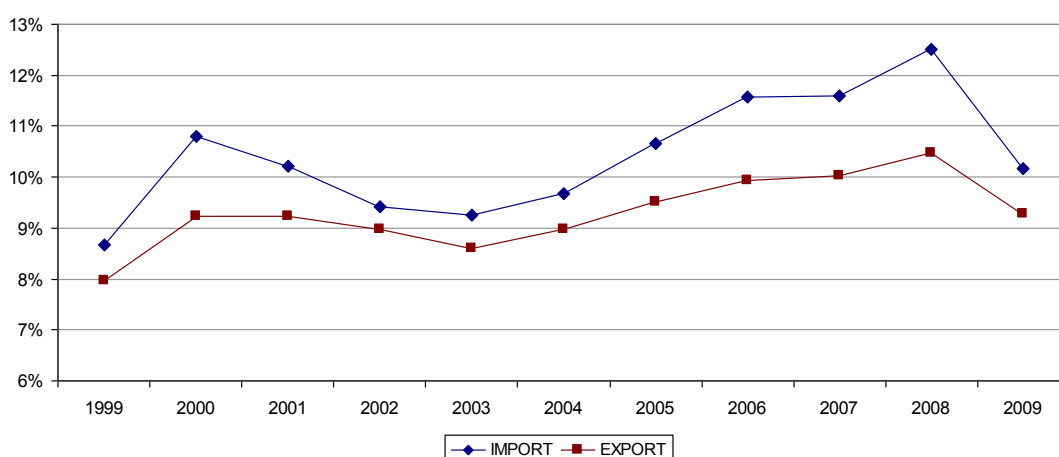
Prospects are not good for a quick reduction in unemployment, which in most regions is projected to increase further.

1.1.1. Globalisation and regional development

The trade in goods between the EU and the rest of the world grew significantly up until the recent crisis. Between 1999 and 2008, exports to third countries increased from 8% of EU GDP to 10.5%. Imports from outside the EU rose by even more, from 8.5% of GDP in 1999 to 12.5% in 2008, the trade deficit widening over the period. In 2009, the recession, which hit the EU more than some other parts of the world, led to imports declining even more than exports and to a narrowing of the trade deficit (Figure 1.3).

Figure 1- 3: Ratio of goods trade on the GDP (EU-27)

Trade in goods between EU and the rest of the world, 1999 - 2009



Source: Eurostat database

This increase in trade in goods reflects growing globalisation. The growth consists in large part of intra-sectoral and intra-firm trade, as major firms increasingly locate different parts of production in different parts of the world. This more dispersed production system at the same time increases the demand for logistics and ordering and control systems.

Such a process creates both opportunities and threats for EU regions. The sectors where the EU has become less competitive include textiles, metals and electric and optical equipment. The Fourth Cohesion Report highlighted the challenge of globalisation to regions specialised in vulnerable sectors. A follow-up study³, however, indicated that although the EU is losing employment in the sectors concerned, these losses tend to be concentrated in the less specialised regions. Many, but by no means all, regions specialised in vulnerable sectors have, therefore, been able to move up the value chain to higher value-added activities such as high-end production, niche markets or high-tech products. This has often allowed them to maintain employment and increase output.

Nevertheless, some regions have not been able to move up the value chain and have lost markets by competing for low-cost and low-quality products with emerging economies outside the EU. This highlights the critical role of investment in human capital, entrepreneurship and a favourable business environment and the problems created by delaying restructuring and failing to encourage a move to activities where regions have the potential to develop a new comparative advantage.

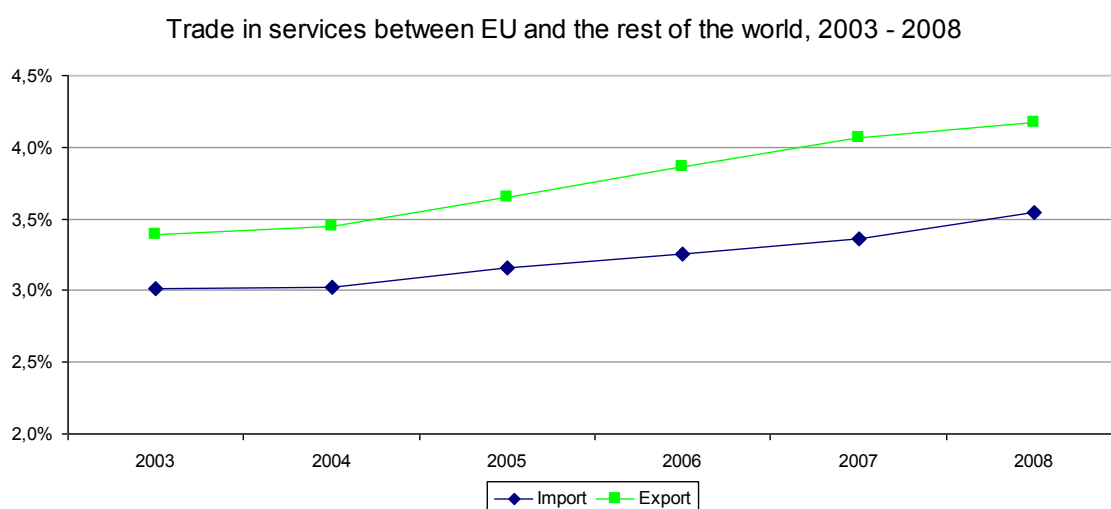
The service sector has also witnessed strong trade growth. Indeed, the EU has a larger market share of services than of goods – 20% of the global

³ Regions vulnerable to globalisation and increased trade.
http://ec.europa.eu/regional_policy/sources/docgener/studies/study_en.htm

market as against only 13% in 2007.⁴ Between 2003 and 2008, exports of services rose from 3.4% to 4.2% of GDP, while imports grew from 3% to 3.5% (Figure 1.4). In some specialised countries, exports far exceeded the EU average in 2008. For instance, Luxembourg (31.6% of its GDP) and Ireland (13.3%) have large trade surpluses in services thanks to financial services and Cyprus (18.1%) and Malta (10.6%) thanks to transport services.

In contrast to goods, where the trade deficit widened from 2003 on, the surplus on trade in services expanded, especially after 2005. Trade in services has also been less affected by the economic crisis.

Figure 1- 4 Ratio of services trade on the GDP (EU-27)



Source: Eurostat database

The increase in the trade surplus on services has boosted output and employment in financial and business services and logistics. Regions which have gained most from the growth of these exports tend to be highly specialised in the services concerned, be the locations of international headquarters and have strong transport connections to other parts of the world⁵.

A second group of regions has also gained from increased trade in goods and services and, in particular, from the stimulus to restructure faster and focus on higher value-added activities. As a result, productivity growth has tended to be higher in traded goods and services than in regions less linked into the global market and with a smaller share of employment in the sectors concerned. Regions can clearly gain from the increasing integration of global trade by raising the skill and technological content of their activities and using their specialisation to diversify into related areas.

⁴ WTO - International Trade Statistics 2008
http://www.wto.org/english/res_e/statis_e/its2008_e/its2008_e.pdf.

⁵ Regions benefitting from globalisation and increased trade.
http://ec.europa.eu/regional_policy/sources/docgener/studies/study_en.htm

Brazil, Russia, India and China

Brazil, Russia, India and China all have internal disparities in GDP per head between regions which are much wider than in the EU. Whereas the top quartile of regions have a GDP per head which is 2.8 times higher than the bottom quartile in the EU, in Brazil and India, it is 3.6 times higher and in Russia 4.9 times higher (World Bank).

Map 1.1: Russia, India, China, and Brazil: Regional GDP per head, 2007

The ratio is also wider in China (3.2), but it cannot be compared to the EU, since data are published only for 31 regions. These have an average population of 43 million as against less than 2 million for NUTS 2 regions in the EU.

Of the four countries, India is the least developed with a GDP per head of only USD 3000 in PPP terms (World Bank), just 10% of the EU average. China has a GDP per head twice that of India, Brazil over three times as high and Russia five times as high. GDP per head in Brazil is similar to that in Bulgaria, while in Russia, it is similar to that in Poland or Latvia.

Given the scale of regional disparities, Brazil, China and Russia have taken a keen interest in Cohesion Policy. The Commission has signed a Memorandum of Understanding with each of the three countries to help them develop their own regional strategies based on the EU's long experience and incorporating open market principles, respect for the environment and partnership in their conception and implementation.

The exchanges with Brazil, which have been at both national and regional level, have already led to policy changes. Moreover, the OECD, with DG Regional Policy support, is carrying out a "Territorial Review" of Brazil to help the authorities develop their strategic capacity in regional development.

Cooperation with China has led to a study comparing its regional policy with that in the EU and focussing on the definition of regions and multi-level governance, to be published at the end of 2010. A future study will focus on the role of regional clusters in interregional cooperation, especially as regards innovation.

Cooperation with Russia has involved seminars in Moscow on multi-level governance, capacity building, on the management of large projects and inter-regional and cross-border cooperation.

1.1.2. EU integration through the flows of goods, services, investments, remittances and people

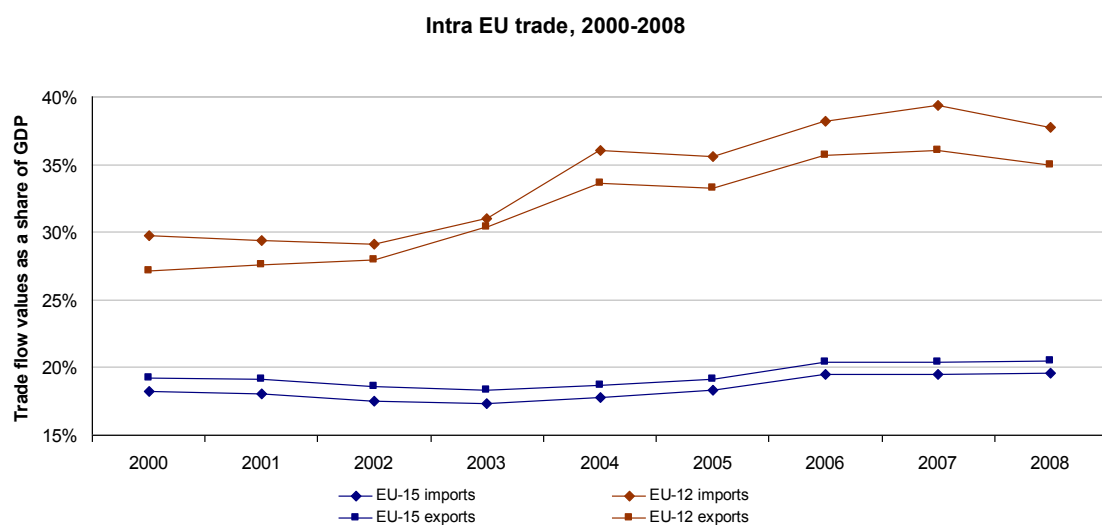
The EU has created a unique environment for businesses to trade freely in the Single Market and for individuals to move freely to live and work in other Member States. No other group of Nation States has gone so far in economic integration. The effect of this integration is evident in the growth of intra-EU trade after each enlargement, the large and growing flows of foreign direct investment (FDI) between Member States, the remittances sent back to their home country by migrants and the movements of labour across the EU. This section shows the positive effects of integration.

1.1.2.1.Trade

Intra-EU trade has become increasingly important for the countries which joined the Union in 2004 and 2007 (the EU-12). In 2000, exports of goods of the EU-12 countries to each other and to the EU-15 amounted to 27% of their GDP. In 2008, this had risen to 35%. At the same time, their imports of goods from other EU Member States rose from 30% of GDP to 38% (Figure 1.5).

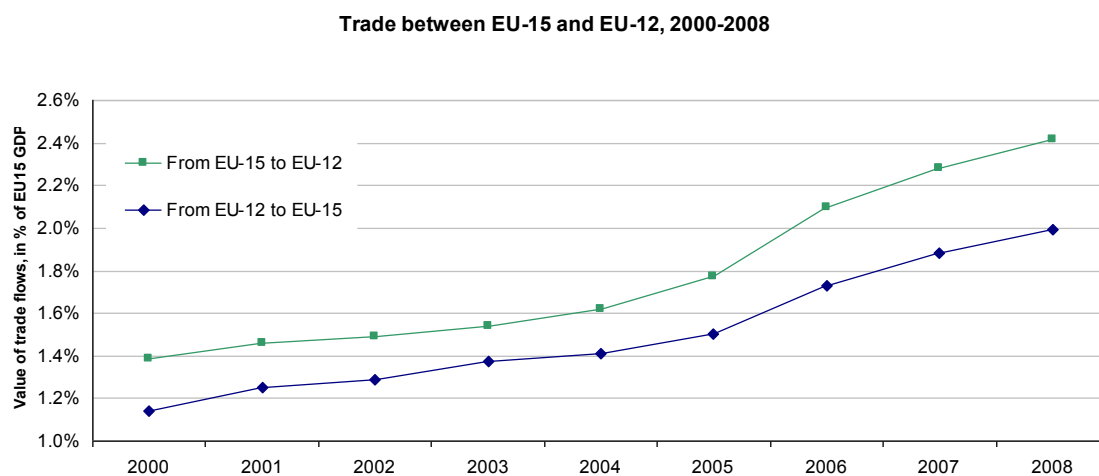
Trade increased markedly in countries that were already export oriented, such as the Czech Republic, where trade to the rest of the EU rose from 44% of GDP to 58% over the period, but also in the less export oriented, such as Poland, whose exports to the rest of the EU rose from 15% of GDP to 25%.

Figure 1- 5: Exports and imports to other EU Member States, 2000-2008



Source: COMEXT database and Eurostat

Figure 1- 6 Trade in the single market between EU-15 and EU-12



Source: COMEXT database and Eurostat

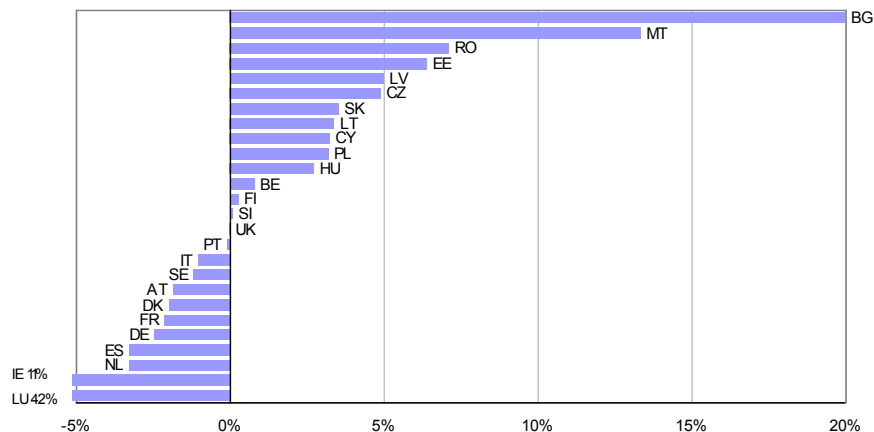
Flows between the EU-12 and EU-15 almost doubled between 2000 and 2008. Exports from the EU-12 to the EU-15 rose from 1% of EU-15 GDP to 2% and exports from the EU-15 to the EU-12 increased by more (from 1.4% of EU-15 GDP to 2.4%), reflecting the higher growth of the latter countries (Figure 1.6).

1.1.2.2. FDI

Inflows of foreign direct investment (FDI) averaged 4.6% of GDP in the EU over the period 2004-2008 and FDI outflows, 6.1% of GDP (Figure 1.7). The EU, therefore, invested more abroad than foreign companies in the EU. Inflows, however, substantially exceeded outflows in all the countries which joined the EU in 2004 and 2007. FDI has, in fact, proved an important engine of growth in these countries. FDI flows from the EU-15 amounted on average to 4.5% of GDP in the EU-12 Member States. In Bulgaria, net inflows averaged over 20% of GDP, in Malta, over 13% and in Romania, Estonia and Latvia, over 5%. In the EU-15, inflows exceeded outflows only in Belgium and Finland and in all the other countries, the reverse was the case.

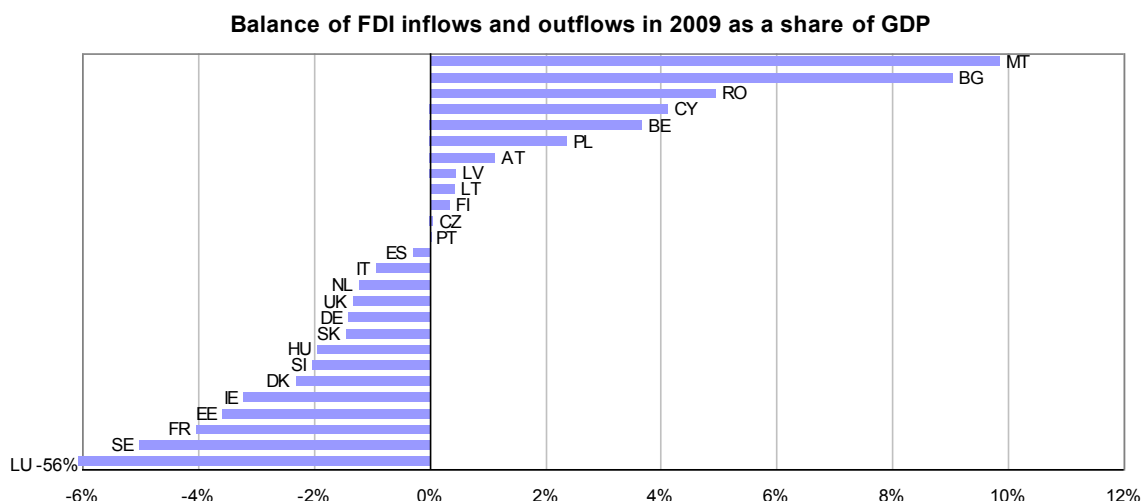
Figure 1- 7

Balance of Net FDI inflows and outflows 2004-2008 as a share of GDP



FDI is volatile and highly sensitive to the economic cycle. It contracted markedly in the economic crisis and ensuing period of uncertainty about economic prospects. Both inflows and outflows declined much more than GDP in 2009. Total FDI inflows amounted to just under 3% of GDP in 2009 and net outflows to around 4% (Figure 1.8), well below the average for the 2004-2008 period.

Figure 1- 8



The collapse hit those Member States with significant net inflows in particular, net FDI to the EU-12 countries declining from over 5% of GDP in 2007 to less than 1.5% in 2009. In Bulgaria and Estonia, the decline relative to the 2004-2008 average was over 10 percentage points of GDP.

1.1.2.3. Romania and Bulgaria are the main recipients of remittances

With enlargement and the opening up of employment opportunities in the EU-15 to people in the EU-12, remittances from the former to the latter have grown markedly as people have moved to take up jobs in the EU-15. The total sum of intra-EU remittances amounted to over EUR 44 billion in 2008.

Bulgaria and Romania were by far the largest recipients of net remittances from other parts of the EU. In 2008, these amounted to EUR 5.7 billion, or 4.2% of GDP, in Romania and to EUR 1.5 billion, 4.5% of GDP, in Bulgaria (Figure 1.9). Remittances are, therefore, an important source of income for households in the two countries. Over 80% of remittances to Romania were sent from Italy (EUR 2.5 billion) and Spain (EUR 2 billion) and some 55% of those to Bulgaria from Germany (EUR 450 million) and Greece (EUR 425 million).

The other countries where remittances were significant were the three Baltic States (between 1.2% and 1.8% of their respective GDPs) and Poland (1.4% of GDP).

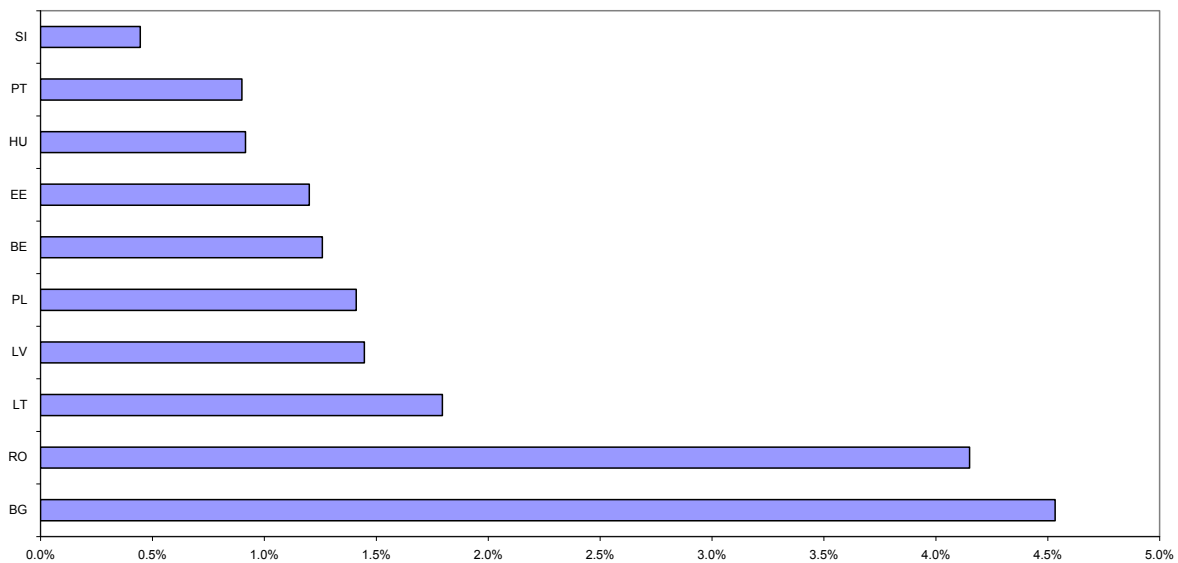
In the main countries from which remittances were sent, Germany, Italy and the Netherlands, the sums involved amounted to less than 0.2% of GDP.

Remittances grew rapidly in Romania from 2004 to 2007, by around EUR 1 billion a year. As a result of the crisis, however, they remained unchanged in 2008 and fell markedly in 2009. The increase before the crisis was also substantial in Lithuania and Poland.

In Romania and Lithuania, remittances were 40% lower in the first three quarters of 2009 than in the same period in 2008. This reduction was less in Bulgaria, Poland and the two other Baltic countries (around 15% or less). These differences reflect the non-uniform effect of the crisis on jobs in the countries from which the remittances were sent. Job losses were substantial in Spain (which accounts for a third of Romanian remittances) and, because of the decline in construction, hit migrant workers especially. By contrast, job losses have been relatively small in Germany from where 30% of Bulgarian remittances come.

Figure 1- 9

Net personal remittances as share of GDP (2008)



1.1.2.4. Labour mobility in the EU and the US

People in the US are much more likely to move to a different US State than people in the EU are to move to another EU region (Map 1.2 and Map 1.3)⁶. In the EU, those of working age who changed their region of residence in 2008 amounted to only 1.2% of total working-age population as against 2.8% in the US. This higher internal mobility gives the US a more flexible labour market, which responds more to regional differences in wages and job opportunities, and tends to reduce both disparities in unemployment and labour shortages. Given the prospective decline in working-age population and the labour shortages which it could give rise to, there is likely to be an increasing need for more labour mobility in the EU.

Map 1.2: Share of working age residents who moved from a different EU region within the last year, 2007-2008

⁶ The data do not take into account seasonal work, education or training without a change in permanent residence.

Map 1.3: Share of working age residents who moved from a different US State within the last year, 2008

Within the EU, however, there are significant differences between countries in the extent of regional movements, with a clear distinction between the countries in the Eastern and the Western part. In the EU-15, some 1.4% of working age population moved between regions in 2008, nearly four times more than in the Central and Eastern Member States. The regions which attracted the highest number of working-age residents were located in France: Limousin (4.8%), Midi-Pyrénées (4.5%), Poitou-Charentes (3.8%) and Languedoc-Roussillon (3.8%). Portugal (2.4%) was ranked second because of Lisbon (5.6%). The UK was ranked third, many regions having relatively large inflows of people of working age from other regions, from Inner and Outer London (4.7%) in particular.

In the EU-12 countries, the inflows were highest (at as around 1% of working-age population) in Opolskie and Dolnośląskie in Poland and virtually zero in Centru and București-Ilfov in Romania. Only 16% of working age population moving between EU regions moved to regions in the EU-12.

In the US, where those moving to another State made up 2.8% of total working age population, the States with the largest inflows were the District of Columbia (10%), Alaska (6.7%), Wyoming (6.1%), Delaware (5.4%) and Montana (5.3%).

On average, more than 85% of the labour movement in the EU comprised movements between regions in the same country. Less than one in seven cases involved crossing a national border. Only 0.15% of people of working age, therefore, moved between Member States, less than movements into the EU from third countries (0.2% of working-age population). Despite the freedom to move, very few people so far take advantage of this.

The low movement between Member States can be explained in terms of linguistic, cultural and labour legislation differences. In the case of those from the EU-12, it is also due to a number of restrictions on their mobility, which will be completely phased out by 2011. Currently, only Germany and Austria still limit the inflow from these countries, though Bulgarians and Romanians still have restricted access to employment in 10 EU-15 countries, which are due to be removed by 2013 at the latest.

1.1.3. Regional growth and convergence

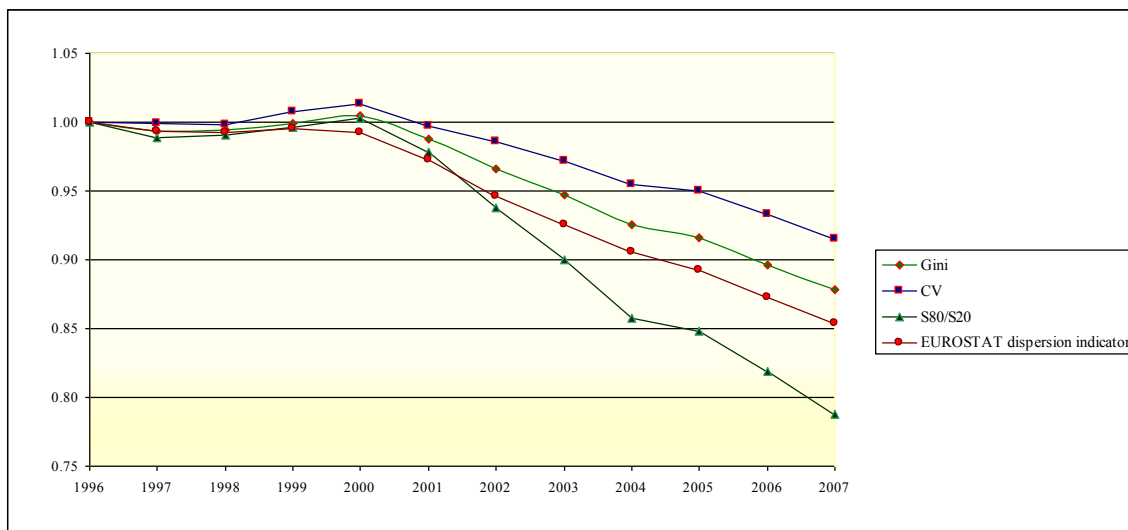
Growth in EU-12 regions especially has led to a marked narrowing of regional disparities in GDP per head in PPS terms across the Union. Nevertheless, disparities remain pronounced with levels less than a third of the EU average in 7 Romanian and Bulgarian regions and levels over 50% higher than the EU average in 19 regions, of which 11 are capital city regions (Map 1.4).

Map 1.4: GDP per head (PPS), 2007

Map 1.5: Growth of GDP per head in real terms, 2000-2007

The coefficient of variation, a common measure of disparities, fell from 42.7 in 1996 to 39.1 in 2007 in the EU. Other dispersion measures, such as the Gini index or the S80/20 ratio (the ratio of the top 20% of regions to the bottom 20%), show much the same reduction (Figure 1.10).

Figure 1- 10: Coefficient of variation, Gini index and S80/20 (normalised), GDP per head, EU-27 NUTS 2 regions, 1996-2007

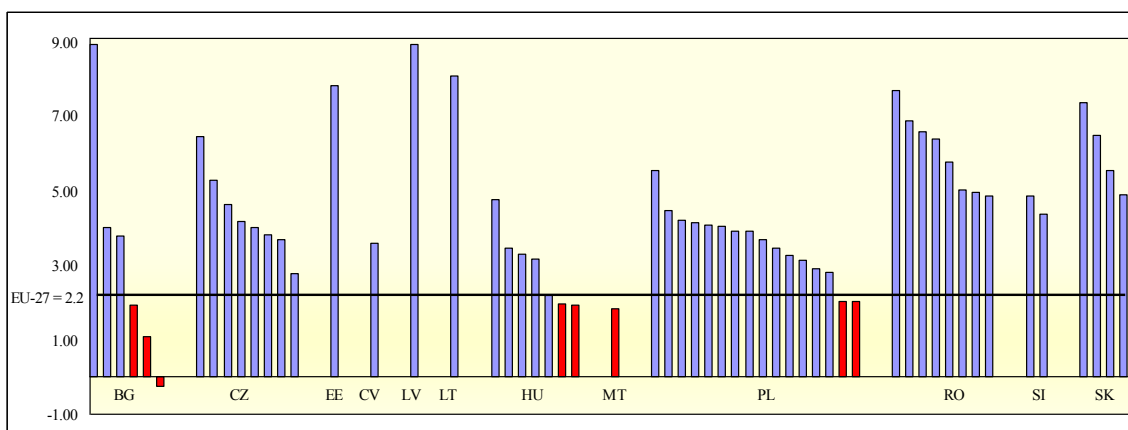


Source: Eurostat database. DG REGIO's calculation.

The fact that regional disparities have declined over the EU as a whole has not prevented disparities from increasing in a number of Member States, in particular in the EU-12. For instance, in Romania the coefficient of variation rose from 15 in 1995 to 44 in 2007, reflecting the relative concentration of growth in one or two regions, especially the capital city region.

However, widening internal disparities has not prevented GDP per head in almost all regions in the EU-12 converging towards the EU average (Map 1.5). In fact, between 2000 and 2007, only 8 regions in the new Member States recorded a lower average growth rate than the EU-27 average (Figure 1.11).

Figure 1- 11: Average growth rates 2000-2007, EU-12 NUTS 2 regions



Source: Eurostat database. DG REGIO's calculation.

Measures of disparities such as the Gini or coefficient of variation can summarise a lot of information. However, they do not take account of the movement in the relative level of GDP per head of individual regions, examination of which can add considerable insight into the forces at work in the convergence process.

Examining individual movements in GDP per head serves to identify which regions are converging and which are falling behind. For example, 11 regions moved from the group of regions with a GDP per head below 50% of the EU average to the group between 50% and 75%. These are the three Baltic States, Yugozapaden (Bulgaria), Közép-Dunántúl (Hungary), four Polish regions and two Slovak regions. Bucureşti–Ilfov (Romania) stands out in moving from below 50% of the average to above 75% in just over 10 years. The crisis has almost certainly had a significant effect on this pattern of convergence, though it will be some time before the data are available to assess what kind of effect.

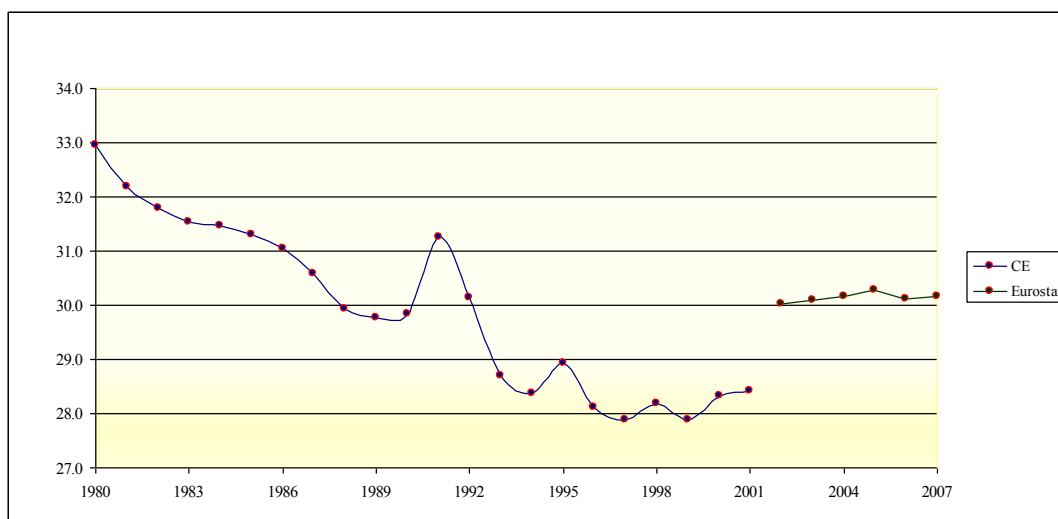
Map 1.6: Change in regional GDP per head (PPS), 1995-2007

Convergence is driven by a catching-up process as less developed EU regions grow faster than the highly developed ones. Regional disparities in GDP per head widened in some of the less developed Member States between 1995 and 2007. Nevertheless, virtually all regions in less developed Member States converged towards the EU-27 average.

Box: Changing regional disparities in the EU-15

Convergence between regions in the EU-15 Member States was strong up to the mid 1990s, but the process since then has slowed down. From 1980 to 1996, there was clear narrowing of disparities the coefficient of variation falling from 33 to 29. Since 1996, it has remained between 29 and 30. The results are in line with the findings regularly reported in the literature.

Figure 1- 12 : Coefficient of variation 1980-2007*, EU-15 NUTS 2 regions



* The methodology currently in use to compute regional GDP per head differs from the one on which Cambridge Econometrics based its historical time series from 1980 to 2001. This explains the difference between the coefficient of variation obtained from Eurostat and Cambridge Econometrics data

Source: Cambridge Econometrics, Eurostat database. DG REGIO's calculation.

As indicated earlier, measures of disparities do not capture the movement in individual regions. Looking in detail at these shows that convergence is still taking place in the EU-15. In almost half of the regions with a GDP per head below 60% of the EU-15 average in 1995, GDP per head had increased above the threshold by 2007. In one in three regions with a GDP per head between 60% and 75% of the EU-15 average in 1995, GDP per head had risen above 75% by 2007. This shows that while the convergence has already taken place for regions with a GDP per head above 75% of the EU-15 average, the process continues for those with a GDP per head below 75%.

This tendency, however, is not captured by dispersion indices as both the number of regions with lower levels of GDP per head and their weight is relatively small.

Economic and social development in candidate countries and the Western Balkans

Croatia, FYROM and the Western Balkans

In 2007 and 2008, the European Council has repeatedly reaffirmed that: "the future of the Western Balkans lies within the European Union." The Western Balkans include Albania, Bosnia and Herzegovina, Croatia, the former Yugoslav Republic of Macedonia, Montenegro and Serbia, as well as Kosovo under UNSC Resolution 1244/99.

Croatia, which is expected to conclude accession negotiations in 2010, is closest to EU membership. It also has the highest GDP per head, the level in all three Croatian regions being above the Western Balkan average. In Sjeverozapadna Hrvatska, it is twice as high, in the coastal region of Jadranska Hrvatska, 66% higher and in Središnja i Istočna (Panonska) Hrvatska 22% higher. GDP in the last region grew fastest in the 10 years 1995–2005, at a rate of 5.6 % year, as against 4.7% a year in Sjeverozapadna Hrvatska and 2.8% a year in Jadranska Hrvatska.

Between 1995 and 2008, GDP in Croatia grew by nearly 4% a year, but as a result of the global crisis, it fell by an estimated 5.8% in 2009 and it is forecast to grow very little in 2010.

Though the level of economic development has increased since 1995, major structural imbalances remain. Participation and employment rates are low and long-term unemployment is high. In 2008, the employment rate was only 58% and for women just 50%. The unemployment rate was 8.4% in 2008, having fallen gradually from 15% in 2002. Because of the recession, it rose above 9% again in 2009 and may reach 10% in 2010. Over half of the unemployed in 2009 had been looking for a job for over a year. Over a third of the population aged 25-64 has only basic education and only 16% tertiary education.

Improvements in higher education and in the operation of the labour market, together with judicial and administrative reforms, are included in the country's Pre-accession Economic Programme (PEP) for 2009–2011. These are important for the further development of the economy and to enable companies to cope with the competitive pressures they will face once Croatia joins the EU.

The Former Yugoslav Republic of Macedonia (FYROM) has been a candidate country since December 2005. The Stabilisation and Association Agreement (SAA) was signed in 2001 and entered into force in 2004. The Council adopted the Accession Partnership, defining the main priorities for progress in the accession process in February 2008. It also set 2010 as the start date for the process to begin.

The other countries in the region which are considered potential candidates for EU entry, Albania, Montenegro, Serbia and Bosnia and Herzegovina, signed SAAs in 2008.

Montenegro has the second highest GDP per head in the region after Croatia (130% of the West Balkan average) followed by Serbia (105% of the average), FYROM (93% of the average), Bosnia and Herzegovina and Albania (both just over 70% of the average), with Kosovo having by far the lowest level (only 20% of the average). Except for FYROM, where growth of GDP was just under 3% a year between 2000 and 2008, the growth rate in the other countries averaged around 5% a year or more. As a result of the crisis, GDP declined in 2009 in all the countries.

Except in Serbia and Kosovo, population either remained unchanged over the period 2000-2008 or increased – by 0.8% a year in Bosnia and Herzegovina, the highest growth in the region.

All the potential candidate countries in the Western Balkans have similar structural problems to other transition countries. Overcoming them will be key to determining economic performance and EU entry.

Map 1.7 Western Balkan: GDP per head in the Western Balkans (PPS), 2008

Box: Turkey

The Turkish economy is a complex mix of modern industry, commerce and a traditional agricultural sector that still accounts for around 25% of employment. There is a strong and rapidly growing private sector and, while it remains a major participant in basic industry, banking, transport, and communications, the role of the State has been diminishing as the privatisation programme proceeds. The largest industrial sector, textiles and clothing, which accounts for a third of industrial employment, faces stiff competition in international markets. Other sectors, however, notably the automotive and electronics industries are growing in importance as regards exports.

Real GDP growth has frequently exceeded 6% a year, but has been interrupted by sharp declines in output in 1994, 1999 and 2001. Growth was particularly strong between 2002 and 2007 largely due to inward investment and IMF backing. GDP, however, declined in 2008 and 2009 as a result of the global recession. Despite the large current account deficit and substantial foreign debts, further economic and judicial reforms and prospective EU membership are expected to boosting foreign direct investment in the future.

GDP per head in Turkey in PPS terms was less than half the EU average in 2006. Moreover, regional disparities in GDP per head are relatively wide, with the level well above the national average in regions in the West and well below in those in the East. The Istanbul region, which accounts for 20% of the total population (70 million), had a GDP per head in 2006 which was 70% above the national average, whereas in Van, on the Iranian border, it was almost 70% below the average. Between 1995 and 2005, GDP per head tended to increase by more in the regions with the lowest levels.

Map 1.8: Turkey: GDP per head, 2006

Box: Iceland:

Iceland was one of the countries most severely hit by the financial crisis. GDP declined by around 10% in real terms in 2009 and unemployment leapt from only 1.3% in September 2008 to 7.6% in October 2009. The banking system collapsed and the exchange value of the currency fell markedly.

Iceland submitted an application for EU membership in July 2009, a prospect which is expected to have a stabilising effect on the economy. Iceland is already integrated into the EU economy through its membership of the European Economic Area (EEA) and since it is part of the Schengen area, its citizens can travel and work freely throughout the EU.

The population of Iceland was 319 368 at the end of 2009, smaller than any of the current Member States.

In 2009, its GDP per head in PPS terms fell by over 10 percentage points of the EU average to just 9% above. Domestic investment in 2009 was under a third of the level it had been two years earlier, with foreign direct investment halving. Inflation rate increased sharply in 2008 and was over 16% in 2009. Public sector debt doubled in 2008 to over 57% of GDP. Nevertheless, the country's economic base remains strong.

GDP growth in Iceland was around 2 percentage points higher on average over the period 2000-2008 than the EU average and over 5 percentage points higher in 2004 and 2005. As a result, the employment rate was much higher than in the EU and unemployment was just 1.6% of the labour force in 2008. Productivity, on the other hand, has fallen over time in relation to that in the EU to 2% below the EU average in 2008.

Box: Economic and social development in the NAFTA countries

When the North Atlantic Free Trade Area (NAFTA) was set up in 1994, most economists

expected that Mexico as the least developed member country stood most to gain from the free trade area. However, the expected economic convergence has been limited at best⁷. Between 2000 and 2006, for example, regional disparities in GDP per head inside NAFTA did not change.

Major factors inhibiting a stronger economic convergence identified in the literature include the low quality of institutions, which can hinder or even block regional economic convergence, and the development gap. An analysis of the convergence process indicates that the more developed Mexican regions gained more from trade integration than the less developed⁸. In 7 Mexican regions with among the lowest levels of GDP per head, GDP per head declined between 2000 and 2006 (Map 1.9 and Map 1.10).

Regional disparities in employment and unemployment rates in NAFTA in 2006 were also substantial. Employment rates were below 65% in 23 Mexican regions, Newfoundland and Labrador and Northwest Territories in Canada and Mississippi and West Virginia in the US. Unemployment was above 7% in 6 of the Northern Canadian provinces and Michigan compared to less than 3% in 19 Mexican regions and 6 US States.

Regional disparities in GDP per head in the EU-27 are narrower than in NAFTA. Whereas in NAFTA disparities were not reduced between 2000 and 2006, in the EU, they diminished significantly partly because of a focus of policy support on the least developed regions.

Map 1.9: NAFTA GDP/ per head (USDPPS), 2006

Map 1.10: NAFTA Growth of GDP/ per head growth in real terms, 2000-2006

1.1.4. Geography of growth

Metropolitan regions

Metropolitan regions⁹ accounted for 60% of the EU population in 2007 and 68% of GDP. Between 2000 and 2007, these shares remained much the same, though there was a marginal increase in their share of population.

This overall stability, however, hides significant variation across the EU. In most EU-12 countries, growth was much higher in the metropolitan regions than in others. Disparities which were already pronounced between the capital city region and the rest of the country in 2000 widened further. In the EU-15, the difference in GDP per head between the capital city region and the rest of the country was much smaller in 2000 and in most cases the difference narrowed between 2000 and 2007.

⁷ Wise, Carol, *Great Expectations: Mexico's Short-Lived Convergence under NAFTA* (January 2007). Available at SSRN: <http://ssrn.com/abstract=964913>.

⁸ Easterly, William et al, *NAFTA and Convergence in North America: High Expectations, Big Events, Little Time* in *Economía*, Vol. 4, No. 1 (Fall, 2003), pp. 1-53 Published by: The Brookings Institution.

⁹ Metropolitan regions are NUTS 3 regions or groups of NUTS 3 regions that represent all EU agglomerations with more than 250 000 inhabitants. See *Regional Focus 1/2009*, Dijkstra as updated by *Metropolitan regions: towards a harmonisation of the OECD and European commission definitions*. OECD, 2009 GOV/TDPC/TI(2009)6.

In the EU-15, the difference between the capital city region and the second metropolitan region¹⁰ tends to be small. In 9 Member States, the second city region has a higher GDP per head than the capital. Moreover, employment rates are not necessarily higher in metropolitan regions: in France, Germany and the UK, they are higher elsewhere.

In the EU-12, the situation is more extreme and the differences between the capital city region and the other metropolitan regions are much larger. These differences are partly due to a less favourable business environment outside the capital city region. Accessibility, IT usage, transport infrastructure and the level of education all tend to be significantly lower outside the capital city region. Employment rates in the capital city region are also typically much higher than elsewhere. These large discrepancies limit the possibility of rapid dispersion of economic growth, which may in turn reduce aggregate economic growth. The tendency in the EU-12 to concentrate public investment in the capital city region (see Chapter II) contributes to this.

Predominantly rural, intermediate and predominantly urban regions

In the EU-27, around 24% of the population live in predominantly rural regions¹¹, around 35% live in intermediate regions and slightly more than 40% live in predominantly urban regions (Table 1.2). In most of the EU-12 countries, a larger proportion of the population live in intermediate and predominantly rural regions, over 40% living in predominantly rural regions and only around 20% in predominantly urban ones (Map 1.11).

In the EU-15, less than 20% of population live in predominantly rural regions and over 46% live in predominantly urban ones. These proportions, however, differ between countries. In Ireland, Finland, Greece and Denmark, between 43% and 72% of population live in predominantly rural regions, while in the Netherlands, the UK and Belgium, around 70% of the population live in predominantly urban ones.

Map 1.11: Urban-rural typology of NUTS3 regions

¹⁰ See ESPON 2013 study on Secondary Growth Poles (ongoing).

¹¹ See Dijkstra, L. and Poelman, H. *A revised urban-rural typology*. Chapter 15 of the Eurostat Regional Yearbook, 2010.

Table 1. 2

Share of population according to the urban-rural typology, 2007
as % of population in EU-12, EU-15 and EU

	Predominantly Urban	Intermediate	Predominantly Rural	Total
EU-12	20.6	38.6	40.8	100
EU-15	46.2	34.7	19.2	100
EU	40.9	35.5	23.7	100

Source: Eurostat, DG REGIO

In the EU-12, GDP per head in predominantly rural regions was only 73% of the national average in 2007 and almost 60% below the average in predominantly urban regions. In the EU-15, GDP per head in predominantly rural regions was more than 30% below that in predominantly urban ones (see also box on remote rural regions in the next section).

The high concentration of economic activity and growth in urban regions and the large disparities between types of region is a major feature of the transition process and occurs primarily in less developed countries with high growth rates.

Indeed, in 2000-2007, GDP in the EU-12 has grown at twice the rate in the EU-15. Not all regions gained equally from economic growth, however, and for many, their share of national GDP declined. This decline occurred mainly in intermediate and rural regions. Nevertheless, GDP per head in these regions still increased relative to the EU average. In the EU-15, GDP per head in rural regions increased in relative terms (Table 1.3).

Table 1. 3 : GDP per head (pps) in 2007 and change, 2000-2007 according to the urban-rural typology

GDP per head (pps) in 2007 and change, 2000-2007 according to the urban-rural typology				
	Predominantly Urban	Intermediate	Predominantly Rural	Total
EU-12				
relative to the EU-12 GDP per head index				
GDP per head index	167	92	73	100
Change in GDP per head index*	4.6	-0.3	-2.6	0.0
EU-15				
relative to the EU-15 GDP per head index				
GDP per head index	114	91	82	100
Change in GDP per head index*	-0.2	-0.7	1.2	0.0
EU-12				
relative to the EU-27 GDP per head index				
GDP per head index	94	52	41	56
Change in GDP per head index*	20.4	10.0	6.9	10.9
EU-15				
GDP per head index	128	101	91	112
Change in GDP per head index*	-4.5	-4.1	-1.6	-3.7
EU-27				
GDP per head index	124	90	73	100
Change in GDP per head index*	-1.6	-0.3	2.1	0.0

Source: Eurostat, DG REGIO

Note * change in index points

As underlined in a recent study¹², as countries become more developed, the advantages of agglomeration become more widely spread throughout the country due to improvements in the business environment, communication and transport infrastructure and the education of the labour force outside the main urban regions. At the same time, some of the benefits of agglomeration are offset by congestion costs and high rents. As a result, economic activity will start to spread to less developed regions, often rural, and the gap between these and urban areas will start to close, leading to more balanced development. This seems to have occurred in the EU-15.

Box: Territorial cohesion: new themes and new geographies

With the adoption of the Lisbon Treaty, a third dimension was added to the objective of cohesion: the EU '*shall promote economic, social and territorial cohesion.*' As with economic and social cohesion, territorial cohesion highlights a number of issues that merit more attention. Economic and social cohesion focuses on regional disparities in competitiveness and well-being; Territorial cohesion reinforces the importance of access to services, sustainable development, 'functional geographies' and territorial analysis.

(a) Access to services of general economic interest

In 1997, the Treaty of Amsterdam introduced territorial cohesion in the article on access to services of general economic interest, which include education, health care and commercial, financial and business services. In remote and sparsely

¹² ESPON 2013 Programme, *CAFE: The Case for Agglomeration Economies in Europe*, Applied Research Project 2013/2/1, Interim report, 2009.

populated regions, physical accessibility is a prominent concern. This is increasingly being overcome by e-services such as e-health, e-education, e-government and e-banking. In other regions, access may be hindered by cost or a lack of knowledge of the system or, among migrants, of the local language. In some cases, discrimination may also limit this access.

(b) The environmental dimension of sustainable development¹³

Environmental protection, climate change and renewable energy production all have a strong territorial dimension. The territorial dimension of environmental protection, which ranges from air quality and waste water treatment to protected habitats and species under *Natura 2000* and the provision of ecosystem services, is increasingly recognised. The growing threat of climate change and the political goal to radically increase the share of renewable energy in the EU underlines the fact that policies at different levels will need to be coordinated to respond to these various threats and opportunities in an efficient and effective way and to avoid them counteracting each other.

(c) Functional geographies

Whereas most policies focus on a single administrative geographic level, the pursuit of territorial cohesion implies a more functional and flexible approach. Depending on the issue, the appropriate geographical dimension ranges from a macro region, such as the Baltic Sea or the Danube region, to metropolitan and cross-border regions or a group of rural areas and market towns. Such a flexible geography can better capture the positive and negative externalities of concentration, improve connections and facilitate cooperation and so be more effective in furthering territorial cohesion.

(d) Territorial analysis

There is need for a better knowledge of the EU in territorial terms and more robust ways of estimating the territorial impact of EU policies. On this front, Eurostat, the Joint Research Centre (JRC) and the European Environmental Agency (EEA) have already significantly increased the data available for more finely defined geographical areas. For example, the Urban Audit and the Urban Atlas provide more indicators for cities, Eurostat and the National Statistical Institutes have increased data at NUTS 3 level and the JRC and EEA are providing more grid data and developing more detailed models. ESPON is making use of these new data and undertaking territorial trend analyses, impact assessments and prospective studies (see section on Territorial Impact Assessment in Chapter 3).

Box: Border regions

Border regions¹⁴ consist of those along the internal borders of the EU, some external borders, maritime borders separated by a maximum distance of 150 km and regions that share borders with European Free Trade Area countries. Regions included in the European Neighbourhood and Partnership Instrument (ENPI) and the Instrument for Pre-Accession Assistance (IPA) are also included.

A large proportion of the EU population lives in border regions – in 2007, over 196

¹³ See also *The territorial dimension of environmental sustainability*. Technical report No 9/2010, EEA, 2009, Copenhagen
<http://www.eea.europa.eu/publications/the-territorial-dimension-of-environmental-sustainability>.

¹⁴ NUTS 3 level regions eligible for cross-border cooperation programmes under the ERDF regulation.

million people, or almost 40% of the total. Most of these live in internal border regions (36% of the EU population). Population growth between 2000 and 2007 was much the same in both internal and external border regions (at around 0.3% a year).

On average, GDP per head is less than the EU average (89% of the average in 2007), though the gap narrowed slightly between 2000 and 2007. GDP per head is less in the external border regions (65% of the EU average) than in internal border regions (92% of the average), though growth was higher in the former group, because many of them are in the EU-12, than in the latter.

Unemployment was also higher in external border regions (8.3%) than in internal ones (7.3%). In addition, external border regions also have, on average, a larger share of their employment in agriculture than internal border regions.

Access to basic services is, on average, more limited in border regions, particularly in external ones, where proximity to a hospital or a university is much less than in the rest of the Union. This is also true of access to an airport, especially for regions in and around the Carpathian Mountains in Romania, in North-East Poland, Hungary, Lithuania, and Estonia.

One of the major features of border regions is that levels of development between regions located on the two sides of the border are sometimes very different. This is the case between Eastern external border regions of the EU and neighbouring regions, but also between some internal border regions. For instance, GDP per head is up to three times higher in border regions of Lithuania as in neighbouring regions of Belarus, though almost the same gap exists between Luxembourg and the neighbouring regions in Belgium (though here commuting between the two is a significant reason for this).

The challenges faced by internal and external border regions differ. For internal border regions, the main challenge is to develop further cross border cooperation so as to overcome the remaining political and administrative barriers that hinder regional integration. For external border regions, especially in Central and Eastern Member States, the challenge is more one of expanding and improving basic infrastructure, including cross border transport and communication links. It is also one, in some cases, of having neighbouring regions with very low levels of development, such as for Dél-Alföld in Hungary which is one of the poorest regions in the EU and shares a border with Serbia, which has a GDP per head of less than 20% of the EU average.

Environmental changes can equally have important cross-border effects. Already there are several nature reserves which cross national borders, such as the Kalmthoutse Heide in Belgium and the Netherlands and the Thayatal and Podyjí International Park in Austria and the Czech Republic. Environmental disasters such as floods or fires and air or water pollution also frequently cross borders. Good cross-border cooperation is key to minimising the damage to the environment from such events.

1.2. Sources of growth

The growth of GDP of a region is determined by the value added of the goods and services it produces for internal and external markets. Increases in value added, depending on efficiency gains and the capital and labour intensity of the sectors

concerned, can lead to employment growth. The balance a regional economy needs to strike is to ensure that, on the one hand, the services and goods it produces are competitively priced and, on the other, wages provide workers with a good quality of life. Productivity growth is key to providing higher wages without losing competitiveness. It is also the main source of growth of GDP per head and it is likely to become even more so as the share of people of working age in total population shrinks.

Growth of GDP per head can be broken down into changes in labour productivity, employment rates and the share of the working age population in the total. Table 1.4 shows the breakdown of growth in GDP per head over the period 2000-2007 between these three components.

Table 1. 4

Sources of economic growth, 2000-2007(annual average % changes)¹⁵

	Change in GDP per head	=	Change in productivity	+	Change in employment rate	+	Change in the share of working age population
EU-27	1.79	=	1.40	+	0.40	+	0.00
CONV	3.03	=	2.54	+	0.21	+	0.26
TRANS	2.26	=	1.00	+	1.26	+	0.00
RCE	1.39	=	1.10	+	0.38	+	-0.10

Source: DG REGIO, Eurostat

Over the period, GDP per head in the EU regions as a whole grew by 1.8% a year. Productivity grew at an annual rate of 1.4% and was responsible for nearly 80% of the growth. Employment increased by 0.4% a year and was responsible for 20% of the growth. The share of the working age population in the total remained broadly unchanged.

In the Convergence regions (i.e. those that from 2007 have been eligible for ERDF support under this Objective), productivity grew by more than the EU average. Many of these regions are in the EU-12 and in a phase of transformation, with output and employment shifting from the less productive activities to those with higher value added. As a consequence, the employment in this group grew by only 0.2% a year contributing just 7% to the total growth in GDP per head. On average, Convergence regions have a larger share of population in the younger age groups than the rest of the EU, resulting in working-age population increasing relative to the total despite its decline in absolute terms.

By contrast, changes in the employment rate contributed more to growth of GDP per head than productivity in the Transition¹⁶ regions. The number of people employed

¹⁵ The formula for this decomposition is $GDP_n/Population_n = GDP_n/Employment_n * Employment_n/Working\ Age\ population_n * Working\ Age\ population_n/Population_n$. By dividing each of the components by the value in year n-1, changes can be calculated and summed to produce the overall effect on GDP per head as in table 1.4.

increased at the same time as productivity, indicating that there is no necessary trade-off between the two. The share of working age population in the total remained unchanged.

The growth in RCE regions came almost entirely from productivity growth, while a decline in the share of working age population in total, reflecting demographic ageing, lowered the growth in GDP per head slightly. While the increase in GDP per head was highest on average in the Convergence regions (3%), there were widely different experiences within the group.

In the 10 fastest growing regions¹⁷, GDP per head increased by over 8% a year over the period. These were all located in the EU-12. The 10 slowest growing regions,¹⁸ many of them in Italy, had an average rate of growth of GDP per head of only 0.2% a year.

In the group of top performers, productivity made the largest contribution to growth. With the exception of three Romanian regions, productivity increased along with an increase in the demand for labour - and the employment rate - and the share of working-age population.

In slow-growing regions, sluggish growth of GDP per head was associated with declining productivity, which occurred in all the regions except Franche-Comté, the only region in which employment fell. This suggests a clear trade-off between growth of labour productivity and employment in these cases, any growth of the former being a result of lower employment rather than of a long-term improvement in productive capacity. In addition, in all the regions in the group, except Illes Balears, the share of population of working age declined. This reflects outward migration and a lack of inward movement, since migration flows consist disproportionately of younger people. In a region with low employment rates, outward migration can help to free up jobs for those who stay, but it can also lead to less productive workers being employed and a decline in productivity.

Among the RCE regions, growth was highest in the Slovak and the Czech capital city regions followed by regions in Ireland (Southern and Eastern), Finland (Pohjois-Suomi, Länsi-Suomi), the Netherlands (Flevoland), the UK (East Anglia, Hampshire and Isle of Wight), and Sweden (Västsverige). Along with little change or a slight decline (Pohjois-Suomi, Länsi-Suomi) in the share of working age population, both, productivity and the employment rate increased simultaneously in these regions. Overall, the increase in GDP per head was largest in regions that succeeded in increasing productivity together with employment (see also the box Factors of growth below).

¹⁶ Transition regions are regions eligible for phasing in or phasing out. They are called transition to highlight their intermediate stage between convergence and competitiveness regions.

¹⁷ Latvia, Yugozapaden (Bulgaria), Lithuania, Vest (Romania), Estonia, Nord-Vest (Romania), Západné Slovensko (Slovakia), Sud-Muntenia (Romania), București-Ilfov (Romania), Bratislavský kraj (Slovakia)

¹⁸ Lombardia (Italy), Piemonte (Italy), Puglia (Italy), Franche-Comté (France), Emilia-Romagna (Italy), Abruzzo (Italy), Umbria (Italy), Berlin (Germany), Provincia Autonoma Trento (Italy), Illes Balears (Spain)

1.2.1. A declining share of working-age population

The share of working age population indicates the potential supply of labour relative to total population. As in the EU, life expectancy continues to increase and the number of births to fall (further) below the replacement level, the share of the working age population is likely to decline in the coming decades. At the EU level, the change in the share of working age population has been close to zero but in many regions it has already started to decline, so reducing the potential growth in GDP per head. In 2009, two out of three regions had a declining share of working-age population. By 2013, this is projected to be the case in 9 out of 10 regions and will continue to be so over the next two decades.

The Eurostat regional population projections indicate that the decline in the share of working age population could be particularly pronounced in parts of Germany, France, Poland, Finland and Sweden. On the other hand, Romania, Greece, Portugal and Ireland are likely to have considerably smaller reductions.

1.2.2. Growth in employment rates can help less developed regions

Growth in employment rates was the main source of growth in the Transition regions. In Convergence and RCE regions, the contribution of employment was much smaller¹⁹. This, however, hides substantial differences between regions and the potential for increases in employment rates to push up GDP per head.

This potential contribution can be estimated by examining the effect of increasing employment rates of people aged 20-64 to 75%, a target set by the Europe 2020 strategy. Achieving this target will require not only a reduction in unemployment but also many of the inactive to enter the labour market, particularly in the Convergence regions where labour participation tends to be lower than in the more developed regions. This target can only be reached if there is an increase in the participation in the labour market of women especially. This might require more favourable, or flexible, employment conditions and sufficient child care provision to allow parents of young children, especially mothers, to combine employment with raising a family.

Raising the employment rate to 75% would increase GDP per head²⁰ in the EU by more than 6%. While the effect would be much more important in the Convergence regions (17%), it is also significant in RCE regions (3% and from a higher base value) (Map 1.12).

¹⁹ In this growth decomposition, employment rates are calculated based on employment figures from regional accounts. As a result, these rates and their changes over time may not correspond exactly with employment rates as measured by the Labour Force Survey.

²⁰ Assuming the additional employment created has the same average productivity as the current employment.

**Map 1.12: Potential increase in GDP per head
from raising the employment rate 20-64, to 75%, 2007**

The main issue is how to achieve these results and to overcome the main obstacles. For example, the positive employment growth in Transition regions could be the result of a sufficiently high output growth to allow employment to grow at the same time as productivity gains are realised. Convergence regions, on the other hand, are still in the process of restructuring with rapid falls in employment in agriculture (see next section) and increases in employment in the other sectors. Increasing output sufficiently to allow Convergence regions to reach 75% employment rates while productivity catches up with that in the rest of the EU could take more than a decade. Output and productivity in RCE regions are already high, but employment rates could still increase in some RCE regions. Here the constraint on increasing employment further could be a lack of incentive to pursue higher rates of output growth, coupled with rigidities in the labour market which obstruct employment growth, underlining the need for continuing structural reforms.

Employment rates in the Nordic countries, the UK and the Netherlands are already in most regions above the 75% target. On the other hand, in Southern Spain, Southern Italy, Greece, and many of the regions in the EU-12 rates are considerably below 65% (Map 1.13).

Map 1.13: Employment rate, 20-64, in 2008 and distance to the Europe 2020 target

Map 1.14: Change in employment rate, 20-64, 2000-2008

In regions with high levels of employment rates, employment rates cannot increase much more and so cannot make an important contribution to economic growth. In these regions, economic growth depends almost entirely on productivity growth, the focus of the next section.

1.2.3. Innovation and restructuring have the largest impact

Productivity growth is the combined effect of improvements in productivity within a sector (i.e. innovation) and shifts between sectors (i.e. restructuring). Restructuring shifts employment to more productive sectors. This occurs mostly in countries at an earlier stage of economic development. Productivity growth within sectors can have a long-lasting impact on the economy and on competitiveness. Innovation in the broad sense, including investment in R&D as well as better use of existing technology and resources, new management and organisation techniques, is a major source of the latter.

Map 1.15 shows the increase in productivity growth within sectors. It shows that in most regions in the EU-12, the increase has been significant, reflecting the introduction of more technically advanced and more efficient production and organisation.

FDI is an important channel for innovation. Regions with a higher share of FDI tend to have higher growth of productivity within sectors. The Convergence regions in the EU-15 show only small increases in productivity

within sectors and in many of them, mainly in Italy and Greece, competitiveness declined. The examples of Finland, Sweden, UK and Ireland show that innovation can increase productivity at any stage of economic development.

Map 1.15: Productivity growth within sectors, 2000-2007

Map 1.16: Productivity growth through employment shifts between sectors, 2000-2007

The growth of productivity through restructuring and a shift to higher value-added sectors – from agriculture to industry and services – has been most marked in the Convergence regions (Map 1.16).

In the Convergence regions, around 48% of the increase in labour productivity was due to restructuring and 52% to productivity growth within sectors. In the RCE regions, there was limited employment shift between sectors and productivity differences were less marked, so almost 90% of the increase in productivity came from productivity growth within sectors.

Table 1.5 shows the effect of restructuring which is strongest in the Convergence regions, where it represents mainly a shift from less productive to more productive sectors, from agriculture to industry and services. The RCE regions have on average a much higher level of productivity and a larger share of employment in high value-added sectors. Employment shifts occur mainly within sectors, e.g. from low to high-tech industry, or from industry to services where deindustrialisation is still occurring (as in Germany).

Table 1. 5**Sources of growth in labour productivity, 2000 - 2007**

	Growth of productivity	=	Growth of productivity within sectors	+	Employment shifts between sectors
EU-27	1.4	=	1.0	+	0.4
CONV	2.5	=	1.3	+	1.2
TRANS	1.0	=	0.7	+	0.3
RCE	1.1	=	1.0	+	0.1

Source: DG REGIO, Eurostat

1.3. Innovation is the main driver of regional development

Financial and business services experienced the highest employment growth in the EU between 2000 and 2007. With an annual average growth rate of 2.6%, it was much higher than overall employment growth of only 0.6%. This sector also had the highest employment growth in all three types of region (Convergence, Transition and RCE) (Table 1.6).

Employment decline was concentrated in agriculture, where it amounted to 5.6% a year, and industry, where it was 0.6% a year. The pattern across the three types of regions, however, is radically different. The decline in agricultural employment was the largest in the Convergence regions, while industrial employment actually increased a little in these regions. The largest decline in industrial employment was in the RCE regions, where it amounted to 1.3% a year.

Though these changes led to some convergence in the structure of employment across regions, this still differs substantially. Despite the strong decline, Convergence regions continue to have a far larger share of employment in agriculture – 14% of the total, almost three times that in Transition regions and six times that in RCE regions. Although productivity growth in agriculture was very high in the Convergence regions (6.4% a year), the modernisation of the sector still has a long way to go to close the gap in productivity with RCE regions (where it is three times higher).

The share of employment in industry is also larger in Convergence regions and has increased since 2000, whereas it has diminished in Transition and RCE regions. This is particularly striking given that industrial productivity is three times higher in RCE regions than in Convergence regions.

The construction sector has grown substantially in Convergence and Transition regions and accounts for a larger share of employment than in RCE regions. The crisis, however, has reduced employment substantially, especially in countries where real estate values fell dramatically, such as in Spain, Ireland and the Baltic States.

The strength of the service sector is linked to the level of regional development. It accounts for the largest share of employment in the RCE regions, where the share of

business and financial services is also large. In Transition regions, the employment share of distribution, transport and communications is larger than in the RCE regions, whereas business and financial services are considerably less developed. In Convergence regions, the employment share in all three service sectors is below the EU average. In particular, the share of employment in business and financial services is only half that in the RCE regions and the share of gross value-added, two-thirds as high.

Table 1. 6

Employment and productivity by sector, 2007

Share in 2007 (%)	Employment				GVA			
	CONV	TRANSITION	RCE	EU-27	CONV	TRANSITION	RCE	EU-27
Agriculture, hunting and fishing	13.7	4.8	2.4	5.8	4.1	2.6	1.4	1.8
Total industry, including energy	21.4	14.3	17.3	18.3	21.4	16.1	20.0	19.9
Construction	8.5	10.7	7.1	7.7	8.2	8.6	5.9	6.4
Trade, transport & communication	23.6	29.0	25.2	25.0	22.7	26.1	20.6	21.3
Financial and business services	8.4	11.6	16.8	14.1	20.2	22.3	30.2	28.2
Other services	24.4	29.6	31.2	29.1	23.5	24.4	22.0	22.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Annual average % change, 2000-2007	Employment				GVA			
	CONV	TRANSITION	RCE	EU-27	CONV	TRANSITION	RCE	EU-27
Agriculture, hunting and fishing	-5.6	-1.7	-1.2	-4.4	-0.6	-0.9	-0.2	-0.4
Total industry, including energy	0.5	-0.3	-1.3	-0.6	4.1	2.1	1.4	1.8
Construction	3.3	3.6	1.7	2.4	2.2	3.7	1.5	1.8
Trade, transport & communication	1.9	2.0	0.6	1.1	3.5	4.1	2.3	2.5
Financial and business services	3.2	4.6	2.3	2.6	3.7	3.9	2.9	3.0
Other services	1.6	2.3	1.4	1.5	1.7	2.5	1.3	1.4
Total	0.4	2.0	0.6	0.6	2.9	3.1	2.0	2.2

Productivity (GVA in PPS per person employed)	Index (EU=100), 2007				Annual average % change, 2000-2007			
	CONV	TRANSITION	RCE	EU-27	CONV	TRANSITION	RCE	EU-27
Agriculture, hunting and fishing	20	52	64	34	6	0	1	5
Total industry, including energy	69	109	135	111	4	3	3	3
Construction	62	78	97	84	0	0	0	0
Trade, transport & communication	64	89	95	86	3	2	2	2
Financial and business services	151	189	207	196	1	0	1	1
Other services	59	79	81	76	0	0	0	0
Total	65	98	116	100	4	1	1	2

Source: Eurostat

1.3.1. Human capital

Training and higher education can increase labour productivity. Higher education also tends to increase people's income and life satisfaction independently of income levels (see next section). The share of people aged 25-64 with tertiary education, however, varies greatly across regions (Map 1.17). In 9 regions, it is over 40% (Inner London, Brussels and the two surrounding regions, Utrecht, País Vasco, and the capital city regions of Denmark, Sweden and Finland). All of these, except País Vasco, are capital city regions or adjoin a capital city region. In all Member States, except Germany and Spain, the capital city region has the largest share of people with tertiary education (see also the section on metropolitan regions).

Map 1.17: Population aged 25-64 with tertiary education, 2008

Map 1.18: Population aged 25-64 with low education, 2008

In four regions, the share was less than 10%: Severozápad in the Czech Republic, the Açores, and Sud-Muntenia and Sud-Est in Romania. Overall regions with small numbers of tertiary educated people are concentrated in Italy, Portugal, Romania and the Czech Republic.

Figure 1- 13

High education rate by country and regional extremes, 2008

% of population 24-64 years

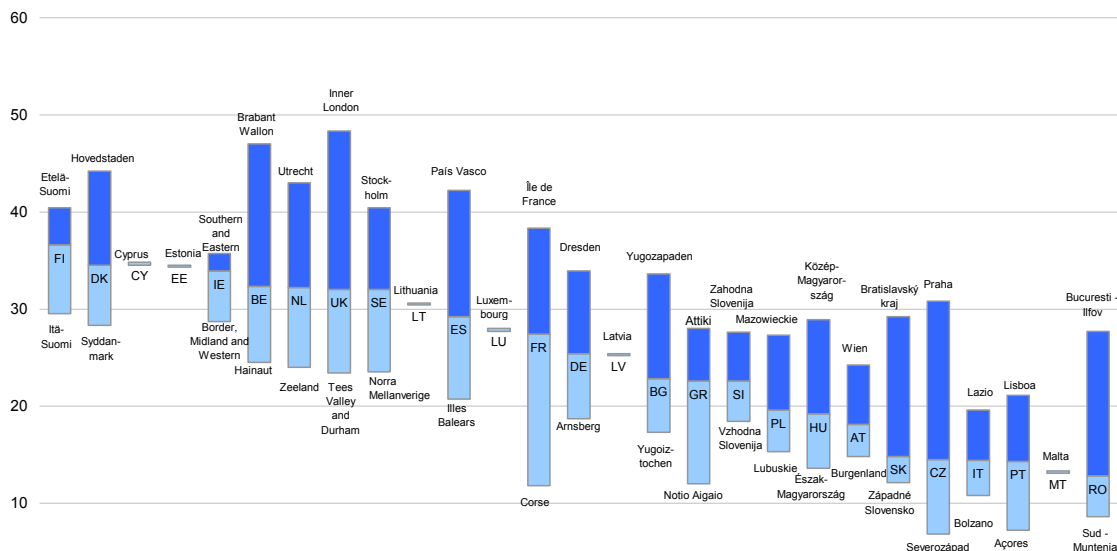


Figure 1- 13 indicates the extent to which the regional variation is concealed by the national averages. For example, Belgium has a smaller average share than Ireland, but in Brussels and the surrounding two regions, the share is larger than in the capital city region of Ireland. The same holds true for Romania and Greece. The more educated also tend to be more mobile. Their concentration in capital city regions is a result not only of universities being disproportionately located there, but also of people moving there after completing their tertiary education elsewhere.

Differences in the share of highly educated are also apparent between the three types of regions. In RCE and transition regions, 26-27% of people aged 25-64 have tertiary education. In Convergence regions, the proportion is only 18%.

The younger generation right across the EU is almost twice as likely to have completed tertiary education as those aged 55-64 (31% as against 16%). The increase between these two generations, however, is bigger in RCE than Convergence regions, which means that the gap between the two types of regions has widened over the past 30 years.

Regions with a larger share of tertiary educated have considerably higher levels of productivity than those with smaller shares, which is one of the reasons why the Europe 2020 strategy aims to increase the share of tertiary educated aged 30-34 to at least 40% (Map 1.19). The tertiary educated, and in particular researchers, play a key role in production, transfer and exploitation of new knowledge. In 2007, the average relationship between productivity and the share of tertiary educated aged 25-64 indicated that productivity was 780 PPS higher for every percentage point the share of

tertiary educated was above average²¹. This suggests that raising the share of tertiary educated would also lead to an increase in GDP (though not automatically so, since other factors may well contribute to the relationship observed). Most regions would stand to gain (Map 1.20). On the basis of the relationship, GDP per head in the EU, as well as in the Transition and RCE regions, would stand to rise by 3-4% and in the Convergence regions by 10%.

Map 1. 19 : Population aged 30-34 with a tertiary education in 2008 and distance to Europe 2020 target

Map 1. 20 : Potential increase in GDP per head from raising the share of tertiary educated aged 25-34 to 40%, 2007

Of course, increasing the share of tertiary educated people aged 25-64 cannot be done overnight. Most people across the EU complete their university degree by the age of 25 and almost all by the time they are 35. Evidence from the Labour Force Survey indicates that very few people who have started working interrupt their career to spend 3-4 years completing a tertiary degree course. This underlines the importance of lifelong learning, which includes access to training of various kinds as well as university courses. As a result, most of the increase in the share of the tertiary educated working age population comes from those under 35, one of the reasons why they are the focus of the Europe 2020 strategy.

At present, only a fifth of the EU regions have a tertiary educated share among the population aged 25-64 of 30% or more. If current trends continue, only half of EU regions will reach 30% by 2020. Simulations show that the share of tertiary educated among 25-64 year-olds would increase to nearly 30% if the share of tertiary educated among those aged 25-34 were raised to 40%. Even achieving this target achieved in all regions from 2010 onwards, however, would still mean that one in three regions would have a share of tertiary educated among those of 25-64 below 30% in 2020. This makes it particularly important to push the trend up.

Nevertheless, tertiary education is neither the only nor an automatic source of highly skilled workers. Skills upgrading at all levels can significantly increase the number of highly skilled workers, especially when linked to labour market needs - a link that can be more easily established at regional level²² (Map 1.21). Researchers in particular need to be fully equipped with the skills necessary to participate in a range of roles in the knowledge economy. Links between an excellent public research base and business are vital. Intersectoral mobility between academia, industry and other partners can ensure that highly skilled workers have the skills and competences necessary for successful innovation.

²¹ This estimate is based on the correlation between regional productivity and regional shares of tertiary educated aged 25-64 in 2007.

²² Intangible Assets and Regional Economic Growth (IAREG) *Scientific Executive Summary*, 2010.

Map 1. 21: Participation of adults aged 25-64 in education and training, 2008

The precise number and nature of the jobs in the future - and of the skills they will require – will depend on long-term structural factors such as research, innovation, technological change, globalisation and demographic trends but also on the extent and pace of the recovery from the current economic downturn.

Projections up to 2020 show that the share of jobs employing those with upper secondary (i.e. medium level) qualifications is likely to remain substantial, at around 50%²³. Those in work will need to update and upgrade their skills, especially the low-qualified, who are far less likely to participate in lifelong learning than those with tertiary education.

Increasing the employment rate (as indicated in section 1.2.2) or the share of tertiary educated, alone, can have important benefits on the economy, especially in the lagging regions but the effect increases and lasts longer if the two occur simultaneously (Table 1.7). Increasing the employment rate at the same time as the share of tertiary educated is likely to mean that the additional jobs created have a higher productivity than the current one. In other words, regions will not only create jobs but they will create the kinds of job that raise productivity and living standards. This would lead to an increase in GDP per head in the EU of 11% and in the Convergence regions of nearly a third. As indicated in the table, an integrated approach to investment in both employment and education, especially in regions with low employment rates, as in many of the Convergence and Transition regions, means that the result is more than the sum of its parts. Moreover, the evidence indicates that increasing education levels in less developed regions will not only benefit the economy but will also contribute to better local institutions.

Table 1. 7 – Increase in GDP per head (in %) from fulfilling the Europe 2020 target for the employment rate and tertiary education, 2007

	EU-27	CON V	TRAN S	RCE
1 Increasing the employment rate of 20-64 to 75%	6	17	11	3
Increasing the share of tertiary educated				
2 population aged 25-34 to 40%	4	10	4	3
3 Point 1 and 2 simultaneously	11	29	16	6

Source: Eurostat, DG REGIO calculation

The share of people with low education – who have at the most only completed compulsory education – is substantial in all the Southern Member States, except Cyprus, varying on average between 40% and 75% of those aged 25-64 (Map 1.18 and Figure 1.14). All five countries have regions where only half of the potential work force has at most completed lower secondary education. People with a low education are less likely to have a job and more likely to have low income and low life expectancy.

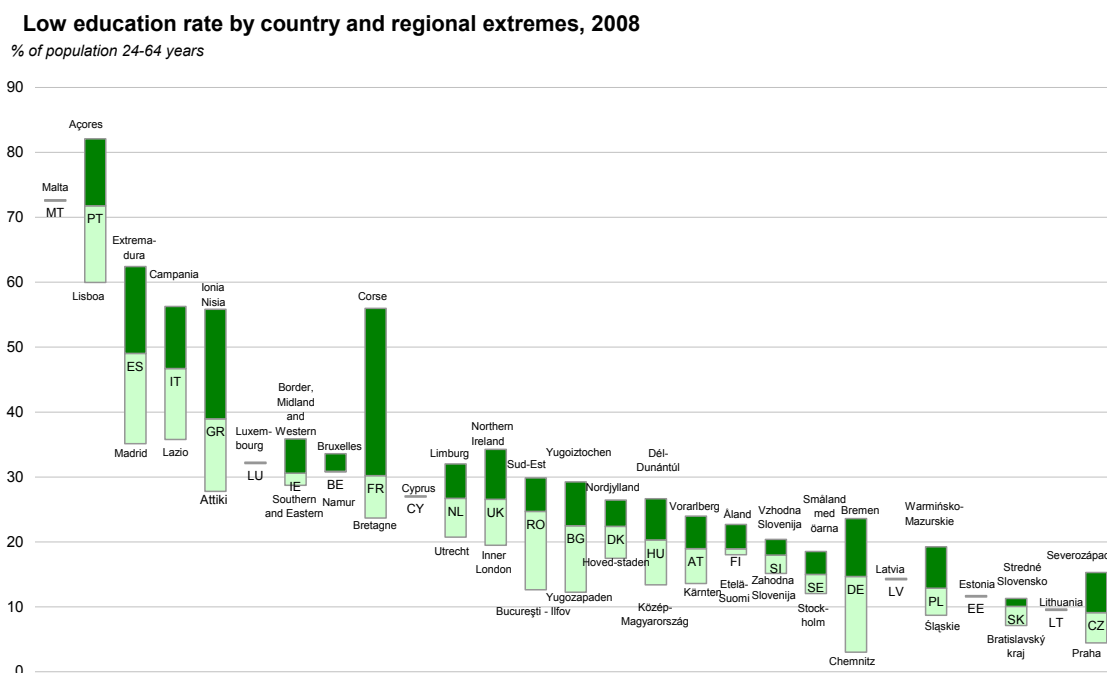
²³ Cedefop 2010. Skills supply and demand in Europe. Medium term forecasts to 2020.

Encouraging more people to complete at least upper secondary education is, accordingly, not just beneficial for economic growth.

The Europe 2020 ‘early-school leaving’ target of having at most 10% of people aged 18-24 with no education beyond basic schooling has been reached in 85 NUTS 2 regions, around one in three, but it will require a substantial effort in many regions to achieve it, especially in the 15 regions in Spain and Portugal where the rate is still above 30% (Map 1.19).

Map 1. 22 Early school leavers aged 18-24, 2007-08 and distance to the Europe 2020 target

Figure 1- 14



The quality of secondary education, however, is as important as the quantity. Surveys carried out by the OECD in this regard (Map 1.23) show that also the share of low achievers in mathematics, reading and science also differs substantially between Member States. Bulgaria and Romania consistently show a share of more than 30% of low achievers in these areas. Greece, Italy and Portugal have more than 30% of low achievers in mathematics, but score slightly better in the other two areas.

Map 1.23: Low achievers in mathematics, reading and science - 2006

Box: Factors of Growth

As highlighted by the OECD²⁴, since the end of the 1990's Governments across the EU have progressively emphasised the regional dimension of economic policy. At the centre of this approach is the challenge of designing policies that are appropriate at the local level.

However, the prerequisite for the success of such a policy is the ability to identify the key determinants of growth at regional level. This is precisely the objective of an on-going study commissioned by DG REGIO which seeks to deepen understanding of economic development in EU regions and analyse the factors underlying the diversity of performance.

The literature tends to group determinants of growth into the following broad categories²⁵:

Accumulation of factors of production, usually *physical* and *human capital* as well as *technology*. Such accumulation is supposed to be facilitated by well functioning financial and labour markets and is affected by various other features such as:

- The age structure of the population;
- Natural geography which includes the endowment of natural resources but also the region's topography;
- Economic geography which focuses on aspects such as access to large product or factor markets or the density of economic activity within the region;
- The policy and institutional context which encompasses aspects such as the quality of governance or the macroeconomic framework of which the regional economy is a part.

Up to date econometric techniques have been used to assess which of a large number (more than 60) of potential growth determinants included in the categories above are the most robust drivers of regional growth:

- Education levels (or human capital) appear to be one of the most important growth factors, especially the share of working age population with tertiary education. This also links to innovation as a higher educated and skilled workforce facilitates a rapid diffusion of knowledge and new techniques. The estimates imply that an increase of 10% in the share of highly educated in working-age population tends on average to raise growth of GDP per head by 0.6 percentage points a year.
- Gross fixed capital formation is also identified as an important factor. This directly affects the productive capacity of regions by increasing the stock of physical capital but mainly by increasing productivity and the diffusion of innovation since capital tends to embody the latest technology.
- Low unemployment rates, which reflect the sound operation of labour markets as well as factor accumulation, regional flexibility and social cohesion, also favour growth.
- Neighbourhood effects are important, in the sense that the growth performance of a region partly depends on growth in surrounding regions.

Regions with capital cities tend equally to have higher growth rates than other regions. In general employment density (rather than population density) has a positive effect on growth, reflecting the fact that high job density leads to dense social interaction which increases the scope for knowledge dissemination, so in turn stimulating innovations and

²⁴ OECD, 'Investing for Growth: Building Innovative Regions', Background Report for the Meeting of the Territorial Development Policy Committee at Ministerial Level, March 2009.

²⁵ Besides the initial level of development which is at the basis of the process of catching-up.

1.3.2. Regional innovation systems

Innovation and creativity have many sources ranging from cultural diversity and tolerance, to entrepreneurship and the creative class²⁶. In this section, the focus is mostly on technological innovation and its diffusion and absorption.

Disparities remain wide across both Member States and regions as regards innovation capacity. According to the Summary Innovation Index (SII) of the European Innovation Scoreboard (EIS)²⁷, the highest innovative capacity is found in the Nordic countries, with Sweden and Finland having a higher capacity than Japan and the US. Performance is in general lower than average in the EU-12 countries, although some of these (Cyprus, Estonia and the Czech Republic) perform better than Southern EU-15 Member States.

The EIS distinguishes four groups of country:

- Denmark, Finland, Germany, Sweden, and the UK with innovation performance well above the EU average;
- Austria, Belgium, France, Ireland, Luxembourg and the Netherlands with innovation performance slightly above the EU average;
- Cyprus, Estonia, Slovenia, the Czech Republic, Greece, Italy, Portugal and Spain with performance slightly below the EU average;
- Bulgaria, Hungary, Latvia, Lithuania, Malta, Poland, Romania and Slovakia with performance well below the EU average.

Changes which have occurred in innovation performance over recent years point to a process of convergence. Except for Italy, Lithuania and Spain, Member States with innovative capacity below the EU average recorded higher than average increases in performance. At the same time, except for Austria and Ireland, in Member States with innovation capacity above the

²⁶ COM(2009) 295

²⁷ The SII gives an overview of aggregate national innovation performance. It is calculated as a composite of the 29 indicators grouped into 7 different innovation dimensions and 3 major groups of dimensions: (i) 'Enablers', i.e. the main drivers of innovation external to the firm. It is divided into a 'Human resources' and a 'Finance and support' dimensions; (ii) 'Firm activities', i.e. innovation efforts that firms undertake. It covers 3 dimensions: 'Firm investments' (a range of different investments firms make in order to generate innovations); 'Linkages & entrepreneurship' (capturing the entrepreneurial efforts and the related collaboration efforts); and 'Throughputs' (capturing among others the Intellectual Property Rights generated as a throughput in the innovation process); (iii) 'Outputs', i.e. the outputs of firm activities. It is divided into 2 dimensions: 'Innovators' (the number of firms that have introduced innovations onto the market or within their organisations) and 'Economic effects' (success of innovation in terms of employment, exports and sales due to innovation activities).

EU average, innovation performance has risen by much the same or less than the EU average.

According to the Regional Innovation Scoreboard²⁸ the most innovative regions are typically in the most innovative countries. Nearly all of these are located in the group of 'Innovation Leader' countries identified in the European Innovation Scoreboard (EIS). Similarly all of the 'low innovator' regions are located in countries that have below average performance in the EIS. However, the results also show regions that outperform their country level:

- Noord-Brabant is a high innovating region located in an 'Innovation follower' country (the Netherlands).
- Praha in the Czech Republic, País Vasco, Comunidad Foral de Navarra, Comunidad de Madrid and Cataluña in Spain, Lombardia and Emilia-Romagna in Italy and Zahodna Slovenija in Slovenia are all medium-high innovating regions in moderate innovator and catching up countries.
- The capital city regions in Hungary and Slovakia show an innovation level around the EU average but are located in catching up countries whose overall innovation performance is well below average.

Regions have different strengths and weaknesses. According to more detailed analysis of those regions where good data are available, regions are performing at different levels across three dimensions of innovation included in the EIS: innovation enablers, firm activities and innovation outputs. Although the relationship between levels of performance and relative strengths is not straight-forward, many of the 'low innovators' have a relative weakness as regards innovation enablers which includes human resources.

Regional performance appears relatively stable since 2004. The pattern of innovation was broadly unchanged between 2004 and 2006, with only a few changes in the membership of the different groups. More specifically, most of the changes are positive and concern Cataluña, Comunidad Valenciana, Illes Balears, and Ceuta (Spain), Bassin Parisien, Est and Sud-Ouest (France), Unterfranken (Germany), Közép-Dunántúl (Hungary) and Algarve (Portugal). Longer time series data is needed to analyse the dynamics of regional innovation performance and how this might be related to other factors such as changes in GDP, industrial structure and public policies.

R&D expenditure in EU regions

Disparities are even wider across EU regions. According to the latest data available, expenditure on R&D in the EU averaged around 1.9% of GDP in 2007. Expenditure, however, ranged from 5-6% of GDP in Braunschweig and Stuttgart in Germany and Västsverige in Sweden to less than 0.1% in Severen tsentralen in Bulgaria and Lubuskie in Poland.

²⁸ See: <http://www.proinno-europe.eu/page/regional-innovation-scoreboard> .

Expenditure exceeds the Europe 2020 target of 3% in only one in 10 regions, while it is less than 1% in almost half (48%) the regions (Map 1.24). Among the 20 regions with the highest expenditure on R&D, 17 are highly developed (with GDP per head above the EU average) and 3 of them are capital city regions (in Austria, Sweden and Denmark). With the exception of Åland in Finland, the regions recording low levels of expenditure on R&D are mostly located in the EU-12 or are regions in the EU-15 with relatively low levels of GDP per head.

The concentration of R&D expenditure in regions with high levels of GDP per head also emerges from examination of expenditure on R&D by the private sector. In 2007, almost none of the lagging regions had R&D expenditure levels above 2% (the Barcelona target for business R&D). The only exception is Stredni Cechy (the region surrounding Prague) where business R&D expenditure amounts to about 2.5% of GDP.

Map 1.24: Total expenditure on R&D, 2007

Human resources in science and technology

Another common indicator of innovative capacity is the proportion of the work force with tertiary level education in science and technology and who work in jobs typically requiring this type of qualification (HRSTC).

Regional disparities in this regard are equally wide. In 2008, HRSTC was 30% or above in Brabant Wallon in Belgium, Stockholm, Inner London and Berlin. It was less than 8% in Corse, Sud-Muntenia in Romania, Açores in Portugal and Severozapad in Bulgaria (see Map 1. 25). Again, regions highly endowed with an educated workforce generally have higher levels of GDP per head and are often capital city regions. Only 4 out of the top 20 regions in terms of HRSTC have a GDP per head below the EU average and 12 are capital city regions.

Map 1. 25: Human resources in Science and Technology (core), 2008

High-tech employment

The relative number of people employed in high-tech sectors is also a measure of R&D input (see Map 1.26). According to the most recent data (2007-2008), the largest proportion (9-11%) is in the EU-15, in Berkshire, Buckinghamshire and Oxfordshire in the UK, Stockholm in Sweden and Karlsruhe in Germany. The proportion is also high (7-8%) in some regions in the EU-12, in the capital regions of the Czech Republic, Hungary and Slovakia. The proportion tends to be smallest in regions with low levels of GDP per head. Only 4 of the 20 regions with the lowest proportions have a GDP per head above 75% of the EU average.

Map 1. 26: Employment in high-technology sectors, 2008

Increases in the proportion of employment in high tech sectors also occur more often in more developed regions than in lagging regions, only 3 of the 20 regions where the increase was highest between 2000 and 2007 having a

GDP per head below 75% of the EU average (Vest in Romania, Západné Slovensko in Slovakia and Moravskoslezsko in the Czech Republic).

Patents

Wide regional variations, which follow the same pattern, are equally evident as regards output indicators of R&D, in particular patent applications to the European Patent Office. In Convergence regions, these was only 11% of the EU average in 2005-2006 (the latest data available), whereas in RCE regions, it was 53% above the EU average. Applications are disproportionately concentrated in the most developed regions, 87% of regions with applications above the EU average also having GDP per head above the average.

The culture of innovation differs substantially between the EU and the US, where applying for a patent is much more common. This, however, explains only part of the difference in patenting intensity between the two. In the US, there were 262 patent applications per million inhabitants in 2007-2008. In the EU-15, there were 139 and in the EU-27, 111 (in 2006-2007), though in Germany, reflecting the specialisation in medium-to-high tech manufacturing, there were 280, more than in the US, and in Sweden and Finland, only slightly less (251 and 248, respectively).

Patent applications vary widely between regions in both the US and the EU (Map 1.27 and Map 1.28). In the US, they tend to be higher on the East and West coast, in California, Massachusetts, Oregon, Vermont and Washington, where there were over 400 applications per 1 million. In the EU, the largest number is in Noord-Brabant, in the Netherlands (723) and Stuttgart (630), Oberbayern (572) and Tübingen (524) in Germany. Numbers at the other end of the spectrum are much lower in both areas. In the US, the number was less than 100 in Louisiana, Mississippi and Alabama, while in the EU, Ionia Nisia and Voreio Aigaio in Greece, Açores in Portugal and Ceuta and Melilla in Spain did not record any patents.

Map 1.27: Patent applications to the European Patent Office (EPO), average 2006-2007

Map 1.28: US: Number of patents, average 2007-2008

Regional Innovation Performance Index

This general picture of innovative capacity being concentrated in the most developed EU regions is confirmed by the Regional Innovation Performance Index (RIPI), a composite indicator comprising 16 of the 29 indicators used in the EIS²⁹. It covers 201 regions (Map 1.29) at various geographical levels according to data availability³⁰.

²⁹ Hollanders, H., S. Tarantola and A. Loschky, "Regional Innovation Scoreboard 2009", INNO Metrics Thematic Paper, Brussels: European Commission, DG Enterprise, 2009.

³⁰ Due to data availability, the RIPI is computed at the NUTS 1 level for 3 regions from Austria, 3 regions from Belgium, 2 regions from Bulgaria, 9 regions from France, 9 regions from Germany, 3 regions from Greece, 1 region from Hungary, 2 regions from Spain, 12 regions from UK. The computation is also made for 1 merged region in Greece (Anatoliki Makedonia Thraki, Dytiki Makedonia and Thessalia), 2 merged regions in Italy (Valle d'Aosta and Piemonte; Molise and

The indicator suggests, as evident from the above, that the most innovative regions are generally located in the most innovative countries and vice versa.

There are, however, a number of regions which outperformed the average, such as Noord-Brabant, Praha, País Vasco, Comunidad Foral de Navarra, Comunidad de Madrid and Cataluña in Spain, Lombardia and Emilia-Romagna in Italy, Zahodna Slovenija and the capital city regions in Hungary and Slovakia.

Map 1.29: Regional Innovation Performance Index, 2006

Innovation by type of region

As is also evident from the above, Convergence regions perform less well than Transition and RCE regions on all the measures examined (Table 1.8). The data, however, also show a catching up process with Convergence regions having higher increases than the other two groups. This is a result of a number of factors including the transfer of technology from other regions (notably through direct investment), changes in their structure towards higher value-added sectors and increased access to EU markets which raises the expected return from innovation.

Table 1.8 : Innovation performance of Convergence, Transition and RCE regions

	Convergence	Transition	RCE	EU-27
	<i>Levels</i>			
Authors of EPO patents applications ^a	11.9	32.6	153.0	100.0
Total R&D expenditure ^b	0.89	0.99	2.08	1.85
Human resources in S&T ^c	14.7	17.8	18.8	17.6
Employment in high-technology sectors ^d	3.1	3.4	5.1	4.4
	<i>Changes*</i>			
Total R&D expenditure, 2000-2007				
Human resources in S&T, 2000-2008	3.9	2.8	3.0	3.3
Employment in high-tech sectors, 2000-2008	1.1	0.5	-0.2	0.3

a Inventors per million inhabitants., 2005-2006.

b % GDP, 2007.

c % of total employment, 2008.

d % of total employment, 2008.

* Percentage points.

Abruzzo) and 1 merged region in Portugal (Região Autónoma dos Açores and Região Autónoma da Madeira). Denmark, Estonia, Cyprus, Latvia, Lithuania, Luxembourg and Malta are included at the country level.

Productivity

Although the indicators described above are helpful in measuring regional innovation performance, they also have serious limitations³¹. In particular, they fail in the main to capture some important inputs into the innovation process, such as product design, market analysis, training of employees or investment in research infrastructure. They also neglect the often informal innovation activities of smaller firms. In addition, the regional disaggregation of data is a serious problem as all of a company's innovation activity may be reported by the head office while in fact occurring in many different places. Moreover, many innovations are not patented or indeed patentable, such as new software systems.

Equally importantly, most of the indicators are focused on technological innovation and ignore other forms such as in processing, marketing or organisation. These may be particularly important for producers in less advanced regions which mostly innovate by absorbing technologies developed elsewhere, by adapting their product to the needs of new markets, or by adopting more efficient methods of organising their operations.

Innovation is primarily a means of increasing productivity, especially labour productivity. It remains, therefore, to examine changes in regional labour productivity in industry and services as a broad measure of the outcome of various forms of innovation.

Labour productivity in industry and services is generally higher in more developed regions (Map 1.30). The average level in RCE regions is almost twice that in Convergence regions. None of the Convergence and Transition regions has a level of productivity higher than the EU average which is the case for around 69% of RCE regions.

Map 1.30: Labour Productivity in industry and services, 2007

However, growth of productivity has tended to be higher in less developed regions. The average annual growth rate in Convergence regions was twice as high as in RCE regions over the period 2000-2007 (Table 1.9). There are also around 36% of RCE regions which experienced higher growth of productivity than the EU average and 24% of Transition regions.

Table 1.9 : Labour productivity, Convergence, Transition and RCE regions

	GDP per employee, in PPS			
	Convergence	Transition	RCE	EU-27
Levels, 2007	65.0	97.6	115.9	100
Average annual % changes, 2000-2007	3.5	1.3	1.2	1.9

Source: Eurostat, DG REGIO calculation.

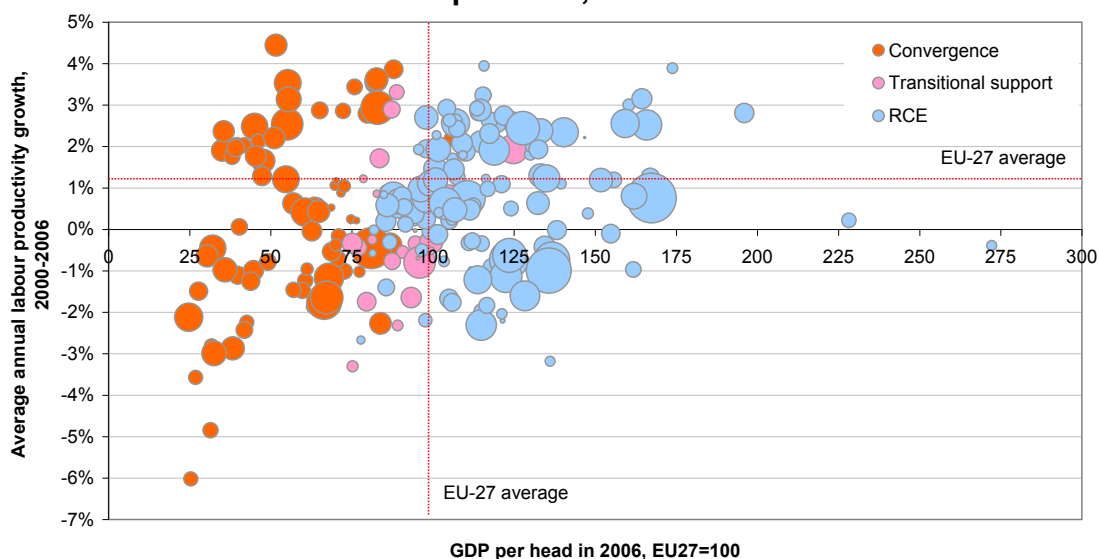
³¹ See for instance: A. Kleinkecht, Van Montfort K. and Brouwer E., 'The non-Trivial Choice Between Innovation Indicators', *Economics of Innovation and New Technology*, Volume 11, Issue 2 2002, pp. 109-121.

This underlines the fact that a broad definition of innovation³² is less concentrated in developed regions than technological innovation. As illustrated in Figure 1.15, high growth in labour productivity in industry and services, which is partly due to innovation, occurred in some RCE regions but also in a large number of Convergence regions.

The highest productivity growth among RCE regions (around 4% a year in Övre Norrland, Sweden) is in fact not much lower than the highest productivity growth among Convergence regions (4.4% in Latvia).

Figure 1- 15

Labour productivity growth (industry and services) and GDP per head, 2000-2006



1.3.3. Innovation potential and bottlenecks

The wide variations between EU regions in innovation performance and in the process of development reflect their specific features and, in particular, their endowment of the basic factors which are important for innovation.

This is well captured by a synthetic indicator developed by DG REGIO which includes different aspects which are central for technological innovation (such as R&D spending), innovation absorption (such as education attainment) or innovation diffusion (such as the connectivity of regions to the rest of the world). The index is helpful for identifying the strengths and weaknesses of EU regions in these terms. Three main groups of regions can be distinguished (Map 1.31).

Map 1.31: Regional Innovation Potential, 2008

³² The 6th Progress Report on Economic and Social Cohesion defined innovation as 'putting a new and useful idea into practice' and new and useful was defined as 'new and useful to the region'.

The first group (labelled as strong generators of innovation) includes regions which are close to the global technology frontier, which are mostly located in the highly developed North-Western Member States. Their main characteristic is the capacity to produce new technologies, and their growth process hinges on R&D and innovation as well as on the accumulation of human capital in order to move the technology frontier outwards.

The second group (labelled as weak absorbers) are regions which are catching up on the first group through a process of technology absorption, which requires high levels of human capital. The main challenge for these regions is therefore to increase the education level of the workforce. They broadly correspond to the moderately developed regions in the EU.

The third group (labelled as weak diffusers) comprises regions mostly located in the EU-12 countries, which are catching up on the first group at an even faster pace. This process is generally based on the restructuring of their economies and critically rests on their capacity to benefit from technology diffusion. For these regions where the level of education is often relatively high, the main limiting factor is their low endowment of infrastructure and the nature of the business environment.

This great diversity in development pathways and trajectories of innovation across regions is also confirmed by a recent study³³. The main findings highlight the multidimensional aspects of a regional knowledge-based economy. It includes a variety of knowledge activities and multiple interactions among a range of actors including universities, research institutes, enterprises, knowledge workers and institutions.

Accordingly, the spatial patterns and trends for the different aspects of the knowledge-based economy vary significantly across the EU. However, regional innovation is relevant for all regions: in technologically leading regions to remain ahead, in peripheral regions to catch up, though innovation strategies should differ. Common to all regions is the need to shift from technology-push policies towards those focusing on demand-pull. Promoting applications, user-driven innovation, innovation in services and in the public sector and addressing societal challenges have increasingly shaped the innovation policy agenda.

³³ European Commission, *The regional impact of technological change in 2020*, Synthesis report, 2010.

Box Regions matter for innovation policy³⁴

The role of innovation in economic growth is expected to increase as other sources of growth decline in OECD countries. The challenge for national and regional governments is to identify the most appropriate policy levers for different stages of the innovation process—from knowledge generation and invention to innovation and commercialisation—each of which can have a different spatial dimension. In this regard, the OECD and the EU (DG Regio) are working together to identify the most effective use of innovation policy funding for regions.

As in the EU, innovative capacity varies markedly across OECD regions. Only 13% of regions account for over half of R&D expenditure in the OECD area, and the top 10% of regions generate on average around 280 patents per million inhabitants, while 40% are responsible for fewer than 20. There are different factors underlying this variation. Several of the top regions with high R&D expenditure relative to GDP are capital city regions or have major national research centres.

Spatial proximity continues to matter. Many of the regions which are strongest in biotechnology, as reflected in the number of patents, tend also to be the strongest in nanotechnology, though there are exceptions. Nevertheless, access to global pipelines of knowledge generation and knowledge exploitation remain important for all types of region, as innovation processes are increasingly open, global, multi-disciplinary and multi-actor.

Many innovations, however, occur without R&D. The share of firms with new-to-market products that did not invest in R&D is at least 30% in several countries, such as Austria, the Czech Republic, Ireland, and Luxembourg. Other analysis estimates that 52% of innovating firms do not perform R&D for their innovations³⁵. The "technological" forms of innovation (in products or processes) are often introduced in the same firms that also report "non-technological" forms (marketing or organisation innovations). There is, therefore, not necessarily a direct mapping between technological innovation and leading regions or between non-technological innovation and lagging regions.

The relationship between regional growth and innovation is not always linear. It is known, however, that human capital is needed to reap the benefits of investment in infrastructure and equipment, and, among leading OECD regions closest to the "technology frontier", those that are growing faster have higher values for traditional innovation indicators than those growing more slowly. Tailored regional approaches with different policy mixes are, therefore, needed to respond to these individual growth paths.

Regional governments in the OECD are also determining their own innovation policies. On average, 64% of all capital expenditure in OECD countries comes from regional or local governments. Comparable budget information at this level for investment and spending in innovation does not yet exist, but according to the

³⁴ For further information, see OECD, *Regions Matter for Innovation Policy* (forthcoming), 2011; OECD, *Measuring and Monitoring Innovation*, 2010; OECD, *Regions Matter: Economic Recovery, Innovation and Sustainable Growth*, 2009; OECD, *Regions at a Glance 2009*; OECD, *How Regions Grow: Trends and Analysis*, 2009.

³⁵ See: 2007 European Innovation Scoreboard thematic paper 'Neglected innovators: How do innovative firms that do not perform R&D innovate?' <http://www.proinno-europe.eu/page/thematic-papers-2>.

recent OECD Survey on the Multi-level Governance of Science, Technology and Innovation, a wide range of measures to support innovation at regional level are being used, with significant budgets. Moreover, it is known that in Germany, for example, just over 50% of public R&D expenditure is financed by the Länder.

1.4. Infrastructure for the 21st century

Regional competitiveness and development prospects are also affected by infrastructure endowment, such as transport or telecommunication networks. As indicated by many studies, the provision of public infrastructure has a positive and large effect on productivity and growth³⁶.

1.4.1. Transport

A good transport system is important for regional economic development. It reduces journey times and, accordingly, production costs, so increasing competitiveness. It improves access to markets for consumers, workers and business and is an important aspect of the attractiveness of a region for investors.

However, a good transport system in itself is not sufficient to ensure regional development. The effect of investment in transport and other infrastructure on economic performance also depends on the region's capacity to use it efficiently, as well as on investment in other factors important for development, such as in human capital and innovation. This partly explains why the return on investment in infrastructure can vary significantly between regions.

Improved transport links between regions and countries facilitate access to EU-wide markets, which is likely to create new opportunities for growth. It also, however, increases competition between regions, which may adversely affect both businesses and workers. The overall effect depends on a region's capacity to exploit and further develop its comparative advantage.

The situation of EU regions with regard to transport infrastructure

Endowment of transport infrastructure varies widely across the EU, especially in terms of roads. Density of motorways³⁷ is three times the EU average in the Netherlands and Luxembourg but is below 10% of average in Romania, while Latvia and Malta have no motorways at all. In 7 Member States, 6 of which are EU-12 countries, density is less than half the EU average.

³⁶ Physical infrastructure can adversely affect the environment, especially heavy and long-lasting infrastructure such as roads, motorways, railway lines and modifications to water courses. In such cases, the trade-off between economic and environmental costs and benefits needs to be explicitly and properly taken into account. .

³⁷ The density of motorways is defined as the length of motorway per inhabitant or per square kilometre. The indicator used here is an average of the densities per inhabitant and per square kilometre.

Differences are even more marked between EU regions with big differences in motorway density. In the east many regions have no motorway at all. For example, in Poland, 7 of the 16 regions and in Romania, 6 out of the 8 have no motorways.

Map 1.32: Improved road accessibility due to a high speed scenario as compared to the current situation

Map 1.33: Improved road accessibility due existing infrastructure as compared to a low speed scenario

A new way to show the difference in the quality of the infrastructure between regions is to compare current accessibility to low speed and high speed scenarios³⁸ (Map 1.32 and Map 1.33). A comparison with the low speed scenario highlights the regions which benefit from existing motorways. Most German, Austrian and French regions benefit from an extensive motorway network, while bringing about a more even distribution of high speed roads would significantly increase the accessibility of Northern and Eastern Poland and all of Romania (Map 1.34).

Between 2000 and 2008, new investment in motorways tended to be concentrated in less developed regions of the EU. In almost three-quarters of Convergence regions, density increased relative to the EU average, while in RCE regions, only a quarter experienced an increase. In the EU-15, investment was especially high in regions in Spain, Portugal and Germany. In the EU-12, there was no clear link between new motorway construction and the initial endowment.

Variations in the quality of the road network are reflected in some degree in differences in the number of accidents and road fatalities, though, as indicated below, other factors are also important. These remain high in most regions of the EU-12 as well as in Greece, Spain, Italy and France. They are much lower in Germany, the Nordic countries and the UK.

The situation in the EU-15 and the EU-12 is radically different as regards the extent to which the road network connects urban centres and ensures a high level of accessibility. The extremely dense road network in the core part of the EU running from the South East of the UK, Belgium, the Netherlands and South-West Germany achieves both. Connectivity is also good in France (especially around Ile de France), Spain and Northern Italy. In the EU-12, the road network overall is limited and fragmented.

The importance of transport networks for regional development is indicated by a territorial impact assessment of a projected enhanced infrastructure

³⁸ The high speed scenario increases the speed to 90 km per hour on all roads to mimic a more even and uniform distribution of highways. However, in certain regions such speeds may not be feasible because of the type of terrain. In addition, it is not a realistic scenario to increase the actual average speed everywhere to 90km. As a result some of the benefits shown may not be capable in reality of being achieved in a cost effective way, especially in regions with a small and dispersed population.

scenario³⁹. This shows a general economic benefit for the EU as a whole and a much greater one for the EU-12, through increasing market potential, regional competitiveness and GDP per head, which could even lead to the emergence of a new economic growth area spanning Praha, Krakow, Budapest, and Vienna.

In the EU-15, substantial potential benefits are also identified, in particular, through better links between regions inside countries, notably Spain and Germany, so enabling development to spread out from the major centres to smaller cities. In the EU-12, inter-regional connections are mostly missing, even the capital cities not being well connected to each other.

Map 1.34: Motorways in relation to potential population

Regional disparities are less as regards railways, at least in terms of the density of track, though not of its efficiency (Map 1.35). Some 37% of Convergence regions have a density of railways which is less than half the EU average as against 25% of RCE regions. In the EU-12, the density of the rail network is much higher than for roads. However, despite significant investment in the modernisation of the network, much of it remains out of date and in a poor state of repair. Many lines are single-track and in most countries, few are electrified. The difference with the EU-15 is, therefore, predominantly in the average speed of the network.

Map 1.35: Passenger trains on the TEN-T railway network, 2005

This difference in speed also emerges from comparing the current situation with a low and high speed scenario (Map 1.36 and Map 1.37). Existing high-speed rail lines benefit most regions in France and Germany, but also several regions in Spain, Italy, the UK, Belgium and Austria. The high speed scenario⁴⁰ shows that regions in the Baltic States, Poland, Slovakia, Romania and Bulgaria, especially those which do not include a major city but are located close to one, would benefit significantly from improving the speed on the railway network to at least 90 km per hour.

Map 1.36: Improved rail accessibility due to a high speed scenario as compared to the current situation

³⁹ This assessment is part of the TIPTAP ESPON project. In particular, the project examined a scenario referred as Infrastructure Enhancement, where policies are oriented towards new infrastructure provision. It is based on a High Growth 2030 scenario as defined in TRANSVisions study. ESPON 2013 Programme, *TIPTAP: Territorial Impact Package for Transport and Agricultural Policies*, Applied Research Project 2013/1/6, 2010.

⁴⁰ The high speed scenario does not consider whether in practice all the railway links can be improved to accommodate higher speeds, which may be very difficult to do, particularly in mountainous regions. Accordingly, the increases in accessibility of regions like Corsica or the regions in the Massif Central in France which are assumed may not be realistic. As with the high-speed road scenario, this scenario is not realistic and investment to increase the speed of certain railway lines may not be cost effective, in particular if the population of the region is small and dispersed.

Map 1.37: Improved rail accessibility due to existing infrastructure as compared to a low speed scenario

Air travel has continued to grow over the past few years up until the onset of the crisis in 2008. The highest growth in traffic has been in secondary airports, which are mostly used by low-cost airlines as well as in the airports in the capital cities in the EU-12. Despite this, the density of air traffic in the latter is much lower than in the EU-15 (the largest airport in terms of traffic, Praha/Ruzyne, being ranked only in 30th position in the EU in 2008).

The accessibility of airports differs widely across regions (Map 1.38). Only around 5% of the EU population lives more than 90 minutes from an airport and 51% can access between 10 and 500 flights a day within 90 minutes. However, accessibility is much higher in the EU-15, particularly in the core part. People in many regions in the EU-12 have access to only 10 flights a day within 90 minutes and many live beyond a 90 minute drive. In Spain too a significant proportion of people live beyond a 90 minute drive to the nearest airport.

The situation in the EU-12 is expected to improve as the quality of the road network and city-airport connections continue to be developed.

Map 1.38: Accessibility to passenger flights, 2008

1.4.2. ICT Networks

Access to high-speed ICT networks is increasingly considered to be a key factor of competitiveness, as determining the capacity to compete in, and benefit from, the global market. It is also a major determinant of the facility to adopt new technologies, which is central to the growth of less developed regions. At the same time, it is critical to the development of e-services, whether public or private.

According to the last Digital Competitiveness report⁴¹, the average national coverage of DSL networks⁴² in the EU increased from 87% of the population in 2005 to 94% in 2009. The gap between Member States has narrowed substantially as coverage rates have risen in countries where they were lowest. For example, in Greece, coverage increased from 12% to 91% over the period, while in Slovenia, it rose from 55% to 93%, in Cyprus from 70% to 96%, in Poland from 55% to 75% and in Slovakia, from 61% to 82%.

Broadband coverage in thinly populated areas generally lags behind that in densely populated ones. In three countries, Bulgaria, Romania and Cyprus, broadband covers less than 50% of population in thinly populated areas. In

⁴¹ European Commission, *Europe's Digital Competitiveness Report, Main achievements of the i2010 strategy 2005-2009*, 2010.

⁴² Coverage of DSL and cable modem networks well summarises broadband coverage. As these two networks tend to overlap, DSL coverage has been used as proxy measurement for broadband coverage in Europe.

some countries, like Slovenia, Italy, Germany and Sweden, efforts were concentrated on reducing the gap between thinly and densely populated areas with some success. In Austria, Estonia and Ireland, mobile technologies have played a key role in closing the gap. Further efforts, however, are needed in Greece, Slovakia, Poland, Romania and Bulgaria, where between 48 and 67% of the population in thinly populated areas have as yet no access to broadband. The Europe 2020⁴³ strategy and the EU Digital Agenda⁴⁴ have the goal of achieving universal coverage of broadband internet by 2013 and of increasing the speed to 30Mbps by 2020 for all and to 100Mbps for one in two households. This will require a substantial amount of investment.

Regional data on levels of digital, or computer, skills also show that despite some recent progress, levels are often lower in less developed regions than in more developed ones. The lowest levels are in regions in Southern Europe, especially in Greece, Italy, Malta and Spain, as well as Latvia and Ireland. Moreover, as central and more advanced regions in the EU invest in next generation networks, there is an increased risk that more peripheral and thinly populated areas will be left behind. The lack of private investment in Next Generation Networks outside large conurbations could lead to another digital divide emerging between more developed and less developed regions in the EU.

The actual use of broadband by households (i.e. the take-up) has also increased rapidly in recent years along with access. In 2009, around 55% of households in the EU had broadband⁴⁵. In Sweden, the Netherlands and Denmark, the proportion was around 77-79%. At the other extreme, only around a quarter or less of households had broadband in Romania and Bulgaria, and in Greece 34%, Italy 39% and Portugal 46%.

In general, disparities remain between thinly and more densely populated⁴⁶ areas, Though these are relatively small in the UK, Sweden, Germany and the Netherlands, they are wide in Romania, Bulgaria, Greece, Lithuania and Ireland (Figure 1- 16).

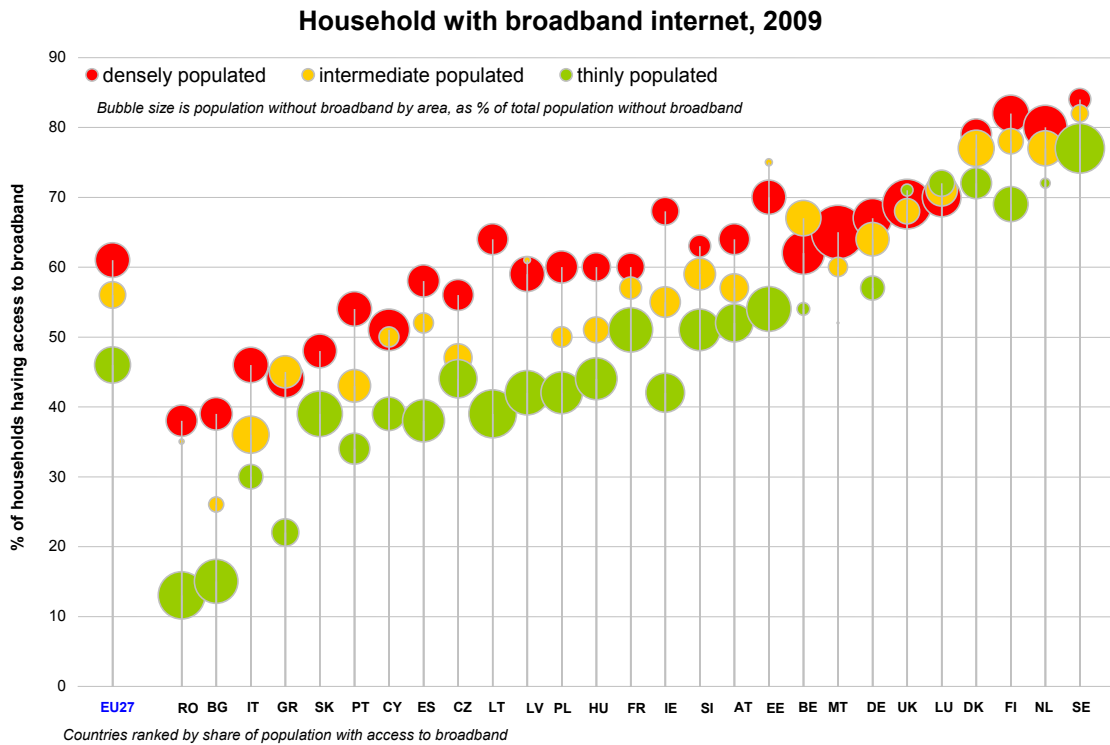
⁴³ COM(2010) 2020.

⁴⁴ COM(2010) 245.

⁴⁵ The broadband platforms taken into consideration are primarily ADSL, cable and FTTx (including VDSL), WLL/WLAN, satellite and PC.

⁴⁶ Definition based on the Eurostat definition at Local Administrative Level 2 based on density, contiguity and total population. For map and methodology see annex.

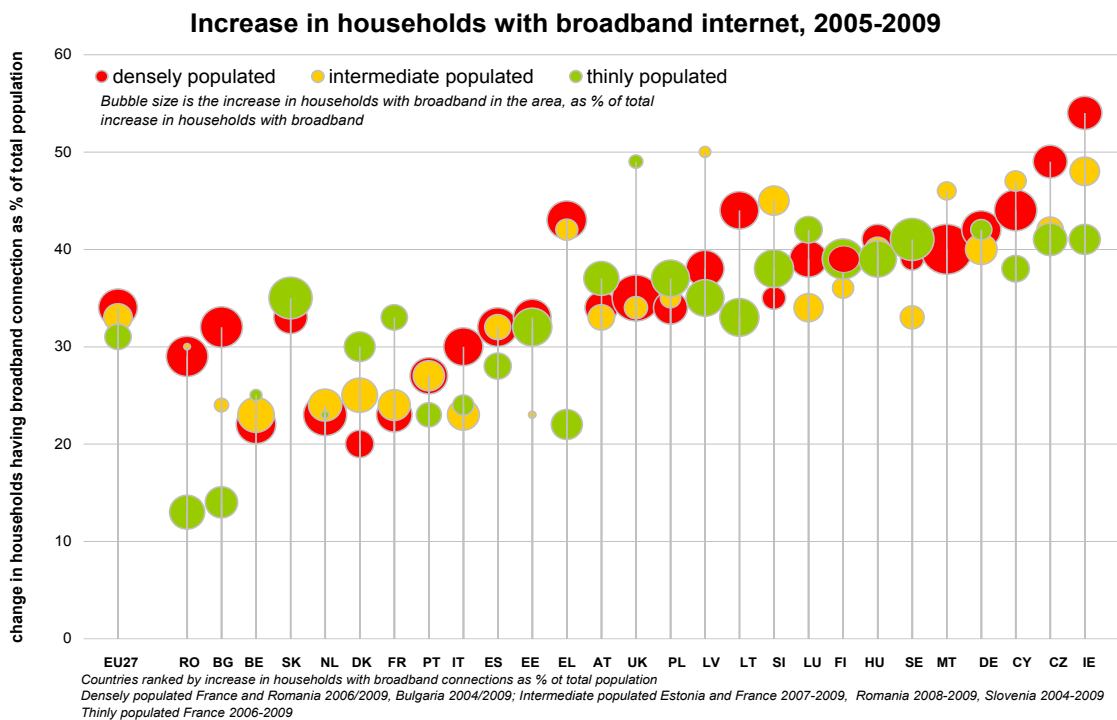
Figure 1- 16 : Household with broadband by degree of urbanisation, 2009



Source: Eurostat

The situation, however, is changing rapidly. The proportion of households with broadband in the EU increased from 23% in 2005 to 56% in 2009, the biggest increases occurring in general in the countries where it was lowest initially (Figure 1.17).

Figure 1- 17: Increase in households with broadband, 2005-2009



Source: Eurostat

Regional disparities across the EU are even wider than between countries. In Groningen and Noord-Holland in the Netherlands, around 79% of households have broadband as compared with only 12% in Severozapaden in Bulgaria and Anatoliki Makedonia and Thraki in Greece (Map 1.39).

Map 1.39: Households with broadband connection, 2009

Box: Degree of urbanisation: densely populated, intermediate and thinly populated areas

Map 1.40: Degree of urbanisation

The concept of the 'degree of urbanisation' was defined as part of the Labour Force Survey⁴⁷. The same classification has been used in many other surveys as well including the EU-SILC and IT surveys.

Three types of area are defined using a criterion of geographical contiguity in combination with a minimum population threshold based on local administrative units level 2 (LAU2) and 2001 census data.

Densely-populated area

This is a contiguous set of LAU2s, each of which has a density of more than 500 inhabitants per square km, where the total population for the set is at least 50 000.

Intermediate area

This is a contiguous set of LAU2, which is not part of a densely-populated area, each of which has a density above 100 inhabitants per square km, either with a total population for the set of at least 50 000 inhabitants or adjacent to a densely-populated area.

Thinly-populated area

This is a contiguous set of LAU2s which is not part of either a densely-populated nor an intermediate area. A set of LAU2s totalling less than square 100 km, not reaching the required density, but entirely enclosed within a densely-populated or intermediate area, is considered to form part of that area. If it is enclosed within a densely-populated area and an intermediate area it is considered to form part of the intermediate area.

A GIS layer with this information can be downloaded here:

<http://epp.eurostat.ec.europa.eu/portal/page/portal/gisco/geodata/reference>

Exceptions: France, Greece, Finland and Ireland

A number of countries have opted to use a modified classification rather than the one described above.

France

The French National Statistical Institute (INSEE) uses a different methodology to define the degree of urbanisation of its communes.

⁴⁷ See *EU Labour Force Survey database User guide Annex: explanatory notes* 2008 http://circa.europa.eu/irc/dsis/employment/info/data/eu_lfs/lfs_main/lfsuserguide/eulfs_userguide_2008_annex.pdf .

Greece

The definition described above has been applied to the LAU1 level by Eurostat as it did not have the Greek LAU2 digital boundaries. However, Greece has classified its LAU2 regions according to this methodology

Finland

Finland has applied the above methodology to a more recent set of LAU2 boundaries.

Ireland

Ireland also uses a different approach than that described above, classifying LAU1 instead of LAU2s. As a result, the following cities (LAU1) are classified as densely populated: Cork City, Dublin, Galway, Limerick and Waterford. The remainder of the country is thinly populated.

For more information on these exceptions please see: https://circabc.europa.eu/d/d/workspace/SpacesStore/b65ef11a-ade2-40e2-8696-e5224e28b59d/CNTR_DEGURBA.zip

1.4.3. Energy

Final energy consumption increased by around 0.4% a year in the EU between 1996 and 2007. Growth, however, was much higher in Malta, Spain and Ireland (between 3 and 4% a year), and Greece, Luxembourg and Cyprus (by around 2.5%). On the other hand, consumption declined in Romania and Bulgaria (by around 1-2% a year), partly reflecting the progressive modernisation of the production system and the closure of inefficient generating plants with high levels of pollution.

While the share of oil in energy consumption remained relatively constant at 42% in the EU as a whole over the period, it increased markedly in Bulgaria, Poland and the Czech Republic. In other countries, the share declined, notably in Germany, Cyprus, Portugal and Sweden.

Electricity production in the EU relies relatively heavily on coal and lignite, which together account for 27% of the total. In five Member States, they account for over half; as much as 90% in the case of Poland and Estonia. Some coal power plants emit high levels of health and environmentally damaging pollutants (SO₂, NO_x, PM, CO₂). Accordingly, further investment and technological progress are needed to reduce these emissions and to capture the carbon released.

Efforts are, therefore, needed to increase energy efficiency further, particularly that of buildings, lighting and transport. A wider use of intelligent energy systems could help. Recent developments in smart energy grids, based on digital technology to control appliances in homes to save energy and reduce costs, open up promising opportunities in this regard. In addition, the growing production of electricity from renewable sources will place new demands on the grid, increasing the need for such systems.

1.5. Institutions

1.5.1. Macro-economic situation

It is widely accepted that a necessary condition for sustained growth is the stability of the macroeconomic framework. According to the World Bank, macroeconomic stability is where inflation is low and predictable, real interest rates are appropriate, fiscal policy is stable and sustainable, the real exchange rate is competitive and predictable and the balance of payment situation is viable.

These criteria lack precision but they refer in very broad terms to a macroeconomic environment which is characterised by a low degree of uncertainty.

Uncertainty is identified as the main reason why the macroeconomic situation affects growth. According to Fisher (1993)⁴⁸, there are two main channels through which this occurs. First, macroeconomic uncertainty reduces the capacity of the price mechanism to ensure an efficient allocation of resources, which in turn reduces productivity. Secondly, uncertainty reduces investment by making assessment of the return more difficult. In addition, investment might also be hampered by high interest rates.

The macroeconomic situation in the EU has been greatly affected by the crisis. As indicated by the latest figures, there has been a sharp fall in economic activity which was translated into declining prices in many cases and large increases in budget deficits and public debt. Both are detrimental to growth prospects. Uncertainty concerning the timing of the recovery has led to the postponement or even cancellation of investment. At the same time, growing public deficits and increasing needs in terms of social security spending may lead governments to reduce public investment targeted at improving the structure of the economy. In such a context, Cohesion Policy and the measures taken under the European Economy Recovery Plan may play a key role in facilitating strategic investment which is essential for regional development in the future.

1.5.2. Institutions

Economists have increasingly realised that the quality of institutions can have a significant effect on economic growth and development in general. Poor institutions can, in particular, hinder the effectiveness of regional development strategies. This is one of the main reasons that the World Bank⁴⁹ has put more emphasis on the need to improve institutions and governance. They use the following definition of governance:

⁴⁸ Fisher, S. "The role of macroeconomic factors in growth", *Journal of Monetary Economics*, Volume 32, Issue 3, pp. 485-512, December 1993.

⁴⁹ The World Development Report, 2009. Washington, World Bank

*The traditions and institutions by which authority in a country is exercised. This includes: (1) the process by which governments are selected, monitored, and replaced, (2) the capacity of the government to effectively formulate and implement sound policies, and (3) the respect of citizens and the state for the institutions that govern economic and social interactions among them*⁵⁰.

The World Bank data indicate that overall governance is of a high quality in the EU, but that some significant differences between Member States remain. It also highlights that several Member States have improved their governance since the 1990s, particularly the Baltic countries have made significant progress. Bulgaria has benefitted from preparations for EU membership leading to improvements in their governance indicators compared to the 1990s.

Improving the quality of government through cross-border learning

Cooperation between EU-15 and EU-12 regions and Member States can significantly increase the institutional capacity in the latter. The improvement in the quality of government in Estonia has been helped through its close ties with Finland, Sweden and Germany. Finland has consistently provided support through exchange of experience and examples of policies to improve institutional capacity. Sweden has also been a source of knowledge and good practice. Estonia conducted its first elections in 1991, two years before its Baltic neighbours, and introduced radical reforms with the help of German experts.

Jihozápad in the Czech Republic forms part of the Jihočeský Kraj cross-border cooperation programme with Austrian and Bavarian regions. In particular, cooperation between Jihozápad and Bavaria goes back centuries. This has led to better transport connections and more German investment in local industries. Cooperation has also helped to improve the institutional capacity of the region, judged to be one of the strongest in the Czech Republic in a recent survey⁵¹.

Prior to joining the Union, EU-12 countries received funding from the PHARE programme to help to strengthen public administration and institutions. After joining, funding has continued to support capacity building under Cohesion Policy.

E-government services can contribute to making public administrations more efficient and transparent. The European Digital Competitiveness Report⁵² tracks the availability of 20 basic e-government services and the share of individuals and enterprises that use e-government services. The UK, Portugal, Austria and Malta provided all of these 20 basic services online in

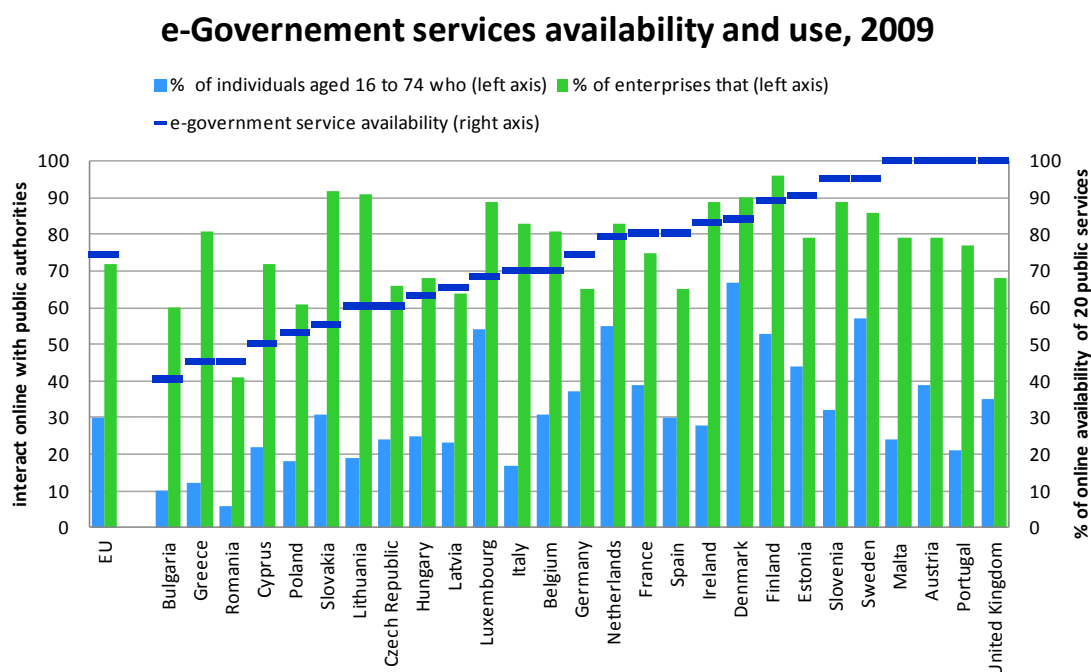
⁵⁰ Kaufmann, Daniel, Kraay, Aart and Mastruzzi, Massimo, *Governance Matters IV: Governance Indicators for 1996-2004* (May 2005). World Bank Policy Research Working Paper No. 3630. Available at SSRN: <http://ssrn.com/abstract=718081>

⁵¹ See Quality of Government Institute. *Measuring the quality of government and subnational variation*. Financed by DG REGIO. Forthcoming.

⁵² Europe's Digital Competitiveness Report 2010, <http://ec.europa.eu/digital-agenda>

2009 (Figure 1- 18). In all Member States, with the exception of Romania, almost three-quarters (72%) of enterprises interacted with public authorities online in 2009 as compared with only 30% individuals. Only in the Nordic Member States, the Netherlands and Luxembourg did at least one in two individuals interact online with public authorities in 2009.

Figure 1- 18



1.6. Competitiveness

The economic crisis has not only changed the global economic landscape, it has also highlighted the fact that in many countries sources of growth were not sufficiently robust, so emphasising the need for better measures of economic performance that incorporate the critical elements of sustainable economic growth. The World Economic Forum publishes each year a global competitiveness report for countries. Following a similar approach, a new regional competitiveness index has been created for all NUTS 2 regions (Map 1.41). It consists of eleven pillars based on a total of 69 indicators organised into three groups. These indicators span a far wider range than only narrow economic aspects and include many indicators relating to quality of life, life expectancy adjusted by perception of health and trust.

The basic group represents the key drivers of all types of economy:

- (1) Institutions
- (2) Macroeconomic stability
- (3) Infrastructure
- (4) Health
- (5) Quality of primary and secondary education

The efficiency group represents aspects which become more important as a region develops

- (6) Higher education and lifelong learning
- (7) Labour market efficiency
- (8) Market size

The innovation group includes the drivers of advanced regional economies

- (9) Technological readiness
- (10) Business sophistication
- (11) Innovation

Map 1.41: Competitiveness Index, 2010

Each of these pillars allows the performance of a region to be assessed in relation to all the other EU regions. As a result, they can be seen as indicating the strengths and weaknesses of every NUTS 2 region in an EU perspective.

As regions move along their development paths, their socio-economic conditions change and different determinants become more important for their competitiveness. Accordingly, the best way to improve competitiveness of a more developed region may not be the same as for a less developed one. To take this into account, the weights attached to each of the three groups depends on the GDP per head of a region, which is similar to the way the World Economic Forum index is constructed.

- In less developed EU regions, the basic group is assigned a weight of 40% and innovation only 10% (efficiency has a fixed weight of 50%)
- In medium developed regions, the basic group has a weight of only 30%, while the weight of innovation doubles to 20%.
- In the highly developed regions, the basic group has a weight of only 20% and innovation one of 30%.

This implicitly provides a guide for policy makers. For example, it implies that the competitiveness of a less developed region is likely to be strengthened more by improving institutions and basic education than by trying to increase the number of patent applications or R&D expenditure. It also means that as a region becomes more developed, it may lose competitiveness if it does not invest more in innovation.

Overall competitiveness is high in the Nordic regions as well as in South-East England, the Netherlands and in Southern Germany.

In some Member States, differences in competitiveness between regions are large. For example in Belgium, Brussels, the two surrounding regions and most Flemish regions score very high, but most Walloon regions have low to very low scores. Spain, Portugal, Italy and Greece also display significant regional differences in

competitiveness. These results emphasise the fact that competitiveness has a strong regional dimension, which national level measures cannot capture.

In most countries, whether more developed or less developed, the capital city region has the highest competitiveness score, while the outermost regions tend to have lower scores than others (Map 1.41). While in the most developed Member States, highly competitive regions are surrounded by other competitive regions, the trend in the less developed Member States is that their most competitive region tends to be surrounded by far less competitive regions. This shows that in the most developed Member States factors of competitiveness are more evenly distributed and competitiveness tends to spill over into neighbouring regions. In less developed Member States, factors of competitiveness are highly concentrated in the capital city region and spillovers to neighbouring regions are still quite limited. This may be due to limited transport connections between regions and substantial differences in the quality of the business environment in these countries.

Box: The Regional index of sustainable economic well-being

The East Midlands Development Agency has a strong view that sustainable economic prosperity and societal well-being are important to regional success, as reflected in their objective:

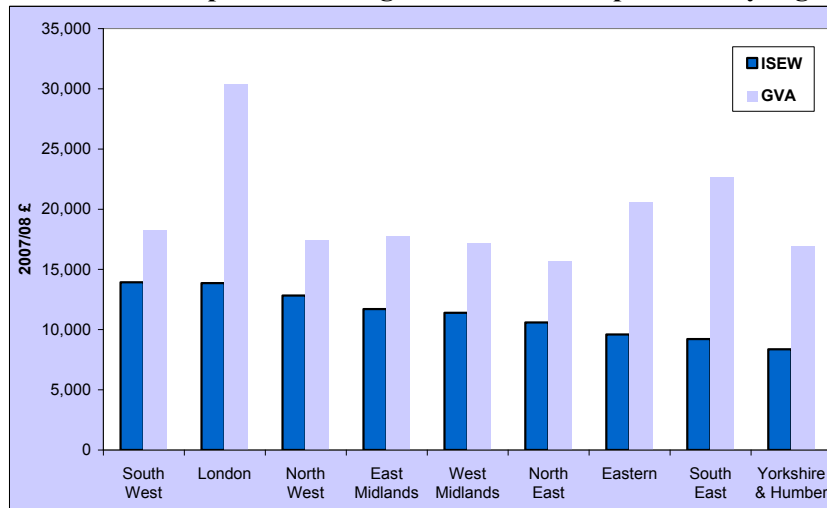
... by 2020, the East Midlands will be a flourishing region - with growing and innovative businesses, skilled people in good quality jobs, participating in healthy, inclusive communities and living in thriving and attractive places. (Flourishing Region RES 2006)

The agency has developed a Regional Index of Sustainable Economic Wellbeing (RISEW) with the New Economics Foundation to capture aspects of sustainable economic development left out of account by conventional measures of economic progress.

The index includes costs and benefits not traditionally measured in monetary terms, bringing together a wide range of economic, social and environmental aspects. The basis is consumer expenditure, which is then adjusted to take account of both positive and negative social, economic and environmental factors. For example, unpaid household work and volunteering are valued and added to the index, together with public expenditure on healthcare and education. At the same time, the environmental costs from habitat loss, pollution, depletion of non-renewable resources and climate change; the social costs associated with crime, divorce, commuting and unequal income distribution; and the health costs of road and workplace accidents are deducted.

The index was first calculated for the East Midlands in 2005 and used to assess progress towards the "flourishing region" objective. In 2007, it was calculated for all English regions, when the value of the index for the East Midlands was slightly above the average for England.

Figure 1- 19: RISEW per head and gross value-added per head by regions, 2007



Source: *Regional Index of Sustainable Economic Wellbeing (RISEW) for the English regions, NEF, January 2010*

- The highest value of the RISEW per head was in the South West, above that of London, which had a much higher Gross value-added per head;
- The lowest value of the RISEW per head was in Yorkshire and Humber, whereas the lowest gross value-added per head was in the North East.

Between 1994 and 2007, the RISEW per head doubled in the East Midlands, as against an average increase of 35% for England.

A consortium led by the East Midlands Development Agency and including Natural England is developing the index further.

1.7. Conclusions

Globalisation and the emergence of new major players in world trade have had a considerable impact on the EU economy. Importing and exporting goods to the rest of the world is now more important for the GDP of the Union. The trade balance in goods has shifted from just being positive to just being negative over the last ten years. Trade in services, however, has been growing fast and the positive trade balance on these has been increasing, underlining the strong global position the EU occupies in this area.

New trade patterns have also emerged. Major firms in many sectors now locate different parts of their production in different parts of the world. This more dispersed production system increases the demand for logistics and command and control functions, which tends to favour the major cities and regions that host these services.

In the EU, productivity growth is the main source of growth in GDP per head. Between 2000 and 2007, increased productivity was responsible for 80% of the growth which occurred, the rest being due to increases in the employment rate and in working-age population. Productivity is, accordingly, a central element of EU competitiveness, generating the income which enables regions to offer both a high quality of life and a favourable business environment.

The productivity growth which has occurred at national and regional level is the combined effect of improvements in productivity within sectors, i.e. innovation broadly defined, and shifts between sectors, i.e. restructuring. The effect of shifting to higher value-added sectors is strongest in less developed regions, while the effect of productivity growth within sectors is important in all regions.

Innovation in a broad sense is the main source of productivity growth within sectors and firms. It covers many aspects ranging from technological innovation to the more efficient use of existing technology and resources and to new management and organisation techniques. Innovation depends on the potential to generate, absorb and diffuse knowledge. This is why human capital is a key driver of growth. Education and skills are important areas of investment throughout the EU, but particular efforts are needed in many regions in Southern Europe to reach the Europe 2020 education targets..

To obtain the full benefits of innovation, however, the appropriate infrastructure and institutions need to be in place. In the 21st century, digital networks are playing an increasingly important role in the development of services and access to them. Providing broadband internet access to all individuals and enterprises can, therefore, have a real impact on growth and the quality of life. Despite the importance of digital infrastructure, good transport networks remain essential. Road and rail

networks in many EU-12 regions, however, still require major investment to reach comparable levels to those in the EU-15.

Last but not least, institutions have a strong influence on national and regional development. These include a sound macroeconomic framework, integrated EU markets, a legislative and regulatory system which facilitates business and job creation and online access to e-government services.

2. IMPROVING WELL-BEING AND REDUCING EXCLUSION

*The Union's aim is to promote peace, its values and the well-being of its peoples*⁵³

Well-being is a broad concept, which is difficult to capture in a single measure. Accordingly, this section considers a variety of measures ranging from objective ones, such as life expectancy and at-risk-of-poverty rates, to subjective ones, including perceptions of health and happiness. These measures provide different perspectives on well-being. However, they do not necessarily always change in the same direction, emphasising their virtual independence in some cases from each other. In combination, they show a diverse and interesting picture.

The first section focuses on a life expectancy, infant mortality and access to health care. The second examines issues relating to living standards. The third section focuses on people's absolute and relative living conditions.

The analysis provides insights into people's access to purchasing power and ability to live a pleasant life and to participate in society. The point to bear in mind is that living standards cannot be measured only in terms of access to market commodities, i.e. goods and services which can be acquired for payment of money, disregarding all those items which are commonly available outside of the market.

A pleasant, safe, secure and non-polluted environment, good neighbour relations, clean water on tap, reciprocal trust and so on are all "common goods" which contribute greatly to the standard of living but are largely not marketable. In addition, there are many home-produced 'private' goods and services, ranging from cleaning, to preparing a meal and child care, which equally contribute to living standards, which, though marketable, are nevertheless not produced for the market and so not captured by standard accounting systems.

Recently the Stiglitz-Sen-Fitoussi (2009) report has articulated the tension between existing national accounts and more complete and meaningful definitions of societal well-being and social progress, highlighting the growing awareness of the divergence between standard GDP measures on the one side and quality of life measures on the other. The report calls on researchers and policy makers to make more consistent use of indicators which are alternative or complementary to GDP when trying to assess standards of living.

Many of these indicators are obvious and readily available, such as life expectancy, infant mortality, gender equality; security and unemployment. These are examined here, along with the concept of 'adjusted' disposable income of households, which includes the value of 'in-kind' goods and services available free or at subsidised prices income.

⁵³ Article 3 in the Treaty on the Functioning of the European Union (TFEU).

2.1. Life expectancy and health

2.1.1. *Living longer and longer*

The EU has an enviably high life expectancy. In 2007, life expectancy at birth stood at 79 years in the EU compared to an average global expectancy of only 67 (UN). Outside Europe, only 6 countries in the world (Japan, Australia, Israel, Canada, New Zealand and Singapore) have a higher life expectancy. Neighbouring countries in the east have a considerably lower life expectancy, of around 68 years in Ukraine, Belarus, Russia and Moldova. It is slightly higher in North African countries, at 70 for men and 74 for women, but still below the EU average.

Within the EU, life expectancy also differs and more for men than for women. While for women, life expectancy varies from 86 in Comunidad Foral de Navarra to 75 in Yugoiztochen in Bulgaria (Map 1.42), for men, it varies from 80 in Marche in Italy to a mere 65 in Lithuania (Map 1.43). This variation has a wide range of causes including differences in life style, climate and diet, but also education, income and access to health care and other social services which affect health. This section considers some of the main causes of low life expectancy.

Map 1.42: Female life expectancy a birth, 2007

Map 1.43: Male life expectancy at birth, 2007

2.1.2. *Unequal access to quality health care*

Infant mortality in the EU at 5 per 1000 live births in 2006 was among the lowest in the world. Only 7 countries outside Europe have a lower rate, the six cited above with a higher life expectancy and South Korea. The average global infant mortality rate is ten times higher than that of the EU.

Three out of four EU regions have an infant mortality rate of 5 or less and one in five a rate below three. However, all Romanian regions except the capital city region have rates between 12 and 15, while the rate is also around 12 in Guyane. In Bulgaria, four of the six regions have rates of over 10 (Map 1.44). This means that a newborn baby in Romania is over six times more likely to die before the age of one than in Brabant Wallon in Belgium. High infant mortality rates have a major effect on the life expectancy figures at birth. Romanian and Bulgarian regions, therefore, also have the lowest life expectancy in the EU.

Map 1.44: Infant mortality rate, 2006-2007

The two main causes of death for adults under 65 are cancer and heart disease. Out of 100,000 people under 65, cancer kills 75 and heart disease 52 annually. These rates, however, vary substantially across regions. In both cases, the highest rates occur in Romanian, Bulgarian and Hungarian regions and the three Baltic States. The death rate for cancer, therefore, is over 120 in all Hungarian regions, while in 10 EU regions it is below 25 (Map 1.45).

Map 1.45: Standard death rate from cancer for population under 65, 2006-2008

Map 1.46: Standard death rate from heart diseases for population under 65, 2006-2008

People living in the countries concerned also tend to judge their health care provision as poor (Eurobarometer 315, 2010). In particular, in Romania and Bulgaria, less than 25% of respondents to the survey thought that health care in their country was good compared to more than 90% in Austria, the Netherlands and Belgium.

The death rate from heart disease for those under 65 is 3-4 times the EU average in all Bulgarian regions and over twice the EU average in the Baltic States, Hungary, Romania and Eastern Slovakia (Map 1.46). These are also regions with low levels of development. Yet the correlation between life expectancy and GDP per head is by no means systematic.

In the more developed regions, some interesting features can be detected. In the UK, the death rates from both cancer and heart disease tend to be higher in more peripheral regions such as the Scottish regions and West Wales and the Valleys, but also in some of the large conurbations, such as Greater Manchester, Merseyside (which includes Liverpool) and London.

The differences in Austria have the opposite pattern to those in the Czech Republic and Slovakia. While the capital city region in Austria has substantially higher death rates for both cancer and heart disease than all the other regions in the country, the opposite is true in the other two countries.

These three indicators reveal large disparities in health risks between regions. The reasons are many and vary between regions. In regions with low disposable income and high poverty, many people may have to wait too long before they can visit a doctor. In more remote regions, physical accessibility may be a factor, while in others it may be the quality of available care. In regions with a large share of foreign-born population (Map 1.61), the lack of knowledge of the health care system or the language spoken in the country may lead to higher death rates. In some regions, access to treatment may depend on ability to pay rather than need, despite the system being nominally free. Such variations in health risks and the underlying factors show the need for a health care policy that can target regional needs, and problem in a differentiated manner.

2.1.3. Traffic fatalities and suicides

The two main causes of death for young people are traffic fatalities and suicide. Both predominantly affect young men. Three out of four people killed in traffic accidents are men, those in the early 20s being especially vulnerable. These premature deaths also reduce average life expectancy, but many of these traffic fatalities can be avoided.

In the EU, traffic fatalities relative to population were reduced by 50% between 1991 and 2008⁵⁴. On current trends, however, the EU target of reducing the number by 50% in 2010 compared to 2000 will not be reached.

In the Netherlands, Sweden and the UK, fatalities average only around 40 per million people (Map 1.47) because traffic safety has been a political priority for many years. As a result, these three countries, which together with Malta, already had the lowest rates in 1991, reduced them by 50% by 2008. In Bulgaria, Greece, Latvia, Lithuania, Poland and Romania, traffic fatality rates were all around three times higher at 140 per million, indicating that there is still significant room for reduction.

Map 1.47: Road fatalities, 2004-2006

Eight regions – three in Greece, Luxembourg and Namur in Belgium, Alentejo in Portugal, La Rioja in Spain and Lithuania – had between 200 and 300 traffic fatalities per million people). This is substantially above the EU average of 92, and even further above the regions with the lowest rates, Bremen, Berlin, Hamburg, Vienna, and Brussels, which all had rates of less than 30 per million, partly because of their urban nature and the low average speed of traffic.

Traffic fatalities depend primarily on the number of accidents. These have a range of causes from alcohol consumption and the extent of law enforcement to the quality of roads. The countries with the lowest fatalities have taken an integrated approach to reducing the figures. They influence driver behaviour through clear rules, targeted enforcement and better driver education, and they have improved roads by separating pedestrians and cyclists from cars where speeds are high and by reducing speeds where separation is not possible. A similar approach could lead to significant reductions in traffic fatalities in many EU regions.

Men also have a lower life expectancy than women because they are over three times more likely to commit suicide. Standardised death rates⁵⁵ from suicide vary considerably between regions (Map 1.48). In ten regions – Lithuania, three Hungarian regions, Bretagne, Itä-Suomi in Finland and four Belgian regions – the rate is above 20 per 100 000 people. By contrast, 30 regions, all those in Greece, 6 in Spain and Italy, Flevoland in the Netherlands, Cyprus, Outer London, Norte in Portugal and Bucureşti – Ilfov in Romania, had rates below 5.

Map 1.48: Standardised death rate from suicide for population under 65, 2006-2008

⁵⁴ DG MOVE CARE database.

⁵⁵ Standardised death rates correct for the differences in age composition of population between regions. As the prevalence of causes of death differs among age groups, standardised death rates are more comparable since they are based on assuming that different regions had exactly the same population composition.

The striking aspect of these differences is that they do not seem to be related to socio-economic factors, at least across countries. The regions with the lowest suicide rates include both those with high levels of income such as Flevoland and Outer London and those with much lower levels, such as Norte and some of the Greek and Italian regions.

Within countries, however, suicide rates tend to be higher in the less developed regions. For example, in Romania, all regions outside the capital city region have rates which are consistently 2-3 times higher. In part, this may be due to better emergency services in the capital, but better employment opportunities and higher income are also likely to reduce suicides. In Belgium too the highest rates also tend to be in regions with lower incomes and higher unemployment. In EU-12 countries which have grown rapidly since the mid-1990s, the suicide death rate has dropped considerably. For example, in Estonia the rate fell from almost 40 per million in 1994-1997 to 15 in 2006-2008, which is still above the EU average (10) but much lower than it was. A similar reduction occurred in the two other Baltic States and Slovenia.

2.1.4. Ageing

Increasing life expectancy coupled with a low birth rate is associated with a rising median age of the population and a growing share of older people. According to the latest regional population projections, the median age in the EU will rise from 40 to 45 between 2008 and 2030 and the share of those of 65 and over will increase from 17% to 24%. In 2008, only two regions in the EU had a share as high as this: Liguria in Italy and Chemnitz in Germany. In 2030, in half of the regions, the share will be 24% or higher⁵⁶.

The rising share of older people has already sparked much debate. In Member States, where there is still a pay-as-you-go system where the employed pay for the pensions of the currently retired, affordability will be a growing issue since the employed will have to pay for an increasing number of pensions. In countries, where there are funded systems, the funds will equally have to cover growing pension numbers and, accordingly, will need to generate the increasing income required, which in turn will depend on economic performance. As a result, the Lisbon agenda focused on increasing the share of people aged 55-64 in employment. In addition, in many Member States, proposals to raise the effective retirement age are being actively considered and in some cases introduced.

The regional dimension of ageing has implications for the demand for services. An ageing population will require more health care services and more and different other kinds of services. Regions with growing numbers of older people will have to expand their infrastructure and services and ensure that they are accessible.

⁵⁶ Giannakouris, Konstantinos. Regional population projections EUROPOP2008: Most EU regions face older population profile in 2030. Statistics in Focus 1/2010. Luxembourg, 2010.

The growth in the number of older people differs considerably between regions, not only because of differences in life expectancy but also because older people have become more mobile and many have moved to warmer climates in the EU. This is evident in many Spanish and French regions which have attracted significant numbers of senior citizens from the UK, Germany and the Netherlands either for the winter or all year round. Although people in the EU tend to move less than their counterparts in the US, the freedom of movement in the EU and the reciprocity of healthcare arrangements open up a wide choice of places in which to retire for those that can afford it.

Differences in the share of older people between regions also reflect the fact that cities tend to attract more migrants who tend to be younger than the resident population than rural areas.

Box: Sparsely populated regions

In 2008, 3 million people in the EU, or 0.6% of the population, lived in sparsely populated regions⁵⁷. There are 18 of these among 1 303 NUTS 3 regions. Most of them are located in Northern Europe, five each in Finland and Sweden, in addition to three in Spain and the UK, one in Greece and one in France. The biggest is Pohjois-Pohjanmaa in Finland with a population of 383 000 and the smallest Evrytania in Greece with a population of less than 20 000.

The small size of their populations generally implies that public service provision in these areas is more expensive. Several of the regions are experimenting with e-services to provide good access to services efficiently.

Overall, the population in sparsely populated regions remained broadly unchanged between 2001 and 2008, but there were differences between them. In particular, population grew strongly in French Guyane, rising by around 4% a year, while it fell in Kainuu in Finland by almost 1% a year. In half of the regions concerned, population increased or remained unchanged, in the other half, it declined.

The age structure of the regions also varies significantly. Some regions have a young population, like, for instance, Pohjois-Pohjanmaa or Lappi where, respectively, 14% and 18% of people are 65 or over. In French Guyane, less than 4% of the population is 65 or more. In other regions, the population is on average much older. In the Spanish sparsely populated regions, around one in four is 65 or over while in Evrytania, it is one in three.

2.1.5. Health

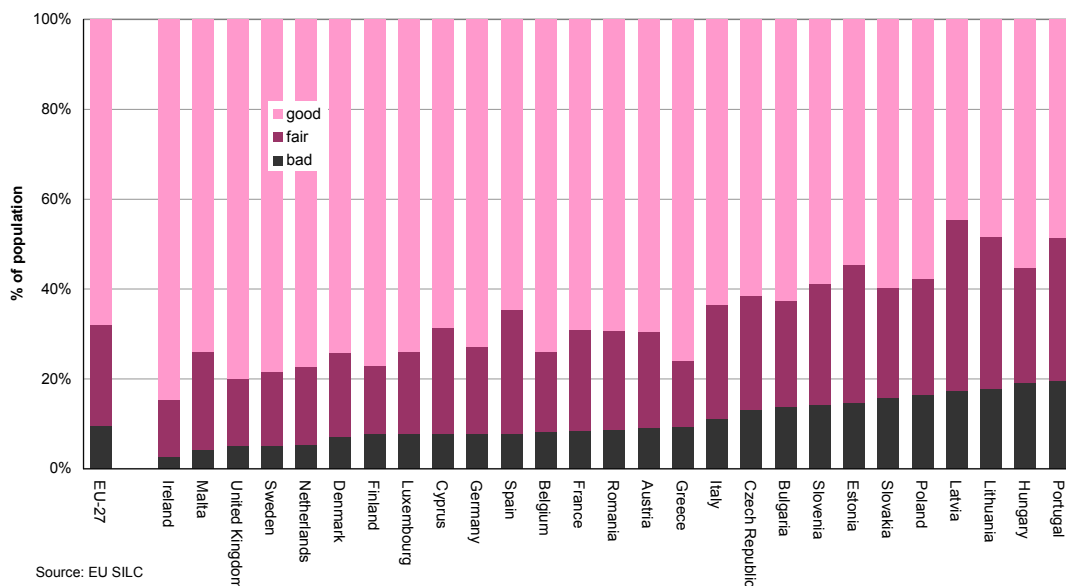
Good health is an important aspect of well-being. People's self perception of their health, however, varies widely. In 7 Member States – Portugal,

⁵⁷ Sparsely populated areas are regions with a population density below a given threshold. Paragraph 30 (b) of the Guidelines on national regional aid for 2007-2013 (2006/C 54/08)⁵⁷ defines low population density regions as 'NUTS-2 geographic regions with a population density of less than 8 inhabitants per km², or NUTS3 geographic regions with a population density of less than 12.5 inhabitants per km²'.

Hungary, the three Baltic States, Poland and Slovakia , between 15% and 20% of the population perceived their health to be poor compared to an EU average of 10% (Figure 1.20). Ireland has the smallest share of the population who consider their health to be poor (just 2.5%).

Figure 1- 20

Self Perceived Health, 2008



2.2. Living conditions

2.2.1. Unemployment dropped until the crisis

Unemployment rates declined in most regions between 2000 and 2008 (Map 1.50). At the EU level, unemployment fell by 2 percentage points over this period. The largest regional reduction was in Severoiztochen in Bulgaria and Warmińsko-Mazurskie in Poland where the rate fell by over 15 percentage points to 8.6% and 7.4%, respectively. Only 36 regions experienced an increase of more than 1 percentage point. The increase was largest in Norte in Portugal where it increased by 4 percentage points to 8.7%.

Map 1.49: Unemployment rate, 2008

Map 1.50: Change in unemployment rate, 2000-2008

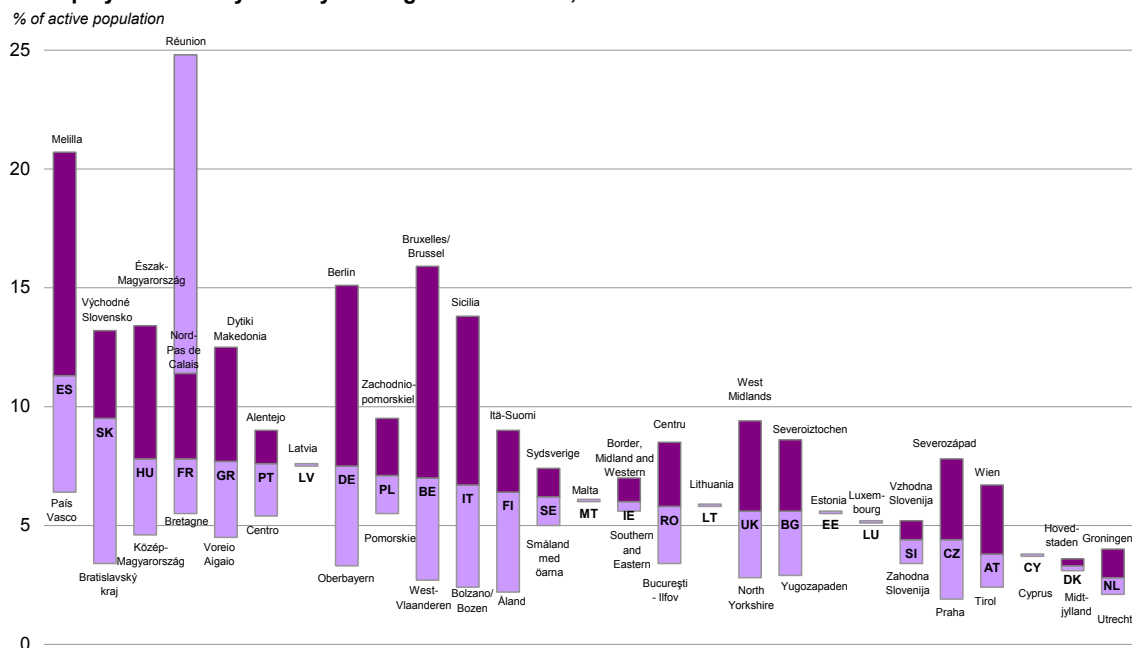
Despite these overall reductions, unemployment in 2008 was still above 20% in the French overseas territories and above 15% in Andalucía, Canarias, Brussels, Extremadura and Berlin (Map 1.49). Regional disparities in unemployment rates were particularly wide in Belgium, Germany, Spain and Italy (Figure 1.21).

Unemployment rates have converged substantially since 2000. The regional dispersion in rates narrowed by 30% between 2000 and 2007. In 2008,

however, it widened by 7% and in 2009, because of the crisis, it may have widened further.

Figure 1- 21

Unemployment rate by country and regional extremes, 2008



Unemployment in the EU has risen rapidly during the crisis to above 10% in 2010⁵⁸ and it is forecast to remain there in 2011. Rates are also forecast to remain above 10% in the US, despite much lower unemployment before the crisis hit.

The effect of the crisis, however, varies widely across the EU. Increases in unemployment in Ireland, Spain and the Baltic States have been especially large, ranging from 7 to 15 percentage points between 2008 and the end of 2009. As a result, rates are well above 10% in all five countries. In Latvia, unemployment was above 20% by the end of 2009 and in Spain, it reached 20% by mid-2010.

In the vast majority of Member States, however, increases have been much less dramatic. In two thirds of cases, the increase was less than 3 percentage points between 2008 and the end of 2009. In Germany and Luxembourg, it was less than 1 percentage point, though because of the delayed effect of the crisis, rates may still rise in the future.

Unemployment has a damaging effect on well-being far beyond the loss of income. This is all the more the case for so-called discouraged workers, those who have given up looking for a job because they consider none are available, who are no longer counted as being unemployed but as economically inactive.

⁵⁸ European Commission, Directorate-General for Economic and Financial Affairs, *European Economic Forecast: Autumn 2009*. European Commission, Brussels, 2009.

Unemployment increases the risk of poverty. This is especially so for long-term unemployment which is particularly high in the French overseas departments, the two eastern Slovakian regions and Berlin (Map 1.51). The crisis is likely to mean persistently high levels of unemployment and, therefore, more long term unemployed and more people at risk of poverty across the EU.

Map 1.51: Long-term unemployment rate, 2008

Reducing the time needed for the unemployed to find a job and ensuring adequate social benefits during their spell of unemployment can greatly reduce their risk of poverty.

The unemployment rate of those under 25 averaged 15.5% in 2008, twice the overall rate. In 34 EU regions, more than one in four of those under 25 and in the labour force was unemployed (Map 1.52).

Map 1.52: Youth unemployment rate – 2008

Map 1.53: Young people aged 15-24 not in work, education or training, average 2006-2008

The unemployment rate of young people covers only those who have entered the labour force and are looking for work. It does not cover those who are in education or training and not looking for work, nor does it include the discouraged ones who have stopped looking for work. The proportion of people aged 15 to 24 not in work, education or training includes both of these groups and indicates in which regions a significant number of young people are neither employed nor acquiring the education and skills for their future working careers. In the EU in 2008, this proportion averaged 11% of the age group, but it was over 20% in five regions in Bulgaria and five in southern Italy. By contrast, it was between 3% and 4% in Prague, Trier, Copenhagen and five Dutch regions (Map 1.53).

Box: The outermost regions

Outermost regions have a distinct character. They are located far away from their national capital and often the rest of the country. Most of them are islands or archipelagos and mountainous, with seismic activity and extreme climatic conditions. The small size of the local market and (for some of them) their location in less developed parts of the world also represent major challenges for their development.

In 2007, around 4.25 million people lived in the outermost regions, 0.9% of EU population. In some cases, the proportion of young people is very large and growing, such as in French Guyane, where 36% of the population is under 15 and population is growing at almost 4% a year.

In general, the level of development is below the EU average. In 2007, while GDP per head in the Canarias was under 8% below, in French Guyane it was over 50% below. However, rates of growth are higher and the regions are catching-up with the rest of the Union.

Employment performance is also mixed. In 2008, unemployment was over 20% in

all of the French outermost regions and almost 25% in Réunion, whereas in Açores and Madeira, it was only 5.5% and 6.0% respectively, well below the EU-27 average of 7%.

2.2.2. In search of better opportunities: migration

Between 2001 and 2007, net migration added almost 0.3% a year to EU population and was the main source of population growth. Overall, two thirds of all NUTS 3 regions had a positive net inward migration largely because of migration from outside the EU (Map 1.54).

At EU level, there has been a high level of net outward migration from regions in the Central and Eastern Member States, while the highest rates of net inward migration were, until the crisis, in Ireland, parts of Spain, France and Italy. A large part of these migration flows was driven by poor employment opportunities in the Central and Eastern countries coupled with significant job growth in Ireland and Spain, especially. The crisis has reduced these flows and led to reverse migration.

In a number of Member States, geographic shifts of population are evident – in Germany, from east to west, in Sweden, Finland and France, from northern regions to southern ones and in Italy, the reverse, from south to north.

At a lower level, shifts to certain cities are evident. In the Central and Eastern Member States, there has been net inward migration into every capital city region. In Poland, this is also the case for many of the other large cities such as Kraków, Łódź, Wrocław, Poznań, Toruń and Rzeszów.

In the Western Member States, the pattern is less clear, with some cities gaining population and other losing. In the UK, several cities have experienced outward migration, including most parts of London, Birmingham, Coventry, Leicester, Liverpool, Greater Manchester, Belfast and Aberdeen. In Germany, some cities have experienced net inward migration while, in the surrounding regions, there has been net outward migration as in the case of Leipzig or Dresden. In other cases, both the city and the surrounding regions have had net inward migration as in the case of Munich or Berlin. Other cities have lost population due to outward migration, as in the case of Bremen or Chemnitz where population has also fallen in the surrounding regions. In France, all but one of the NUTS 3 regions in Ile de France have lost population because of outward migration, while population declined in Copenhagen and the surrounding region as well.

Map 1.54: Net migration into NUTS 3 regions, 2001-2007

Map 1.55: Natural population growth, 2001-2007

The natural change in population was negative in almost two-thirds of NUTS 3 regions between 2001 and 2007 (Map 1.55). This was especially so in the Baltic States, Romania, Bulgaria, Hungary, Czech Republic,

Germany, Portugal and parts of Italy, Spain and France On the other hand, there was for the most part natural growth in Ireland and the Netherlands.

As the main determinant of population change in the EU is migration, differences in the overall population change between regions largely reflect the extent of this. Only one in five regions with net outward migration have had high enough natural population growth to prevent population from falling. On the other hand, in only two out of five regions with a natural decline in population, net inward migration has been large enough to avoid an overall reduction.

Table 1. 10 Population change, natural change and migration according to the urban-rural typology, 2001-2007

2001-2007	Predominantly Urban	Intermediate	Predominantly Rural	Total
average annual change in ‰	EU-12			
Total population change	0.4	-1.1	-3.3	-2.5
Natural population change	-1.8	-1.2	-1.8	-1.6
Net migration	2.2	0.1	-1.6	-0.9
	EU-15			
Total population change	5.9	5.6	3.6	5.3
Natural population change	2.1	0.5	-0.5	1.0
Net migration	3.8	5.1	4.2	4.2
	EU-27			
Total population change	5.3	4.1	1.1	3.6
Natural population change	1.7	0.1	-1.0	0.6
Net migration	3.6	4.0	2.1	2.9

Source: Eurostat, DG REGIO

Table 1. 11 Population age structure by type of region, 2007

2007	Predominantly Urban	Intermediate	Predominantly Rural	Total
as % of total population	EU-12			
population aged 14 or less	13.4	15.4	16.1	15.4
population aged 65 or more	14.8	14.2	14.7	14.6
	EU-15			
population aged 14 or less	16.2	15.7	15.7	16.0
population aged 65 or more	16.4	18.1	19.4	17.6
	EU-27			
population aged 14 or less	15.9	15.6	15.9	15.8
population aged 65 or more	16.3	17.2	17.7	17.0

Source: Eurostat, DG REGIO

Population trends in predominantly rural regions in the EU-15 and the EU-12 follow distinct patterns (Table 1.10). In the EU-15, predominantly rural regions on average experienced population growth over the period 2001-2007 because of net inward migration, which was higher than in predominantly urban regions. There was a natural decline in population, however, in predominantly rural regions.

In the EU-12, population declined in predominantly rural regions due to a combination of a natural reduction, which also occurred in predominantly urban regions, and net outward migration, while there was net inward migration in predominantly urban regions.

In the EU-12, the population under 15 represents a much larger share of the total in predominantly rural regions than in predominantly urban ones: 16.1% as opposed 13.4%. In the EU-15, the share of population under 15 is half a percentage point larger in predominantly urban regions than in the other two regional types (Table 1.11). Population of 65 or over is fairly equally distributed across the three types of region in the EU-12, but in the EU-15 it represents a significantly larger share of the total in predominantly rural regions than in predominantly urban ones: 19.4% as against 16.4%.

Trends in predominantly rural regions in the EU-12 and the EU-15 tend go in opposite directions: population decline in one, population growth in the other, high outward migration in one, high inward migration in the other, a large share of children in one, a large share of older people in the other. Accordingly, the EU-27 figures in which these opposing trends are present show a much less clear picture of demographic trends in predominantly rural regions.

Map 1.56: Total population change, 2001-2007

Box : Islands

Over 21 million people – 4.3% of EU population – lived in island regions⁵⁹ in 2007. Between 2000 and 2007, island population grew by around 1.1% a year, almost three times the EU average growth rate. Islands can be divided into three broad geographical areas, the Atlantic, the North and the Mediterranean. However, they differ markedly in their population size, ranging from 6.1 million people in Ireland to only 10 000 in El Hierro in Spain, which makes comparisons between them very difficult.

The rate of population growth was particularly high between 2000 and 2007 in small and medium-sized islands, of up to 1.6% a year, though population growth has more to do with the location of the islands than their size. The highest growth was in Fuerteventura in Canarias (5.6% a year) and Lanzarote (4.8% a year). By contrast, population in Bornholm in Denmark fell by 0.5% a year.

Most of the increase in population in most regions is due to net inward migration and in many small islands, population would have fallen in the absence of migration.

The proportion of older people of 65 and over is highest in the smaller southern islands, which, to some extent, reflects the inward movement of people to retire.

As underlined by a recent study⁶⁰, islands face challenges to their ecosystems. A number of islands have rich and diversified natural assets, notably those in the Mediterranean. However, these assets are generally fragile and under various pressures, such as from urban

⁵⁹ Formally, island regions are defined as one or more NUTS3 regions which consist entirely of one or more islands. In practice, this definition covers islands with more than one NUTS 3 region (e.g. Sicily), islands corresponding to one NUTS 3 region (e.g. Gozo) and NUTS 3 regions with several islands (e.g. Kyklades). It does not include NUTS 3 regions with a major continental part in which the island population is marginal. In addition, islands with a fixed link to the mainland such as a bridge, tunnel or a dyke are not included.

⁶⁰ ESPON 2013 Programme, *The Development of the Islands – European Islands and Cohesion Policy*, Targeted analysis 2013/2/2, Interim Report, 2010.

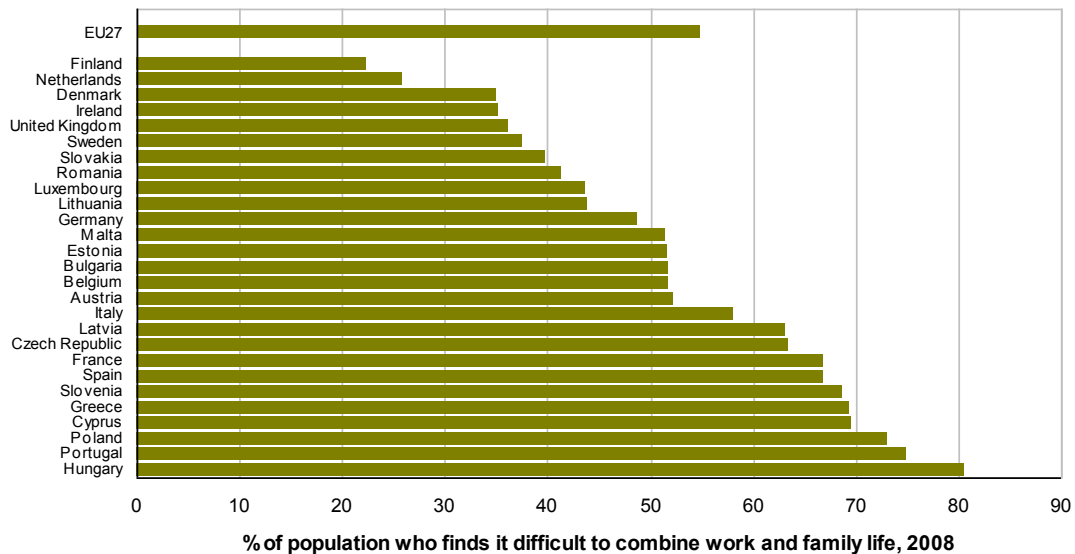
sprawl, tourism and the construction of second homes, shortage of water, fires, soil erosion and pollution of the sea. Climate change is also a concern since islands tend to be more vulnerable than the mainland to extreme climatic conditions and rises in the sea level.

2.2.3. Work life balance

According to survey evidence, half of the people in the EU find it difficult to combine work and family, one in seven very difficult (Figure 1.22). The proportion varies markedly between countries. In Finland and the Netherlands, less than one in four reported difficulty, whereas in Hungary and Portugal, it was three out of four.

In general, women find combining work and family more difficult than men (55% as against 46%) because childcare responsibilities tend to fall on them. Lone parents reported most difficulty, as might be expected (49% of men and 57% of women). The differences between different types of household, however, though significant, are considerably smaller than those between countries.

Figure 1- 22
Work-life balance in 2008



Flash Eurobarometer 247

Long working days are one of the main reasons for difficulties. In less developed countries, people tend to work longer hours than elsewhere, possibly to compensate for lower hourly wages. Accordingly, it is mostly in the less developed EU Member States that people report the most difficulties. There are, however, exceptions, such as Slovakia, where only 44% reported a difficulty as against an EU average of 55% and 67% in Spain.

2.2.4. (Un)Equal Opportunities

An inclusive society means non-discrimination against minorities. The 6th Progress Report showed that in several Member States, people are not comfortable with a neighbour or someone in the highest elected political position being of different ethnic origin or, having a different religion or belief, a different sexual orientation or a disability. Discrimination on all of these grounds is prohibited in the EU⁶¹. A survey conducted in 2008⁶² revealed that in 17 Member States, people felt that at least one type of discrimination was more widespread than five years earlier. In almost all cases, this included ethnic discrimination, but also in many, discrimination on grounds of religion, sexual orientation or gender.

2.2.4.1. Gender

Overall in the EU, the unemployment rate of women in 2008 was almost one percentage point higher than for men. In 29 regions, however, unemployment of women was 5 percentage points or more higher than for men. These regions were predominantly in Greece, Spain and Italy (Map 1.57). These differences, moreover, had nothing to do with differences in education attainment.

Map 1.57: Difference between female and male unemployment rates, 2008

Map 1.58: Difference between female and male employment rates, 20-64, 2008

In 2008, women had a lower employment rate than men in every single region of the EU. The Lisbon employment target for women was also some 20 percentage points lower than for men. In 2008, 33 regions had a gap in employment rates between men and women of over 20 percentage points. Again, these were mainly regions in Greece, Spain and Italy (Map 1.58).

In terms of education levels, however, women out-perform men in most regions. In the EU, for every 100 men aged 25-64 with a tertiary education, there are 105 women. For those aged 25-34, there are 126 women with tertiary education per 100 men (Map 1.60), compared to only 80 for women aged 55-64 (Map 1.59). This tendency is equally evident at regional level. In two-thirds of regions, more women aged 25-64 have a higher education degree than men. For those aged 25-34, this is the case in almost 90% of regions, while for women aged 55-64 this is the case in only 27% of regions.

Map 1.59: Gender balance of population aged 55-64 with tertiary education, 2008

Map 1.60: Gender balance of population aged 25-34 with tertiary education, 2008

There are also, however, more women than men with only basic schooling. For every 100 men aged 25-64 who have not completed upper secondary

⁶¹ Art. 21 EU Charter of fundamental rights

⁶² Special Eurobarometer (269)

education, there are 110 women. Equally, in two-thirds of the regions, more women aged 25-64 have a low education than men.

Nevertheless, this situation has changed markedly over time. For every 100 men aged 25-34 who have not completed upper secondary education, there are only 83 women, and in only a third of the regions do more women than men have a low level of education

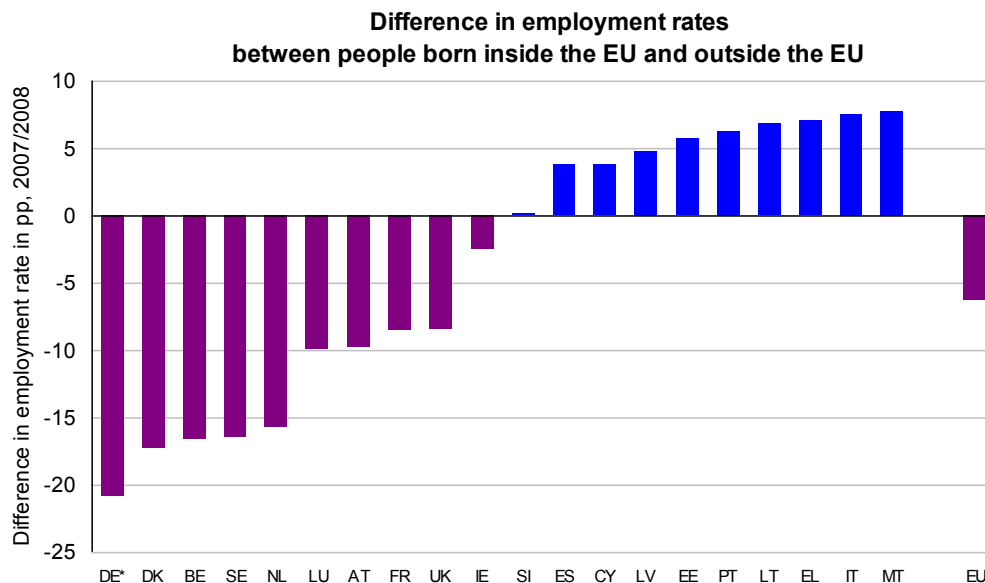
2.2.4.2. Foreign born

People born outside the EU – i.e. those with a migrant background – tend to have fewer employment opportunities than those born in the EU and often face cultural and linguistic barriers to working. On average, according to the Labour Force Survey (LFS), just under 7% of the working-age population in the EU was born outside the EU. The figure is above 10% in only one of every six regions, while in half it is less than 5%. In the Central and Eastern countries, apart from the Baltic States, the figures are very small (1% or less). The figures tend to be highest in the more developed regions and in large cities as well as in tourist regions (Map 1.61).

People born outside the EU tend to have lower employment rates in most Member States (Figure 1.23). In Germany, Denmark, Sweden, the Benelux, Austria, the UK and France, the employment rate of people aged 15-64 born outside the EU is at least 8 percentage points lower than those born inside the EU. However, in Portugal, Spain, Italy, Greece, Malta and Cyprus, as well as in the three Baltic States, the rate is 4 to 8 percentage points higher.

One reason for the higher rate in the latter countries may be that those born outside the EU tend to live in regions with relatively high employment rates. This explains more than half the difference in rates in Spain and more than a third of the difference in Italy, though in the other countries, it is not an explanation.

Figure 1- 23



Source: Eurostat * EU national and non EU national

Map 1.61 Population aged 15-64 born outside the EU, 2008

Map 1.62 US: Foreign-born population aged 18-64, 2008

The right to move freely within the EU means that people can move to where the jobs are or to where jobs are most attractive. People who have moved to the EU from the outside, however, tend to face longer distances and larger differences in job opportunities and the quality of life if they wish to return home.

Migrants from outside the EU also face more obstacles on the labour market than people moving between Member States. The average employment rate of those born outside the EU is, therefore, 6 percentage points lower than that of migrants born inside the EU.

As compared with the EU-15, the US has almost twice the share of people born abroad (16%). In California, one third of people aged 18-64 were born outside the US in 2008 (Map 1.62). The only region in the EU with a similar share is Inner London, though California has 37 million inhabitants, Inner London 3 million.

Elsewhere, in New York, New Jersey and Nevada, a quarter of the population is foreign born. In the EU, only Vienna, Brussels and Outer London have a share as large as this. In the US, only 6 relatively rural States have a foreign-born population which is less than 3% of the total⁶³. In the EU, 86 NUTS 2 regions, a third, have figures of less than 3%.

2.2.5. Access to services

Access to basic services, such as compulsory schools, primary health care and banking differ both between and within countries. Figures 1.24 –1.26 show countries ranked according to the proportion of population reporting difficulties accessing these services. The differences between countries are substantial. For compulsory schools, the proportion varies between 9% in Cyprus, Finland and Sweden to 24% in Portugal and Latvia. For banking services, they vary from 4% in the Netherlands to 56% in Romania. For primary health, the variation is between 6% in the UK and France to 35% in Latvia.

In addition to these differences, the graphs show the proportion of people reporting access difficulties by type of area (see box on Degree of urbanisation in Section 1.1). Access tends to be more difficult in the thinly populated areas, in particular. However, since the share of a country's population living in thinly populated areas ranges from zero to two-thirds, the bubble size in the graph is adjusted to reflect the share of the country's population having difficulty accessing the service living in this type of area.

For example, in Belgium, 32% of people living in thinly populated areas have difficulty in accessing primary health. However, as only 4% of

⁶³ Maine, Mississippi, Montana, North and South Dakota, and West Virginia.

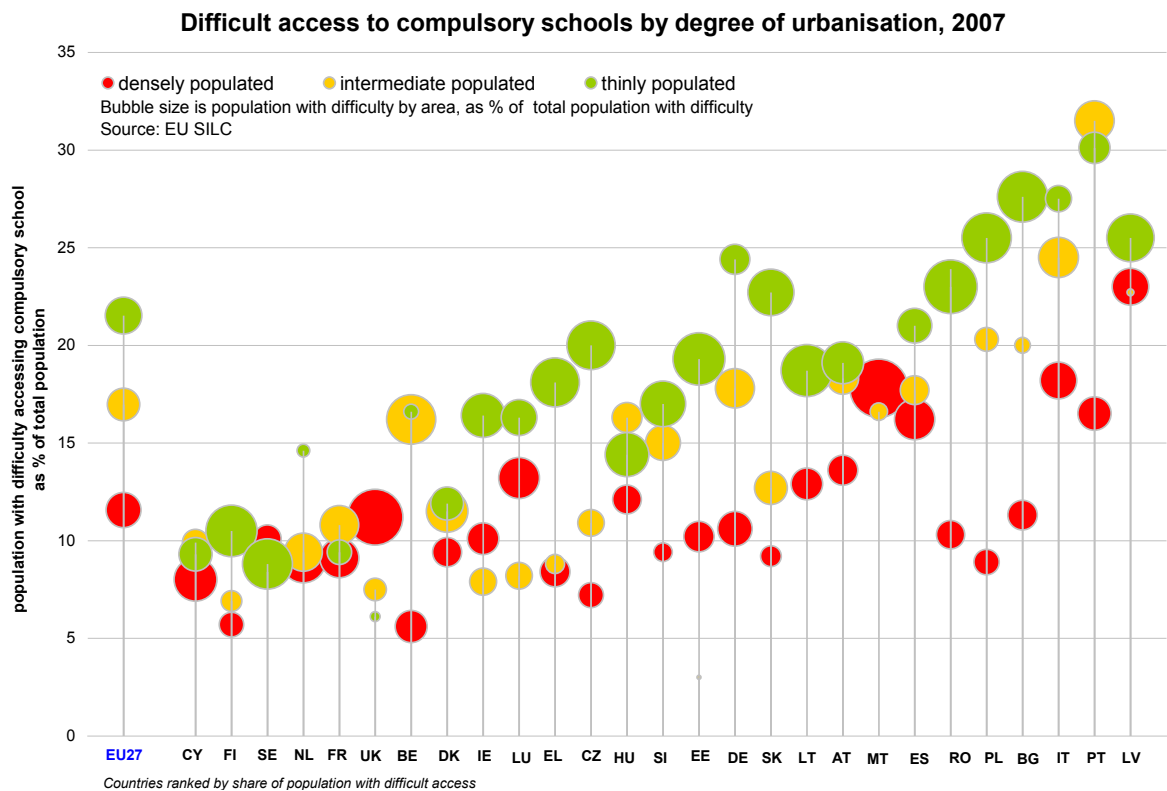
Belgium population live in thinly populated areas, the people with difficulty accessing primary health in such areas represent only 12% of the total in Belgium having this difficulty.

In some countries, there are negligible differences in the proportion reporting access difficulties between the three types of area. This is the case in France and the UK for access to primary health care.

The above figures, however, are based on what people report, i.e. their subjective views which may reflect their expectations about access, which in turn are likely to vary across countries according to what people are used to. Nor do they reveal why people are having difficulties, which may, for example, result from physical distance or a problem of affordability. Accordingly, the answers do not indicate what can be done to improve the situation.

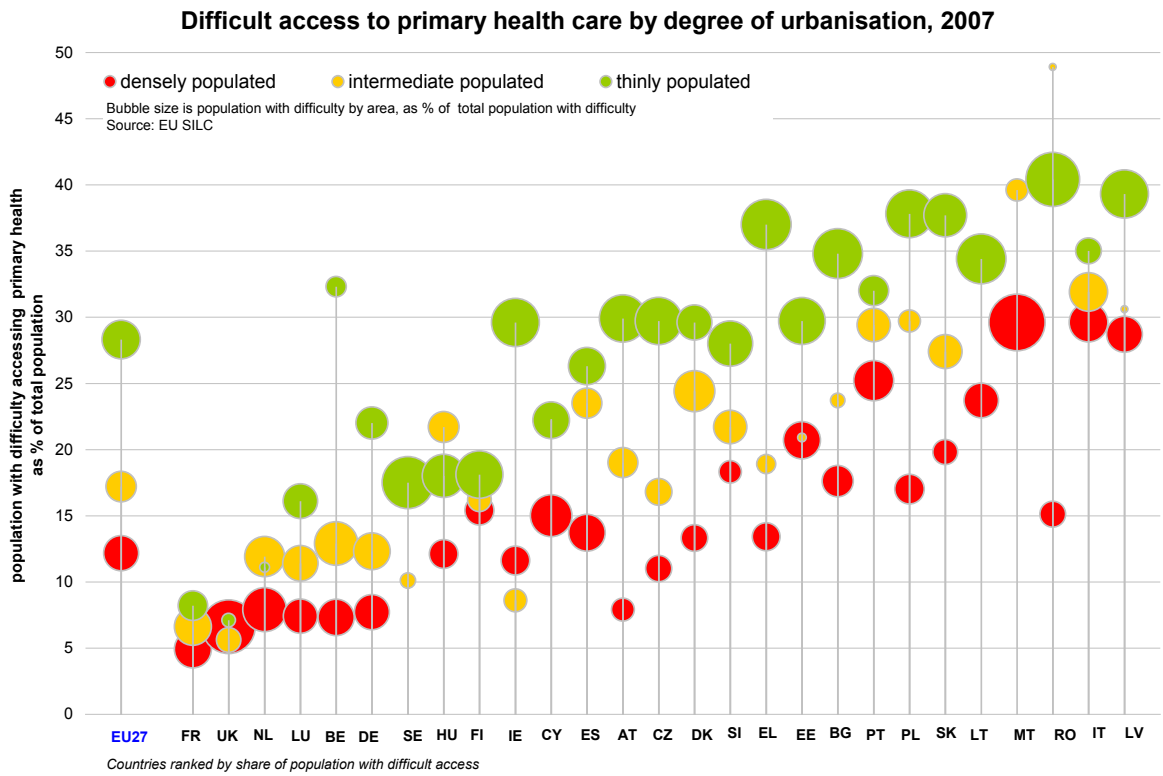
Policies with an overall equity objective will focus on the types of area where most people with difficulty live (the biggest bubble). Policies with a concern for territorial cohesion will also focus on reducing differences between the three types of area where these differences are large.

Figure 1- 24



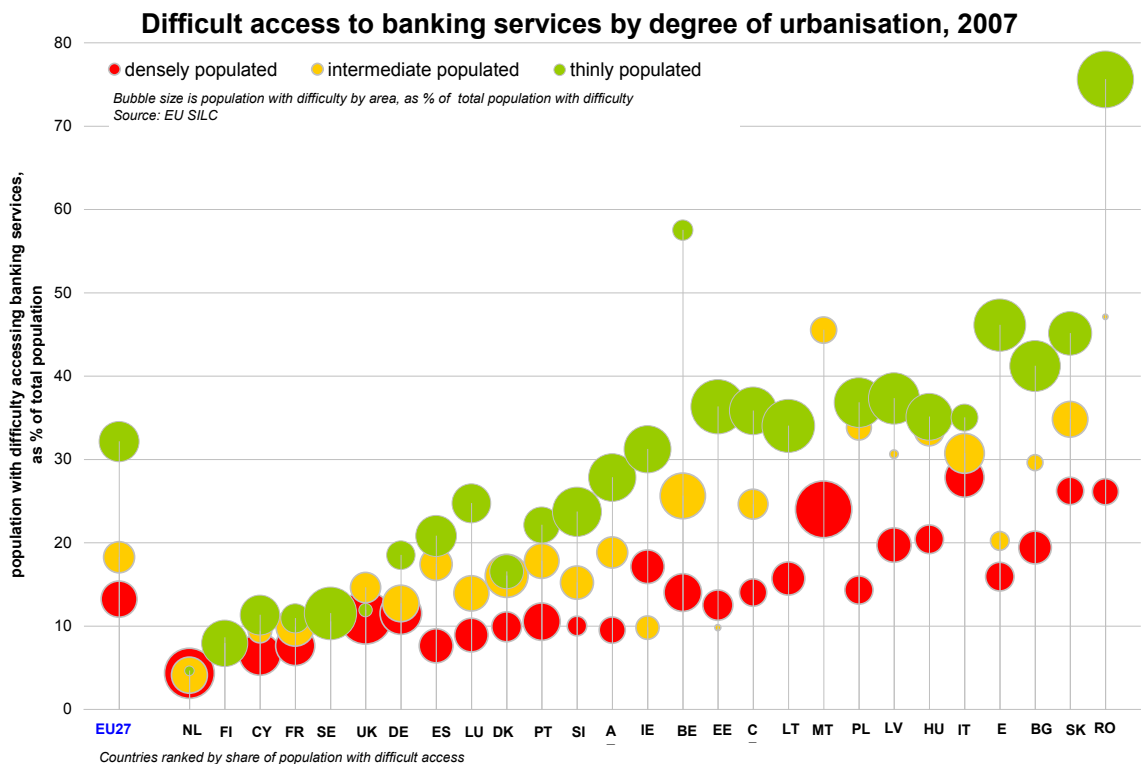
Source: Eurostat

Figure 1- 25



Source: Eurostat

Figure 1- 26



Source: Eurostat

Access to a grocery store is particularly relevant for the elderly, those with disabilities who cannot afford a car or live in a thinly populated area. A recent Commission Report⁶⁴ highlighted that residents of towns with less than 10 000 inhabitants were considerably less satisfied with their choice of shops in 2008. It indicated that the recent trend to establish small neighbourhood shops in towns and villages and a stronger e-commerce sector could help to address this lack of choice.

Box: Remote rural areas

Population in the remote rural regions in the EU – those some distance away from a town or city of any size - has tended to rise more slowly (in the EU-15) or decline faster (in the EU-12) than in rural regions close to a city (Map 1.63). In the EU-15, natural population growth in remote rural regions is less than in rural regions close to a city. Net inward migration, however, is similar. In Central and Eastern regions, by contrast, natural population has declined and there has been net outward migration rates in both types of region, but more so in the remote regions.

The effects of remoteness can also be seen in Mexico, Canada and the US (Map 1.64). In each case, population increased in rural regions close to a city, whereas it declined in remote regions in Mexico and Canada and grew by much less in the US.

Growth of GDP in rural regions in the EU-15 followed a different pattern. In 2000-2007, growth was higher in remote rural regions than in those close to a city (an increase of 0.5% as against only 0.1 %). In the EU-12 countries, both types of region grew more slowly than others regions, though more so for those close to a city.

In the EU-15, rural regions close to a city have a higher share of tertiary educated in working-age population (21%) as against 18% in remote regions. The share of people with a low education is much larger in remote rural regions (46%) than in those close to a city (33%). In the CEEC's, the differences in the levels of education are lower.

Employment also increased by more in remote rural regions in the EU-15 (1.4% a year) than in those close to a city (0.8% a year). As a result, the gap in employment rates between the two closed almost completely (65-66% in both). Employment in both types of region in the EU-12, however, declined at a similar rate, leaving the employment rate in remote rural regions (58%) lower than in those close to a city (61%). Remote rural regions, however, have larger shares of employment in agriculture, which, especially in the EU-12, includes a large share of subsistence farming.

Map 1.63: Urban-rural typology of NUTS3 regions including remoteness

Map 1.64: NAFTA: Urban-rural typology including remoteness

2.2.6. Safety and trust

Crime figures influence how safe people feel and levels of trust (Figure 1.27). Extensive media coverage of violent crime and murders, in particular, tends to feed feelings of insecurity, even when crime rates are declining.

⁶⁴ European Commission 2010 *Retail market monitoring report* COM(2010)355

Fortunately, murder rates tend to be low in the EU. In 20 Member States, rates are less than two murders per 100,000 inhabitants (Map 1.65). Only 6 EU regions had rates of 5 per 100,000 or higher. The three highest rates were in Lithuania, Estonia and Corsica at 8 or more per 100,000. In Member States, where consistent data are available, murder rates have declined or remained low over time. The only exception is Portugal, where murder rates have increased by almost 5% a year since 1998.

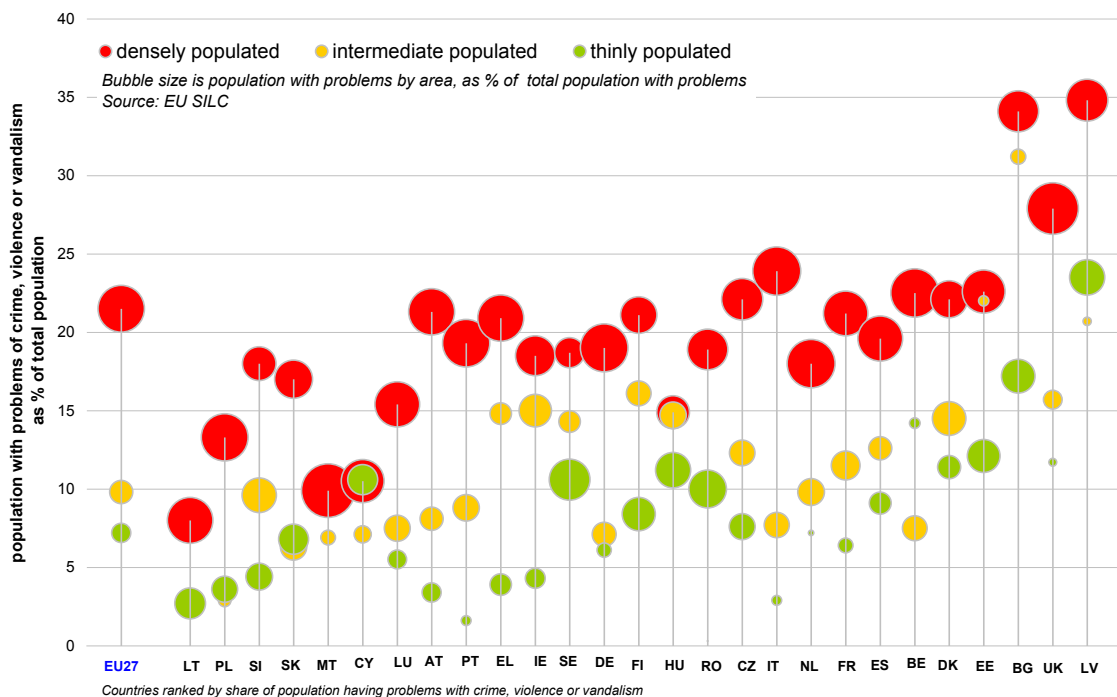
The US has a murder rate of 5.5 per 100,000, over three times the EU average. Only 7 of the 50 US States have a murder rate under two per 100,000 (Map 1.66), while in 25 States, i.e. half, the rate is 5 per 100,000 or higher. Explanations for this higher rate vary, though they include cultural differences, the heterogeneity of US society, higher poverty rates and the ease of access to firearms.

Map 1.65 : Homicide rate in the EU 2005

Map 1.66 : US: Homicide rate in the US 2006-2008

Figure 1- 27

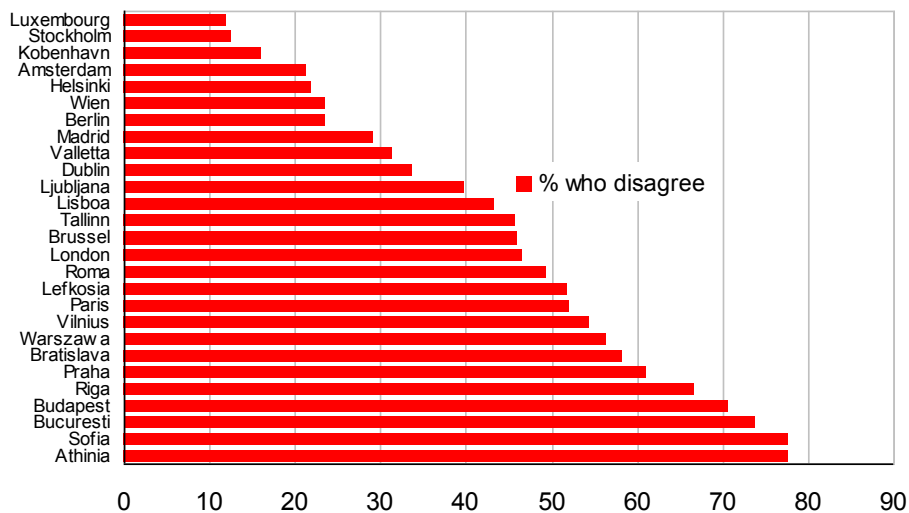
Crime, violence or vandalism by degree of urbanisation, 2008



Problems related to crime, violence and vandalism are concentrated in densely populated areas, where on average one in five people report such problems. In intermediate areas, only one in ten reports problems and in thinly populated areas, even fewer (Figure 1.28). Problems relating to noise and pollution are also much more often reported in densely populated areas than in others.

Figure 1- 28

Generally speaking, most people in this city can be trusted, 2009.



Source: Urban Audit Perception Survey

Box: The Urban Audit Perception Survey⁶⁵

The Urban Audit Perception Survey measures the satisfaction of the residents of 75 European cities. Here, their responses to 7 indicators are examined for 16 cities to illustrate the situation across the EU. Interviewees were asked to judge their satisfaction of the following features of the cities in which they lived: public transport, air quality, safety, quality of city government, job opportunities, cost and availability of housing and integration of foreigners. The results are plotted in cobweb (Figure 1.29) and compared with the median satisfaction in the EU.

Satisfaction, it should be noted, is not an absolute indicator but a relative measure comparing the perceptions of residents with what they expect. For instance, those in small cities might be very satisfied with basic public transport services whereas those in large cities might expect more.

Indeed, the size of the city is especially relevant. Air quality, for example, tends to be an issue only in bigger cities. Similarly, the cost and availability of housing are much more issues in large cities, especially capitals, than smaller ones.

This is confirmed by the examples of Rostock, Groningen, Leipzig and Piatra Neamt which recorded very high levels of satisfaction with both air quality and housing availability.

The problems of poor air quality and housing availability in big cities are usually counterbalanced in part by more job opportunities. This is the case, for example, in Paris, London and Warsaw, where overall satisfaction is similar to the EU average.

Some smaller capital cities - Wien, Stockholm and Helsinki - record higher satisfaction in the quality of government and people there are generally more

⁶⁵ The Urban Audit Perception Survey on quality of life in European cities was conducted in 2009 to measure the perceptions of quality of life in 75 cities in the EU, Croatia and Turkey. A previous survey was done in 2006. http://ec.europa.eu/regional_policy/themes/urban/audit/index_en.htm

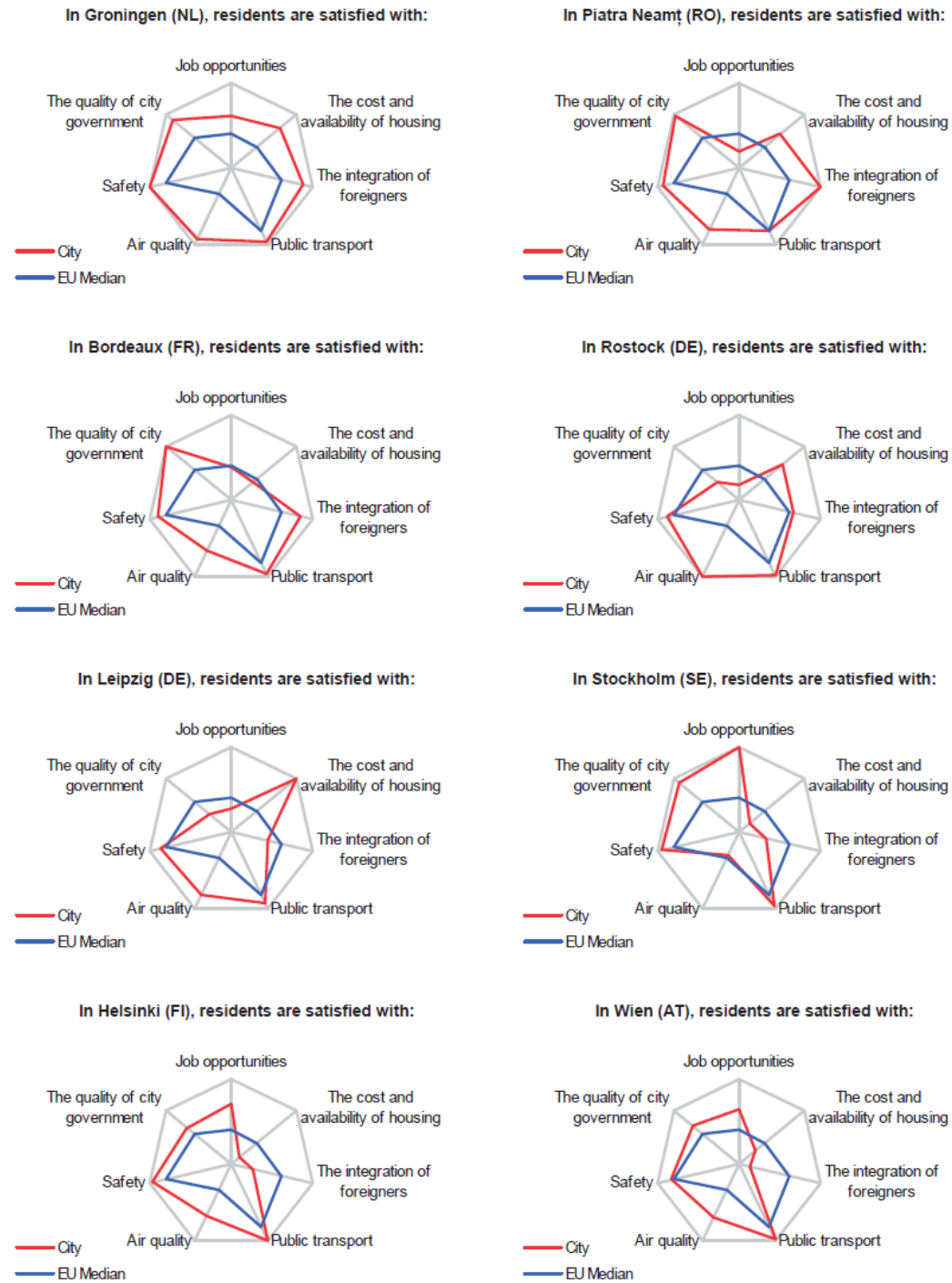
satisfied than in other capitals.

Residents of Budapest and Sofia are particularly dissatisfied with the city government, safety and air quality, while those in Athens report being very dissatisfied on most counts, only public transport and housing registering similar levels of satisfaction as the EU average (investment for the Olympic Games might be relevant here).

Satisfaction levels in smaller cities, except for air quality and housing, reflect their specific features. Groningen and Piatra Neamt have the most satisfied residents, Palermo the least, with Athens just above.

Figure 1- 29: Level of satisfaction of residents with aspects of quality of life in selected cities, 2009

Level of satisfaction of residents with aspects of quality of life in selected cities, 2009



Cities are ranked from low to high scoring. Centre of the graph is the lowest city score and graph edge is the highest score in the survey.
Source: Urban Audit Perception Survey

Level of satisfaction of residents with aspects of quality of life in selected cities, 2009

In Warszawa (PL), residents are satisfied with:



In London (UK), residents are satisfied with:



In Paris (FR), residents are satisfied with:



In Madrid (ES), residents are satisfied with:



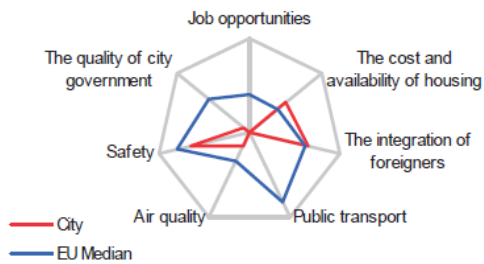
In Sofia (BG), residents are satisfied with:



In Budapest (HU), residents are satisfied with:



In Palermo (IT), residents are satisfied with:



In Athina (GR), residents are satisfied with:



Cities are ranked from low to high scoring. Centre of the graph is the lowest city score and graph edge is the highest score in the survey.
Source: Urban Audit Perception Survey

2.3. Income, poverty and deprivation

2.3.1. *Income and transfers in kind*

Comparing household income between countries simply in monetary terms is distorted because of the failure to take account of the services financed or subsidised by government (benefits or transfers in kind), such as healthcare, education and child and elderly care.

Net adjusted disposable household income (Map 1.67) corrects for these differences in transfers in kind as recommended by the Stiglitz-Sen-Fitoussi report. This is critical since it adds an estimated 43% and 39% to net disposable household income in Denmark and Sweden, compared to only 3% in Slovenia and 11% in Greece. In most Member States transfers in kind are estimated to add between 15% and 25% to net disposable household income.

Map 1.67: Net adjusted disposable income of private households (PPCS), 2007

Without this type of adjustment, household income is underestimated in countries with extensive public services (like the Nordic Member States) and overestimated in those where households have to pay for most of these services out of their disposable income.

Disparities in net adjusted household income between regions across the EU are less than for GDP per head, but remain substantial. For example, almost all regions in Romania and Bulgaria have an income below a third of the EU average, while 11 regions in the EU-15 have an income over a third above the EU average.

Box: GDP differs from income

GDP per head is often used as a proxy for income, regions with a high GDP per head being regarded as prosperous. GDP per head, however, is a poor proxy for household income.

Differences in GDP per head explain only 60% of the variation in net adjusted disposable household income. The difference in the ranking of regions is also large. The ranking of 17 regions is 100 places higher on one measure than the other. The ranking of 66 regions changes by more than 50 places. For example, the Brussels Region has the third highest GDP per head in the EU but is ranked only 142nd in terms of adjusted disposable household income per head (Map 1.4). In many regions, therefore GDP per head does not reflect the relative level of household income.

The top five NUTS 2 regions with the highest GDP per head include four where inward commuting inflates GDP per head significantly. As accurate data on commuting flows are not available, much of the distortion they create can be corrected by calculating the figure for the entire metropolitan region (i.e. including some of the surrounding NUTS 2 regions from which commuting emanates) to provide a more accurate estimate of their economic activity relative to their

population. For example, Inner London has a GDP per head of 336% of the EU average, while for the London metro region it is 164% of the average, for Brussels, it is 233%, while for the Brussels Metro region it is 147% and for Hamburg, 200% and 154%, respectively.

Income is also not identical to GDP. In two Member States, the difference is particularly large. Ireland has the second highest GDP per head in the EU, but its gross national income (GNI) per head is 14% lower and only the 8th highest in the EU. Luxembourg's GNI is 25% lower than its GDP. The main difference between the two measures is that GNI takes account of the income of companies sent to and received from abroad, as well as transfers of individuals, and excludes the compensation of employees living outside the country (and so corrects for the impact of commuting).

In 2006, 17% of Luxembourg's GDP consisted of compensation of employees living outside Luxembourg. The same differences apply at regional level but regional figures for gross income are not available. In many regions, however, it is likely that a substantial share of the economic wealth generated there goes to other regions and countries.

The adjustments for transfers in kind are currently only available for 23 Member States. Moreover, transfers in kind cannot be assigned to specific households. Accordingly, at-risk-of-poverty rates do not take these transfers into account. There is also no information about the regional distribution of transfers in kind – the estimates presented here assume that this is in line with the distribution of population.

2.3.1.1. Housing costs not included in income or at-risk-of-poverty rates

One of the main determinants of people's well-being and social participation is access to affordable and decent housing. Indeed, according to a recent Eurobarometer survey, for 26% of people in the EU the fact that decent housing is too expensive is the main reason why people are poor. People with incomes below the poverty threshold⁶⁶ also spend more on housing in relative terms than those above (on average in the EU 33% of disposable income as opposed to 17%) and 39% of them report that housing costs are a burden (against 7% for those above the poverty threshold). They live in worse housing conditions as well, some 27% living in overcrowded accommodation, as opposed to 15% of the rest of the population and 38% of them are affected by at least one of the housing deprivation factors⁶⁷.

⁶⁶ Measured conventionally as 60% of median equivalised disposable household income in each country ('equivalised' meaning that an adjustment is made for the size and composition of households). Those with income below 60% of the median are referred to as being at risk of poverty.

⁶⁷ Housing deprivation factors include: damp walls, leaking roofs or rot in windows, no bath or shower in the dwelling; no indoor flushing toilet for the sole use of the household; dwelling too dark. For a full analysis of housing costs and housing deprivation, see the supporting document to the 2010 Joint Report on Social Protection and Social Exclusion: <http://ec.europa.eu/social/main.jsp?catId=757&langId=en> and the 2009 Social Situation Report <http://ec.europa.eu/social/main.jsp?catId=501&langId=en>

Housing costs are at present not taken into account at EU level and in most countries in the measure of the risk of poverty.

2.3.2. *Relative poverty: at-risk-of-poverty income relative to the national median income*

In 2008, 17% of the EU population had an income after social transfers below 60% of median disposable income in the country in which they live – the at-risk-of-poverty rate. The rate was 20% for children and 19% for older people of 65 and over. For the unemployed, the rate was much higher at 44%.

Regional differences are also pronounced. Those at risk of poverty range from below 6% of the population in Trento, Praha and Jihozápadat to over 35% in Ceuta and Extremadura in Spain and Campania, Sicilia and Calabria in Italy (Map 1.68).

Map 1.68: Population at-risk-of-poverty after social transfers, 2008

Within a country, the level of regional development has a substantial effect on the risk of poverty. Less developed regions tend to have the highest rates, whereas the most developed regions tend to have much lower rates. This can be clearly seen in the UK, Spain, Italy and Germany.

In some countries, the capital city region has a lower poverty rate than the national average, as in Spain, Portugal, Slovakia, the Czech Republic, Poland, Finland and Sweden. In others, the capital region has a higher rate, as in Brussels, London, Vienna and Berlin. In all four cases, this may reflect a concentration of those at risk of poverty in deprived inner city areas.

The at-risk-of-poverty rate is measured against a national benchmark, which varies greatly across the EU. If adjusted for differences in the cost of living (values expressed in purchasing power standards), the poverty threshold for a single-person household varies from about PPS 1900 a year in Romania, PPS 2800 in Bulgaria and around PPS 4000 in Poland, Hungary and Slovakia to over PPS 10 000 in 10 Member States and PPS 16 500 in Luxembourg. The poverty threshold is, therefore, 4-5 times higher in the countries with the highest income levels than in those with the lowest levels. Being at risk of poverty, therefore, means having a very different income level in the former than in the latter.

2.3.3. *Absolute poverty: material deprivation*

Measuring material deprivation rather than the risk of poverty is a means of taking account of these differences in absolute income, since it is measured in relation to a common set of goods and services. It is defined for comparison purposes as the enforced lack of at least three of the nine following items: ability to face unexpected expenses, ability to pay for a one week annual holiday away from home, existence of arrears on bills (mortgage or rent payments, utility bills, or hire purchase instalments or other loan payments), capacity to have a meal with meat, chicken or fish every second day, capacity to keep the home adequately warm, ability to afford a washing machine, colour TV, telephone or car.

As such, it takes account of savings and accumulated wealth; which the at-risk-of-poverty rate does not and which means that a household will not necessarily experience material deprivation if their income drops below the poverty threshold. It also takes account of people's ability to manage their finances⁶⁸. Some households with a relatively high income may still experience material deprivation because they fail to manage their finances properly.

Some 17% of people in the EU were measured as being materially deprived in 2008 according to this indicator. The figure, however, is very much higher in the lower income countries than in the more prosperous ones. In the EU-15, the proportion of materially deprived is much larger in Portugal and Greece (22% in each) than the EU-15 average (13%).

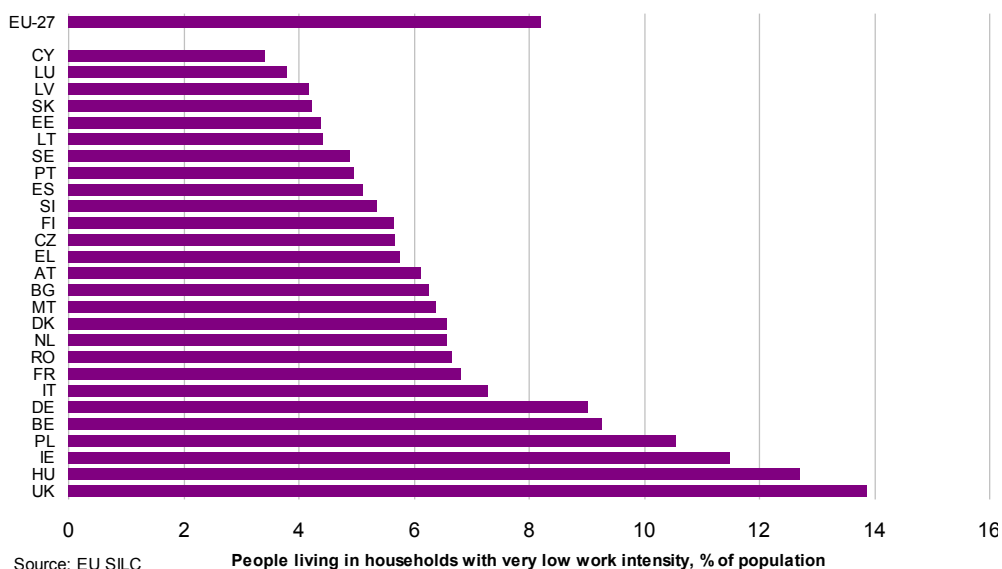
The Europe-2020 objective⁶⁹ is to lift 20 million people out of a risk of poverty and exclusion. The indicator chosen covers the number of people who are either at risk-of-poverty and/or severely materially deprived and/or living in households with very low work intensity.

Map 1.69: Population suffering from severe material deprivation, 2008

Severe materially deprivation (being unable to afford at least 4 of the 9 items listed above) differs considerably between Member States. Less than 2% of the population in Luxembourg, Sweden, the Netherlands and Denmark are severely materially deprived, while in Romania and Bulgaria, the proportion is over 30% (Map 1.69).

Figure 1- 30

Workless households, 2008



⁶⁸ OECD *Improving Financial Literacy: Analysis of Issues and Policies*. OECD, Paris, 2005.

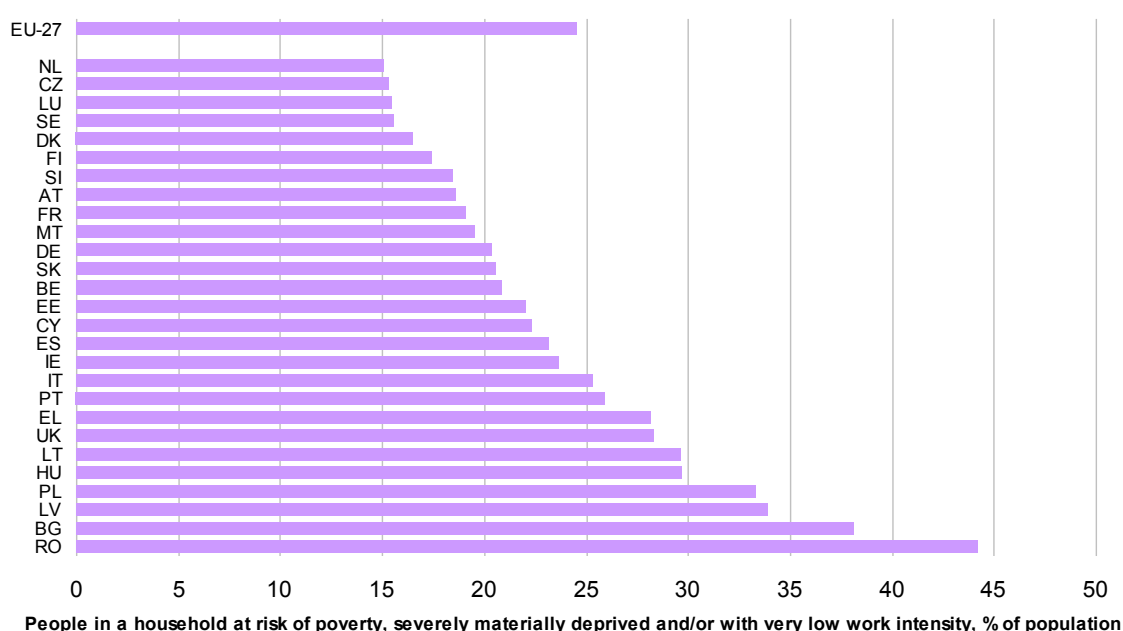
⁶⁹ Member States can propose indicators suited to their circumstances and priorities.

The share of people in households with a very low work intensity in most Member States ranges between 4% and 7%. In Hungary and the UK, however, it was over 12% in 2008 (Figure 1.30).

The combination of the three criteria used in Europe 2020 classifies almost one in four EU residents as at-risk-of-poverty or exclusion (Figure 1.31). This share of population varies considerably between just over 15% in the Netherlands, the Czech Republic and Luxembourg to 38% in Bulgaria and 44% in Romania.

Figure 1- 31

People at-risk-of-poverty or exclusion, 2008



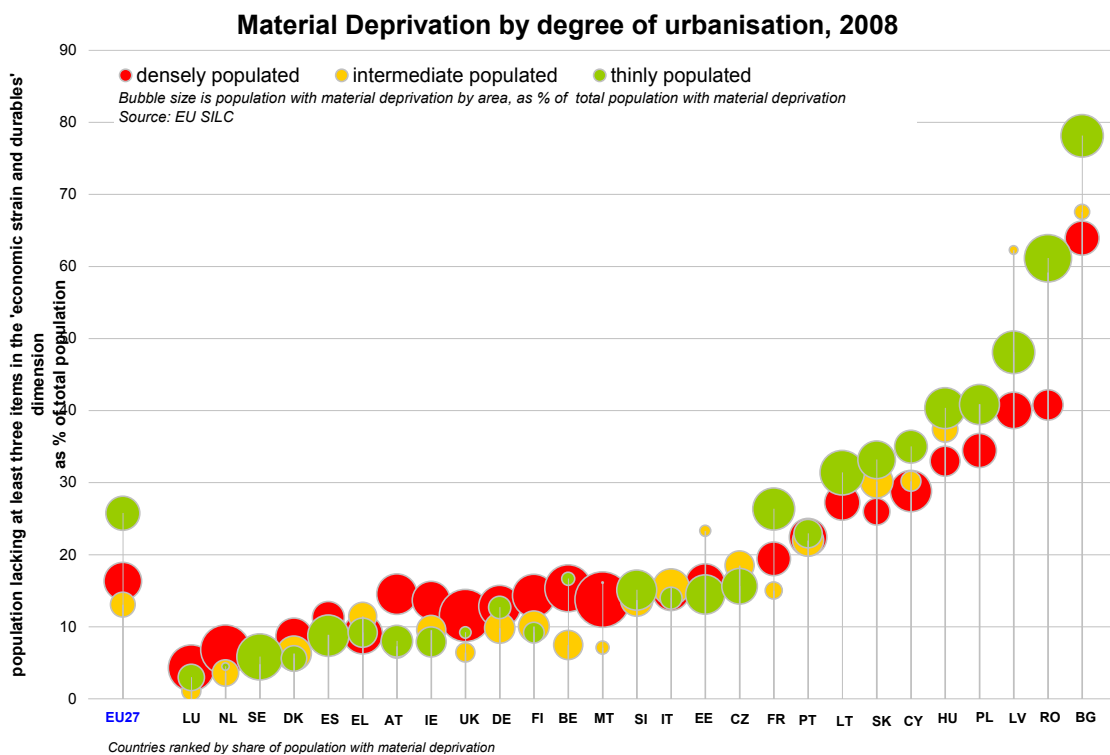
2.3.4. Deprivation and poverty by degree of urbanisation

The share of population experiencing material deprivation is considerably higher in thinly populated areas in Romania and Bulgaria than in other parts of the two countries (20 and 14 percentage points higher). In most Member States, however, material deprivation is the same or lower in such areas (Figure 1.32). This is particularly so in countries with relatively low rates of material deprivation. As material deprivation declines, therefore, it appears that the disadvantages of living in a thinly populated area diminish to such an extent that it becomes more prominent in densely populated areas. For severe material deprivation, this pattern is even stronger: in two out of three Member States severe material deprivation is higher in densely populated areas than in thinly populated ones (Figure 1.33).

A similar pattern is evident for the share of population that lacks the capacity to face unexpected financial expenses (Figure 1.34). Significantly higher rates in thinly populated areas occur mostly in Central and Eastern Member States. In Western Member States, the rates in these areas are in general lower than elsewhere and are higher in densely populated areas.

The share of population with income below the poverty threshold shows a similar pattern but less uniformly (Figure 1.35). This indicator, however, suffers from a number of drawbacks when comparing across areas by degree of urbanisation, since it does not take account of differences in living costs or whether a household owns or rents its home. Since the cost of living is on average higher in densely populated areas⁷⁰ and more households rent their accommodation, the share of people at-risk-of-poverty may well be higher in densely populated areas than is shown in the chart once income is adjusted for these differences.

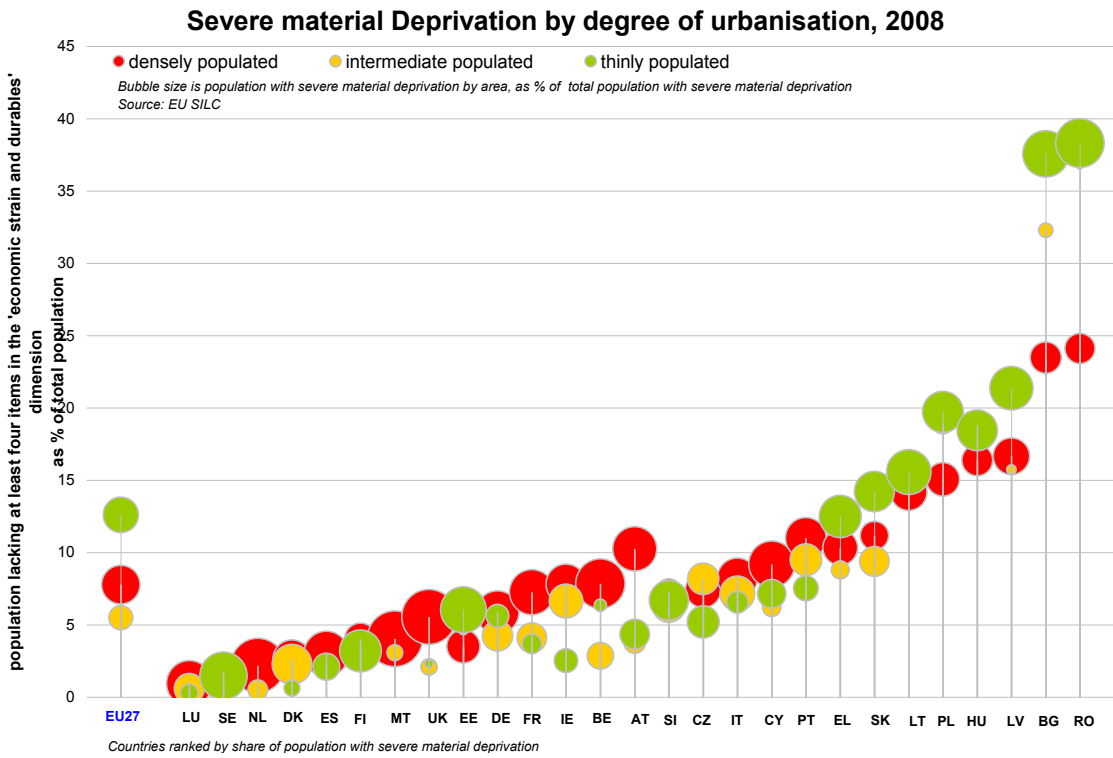
Figure 1- 32



Source: Eurostat

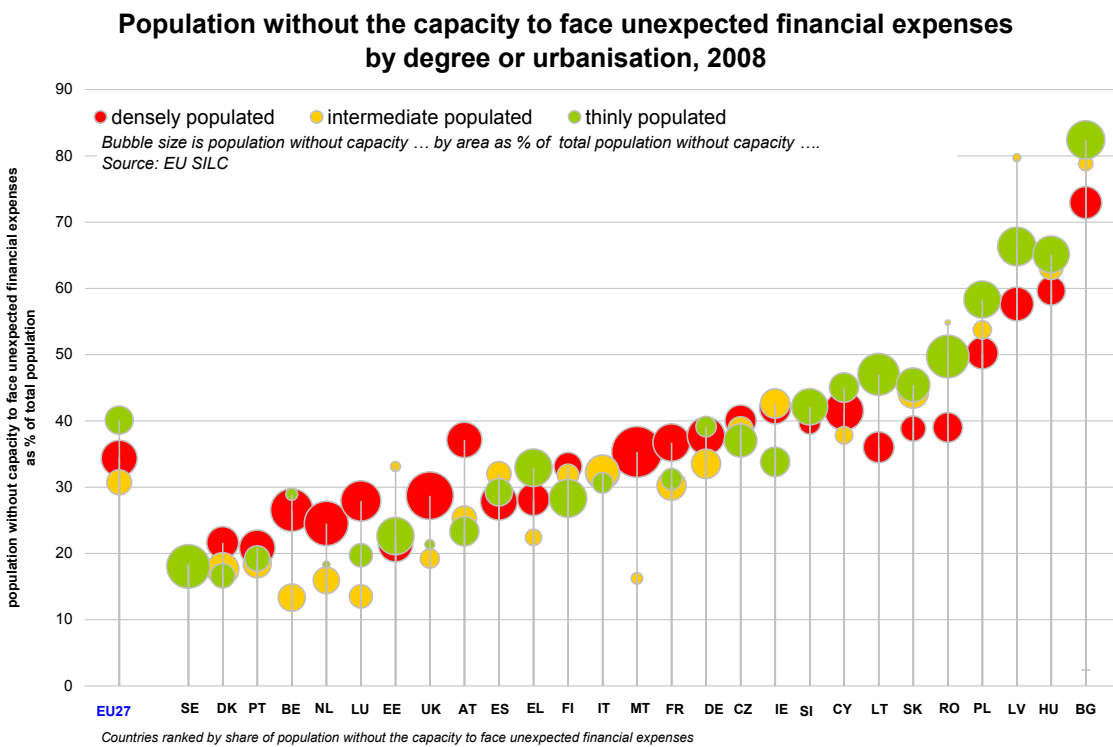
Figure 1- 33

⁷⁰ See for example the *Regional Price Index* as calculated by the German Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR www.bbsr.bund.be).



Source: Eurostat

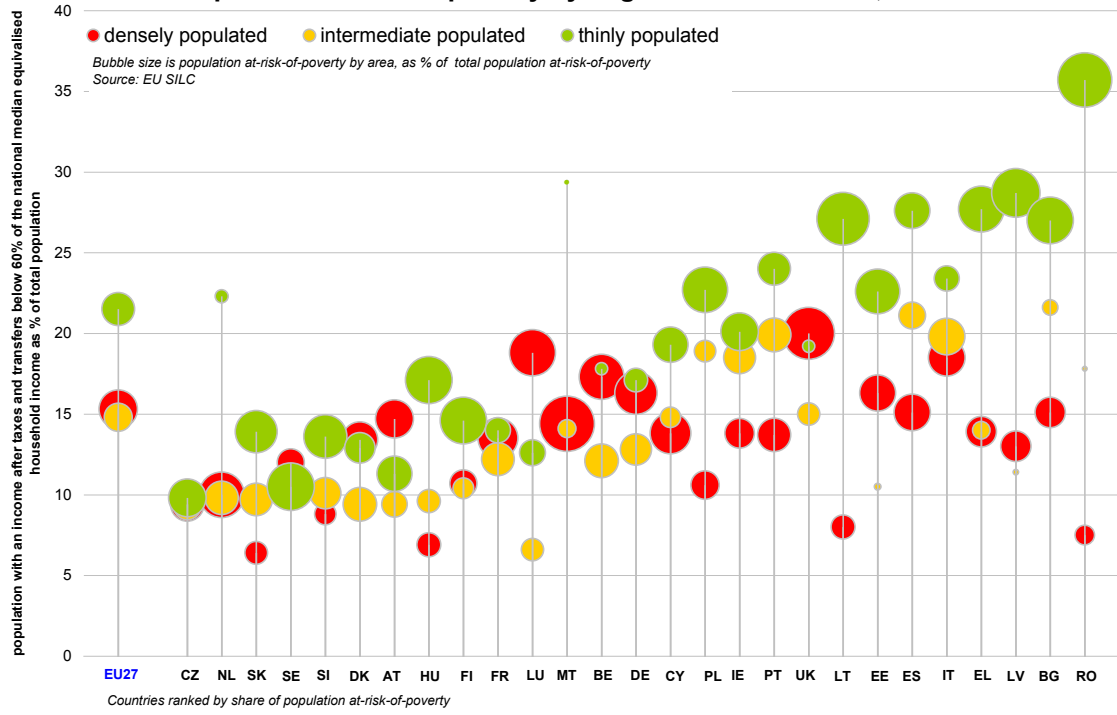
Figure 1- 34



Source: Eurostat

Figure 1- 35

Population at-risk-of-poverty by degree of urbanisation, 2008



Source: Eurostat

**Box on Changes in material deprivation,
at-risk-of-poverty and income in five less developed MS**

In Poland, Slovakia and the three Baltic States, the share of population experiencing material deprivation declined by between 15 and 25 percentage points between 2005 and 2008 (though the crisis may lead to renewed increases, especially in the three Baltic States). Given that average net adjusted household income (i.e. allowing for transfers in kind) per person increased by between 15% and 34%, over these three years, the highest rises in the EU, this should come as no surprise (Table 1.12).

Table 1.12

Changes in material deprivation and net household income in five less developed Member States, 2005-2008

	Material deprivation			Net adjusted household income		
	% of total population		percentage point change	PPCS per inhabitant*		In real terms
	2005	2008	2005-2008	2005	2008	Change in % 2005-2008
Estonia	27	12	-15	7,476	9,773	28
Latvia	56	35	-21	6,797	9,585	34
Lithuania	52	27	-25	7,980	10,519	28
Hungary	40	37	-3	9,704	10,122	-2
Poland	51	32	-19	7,986	10,007	15
Slovakia	43	28	-15	8,342	10,933	19

* Purchasing power standard for consumers' expenditure

Source: Eurostat

However, only in Poland and Slovakia was there a reduction in the at-risk-of-poverty rate. In part, the failure of the rate to fall in the other countries is due to rising average income, which increased the poverty threshold significantly each year. Relative to the poverty threshold anchored in 2005, however, the share of population at risk of poverty halved in all 5 countries (Table 1.13).

Table 1.13

	At-risk-of-poverty rate, in % of total population				
	2005	2008	Change in pp 2008-05	2008, relative to 2005 threshold	Change in pp 2008-05
Estonia	18	19	1	5	-13
Latvia	19	26	7	7	-12
Lithuania	21	20	-1	5	-16
Hungary	13	12	-1	9	-4
Poland	21	17	-4	8	-13
Slovakia	13	11	-2	5	-8

In Hungary, the share of population measured as being material deprived fell by only 3 percentage points over the period, from 40% to 37%. In 2005, it had the second lowest rate of these six countries. In 2008, it had the highest rate. Over the period, real disposable household income actually diminished, which is the main reason for the small fall. By 2008, therefore, income had declined below that in Slovakia and Lithuania.

The question arises as to whether the rise in income in the 5 countries listed above led to an increase in happiness or satisfaction with life. Although the periods do not precisely correspond, there are clear signs of increases in happiness in all of them. In Hungary, however, both happiness and satisfaction with life declined (Table 1.14).

Table 1. 14

	Happiness index			Life Satisfaction index		
	2003	2007	Change 2007-03	2003	2007	Change 2007-03
Estonia	6.8	7.4	0.6	5.9	6.7	0.8
Lithuania	6.4	7.3	0.9	5.4	6.3	0.9
Latvia	6.4	6.8	0.4	5.5	6	0.5
Hungary	7.1	7.0	-0.1	5.9	5.6	-0.3
Poland	6.9	7.4	0.5	6.2	6.9	0.7
Slovakia	6.5	7.5	1.0	5.7	6.7	1.0

2.4. UN Human Development Index and Human Poverty Index

The UN has developed the Human Development Index (HDI) to emphasise the fact that aspects other than economic activities and their growth are important for development. The HDI is based on life expectancy, GDP per head, literacy and enrolment rates. Within the EU, however, this indicator is highly correlated with GDP per head; primarily because literacy, enrolment and life expectancy are all similarly high from a global perspective.

To gain a better perspective on human development diversity within the EU, an EU regional HDI has been calculated, which includes healthy life expectancy, net adjusted household income⁷¹ and low and high educational attainment for people aged 25-64. This indicator is less closely correlated to GDP than the UN one and provides a complementary perspective.

The top 10 regions include five English ones, the capital city regions of Sweden and France, and two regions surrounding Brussels (Map 1.70). Of these 10 regions, only three appear in the top 10 based on GDP per head.

The bottom 10 regions comprise 7 in Romania, two in Hungary and one in Bulgaria. Half of them are also in the bottom 10 regions in terms of GDP per head.

Map 1.70 EU Human Development Index, 2007

Map 1.71 UN Human Poverty Index 2, 2007

The UN has also created a Human Poverty Index⁷², which allows for the fact that averages can hide large disparities. The Index has one version for less developed countries and one for developed countries (HPI 2). This latter index was also calculated for all EU regions based on the probability at birth of not reaching 65, the at-risk-of-poverty rate, long term unemployment and the share of population aged 25-64 with only basic schooling.

⁷¹ Following the recommendations in the Stiglitz Sen Report. This does create difficulties as data is missing for Cyprus, Malta, Luxembourg and Romania. For this index, Romanian regions use unadjusted disposable household income. For Luxembourg data was based on EQLS.

⁷² <http://hdr.undp.org/en/statistics/indices/hpi/>.

The highest levels of human poverty on this measure are in Portugal, Southern Spain, Southern Italy and Greece (Map 1.71). The lowest levels are in highly, moderately and less developed Member States – in Sweden, Germany, Slovenia, the Czech Republic and Slovakia.

The striking feature of the HPI and HDI is that they are only weakly correlated. Only a few regions score well on both, such as Stockholm, or poorly on both, such as Açores. The vast majority combine a high score on one index and a low one on the other. This is notably the case in Brussels, Luxembourg, Navarra and País Vasco, where the human poverty index is much higher than the human development index would imply.

One of the main reasons for the difference in the two indices is that the HDI is based on a per capita average of an absolute measure of income (net adjusted household income), while HPI includes a relative measure (the portion of population below the national poverty threshold). Accordingly, a region with an unequal distribution of a high level of income can have both a high average level of human development and a high level of poverty. A region with low income but relatively equal distribution of it will have a low HDI and a low HPI.

The increases in average income in the 5 less developed countries listed above did, in fact, lead to higher levels of life satisfaction and happiness, despite the at-risk-of-poverty rate remaining unchanged. It could be argued, therefore, that improving well-being, especially in less developed Member States depends on improving the factors behind the HDI and other absolute measures of well-being.

Relative measures of poverty add nuance and can guide policy choices in situations where circumstances are similar. For example, in regions with similar levels of HDI, average well-being is likely to be higher in the region with a lower HPI. Relative measures, however, are difficult to compare in radically different situations. For example, Stockholm and Bratislava have a very similar HPI, yet residents in Stockholm report being much more satisfied with their life and happier than in Bratislava.

Box: Happiness and life satisfaction

And they lived happily ever after.

(Traditional ending of a fairytale)

Life is no fairy tale. Nevertheless, a growing number of academics⁷³, researchers⁷⁴ and politicians (OECD 2009) argue that well-being, in the form of a long and happy life, should be an important goal of public policy⁷⁵. Research has shown⁷⁶ that although more developed countries tend to be happier than less developed ones, more economic growth does not necessarily lead to a happier population.

An increase in economic activity does not always lead to more and better jobs. Nor does it automatically lead to an increase in average income. In some countries, the benefits of economic growth have largely gone to high income groups or to companies, while median household income has barely increased or has even fallen. Economic growth can also be accompanied by longer working hours, more stress and a deterioration in the quality of life.

In 2007, the three Member States with the highest scores on the happiness index were the three Nordic countries. The three with the lowest scores were Bulgaria, Latvia and Portugal.

Although overall, happiness tends to be less in the less developed Member States, this is not always the case. Malta is an extreme case, ranking only 18th in terms of GDP per head, but 7th according to the happiness index, while Austria has the 4th highest GDP per head but ranks 19th on the happiness index.

Life satisfaction is another frequently used subjective indicator of well-being. It is highly correlated with happiness. The three Nordic Member States also had the highest life satisfaction, according to a Eurobarometer survey conducted in 2009. One reason cited for the high levels of happiness in these countries is not only their high income but also the relatively equal distribution of this.

The least satisfied Member States were Bulgaria, Hungary, Latvia, Portugal, Lithuania and Romania. These are also among the least developed. However, some countries are far less satisfied than their level of development would imply and *vice versa*. For example, Poland ranked 24th out of the 27 Member States in terms of GDP per head in 2008, but was ranked 16th in terms of life satisfaction in 2009. Portugal was ranked 19th in terms of GDP per head, but 24th in life satisfaction.

The impact of the crisis is also evident in the changes in life satisfaction between 2007 and 2009. This declined in 23 Member States and remained unchanged in the remaining four. In Romania, Latvia, Bulgaria and Portugal, the index fell by 10%. Satisfaction in other domains, such as family

⁷³ Layard, Richard. *Happiness: Lessons from a New Science*, Penguin, London, 2006.

⁷⁴ New Economics Foundation, NEF, *National Accounts of Well-being*, nef, London, 2009.

⁷⁵ Stiglitz, J., Sen, A., Fitoussi, J., *Report by the Commission on the Measurement of Economic Performance and Social Progress*. 2009 www.stiglitz-sen-fitoussi.fr.

⁷⁶ Veenhoven, Ruut, 'Well-being in the welfare state: Level not higher, distribution not more equitable' *Journal of Comparative Policy Analysis*, 2000, vol 2, pp 91-125.

life, were not much affected by the crisis.

Being happy is even better if it lasts. The Happy Life Years index combines data on life expectancy in good health with the happiness index⁷⁷. This reaches 60 or more in the three Nordic countries and Ireland, but is only 37 in Bulgaria and Romania. (Table 1.15).

Table 1. 15

2007	Happiness index	Happy Life Years 2007	GDP per head, EU27=100	Rank			Change in rank vs GDP	
				Happiness	Happy Life Years	GDP per head	Happiness	Happy Life Years
Denmark	8.3	61	121	1	5	6	5	1
Finland	8.3	61	118	1	4	7	6	3
Sweden	8.2	63	123	3	1	4	1	3
Ireland	8.0	62	148	4	2	2	-2	0
Luxembourg	8.0	59	150	4	7	1	-3	-6
Netherlands	8.0	62	132	4	3	3	-1	0
Malta	7.9	60	76	7	6	18	11	12
Belgium	7.8	58	116	8	10	10	2	0
France	7.8	58	109	8	9	11	3	2
United Kingdom	7.8	59	117	8	8	8	0	0
Cyprus	7.7	55	94	11	12	14	3	2
Slovenia	7.7	52	89	11	16	16	5	0
Spain	7.6	55	105	13	13	12	-1	-1
Czech Republic	7.5	51	80	14	17	17	3	0
Germany	7.5	55	116	14	11	9	-5	-2
Slovakia	7.5	47	68	14	21	21	7	0
Estonia	7.4	48	69	17	19	20	3	1
Poland	7.4	47	54	17	20	25	8	5
Austria	7.3	54	123	19	14	4	-15	-10
Greece	7.3	53	93	19	15	15	-4	0
Lithuania	7.3	45	59	19	23	23	4	0
Hungary	7.0	42	63	22	24	22	0	-2
Italy	7.0	51	103	22	18	13	-9	-5
Romania	7.0	37	42	22	26	26	4	0
Portugal	6.9	45	76	25	22	19	-6	-3
Latvia	6.8	41	56	26	25	24	-2	-1
Bulgaria	5.8	37	38	27	27	27	0	0

Source: Eurostat, EQLS2, DG REGIO calculations
Ranked on Happiness Index

In general, the Happy Life Years indicator is also closely correlated with GDP per head. The ranking by GDP per head and Happy Life Years only changes by a maximum of 2 places for 19 Member States. There are a few striking exceptions. Malta is in sixth place for Happy Life Years and 18th for GDP per head. Austria, which is 14th on the first and 4th on GDP per head. Italy and Luxembourg drop 5 and 6 places, while Poland and Malta move up 5 and 12 places. It is striking, though the levels of GDP per head are similar, Malta is much happier than Portugal and Spain is much happier than Italy.

2.5. Conclusions

Although the EU has an enviably long life expectancy from a global perspective, too many EU regions still have considerably shorter life expectancy than the average at birth. The reasons are manifold, ranging from differences in income, education and living conditions to differential access to high quality health care. Romanian and Bulgarian regions score the worst on health indicators such as infant

⁷⁷ Veenhoven, Ruut. 2006. 'Quality of life in modern society, Measured with Happy Life Years.' in: Yew-Kwang Ng & Lok Sang Ho (Eds.) *Happiness and Public Policy, Theory, Case studies and Implications* Palgrave-Macmillan, New York.

mortality and (standardised) mortality rates from cancer and heart disease. These indicators, however, are not uniformly high in the more developed parts of the EU. Some of the more remote and/or economically depressed regions have poor scores on these indicators.

Road fatalities disproportionately affect young men and significantly reduce male life expectancy. The large regional differences in road fatalities, however, are not related to the quality of transport infrastructure and are probably more influenced by driver behaviour and the extent to which laws are enforced.

Unemployment declined substantially between 2000 and 2008. Nevertheless, regional unemployment rates remained high in Southern Italy, Eastern Germany and Southern Spain even before the crisis. Since 2008, unemployment has risen dramatically in many Member States, notably in Spain, and the Baltic States, where average rates were between 17% and 22% by early 2010. Reaching the Europe 2020 employment rate target of 75% of people aged 20-64 will require a wide ranging strategy.

Regions with high unemployment rates also tend to have more outward than inward migration, although overall regional labour mobility in the EU remains low compared to the US. Between 2001 and 2007, most regions in the EU-12 and Eastern Germany had net outward migration, especially the predominantly rural regions. By contrast, regions in the EU-15 had mostly net inward migration and the predominantly rural regions more so than the predominantly urban ones.

Access to services, such as primary and secondary education, primary health care and banking services was typically considered more difficult in thinly populated areas, especially in the less developed Member States. In the most developed Member States few people experienced difficulties and the differences between densely and thinly populated areas were small. Densely populated areas consistently had a larger share of their population that reported problems relating to crime and pollution.

Within one generation, women have achieved and surpassed the education attainment level of men. In virtually all EU regions, more women than men aged 25-34 have a university degree or the equivalent, while for women aged 55-64, this is the case only in a small minority of regions. This increase in the education attainment of women has not yet led to more equal employment rates. In many parts of southern Europe, in particular, employment rates of women remain considerably below those of men despite increasing over the past decade.

Prior to the crisis, household income had grown markedly in many of the central and eastern Member States. This lifted many people out of (severe) material deprivation and increased their overall life satisfaction and happiness. The crisis, unfortunately, is likely to have reversed this tendency and increased deprivation, especially in the worst affected countries like the Baltic States.

The relative number of people with income which puts them at risk of poverty (less than 60% of national median disposable income) differs not only between Member States but also between regions within Member States. In several Member States, including in the UK, Spain, Italy, Germany and Poland, the relative number is twice as large in the least prosperous regions as in the most prosperous.

In most EU-15 countries, densely populated areas have a larger proportion of people who are materially deprived than thinly populated ones, while in most EU-12 countries, the proportion is larger in thinly populated areas.

The UN human development index (HDI) and the UN human poverty index (HPI) highlight both the absolute and relative dimensions of well-being. The first provides an index of absolute levels of development, the second focuses on the distribution of the aspects which make this up across the population. The analysis here indicates that improvements in the HDI in less developed regions can have a strong impact on well-being, while in more developed regions a reduction in the HPI, i.e. in inequalities, is more likely to improve well-being.

3. ENHANCING ENVIRONMENTAL SUSTAINABILITY

Among the main challenges facing regions in the EU are climate change and its impact, environmental degradation, biodiversity loss and unsustainable use of natural resources. Mitigating climate change and improving resource efficiency, notably by limiting greenhouse gas emissions and adapting to the consequences, have become key priorities of the EU. As a result, the White Paper on adaptation to climate change⁷⁸ highlights the role of environmental capacity, green infrastructure and ecosystem services in adaptation, the recognition of regional and urban-rural differences, and the need for more strategic, long-term spatial planning and regional development. In addition, there is a need for cost-benefit analysis of public investment to consider using an ecosystem-based approach for climate change adaptation and mitigation (especially in building green infrastructure)⁷⁹.

Measures to encourage the production of renewable energy, energy efficiency and water treatment feature prominently among the interventions funded under Cohesion policy. However, there are major differences between regions as regards the scope for action and the likely consequences of climate change.

3.1. Adapting to climate change already underway

The severity of the impact of climate change will vary across the EU according to geophysical vulnerability, the natural and human capacity to adapt, and the level of economic development. In the face of these variations, it is crucial for regions to plan an adaptation strategy most appropriate for them.

Regions most vulnerable to climate change are largely located in the South and East of Europe. A number of regions in Spain, Portugal, Italy, Greece, Bulgaria, Cyprus and Malta will be seriously affected in terms of reduced precipitation and increased temperatures. Many of these regions are also highly dependent on vulnerable sectors such as agriculture and tourism⁸⁰. Less pressure is expected in the North and West of Europe except in low-lying coastal regions around the North Sea and in regions exposed to coastal erosion around the Baltic Sea. Regions with low GDP per head are likely to experience more pressure because of their lower capacity to adapt.

In the long-term, climate change will increase average temperatures, modify rainfall patterns and raise sea levels. Accordingly, the activities most affected are likely to be agriculture, forestry, fisheries, energy production and tourism. The built environment will also be affected by extreme weather, and there will equally be direct and indirect effects on human health. Major investment will be required to combat and prevent drought, desertification, fires, coastal erosion and flooding. There are likely to be damaging economic, social and environmental effects, though

⁷⁸ COM(2009) 147 final, 1.4.2009.

⁷⁹ *The Economics of Ecosystems and Biodiversity* TEEB-CIU, 2010 <http://www.teebweb.org/>.

⁸⁰ For a sectoral economic sensitivity to climate change, see ESPON 2013 Programme, *Climate Change and Territorial Effects on Regions and Local Economies*, Applied Research Project 2013/2/1, Interim report, 2010.

the increased need for mitigating investment could also boost GDP growth in the short term.

Temperature changes

The EU has declared an objective of limiting the rise in temperature to 2°C. The IPCC (Inter-governmental Panel on Climate Change) has prepared climate forecasts under several possible future scenarios for 2070-2099. According to the IPCC A1B scenario⁸¹, temperatures will rise by 3-5°C in Europe as compared with the average for 1961-1990. Only in Ireland and Scotland will temperatures increase by much less than in the rest of Europe. The number of nights when the temperature does not fall below 20°C is likely to increase, especially around the Mediterranean and in Bulgaria and southern Romania, though also in central France and Hungary (Map 1.72).

Map 1.72 Projected change in number of tropical nights between 1961-1990 and 2071-2100

Change in snow cover

As a direct consequence of increased temperatures, the number of days with snow cover is likely to diminish, affecting in particular mountain areas, especially in the Alps though also in the Pyrenees and Carpathians (Map 1.73).

Map 1.73 Projected change in annual number of days with snow cover between 1961-1990 and 2071-2100

The retreat of alpine glaciers is of particular concern since this will directly reduce water reserves, 40 % of Europe's fresh water comes from this source and feeds the Danube, Rhine, Po, Rhone and other rivers. Climate change is, therefore, threatening the delicate interaction between winter storage and summer release of water, resulting in more extreme flows of water with a significant increase in the risk of floods and drought.

The reduction in snow cover will also hit many mountain regions dependent on winter sports significantly. The fragile natural environment of mountain areas may be affected as well, with direct consequences for biodiversity and local activities.

Water scarcity

Water is necessary for life, sustaining ecosystems and regulating our climate. But it is a finite resource, and less than 1% of the world's fresh water is accessible for direct human use. Competition for water poses a growing risk to the economy, communities and the ecosystems that rely on it. If climate change continues to raise average temperatures across Europe, water is expected to become even scarcer in many areas, so it is vital to find solutions to protect it.

⁸¹ The A1B scenario describes a future world of high economic growth, global population that peaks in mid-century and declines thereafter, and the rapid introduction of new and more efficient technologies. Major underlying assumptions include increased cultural and social interaction and a substantial reduction in regional differences in GDP per head, as well as balance between fossil and non-fossil energy sources.

A reduction in rainfall is likely to mean an increase in water scarcity⁸². Summers are expected to become much drier and EU regions as a whole are expected to experience a reduction in rainfall of over 20% over the next 60 years and in some cases, over 40%. At the same time, precipitation in winter in Baltic and Northern Sea regions could rise by 20% or even 40% (Map 1.74).

Map 1.74 Projected change of temperature and precipitation between 1961-1990 and 2071-2100

The combined effect of over-exploitation, changes in temperature and precipitation could affect environmental conditions and biodiversity severely. Some "semi-arid" regions already exist in Europe (e.g. in Cyprus, Spain and Greece) but by 2100 Murcia is predicted to have become the first totally arid region in Europe.

Sicily and Sardinia are likely to become semi-arid, along with southern Romania, including Bucharest, and parts of Bulgaria, while Spain and Greece will be almost totally "semi-arid"⁸³. Moreover, several French regions and parts of central Europe could come to be classified as 'dry sub-humid'. As a result, the availability of drinking water could diminish, so affecting the health and well-being of people and the viability of many businesses.

Impact on soil quality

Climate change will put further pressure on the quality of soil and will increase the risk of desertification. This already affects the southern Member States and is expected to gradually move north. For instance, the changes in rainfall patterns will contribute to an increase in erosion of vulnerable soils which often suffer from low organic matter content. Moreover, a rise in global temperature will accelerate carbon losses from the soil, driving up the concentration of carbon dioxide in the atmosphere.

Forest fires

Forest fires are a recurring phenomenon in the EU affecting large areas of the Mediterranean. They can destroy soils and release carbon dioxide into the atmosphere. With changing climatic conditions, the vulnerability of forests to fires in Member States which have so far not been endangered is increasing. Fires can be detrimental to biodiversity and necessitate huge restoration efforts, in particular in Natura 2000 areas where the 'green infrastructure' risks becoming fragmented.

Flood hazards

⁸² *Water scarcity* occurs when demand for water exceeds the available sustainable resources, while *drought* refers to a temporary reduction in water availability, for example, when it does not rain over a long period of time..

⁸³ Ratio of potential evaporation (E0) to precipitation (P), commonly known as the aridity index (ϕ), in (a) the HIRHAM control run (1961-1990) and (b) the scenario run (2071-2100). Values of ϕ have been classified following Ponce et al. (2000) into humid ($\phi < 0.75$), sub-humid ($0.75 \leq \phi < 2$), semi-arid ($2 \leq \phi < 5$) and arid ($\phi \geq 5$) regions.

Flooding of rivers is expected to become more frequent due to more extreme weather conditions and continued construction in areas at risk. The most vulnerable areas⁸⁴ are the Po Valley, areas along the Rhine (especially in France and the Netherlands), and lower Loire, Mecklenburg-Vorpommern and western Poland, together with areas bordering the River Pineios in Thelassia, Greece. As a result of climate change, all of Europe will become more susceptible to flash floods.

In the longer term, the rise in sea levels is expected to lead to the flooding of a number of coastal areas, especially in the Netherlands and other low-lying coastal areas.

The threat to tourism

Changing weather conditions will adversely affect living conditions in many areas, especially around the Mediterranean, which could become excessively hot and arid. Areas further North are likely to become more attractive for tourists, so damaging the economies of present destinations for summer holidays (Map 1.75).

Map 1.75 Projected change in Tourism Climate Index, 1970-2080

The climate change vulnerability index

The combined outcome of these effects is a wide diversity of regional experience. Regions subject to the most pressure are generally located in the South and the South East of the EU. In particular the regions that appear to be more vulnerable to climate change are Extremadura, Algarve, Ionia Nisia, and Thelassia. Many regions in Spain, Portugal, Italy, Greece, Bulgaria, Cyprus and Malta, however, are also likely to be affected significantly (Map 1.76).

Map 1.76 Vulnerability of NUTS 2 regions to climate change

3.2. Limiting future climate change

In 2007, the European Council adopted an integrated approach to tackling climate change and increasing energy security while strengthening EU competitiveness, with the aim of transforming the Union into a highly energy-efficient, low carbon economy. To this end, a number of targets (so-called '20-20-20' targets) were set to be met by 2020:

- a reduction in EU greenhouse gas emissions of at least 20% below 1990 levels⁸⁵;
- 20% of EU final energy consumption to come from renewable sources;
- a reduction in primary energy use of 20% from projected levels to be achieved by improving energy efficiency.

⁸⁴ See <http://floods.jrc.ec.europa.eu/>.

⁸⁵ The EU leaders also offered to increase the EU's emissions reduction to 30%, on condition that other major emitting countries in the developed and developing worlds commit to do their share under a global climate agreement. United Nations negotiations on this are ongoing.

Binding legislation to implement the 20-20-20 targets was agreed by the European Parliament and the Council in December 2008 and became law in June 2009. There were four elements to this:

- (1) A revision of the Emissions Trading System (EU ETS), with the number of emission allowances available to large emitters being progressively reduced from 2013 to 21% below the 2005 level by 2020 and the free allocation of allowances replaced by auctioning.
- (2) An 'Effort Sharing Decision' governing emissions from sectors not covered by the EU ETS, such as transport, housing, agriculture and waste, under which each Member State committed to a binding national emissions limitation target for 2020 taking into account GDP per head. These national targets should reduce the EU's overall emissions from these sectors by 10% by 2020 on 2005 levels.
- (3) Binding national targets for renewable energy which collectively should increase the share across the EU to 20% by 2020.
- (4) A legal framework to encourage the development and safe use of carbon capture and storage (CCS)⁸⁶.

Up until now, the implementation of the EU ETS, which started in 2005, has not resulted in a significant change in CO₂ prices, partly because the allocations for the 2005-2007 trading period were above annual emissions while for the 2009-2012, the economic crisis reduced emissions below the anticipated level. Allocations and external crediting are expected to exceed demand up until 2013⁸⁷. The package is, therefore, an opportunity to strengthen the EU ETS, since, between 2013 and 2020, it should be a key means of reducing emissions to meet the target of 20% below 1990 levels⁸⁸.

3.2.1. *Less green house gas emissions*

The limitation of Greenhouse Gas (GHG) emissions is a major part of the measures to tackle climate change. As a party to the UN Framework Convention on Climate Change (UNFCCC), the Commission monitors GHG emissions in the EU. Under the Kyoto Protocol, the EU-15 also committed

⁸⁶ CCS is a family of technologies that capture the carbon dioxide emitted by industrial processes and store it underground geological formations where it cannot contribute to global warming. Although the different components of CCS are already deployed commercially, its technical and economic viability has yet to be shown. The EU plans to set up a network of CCS demonstration plants by 2015 to test its viability.

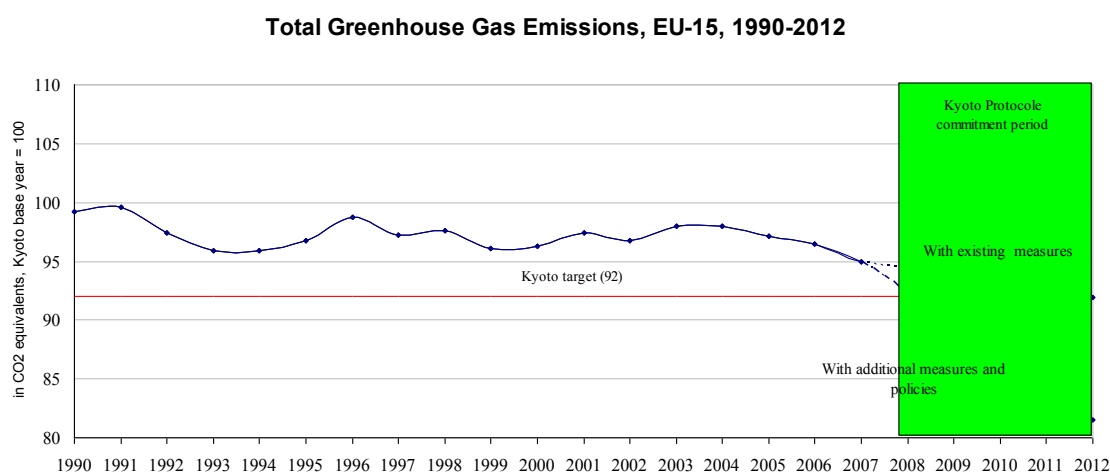
⁸⁷ See I. Curien and Lewis M. (2009), 'The ETS review: unfinished business', Deutsche Bank Global Market Research, February 2009.

⁸⁸ As recent study also accounts for a 'Carbon leakage' effect, that is the possibility that companies decide to transfer their production facilities to countries outside the EU if production costs rise as a result of carbon taxes. See ESPON 2013 Programme, *ReRISK – Regions at Risk of Energy Poverty*, Applied Research Project 2013/1/5, Final report, 2010.

to reducing emissions by 8% between 2008 and 2012 relative to the 'base year'⁸⁹.

In 2008, total GHG emissions by the EU-27 were 11.3% less than in 1990, falling by 1.9% between 2007 and 2008. According to the European Environment Agency (which monitors performance in meeting Kyoto Protocol goals), the EU-15 and the EU-12 are likely to meet their obligations. For the EU-15, however, this will partly depend on the success of additional measures taken by Member States and on the import of carbon credits through the Clean Development Mechanism (CDM) from developing countries with excess supply. The estimated reduction of GHG by 2010 would only be around 7% relative to the base year with existing measures but could reach 13% if supplemented by Kyoto Protocol Flexibility mechanisms (reducing it by 2%), carbon sinks (by 1%), credit acquisition by EU ETS sectors (by 1.5%) and additional measures (by 15%) (Figure 1- 36).

Figure 1- 36 : GHG emissions, EU-15 (100 = base year emissions)

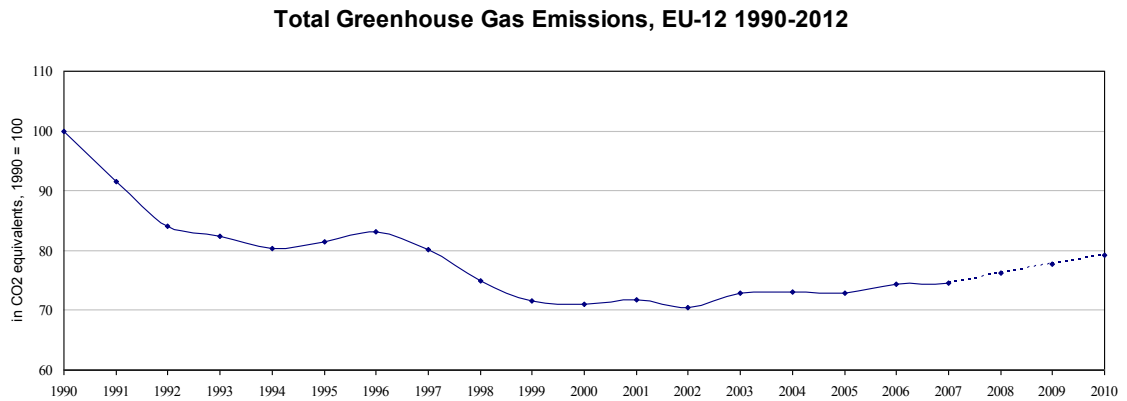


Dashed lines correspond to projected figures.
Source: EEA, EUROSTAT.

For EU-12 countries, reductions have generally exceeded their targets, mainly because of the modernisation of old, polluting industrial plants. Between 1990 and 2008, GHG emissions in these countries fell by 27.2% (Figure 1- 37). However, high economic growth has led to a steady increase in emissions since 2002 and in 2010, the reduction is expected to fall to 21% in relation to 1990.

⁸⁹ For the EU-15, the base year for CO₂, CH₄ and N₂O is 1990; for fluorinated gases, 1995 for 12 Member States and 1990 for Austria, France and Italy have chosen 1990..

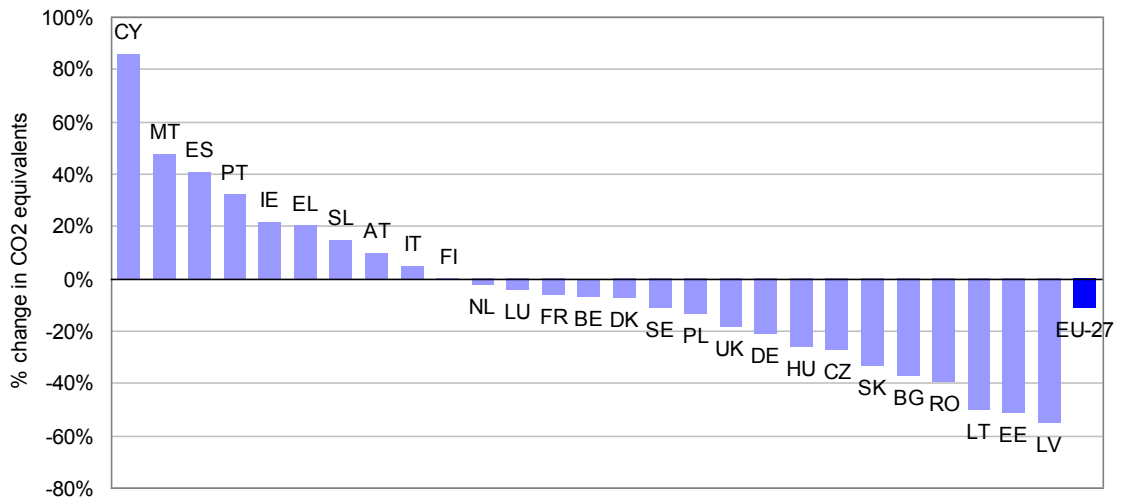
Figure 1- 37 : GHG emissions, EU-12 (emissions in 1990=100)



Dashed lines correspond to projected figures.
 Source: EEA, EUROSTAT.

Reductions in GHG emissions and compliance with the Kyoto targets vary widely across Member States. Reductions have been large not only in most EU-12 Member States but also in some EU-15 countries, like Germany and the UK. Emissions increased in some countries, notably in Cyprus, where they rose by over 85% (Figure 1-3838).

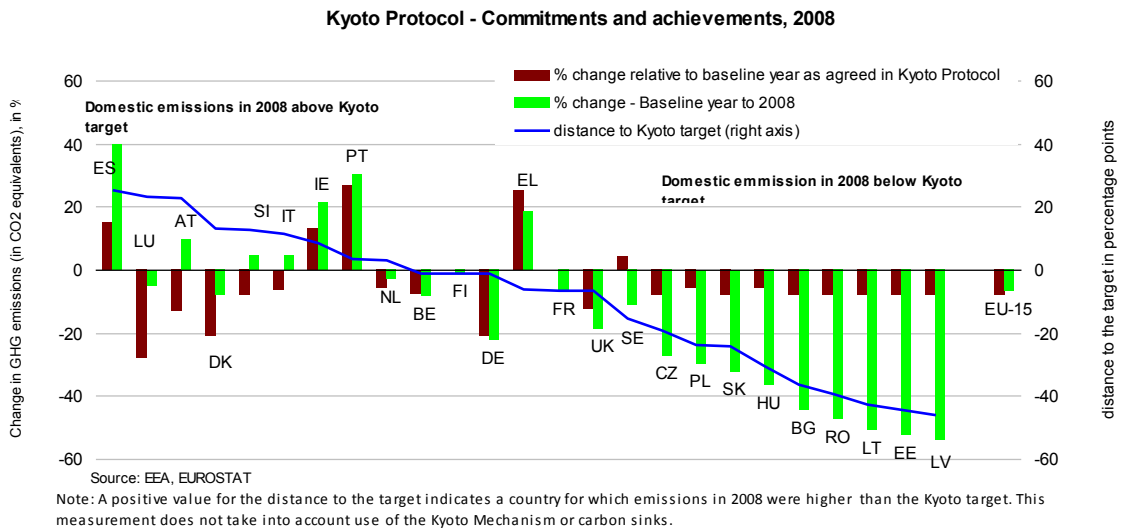
Figure 1-38: Change in GHG emissions, 1990-2008, EU-27 Member States



Source: EEA, EUROSTAT.

Compliance with Kyoto targets depends in part on the commitment of Member States under the Protocol. Variations in the extent of reduction in emissions are taken into account by the ‘burden sharing’ mechanism which allows some countries to increase emissions while others compensate for this by accepting deeper cuts. The large reduction in EU-12 countries has meant that they have overshoot their targets, as noted above, while for some EU-15 countries, compliance will depend on the use of additional measures (Figure 1.39). Even so, great efforts are needed to meet the targets in some countries like Luxemburg or Austria.

Figure 1- 36 Levels of GHG emissions (2008) relative to Kyoto targets, EU-27 Member States

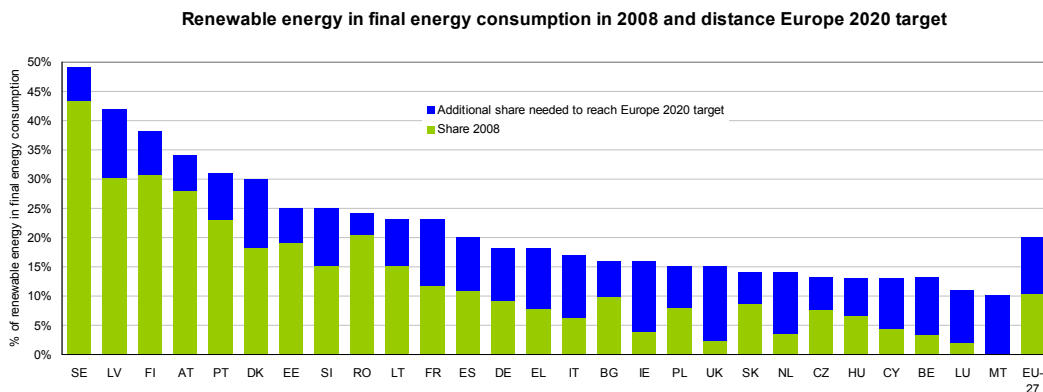


Numbers indicate the distance with the Kyoto targets.

3.2.2. More renewable energy

Another important aspect of the agreed package is the aim of increasing renewable energy sources. The national targets range from a share of 10% in Malta to 49% in Sweden, while the actual shares in 2008 ranged from zero in Malta to 43% in Sweden. The efforts required to meet the 2020 target, therefore, vary across the EU, the UK having to increase the share by 12.7 percentage points, Romania by only 3.7 percentage points (Figure 1- 40).

Figure 1- 40 Share of renewable energy in final energy consumption (2006) and distance to cover to meet the 20% target.



Source: EEA, EUROSTAT

While there are various sources of renewable energy, the potential of the two main ones, wind and solar power, varies across regions.

Regions exposed to the wind from the North Sea generally have more potential from this source (Map 1.77). This also applies to some small Mediterranean islands and the southern part of the Baltic. At the same time, conditions can change markedly within a short distance and the potential for

wind power can sometimes vary substantially within NUTS 2 regions, as in many coastal areas in Spain and Portugal.

Given the high fixed cost of windmill construction and maintenance and the minimal running costs, average production costs of wind power fall rapidly as output increases. The generating costs are, therefore, lowest in regions where the potential use is greatest. The intermittent character of these sources of renewable energy makes energy storage a key issue⁹⁰.

Map 1.77 Wind energy potential

Map 1.78 Average of solar energy resources

Southern regions of the EU generally have much greater access to solar power than those in the North because of the many more sunny days but also because of their more southerly position which increases solar irradiation. Regions with the highest potential for the generation of solar power are mostly located in the Mediterranean, though the potential is also relatively high in Bulgaria, Central France, Northern Italy and Romania (Map 1.78).

More investment, research and technological development in other sources of renewable energy, such as wave, tidal, biomass, bio-fuel and geothermal power, could also lead to these making an important contribution to the production of renewable energy.

Given the different potential for exploiting different sources, the development of intelligent energy distribution networks is central for sharing the power generated in different places.

3.2.3. Increased energy efficiency

3.2.3.1. More efficient transport

Energy efficiency in transport⁹¹ mainly depends on three aspects: the technology embodied in vehicles, the modes of transport and the standard of the transport network.

The latest generation of vehicles often embodies technology with higher fuel efficiency (i.e. less fuel per unit of distance travelled), while efficient transport networks tend to be those with higher rates of vehicle occupancy. In addition, trains are generally much more energy efficient than cars and lorries for both passenger and freight transport.

The traffic going by road continues to increase relative to that going by rail and inland waterways, in particular for freight (Figure 1- 41 and 1.42). Rail transport, however, varies in importance across the EU, accounting for over

⁹⁰ MacKay, David. *Sustainable Energy without the hot air*. UIT, Cambridge, UK. 2008
<http://www.withouthotair.com//>

⁹¹ This can be expressed in terms of consumption per unit of distance per vehicle, per passenger or per unit of cargo transported.

20% of freight in most EU-12 countries as well as in Finland, Sweden and Germany.

Figure 1- 41 : Freight Modal split, 2008

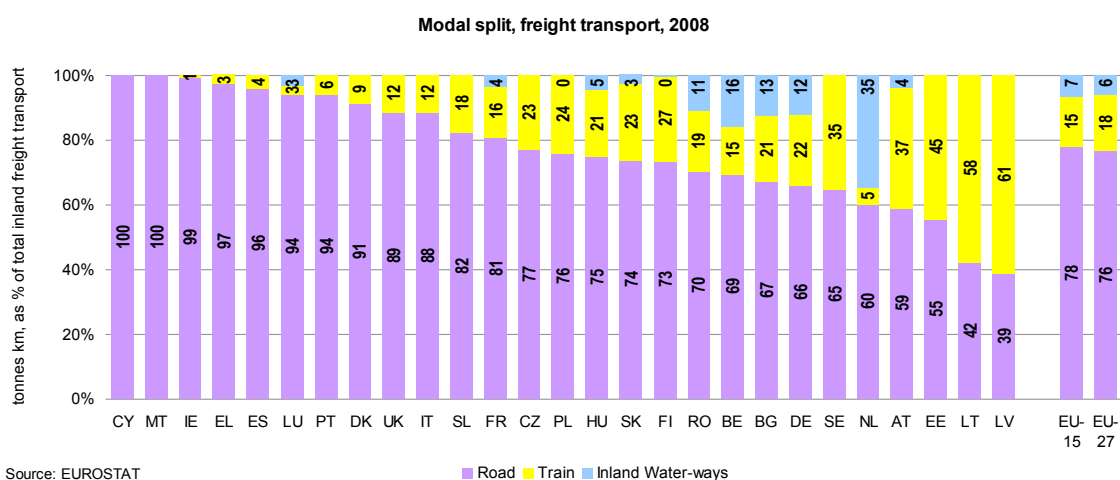
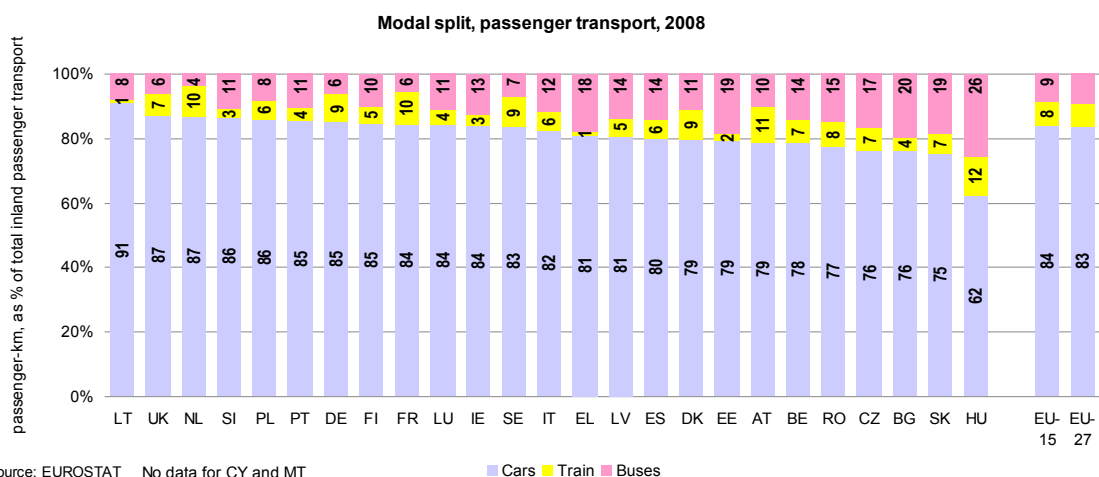


Figure 1- 42 Modal Split, passenger transport, 2008



Source: Eurostat

Policies for increasing the efficiency of modes of transport need to adapt to the local situation and will differ significantly between EU-15 and EU-12 countries. In the EU-15, the road network is generally well developed and often extremely dense. As a result, investment in new roads in the EU-15 is likely to have only a limited effect on accessibility and congestion; especially if not accompanied by measures to encourage modal shifts and travel outside of peak hours. The challenge is, therefore, to make modes of transport other than roads more attractive and competitive, notably by improving the ‘quality’ of service offered, though increasing speed and/or the regularity of service and by aligning prices more with the environmental cost.

In the EU-12, the road network is generally of low standard and its improvement partly conditions development prospects of many of the regions. The challenge is to do this while minimising damage to the environment.

The environmental impact of the transport sector was examined in the TIPTAP ESPON project⁹², which investigated a regulatory and pricing scenario, in which policies are oriented towards taxation, internalisation of transport externalities and incentives for a modal shift towards rail and maritime transport⁹³. This is judged to have a positive outcome for most regions, but especially for Ireland, the UK and EU-12 countries, though also for Spain, Portugal, Northern Italy and South-Western France, mainly as a result of reduced road congestion (Map 1.79).

Regulatory and pricing measures should reduce traffic across the entire transport network and shift travel from roads where they are congested to other modes (e.g. in Western Germany, the Netherlands, London, Milan and Rome) or other regions distant from the main European centres (e.g. Lisbon, Ljubljana, Budapest, Praha, Bucuresti and Sofiya). The scenario shows substantial reductions in CO₂ emissions, most notably in Spain, Portugal, central Italy and Poland.

Map 1.79: Congestion index on the main road network, 2009

Rail can also provide an alternative to air transport, especially for passengers, though this depends critically on the rail connections between urban centres. In practice, there are few flights which are in direct competition with rail for journeys of less than 500 km (Map 1.80). In Spain and Italy, in particular, air transport is the main form of connection between most regions and the capital city (which is usually the national hub for international flights). The situation is quite different in France where high-speed train connections have been put in place and where there is direct competition between rail and air between London, Paris, Amsterdam and Brussels (Map 1.81).

Map 1.80: Passengers flights of less than 500km, 2008

Map 1.81: Highest speed on railway sections according to timetables, 2010

3.2.3.2. More efficient housing

Housing, and buildings generally, is another area where major improvements in energy efficiency are possible, which can, in addition, increase job creation. By improving the energy efficiency of new and existing buildings, energy consumption could be significantly reduced.

⁹² ESPON 2013 Programme, '*TIPTAP: Territorial Impact Package for Transport and Agricultural Policies*', Applied Research Project 2013/1/6, 2010.

⁹³ This scenario is based on Low Growth 2030 as defined in TRANSVisions study. TRANS-TOOLS, official DG MOVE forecast model has been used to move from policies to the assessment indicators above defined.

A study commissioned by DG Energy examined current and future potential for energy saving in the EU-27 Member States⁹⁴. The results show that a 'High Policy Intensity Scenario', involving the removal of barriers to energy efficiency, increased policy effort and low interest rates for investment can lead to considerable energy savings, notably in households through the adoption of more efficient heating and water heating systems, insulation and electrical appliances.

A policy of diffusing energy saving technologies assumed in the scenario⁹⁵ would enable household energy consumption to be reduced by an estimated 42% by 2030, though the potential saving in Sweden is much less (29%) because of the already strong focus of policy on energy efficiency.

Potential savings are greatest from improvements in heating systems. The hottest countries are generally the least efficient in this regard and, therefore, offer the most potential for major savings. There is much less scope for energy saving in respect of electrical and electronic appliances since major reductions have already been made, though because replacement rates are lower in EU-12 countries, potential savings (of 35%) are more than in the EU-15 (27%).

3.2.3.3. Green cities

Cities will play an important role in combating climate change, since they accommodate both a large share of the population and a large share of economic activity. As a result, they are also the location of a large proportion of GHG emissions. They provide opportunities for energy saving measures in, for example transport and heating because of their high population density. This is one of the reasons that the EU has set up a Smart Cities Initiative⁹⁶ as part of its Strategic Energy Technology Plan.

As emphasised in a recent report from OECD⁹⁷, even if there is wide variation in their situation, there are at least three areas in which action is particularly appropriate in cities:

⁹⁴ Study on the Energy Savings Potentials in EU Member States, Candidate Countries and EEA Countries Final Report, European Commission, Directorate-General Energy and Transport, 2009. http://ec.europa.eu/energy/efficiency/studies/doc/2009_03_15_esd_efficiency_potentials_short_report.pdf

⁹⁵ The High policy intensity scenario describes the diffusion of the most energy saving technologies to the maximum possible extent from an economic perspective and compares this with a baseline scenario which assumes that technology diffusion continues at the same pace as in the past, though it takes account of the potential effect of policies already introduced as well as of changes in market prices of energy.

⁹⁶ <http://setis.ec.europa.eu/initiatives/technology-roadmap/european-initiative-on-smart-cities>

⁹⁷ Lamia Kamal-Chaoui and Alexis Robert (eds.), *Competitive Cities and Climate Change*. OECD Regional Development Working Papers N° 2, 2009, OECD publishing, © OECD.

- GHG emissions are mostly the result of the energy used by lighting, heating, cooling and transport. Cities should anticipate future rises in carbon prices and favour less carbon-intensive investment;
- A substantial part of energy used in cities is related to buildings, so increasing their energy efficiency is particularly important. Since there tend to be many public buildings in cities, these should be a specific focus of attention.
- Moving to a low-carbon, and low environmental impact, way of life often requires investment for which the benefits only outweigh the cost if they are spread across a large proportion of the population. City authorities can play a key role in establishing the appropriate structure of incentives, such as by subsidising energy audits, adapting regulations to encourage energy efficiency and favouring environmentally-friendly modes of transport.

From a household perspective, however, cities already offer a more resource efficient way of life⁹⁸ and there is an explicit aim in many cases to go further in this direction. In January 2008, the ‘Covenant of Mayors’ initiative was launched to reduce the impact of cities on climate change, with a formal commitment to go beyond the EU objectives for reducing CO₂ emissions and to prepare a Sustainable Energy Action Plan, as well as to report periodically on progress. Over 1 000 towns and cities, with a combined population of over 140 million in 36 countries, have signed up to the Covenant. In addition, Ministers responsible for urban development decided in Marseille in 2008 to establish a common European Reference Framework for Sustainable Cities.

Compact cities tend to be more resource efficient than sprawling ones. The Urban Atlas⁹⁹ provides a new insight in the different urban forms across the EU. Bucharest, for example, is a highly compact city (Map 1.82). Outside the city centre, there are only a few isolated houses and other buildings. Its urban fabric is concentrated within a radius of 4 km from the centre (see figure below map). This tends to reduce the average length of journeys and makes public transport more efficient, so reducing energy consumption and GHG emissions.

Brussels, on the other hand, has far more dispersed settlements surrounding the city. The density of the urban fabric also quickly diminishes as one moves away from the centre.

In Vienna and Cologne, construction outside the city centre is mostly clustered in villages or neighbourhoods with open spaces between them.

⁹⁸ See for example *The Green metropolis* by David Owen and work by energy and fuel use by household at NUTS 4 level as published by UK Dept of Energy and Climate Change.
http://www.decc.gov.uk/en/content/cms/statistics/regional/high_level/high_level.aspx

⁹⁹ The Urban Atlas is the first high resolution land use mapping of all major urban agglomerations in the EU. It was designed especially to facilitate European wide comparison of urban land use patterns.

These centres can be served by public transport more efficiently than where settlements are more dispersed. In addition, this clustering of construction safeguards the open spaces between these settlements.

In Warsaw, many of the roads leading out of the city have been built up along the sides, though construction is generally of a high density. This type of strip development can also be seen outside Lyon and Brussels, but there it tends to be of lower density.

Green urban areas and sports and leisure facilities can make city living more attractive and healthy. Cologne, Warsaw, Vienna and Brussels all have many parks and leisure areas both close to and further away from the centre. Bucharest and Barcelona, by contrast, have relatively few green areas.

Barcelona and Copenhagen are both located on the sea. Barcelona which has the sea on one side and mountains on the other has developed in a compact way. Copenhagen has been developed according to a "five fingers plan" since 1947 to ensure good access to open spaces. Development is concentrated along the five fingers with protected stretches of fields, forest, urban parks, footpaths and bicycle paths in between.

Map 1.82: Land use in selected cities, 2006

Land use can also be improved in a number of cities. Around a third of the cities covered by the urban atlas have more than 0.5% of their land which could potentially be used more efficiently. In particular, sites which are abandoned, such as old industrial plants, factories and warehouses, can almost always be developed for use.

3.3. Improving environmental quality

The quality of the environment is mostly conditioned by human activities. Improving quality requires both limiting the negative environmental effects of the activities concerned and preserving natural assets. At the EU level, this has been achieved through both normative requirements, e.g. on the concentration of pollutants, and investments in infrastructure.

3.3.1. Waste water treatment

Treatment of waste water is necessary to preserve the quality of water reserves, for drinking, use by industry, tourism and agriculture and for environmental reasons generally. For urban areas, treatment which removes most contaminants from sewage is mandatory so as to protect the natural environment¹⁰⁰.

Overall, close to 90% of urban waste water is treated across the EU-15. However gaps still remain. In the case of the EU-12, the Accession Treaties provide for staggered transition, extending to 2015 and for Romania to 2018. waste water treatment is still well under 100% in a number of urban areas in

¹⁰⁰ Directive 91/271/EEC.

the EU-12 (Map 1.83).¹⁰¹ This is particularly so in Romania, where in some regions, including Bucuresti, less than 30% of urban waste water is treated.

Map 1.83: Urban waste water treatment capacity, 2007

3.3.2. Waste management

Member States are obliged to establish and evaluate waste management plans for all parts of the country. Plans are often made at regional level, and in some cases they have been co-financed under Cohesion Policy, especially in the EU-12, and southern Member States, where problems remain. Such plans are the main vehicle for implementing the central aim of the Waste Framework Directive of diverting waste from landfills to recycling and recovery.

The proportion of waste which is recycled is rising, while that disposed in landfills is falling. Waste treatment sites are undertaking more recycling and more recovery of energy through incineration. At the same time, hazardous waste and illegal dumping have become more tightly controlled. Waste management also has potentially important economic effects. Solid waste management and recycling industries have an annual turnover of EUR 137 billion, over 1% of EU GDP, and are estimated to have created over 2 million jobs¹⁰².

3.3.3. Air quality

Good air quality helps to prevent respiratory diseases and premature death. The emission of many pollutants as well as the permissible concentrations of those pollutants in the air is regulated by EU Directives¹⁰³. There are limits on the emissions of several pollutants that can be released into the air as well as on the concentration of particulate matter and other damaging pollutants. Regions most affected by high particulate matter concentrations are those in the central part of the EU, in south and central Poland, in a few parts of Hungary and around Bucharest (the most polluted area) (Map 1.84).

Map 1.84: Concentration of PM10 at surface level, 2009

¹⁰¹ The map describes the treatment capacity of the urban areas in the region and not the treatment capacity of the whole territory of the region (urban and non urban areas).

¹⁰² http://ec.europa.eu/environment/waste/compost/pdf/sec_biowaste.pdf

¹⁰³ Pollutant emissions: mainly Directives 2008/1/EC, 2001/80/EC and 2001/81/EC. Ambient air quality: mainly Directives 1999/30/EC and 96/62/EC. A full list of relevant legislation can be found here: <http://ec.europa.eu/environment/air/legis.htm>

A revision and streamlining of Directive 2008/1/EC, 2001/80/EC and of five other Directives has recently been completed. These Directives will be repealed and replaced by the new Industrial Emissions Directive. A revision of the air quality framework is foreseen for 2013.

Map 1.85: Ozone concentration exceedances in NUTS 3 regions, 2008

There is much evidence that high ground-level ozone concentrations can harm lungs and irritate the respiratory system. A daily concentration limit has, therefore, been established, though this is often exceeded in a number of regions (Map 1.85). This was especially so in Italian regions in 2008, and to a lesser extent in Malta, Bulgaria, Cyprus, some Greek regions and southern Romania. Indeed, except for the Spanish regions, almost all the regions in the Mediterranean exceeded the concentration limit for a significant number of days (15 or more).

3.3.4. Land use patterns

Soil sealing

Soil sealing refers to the ground being covered with impervious materials. This is typically a result of urban development and the construction of infrastructure. The ecological soil functions of sealed areas are severely impaired or even prevented (e.g. the soil working as a buffer and filter system or as a carbon sink). In addition, surrounding soils may be affected by changes in water flow patterns or the fragmentation of habitats. Sealed soils contribute to increasing flood hazards as the capacity to absorb and store excess water is reduced, and run-off therefore increases.

Soil sealing is particularly high in highly urbanised areas such as parts of the Netherlands, North Belgium, West and South Germany and central and south-eastern parts of the UK. In Mediterranean regions, soil sealing is relatively high along the coasts where rapid urbanisation is associated with the expansion of tourism. In EU-12 countries, the extent of soil sealing¹⁰⁴ is generally much lower, but it is likely to increase (Map 1.86).

Map 1.86: Soil sealed area, 2006

The extent of soil sealing also depends on the way people live and where companies locate. Besides the effect of tourism, it can also be caused by a combination of lax land use planning and a preference for living and working outside city centres, for bigger houses coupled with out of town developments, such as supermarkets, leisure centres and the associated transport infrastructure. Soil sealing per inhabitant is the lowest in all major urban regions (Map 1.87). Although a few rural regions in southern and eastern EU regions (in Southern Italy, Greece and Romania) also have low levels of soil sealing, overall rural regions have the highest level of soil sealing per inhabitant¹⁰⁵.

Map 1.87: Soil sealing per inhabitant, 2006

¹⁰⁴ See *State of the Environment Report 2010*, European Environmental Agency.

¹⁰⁵ Note that this indicator may be somewhat biased in regions with a small population because part of the infrastructure which is responsible for soil sealing (e.g. transport infrastructure) also serves the population of neighbouring regions.

Natura 2000 and biodiversity

Natura 2000 is an EU wide network of nature preservation areas. The aim is to ensure the long-term survival of threatened species and habitats. According to the EU Nature Directives, conservation should be achieved while taking account of economic, social, cultural, regional and recreational needs. Regions should, therefore, not consider the sites concerned as merely areas to protect but as important assets in development strategies: NATURA 2000 areas could be used for instance to attract more visitors and to develop economic activities related to ecotourism, as well as enhancing the quality of life of the people living in the regions concerned.

The Natura 2000 Network currently covers approximately 18% of the land area of the EU (Map 1.88). To ensure that biodiversity and ecosystems continue to contribute to human and economic prosperity (e.g. through pollination, water purification, and flood prevention), these protected areas and the wider countryside need to be properly managed. Developing 'green infrastructure', avoiding the fragmentation of landscapes and reducing the impact of fragmentation through ecological networks, particularly Natura 2000, is key to maintaining a sustainable environment.

Map 1.88: Natura 2000 areas, 2009

The network of protected areas is particularly dense in Slovenia, Spain and Bulgaria. Protected areas cover a smaller part of the land area in many English and French regions as well as in those in Southern Finland and Sweden. However, there tends to be relatively high sensitivity to environmental issues in these countries, which leads to areas in addition to the Natura 2000 ones being protected.

3.4. Conclusions

Protecting the environment and improving its quality, together with the effect of adapting to climate change and mitigating its consequences, are crucial issues for EU regions. However, their importance differs substantially across regions.

The impact of climate change will be most severe in Southern and Eastern European regions. They will suffer longer and more severe droughts, with possibility of water shortage in the medium-term. Regions that depend on activities directly or indirectly affected by increase in temperature and changes in weather conditions (such as tourism and agriculture) are particularly vulnerable. Others will face an increased risk of natural disasters. These prospective developments need to be incorporated in spatial planning and regional development strategies.

Limiting the extent of climate change will require swift action to achieve the targets set out in the EU Climate and Energy Package, which is part of the Europe 2020 strategy. The ambitious reductions in GHG emissions will depend for their achievement mostly on changes in the sectors covered by the emissions trading scheme. Nevertheless, reaching the overall emissions reduction target also depends

on improvements outside this scheme, particularly in respect of transport and buildings, areas where public authorities play a decisive role.

The production of renewable energy has a strong geographical dimension. Solar energy potential, for example, is far greater in the southern regions, while the potential of wind power is greatest in areas along the Atlantic and North Sea coasts. Regions can, accordingly, play an important strong role in facilitating and encouraging renewable energy production.

Increasing energy efficiency depends on the actions of individuals and organisation in both the private and public sectors. The former will invest in energy efficiency if they can recoup the cost involved, which depends on energy prices and technological advance. In the public sector, authorities should consider the shift to a low-carbon economy and the possibility of much higher energy prices when deciding their policies and investment, especially in infrastructure likely to last for a great many years.

The protection of the environment and its quality still vary greatly across the EU. Urban centres continue to suffer from poor air quality. Ozone concentrations often exceed EU thresholds in cities, especially in southern Europe, and concentrations of particulate matter are too high in many cities, including Paris, Brussels, Milan, Budapest and Bucharest. Yet living in city centres, especially in those in compact cities, means people usually need to travel shorter distances to get where they have to be. This means lower energy use of transport and even more so if journeys are made on foot, by bicycle or public transport. Living in cities also means lower levels of soil sealing per person, especially in compact cities.

Urban waste water is not yet treated adequately in every Member State, especially in regions in the EU-12, but also several in the EU-15. The waste management sector, on the other hand, is recycling more waste, relying less on land fill and recovering more energy from incineration.

CHAPTER II: NATIONAL POLICIES AND COHESION

1. INTRODUCTION

EU Cohesion Policy operates alongside an array of national and regional policies devised and implemented in many different places and under widely differing circumstances.

The objective of promoting harmonious development across the EU and a reduction in disparities between regions enshrined in Article 174 of the Treaty is a joint task with Member States. According to Treaty (Article 175), the latter should conduct and coordinate their policies to attain economic, social and territorial cohesion.

This chapter examines the contribution of Member States to the pursuit of this objective. In doing so, it considers the size and composition of public expenditure over the past decade, paying particular attention to investment decisions in key areas for growth and employment. It draws a picture of the main features and differences across countries as regards government spending and the involvement of regional and local authorities in public investment. For the first time, public investment is broken down at NUTS 2 level and examined in terms of its variation across regions, its relationship to total investment and its contribution to Cohesion Policy.

A specific issue covered is the role of regional and local authorities in policy implementation, particularly in public investment, and in raising revenue, to examine whether or not the process of decentralisation of competences which has occurred has been accompanied by a transfer of financial resources.

National responses to the economic recession are also examined. These have varied markedly across the EU, in general, in line with the size of the public sector, the fiscal ‘space’ available to implement *ad hoc* measures¹⁰⁶ and the relative impact of the crisis. The impact on budgets is also specific to each country, though revenue has fallen everywhere. The measures taken, however, and the resulting increase in public deficits is likely significantly to constrain the room for public investment in future years in most Member States.

The final section summarises the steps made to improve the context in which Cohesion Policy operates. While most public policies which have an impact on economic, social and territorial cohesion involve spending, there are others that do not which set the conditions for successful development. These include measures to improve the functioning of labour markets or to boost competition.

¹⁰⁶ Fiscal space is the scope for governments to expand expenditure without jeopardising the sustainability of its fiscal position or the stability of the economy.

2. NATIONAL APPROACHES TO ECONOMIC, SOCIAL AND TERRITORIAL COHESION

The precise policy priorities set by Member States depends not only on the scale of regional disparities that exist but also on factors such as social preferences, the division of power across the country, the nature of the regional challenges faced and the financial resources available.

The most obvious policy objective associated with cohesion is avoiding excessive disparities across regions. This is a constitutional requirement in some Member States. In Germany, for instance, the Basic Law refers to the creation of equivalent living conditions throughout the country and, under federal legislation, regions should be supported if development is below the national average. In Italy too there is a constitutional commitment to reducing disparities between regions by channelling additional resources to them. In Spain, the Constitution includes the objective of promoting '*a more equitable distribution of income*' and '*a fair and adequate economic balance between the different parts of the Spanish territory*'. Other countries, such as Greece or Bulgaria, also have explicit constitutional references to regional and social inequalities or to the needs of specific areas. Yet, the fact that lagging regions might be supported by specific regional policies does not always mean that they are favoured by public intervention.

The past decade has witnessed a gradual shift from policies aimed at reducing disparities towards those aimed at strengthening regional and national competitiveness, with a focus on exploiting regional potential to contribute to national growth. This is the approach in most Cohesion countries where reducing the gap between national GDP per head and the EU average is a major objective. Similarly, in the Netherlands, the policy emphasis is on seizing opportunities of national significance wherever they happen to be located, while in the UK, the aim is to provide '*the environment for business and communities to maximise their potential*'.

The aim tends to be pursued through investments in infrastructure and aid to businesses targeted at lagging or problem regions. In Germany, for example, funding amounting to around 4% of their GDP is channelled to the Eastern Länder under the Solidarity Pact II to support investment for economic development. In Spain, the Compensation Fund (*Fondo de Compensación Interterritorial*) is similarly aimed at correcting regional disparities through public investment projects, and in Italy, the Fund for the Underutilised Areas' (*Fondo per le Aree Sottoutilizzate*) is designed to increase investment in the lagging regions of the *Mezzogiorno*, the sum involved amounting to 3-4% of their GDP over the period 2007-2013 (though this was reduced significantly in 2009). In Poland too, there is a specific policy for the less developed Eastern regions.

In Member States with less pronounced regional disparities but geographical diversity, regional policies are mostly focused on areas with specific features, often taking the form of aid to business. In Finland and Sweden, such aid is directed to firms located in the sparsely populated Northern regions. These regions also receive a transport grant to compensate for their extra costs of travel. In Denmark too, peripheral areas receive additional funding for business development. In France, special measures support areas affected by industrial restructuring and assist development in rural and mountain areas as well as in Corsica. Similar measures exist in Greece. In Cyprus a significant strand of regional policy is aimed at tackling underdevelopment of rural areas. In Malta there is a

specific focus on the development of the island of Gozo. A particular feature of regional policies over the past 10 years, is that they have tended to become more extensive reflecting the shift to support of endogenous development.¹⁰⁷ Public investment policies aimed at reducing territorial disparities need to take increasing account of their effects in terms of efficiency and economic growth as well as of their coherence with sectoral policies. Fiscal equalisation mechanisms operate in almost all Member States in order to ensure an acceptable provision of public goods and services across the country. They channel funding towards the less developed areas or those in which the cost of the provision is higher. They tend to level living standards by financing local authorities which are unable to collect sufficient revenues to finance public goods and services that they provide.

At the same time, sectoral policies may have a considerable impact on cohesion even though cohesion-related objectives are rarely made explicit and the effects are often unintended. This is, for instance, the case for transport policy. The setting of priorities, the favouring of a particular system of transport and the design and implementation of projects all have an impact on cohesion which often goes beyond national borders. Employment policy can also have significant effects on economic, social and territorial cohesion. The demographic structure of the population often differs markedly across regions in a country. Equally, unemployment affects different locations and social groups unevenly, so that measures adopted by governments to tackle the problem and increase labour force participation have an impact on cohesion. The impact may also be considerable from other policies such as on education, research and innovation, tourism or rural development, though it is frequently not easy to measure.

3. PUBLIC SPENDING AND INVESTMENT IN EU MEMBER STATES

3.1. "Trends in public expenditure and public investment in the EU"

The public sector tends to be larger in Member States with the highest levels of GDP per head...

Public expenditure¹⁰⁸ in relation to both GDP and population varies across Member States with their level of GDP per head. Expenditure on social protection accounts for most of this variation. By contrast, public investment tends to be higher relative to GDP, though not population, in the less prosperous countries. This is linked to a large extent to EU Cohesion Policy support, which accounts in the Cohesion countries for around 55% of public expenditure on environmental protection, over

¹⁰⁷ A recent study provides evidence from a number of countries that such policies tend to favour weaker regions. See Yuill D, Ferry M and Vironen H (2008) *New Policy Frameworks, New Policy Approaches: Recent Regional Policy Developments in the EU and Norway*, EoRPA Paper 08/1, University of Strathclyde.

¹⁰⁸ The definition of public expenditure here is that used in the European System of Accounts (ESA-95). It includes all expenditure incurred by General Government; both central and sub-national level Expenditure by public corporations or similar bodies is not included.

25% of that on transport, telecommunications and energy and around 10% of that on human capital development¹⁰⁹.

Public expenditure declined slightly relative to GDP (by about 1 percentage point) over the period 2002-2007 but increased by the same amount in 2008 and jumped in 2009 mostly as a result of the sharp drop in GDP caused by the recession. Up until 2008, there was a gradual convergence of both total public expenditure and public investment relative to population in Cohesion countries towards the EU average. Following the economic crisis, prospects for public investment are bleak in many of these countries, underlining the importance of Cohesion Policy support.

Public investment: A problematic concept in the European System of Accounts

Public investment is defined in this report as the sum of Gross Fixed Capital Formation (P51 in ESA-95) and consolidated Capital Transfers (D9_CO), after netting out transfers between the different levels of Government. This takes account of the process of privatisation in many Member States over the past few decades, which often changes the economic category to which expenditure is assigned. Instead of investment being associated only with fixed capital formation, it is also associated with transfers to the privatised organisations which undertake the investment in place of public authorities. Making a sharp distinction between gross fixed capital formation and capital transfers then becomes of questionable meaningfulness and the sum of the two together is the most relevant concept for identifying overall expenditure on regional development.

A further consequence of privatisation is that sales of public assets have tended to become more important. Since in the ESA 95 system of accounts, these are treated as negative expenditure and are netted off gross capital formation in the published figures, the data for public investment presented here are also net of this item, which can be large in some countries (the UK is an example). The figures, therefore, do not necessarily indicate 'new' investment as such but might significantly understate this in some cases. With the data available, however, it is not possible to judge the size of this distortion and how it affects changes in the figures over time. The figures should be interpreted with this in mind.

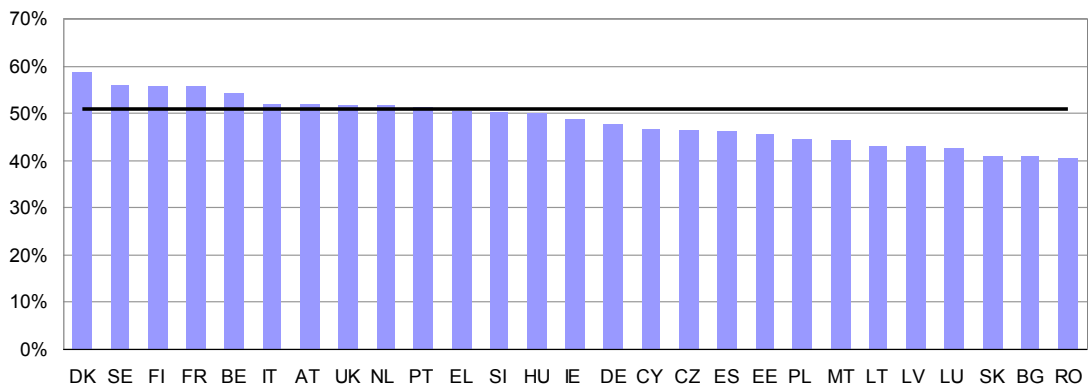
Total public expenditure amounted to just under 47% of GDP in the EU in 2008 but rose to almost 51% in 2009. The collapse of GDP rather than higher expenditure is the predominant reason for this. Nevertheless, there are marked differences in the scale of public expenditure across Member States which varies from over 58% of GDP in Denmark to only just over 40% in Romania, broadly in line with variation in GDP per head (Figure 2- 1). Most of the differences are explained by the level of expenditure on social protection.

After the reductions in the run-up to the Monetary Union in 1999, public expenditure in the EU remained broadly unchanged relative to GDP for almost a decade. In most of the Member States which have joined the Union since 2004, however, public expenditure declined relative to GDP up until 2007. In 2009, public expenditure rose back to 1997 levels as a share of GDP and public deficits and accumulated debts increased dramatically.

¹⁰⁹ The Member States which are eligible for Cohesion Fund support in the 2007-2013 programming period – i.e. the 12 Member States which joined the EU in 2004 and 2007 plus Greece and Portugal.

Figure 2- 1

Total public expenditure as a share of GDP (2009)



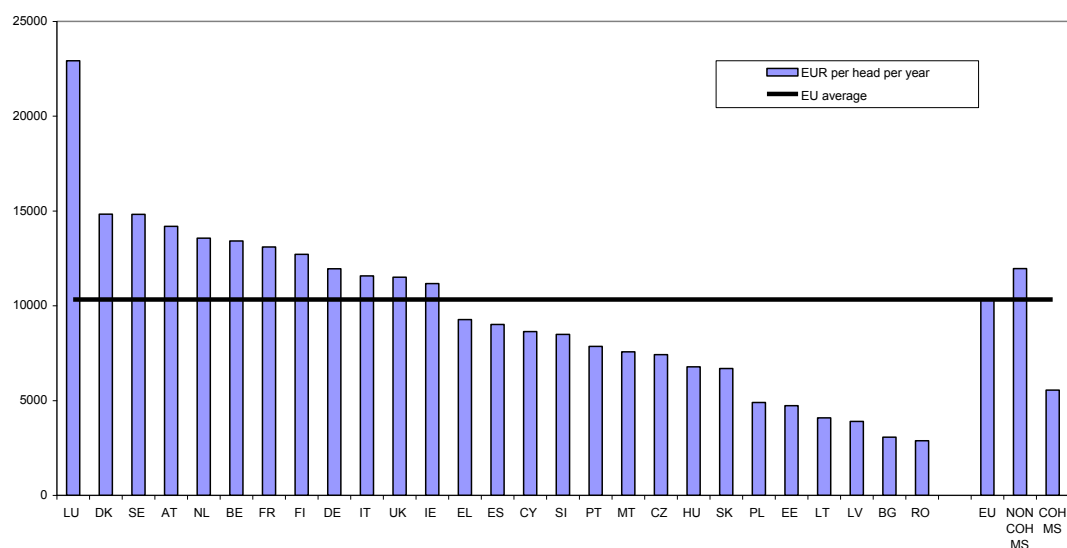
Source: EUROSTAT

The large differences in GDP across the EU mean that public expenditure needs to be expressed on a per head basis in order to capture its size in different Member States. The relative level in these terms is even higher in the more prosperous countries, their larger GDP per head enabling them to devote more resources to the public sector.

Public expenditure per head in PPS terms in Cohesion countries was on average only around half (49%) of that in other Member States in 2009. The gap narrowed gradually (from 42% in 2000) up until 2008 (reaching 51%) but widened in 2009 (Figure 2.2). Accordingly, the largest increases in public expenditure per head over the period 2000-2008 occurred in Member States with GDP per head below the EU average. These in general experienced the highest rates of economic growth, underlining the importance of this for governments to be able to respond to demands for more development and social spending.

Figure 2- 2

Graph 2- Total public expenditure in PPS 2000-2009 (EUR per head)



Source: EUROSTAT

... but public investment is higher relative to GDP in the less prosperous countries

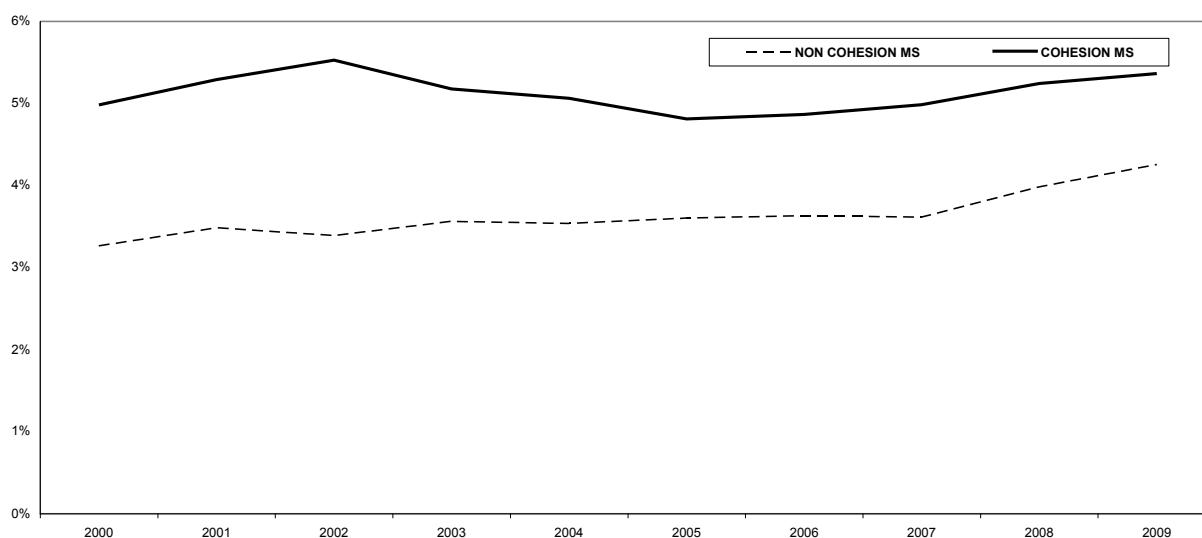
Public investment accounts for a relatively small share of total public expenditure in the EU (just under 9% in 2009). The dividing line between this and current spending however, is not altogether meaningful. Expenditure on education and training and on R&D is classified as current, even though like capital spending, it produces returns over a number of years. Both are at the heart of the Europe 2020 strategy (as they were in the Lisbon strategy).

Public investment also remained largely unchanged in the EU relative to GDP over the period 2000-2007. Between 2007 and 2009, however, it increased from 3.7% of GDP to 4.4%, more proportionately than the rise in total spending (Figure 2.3). In EU-12 countries, in particular, public investment has risen as a share of public expenditure, especially since their entry into the Union.

In general, public investment has been consistently higher relative to GDP in countries with below average GDP per head. It accounted, on average, for around 5% of GDP over the period 2000-2009 in Cohesion countries as against under 4% in the other Member States. This might reflect relatively low endowment of infrastructure and so a greater need for investment than in more developed countries.

Figure 2- 3

Graph 3- Public investment as a share of GDP (2000-2009)

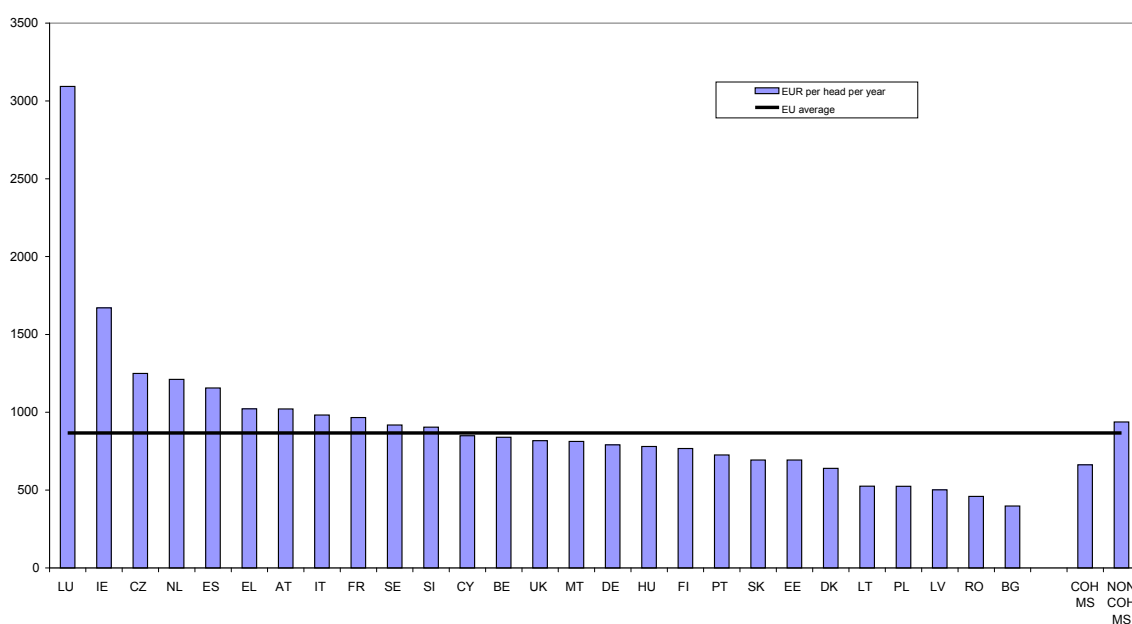


Source: EUROSTAT

Accordingly, while public investment per head in PPS terms was on average lower in Cohesion countries than in others over the period 2000-2009, the difference was much smaller than in the case of total public spending (Figure 2.4). The difference, moreover, has narrowed over time, the level in Cohesion countries rising from 64% of that in other Member States in 2000 to 75% in 2008, though falling to 69% in 2009 due largely to the smaller effect of the crisis on GDP in Poland especially. In the Czech Republic and Greece, public investment per head was above the EU average in PPS terms and in Cyprus and Malta, around the average. By contrast, in Denmark, Germany and Finland, it was below the EU average, despite the higher level of GDP per head.

Figure 2- 4

Graph 4- Total public investment in EUR per year per head in PPS 2000-2009



Source: EUROSTAT

Public investment has increased dramatically in some Cohesion countries while declining in those with high levels of public debt.

Public investment increased by around 14% in real terms in the EU between 2000-2004 and 2005-2009¹¹⁰ (Figure 2.5). The increase was slightly higher in Cohesion countries (19%) than in others (16%).

This average masks significant differences between Member States and, most especially, between Cohesion countries. Public investment declined in real terms in seven Member States, five of which were Cohesion countries (Greece, Hungary, Malta, Portugal and Slovakia). On the other hand, the six countries with the highest increases are also Cohesion countries, the rise amounting to over 60% in Poland, Estonia, Romania and Lithuania and over 100% in Latvia and Bulgaria, in all of them much more than the increase in total expenditure. Among non-cohesion countries, the highest growth was in Ireland and the UK (over 45% in both cases).

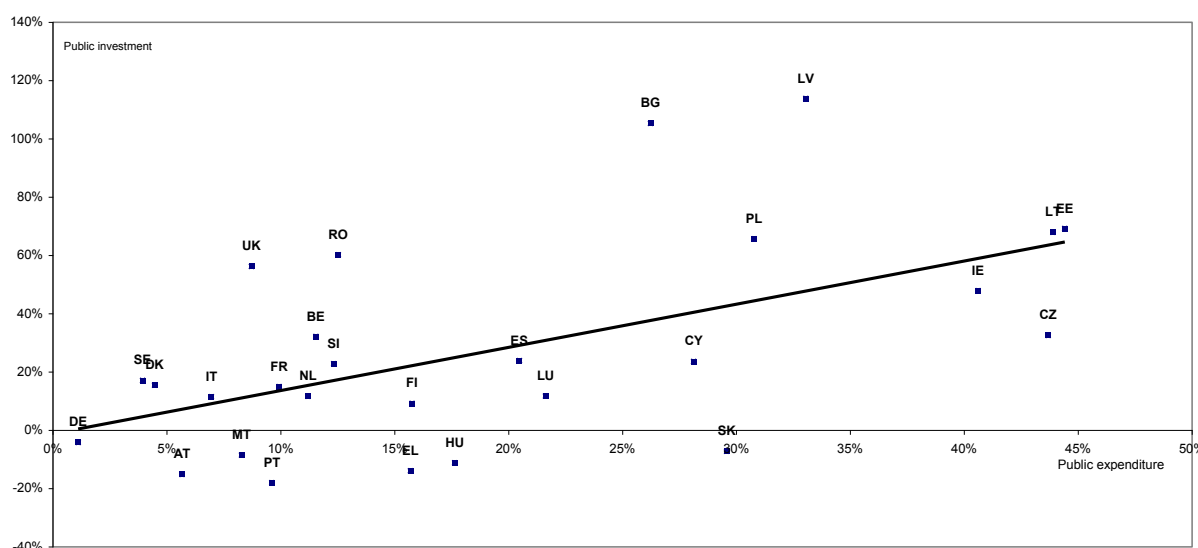
There seems to be a negative correlation between changes in public investment and public debt levels, suggesting perhaps that the possible need to limit expenditure affects public investment in particular. In 2008, Greece, Hungary, Malta and Portugal had the highest levels of debt relative to GDP among Cohesion countries and public investment declined in all of them, partly perhaps to make room for interest payments (which account for over 3% of GDP in Malta and Portugal and over 4% in Hungary and Greece), which were relatively small in Cohesion countries where public investment increased by most (under 1% of GDP).

Countries with the highest levels of public investment relative to GDP over the period 2000-2009 also had the highest increases in GDP per head (Luxembourg, Ireland and the three Baltic States), though whether the former led to the latter or vice versa is uncertain. By contrast, only one of the 10 countries with the lowest levels of public investment experienced an above average growth of GDP per head. This was the UK, where public investment rose over the period.

¹¹⁰ Averages are used to avoid distortions caused by **fluctuations** in expenditure.

Figure 2- 5

Graph 5- Changes in public investment compared to changes in total public expenditure 2000-2004 and 2005-2009 (in EUR, 2004 prices)



Source: EUROSTAT; DG REGIO

3.2. The case for public investment and the rationale for additionality

A recurring issue in academic research concerns the net effect of public investment on economic growth. Although findings are mixed, a number of recent studies have concluded that public investment tends to boost growth, though they also stress the importance of the institutional setting (see Box).

Box: The effect of public investment on economic growth

On the basis of a critical appraisal of recent theoretical studies on the link between government spending and economic activity, Imen and Kuehnel¹¹¹ conclude that public investment tends to increase the rate of return to private capital and, in the long run, boosts economic growth. Several researchers¹¹² stress the importance of the institutional setting for maximising the positive effects of public investment in the economy. One study¹¹³ claims that there is more consensus in recent literature about the positive effects of public capital on economic growth. It points out that the effect differs across regions and sectors and confirms that it is often dependent on institutional and policy factors. EU Cohesion

¹¹¹ Andreas Irmen and Johana Kuehnel. Productive Government Expenditure and Economic Growth. *Journal of Economic Surveys*, Vol. 23, Issue 4, pp. 692-733, September 2009.

¹¹² Acemoglu D., Johnson S. and Robinson J., 2004, Institutions as the Fundamental Cause of Long-Run Growth, in *Handbook of Economic Growth*, Aghion P. and Durlauf S. (eds.) and Helpman E., 2008, Institutions and Economic Performance, Harvard University Press.

¹¹³ Romp, W., and De Haan J., 2007, Public Capital and Economic Growth: A Critical Survey, *Perspektiven der Wirtschaftspolitik*, Vol. 8, pp. 6-52.

Policy has also been widely analysed. A number of studies have demonstrated that investment financed by Cohesion Policy in infrastructure¹¹⁴, education¹¹⁵ and R&D¹¹⁶ has a positive effect on economic performance.

EU Cohesion Policy is aimed at strengthening the competitiveness of regions through support for investment to increase their growth potential. To have the maximum effect, investments undertaken by national governments should be maintained. This is the reason why, under the principle of additionality (Article 15 of Regulation 1083/2006), it is stipulated that finance from Cohesion Policy should not replace equivalent expenditure by Member States, which are required to maintain public investment rather than diverting funding to other purposes.

The '*ex-ante*' verification of additionality for the period 2007-2013 indicated that an estimated EUR 94 billion or more a year (in 2006 prices) was planned to be invested in Convergence regions over the period from national sources, additional to the amount financed from Cohesion Policy¹¹⁷. A mid-term verification of additionality will be carried out in 2011 on the basis of public investment since 2007 and the prospects up to 2013¹¹⁸.

Additionality is critical to maintaining the structural nature of Cohesion Policy, to preventing Member States from diverting the finance received from public investment to other non structural purpose and to ensuring that it results in higher rates of growth enhancing investments. Yet, the current system for verifying additionality is often contested on the grounds that results are not fully reliable and not comparable across Member States and this is an '*ad hoc*' exercise which is often cumbersome.

¹¹⁴ Bouvet, F., 2007, Labor Productivity, Infrastructure Endowment, and Regional Spillovers in the European Union. In European Union Studies Association (EUSA), Tenth Biennial International Conference, May 17-19, 2007, pages 27, Montreal, Canada.

¹¹⁵ Rodriguez-Pose A. and Fratesi U., 2004, Between Development and Social Policies: the Impact of European Structural Funds in Objective 1 Regions, *Regional Studies*, Vol. 38, pp. 97-113.

¹¹⁶ Hsu F., Horng D., Hsueh C., 2009, The effect of government-sponsored R&D programmes on additionality in recipient firms in Taiwan, *Technovation*, Vol. 29, pp. 204–217.

¹¹⁷ Carried out by the Commission in cooperation with Member States under Article 15 of the Regulation N° 1083/2006.

¹¹⁸ A revision of the baselines agreed in the National Strategic Reference Framework (NSRF) for the period might then be decided in the light of the impact of the crisis on public finances and their sustainability over the medium and long term.

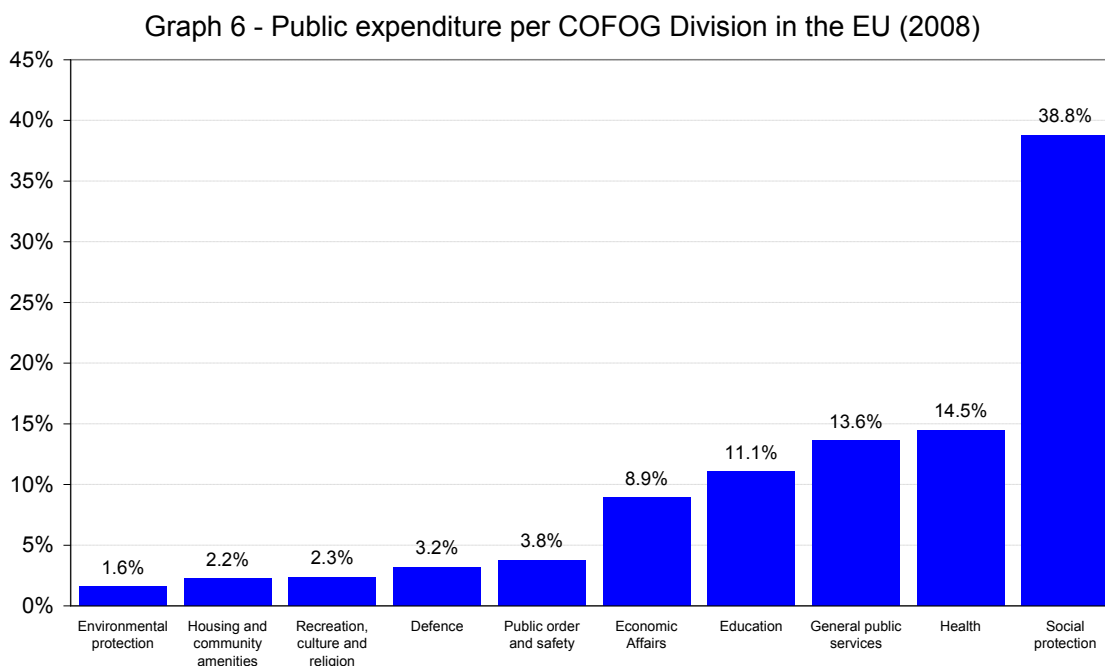
4. THE COMPOSITION OF PUBLIC EXPENDITURE IN THE EU

The aim here is to identify the main policy areas accounting for the differences in public expenditure across Member States – i.e. whether they are due to investment in physical or human capital, current spending on social transfers or debt interest payments (which varied from 5% of GDP in Italy – nearly 10% of total public expenditure – and over 4% in Belgium, Greece and Hungary to below 1% in the Baltic States and Luxembourg).

Overall, as noted, expenditure on social protection explains most of the difference in total public spending. Countries with below average GDP per head tend to spend more on energy, transport and communications, other items of expenditure not tending to vary systematically with GDP per head.

The most common basis of analysing the composition of public spending is through the UN Classification of Functions of Government¹¹⁹ (COFOG). Complete data for all Member States are available only for the 10 main COFOG Divisions (Figure 2.6). Most public investment is concentrated in a few of these, over a third in Economic Affairs (mostly in transport).

Figure 2- 6



Source: EUROSTAT

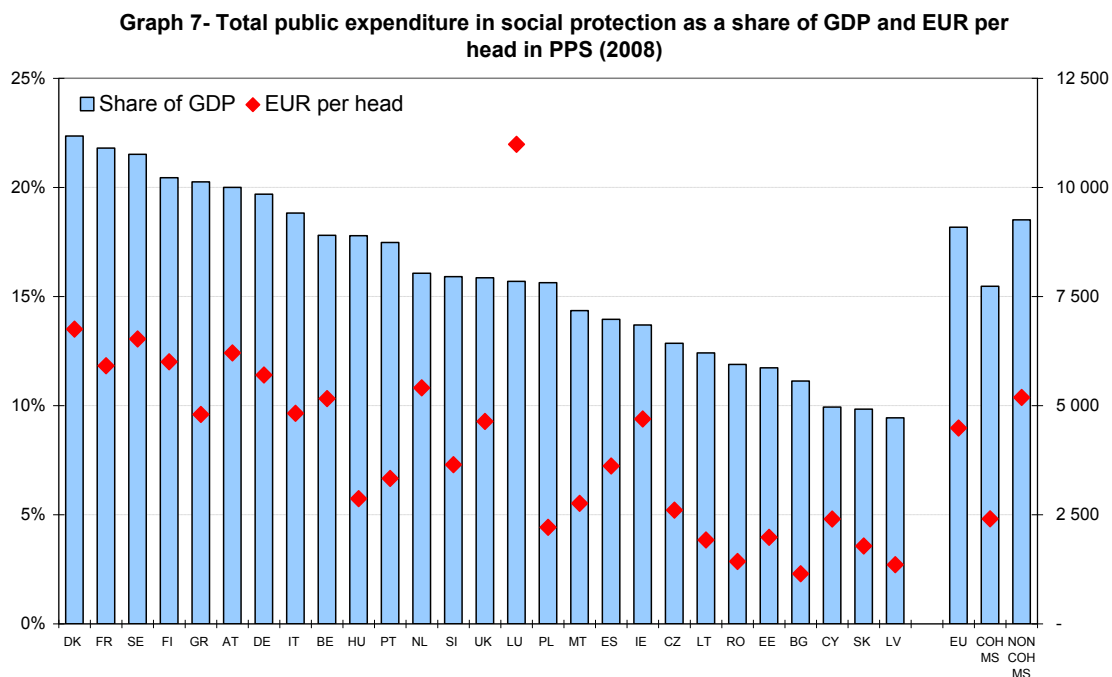
Social protection explains most of the differences in total public expenditure across Member States...

Social protection accounted, on average, for around 39% of total public expenditure in the EU and over 18% of GDP in 2008. In the three Member States with the highest levels

¹¹⁹ The expenditure is classified into Divisions (10), Groups (74) and Classes.

of spending on social protection (France, Denmark and Sweden), which were also those with the highest levels of total public expenditure, it amounted to over 20% of GDP. Conversely, it was below 10% of GDP in Estonia, Cyprus, Latvia and Romania and averaged under 14% of GDP in Cohesion countries as against over 18% in others. Expenditure per person in PPS terms in the former, however, rose from 47% of the EU average in 2002 to just over 50% in 2008 (Figure 2- 7).

Figure 2- 7



Source: EUROSTAT; DG REGIO

However, differences in public expenditure on social protection may conceal differences across countries in the way that protection is provided. In some Member States, the private sector plays a significant role in providing social support, while in others, support is provided through tax reliefs rather than through public expenditure.

The inclusion of private expenditure tends to widen the existing gap across Member States even further, this tending to be lower in countries with below average GDP per head¹²⁰. On the other hand, private expenditure narrows differences between Member States with GDP per head above average. The private sector share is over 40% of the total in Belgium and the Netherlands and only slightly less in Ireland, the UK and Spain as against under 30% in France and Sweden and under 25% in Denmark, where public expenditure is highest. Tax concessions together with the taxes and social contributions payable on social transfers have a similar effect (though a detailed analysis of this goes beyond the scope of this report¹²¹).

¹²⁰ The figures are derived by combining data on Government Statistics in ESA-95 with the European System of Integrated Social Protection Statistics- ESSPROS).

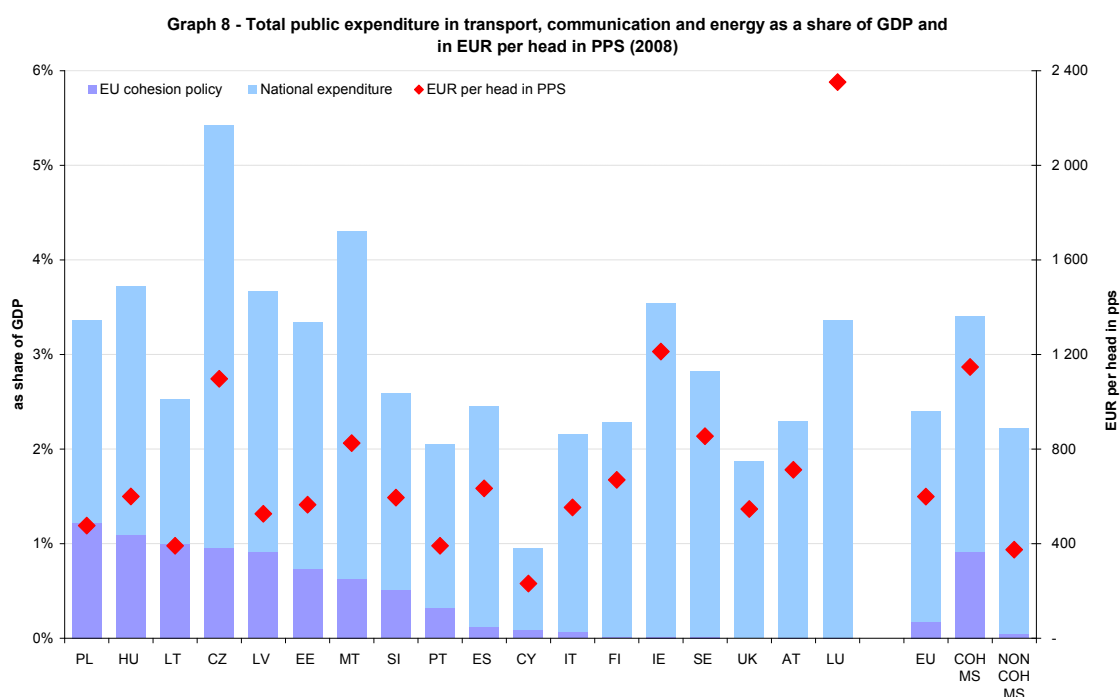
¹²¹ Further information may be found in Willem Adema and Maxime Ladaïque, 'How expensive is the Welfare State?'. OECD Social, Employment and Migration Working Papers N°92, 2009.

....while public expenditure on physical and human capital is largely unrelated to levels of total public expenditure.

On the other hand, public expenditure on transport, telecommunications and energy as a share of GDP tends to be highest in Member States with below average GDP per head¹²². In the 18 Member States for which full data are available, expenditure in these areas accounted for 3.4% of GDP on average in 2008 in Cohesion countries - in the Czech Republic, for almost 5.5% - as against just 2.2% in the others. This difference reflects the greater need to expand infrastructure in the former. Such investments to population rose from 70% of the EU average in 2002 to almost 79% in 2008 in these countries.

EU funding under Cohesion Policy¹²³ for transport, telecommunications and energy in Cohesion countries amounted to almost 1% of their combined GDP, as against only 0.1% in other Member States. As such, it accounted for around 75% of the difference in expenditure between the former and the latter in 2008. Public investment as a share of GDP in these areas was, accordingly, around 35% higher in Cohesion countries than others, with the ERDF plus the Cohesion Fund financing an estimated 28% of total investment – almost 40% in Lithuania and just under 35% in Poland (Figure 2.8).

Figure 2- 8



Source: EUROSTAT; DG REGIO

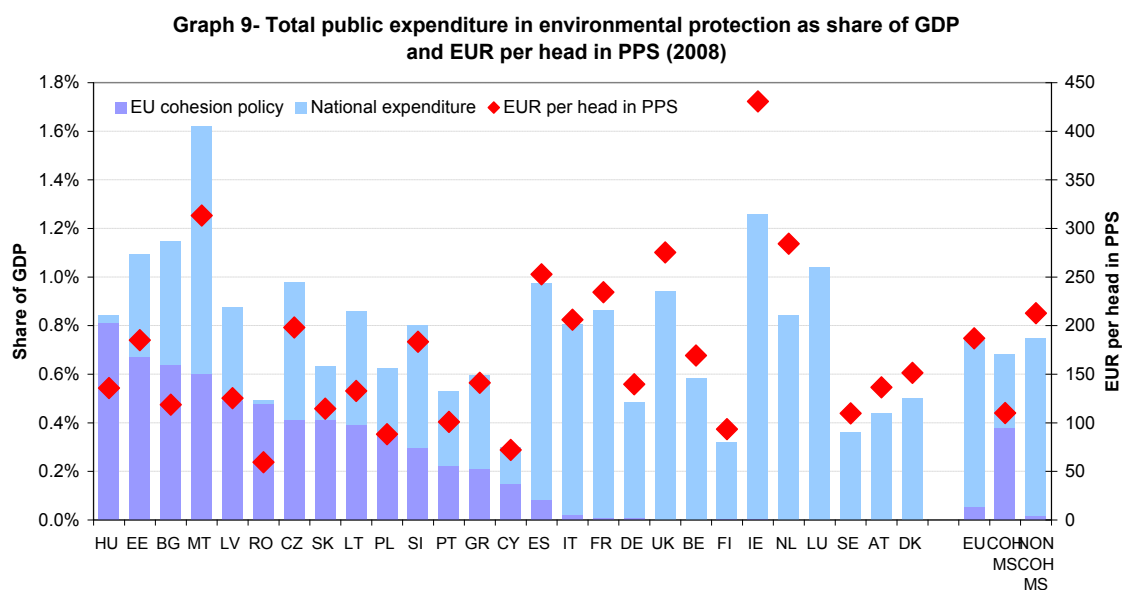
¹²² Expenditure in these areas is recorded in the COFOG category 'Economic Affairs' which also includes agriculture, fishing, manufacturing and construction. Complete data are not available in 9 Member States (Belgium, Bulgaria, Denmark, Greece, Germany, France, Netherlands, Romania and Slovakia).

¹²³ The codes taken into account for the comparison are the following: 10-15 (Information Society), 16-32 (Transport) 33-43 (Energy) according to the spending categories of Annex IV of the EC Regulation N° 1083/2006.

Public expenditure on environmental protection tends to be higher relative to GDP in Member States with above average GDP per head though not systematically so. In 2008, it averaged around just over 0.7% of GDP. In Bulgaria, Estonia and Malta as well as Ireland and Luxembourg, the figure was over 1% (Figure 2.9).

In the Cohesion countries, EU funding accounted on average for over 55% of total public expenditure on the environment. This enabled them to maintain expenditure at a more comparable level to that in other countries. In 2008, their expenditure per head was 58% of the EU average in PPS terms as against 49% in 2002. In the Czech Republic and Malta, it has risen above the EU average in these terms.

Figure 2- 9

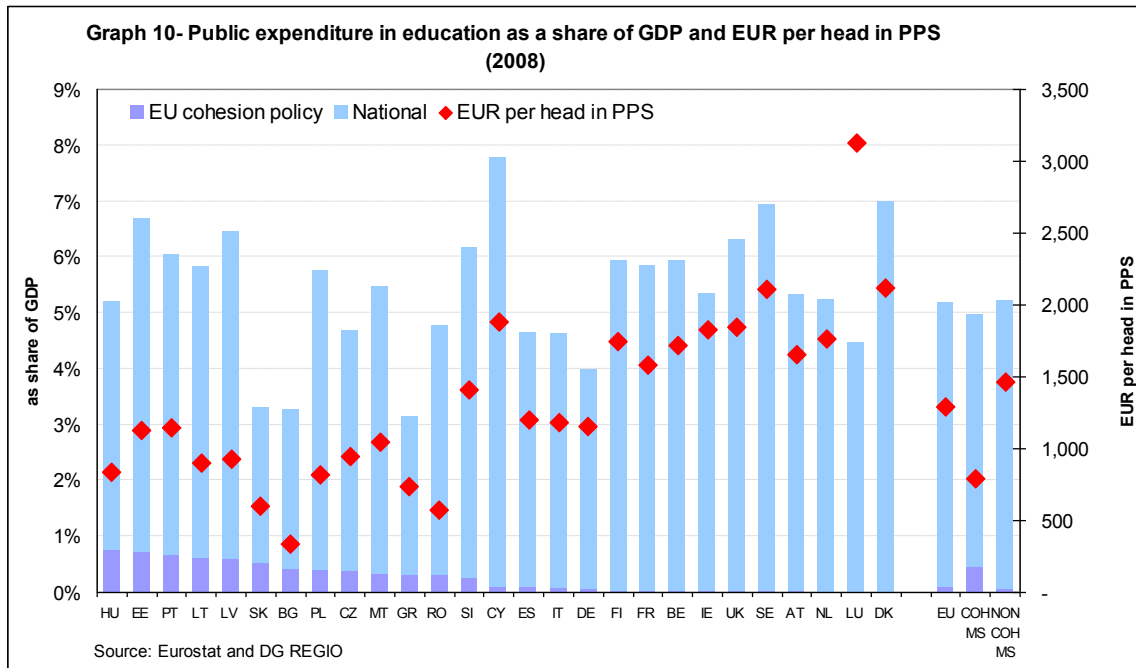


Source: EUROSTAT

Public expenditure on education amounted to just over 5% of GDP in the EU in 2008 and marginally more in Member States with above average GDP per head than in Cohesion countries. In Estonia, Latvia, Slovenia, Cyprus and Poland, however, expenditure on education was above the EU average in these terms (Figure 2.10). Relative to population, expenditure on education in Cohesion countries in PPS terms increased slightly relative to the EU average between 2002 and 2008 (from 56% to 58%).

Since only a small part of spending on education is eligible for EU support, Cohesion Policy accounted for only a minor part of the difference in expenditure across Member States. Expenditure on primary and secondary education makes up most of the total but this is largely excluded from Cohesion Policy support. Nevertheless, Cohesion Policy financed over 10% of expenditure on education in 2008 in five EU-12 countries as well as in Greece and Portugal.

Figure 2- 10



Economic growth enabled public expenditure in key areas for economic and social cohesion to be increased in most Cohesion countries

Total public expenditure in the EU was much the same in 2008 as in 2002 as a share of GDP (47%). In real terms, it was around 10% higher, but over 30% higher in Cohesion countries, even though as a share of GDP, it declined slightly because of their higher rates of growth.

The increase in expenditure was highest in environment and transport (included in economic affairs) at around 12% on average, though over 24% in Cohesion countries. The increase was less on education and social protection, below 5% in both, but over 12% in the latter in Cohesion countries and 7% in education (see Table 2. 1).

The rise in public expenditure relative to population in Cohesion countries was more than double that in other countries in all these areas, especially in those where EU funding was most important. This rise occurred despite public expenditure declining relative to GDP, reflecting the significant growth in GDP and demonstrating the importance of the latter for the ability of governments to increase spending in key areas for social welfare and economic development.

Table 2. 1: Public expenditure by policy area

	As a share of GDP		Per head in PPS (2004 prices)	
	2002	2008	2002	2008
Economic affairs				
EU	3.9%	4.2%	862.1	967.9
COH MS	5.0%	5.6%	610.8	758.6
NON COH MS	3.8%	4.0%	949.7	1038.2
Environment				
EU	0.7%	0.7%	150.8	168.4
COH MS	0.6%	0.7%	73.5	91.5
NON COH MS	0.7%	0.7%	177.7	194.2
Education				
EU	5.3%	5.2%	1131.2	1174.8
COH MS	5.3%	5.0%	631.1	676.7
NON COH MS	5.3%	5.2%	1305.6	1342.1
Social protection				
EU	18.5%	18.2%	3898.7	4089.7
COH MS	15.4%	15.5%	1839.2	2059.6
NON COH MS	18.7%	18.5%	4616.9	4771.6

Source: Eurostat and DG REGIO calculations

5. PUBLIC SPENDING AND PUBLIC INVESTMENT AT REGIONAL LEVEL

5.1. Decentralisation of public expenditure and investment

There has been a shift in responsibility for public expenditure from central to lower levels of government¹²⁴ over recent decades. This trend, however, has not been accompanied by increased resources for the latter. Since the 1990s, the share of sub-national government spending relative to GDP has been fairly stable across the EU as a whole, despite the trend decentralisation of competences. In some countries, however, it increased significantly (in Belgium, Denmark and Spain) while in others it declined (in Ireland, the Netherlands and Austria).

Less than a third of public expenditure is decentralised...

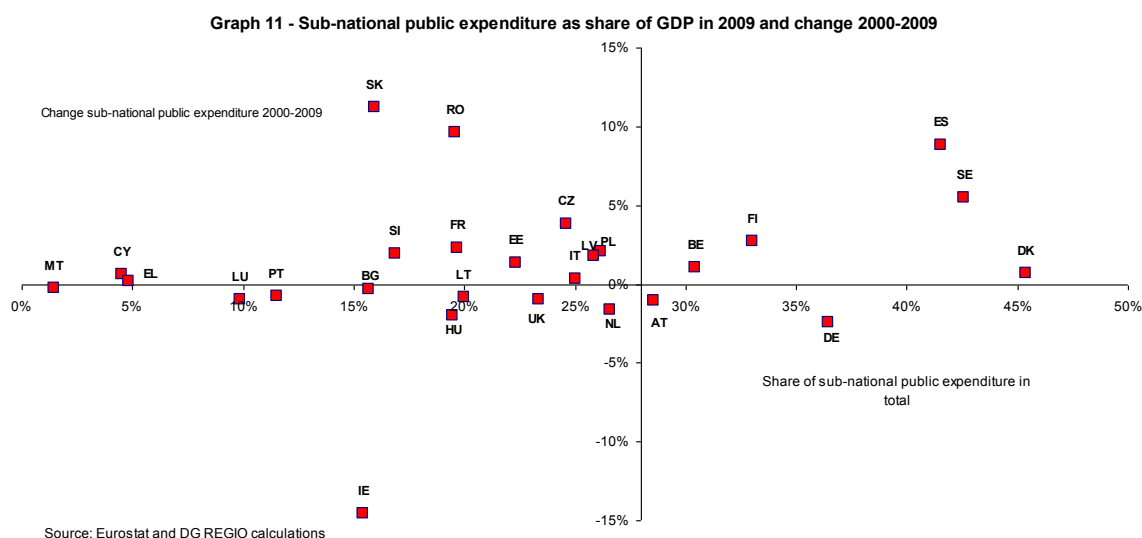
Expenditure of sub-national levels of government in the EU accounted for around 28% of the total in 2009 though with large differences across Member States. Expenditure tends to be more decentralised in Member States with a federal system (Germany, Austria and Belgium) but also in Spain and the Nordic countries where local authorities play an important role in the provision of public goods and services. In Denmark, the sub-national level accounted for over 45% of total public spending in 2009, in Sweden and Spain for over 40% and in Germany, for over 35%. By contrast, in EU-12 countries, it averaged around 25%.

The share of sub-national governments in total expenditure has remained much the same over the past decade despite the gradual decentralisation of competences. However, in most Member States, there was a trend towards decentralisation of

¹²⁴ Sub-national levels of Government refer to all administrative levels other than the Central Government and Social Security, i.e. mainly regional and local authorities.

revenue, if modest in most cases. The most significant decentralisation of expenditure occurred in Slovakia and Romania, while decentralisation of revenue was most marked in Spain and Sweden. By contrast, expenditure became more centralised in Ireland as well as in two federal countries, Germany and Austria (See figure 2.11). In sum, devolution of power to sub-national levels of government does not always go in parallel with decentralisation of financial resources. The former seems to have occurred more than the latter.

Figure 2- 11



Education and social protection are the main items of public expenditure at sub-national level, accounting on average for around 21% and 19% of total spending at this level, respectively. Social protection expenditure at sub-national level is particularly important in the UK (28%), Finland (27%), Germany (25%) and Sweden (23%). Expenditure on education is the main item at sub-national level in most of the EU-12 countries, local authorities being responsible for spending on primary and secondary schools. The other areas which account on average for more than 10% of total sub-national expenditure are Health (13%) – though over 20% in Italy, Sweden, Finland, Spain and Austria – and Economic Affairs (12% - over 20% in the Czech Republic and Romania).

Box: Spain - A rapid decentralisation of public expenditure

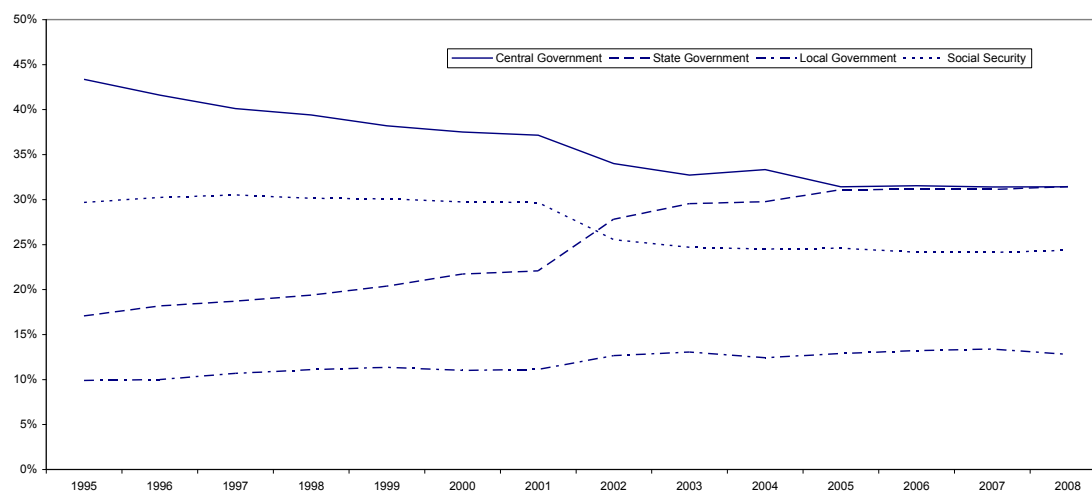
Spain had the highest degree of decentralisation of public expenditure in the EU in 2009 after Denmark and Sweden. Public finances have been significantly decentralised over the past 15 years in parallel with gradual devolution to the regions. For the first time, expenditure of the regions (Comunidades Autónomas) overtook that of Central Government in 2008 though it was reversed in 2009 due to the impact of the crisis.

Decentralisation has occurred much faster in Spain in recent years than in the rest of the EU – the share of the sub-national level increasing on average by 13 percentage points between 1999 and 2007 as against just 1 percentage point elsewhere. Public investment followed the same tendency, around two-thirds of the total being undertaken at sub-national level.

The process of devolution is reflected in the composition of public expenditure in the regions. The transfer of education and health to them led in over half of their annual budgets being devoted to these, investment in basic infrastructure, included in Economic Affairs, accounting for just under 15%. A distinct tendency over the period 2000-2006 was a progressive increase of expenditure on health coupled with a relative decline in spending on education and training.

Figure 2- 12

Total public expenditure by level (1995-2008)



Source: EUROSTAT

...while two-thirds of public investment is decentralised

Public investment¹²⁵ is significantly more decentralised than public expenditure, accounting for a larger share of total spending at the sub-national level than at central level in virtually all Member States. On average, some two thirds of public investment is carried out by sub-national governments in the EU (Figure 2.13).

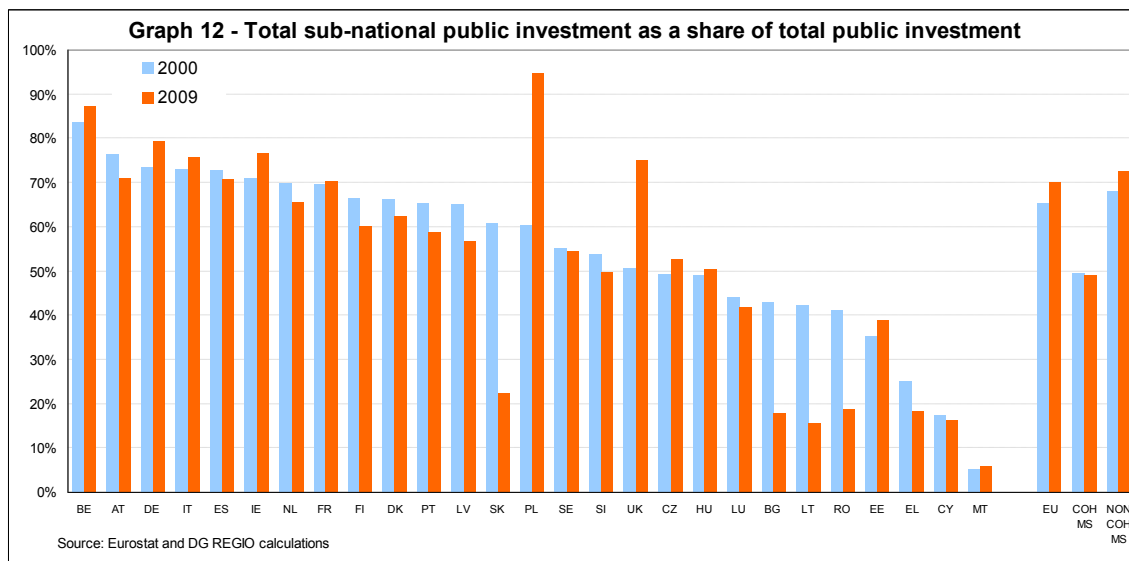
The federal countries (Belgium, Germany and Austria) have the largest sub-national shares, together with Italy, Spain and France (over 70% of the total in 2009 in each case). The share in the Nordic countries is similar to the EU average, while in EU-12 countries, it is below 50% on average, though over 60% in Poland, Latvia and the Slovakia, where there has been a rapid decentralisation of public investment. The importance of local government over the past decade has increased too in Bulgaria, Romania and Lithuania.

While the above figures provide some insight into the importance of sub-national government in public finances, it should be emphasised that decentralisation of expenditure and revenue is just one aspect of a wider process. Expenditure at sub-national level does not necessarily reflect the power of the authorities concerned

¹²⁵ Public investment here includes only gross fixed capital formation, since there is not sufficient information to distinguish capital transfers between different levels of government.

over spending which may be limited to following central government instructions and implementing programmes decided elsewhere.

Figure 2- 13



Environmental protection is by far the most decentralised area of spending in the EU, almost 80% of expenditure occurring at regional and local level, indicating the crucial role of the authorities concerned in tackling challenges like sustainable development or climate change. There are, however, a few countries, where expenditure is much less decentralised, notably Cyprus and Greece but also Poland and the Czech Republic to a lesser extent.

Around 40% of expenditure on Economic Affairs (mostly transport) is undertaken at sub-national level, though more in Federal States, Italy and Spain, reflecting the major involvement of regional and local authorities in investment in infrastructure.

5.2. Regional breakdown of investment

As of now, there are no official EU statistics on public expenditure at regional level and, accordingly, no consistent and comparable set of data in this regard. This is a serious obstacle to analysing the distribution of public expenditure and investment across EU regions¹²⁶. In the meantime, data at regional level are available only from national sources, though not in all cases or on a comparable basis. However, an attempt has been made to align national data, where they exist, with Government Finance Statistics on an ESA-95 basis in order to give some indication of the scale of expenditure and how it varies across regions.

¹²⁶ The Commission is currently cooperating with Member States to make such statistics available in the new ESA-95 Transmission Programme from 2014 on, the aim being that data at NUTS 2 level are reported for main categories of public expenditure.

Public investment in this section is defined to cover General Government gross fixed capital formation (GFCF) and capital transfers to businesses¹²⁷.

Box: Regionalisation of public expenditure data in Italy

Italy is an exception among EU countries in having a full set of public expenditure and revenue data at NUTS 2 regional level, which has been the case since 1994.

La Banca Dati Conti Pubblici Territoriali (CPT) provides information on revenue and expenditure (both current and capital) of the different public authorities in each region. It is coordinated by a Central Technical Unit in the Italian Development and Cohesion Department and 21 Operational Units, one per region. These Operational Units collect data from public bodies on a harmonised basis. Data cover the public sector, including public corporations, and are divided by administrative level, policy area and function, so enabling the distribution of public expenditure across regions and its composition in each case to be examined.

Public investment is not particularly concentrated in less developed regions...

While the regional distribution of public investment and changes in this vary across Member States, public investment per head was on average higher in Competitiveness and Employment (RCE) and Transition regions (TRANS) than in Convergence ones (CONV) over the period 2002-2006¹²⁸ (Figure 2.14). Only in France and Germany did CONV regions have higher public investment per head. This was especially the case in Germany, where expenditure per head was more than twice that in other regions in the country. In Spain, Greece and the UK, public investment was relatively evenly distributed across regions, while in the Czech Republic, Slovakia and Hungary, there was significant concentration in capital city regions. In consequence, other factors seem to have been more important than GDP per head in determining the location of public investment. Accordingly, people living in lagging regions often benefit less from public investment than those elsewhere, implying a widening of disparities in the endowment of public goods and services over time.

... as factors other than GDP per head seem to determine the location of public investment to a greater extent.

Public investment seems particularly high in regions with specific geographical features, such as the Alpine regions of Tirol in Austria and Valle d'Aosta, Bolzano and Trento in Italy. The islands of Corse in France, Sardegna in Italy and Acores and Madeira in Portugal also have a higher level than other regions in the respective countries. The same is the case in Sweden in respect of the two most northerly regions, while in Spain, public investment tends to be higher the lower the density of population, with Castilla y León and Aragón having the highest levels per head over the period 2002-2006.

¹²⁷ This means that current expenditure on education and training is excluded, part of which is part of cohesion spending though this part cannot be separately distinguished at regional level.

¹²⁸ The classification of the current programming period 2007-2013 is used as the different Objectives were set using the state of regional disparities in the years 2001, 2002 and 2003.

Another element which seems relevant is the degree of political and administrative autonomy which in some cases overlaps with the geographical features, as in the Italian, French and Portuguese regions mentioned above. Other cases include the city state of Bremen in Germany or the devolved regions of Scotland and Northern Ireland in the UK.

In some countries, public investment also tends to be concentrated in capital city regions in per capita terms, as in Austria, the UK and Sweden as well as in Hungary, the Czech Republic and Slovakia. Central government investment explains most of this, the higher level perhaps reflecting to some extent the large number of commuters which add to the need for public goods and services.

The lack of data on public investment by region, especially that of central government, however, in some countries, such as in Germany and France, limits the extent to which this tendency can be fully examined.

EU Cohesion Policy, therefore, operates in different national contexts, where public investment is only partially concentrated in less developed regions. Figures on public investment per head seem to suggest a relatively limited effort to improve the endowment of public goods and services in the regions concerned, which implies a risk of widening disparities in terms of development opportunity.

Box: The case of the Italian Mezzogiorno

The *Mezzogiorno* comprises the 8 regions in the South of Italy, all of them recipients of Objective 1 support in the 2000-2006 period except Abruzzo and Molise which had transitional 'phasing-out' status. Most of the regions were among those with the lowest rate of GDP growth in the EU over the period, their average GDP per head in PPS terms falling from 76% of the EU-27 average in 2000 to 68% in 2006.

Although employment rates increased, they remained low as compared with rates in the rest of the EU and, indeed, the rest of the country. This was especially so for employment rates of women

The low growth in the *Mezzogiorno*, however, reflects that in the Italian economy as a whole, GDP per head in PPS terms declining from 117% of the EU average in 2000 to under 104% in 2006. Indeed, growth in Objective 1 regions in Italy was slightly higher over the period than in the Centre and North of the country. Accordingly, it can be argued that 'the problem is as much that of the whole Italy as of the *Mezzogiorno*'.

Public investment policies at national level did not particularly favour the *Mezzogiorno* over the period. The Government objective¹²⁹ of achieving a level of public capital expenditure, excluding the specific funds for regional development, in the *Mezzogiorno* higher than in the rest of the country relative to its population was not achieved. Excluding public corporations (which account for around 25% of total public investment in Italy), public investment per head was lower in the Objective 1 regions (1 198 EUR per head a year) than in the other parts of the country (1 322 EUR per head) over the 2000-2006 period. This contrasts with the relative concentration of public investment in less

¹²⁹ Legge n° 311/2004 (Legge Finanziaria for 2005) articolo 1, comma 17: '*Per le stesse finalità le amministrazioni centrali si conformano all'obiettivo di destinare al Mezzogiorno almeno il 30 per cento della spesa ordinaria in conto capitale*'.

developed regions in Germany and, to a lesser extent, in Spain.

After 7 years of modest growth, the international crisis pushed Italy into deep recession in 2008, sooner than in most other euro-zone economies. The reduction in economic activity extended across all regions, RCE as well as CONV ones¹³⁰. The more open (and resilient) RCE regions, however, are likely to recover more quickly than the latter.

Map 2.1 Estimated public investment per head in PPS (average 2002-2006)

Four groups of countries can be broadly distinguished in terms of the scale of regional disparities and the regional distribution of public investment over the period 2002-2006.

The first group comprises Member States with large regional disparities in which public investment was higher in the less advanced regions. Germany stands out, with public investment in the 5 Eastern Länder much higher than in the rest of the country. In France, the same was the case in the four outermost regions as well as in Corse.

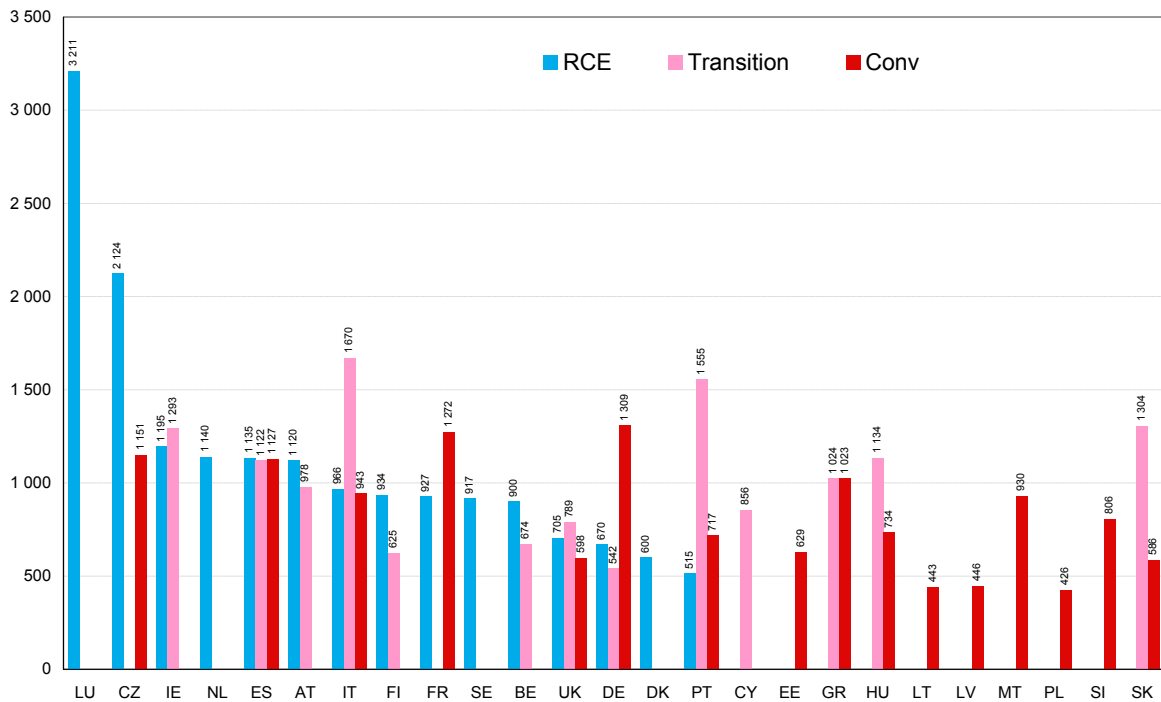
The second group includes Member States where public investment was not concentrated in less developed regions despite significant regional disparities. In Italy, public investment per head was slightly higher in the more prosperous regions in the Centre and North of the country, being especially high in the affluent regions of Aosta, Bolzano and Trento, than in the *Mezzogiorno* despite the special funds devoted to the latter. In Spain, public investment was above the national average in the Convergence regions of Galicia, Extremadura and Castilla-La-Mancha but below it in Andalucía, the other Convergence region and the most populated in the country. In Portugal, the highest rates of public investment by far were in the outermost regions of Madeira, with the second highest level of GDP per head in the country, and Açores.

The third group consists of countries with relatively small regional disparities, where, in general, public investment tends to be higher in peripheral regions and those with specific geographical features. In Austria, public investment was highest in the Alpine region of Tirol, in Sweden, in the two northern-most regions and in the UK, in Scotland and Northern Ireland. In these countries, however, public investment per head was also higher than the national average in the capital region.

The fourth group includes Member States with GDP per head below the EU average, where public investment is concentrated in the capital region. These are countries which have joined the EU since 2004. The most prominent examples are the Czech Republic, Hungary and Slovakia.

Figure 2- 14: Public investment in EUR per head per year in PPS (average 2002-2006)

¹³⁰ CONV regions in Italy are Campania, Puglia, Calabria and Sicilia, while Basilicata is as phasing-in region. All the remaining regions are RCE ones.



Source: National Sources, DG REGIO, EUROSTAT

...and private investment tends to be higher in the most prosperous regions

Private investment is distributed in a very different way across regions than public investment, in that it is highly correlated with the relative prosperity of regions and, therefore, tends to be concentrated in the most affluent ones both at national and EU level. While public investment is not particularly concentrated in less developed regions, it tends to be higher relative to GDP in these than in other regions, so helping to strengthen their competitiveness by making them more attractive places to live, work and invest in.

Over the period 2002-2006, private investment in the EU was highest in a broad area covering the North-East of Italy, Western Austria and Bayern in Germany and, to a lesser extent, in the Flemish part of Belgium and some of the Netherlands. These areas have among the highest levels of GDP per head in the Union. The North-East of Spain, Ireland and most of Denmark also had relatively high investment levels in per capita terms, along with most of the capital city regions and a number of conurbations, such as Hamburg, confirming that investment tends towards places with high accessibility and good endowment of physical and human capital where the business environment is particularly favourable. Private investment was equally above average relative to population in the Portuguese and Spanish outermost regions, some Alpine regions, and a few Mediterranean islands, which are important tourist destinations (the Balearic Islands and Crete, especially), indicating that geography is not always an obstacle to attracting investment.

It was significantly below average relative to population in virtually all Central and Eastern European regions (except in some capital cities) as well as in many Convergence regions in Southern Europe, in particular, most of the Italian *Mezzogiorno* and the Norte region in Portugal. These regions have GDP per head below the EU average and often below the national average. (Note that there are no regional data on investment available for the UK and Bulgaria.)

Box: Capital Stock

The endowment of physical capital is a major factor of growth for regional economies. Capital stock statistics are available at the national level for most EU countries but are severely lacking for regions and where they exist, the methods used to produce them are generally not consistent across countries.

A pilot study commissioned by DG REGIO tested the feasibility of producing comparable estimates of the capital stock for NUTS 2 regions. After reviewing the main approaches used for estimation, the Perpetual Inventory Method (see OECD Manual on capital stock estimation, OECD 2001, 2009) was selected as the one most in line with data availability and allowing the widest geographical coverage.

Using data from Eurostat or other publicly available sources wherever possible, the study produced capital stock figures for the all EU NUTS 2 regions. Analysis suggests that the estimates are generally robust and give rise to the following observations. The capital stock is invariably larger in the EU-15 than in the EU-12, with some exceptions like Mazowieckie in Poland. A large amount of capital is concentrated in the highly industrialised north western part of Germany, as well as in the south west around Frankfurt. There is also a large net capital stock in Northern Italy, the South of France and some Spanish regions, like Cataluña and Castilla y Leon.

The estimates were also used to compute the capital to labour ratio, which reflects the extent to which regional economies have predominantly capital or labour-intensive technologies. The ratio tends to be higher in the more developed Member States and lowest in regions where labour is less costly. Clusters of regions with a relatively high capital-labour ratio are in Austria, West Germany, and the Nordic countries. The ratio is also high in Ile de France and Provence-Côte d'Azur and Inner and Outer London.

Map 2. 2: Private investment per head (PPS), average 2002-2006

The public sector is critical to sustaining investment in many European regions...

Accordingly, public investment has an important role in these regions in increasing their endowment of infrastructure and so improving the competitiveness of businesses located there and making them more attractive for the private sector to invest in.

It is also worth noting that public investment is relatively important in a number of non-Convergence regions with particular geophysical features, such as the Northern regions of Sweden, Corse in France and the Alpine regions in Italy as well as those undergoing industrial restructuring such as Nord-Pas-de-Calais in France or Liège in Belgium.

...and European Cohesion Policy is very often behind this substantial public support to investment in regions.

The ERDF and the Cohesion Fund account for a significant share of public investment in less developed regions across the Union. The two together over the 2000-2006 programming period accounted for over 40% of public investment in Convergence regions in Portugal, for over 30% in most regions in Greece, 20-25% in the Spanish Convergence regions, around 15% in the Italian Mezzogiorno and around 10% in Eastern regions in Germany. In the last, however, this was in the context of high concentration of national public investment in these regions. In EU-12 countries, they were responsible for over 20% of public investment in Latvia,

Lithuania and many regions in Poland. The share, moreover, is likely to be significantly larger in the present programming period, because of the larger sums involved and the possible adverse effects of the crisis on national funding. Indeed, in a number of these countries, Cohesion policy is likely to be main source of finance for public investment in this period. It accounted already for a substantial part of the total gross fixed capital formation¹³¹ (GFCF) of the public sector in 2009. Cohesion policy amounted to 90% of total public GFCF in Lithuania and to over 50% in Hungary, Portugal, Estonia and Slovakia.

EU Cohesion Policy is not only important for the less prosperous regions in the Union. It is equal to 25% of the public investment undertaken by regional governments in non Convergence regions in Spain and France (and over 30% in Catalonia and Aquitaine). In addition, in the West Midlands and London, it is estimated to be responsible for around 15% of public expenditure on environmental protection.

EU funding is also significant in respect of investment in human capital, improving the adaptability of workers and assisting disadvantaged groups into employment. In regions in the Centre and North of Italy, it is estimated to account for some 25% of public expenditure and in the Brussels region for around 10%.

Map 2. 3: Share of ERDF and Cohesion Fund in total Public Investment

5.3. Current spending and cohesion

Regional and local governments, which are mainly responsible for the provision of public goods and services, often face significant financial constraints despite high levels of GDP per head. One reason is that the number of people using public services is markedly higher than the number of inhabitants, which is typically the case in capital cities and other metropolitan areas. Another possible reason is the high debt level of many local and regional governments.

Their ability to raise revenue from their own sources is also in many cases less than suggested by their GDP per head. The base for regional and local taxes is often property and/or the income of those living there which may differ greatly from GDP. Indeed, the endowment of public goods and services and the ability to provide them seems to be more correlated with income per head than GDP per head.

¹³¹ While the scope of the Structural Funds and the Cohesion Fund is larger than GFCF it gives an indication of the relative importance of the policy in total public investment.

GDP, income and the provision of public goods and services

The provision of public goods and services is important for increasing the development opportunities and standard of living in regions. A high GDP per head does not necessarily ensure sufficient provision for people living in the region.

GDP per head, which tends to be the indicator used to measure the relative prosperity of regions, relates to the income generated by the production of goods and services in the region in relation to the population living there. The GDP generated in a region, however, does not necessarily all go to people living in a region. Some of it may go to people outside who work in the region but live elsewhere – i.e. to those commuting into the region to work who are partly responsible for the GDP generated there. Some of it will take the form of company profits which may then be transferred to other regions, or even to other countries. Some of it may also be transferred out of the region by individuals, in the form, for example, of remittances abroad. The income available to households in a region, therefore, differs from GDP. The relationship between GDP per head and disposable household income at regional level is, therefore, by no means a systematic one. The final determinants of the income which households have available to spend are the taxes levied by government and the transfers paid, both of which can vary markedly across regions. Regions with a high GDP per head do not necessarily have a high level of disposable household income per head, nor does a low GDP per head necessarily imply a low level of household income and low living standards.

GDP is more concentrated than income in all Member States.

Economic activity, and therefore, GDP, is more regionally concentrated than either population or income in the EU. As a result, regional disparities in GDP per head are wider than differences across regions in income per head. The main reasons for this, as indicated above, are commuting, which effectively transfers the income generated by GDP from regions where people work to those where they live, the transfer of company profits and, most importantly, at least at NUTS 1 and 2 levels, government taxes and transfers. The latter include both those intended to make regional income levels more equal and those associated with the social protection system.

Disparities in GDP per head between NUTS 2 regions are widest in Belgium, Slovakia and Romania, in each case because of a high concentration of economic activity in the capital city region relative to population. GDP per head in the latter is around twice as high as the national average in all of them since many of the people responsible for producing GDP live in neighbouring regions. Conversely, regional disparities in GDP per head are relatively narrow in the Netherlands partly because GDP and population are distributed across regions in similar ways and commuting between regions (rather than within them) is much less.

Commuting is important in narrowing regional disparities, especially in some Member States.

Commuting plays an important role in reducing disparities in income across NUTS 2 regions in a number of countries. Commuting tends to push up GDP per

head in capital city regions and to reduce it in surrounding regions, which tend accordingly to have the highest levels of primary income per head relative to GDP per head. In Austria, for example, because of commuting to Vienna, income per head in Burgenland is 42% higher than GDP per head and in Niederösterreich, over 26% higher. Equally, in the Wallonne region in Belgium, primary income is over 21% higher than GDP. Similar differences are evident in other countries, especially those where the capital city region is relatively small in geographical terms and surrounding regions, correspondingly more important sources of labour¹³². In the EU as a whole primary income is about 8% less dispersed than GDP across regions.

The government taxes and transfers systems are even more important in narrowing income disparities across regions at both the national and EU level

Disparities in disposable income per head across regions are narrower than in either GDP per head or primary income in all Member States as a result of government taxes and transfers redistributing income. The same applies across the EU as a whole. Regional disparities in disposable income across regions are about 18% less than disparities in GDP.

Average GDP per head in the 10% of regions with the highest levels in PPS terms was 4.5 times the average in the 10% of regions with the lowest levels in 2007. In terms of disposable income, it was 3.9 times higher¹³³.

The redistributive effect of taxes and transfers is especially large in Denmark which, as a result, has the narrowest disparities in disposable income per head across NUTS 2 regions in the EU. The effect is only slightly smaller in Sweden, Austria, France and the Netherlands. By contrast, the redistributive effect is relatively small in Spain, Italy and Romania which have the widest income disparities across regions in the EU, along with Hungary, Slovakia and Bulgaria¹³⁴.

It is equally important to take account of the effect of transfers in kind which is not captured by these figures. In all countries, education and healthcare are provided free of charge and, accordingly, contribute significantly to economic, social and territorial cohesion. The quality of these services varies both within and between countries which should ideally be taken into account when assessing income disparities. Equally, social services, such as child or elderly care, are provided free or well below cost in some countries – the Nordic countries especially – but not in others, so effectively adding to income much more in the former than the latter. Ignoring these services distorts comparisons across countries –and in some cases across regions – though lack of data makes it difficult to incorporate them in the analysis.

¹³² For this reason, the analysis is made at NUTS I level in the UK, Germany and the Netherlands as well as Belgium. These are the four Member States with the highest rates of population density in the EU.

¹³³ The 20% of regions with the highest and lowest levels of GDP per head and income per head is here calculated in terms of population rather than the number of regions so as to take account of the very different population sizes of NUTS 2 regions.

¹³⁴ There are no data available for Greece.

Sixteen of the 20 regions in which taxes and transfers have the most effect are either Convergence or Transition regions, government interventions increasing disposable income per head by at least 9%. These include Asturias in Spain, Calabria in Italy, Wales and Northern Ireland in the UK, the Finnish region of Itä-Suomi and the two eastern regions of Hungary. In four of the East German Länder, the increase is over 15%.

The number of NUTS 2 regions (132) in the EU in which disposable income per head is increased relative to GDP per head is much larger than the number (50) in which it is reduced, reflecting the greater concentration of economic activity than of population.

In sum, household income per head in the EU is significantly more equal across regions than GDP per head, principally because of the net effect of taxes and transfers. This effect, however, varies markedly across countries, as does the scale of commuting, which is important in transferring income generated in capital city regions in particular to surrounding areas in a number of countries.

Developments since 2000 indicate a gradual reduction in regional disparities in the EU in both income and GDP.

Map 2. 4: Net effect of taxes and public transfers, 2007

Capital city regions: A particular kind of administrative entity

Capital city regions across the EU share a number of features. In nearly all Member States, they have the highest GDP per head as a result of the higher concentration of economic activity in them than of population. Berlin is the main exception. GDP per head in Lazio in Italy and Madrid in Spain is also not the highest in these countries, though well above the national average.

Large inflows of commuters occur daily into capital city regions from neighbouring ones, pushing up GDP per head in the former and reducing it in the latter. There are 12 capital city regions among the 20 regions in the EU where primary income per head is furthest below GDP per head. Brussels is the prime case, with GDP per head almost twice the national average and primary income per head 7% below this. In London, GDP per head is 178% above the national average, primary income, 71% above, in Praha, the figures are 109% above and 47%, respectively, and in Wien, 34% above and 4% above. These large differences partly reflect the relatively small geographical size of the cities concerned and the fact that they do not constitute coherent functional regions. Other geographically larger capital city regions, defined in NUTS 2 terms, have smaller commuter inflows (much of the commuting occurring within the region), though still significant in some cases, such as Ile de France and the regions in which Budapest, Warsaw and Athens are situated. In all of them, the gap between their primary income per head and the national average is over 10% smaller than that between their GDP per head and the national average.

Capital city regions also tend to transfer significant income to other regions through the operation of the fiscal system, which reduces their disposable income. Berlin, Brussels and Athens are the only exceptions. The amount of transfer is especially large in Romania, Slovakia and the UK, disposable income per head in the capital being reduced by over 15% in each case. It is slightly smaller, in France, Hungary and Poland, where the reduction is over 10%.

This outflow of income may affect the ability of the authorities in capital city regions to

maintain the public services needed by the people working in the region as well as those living there or may result in relatively high taxes on residents to finance these services.

6. NATIONAL POLICIES AND THE ECONOMIC CRISIS

6.1. The economic crisis and the national stimulus plans

The EU economy in 2009 experienced the worst recession since the Second World War. GDP shrank by over 4% and unemployment rose to 10% by the end of the year. The effects, however, were moderated by the European Economic Recovery Plan¹³⁵ (EERP) endorsed by the European Council in December 2008. This had two main elements:

- a major injection of purchasing power to boost demand in the short term and restore business and consumer confidence
- short-term measures to strengthen EU competitiveness in the longer term.

The former involved a budgetary expansion of EUR 170 billion from national sources with an additional EUR 30 billion from EU sources, much of it in the form of accelerated Cohesion Policy payments (see Box).

Many Member States adopted national stimulus plans...

From autumn 2008, many Member States adopted stimulus packages, amounting together to some 1.5% of EU GDP in 2009 and much the same in 2010. The size, however, varied markedly, tending to be larger in countries with more fiscal leeway (Figure 2.15).

In five Member States (Luxembourg, Cyprus, Poland, Sweden and Finland) the total stimulus amounted to over 2% of GDP in 2009 and 2010, while in 11, it was under 1%, and in three of these (Greece, Romania and Lithuania) below 0.5%.

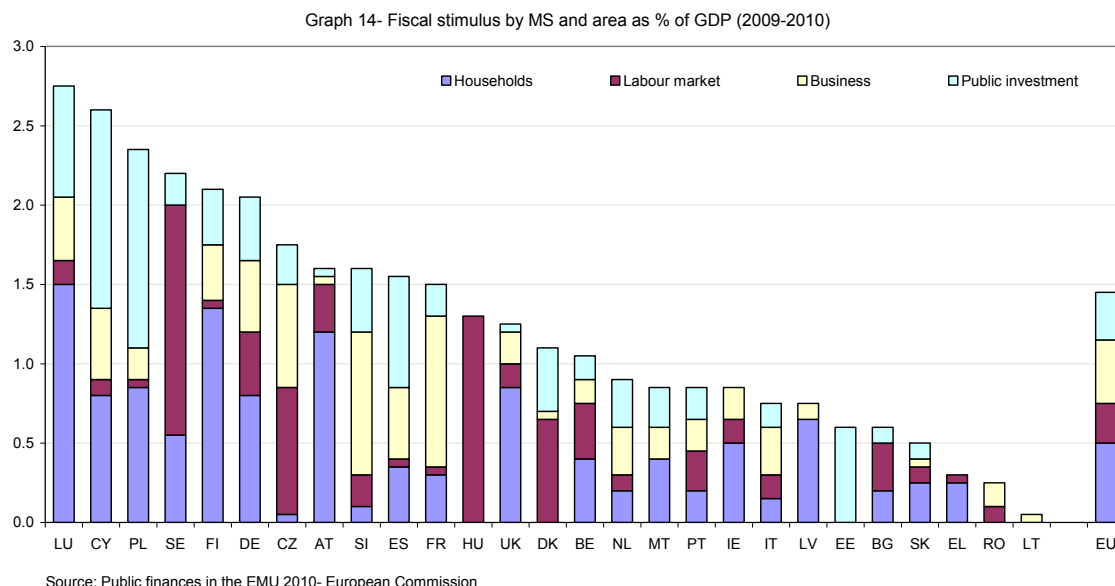
The nature of the measures adopted also differed. They can be divided into four main categories:

- **support to households** (about 0.5% of GDP 2009-2010), the main measure, accounting for around a third of the total stimulus and consisting mostly of temporary tax and social contribution reductions and special support to low-income households;
- **increased public investment** (around 0.3% of GDP 2009-2010), consisting of new or accelerated projects, mostly on infrastructure;
- **business support** (0.4% of GDP 2009-2010) to provide temporary assistance to sectors most affected such as the car industry;
- **labour market measures** (0.25% of GDP 2009-2010) to alleviate the social impact of the crisis.

¹³⁵ A European Economic Recovery Plan. COM (2008) 800 final.

The relative weight given to each of these varied between countries depending on the specific impact of the crisis. In Austria, Luxembourg, Finland, and the UK, support was concentrated on households, in Sweden, Hungary, Denmark and the Czech Republic, mainly on the labour market, in Slovenia and France, on businesses and in Poland, on public investment. In Germany, Spain and Belgium, there was a relatively even spread across the measures.

Figure 2- 15



As in the case of other measures, the priority given to public investment differed markedly across countries, with a number of Cohesion countries (Greece, Latvia, Romania, Hungary and Lithuania) not being in a position to expand expenditure because of the limited fiscal space for action.

Most of the increase in public investment took the form of infrastructure projects, many of which were already under preparation. The main exception was in Germany, where priority was given to projects for increasing energy efficiency in line with Commission guidelines. Only a few countries (Slovenia, Slovakia and Latvia among the Cohesion countries) adopted measures to boost R&D significantly.

The packages have prevented GDP from falling further and job losses and firm closures from being larger. Since they are temporary, most of the measures will come to an end in 2011 as economic growth picks up.

... in which regions played an active role in countering the effects of the crisis

Much of the response to the crisis was at national level. Regional and local authorities, however, also played an important role in some countries, especially in those with a significant degree of fiscal decentralisation.

Major stimulus packages were initiated in a number of regions. All regions in Italy for instance introduced their own packages, amounting to some EUR 5.5 billion overall or around half of the total stimulus. Significant stimulus packages were also implemented in all the German Landër, Vlaanderen (Belgium), Gelderland

(Netherlands) and Scotland and Wales (UK). They included, in general, the same types of measure as at national level, with a particular focus on infrastructure projects. In Spain, many regions also introduced temporary tax rebates and other support for the car industry to complement national government measures. In the EU-12, the only example of direct regional support was in Slovenia¹³⁶.

BOX: EU COHESION POLICY IN THE RECOVERY PLAN

In 2009, EU Cohesion Policy was a key part of the European Economic Recovery Plan. Significant advance payments from Cohesion Policy were made in 2009, allowing more money to be directed to priority projects (total payments of EUR 11.25 billion, of which EUR 6.25 billion was in response to the crisis). For many 2000-2006 programmes, the eligibility date was extended to give more opportunity for funding to be absorbed and many Member States increased the speed and amount of advance payments to recipients to help them cope with the recession.

At the end of 2009, over EUR 93 billion had been allocated to specific projects on the ground, equivalent to over 27% of the total funds allocated for the whole of the 2007-2013 programming period.

The biggest injection of funds was in the Baltic States which were hit most severely by the recession, payments amounting to around 4% of GDP in Estonia and Lithuania and 2.5% in Latvia. Payments were also over 2% of GDP in Hungary and Poland. The highest rates of absorption are evident in countries hit hardest by the recession, namely in Ireland, Estonia and Lithuania, where investment declined by over 35% in each case and consumption by over 10%.

Most of these countries had only limited fiscal space for counter-cyclical measures and their national stimulus packages were among the smallest in the EU.

The composition of spending was largely in line with the European Economic Recovery Plan and the Europe 2020 objectives. Around EUR 60 billion was allocated to projects in areas related to the latter. In particular, 28% of the projects financed involved support to innovation and businesses and around 20%, upgrading human capital. In addition, around half of the funds allocated to making places more attractive went on clean transport (rail), the environment and cultural and social projects.

The absorption of funds was particularly high in respect of support to businesses, on which over 36% of the funds allocated over the programming period had already been committed by 2009, as well as investment in human capital (25% of funds being absorbed).

EU funding accounted for a large part of total public investment in 2009 in many Member States where budget constraints limited the amount of national spending and are likely to continue to do so in coming years because of the need to reduce government borrowing. In these countries, therefore, EU funding is key to ensuring some stability in public investment levels and, accordingly, a crucial part of economic recovery.

6.2. The effects of the economic crisis on public finances and the prospects for public investment

Public finances have been affected dramatically by the sharp economic downturn which started in 2008. All Member States had budget deficits in 2009 (in some - Ireland, Spain, Greece and the UK – amounting to over 10% of GDP) and all of them are expected to do so in 2010 and 2011. The average deficit across the EU was 6.9% of GDP and is expected to rise to 7.5% in 2010. Accumulated public sector

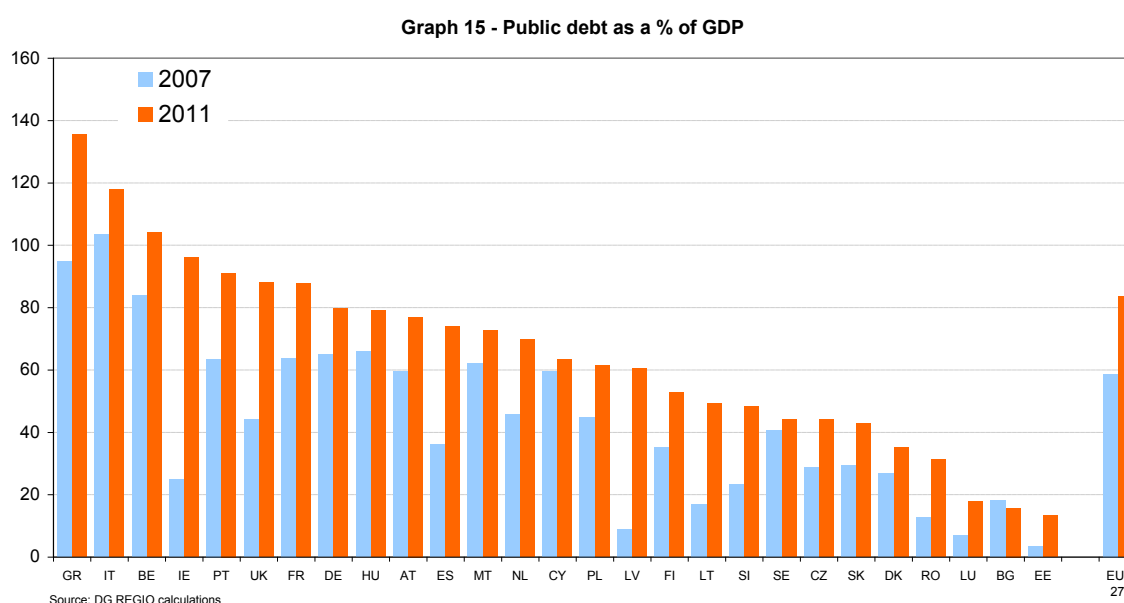
¹³⁶ Grzegorz Gorzelak and John Bachtler: 'The financial and economic crisis in Europe and its regional dimensions and policy responses'.

debt averaged 73.5% of GDP in 2009 and it is expected to rise to over 83% in 2011 unless there is a change in policy.

Public deficits and public debt are problematic legacies of the crisis...

The deterioration of public finances is expected to continue until at least 2011 despite the fiscal consolidation envisaged in the Stability and Convergence Programmes recently adopted. The increase in public sector debt by 2011 is on average projected to be around 25 percentage points of GDP relative to 2007 in the EU and over 70 percentage points in Ireland, over 50 percentage points in Latvia, over 40 percentage points in the UK and only slightly less in Spain and Greece (Figure 2.16).

Figure 2- 16



Despite the stimulus packages adopted by many Member States, only a limited part of the projected increase in debt is due to additional government expenditure. The main part results from reduced government revenue from taxes and social security payments as a result of the economic downturn (the so-called automatic stabilisers which prevent economic activity falling even further). There is also, of course, a 'denominator effect' caused by the decline in GDP in 2009.

High levels of public debt are one of the main legacies of the crisis over the medium term, putting the sustainability of public finances at the forefront of the policy agenda. Recovery of the economy, and in the tax base, together with a withdrawal of stimulus measures will not in most cases be sufficient to reduce public debt back to pre-crisis levels. To achieve this will require a protracted adjustment¹³⁷.

... which threatens public investment in the coming years

¹³⁷ See European Economic Forecast- Autumn 2009. European Commission.

There are serious risks that such adjustment will lead to reductions in public investment, just as occurred in similar periods of budgetary consolidation in the past. This was the case, for instance, in the 1990s when public debt was reduced to comply with the Maastricht criteria required to join the Monetary Union. This risk is especially serious in Member States where public debt has increased by most. Empirical evidence shows that countries with high levels of public debt tend to have lower levels of public investment, especially in times of fiscal consolidation.

A 'golden rule' of economics, however, is that 'productive' public expenditure should not be cut as severely as other elements in times of budget restraint, since this may stimulate higher rates of growth in the longer term, which are essential for budgetary consolidation to be sustained¹³⁸. Indeed, reducing public investment is likely to make it harder to reduce government borrowing levels over the long-run because of its depressing effect on growth (see Box).

Box Public investment and budgetary consolidation

Economic studies suggest that cutbacks in public investment in infrastructure and education may have damaging effects on economic growth in the longer-term which may more than outweigh the short-term reduction in the budget deficit. For instance, (Zagler and Durnecker, 2003) show the long run growth effects of government expenditure of public investments in infrastructure and education. This is very relevant because it pushes the research agenda on fiscal policy issues from a purely short run view to a more long run perspective. Growth-enhancing public investment, while causing short run budget deficits, has a positive effect not only in economic growth but also in the increase of tax revenue. If public investment is cut for budgetary purposes until levels of significant underinvestment, there is a risk that revenues fall more than the immediate improvement in the cash deficit as a result of lower economic growth. These authors show that the effects of cutting public investment are negative not only in terms of economic growth but also for the budgetary position of the country. Accordingly, if this is the case, the conclusion is that there is not a 'trade-off' between public investment and fiscal consolidation in the medium and long run but just the reverse. Resuming economic growth is a must for a sustainable consolidation of public finances and public investment can play a significant role in the recovery of the economy.

The impact of the crisis on public finances was less for regional and local authorities than for central government in 2009.

Regional and local governments have been affected to varying extents by the economic downturn, depending on its scale, the composition of their expenditure and their sources of revenues. Overall, however, the effect was less than on central government in 2009.

Public expenditure increased by 2.2% in nominal terms in the EU in 2009. In the three Baltic countries, expenditure declined. The overall increase in expenditure was larger for central governments (up by 2.6%) than for sub-national levels (up by

¹³⁸ Mitns and Smart (2006).

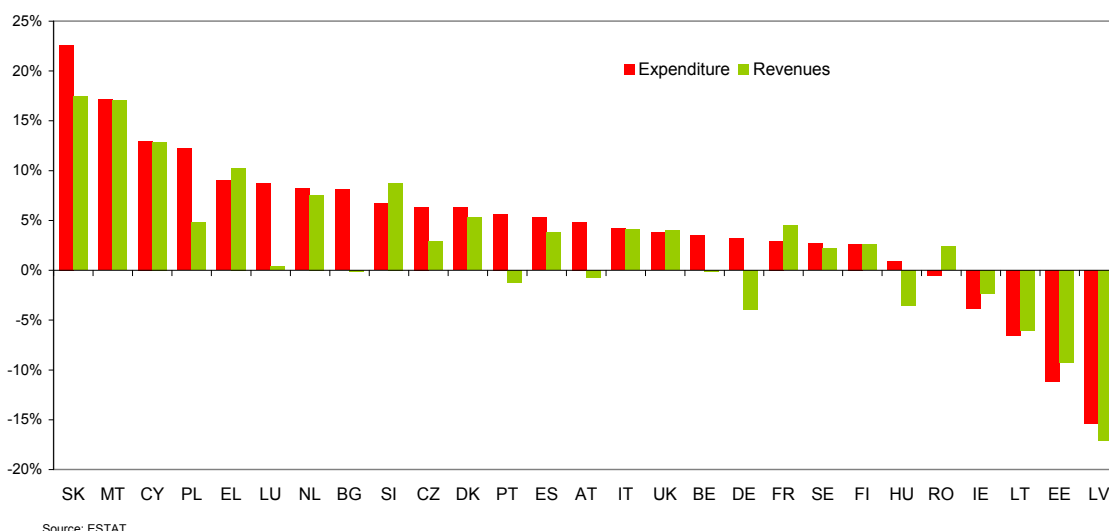
1.7%). Only in Malta, Austria and the Czech Republic, was the increase more for the latter than for the former (Figure 2.17).

Public investment in the EU rose in 2009 for both central and sub-national levels of government by slightly more than total expenditure, reflecting the stimulus measures. There were, however, big differences between Member States. Public investment declined in many Cohesion countries, by as much as 35% in Latvia and Lithuania and by over 20% in Estonia, just under 20% in Ireland and close to 15% in Bulgaria. The biggest increases also occurred in two Cohesion countries, Cyprus (36%) and Poland (22%), where the effect of the crisis was much more modest.

Revenue of sub-national levels of government was affected by the crisis only to a small extent, since in general this depends less on taxes than on central government transfers, which account for over 40% of their total revenue. These increased in 2009 despite the crisis, in many cases as part of national stimulus measures, though they fell markedly in the three Baltic countries because of the depth of the recession

Despite the generally small impact of the crisis on the financial resources of sub-national governments in 2009, there is concern about prospective reductions in the coming years, especially in countries with large deficits and high levels of debt. Sub-national governments are responsible for a large part of public investment and for the provision of public goods and services important to social welfare and to improve development opportunities. In many cases, much of their revenue comes from central government. While regions with significant fiscal autonomy were hit most by the economic downturn in 2009, they may fare better than others during economic recovery if national budgets are consolidated at the same time.

Figure 2- 17 – Changes in revenues and expenditures of sub-national levels of Government in 2009 compared to 2008



7. STRUCTURAL CONDITIONS FOR SUCCESSFUL COHESION

Government intervention in pursuit of cohesion objectives does not only entail public expenditure. It also includes measures to set the structural conditions for a more efficient allocation of resources. Their effective design and implementation is necessary not only

for sustained growth but also to maximise the impact of public investment. They may even provide a greater impact in regions with higher levels of unemployment and higher potential for growth. Structural reforms are therefore not only important for growth as a whole in the EU but also to tackle regional disparities.

Cohesion policy provides a significant demand stimulus in the short term in many EU Member States. The associated risks in terms of inflation and current account imbalances can be reduced by appropriate flexibility-oriented structural reforms and stability-oriented policies. It is the synergy between an EU cohesion policy channelled towards the most productive human and physical capital investment (complemented by national public investment) and supportive fiscal and structural reform policies that can have a lasting effect on the supply side of the economy.

Member States have implemented a number of structural measures as part of their National Reform Programmes (NRPs) in recent years, the second set for the years 2008-2010 being formulated under the renewed Lisbon Strategy and focused on growth and employment. Priorities are establishing well-functioning labour and product markets, creating an environment favourable for businesses and innovation and increasing competition.

An adequate institutional framework and efficient public administration are repeatedly identified as prerequisites for creating an environment favourable for growth and competitiveness and for fully realising the benefits of public investment and, in particular, EU Cohesion Policy. The reform of public administration has a prominent place on the agenda of many Member States, especially those for which structural weaknesses in this area constitute an impediment to achieving their economic development objectives.

Member States have made progress in adopting coherent and integrated approaches to R&D and innovation...

Research and innovation are critical to an advanced knowledge intensive economy based on the production of goods and services of high value added.

Member States have increasingly become aware that enhancing their economic performance and responding to societal needs will require R&D policy to be placed in a broader context and to be developed in a coherent way with other policy areas. The revamped Lisbon process has shown its usefulness by encouraging a common orientation of policy and the setting of a limited number of quantified targets but at the same time leaving Member States free to experiment and design specific measures suited to their economic structure, institutional features and national priorities. National R&D strategies have evolved gradually towards a more coherent and complex policy mix, cutting across different Ministries and involving changes in the institutional setting. In this context, the investment funded under Cohesion Policy is likely to have a greater impact.

...even though expenditure on R&D has remained below the Lisbon objective

The target of increasing total expenditure on R&D to 3% of EU GDP has been maintained in the Europe 2020 Strategy. All Member States have set their own national targets, which are in most cases lower than 3%. Progress in increasing R&D has been very slow, expenditure rising only marginally from 1.8% to 1.9% of GDP over the period 2000-2008. In general, the substantial increases in R&D spending have taken place in countries where R&D expenditure was relatively low. At the same time, government

funding of private R&D is increasingly taking the form of indirect measures, such as tax incentives, rather than direct ones¹³⁹.

R&D expenditures and policies are at risk of being downsized due to the enormous strains on both public and private budgets. In this context, it is important for Member States to build on their progress and tackle weaknesses, in order to sustain current positive trends and to continue them beyond 2010.

Many regions are increasingly involved in R&D and innovation policies

Many regions have come to play a key role in innovation policies of Member States. They have developed their own innovation strategies relying on existing strengths and local potential. They tend to concentrate on selected areas or on technologies focussed on specific sectors. The main goal of regional involvement is to promote technology transfer, innovation and commercialisation. Such involvement in research policies and, more particularly, in the European Research Area, however, has had mixed results. A potentially important development is that regions in federal countries have been given increasing responsibility over basic science and university funding. By contrast, regions which simply implement national top-down policies for research and innovation have no way of involved in their own policies other than participating in EU funded projects¹⁴⁰.

Progress have been made in the modernisation of higher education systems

The post-2000 period has seen widespread policy activity in pursuit of reforms to foster the excellence of the public research base, particularly as regards universities. The modernisation of universities was part of the Lisbon Agenda.

European universities have implemented major policy changes concerning their governance, funding and human resources policies. Increasing competition has driven universities to develop strategies to attract students, researchers and funding and to raise their scientific profile. In most countries, the institutional autonomy granted to universities has been reinforced. This has involved more competitive and output-oriented methods of coordination between the State and higher education institutions and among the latter themselves. It has also involved a corresponding reorganisation of decision-making processes within the institutions. University funding has changed, with a decline in block grants and a growth of competitive funding and finance from contracts.

However, Member States still face challenges in modernising higher education. The economic crisis has led to significant cutbacks in spending which may put at risk the progress already achieved. The strategic framework for European co-operation in education and training ('ET 2020'), adopted by the Council in May 2009, underlines the

¹³⁹ See "Trends in R&D policies for a European knowledge-based economy". JRC Scientific and Technical Reports. European Commission.

¹⁴⁰ See "Contribution of policies at the regional level to the realisation of the European Research Area". ERAWATCH, a joint initiative of the European Commission's Directorates General for Research and Joint Research Centre. European Commission. 2009.

need to continue with the modernisation agenda for higher education and to improve the quality and efficiency of education and training¹⁴¹.

Business potential has been gradually unlocked, especially in SMEs

Businesses in the EU are confronted daily with a range of obstacles which limit their activities. These restrict their ability to operate internationally and reduce the impact of ERDF support to enhance the competitiveness of firms. Firms often have to deal with 27 different legal systems for the same transaction as well as having to cope with administrative burdens and the associated costs, including when starting up a business. These tend to offset the support provided under Cohesion Policy to increase firm competitiveness (EUR 70 billion in 2007-2013). These problems affect SMEs, in particular, which are a main focus of policy and impede their ability to grasp the opportunities created by the Single Market.

In the second set of National Reform Programmes, some progress has been made in improving the business environment in a number of Member States, partly because of a greater focus on creating more favourable conditions for SMEs as a response to economic downturn. In 2009, there were 18 Member States which had introduced one-stop shops for starting up businesses, with the average time for starting a private limited company being reduced to 8 calendar days as against 24 days in 2002 and the average cost being halved to EUR 417. While there has been a major change in the regulatory culture in the EU over this period, much remains to be done to simplify the business environment and reduce the administrative burden.

The first step towards a comprehensive policy framework for SMEs across the EU was the adoption by the Commission of the Small Business Act in June 2008. Several measures included in this document have already been introduced, such as reduced VAT rates in June 2009.

Access to finance for SMEs has become even more important in the crisis and most Member States have taken measures to facilitate this, mainly through extending schemes guaranteeing loans to SMEs, interest rate subsidies and increasing the credit earmarked for SMEs. Nevertheless access to finance still remains fragmented and out of line with current needs, especially for start-ups and small loans (micro credit).

...but competition policies have progressed relatively slowly.

Competition policies, and preventing restrictive agreements between firms as well as monopolies, are intended to ensure that markets provide the right environment for investment and innovation and, accordingly, for growth and employment. In the absence of competition, there is a risk that public investment and aid to business will not produce the expected effects in this regard.

Measures adopted by Member States in this area have often been general in scope, focusing either on implementing the existing *acquis*, in particular as regards 'network industries' (i.e. energy, transport and telecommunications) or on enforcing competition policy.

¹⁴¹ See "Focus on Higher Education in Europe 2010: The impact of the Bologna Process". European Commission.

The regulation of professional services still remains restrictive in a number of Member States, so hampering competition. The implementation of the Services Directive should bring about visible improvements by facilitating the establishment of services in other countries and the provision of cross-border services. Progress has been made in most Member States in this respect, but there remain a number of Member States who have still to implement the Directive fully. There has been an increase in financial integration, though at different speeds across sections of the market. In particular, retail banking remains fragmented, though a number of Member States have taken specific action to correct this, such as Poland which abolished regulations limiting investment in retail and wholesale markets. Some Member States have taken measures to remove barriers to market entry by new operators and the expansion of existing ones. Opening up network industries and services to competition has been slow and significant obstacles to market entry remain. While many Member States have sought to increase competition in gas, electricity and telecommunications, there remain restrictions due to 'bundling' (especially in the gas, electricity and rail sectors) as well as a need to set up clearly mandated and independent regulatory authorities with adequate resources.

In addition, very few Member States have introduced measures to improve the functioning of public procurement markets or intellectual and industrial property rights regulations, or to speed up standardisation.

Structural improvements in the functioning of labour markets help to increase employment...

Raising employment levels is one of the most effective ways of generating economic growth and increasing social inclusion. Some 75 EUR billion is allocated under Cohesion Policy in the current programming period to employment policies and upgrading human capital. This is intended, *inter alia*, to increase lifelong learning, help disadvantaged groups into jobs and support active ageing.

The potential gains from such funding will not be fully realised if parallel legislative and institutional reforms are not made to modernise labour markets and social protection systems. The effects of training programmes in helping people who are unemployed are limited if there are barriers and disincentives to take up employment. Equally, support for active ageing has little point if there is compulsory retirement at 60 or 65. In sum, the right conditions need to be put in place to facilitate employment, whether into a first-time job, a return to work after a break or remaining in work longer.

These conditions entail appropriate levels of labour cost, modern forms of work organisation, the removal of barriers to entering the labour market or leaving it temporarily, and labour market flexibility combined with employment security ('flexicurity'). Active inclusion policies are also important to increasing participation and strengthening social cohesion.

Despite the increase in employment rates over the past decade, the economic downturn has underlined the need to reinforce efforts in two areas: (1) implementing integrated 'flexicurity' pathways to smooth transitions between jobs or from unemployment or inactivity into work, and (2) ensuring better matching and upgrading of skills, which is important to get the unemployed into work and improve security of employment.

through increased efforts to establish flexicurity ...

One of the most important developments in labour market policy under the Lisbon Strategy has been the adoption of common flexicurity principles, which help meet the need for both enterprises and workers to adapt to structural change. Most Member States have developed comprehensive strategies in this regard or are in the process of so doing but still have to implement the reforms set out in these strategies.

For example, some Member States have introduced or announced reforms to develop flexible contractual arrangements, while improving the protection of the workers concerned or have revised Labour Codes. There is in general a move from passive to active labour market policies, which are becoming increasingly oriented towards prevention and early intervention with emphasis on training. Innovative measures to increase mobility between occupations, especially for young people, are also being taken in some countries.

In addition, many Member States have reformed their tax and benefit systems to make it more attractive to work and to encourage the unemployed and inactive to get a job. Policies to 'make work pay' have been introduced and efforts have been made to increase the take-home pay of low-wage earners. On the tax side, widespread efforts have been made to reduce the tax wedge, in particular for low wage earners, young people, older workers and disadvantaged groups.

...and address persisting structural weaknesses in labour markets

Some progress has been made in promoting a lifecycle approach to work. Most Member States have implemented pension reforms which strengthen incentives to work longer and encourage employers to retain older workers. However, progress in advancing gender equality has been limited and most countries are far from adopting a full gender mainstreaming approach to employment policies and undertaking systematic gender impact assessments of policy measures.

Advances have also been made in some Member States in combating youth unemployment through improved vocational education and training schemes aimed at ensuring a better match with labour market needs and in providing personalised guidance and support.

Some effort has gone into improving the organisation of work in a number of countries to the benefit of both workers and employers, while regional mobility has been encouraged through subsidising the costs of commuting, increasing cooperation between regional employment services, language training and subsidising housing costs.

Despite the measures listed above, structural problems persist. Labour markets continue to be segmented in a number of Member States, participation in life-long learning remains low almost everywhere, youth unemployment is high in many parts of the EU and education and training systems remain insufficiently responsive to labour demand.

While much has been achieved, the pace of implementing reforms has been slow and uneven.

Although the Lisbon Strategy has helped forge consensus around the EU over the need for reform, progress in implementation has been slow and uneven across Member States and policy areas. In particular, reform in policy areas important for cohesion (R&D and

innovation, business environment, internal market and competition, and the better regulation agenda) has lagged behind that in the labour market.

The implementation of structural reforms in support of economic growth, employment and cohesion will continue under the Europe 2020 strategy. Nevertheless, the implementation of these reforms needs to be faster for them to have a significant impact on economic and social cohesion and the performance of Cohesion Policy and a closer link between the latter, structural reforms and fiscal policies could strengthen the effectiveness of policy and boost long-term growth.

8. CONCLUSIONS

Regional development policies were increasingly oriented over the last two decades to stimulating endogenous development through support to areas of comparative advantage rather than on compensating for disadvantages.

Under this new paradigm, public investment has proven essential for the development of lagging regions. Cohesion Policy allocations alongside its principle of additionality ensure that less developed countries enjoy higher rates of public investment relative to the size of their economies. This is mostly the reason why, on average, public investment is higher relative to GDP (though not per head) in Cohesion countries than in the rest of the EU and has, moreover, increased relative to population over the past decade.

A number of recent studies have concluded that public investment tends to boost growth under certain conditions among which good institutional governance is critical. Evidence shows a positive correlation between rates of public investment and rates of economic growth over this period, suggesting both that public investment is important for convergence and that growth is important for public investment. Therefore, it is important to maintain the concentration of public investment, in particular Cohesion Policy, on less developed Member States and regions to strengthen economic, social and territorial cohesion.

Regional and local authorities are key actors of development. Public investment is significantly more decentralised than public expenditure in virtually all Member States. On average, some two thirds of public investment is carried out by sub-national administrations in the EU.

Higher rates of public investment in Cohesion countries are mostly due to expenditure on infrastructure, notably transport networks. This reflects the lack of endowment of physical capital in less advanced Member States and the crucial role of cohesion policy in narrowing this gap.

Unlike in the case of EU cohesion policy, the relative prosperity of regions is not a major determinant of their access to national funds for investment, except in Germany and, to a lesser extent, in France. Other factors such as geophysical features, the extent of fiscal and political autonomy or the attraction of capital cities seem to be at least as important determinants of the geographical distribution of investment. In other words, cohesion does not seem to be a major determinant in decisions on public investment in many Member States.

The economic crisis led most national governments and some regional authorities to introduce 'ad hoc' stimulus packages in order to counter the effects on growth and

employment. Public investment was an important component of these. The legacy of the crisis, however, is a dramatic increase in government borrowing and debt, mostly stemming from a fall in tax revenue. Reducing government deficits in the coming years to more sustainable levels is likely to put pressure on public expenditure programmes and on public investment in particular.

Accordingly, cohesion policy which accounts for a substantial proportion of financing for investment in many countries is likely to become increasingly important in the future. On the other hand, the fiscal and budgetary constraints of Member States will have a significant impact on the environment in which cohesion policy will operate.

It is important that Member States bear in mind the potentially significant role of public investment in this new context. In any case, the system for the verification of additionality needs to be revised. Currently, the system is contested on grounds of reliability and full comparability between Member States, in view of its ad-hoc nature and complexity. A reform of the system is necessary with a view to making it more reliable, transparent, simple and proportional.

Structural and institutional reforms are of major importance for maximising the impact of cohesion policy. Yet, the pace of reform over the past decade has been relatively slow in some critical areas. This affects the impact of the policy 'on the ground'. The Europe 2020 strategy has set a new framework to which cohesion policy needs to adapt. A central element in the reform of the policy will be to establish closer links between the design and implementation of the policy and the macroeconomic objectives and the structural as well as institutional reforms pursued in this context.

Conditionality in the current 2007-2013 programming period for cohesion policy is confined to the macroeconomic criterion linked to the Cohesion Fund (apart from the administrative requirements relating to financial management and control systems). For cohesion policy post-2013, it is desirable to explore whether this kind of macroeconomic conditionality should be extended and if so how. There is also a need to examine the desirability of introducing conditionality for other purposes, such as to give an incentive for structural and institutional reforms in areas closely linked to the operation of cohesion policy with the aim of making the policy more results-oriented and of trying to ensure maximum value for money.

Chapter III: Other European Union policies and cohesion

1. INTRODUCTION

Economic, social and territorial cohesion is a key objective of the EU¹⁴², which cuts across all policies. According to Article 175 of the Treaty, '*The formulation and implementation of the Union's policies and actions and the implementation of the internal market shall take into account the objectives set out in Article 174 (i.e. the strengthening of economic, social and territorial cohesion) and shall contribute to their achievement.*'

While each policy has its own objectives, there is a growing need for the overall strategy pursued by the EU to become more effective, which has been given added weight by the adoption of the Europe 2020 headline targets.

This chapter examines the interaction between different policies and the extent to which other policies reinforce the effect of Cohesion Policy on the objectives of the latter, focusing in particular on their effect in reducing regional disparities.

Taking a slightly different approach than in previous reports, this chapter distinguishes policies which have an explicit spatial (regional) dimension as such from those which only have a partial spatial dimension and those which are 'spatially blind'¹⁴³, i.e., policies which do not distinguish between different parts of the EU.¹⁴⁴

This chapter does not argue that policies need a spatial dimension as such. Many policies do not have a spatial dimension nor a spatial impact, such as for example intellectual property rights. However, a greater awareness of potential territorial impacts can improve policies and facilitate coordination between them. This could be achieved by carrying out territorial impact assessments as described at the end of this chapter.

2. POLICIES WITH AN EXPLICIT SPATIAL DIMENSION

2.1. Competition

Competition policy is designed to ensure that the internal market remains an open one, with equal opportunity for firms to compete in whichever place they are located and from whatever Member State they originate. The intention is to stop

¹⁴² Article 3(3) of the consolidated versions of the Treaty on European Union (TEU) and the Treaty on the Functioning of the European Union (TFEU) states that 'The Union shall promote economic, social and territorial cohesion'. This is further developed in Article 174: 'In order to promote its overall harmonious development, the Union shall develop and pursue its actions leading to the strengthening of its economic, social and territorial cohesion.'

¹⁴³ *An agenda for a reformed Cohesion Policy* by Fabrizio Barca, 2009.
http://ec.europa.eu/regional_policy/policy/future/barca_en.htm

¹⁴⁴ For a similar approach see chapter 3 of *The territorial dimension of environmental sustainability*. Technical report No 9/2010, EEA, 2009, Copenhagen
<http://www.eea.europa.eu/publications/the-territorial-dimension-of-environmental-sustainability>.

both the protection of national firms and the more prosperous regions from outbidding less prosperous ones in terms of the financial inducements offered. 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 for R&D and other investment, which contributes to the pursuit of the Europe 2020 objectives by encouraging the adoption of more innovative and greener technology.

In 2008, State aid amounted to EUR 52.9 billion¹⁴⁵, or EUR 113 per head of population. In the three years 2006-2008, it was an average of 0.4% of EU GDP a year, but the exceptional measures to combat the crisis pushed it up to 2.2% of EU GDP in 2008.

State aid differs across Member States. The amount in 2008 ranged from over EUR 300 per head in Denmark and over EUR 200 per head in Sweden and Malta to less than EUR 50 per head in Latvia, Romania, Estonia and Bulgaria, reflecting differences in policy approaches as well as levels of economic prosperity. Despite generally higher State aid figures per head in the EU-15, the EU-12 Member States accounted for some 13% of the total in 2008, much more than their share of EU GDP (8%), reflecting the larger share of population covered.

Regional aid

The Commission Guidelines on national regional aid for 2007-2013¹⁴⁶ set out the principles for determining whether or not aid for the economic development of disadvantaged areas, and the support for investment or new enterprise creation which it entails, is compatible with internal market rules. The maximum intensity of aid allowed is higher in regions with lower GDP per head and in the outermost regions. Member States are encouraged to concentrate aid on multi-sectoral schemes which are part of national regional policy and which normally do not require notification to the Commission.

In the three years 2006-2008, aid for regional development amounted to EUR 11.3 billion, up 14% on the previous three years. The share of regional aid in the total aid increased from 18% to 22% between the two periods. Greece, Poland, Portugal, Sweden and the Czech Republic were the largest contributors to the increase.

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 underemployment (category 'a' regions) (see Map 3. 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

¹⁴⁵ Excluding railways. The total including railways is EUR 67.4 billion.

¹⁴⁶ OJ C 54, 4.3.2006, p. 13.

to Convergence regions (including Phasing-out regions). In 2008, aid in these regions amounted to almost EUR 14 billion.

Aid in ‘category a’ regions increased by a quarter between 2007 and 2008 (from EUR 11 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). Member States differ in terms of the level of aid in such regions, reflecting differences in regional policy, the extent to which aid is used to support development and the size of the eligible population¹⁴⁷.

Map 3. 1: Regional aid 2011-2013

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 5000 or less and regions similarly isolated geographically, regions neighbouring category ‘a’ regions. Aid in these c regions totalled around EUR 7.4 billion in 2008 (i.e. just over half that in category ‘a’ regions), down by 23% from 2007.

State aid and the Lisbon objectives

A new General Block Exemption Regulation (GBER) was introduced in 2008¹⁴⁸, 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 in all regions.

The GBER covers aid to SMEs, research, innovation, regional development, training, employment and risk capital, as well as aid 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 19% (EUR 10 billion) of aid to industry and services was already block exempted in

¹⁴⁷ It should be noted that aid in category ‘a’ regions might be used for purposes other than regional development.

¹⁴⁸ http://ec.europa.eu/comm/competition/state_aid/reform/reform.cfm

2008 under the previous regulations as compared with 13% (EUR 6.3 billion) in 2007 and 6% (EUR 3 billion) in 2006.

A Best Practice Code and a Simplified Procedure were introduced in 2009 to facilitate the treatment of State aid cases and accelerate the process. Measures eligible for simplified treatment include certain aid for SMEs, the environment, innovation and restructuring. In addition, guidelines for State aid for investment in broadband networks were recently adopted¹⁴⁹ to accelerate and extend their deployment and so contribute to both the short-term recovery and long term competitiveness of the EU economy as part of the European Economic Recovery Plan¹⁵⁰.

2.2. Transport

Investment in transport inevitably affects some regions more than others, though the selection of routes and places to invest in at the EU level has largely been determined by objectives other than reducing regional disparities, though it has undoubtedly assisted the development of the less developed countries.

Transport policy is centred on completing the trans-European transport network (TEN-T), which is aimed at ensuring that the transport system in place enables the internal market to function smoothly and that the main centres of population and economic activity are reasonably well connected.

Since 1996, when the policy was initiated, some EUR 400 billion has been invested in the network, almost a third coming from EU sources¹⁵¹, much of it from the Cohesion Fund, which is confined to financing investment in Member States with relatively low income levels. As a result, national rail and road networks have become better interconnected.

An efficient transport network is important for sustained economic development and territorial balance. The focus of the TEN-T policy, however, has been on strengthening links across the EU rather than on improving the accessibility of lagging regions as such, though it has undoubtedly contributed to this, not least through the investment financed by the Cohesion Fund. These countries – Greece, Spain, Portugal and (up until 2003) Ireland and the EU-12 countries since 2004 – were also the ones with transport systems most in need of expansion and improvement. Thus, it has been left to Cohesion Policy, and in particular to the ERDF and Cohesion Fund, to strengthen transport links both within regions and between regional networks and national and European ones.

The challenge now is to respond effectively to the growing need to reduce emissions from transport and to save energy by encouraging a shift from road to rail, in particular, though also to waterways and maritime transport, while at the same time

¹⁴⁹ http://ec.europa.eu/competition/state_aid/legislation/specific_rules.html#broadband

¹⁵⁰ This includes EUR 1.02 billion through the EAFRD that Member States could allocate, among other priorities, to the development of broadband internet in rural areas

¹⁵¹ Grants from the TEN-T budget, the Cohesion Fund and the European Regional Development Fund, plus loans from the European Investment Bank.

meeting the need for improvements in the transport network in less well endowed regions. This is especially the case in the EU-12 countries, where road as well as rail networks are in a poor state of repair and wholly inadequate to meet the demands imposed on them as their economies grow and develop.

2.3. Environment

The main political driving force for improving the quality of the environment and human health is the EU Treaty, and body of EU legislation adopted under it which must be implemented by Member States. EU environmental policy is pursued through Action Programmes, the 6th one covering the period 2002-2012, the aim being to further the EU Sustainable Development Strategy (SDS). It covers a wide range of activities ranging from protecting ecosystems and biodiversity to improving water supply and the treatment and reducing noise pollution. It aims to reduce environmental disparities in the EU, which directly contributes to cohesion in that it will make lagging areas more attractive as well as healthier places to live and work.

Natura 2000 is a good example of a policy with a strong spatial dimension. It is an EU-wide network of nature protection areas established to assure the long-term survival of Europe's most valuable and threatened species and habitats. Natura 2000 is not a system of strict nature reserves where all human activities are excluded. Whereas the network certainly includes nature reserves, most of the land continues to be privately owned and the emphasis is on ensuring that future management is sustainable, both ecologically and economically.

Framework Directives, moreover, require public authorities to draw up plans for management of water, flood risk, waste and air quality in cities as well as marine management to achieve a set of environmental objectives, so encouraging the formulation of integrated development strategies for particular areas. River basin management plans, for example, may lead to better coordination of their use by agriculture, tourism, shipping, hydropower and so on, while those for air quality might lead to the development of public transport, more green spaces and bicycle lanes.

Up until now, the EU biodiversity policy was driven by the EU 2010 target – to halt biodiversity loss in the EU by 2010 – set by the Heads of State in 2001. The EU Biodiversity Action Plan was put in place in 2006 to accelerate progress towards this target and took an integration approach. For the period post-2010, the Environment Council on 15 March 2010 agreed a new vision for 2050 and target for 2020 for biodiversity, – halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as it is feasible, while stepping up the EU contribution to averting global biodiversity loss.

In addition, there are plans for a new strategy for the prevention of natural and man-made disasters¹⁵², which involve heavy costs for some regions (total losses from

¹⁵² Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 23 February 2009 - A EU approach on the prevention of natural and man made disasters COM(2009) 82 final

natural disasters are estimated to amount to at EUR 112 billion over the period 1998-2008 and to have led to 98,000 deaths)¹⁵³.

2.4. Maritime Policy

EU Integrated Maritime Policy is a new approach developing all marine-related activities in a sustainable manner. It uses cross-sectoral tools such as maritime spatial planning, integrated surveillance and marine knowledge, which will improve the way that our oceans are managed. The Commission has also made first steps towards implementing this policy on a regional basis, notably in the Baltic Sea and the Mediterranean.

The objective of this new approach is to identify EU actions that have an impact on the sea and to promote coherence across sectors and areas of activity. In addition, it aims to boost the maritime economy, protect and restore the marine environment, strengthen research and innovation and foster development in coastal and outermost regions¹⁵⁴. The success of this approach depends to a large degree on its interaction with other policies. For example, Cohesion Policy during the 2007-2013 programming period had already funded up to end-December 2008 already funded a total of 1,131 projects relating to maritime policy representing an investment of almost EUR 1.2 billion¹⁵⁵.

2.5. Common Fisheries Policy

The objective of the Common Fisheries Policy (CFP)¹⁵⁶ at present is to '...ensure the sustainable exploitation of living aquatic resources' by 'contribut(ing) to efficient fishing activities within an economically viable and competitive fisheries and aquaculture industry, providing a fair standard of living for those who depend on fishing activities...' One of the four main pillars of the policy consists of structural measures to strengthen economic, social and territorial cohesion.

The European Fisheries Fund (EFF), which supports the policy, amounts to EUR 4.3 billion for 2007-2013. Three pillars of the EFF contain measures supporting the fisheries sector (in particular, with regard to the fishing fleet, aquaculture, processing and organisation of the sector), while the fourth pillar consists of structural measures to strengthen economic, social and territorial cohesion. This is intended to assist the development of coastal areas in which fishing is an important part of economic activity and to help improve the quality of life there.

To reach these goals, it has set up Fisheries Local Action Groups, to draw up integrated local development strategies to help maintain viable coastal communities by diversifying activities and creating alternative jobs. The total public budget for

¹⁵³ European Environment Agency (2010) Mapping the impact of recent natural and technological disasters in Europe. An overview of the last decade. Version May 2010.

¹⁵⁴ Progress report on the EU's integrated maritime policy. COM(2009)540

¹⁵⁵ Policy Research Corporation based on the database on EU funded projects. http://ec.europa.eu/maritimeaffairs/study_d_base_en.html

¹⁵⁶ COUNCIL REGULATION (EC) No 2371/2002 of 20 December 2002.

this is around EUR 826.6 million and some 130 Action Groups have so far been set up of the 240 which are eventually expected.

3. POLICIES WITH A PARTIAL SPATIAL DIMENSION

3.1. Research and technological development

Policies to promote research and technological development along with innovation (RTDI) inevitably affect some regions more than others. The regional dimension, however, is not a central aspect in the design of policy and in determining the allocation of EU funding for research, which is a significant part of the overall EU Budget (see **Fehler! Verweisquelle konnte nicht gefunden werden.**).

The 7th Research Framework Programme (FP7) has a budget of some EUR 50 billion for the period 2007-2013. Its objective is to help to make the EU the leading research area in the world through supporting research excellence wherever it takes place. The Risk-Sharing Finance Facility (RSFF) provides EUR 10 billion in the form of loans to projects which involve a relatively high degree of risk

The Capacities specific programme of FP7 has a budget of some EUR 4 billion, which is intended to enhance research and innovation capacity throughout Europe and ensure its optimal use.

Support is provided for a range of activities such as encouraging greater involvement of SMEs in research activities (EUR 1.3 billion); supporting the creation of large-scale, pan-European research infrastructure identified in the ESFRI roadmap¹⁵⁷, as well as optimising the use of existing infrastructure (EUR1.8 billion); strengthening the R&D potential of European regions by promoting, through the Regions of Knowledge action, the emergence of regional research-driven clusters (involving the triple helix of researchers, businesses and the public authorities) (EUR 126 million) and unlocking and developing the research potential in Convergence and outermost regions by supporting, through the Research Potential Action, excellent research entities in the regions concerned (EUR 340 million).

As the bulk of the funding for RTDI under cohesion policy is allocated to spending categories that reflect the areas of intervention under the Capacities programme there are clear complementarities between the two funding sources.

There is also, however, likely to be some indirect effect on strengthening cohesion from other FP7 programmes: ‘Cooperation’ (which supports trans-national collaboration), ‘Ideas’ (which supports basic research across the EU) and ‘People’ (which supports the development of researchers across the EU).

Equally, part of the ‘Cooperation’ programmes consists of research in the social sciences (‘Research in Socio-economic Sciences and Humanities, with a budget of

¹⁵⁷ European Strategy Forum for Research Infrastructures: <http://cordis.europa.eu/esfri/roadmap.htm>

EUR 623 million in 2007-2013)¹⁵⁸. The projects supported include studies of economic growth, regional performance, regional innovation systems, urban problems and rural regions under pressure from globalisation and are designed to increase understanding of economic and social issues. There are a number of studies, moreover, specifically on social cohesion, including the impact of inequality, the social exclusion and integration of young people and social cohesion in cities.

Analysis of FP6 ICT programmes¹⁵⁹ indicated that the participation of EU-12 countries in projects alongside more advanced countries was an important opportunity for these countries to improve the skills of their researchers, their infrastructure and the capacity to produce new products and processes.

Map 3.2: 6th FP, funding per head (index)

Map 3.3: 7th FP, funding per head (index)

3.2. Innovation and entrepreneurship

The Competitiveness and Innovation Framework Programme (CIP) is intended to increase the competitiveness of firms in the EU through helping them to innovate. Funding amounts to EUR 3.6 billion in the period 2007-2013. The main targets are SMEs with support going to help them invest in eco-innovation and energy efficiency and renewables as well as to provide better access to finance, business support services and ICT. The main instruments used for innovation policy are:

- financial instruments (amounting to around EUR 1 billion) for SMEs and innovation,
- the Enterprise Europe Network to bring together national and regional business and innovation support providers across the EU (and beyond) and to improve and broaden their support with a trans-national perspective,
- platforms and networks for innovation policy makers (PRO INNO Europe¹⁶⁰), agencies (Europe INNOVA¹⁶¹), the provision of policy and statistical analysis on innovation (e.g. the Regional Innovation Scoreboard¹⁶²) and the European Cluster Observatory, grants for eco-innovation, market replication projects and ICT related pilot projects.

¹⁵⁸ Detailed descriptions of the relevant research projects can be found on the Socio-economic Sciences and Humanities website at the address: http://ec.europa.eu/research/social-sciences/research_en.html

¹⁵⁹ 'Watching IST innovation and knowledge: FP6 impact analysis study': <http://cordis.europa.eu/fp7/ict/impact/documents/wing-pilot-fp6-final-report-18-12-09.pdf>

¹⁶⁰ PRO INNO Europe is intended to become the focal point for innovation policy analysis and cooperation, with a view to learning from the best and contributing to the development of new innovation policies.

¹⁶¹ Europe INNOVA is a European initiative which is intended to be the laboratory for the development, testing and promotion of new measures to support innovation.

¹⁶² See: <http://www.proinno-europe.eu/page/regional-innovation-scoreboard>

The Lead market initiative¹⁶³ has set up networks of public authorities to provide advice on the procurement of innovative solutions, which is a good example of how national or regional public authorities can boost innovation. In the same vein, the programme has supported the European Enterprise Awards since 2006, which go to the best initiatives undertaken by public authorities to promote entrepreneurship and small businesses. More than 300 initiatives in the 29 participating countries take part in the competition every year and winners serve as role models for regions across Europe¹⁶⁴.

There has been increasing recognition in recent years of the need to improve the complementarity between FP7, the CIP and Cohesion Policy¹⁶⁵, which led to the Commission Communication 'Competitive European Regions through Research and Innovation'¹⁶⁶, which emphasised the need for Member States and regions to coordinate their use of the different funding sources more effectively.

3.3. Information Society and Media

ICT is a major source of economic growth and is directly responsible for 5% of EU GDP. There are large disparities between countries and regions, however, as regards the rate of adoption of ICT and of modern telecommunications in particular. The extent of broadband coverage is, therefore, much less in Convergence regions (47% of the population covered in 2009) than Competitiveness ones (68% covered)¹⁶⁷, though there is some evidence of catching up.

The evidence is that managing authorities in less advanced regions have difficulty in absorbing funds available for improvements in ICT infrastructure because of a lack of skills and experience¹⁶⁸.

The Digital Agenda highlights the action needed from national, regional and city authorities to help close the gap and prevent it from widening further. This Agenda includes the following targets for 2020, (i) all Europeans should have access to

¹⁶³ See: http://ec.europa.eu/enterprise/policies/innovation/policy/lead-market-initiative/index_en.htm

¹⁶⁴ This exchange of best practice has already led to the replication of successful projects, such as the Y4 entrepreneurship development project from Central Finland which has inspired and supported similar projects in Finland and in Portugal.

¹⁶⁵ The issue has been examined in reports of the European Parliament ('Synergies between the EU 7th Research Framework Programme, the Competitiveness and Innovation Framework Programme and the Structural Funds', ITRE Committee, European Parliament, May 2007), the European Research Advisory Board (Energising Europe's Knowledge Triangle through the Structural Funds, April 2007) and the Scientific and Technical Research Committee of the EU (How to make better coordinated use of FPs and Structural Funds to support R&D, CREST, May 2007).

¹⁶⁶ COM(2007) 474 of 16.08.2007

¹⁶⁷ Digital Competitiveness Report, 2010.
http://ec.europa.eu/information_society/digital-agenda/documents/edcr.pdf

¹⁶⁸ Further evidence of the gap between convergence and competitiveness regions comes from a recent study on EU spending on ICT under structural and rural development policies.

internet speeds of 30 Mbps or more and (ii) 50% or more of European households should subscribe to internet connections above 100 Mbps.

In addition, the 2007 Commission Communication on pre-commercial procurement¹⁶⁹ highlighted the extent to which public procurement of R&D across the EU, of which ICT accounts for 20%, falls below that in the US. The bulk of public procurement occurs at local and regional level, where less innovation-minded authorities in the EU-12 countries spend considerably less than those in the EU-15. Because of the fragmentation of demand, cooperation between regions on pre-commercial procurement is essential to achieve enough critical mass for innovations to reach wide markets. The intention is, therefore, to support authorities in coordinating their procurement of ICT under the FP7 programme.

3.4. Poverty and social exclusion

Social inclusion policies, both at EU and national levels, tend to focus on specific groups of disadvantaged and vulnerable people (such as lone mothers, elderly people living alone, migrants, homeless people, ethnic minorities and people with disabilities). One of the Europe 2020 headline targets is to lift at least 20 million people out of the risk of poverty and exclusion.

Such a focus tends not to have a spatial dimension, measures being directed at helping those concerned wherever they live. There is a growing awareness, however, of the concentration of social exclusion in particular places, particularly in inner city areas and deprived neighbourhoods. Such concentrations also occur in rural areas, mostly in the EU-12 where economic activity is limited and few employment opportunities outside subsistence farming exist. The analysis carried out in the context of the Open Method of Coordination¹⁷⁰ on Social Protection and Social Inclusion shows this clearly. This provides the basis for policy cooperation in this area in pursuit of broad common objectives and which forms the central plank of EU social policy, since competence in this area resides mainly with Member States.

It is increasingly recognised, therefore, that the nature of disadvantage affecting people in situations of poverty and social exclusion is influenced by the area where they live. The link between individual circumstances and local situations runs both ways. A concentration of disadvantaged people in certain neighbourhoods results in increased pressure on public services, reduced economic activity and private investment, the emergence of ghetto situations and an erosion of social capital. At the same time, living in deprived areas means reduced access to jobs, often inadequate public services, stigmatisation and discrimination. The concentration of disadvantage also appears to be a persistent phenomenon which can spread from one generation to the next. Social policies, therefore, need to tackle the territorial

¹⁶⁹ COM(2007) 799 'Pre-commercial procurement: driving innovation to ensure high-quality public services in Europe': http://cordis.europa.eu/fp7/ict/pcp/home_en.html

¹⁷⁰ The Open Method of Coordination essentially provides a means for Member States to exchange information and views on social policy on the basis of a common set of agreed indicators of various aspects of social developments and to subject their policies to a peer review process managed by the Commission.

aspects of disadvantage if they are to succeed in helping people in the places where they live and to encompass the regeneration of deprived areas as well as support to the people concerned themselves.

This approach is also promoted through the common principles on active inclusion¹⁷¹, which emphasise the importance of local and regional circumstances and the need to ensure access to quality services. Area-based social policy was one of the main themes of the 2009 European Roundtable on Poverty and Social Exclusion organised by the Swedish Presidency, which called for increased efforts to combine ‘people-based’ and ‘place-based’ approaches in the social OMC, as well as in Cohesion Policy.

3.5. Employment

Employment policy represents a central means of tackling issues of poverty and social exclusion, since unemployment, or inactivity, is a major cause of both. On 17 June 2010, the European Council raised the employment target to 75% for people aged 20-64. Greater participation of the young, older people and the low-skilled and the better integration of legal migrants can make an important contribution to this target. To improve the integration of migrants, the Commission approved the Stockholm programme¹⁷² in 2010 and will follow this up with an EU agenda for integration in 2011.

The focus of the European Employment Strategy (EES) is, however, national rather than regional, even if it is most relevant in areas of high unemployment and its success is judged inevitably in terms of reducing disparities in employment and unemployment rates within, as well as between, Member States. Like social policy, it operates through the Open Method of Coordination, since competence for employment remains with Member States, though the ESF provides financial support to assist the pursuit of EES objectives (see Chapter IV below).

The essence of the strategy is that well performing labour markets are key to increasing employment and furthering social and economic cohesion, but these need to be accompanied by measures to support people should they lose their jobs. This flexicurity approach, combining active labour market measures (especially education and training) with adequate unemployment insurance and effective employment regulation, reduces the risk of exclusion and helps, and encourages, people to move between jobs and from inactivity and unemployment into the labour market. Moreover, flexible forms of work organisation both help to increase productivity by enabling labour input to be adjusted to the flow of work and assist people to reconcile work with family responsibilities.

Flexicurity is accompanied by measures to encourage labour mobility, in the form of an international job placement service (EURES – which held details of 805,000 job vacancies across Europe in August 2009) as well as through support for the freedom of movement of workers and the removal of obstacles to occupational

¹⁷¹ See the Commission Recommendation of 3.10.2008 (2008/867/EC), the Council Conclusions of 17.12.2008 and the Parliament Resolution of 6.5.2009 (2008/2335(INI)).

¹⁷² COM(2010)171

mobility, and the ‘New skills for new jobs’ initiative. The latter is aimed at anticipating future labour market needs and encouraging education and training systems to become more responsive to the prospective demand for particular skills. The emphasis, however, is primarily on general tendencies across the EU as a whole rather than on the potential variations in skill needs across countries and, indeed, regions.

3.5.1. The European Globalisation Adjustment Fund

The European Globalisation Adjustment Fund (EGF) helps workers who have lost their job as a result of changing global trade patterns to find another one quickly. When a large enterprise shuts down or a factory is relocated to a country outside the EU, or a whole sector loses many jobs in a region, the EGF can help the workers made redundant to find new jobs as quickly as possible. A maximum amount of EUR 500 million a year is available to the EGF to finance such interventions. The economic crisis has led to a massive loss of employment across Europe. This was reflected also in the applications for EFG in 2009 and 2010 where three quarters of them were related to the crisis. In 2007 and 2008, all the applications were related to the field of Trade.

The automotive industry was one of the hardest hit by the crisis and it is the sector which had the highest share of all applications (18%). Together with textile industry it accounted for more than a third of all applications followed by the printing and mechanical industry with each having a share of around 10%. Since its creation in 2007, the EGF has received 63 applications by the Member States. Spain, the Netherlands and Ireland introduced respectively 10, 9 and 65 applications while Bulgaria, the Czech Republic, Malta, Slovenia, Finland, and Sweden only introduced one each.

The EGF funds active labour market measures such as job-search assistance, occupational guidance, tailor-made training and re-training including IT skills and certification of acquired experience, outplacement assistance, and the promotion of entrepreneurship and aid for self-employment. It can also provide special time-limited measures, such as job-search allowances, mobility allowances or allowances to individuals participating in lifelong learning and training.

The EGF does not fund passive social protection measures such as retirement pensions or unemployment benefits.

3.6. Education

Policy on education and training is intimately linked not only with enterprise and innovation but also with employment and social inclusion policies, since it is regarded as a central means of achieving the objectives of the latter two. Its overriding aim is to encourage lifelong learning in Member States, which retain competence in this broad area (though in some Member States, responsibility lies at the regional or local level), again through the Open Method of Coordination. As in the case of employment and social policy, the focus is almost entirely at the national rather than at the regional level, even though significant disparities exist in education attainment levels and rates of school drop-out across regions within

countries – in some degree mirroring disparities in economic conditions – as well as between countries.

Nevertheless, education and training is a key element in strengthening social and economic cohesion and the various Initiatives included in the Lifelong Learning Programme (such as Erasmus and Leonardo da Vinci) increase the opportunities available to young people, who could subsequently benefit from EU research scholarships, to attain a high level of education¹⁷³. Moreover, a set of targets has been agreed with Member States to increase education levels and reduce drop-outs by 2020:

- at least 95% of children between the age of four and starting compulsory primary school should participate in early childhood education;
- the share of 15-years olds with inadequate abilities in reading, maths and science should be less than 15%;
- an average of at least 15 % of people aged 25-64 should participate in lifelong learning
- the share of early leavers from education should be less than 10%;
- the share of 30-34 year olds with tertiary education should be at least 40%.
- These last two are also Europe 2020 headline targets.

3.7. Gender equality

Over the last decade, greater participation of women in the labour market has been the crucial factor for achieving the Lisbon targets on employment. Participation by women in the labour market has increased steadily over the last few years, approaching 60 % on average in the EU¹⁷⁴ (which was the 2010 Lisbon target¹⁷⁵). Addressing gender equality at national and regional levels in the national reform programmes has helped to better identify the contribution of gender equality to the objectives in terms of employment, growth and social inclusion and so has had a positive impact on European social and economic cohesion¹⁷⁶.

Equality policies can have a significant effect on individuals, firms, regions and countries¹⁷⁷. In many countries, a positive correlation exists between high levels of

¹⁷³ 7th Framework Programme for Research and Technological Development : Marie Curie actions

¹⁷⁴ 59.1 % in 2008 with huge difference between Member States, see SEC(2009)1706 'Annual report on equality between women and men 2010'.

¹⁷⁵ The age group (20-64) covered by the Europe 2020 strategy employment rate target of 75 % differs from the Lisbon target which covered the 15-64 age group. On the basis of the 2020 target, the female employment rate has risen from 57.3 % to 62.5 between 2000 and 2009.

¹⁷⁶ Smith, M., 'Analysis note: gender equality on the labour market: challenges of the EU after 2010', European Commission's Network of Experts on Employment and Gender Equality issues, July 2009.

¹⁷⁷ Smith, M. and F. Bettio, 'Analysis note: the Economic case for Gender Equality', European Commission's Network of Experts on Employment and Gender Equality issues, August 2008.

economic activity (GDP per head) and higher labour market participation by women and men. There are several factors which could lead to gender equality policy contributing to economic growth, , such as through measures to help balance work and family life and the design of tax systems which can increase the participation of women in the labour market, resulting in higher employment and so increased growth¹⁷⁸.

Member States which have put reconciliation policies in place have succeeded in raising both participation rates of women and men and fertility rates. The EU has recently helped to improve the framework conditions for supporting reconciliation between work and private life. The Directives giving the self-employed and their partners the right to maternity leave for the first time and strengthening the rights to parental leave are important in this respect¹⁷⁹. Gender equality enables a more coherent social model to be developed, with investment in social infrastructure to support working women and men and to promote sustainable employment and social reproduction¹⁸⁰.

3.8. Health

Health forms part of human capital and constitutes a key determinant of growth and competitiveness as well as of individual well-being. Wide disparities exist between Member States and regions in terms of health status and the quality of health services, which have important implications for economic, social and territorial cohesion.

In 2007, the Commission adopted a new Health Strategy for the period 2007-2013 aimed at fostering better health and increasing healthy life years, reducing health inequalities, protecting people from health threats and supporting technological innovation in healthcare systems. Although the strategy does not have cohesion as an explicit aim, a central aspect is to reduce inequalities in access and affordability. The approach to achieving this aim is set out in the Commission Communication 'Solidarity in health: reducing health inequalities in the EU' (COM(2009) 567) which identifies wide gaps in health between Member States and regions as well as between social groups as a threat to the EU's fundamental values. It puts forward a range of measures to be taken by the EU and Member States, including through Cohesion Policy. Reducing health inequality is equally an objective of the Health Programme 2008-2013.

Related to this, a European Health Information system has been put in place to monitor developments in the situation across Member States and regions. The system comprises 30 health indicators, most of which are available at regional as well as national level.

¹⁷⁸ Lofström, Asa (2009), 'Gender Equality, Economic Growth and Employment', *Swedish Presidency of the European Union*, 2009.

¹⁷⁹ COM(2008) 635 final, Directive 2010/18/EC implementing the revised Framework Agreement on parental leave, OJ L 68/13, 18.3.2010; Directive 2010/.../EC on self-employed women and helping spouses, OJ reference to be added once published

¹⁸⁰ Social reproduction designates the processes which sustain or perpetuate characteristics of a given social structure or tradition over a period of time.

3.9. The Common Agricultural Policy

The Common Agricultural Policy (CAP) is made up of two pillars (agricultural support and rural development), with distinct but complementary objectives. It has a total budget of EUR 413 billion (in current prices) for the period 2007-2013.

Agricultural support

The first pillar of the CAP is financed by the European Agricultural Guarantee Fund (EAGF) with a budget of EUR 313 billion. It consists mainly of direct payments to farmers, along with a small number of market management measures.

Map 3. 4: CAP Pillar 1 expenditure per utilized agricultural area, 2000-2006

Direct payments to farmers help to sustain employment in agriculture. They also ensure that farmers continue to undertake important land management functions across the EU and support the viability of rural areas.

The agricultural and food sectors combined accounted for some 18.6 million jobs in the EU in 2005 (just under 9% of total employment) and for 4% of GDP. There are, however, significant variations between countries in the importance of the two sectors, this being greater in the EU-12 than in the EU-15.

The structure of agriculture is different in the EU-12, consisting of with very small holdings mixed with large-scale enterprises. In Romania and Bulgaria, around two-thirds of farms are classified as semi-subsistence and over half of them in the other EU-12 countries as against only around 16% in the EU-15.

Productivity gains from developments in crop and animal genetics as well as mechanisation, together with economic pressure, have led to a considerable structural reduction in employment over last decades. In recent years, the CAP has certainly contributed to cushioning this process by slowing down labour outflows, whilst increasing productivity, competitiveness and sustainability.

The principal beneficiaries of the first pillar of the CAP in 2008 were, as in the past, France (21.5% of the total), Germany (14.6%), Spain (13.1%) and Italy (10.2%). Financial support per 'annual work unit' (AWU – i.e. per person employed on an annual equivalent basis) was higher in the northern Member States than in the southern and EU-12 countries. Support per hectare was more balanced, though EU-12 Member States, where direct payments were still being phased in, received considerably less per hectare than EU-15 ones (see Map3.4).

Rural development

Map 3. 5: CAP Pillar 2: EAFRD expenditure per head, 2007-2009

The territorial elements of the CAP are concentrated under the rural development pillar, which is entirely focussed on rural areas, which Member States have to define in their programmes. In addition, this pillar provides more support to farmers in less favoured areas (see Map 3.6) and it invests in structural measures (investment in farms, marketing and processing) in rural areas and promotes local development under the Leader Initiative. For the period 2007-2009, the European Agricultural Fund for Rural Development (EAFRD) expenditure per head tends to concentrate in

specific regions, in particular in more remote regions and regions which do not include many large cities (see Map 3.5). NUTS 3 regions which include the capital or a large city typically have lower expenditure per head in most Member States.

Map 3. 6: Map of Less Favoured Areas

A budget of some EUR 91 billion was allocated to the EAFRD for 2007–2013, with a minimum of EUR 31.2 billion going to Convergence regions. This was increased by EUR 4.4 billion in 2009, in part by reducing the amount available under the first pillar, in order to reinforce expenditure on climate change, renewable energy, water management, biodiversity and innovation, the development of broadband in rural areas as well to assist dairy farmers hit by the crisis.

Most of the EU-12 countries, including Poland, Bulgaria and Romania have allocated an above average amount to the broad objective of 'improving the competitiveness of agriculture and forestry', while Poland, Bulgaria and Romania are also among those allocating most funding to the objective of 'improving the quality of life in rural areas and diversifying the rural economy'. This objective accounts for some 13% of overall EAFRD financing in the EU for the period and it is estimated that it will result in the gross creation of some 320,000 new jobs, with over 240,000 of these being in Convergence regions¹⁸¹.

3.10. Climate

Climate policy has two main aims – to reduce greenhouse gas emissions and to adapt to the consequences of future climate change. The way that both of these aims are pursued affects regions differentially.

Reducing the use of fossil fuels in order to cut greenhouse gas emissions implies a need for restructuring in regions where the industries concerned are concentrated. At the same time, it will tend to increase growth in regions where renewable energy sources are located, which are not necessarily the same.

Regional and local authorities have an important role to play in taking measures to reduce emissions, since they are largely responsible across the EU for housing, public buildings, local transport, local taxes and charges and spatial planning. On an initiative of the European Commission, over 1750 mayors of municipalities have already agreed to going beyond the emission reduction targets defined for the EU and have signed a commitment to this effect¹⁸².

The need to adapt to climate change also varies across regions. The evidence is that the Mediterranean Basin, the outermost regions and the Arctic are the most vulnerable, while mountain areas in particular the Alps, many islands and coastal areas and densely populated floodplains face particular problems¹⁸³. The

¹⁸¹ It is not always possible to match national or regional rural development programmes to the areas covered by the Convergence objective because the areas in which the programmes are implemented do not correspond with NUTS 2 regions.

¹⁸² The Covenant of Mayors.

¹⁸³ COM(2009) 147 final White Paper Adapting to climate change: Towards a European framework for action

Commission White Paper on adapting to climate change again emphasises the role of regional and local authorities in this and encourages the formulation of national and regional adaptation strategies by 2012¹⁸⁴.

4. POLICIES WITHOUT A SPATIAL DIMENSION

4.1. Single market

Economic and Monetary Union (EMU) helps to establish stable financial conditions across the EU which is important for the sustained growth of both Member States and regions. In the EMU, Member States cannot rely on exchange rate adjustment anymore to adjust to macroeconomic shocks. Fiscal policy can be used for stabilisation only if its room for manoeuvre as defined by the Stability and Growth Pact is not exhausted. This implies that flexible labour and product markets and hence structural reforms improving their flexibility should play a vital role in avoiding widening differences in competitiveness, economic activity and employment in the euro area. This applies to differences both between countries and between regions within countries.

Cohesion policy can support regions to tackle their fundamental structural problems which inhibit the competitiveness of their producers, and it can also provide support to a part of the structural reforms improving the flexibility of labour and product markets. However, for cohesion policy to have a lasting impact on the supply side of the supported economies, it needs to be complemented by stability-oriented prudent fiscal policy and adequate structural reform policies. Such a supportive policy framework can not only support the attainment of the long-term impact of cohesion policy, but it can also alleviate the potential short-term risk associated with the inflation induced by the inflow of large-scale capital transfers into euro-area economies.

While differences in economic performance between countries which are part of the euro area have decreased over time, there is scant evidence on the specific impact of the EMU on regional disparities. At the same time, the evidence is that transparency of costs and the reduction in exchange risks resulting from monetary union have brought to the fore the role of specific regional characteristics as factors in determining the potential for regional development.

4.2. Trade

EU trade policy applies across the whole Union and is therefore a clear example of a policy without a spatial dimension. Trade can help to build a stronger EU economy, if its exports are sufficiently competitive abroad. In relation to its size, the EU is one of the most outward-oriented economies in the world.

Like the European Single Market, the EU' openness to trade and investment has been a major catalyst for growth over the last two decades. Trade alone explains a quarter of the productivity gains which have occurred across the EU in recent years,

¹⁸⁴ Op, cit.

through stimulating greater competition, specialisation in higher value added areas and innovation.

4.3. Energy

EU energy policy also has potentially important differential effects on regions but has no regional dimension as such. The objectives are to maintain a competitive energy sector and achieve a sustainable and secure supply. Policy is implemented through various Directives, Regulations and Communications which are aimed at creating a single energy market in the EU so as to bring down prices for businesses and consumers alike, increasing the efficiency of energy use, reducing environmental impact and raising the share of renewables in energy supply. The latter might contribute to economic development in less favoured regions by helping them capitalise on their natural resources (such as solar power, wind or biomass).

4.4. Economic and Monetary Union

Economic and Monetary Union helps to establish stable financial conditions across the EU which are important for the sustained growth of both Member States and regions. At the same time, by removing the possibility of exchange rate adjustment, it puts the onus on flexible labour and product markets to adjust to external shocks through reductions in wages and prices so as to avoid widening differences in competitiveness, and, therefore, in economic activity and employment. This applies to differences both between countries and between regions within countries. These can equally be moderated by movements of labour from the weaker to the stronger regions as well as by price and cost adjustments, with Cohesion Policy being relied upon to tackle more fundamental structural problems which inhibit the capacity of producers in a region to compete in the internal market.

While there is some uncertainty about the effect of EMU on differences in economic performance between the countries which are part of the Eurozone, this is all the more the case as regards its effect on regional disparities. At the same time, the evidence is that the transparency of costs and the reduction in exchange risks resulting from monetary union have brought to the fore the role of specific regional characteristics as factors in determining the potential for regional development.

4.5. The Lisbon Strategy

The re-launch of the Lisbon strategy in 2005 improved the overall consistency of the economic policy framework of the Union¹⁸⁵. It was considered to be important to achieve greater ownership of the Lisbon objectives on the ground and therefore to increase the involvement of regional and local actors and the social partners. Many policies under the Lisbon strategy need to be implemented at sub-national level, particularly those in areas where proximity matters, such as innovation and the knowledge economy, employment, human capital development, entrepreneurship, support for SMEs, and access to risk capital financing, or in areas where local or regional authorities have competence (for example, education or health).

¹⁸⁵ High-Level Group chaired by Wim Kok (2004): Facing the challenges: the Lisbon strategy for growth and employment. http://europa.eu.int/comm/lisbon_strategy/index_en.html

Map 3. 7: Lisbon Index 2008

Map 3. 8: Change in Lisbon Index 2000-2008

The position of regions in relation to the key Lisbon targets depends on their overall level of development. The convergence regions tend to score much lower on all these indicators (see Table 3.1). Nevertheless, they made considerable progress in this regard between 2000 and 2008. The Lisbon Index measures the distance of regions from eight Lisbon targets (see Table 3.1). A region scores 100 if it has reached all eight targets, while the region farthest away from all eight scores zero. The Convergence regions increased their score by seven points over the period, almost as much as the RCE regions, indicating that all regions contributed to the pursuit of the Lisbon Strategy and not only the more developed.

Table 3.1: Lisbon Index 2008 and change 2000-2008

	Lisbon Target	2008			
		EU-27	Convergence	Transition	RCE
Employment rate for men aged 15-54	85	76	71	75	80
Employment rate for women aged 15-54	64	64	57	59	69
Employment rate for people aged 55-64	50	46	40	44	49
Early school leavers aged 18-24*	10	14	15	19	12
Secondary educational attainment for people aged 20-24	85	78	80	72	78
Life long learning participation of people aged 25-64	12.5	9.4	5.3	8.6	11.6
Business expenditure in R&D in % of GDP	2	1.2	0.4	0.5	1.4
Government, higher education and non-profit expenditure in R&D in % of GDP	1	0.6	0.5	0.5	0.7
Lisbon index in 2008	100	68	38	42	70
Change in the Lisbon index between 2000 and 2008		11	7	10	9

In 2008, only three regions reached all eight targets: Länsi-Suomi in Finland and Östra Mellansverige and Västsverige in Sweden. Between 2000 and 2008, the five fast movers were all Spanish regions which increased their score by between 27 and 36 points. However, the crisis led to sharp falls in employment rates in Spain and, accordingly, adversely affected their performance in reaching the employment targets.

5. ASSESSING TERRITORIAL IMPACTS

Both policies with and without an explicit spatial dimension could benefit from an assessment of territorial impact. Before deciding on a particular policy, such an assessment could show in a quantitative or qualitative way which areas or regions might face the highest costs or enjoy the largest benefits. After a policy has been implemented, the assessment could reveal whether the implementation of the policy has led to an unbalanced impact territorial impact across the EU.

The majority of the stakeholders in the debate on the Green Paper on Territorial Cohesion¹⁸⁶ as well as Member State experts¹⁸⁷ have argued that the European

¹⁸⁶ A summary of the contributions has been published by the Commission within the 6th progress report on economic and social cohesion, COM(2009) 295, June 2009.

¹⁸⁷ See Annex and the Report on the EU Seminar on Territorial Impact of EU policies 5 March 2009, Amsterdam, Action 2.2 of the Action Programme for the implementation for the EU Territorial Agenda [http://www.eu-territorial-agenda.eu/Summary%20Documents/Action%202-2_%20Report%20EU%20Seminar%20Territorial%20Impact%20\(3\)_05032009.pdf](http://www.eu-territorial-agenda.eu/Summary%20Documents/Action%202-2_%20Report%20EU%20Seminar%20Territorial%20Impact%20(3)_05032009.pdf)

Commission should improve the territorial dimension of its impact assessments. This would not require a new instrument. Simply ensuring that the territorial dimension in the Strategic Environmental Assessment (SEA)¹⁸⁸ and the impact assessment (IA) is given appropriate attention could already have significant benefits. Currently, the impact assessment guidelines contain several elements with clear territorial relevance. When a single Member State or region is disproportionately affected, this should be mentioned. Where such disparities appear to be significant, they should be analysed as they may be a reason to adapt the initiative, for instance to offer mitigating or transitional measures for the ‘outlier’. The IA guidelines also offer more specific guidance on assessing territorial impacts (see **Box**). Addressing these issues in a coherent manner and, where possible, mapping the results could enhance the quality and scope of these assessments.

Box - Examples of territorial elements to be considered in the Commission ex-ante impact assessments¹⁸⁹

IMPACTS

KEY QUESTIONS

ECONOMIC:

Specific regions or sectors

- Will it have a specific impact on certain regions, for instance in terms of jobs created or lost?
- Is there a single Member State, region or sector which is disproportionately affected (so-called 'outlier' impact)?

SOCIAL:

Social inclusion

- Does it affect equal access to services and goods?
- Does it affect access to placement services or to services of general economic interest?
- Does the option affect specific localities more than others?

ENVIRONMENTAL:

Land use

- Does the option have the effect of bringing new areas of land (‘greenfields’) into use for the first time?
- Does it affect land designated as sensitive for ecological reasons? Does it lead to a change in land use (for example, the divide between rural and urban, or change in type of agriculture)?

Member States can also develop their assessments of territorial impacts for two reasons. First, they have more detailed knowledge of their territory which allows them to undertake a more specific impact assessment. Second, the concrete impact of EU legislation depends on how Member States transpose EU directives into national law.¹⁹⁰

¹⁸⁸ Directive 2001/42/EC

¹⁸⁹ Based on the EC Impact Assessment Guidelines SEC(2009)92
http://ec.europa.eu/governance/impact/index_en.htm

¹⁹⁰ See also Zonneveld, W. – Waterhout, B. *EU Territorial Impact Assessment: Under What Conditions* 49th European Congress of the Regional Science Association, 25-29. August 2009, Lodz, Poland

A good example of a national assessment of territorial impacts is the Dutch Quick Scan¹⁹¹ approach which combines quantitative and qualitative methods.

A simple approach is being tested by an ESPON study which will assess the sensitivity of regions to a number of specific policies and (non-spending) directives. An example of such an approach is the ex-post assessment of the impact of the ozone air quality directive (2002/3/EC). This directive is aimed at reducing exposure to high ozone concentrations in cities. Combining the population share in cities and the number of days in which ozone concentration exceeds this threshold provides an indication of which regions will be most affected by the directive (see **Fehler! Verweisquelle konnte nicht gefunden werden.**).

An alternative ozone directive could consider setting more differentiated targets according to the initial levels in each city. This would reduce the cumulative long-term exposure in the cities that have relatively high average ozone concentrations but which do not exceed the maximum threshold.

Map 3. 9: Ozone concentration exceedances in cities over 50 000 inhabitants, 2008

6. CONCLUSIONS

Some policies have an explicit territorial dimension, like transport or environmental policy. This means that during the policy design phase, the territorial impact of this policy was considered and the policy was adjusted to ensure that the policy has the highest impact and the territorial distribution of this impact is balanced. Nevertheless, policies with a spatial dimension can still have adverse territorial impacts, for example, due to unforeseen effects or changes in the context. As a result, it remains important to evaluate the territorial impacts of policies with a spatial dimension once they have been implemented.

Other policies only have a partial territorial dimension, such as those relating to research, innovation, information society and health. For example, EU health policy provides EU residents with certain rights in all EU Member States, but it also considers specific territorial issues such as cross-border health care. The Digital Agenda fears that high-speed broadband infrastructure may not be constructed in remote or rural regions without public intervention, which is why it adopted the objective that everyone in the EU should have access to this type of internet. Another example is the Common Agricultural Policy which provides direct support to farmers under pillar one based in a uniform manner, while some of the support under pillar two is differentiated according to the type of area. Policies with a partial spatial dimension should consider the territorial impact of their entire policy during the design phase and include the territorial dimension in their ex post evaluation.

Some policies cannot distinguish between different parts of the EU, which is the case for the single market or trade. However, this does not mean that these policies do not have a spatial impact. For example, further trade liberalisation may lead to concentrated job

¹⁹¹ See for example, Quickscan energie en ruimte. PBL The Netherlands Environmental Assessment Agency, 2010. <http://www.pbl.nl/nl/publicaties/2010/Quickscan-energie-en-ruimte-Raakvlakken-tussen-energiebeleid-en-ruimtelijke-ordening.html>

losses in a particular area. To reduce such negative social impacts in specific areas, the EU has set up the Globalisation Adjustment Fund.

In short, this chapter has shown that some EU policies have an asymmetric territorial impact and that for some of these concrete steps have been taken to avoid an excessive concentration of costs of benefits. This implies that new policies which are likely to have an asymmetric territorial impact could benefit from an explicit discussion of this impact during the policy design phase.

Furthermore, all types of policies, be they spatially blind or spatially targeted, should include a territorial dimension in their ex post assessment which would allow catching both intended and unintended spatial impacts.

Chapter IV: Impact of Cohesion Policy

1. INTRODUCTION

Cohesion was a goal of what later became the European Union from the start. In 1957, six countries signed the Treaty of Rome which said they were anxious "*to strengthen the unity of their economies and to ensure their harmonious development by reducing the differences existing between the various regions and the backwardness of the less favoured regions*".

The goal was motivated by a concern that less developed regions would be unable to benefit from economic union, a concern which underlay the creation of Cohesion Policy and which was expressed in the Thomson report of 1973: "*No Community could maintain itself nor have a meaning for the people which belong to it so long as some have very low standards of living and have cause to doubt the common will to help each Member State to better the condition of its people*".

Successive enlargements have substantially increased the extent of regional disparities in the EU. When Greece, Spain and Portugal joined the Union in 1981/86, the proportion of the population living in a region with GDP per head 30% below the EU average jumped from 12.5% to 20%. The last two enlargements dramatically widened regional differences and further strengthened the need for a policy aimed at ensuring development in all regions. This need was also recognised in the Lisbon Treaty which added the aim of *territorial* cohesion to those of economic and social cohesion.

How do these aims fit together?

The overriding objective of Cohesion Policy is to achieve the harmonious development of the Union and its regions, through:

- increasing competitiveness especially in less developed regions
- expanding employment and improving people's well-being
- protecting and enhancing the environment
- Economic and social cohesion are closely associated with the first two goals. Territorial cohesion is associated with the third goal as well as with using a more integrated and territorial approach to policy making.

The integrated and territorial approach

To pursue regional development effectively requires close coordination of public policies. For example, while investment in both infrastructure and education can contribute to development, the effect of coordinating the two is greater than undertaking the two separately. Such coordination, moreover, needs to occur at the regional level so as to ensure that investment is targeted at the most relevant factors within an integrated development strategy.

The territorial approach also implies a need for the different levels of government, local and regional as well as national and EU-level, to work together to ensure consistency between policies. This co-ordination can occur at the local level with an integrated local development strategy supported by local authorities and other local actors. However the geographic scale can change with the policy field. In some cases – environmental protection, for example – it might require a strategy spanning macro-regions, such as that covering the Baltic Sea area.

In similar vein, for regional policy to be coherent across countries, strategies need to take account of those being pursued elsewhere. Accordingly, Cohesion Policy supports the development of trans-regional coordination to ensure that potential conflicts are avoided and synergies are realised.

The evidence presented below often relates more to economic and social cohesion than to territorial cohesion, which only became a Treaty goal of the policy at the end of 2009. Evidence on the impact of the territorial approach is most obvious as regards issues such as local development, territorial co-operation and sustainability.

1.1. Investing in green, smart and inclusive growth - the main lines of spending

Cohesion Policy is the main EU measure for pursuing balanced and sustainable growth across Europe. The funds at its disposal amount to some EUR344 billion in the current 2007-13 period (Figure 4.1 and Table 4.1), over a third of the EU budget – a tangible sign of the Union’s commitment to regional development and social and economic cohesion.

Figure 4- 1

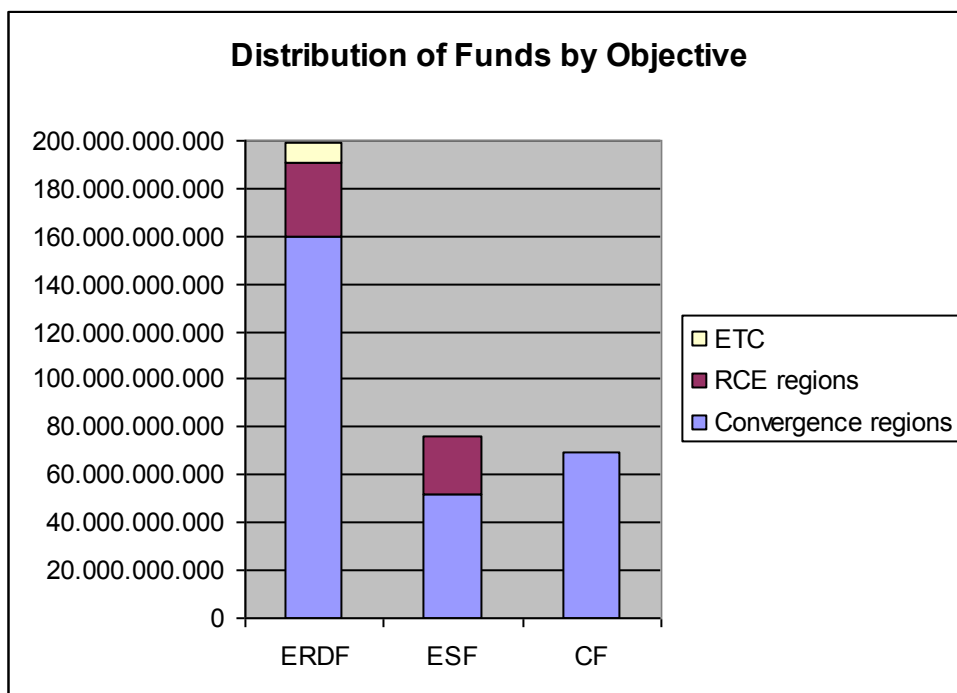


Table 4. 1: Distribution of Funds by Objective, 2007-13 (in EUR billion)

Objectives	All Funds	ERDF	ESF	Cohesion Fund
All Objectives	344.3	198.8	76.0	69.6
Convergence (1)	281.5	159.9	52.0	(2) 69.6
Regional Competitiveness & Employment (3)	55.0	31.0	23.9	
European Territorial Cooperation (4)	7.8	7.8		

Source: Programmed expenditure. These figures can be slightly smaller than the financial perspectives, since they do not include money de-committed or not yet programmed.

(1) Includes phasing out regions

(2) The correspondence between Convergence regions and Cohesion Fund countries is approximate, not 1-to-1.

(3) Includes phasing in regions

(4) Does not include EUR 0.9 billion for co-operation with third countries.

The main elements are the European Regional Development Fund (ERDF) and the European Social Fund (ESF) divided between:

- The Convergence Objective (EUR 212 billion over the 2007-13 period¹⁹²) covering the 100 least prosperous NUTS 2 regions with a total population of 170 million. These are the regions with GDP/head of less than 75% of the EU average;
- the Regional Competitiveness and Employment (RCE) Objective (EUR 55 billion¹⁹³), aimed at assisting other regions in the EU to compete and maintain jobs in a global economy;
- the European Territorial Cooperation Objective (EUR 7.8 billion¹⁹⁴) for strengthening cooperation across borders and exchanging experience across the EU;

In addition, the Cohesion Fund (EUR 70 billion) supports investment in transport and environmental infrastructure in the 15 Member States with the lowest levels of national income (less than 90% of the EU average)¹⁹⁵.

¹⁹² Including the 16 regions "phasing out" over the period

¹⁹³ Including the 13 regions "phasing in" over the period

¹⁹⁴ Plus EUR0.9 billion for co-operation with third countries under ENPI and IPA, making a grand total of EUR8.7 billion

¹⁹⁵ Bulgaria, Cyprus, the Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovakia and Slovenia. Spain is eligible for phasing-out funding. There is therefore a close, but not exact, correspondence between eligibility for the Cohesion Fund and for the Convergence Objective.

Contributing to smart inclusive growth¹⁹⁶ in Eastern Germany¹⁹⁷

The East German Länder received EUR 18.6 billion from the ERDF and the ESF in the 2000–2006 period. Except Berlin, all of them were eligible under Objective 1. In the 2007–2013 period, Cohesion Policy amounts to EUR 16.6 billion, all the regions receiving support under the Convergence Objective, except Berlin (Competitive) again and Brandenburg–Südwest (Phasing Out).

In 2000–2006, Cohesion Policy accounted for a third of the total support to entrepreneurship, a quarter of that to R&D and a fifth of that for urban development. It also accounted for 50% of investment in vocational training and 10% of funding for active labour market policies.

The contribution of Cohesion Policy to the economic development of Eastern Germany is demonstrated by a number of indicators. For example, support to business helped to create 91,000 jobs. Industrial sites covering around 3,250 hectares were created or renovated. Some 3,300 km of roads were constructed or upgraded. Over 2.6 million people participated in activities aimed at assisting the unemployed into work and at developing human resources. Estimates by the HERMIN macroeconomic model (see Chapter IV.6) are that the measures supported by Cohesion Policy had a significant impact on GDP and employment creation.

GDP in Eastern Germany grew rapidly during the years following reunification but by 1996, the growth rate was already below 2% and it fell to close to zero in the early 2000s. The recovery from 2006, when GDP grew by 2.8%, was halted by the economic crisis. Population has been declining since unification. By 2008, it was nearly 9% lower than in 1991. The decline coupled with GDP growth led to GDP per head rising to 116% of the EU average in 1995, but it then fell to 95% in 2000 and 88% in 2008. The level, however, varies from 87% of the EU average in Brandenburg–Nordost to 117% in Berlin. The employment rate followed a similar path to economic growth, falling below 60% of working-age population in the early 2000s and rising to 68% in 2008.

The massive investment in construction in Eastern Germany has led to the gap in infrastructure endowment with the Western part of the country being virtually closed. However, to strengthen competitiveness and to face the challenges from globalisation, demographic trends, climate change and energy scarcity, there is need to strengthen productive potential. This applies, in particular, to human capital, innovation capacity and transport links within the region. Although a third of working-age population is highly educated, due to a lack of demand on the labour market, many of those concerned leave the region to work elsewhere (brain-drain). Gender equality and lifelong learning also need to be improved further.

There is equally a need to increase innovation and the marketing of new products so as to make full use of the investment in R&D as well as to create stronger links between business and research.

¹⁹⁶ Anforderungen und Handlungsoptionen für den Einsatz der europäischen Strukturpolitik in den Jahren 2014-2020 in den neuen Bundesländern einschließlich Berlin (GEFRA, EMDS, IFS, MR), 2010

¹⁹⁷ Thüringen, Dresden, Chemnitz, Brandenburg – Nordost, Brandenburg – Südwest, Sachsen-Anhalt, Mecklenburg-Vorpommern and Berlin

Achieving the cohesion objectives is complex. Every region has specific needs and different regions face different challenges. Economic development, moreover, has to be sustainable and, accordingly, compatible with social and environmental objectives as well as with territorial cohesion, which entails minimising spatial disparities and ensuring access to basic services.

Correspondingly, spending under Cohesion Policy covers a broad mix of measures, though four broad policy areas account for more than 80% of the total:

- Support to **enterprise and innovation**, which are the motors of economic development and the source of tax revenue to support social spending, environmental protection and balanced territorial development. This includes direct financial aid to investment and R&D, but also, increasingly, non-financial assistance, in the form of networking and innovation systems, business advice and incubators.

Planned investment in this area amounts to some EUR 79 billion over the 2007-13 period and is the largest single item of expenditure in almost all regions.

- **Transport** infrastructure to link regions internally and to the outside world. Support is given to investment in roads and rail, though also in urban transport, ports and airports and in links between different transport modes.

Planned investment amounts to some EUR 76 billion over the 2007-13 period, mostly in the EU10, where road and rail networks are in need of modernisation, though also in many southern regions where investment programmes have stretched over several programming periods and are nearing completion.

- **Human capital** development which is a key source of growth in all Member States and regions in Europe as well as means of strengthening social cohesion and equal opportunities and improving the adaptability of workers and entrepreneurs to economic change.

Planned investment over the 2007-2013 period amounts to EUR 68 billion, funding going to support many different forms of vocational education and training, structural reform in labour market and education and training systems and groups of people that face particular problems on the labour market, like the long term unemployed, those with disabilities and migrants.

- **Environmental protection** to ensure the sustainability of economic development as well as to make regions more attractive places to live and work.

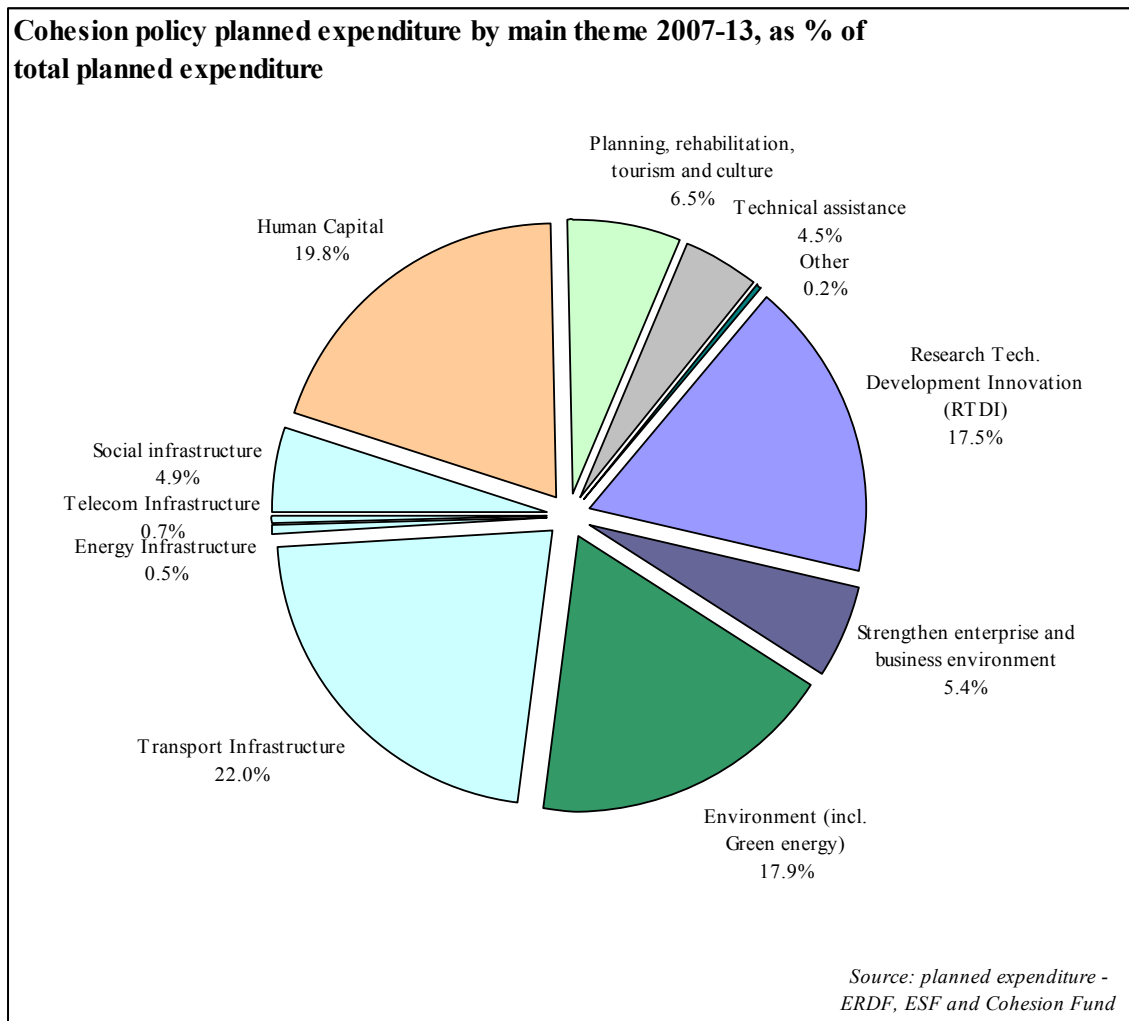
Planned investment amounts to some EUR 62 billion over the 2007-13 period to a large extent in waste, water and waste water treatment, especially in less developed regions. In other regions, support goes mainly to measures such as urban regeneration, the reclamation of old industrial sites, energy saving and environmentally-friendly investment in enterprises. Nearly half of the Member States¹⁹⁸ have included indicators for greenhouse gas emissions in their

¹⁹⁸ Austria, Bulgaria, the Czech Republic, France, Germany, Hungary, Italy, Poland, Portugal, Romania, Slovakia, Slovenia and the UK

programmes. In addition, Cohesion Policy provides support to training to raise skills and employment in this broad area.

The relative scale of spending on these main policy areas has tended to remain similar over time (Figure 4.2). There have, however, been shifts in emphasis in line with the Lisbon agenda, most notably from support of businesses to support of innovation, much of it targeting SMEs.

Figure 4- 2



1.2. Evaluation – understanding and finding ways to improve the effects of intervention

Evaluation methods: building up a picture over time¹⁹⁹

Evaluation attempts to build up a picture of the economic, social and environmental impact of Cohesion Policy. This serves the twin goals of accountability ("what has

¹⁹⁹ For further information see the evaluation website:
http://ec.europa.eu/regional_policy/sources/docgener/evaluation/evaluation_en.htm
http://ec.europa.eu/social/main.jsp?catId=701&langId=en&internal_pagesId=616&moreDocuments=yes&tableName=INTERNAL_PAGES

been achieved with taxpayers' money?") and learning ("how could policy be improved?").

Impact, however, is difficult to measure, since Cohesion Policy is only one influence among many. Global economic developments, technological change, macroeconomic policy and so on also exert an influence, as does individual and company behaviour. Moreover, the full impact of Cohesion Policy, especially as regards support for innovation and transport, can only emerge over the long-term.

There is therefore no easy way of measuring the impact of Cohesion Policy. Instead, a variety of methods are used to build up a detailed picture over time:

- Regional statistics indicate what has happened in terms of GDP, innovation, productivity, employment and unemployment, the natural and built environment and so on, but they do not measure the contribution of Cohesion Policy to the changes.
- Monitoring of programmes records the activity and output of Cohesion Policy – how much was given in R&D grants and what firms report doing with these? How many kilometres of road have been built? Were there delays in implementation? How many people have been trained?
- Where the data exist, entities supported can be compared with similar ‘control’ ones to estimate the impact of policy²⁰⁰.
- Ex post cost-benefit analysis may be able to estimate the contribution of infrastructure to the wider economy.
- Macro-economic models, which attempt to replicate the main economic mechanisms, can be used to try to capture the effect of policy on the economy²⁰¹.
- Some models can help to analyse possible reforms with respect to their impact on the labour market as well as on firms and households²⁰².
- Case studies, including interviews with stakeholders, can be used to gain an insight into the factors underlying the quantified developments and the contribution of policy to these.

²⁰⁰ This ‘counterfactual’ method is being tested in a variety of settings, including enterprise support, urban regeneration and assistance to minorities

²⁰¹ DG Regional Policy uses two macro models (HERMIN and QUEST) as well as a model on transport investment (TRANSTOOLS).

²⁰² Such a model has been developed recently and applied to 6 Member States: Austria, Denmark, Germany, Italy, Poland and the UK, which have different socio-economic features and which may be representative of the other countries in the EU.

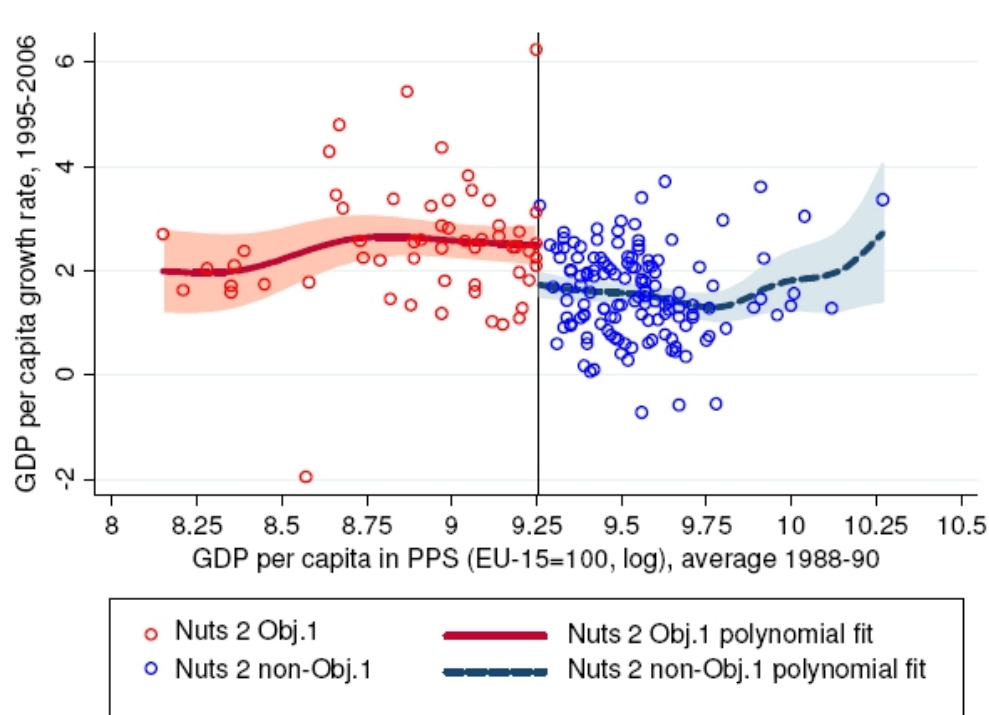
Cutting edge econometric techniques demonstrate the contribution to economic growth and convergence

A recent academic study of the dynamics of regional GDP growth in the EU15 (see figure)²⁰³ found a sharp jump between those regions in receipt of Objective 1 funding over the period 1995-2006 and other regions. Comparing regions near the cut-off for eligibility for Objective 1 funding, GDP of Objective 1 regions grew at an average of 0.6-0.9 of a percentage point²⁰⁴ more than similar regions above the cut-off.

This implies something like an extra 10% addition to GDP over the two programming periods concerned (1994-99 and 2000-2006).

The scale of this effect is much larger than the amount of funding involved (or the direct stimulus to demand from this) which suggests that it mostly reflects a strengthening of the supply-side of the economy in the regions concerned.

Figure 4- 3: A comparison of the growth rates of Objective 1 and other regions, 1995-2006



All of these methods have their uses. Monitoring, for example, is an essential management tool to track programmes but monitoring indicators (e.g. km of road) say nothing about the social or economic impact of policy.

Since no single method can indicate the impact of policy, "triangulation", comparing the results of different methods, is an important part of the evaluation process.

²⁰³ Measuring the Effects of European Regional Policy on Economic Growth: a Regression Discontinuity Approach" Busillo, Muccigrosso, Pellegrini, Tarola, Terribile (2010)

²⁰⁴ The range of estimates was generated using a variety of parametric and non-parametric techniques

The European Commission alone cannot deliver all the evidence on the performance of Cohesion Policy. It, therefore, encourages Member States to carry out evaluations and, where possible, to use rigorous methods to do so. The more evaluations that deliver credible evidence on different aspects of the policy, the greater the possibility of building a picture of its overall performance as a basis for improving policy in the future.

The main results of the ex post evaluations of Cohesion Policy (see box) form the core of this chapter²⁰⁵ and are presented under five central and interrelated themes:

- Economic development, including transport and cross-border links
- Social inclusion, including training and local development
- Environmental protection and the green economy
- Governance, including partnership arrangements
- Macroeconomic modelling results

These are considered in turn below.

The ex post evaluation of the 2000-2006 period

The evaluation of Cohesion Policy is an immense undertaking. The *ex post* evaluation of the ERDF for 2000-2006 alone generated 105 in-depth case studies and examined some 29,500 monitoring indicators from 382 programmes²⁰⁶. For the ex-post evaluation of the ESF, 49 case studies were undertaken and more than 2,000 measures from 238 programmes were examined.

The evaluation of the ERDF could not cover all the details of Cohesion Policy between 2000 and 2006 in more than 230 Objective 1 and 2 programmes. Instead, it focused on the main policy areas and issues in 14 studies, ranging from enterprise support to equal opportunities, assessing the contribution of the policy to the development of lagging regions (Objective 1) and the process of restructuring (in Objective 2 areas).

The ex post evaluation of the ESF likewise could not examine in detail every aspect of its contribution to 238 Objective 1, 2 and 3 programmes (including the EQUAL Initiative). Five evaluations were undertaken to assess the results of ESF support and its effect on cohesion. A preparatory study focussed on the availability and reliability of data. Two evaluations examined ESF support to the Open Method of Coordination in Social Protection and Social Inclusion and the impact on the functioning of the labour market and support for investment in infrastructure and systems for human capital development. Two further evaluations examined the ESF and the EQUAL Community initiative.

Other evaluations assessed the effects of INTERREG and URBAN, while the Cohesion Fund is being examined in three studies due to be completed in early 2011.

²⁰⁵ For details and reports, see
http://ec.europa.eu/regional_policy/sources/docgener/evaluation/rado2_en.htm
<http://ec.europa.eu/social/main.jsp?catId=701&langId=en>

²⁰⁶ 230 Objective 1 and 2 programmes, plus Interreg and URBAN programmes

2. STRONGER ECONOMIES

Growth of regional economies was the original focus of the ERDF and remains a key priority, generating jobs and funding social spending, and environmental protection, as well as social cohesion and cleaner, more efficient technologies, which, in turn, contribute to growth.

This section reviews the contribution of Cohesion Policy to growth, beginning with support to enterprise and innovation and going on to investment in transport which is important for accessibility and efficient internal links. It ends by considering the contribution of Interreg to cross-border cooperation and exchange of experience.

2.1. Strengthening SMEs and competitiveness

Enterprises and innovation are key to growth. If lagging regions are to catch up and others are to maintain competitiveness, encouraging the growth of efficient and innovative firms is essential.

The rationale for support to enterprise rests on several areas of market failure:

- Since many of the basic conditions for innovation are public goods, there is a role for public intervention to boost investment in them.
- Since SMEs and – most of all – start ups typically have difficulty accessing finance, especially for innovative, and risky, ideas, public support can reduce the difficulty and absorb some of the risk.
- Since SMEs and start-ups face difficulties and costs in obtaining advice, information and expertise, public intervention can provide access to these.
- Since, in addition, SMEs are the main source of jobs in the EU and a breeding ground for business ideas²⁰⁷, the focus of policy is, therefore, on them. In the 2000-2006 period, they received around 83%²⁰⁸ of Cohesion support to enterprise and the figure in 2007-13 is likely to be similarly high.

In all Member States, the overriding aim of enterprise support is to increase productivity and competitiveness with a view to sustainable growth and employment. This mirrors the Lisbon goals and in some countries (notably Germany, Poland and Luxembourg) the link has been made explicit.

Map 4. 1 Planned investments of Cohesion Policy in RTD, innovation, enterprise environment, 2007-2013

²⁰⁷ European Charter for Small Enterprises, European Commission, Directorate General for Enterprises.

²⁰⁸ Ex post evaluation of Cohesion Policy 2000-2006, Work package 6 on enterprise http://ec.europa.eu/regional_policy/sources/docgener/evaluation/expost2006/wp6_en.htm
Since the study examined the 2000-2006 Cohesion Policy period, Member States refers to the EU-25.

In Poland, for example, the 2004-2006 programming documents emphasised the reliance of the economy on firms in traditional industries able to compete only in terms of cheap labour. Since low incomes are not a socially sustainable form of comparative advantage, firms need support in order to invest in new technology and more efficient methods of production.

Solid achievements: jobs and productivity

Evaluation evidence²⁰⁹ indicated the following achievements from enterprise support over the 2000-2006 period:

- the creation of 1.4 million gross jobs, recorded by Member States over the period, an estimated 1 million due to enterprise support
- An estimated 230,000 enterprises (mainly SMEs) received direct financial support - mainly grants but also loans or venture capital
- An estimated 1.7 million enterprises (again, mainly SMEs) received advice, expertise and support for networking

Long-run impacts are more difficult to measure and need to be explored on a case-by-case basis. But there is a growing body of evidence that support to SMEs in particular can have significant effects (see box).

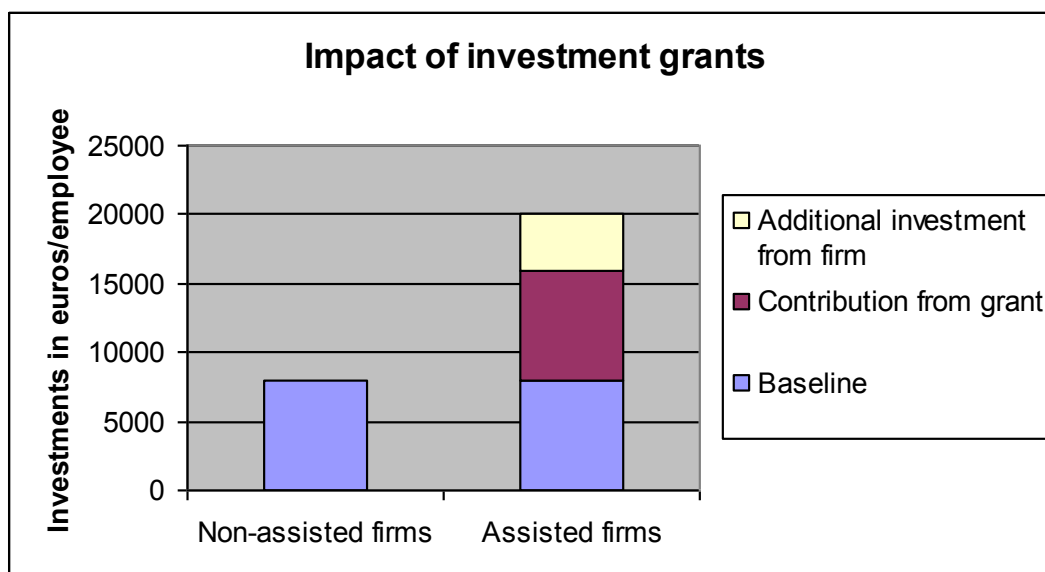
Positive results from a rigorous and innovative evaluation of enterprise support in Eastern Germany

In Eastern Germany, an innovative study²¹⁰ compared enterprises assisted to similar ones not assisted in a control group. According to the study, an average grant of roughly EUR 8,000 per employee generated around EUR 12,000 of additional investment, a clear leverage effect. As a result, enterprises assisted invested around EUR 20,000 per employee, nearly 2.5 times as much as non-assisted enterprises. Though employment gains were significant, the main effect was on increasing productivity. This demonstrates that, even in a regional context where grants are common, they can be effective.

²⁰⁹ Ex post evaluation of Cohesion Policy 2000-2006, Work package 6b on the 30 largest enterprise programmes http://ec.europa.eu/regional_policy/sources/docgener/evaluation/expost2006/wp6_en.htm

²¹⁰ Ex post evaluation of Cohesion Policy 2000-2006, Work package 6c "An exploratory study using counterfactual methods on available data from Germany" http://ec.europa.eu/regional_policy/sources/docgener/evaluation/expost2006/wp6_en.htm

Figure 4- 4



Structural change: invest in the future

Managing and facilitating structural changes in economic activity was an explicit aim of Objective 2 in 2000-2006. And the adaptability of workers, firms and other organisations was one of the five core policy areas for the ESF. As economies modernise, shifts of labour and capital to more efficient uses are essential to sustain growth and attain higher living standards.

But there can also be significant adjustment costs, in the form of job displacement and premature scrapping of capital, which often fall on a small section of the population. It is therefore important to manage change in a way that limits, or takes account of, these costs.

The ex post evaluation²¹¹ found that Objective 2 programmes were successful in managing structural change when:

- they focussed efforts on innovation, the capacity of SMEs to absorb new technology, fostering clusters, internationalisation and the creation of new jobs rather than on safeguarding jobs in ailing industries – on investing in the future instead of the past.
- policies were pursued over the long term. This was the case in Pais Vasco, which, for decades, has pursued a policy encouraging adaptation to structural change and globalisation, which requires solid commitment from all sides.

The evaluation found that, even where Cohesion Funding was relatively small, it could be a catalyst for change. Evidence from successful regions underlined the importance of long-term planning. Cohesion Policy played a key role in setting the

²¹¹ Ex post evaluation, Work Package 4 " Structural Change and Globalisation"
http://ec.europa.eu/regional_policy/sources/docgener/evaluation/expost2006/wp4_en.htm

agenda and giving regional stakeholders the chance to meet and consider development strategies.

Since the shift of resources to more productive activities is an integral part of structural change, measures to help increase the adaptability of workers and organisations are of strategic importance. There can also, however, be significant adjustment costs in the form of job losses, in particular. These often fall on the less favoured sections of the population, raising concerns about equity.

The 2000-2006 ex-post evaluation of the ESF found that overall expenditure on measures to support the adaptability of organisations²¹² amounted to EUR 33.1 billion and reached 18 million people over the period, while spending on measures to increase worker adaptability totalled 65,8 billion and assisted 37 million people in 335,000 organisations.

Training for micro-enterprises

An evaluation of ESF support to enterprises²¹³ in Poland found that it provided a strong stimulus for micro businesses to train their employees. Some 41% of the micro-sized enterprises (those with under 10 people employed) receiving support had not engaged in training before (as compared with 20% of small, 13% of medium-sized and only 6% of large ones). Similarly, an evaluation of the Sachsen ESF programme for 2007-2013 found that half of the firms receiving ESF support had no prior engagement in training.²¹⁴

2.2. More support for innovation

Cohesion Policy is the largest EU source of finance to support RTD and innovation²¹⁵. A significant shift occurred between the past and present programming periods (see Figure 4- 55) from general support to enterprises (typically a grant to modernise or expand their capital base) to a broader range of measures targeted at innovation. These more innovative measures include:

- grants for research, collaboration, and capacity building, both to the private sector and to research institutions;
- investment in formal education and, vocational education and training so as to equip workers with the qualifications and skills required;

²¹² Both public and private sector

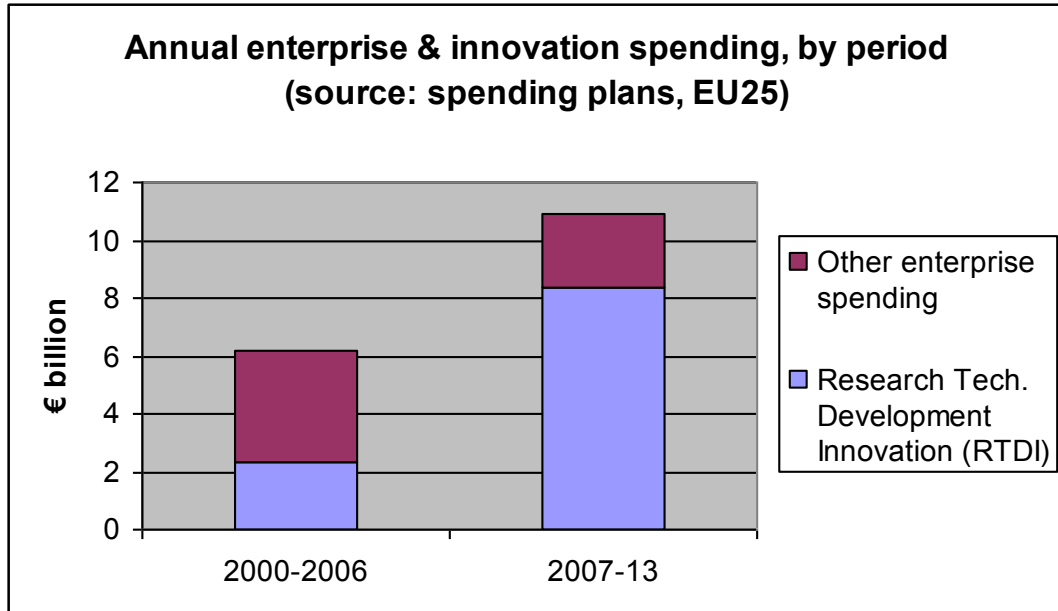
²¹³ Bernard Brunhes International (2010) "Reporting on ESF interventions in the EU: The European Social Fund: developing human potential in research and innovation".

²¹⁴ ISW, Begleitende Evaluierung für den Europäischen Sozialfonds im Freistaat Sachsen, Evaluierung der Prioritätsachse A, Endbericht, September 2009.

²¹⁵ The Seventh Framework Programme for RTD, and the Competitiveness and Innovation Programme, are the other main sources.

- indirect measures, such as support for business services, technology transfer, networking and research infrastructure;
- venture capital and loan funds, sometimes to a particular sector such as biotechnology.

Figure 4- 5



However, support to enterprise, innovation and RTD remains inextricably linked. Some EUR 60 billion in the current 2007-13 programming period is planned for RTD and innovation – EUR 25 billion of this going directly and indirectly to firms.

Across the EU, cohesion programmes emphasise stimulating research and innovation as well as technology transfer. This applies equally to enterprises (particularly SMEs), to research centres and institutes of higher education. Moreover, there has been a proliferation of programmes for improving innovation through cooperation and networks.

A recent study of cohesion policy performance in the 2007-2013 period²¹⁶ concludes that the ERDF provides important support for RTDI policy across the EU, not only in financial terms – which is significant – but also in stimulating the development of more coherent strategies at regional level which take into account local characteristics and the needs of businesses. The regional dimension of innovation policies has grown in recent years with the support of the ERDF. While more advanced Member States spend more on innovation and reap significant benefits in terms of the multiplier effect on private investment, convergence regions are now creating the preconditions for innovation in terms of institutions and absorptive capacity, collective action and human resource development. The Structural Funds are essential drivers in this process.

²¹⁶ Expert Evaluation Network delivering Policy Analysis on the Performance of Cohesion Policy 2007-13, Synthesis Report on Innovation, 2010

In the Convergence regions alone, EUR 47.6 billion has been allocated to innovation – a significant stimulus. Many Convergence regions suffer limited capacity. This can stem from limitations in the economic base or in higher education and research centres, or both²¹⁷. In peripheral regions, moreover, it can be difficult to establish a critical mass of knowledge, capital and skills. In the EU-12, there is much potential (including a skilled work force) but limited experience and institutions devoted to RTDI.

In Competitiveness regions, funding is particularly concentrated on innovation - EUR 13.4 billion, or 24% of the total allocated. In France, for example, Cohesion Policy enabled continued financing of innovation despite the financial crisis²¹⁸.

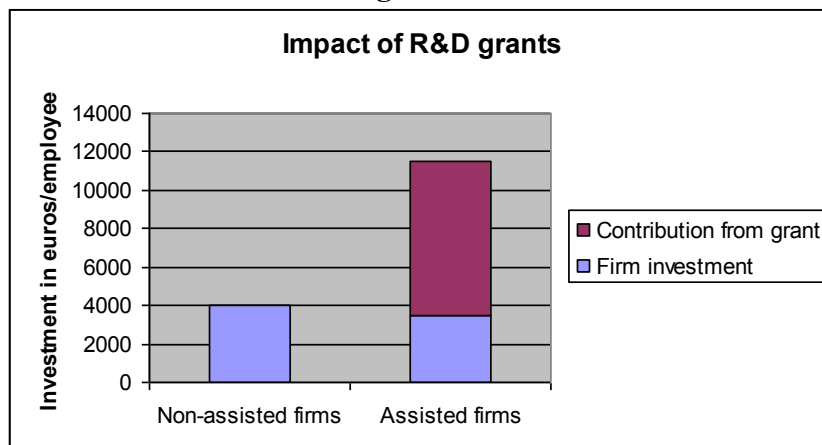
Cohesion Policy has boosted R&D in Thuringia (Germany)

An innovative evaluation²¹⁹ used control groups to assess the impact of direct grants to enterprise R&D in Thüringen over the period 2000-2006.

The results were very positive. On average, an R&D grant of roughly EUR 8000 per employee was almost completely "additional", generating a similar increase in total R&D investment. This counters an all too frequent assumption that firms take public money for investments they would have made anyway, sooner or later – so called "deadweight".

As a result of ERDF support, assisted firms invested some 2.5 times as much in R&D as non-assisted firms. Although the results are a little less dramatic than for general investment grants (there is no leverage effect – cf box above), the study noted that increased R&D spending by enterprises is likely to generate greater spillovers to long term regional growth.

Figure 4- 6



²¹⁷ Strategic Evaluation on Innovation and the knowledge based economy in relation to the Structural and Cohesion Funds, for the programming period 2007-2013
http://ec.europa.eu/regional_policy/sources/docgener/evaluation/pdf/strategic_innov.pdf

²¹⁸ Strategic report on innovation (previously cited) p 26-27

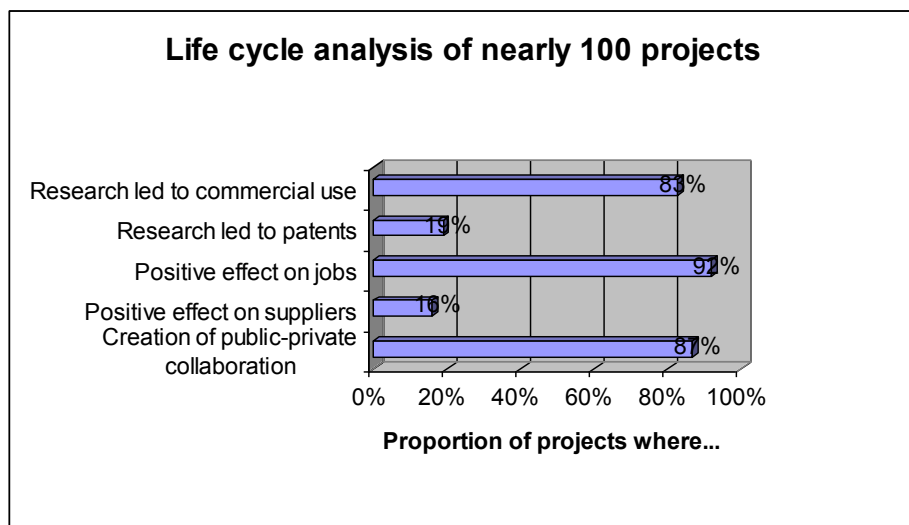
²¹⁹ Ex post evaluation of Cohesion Policy 2000-2006, Work package 6c "An exploratory study using counterfactual methods on available data from Germany"
http://ec.europa.eu/regional_policy/sources/docgener/evaluation/expost2006/wp6_en.htm#6c

Support to innovation and enterprise in Italy²²⁰

In Italy over the period 2000-2006, some EUR 1.3 billion of the EDRF went to a programme supporting RTD and higher education in Objective 1 regions, mainly in investment grants to SMEs. Total funding, including from national government and private sources, amounted to 0.7% of the GDP of these regions in 2004.

Research on over 250 firms receiving support found that over two-thirds (69%) of projects were of a high and medium-to-high tech nature and that the nearly 100 projects financed (from research activities to commercialisation of results) had positive results, from commercial use of research to an impact on suppliers.

Figure 4- 7



Delays in ICT measures being tackled by innovative financing

The recently published 2010 Strategic Report on the implementation of Cohesion programmes²²¹ reveals that on average, only 22% of Structural Funds for ICT services and 18% for broadband infrastructure have been allocated to projects against an EU average for all other measures of 27%. One reason is the substantial difficulties managing authorities face in the planning and management of broadband projects. In addition, in the current economic climate local and regional authorities tend to have more difficulty in finding matching funds for these projects.

In 2011, the European Commission will publish guidance on broadband investment for local and regional authorities to encourage the full absorption of EU funds. Further, guidance will be provided on public-private partnerships and other financial instruments such as matching funds.

²²⁰ See Ismeri Europa – Nova, Intermediate evaluation of NOP SIL, 2005 and Ismeri Europa – IZI, Intermediate evaluation of NOP Research.

²²¹ See: COM(2010)110 and Staff Working Document SEC(2010)360:
http://ec.europa.eu/regional_policy/policy/reporting/cs_reports_en.htm

Developing human capital

The ESF complements ERDF support in respect of research and innovation through a specific focus on the development of human capital and, in particular, the education and training of people and the development and adaptation of education and training systems. The impact of the ESF is most evident as regards international mobility, the modernisation of tertiary education, the increase in the skills of students and researchers and the transfer of knowledge between research institutes and businesses.

In 2000-2006, 18 Member States (out of 25) used cohesion support to invest in human capital in research and innovation. Some EUR 3.4 billion of ESF was allocated, national and private co-financing adding EUR 3.1 billion. Over 3.1 million people are estimated to have participated in the measures concerned.

Tertiary education, in particular, is a crucial component of a successful innovation policy and ESF co-financing led to EUR 3.5 billion (including the national contribution) over the 2000-2006 period going on three main types of intervention: raising skills profiles and increasing research capacity, increasing the mobility of researchers and encouraging international cooperation, and making higher education accessible to everyone and promoting equal opportunities. Almost 2 million people were assisted by these measures.

Support for technological employment

Almost 10 000 new firms in Finland were helped by ESF support over the 2000-2006 period²²². In Sweden over 50 technology centres were supported, as well as over 80 new firms²²³. In addition, almost 600 cooperation and network projects were funded.

Available data indicate that almost 70,000 researchers were helped with the support of ESF funding to research and innovation in 7 Member States (Germany, Spain, Finland, France, Sweden, Slovakia and the UK). Over 40,000 people gained a qualification and almost 60,000 found a job following participation in ESF-funded activities.

The ESF also supported initiatives to launch “competence centres” in Sweden and Germany. Support for the ‘Transfer of knowledge and competence to support regional structural change’ measure in Schleswig Holstein in Germany led to 8 networks and 5 competence centres being set up in areas such as medical technology, tissue engineering, hydrogen and fuel cell technology and wind power.

²²² Bernard Brunhes International (BBI), 2010. “Reporting on ESF interventions in the EU: The European Social Fund: developing human potential in research and innovation”.

²²³ 2000SE192DO001, OP, Öarna, Sweden.

Bridging the public/private research divide in Italy

In Italy, 34 measures, with a total budget of EUR 1.8 billion, were implemented in different regions to improve tertiary education and research conditions by providing a link between the school system, universities, the training sector and businesses. Almost 600,000 participants were involved and almost 28,000 projects were funded. A broad range of activities were supported:

- promoting higher and university education by establishing new programmes for post-secondary and post-tertiary education and Masters courses;
- innovative projects to facilitate exchange between research and business;
- facilitating exchange of practice between research institutes;
- post-secondary training (post diploma) and post-tertiary education;
- integrating academic programmes with regional vocational training systems in order to create a link with the labour market.

2.3. A variety of tools, including financial engineering

Indirect support – advice, networking, clustering and incubation – can be as effective as direct financial aid

Direct measures (mostly grants but also loans and equity) were the mainstay of support to enterprise and innovation in the early 2000s, and accounted for some 69% of such spending over the period 2000 to 2006. However, indirect measures increased from some 17% of enterprise and innovation spending in EU-15 Objective 1 regions in 2000 to 28% in 2006 and from 37% to 45% in Objective 2 regions. This trend seems to be continuing in the 2007-13 period.

Indirect support includes:

- Advice, training, mentoring or consultancy services
- Clustering and networking
- Infrastructure and support services such as business incubators

These measures are often combined - specialist advice, for example, with financial support to convert a new idea into a commercial success.

By their very nature, indirect support measures tend to have effects only over the long-term, but the (limited) evidence available suggests that they are no less effective per Euro than direct financial assistance²²⁴. For example, in Merseyside

²²⁴ Ex post evaluation of ERDF 2000-2006: WP6b "the 30 programmes spending the most on enterprise assistance"

(UK), 37% of SMEs receiving advice experienced an increase in employment growth and 63% an increase in turnover.

The intensity of support provided can vary considerably. In the 30 largest enterprise support programmes in 2000-2006, 387,000 firms were assisted, implying that over 600,000 firms in the EU as whole received support over the period²²⁵.

A Baltic Sea Region Programme for Innovation, Clusters and SME-Networks

This flagship project is aimed at fostering R&D and transnational clusters, collaboration on innovation and networks of SMEs. It is jointly led by Sweden and Lithuania and its goal is to establish "a new Baltic Sea Region brand", building on "smartness", research, innovation and co-operation. The long term aims are capacity building, stronger international competitiveness, increased foreign investment and world-class firms in some strategic sectors.

ESF support for knowledge and technology transfer between research centres and businesses, including the creation of competence centres, amounted to over EUR 3 billion over the period, leading to over 50.000 new jobs in the regions and countries where the measure was monitored.

Support to innovation in Poland

In Poland, 234 projects were funded under the "Regional innovative strategies and knowledge transfer" measure, aimed at expanding innovation capacity in the country by strengthening cooperation between research centres and businesses²²⁶. The measure funded traineeships as well as scholarships for PhD students and supported exchange of information and the transfer of innovations to local firms. As a result, 381 firms signed agreements with universities and other research centres to support innovative joint projects.

Financial engineering – a growing and effective form of support

Access of SMEs to finance and risk capital is essential if their potential to contribute to economic growth and competitiveness is to be realised. Venture Capital and loan funds, moreover, help move a region away from a subsidy culture towards one that rewards ambition and risk-taking. Moreover, money can be recycled back into a "legacy fund" and reused in the future.

Loan and equity finance²²⁷ are relatively common in some Member States (the UK and Germany, especially) but rare in others. Many schemes and pilot projects however, are starting to appear, with EUR 3 billion earmarked for venture capital funds in the 2007-13 period.

²²⁵ On the assumption that a similar rate of support for a given amount of expenditure also applied in the other programmes not covered by the evaluation.

²²⁶ 2003PL161PO001, PC, Integrated Regional Development, Poland

²²⁷ Loans are repayed, usually at generous terms. Equity finance means that, in return for the money, the venture capital fund takes a stake in the company. The distinction between loans and equity, while clear enough on paper, is sometimes not so cut and dried in practice. In fact, umbrella funds

Evidence²²⁸ suggests that both instruments lend themselves primarily to modernisation, innovation and capital deepening, the main effect, accordingly, tending to be on productivity growth rather than on job creation (though this may occur in the longer term as firms grow).

One of the main positive effects is the building of a strong venture capital market in the region. A striking example is the North East (of England) Co-investment Fund, launched in 2005 in a region where the last investment firm closed in 1999, leaving a lack of corporate finance professionals with a knowledge of the local market. The ERDF helped to set up the fund and to develop the local knowledge and networks necessary to manage it, so contributing to the creation of a venture capital market in the region.

Set-up costs can mean that loan and venture capital funds are slow to develop – especially in regions where they compete with grant schemes which are obviously more attractive to firms. Moreover, it can be difficult to identify suitable projects, without funding those which could have been funded from commercial sources. The scarcity of credit over the recent past, however, has made EU support even more important.

JEREMIE and JASMINE: Cohesion Policy supporting financial engineering

JEREMIE and JASMINE are joint financial engineering initiatives between the European Commission, the European Investment Bank (EIB) and its venture capital arm, the European Investment Fund (EIF).

JEREMIE

The "Joint European Resources for Micro to Medium Enterprises" invests in SME expansion and innovation, as well as new business creation. Holding funds are created, which in turn provide equity, loans or guarantees.

Improving SME access to finance was a Lisbon priority but one for which programme authorities lacked both expertise and access to risk capital. JEREMIE was designed to help to overcome these difficulties by creating a framework for cooperation with specialised financial institutions, the EIF and EIB, as well as other international financial institutions.

The EIF and DG REGIO started to prepare the ground in 2006. The first steps included assessing the demand for SME financial instruments in regions and Member States (the so called "evaluation studies") and advising interested Managing Authorities on practical arrangements for the implementation of these JEREMIE funds.

The second phase, consisting of implementing the initiative, began in 2009. EUR 3.2 billion has already been committed under the 26 signed JEREMIE holding fund agreements. Of this, EUR 2.1 billion is managed by national or regional financial institutions acting as holding funds, using Cohesion Policy money.

The remaining EUR 1.1 billion is managed by the EIB. To date the EIF has signed 11

sometimes offer the option of combining equity with loans or the option to convert between equity and loans.

²²⁸ http://ec.europa.eu/regional_policy/sources/docgener/evaluation/expost2006/wp6_en.htm#6b

agreements with Member States and regions, seven of these agreements are with EU-12 countries,

JASMINE

"Joint Action to Support Micro-finance Institutions in Europe" provides additional funding and technical assistance to non-bank microfinance institutions . The goal is to help the institutions concerned to increase their access to private capital markets, to expand and to become sustainable.

JASMINE is a 3-year pilot initiative running from 2009 to 2011, managed by the EIF. There are 2 elements: funding support and technical assistance.

Under the funding support, the EIF has already signed a EUR 1.8 million investment with Coopest, an EU-based investment fund, providing financing to small microfinance institutions in Central and Eastern Europe. Additionally, equity operations for greenfield microfinance institutions have been approved to reinforce the capacities of four microfinance institutions across the EU.

The technical assistance pilot consists of assessments and ratings (free-of-charge) to selected JASMINE beneficiaries (non-bank micro-credit providers active in the EU 27). Following this evaluation phase, beneficiaries benefit from training tailored to the specific needs of each JASMINE Beneficiary, as identified during the assessment/rating phase. In total at least 30 non-bank microfinance institutions will receive technical assistance during the pilot phase.

In addition, some market development services have also been set up to increase the visibility of the European microfinance market (creation of a web-based European microfinance database) and to promote exchange of best practices (organisation of specific workshops and creation of a helpdesk for microfinance practitioners).

Monitoring systems must keep pace with new tools

Historically, the success of enterprise support has been measured in terms of jobs created, or even jobs safeguarded. This has been true of both the day-to-day management (monitoring) and the longer-term assessment (evaluation) of the support. Other possible indicators of success – such as productivity, profits, added value and innovation – have been monitored only in a few cases.

With the growing focus on innovation, an increasing proportion of support to enterprises is aimed at increasing productivity and competitiveness rather than at directly creating jobs, at least in the short-term, though the objective is that in the long-term employment will be increased on a sustainable basis as a result of increased competitiveness.

Measurement systems, however, have not kept up with this new reality. Despite the focus on competitiveness and productivity, most programmes continue to measure their impact in terms of jobs created. The risk is that this serves to distort the direction of policy on the ground towards a focus on the short rather than the long-term and on maintaining declining activities rather than supporting diversification into new ones (see Box). Evaluation evidence suggests a need for greater clarity in the future on the objectives of enterprise and innovation support with a correspondingly greater commitment to rigorously evaluating the effects of intervention.

What gets measured, gets done – two examples from Italy

The Italian law 488/92 for local enterprise development was evaluated²²⁹ using a control group of non-assisted firms. Assistance had a significant positive effect on turnover, employment and investment in supported firms, but labour productivity growth was less than in non-supported firms. The evaluation concluded the likely reason for this to be that jobs created was the main result indicator and that this was a clear signal of priorities to programme and project managers.

The evaluation contrasted this with a small measure to promote e-commerce in Piemonte. Here the indicator was increased sales, the result being that turnover rose by 5% in supported enterprises.

Box: The EIB and EU cohesion policy

The European Investment Bank (EIB), as the European Union's investment bank, currently provides funding to the EU27 as well as to acceding and candidate countries in order to support Cohesion policy.; EIB loans are an important complement to grant instruments in Cohesion policy, as they provide a useful intermediate instrument between these and loans from commercial banks.

The EIB's remit and support is wide. Beyond TENs, energy and climate change as well as support to environmental protection and sustainable communities, it encompasses financing projects in the knowledge economy (Lisbon agenda) education and training, R&D and innovation and ICT, including financing of SMEs. Between 2007 and 2009 more than half of EIB lending was directed to investment projects in energy and transport. Support to competitiveness and the knowledge economy also represents an important part of EIB lending activities in convergence regions.

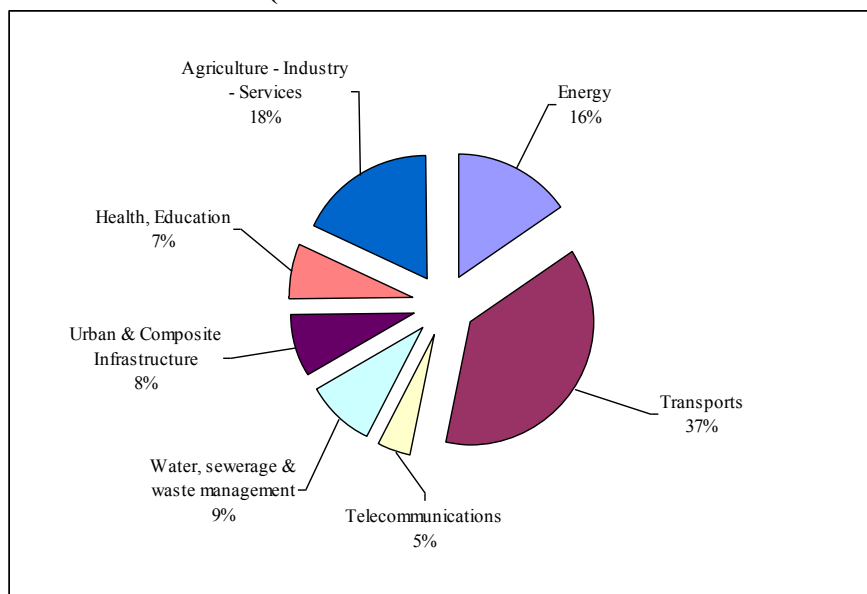
The importance of EIB support has been further accentuated by the financial crisis and as a consequence, lending to Convergence regions has been stepped up as part of the EIB contribution to the EU Economic Recovery Plan. In 2009, lending to Convergence regions totalled EUR 29.0bn, i.e. 41% of total EIB annual lending, funding 135 projects. Since the beginning of the current programming period, EIB lending to Cohesion countries has reached EUR 65.9 bn, and a total of 339 projects have been supported.

Total EIB support to Cohesion policy (Amount signed EUR million)

²²⁹ Pellegrini & Centra (2006) Growth and efficiency in subsidized firms. Paper prepared for the Workshop "The Evaluation of Labour Market, Welfare and Firms Incentives Programmes", May 11th - 13th 2006, Istituto Veneto di Scienze, Lettere ed Arti - Venezia.

	2007		2008		2009	
Cohesion countries	11 690.5	75%	16 398.3	77%	22 838.0	79%
Non-cohesion countries	3 897.9	25%	4 884.0	23%	6 212.0	21%
Total	15 588.4		21 282.3		29 050.0	
Share of EIB Structural funds co-financing (SPL)						
	2007		2008		2009	
Cohesion countries	1 583.0	100%	2 612.0	65%	2 472.0	97%
Non-cohesion countries	0	0%	1 400.0	35%	75	3%
Total	1 583.0		4 012.0		2 547.0	
<i>Including global loans for SMEs & Mid-cap</i>						

Figure 4- 8: Sectoral breakdown of EIB support to Cohesion policy (cumulative amount 2007-2009)



The current 2007-2013 programming period has introduced a greater role for the Bank in common initiatives implemented with the Commission to bolster convergence through advisory services, financial engineering and customised financial products, especially in the EU12 countries. It involves planning and programming, including technical assistance in the preparation of projects, project appraisal and financial engineering and monitoring.

There are four specially conceived Cohesion Policy Joint Initiatives, the so-called “4 Js”, originating from partnerships established between the European Commission (EC), the EIB/EIF and other international financial institutions. They are (i) JASPERS - Joint Assistance to support Projects in European Regions (EIB, EC, European Bank for Reconstruction and Development and KfW Bankengruppe); (ii) JESSICA - Joint European Support for Sustainable Investment in City Areas (EIB, EC and Council of Europe Development Bank), (iii) JEREMIE - Joint European Resources for Micro to Medium Enterprises initiative (EIF, EC); and (iv) JASMINE - Joint Action to Support Micro-Finance Institutions in Europe (EIF and EC).

But there are also a number of risk-sharing instruments such as Risk Sharing Finance Facility (RSFF) and Loan Guarantee for TEN Transport (LGTT) addressing complementary EU objectives and developed in partnership with the Commission. Financial engineering has provided new revolving instruments allowing a better matching between the type of funding and the nature of activities and ensuring market impact and leverage of EU financial resources.

Building on established technical assistance products, new technical assistance activities, usually closely linked to projects financed by the EIB, are being developed. The European Local Energy Assistance facility (ELENA) is an example of a new product that will support public investment in energy efficiency, renewable energy sources and clean transport. The European PPP Expertise Centre (EPEC) is another initiative developed in partnership with DG Regio. EPEC supports Public Private Partnerships for infrastructure investment by sharing and transferring knowledge, experience and best practice.

In terms of European territorial cooperation, the EIB has been a key partner in the design, launch and implementation of the EU Baltic Sea Strategy (BSS) and acted as a pathfinder for the new macro-regional strategy developed by the Commission at the request of the European Council. The EIB is contributing to this Strategy via its lending activity, development of technical assistance, reinforced cooperation and participation with the Nordic Investment Bank (NIB) in the Financial Expert Group for BSS, and further participation in relevant Northern Dimension Fora. The EIB is making a similar contribution to the Danube strategy.

2.4. Transport infrastructure

Efficient transport systems are equally important for sustained regional development. Indeed, many of the problems faced by lagging regions stem from inadequate transport links.

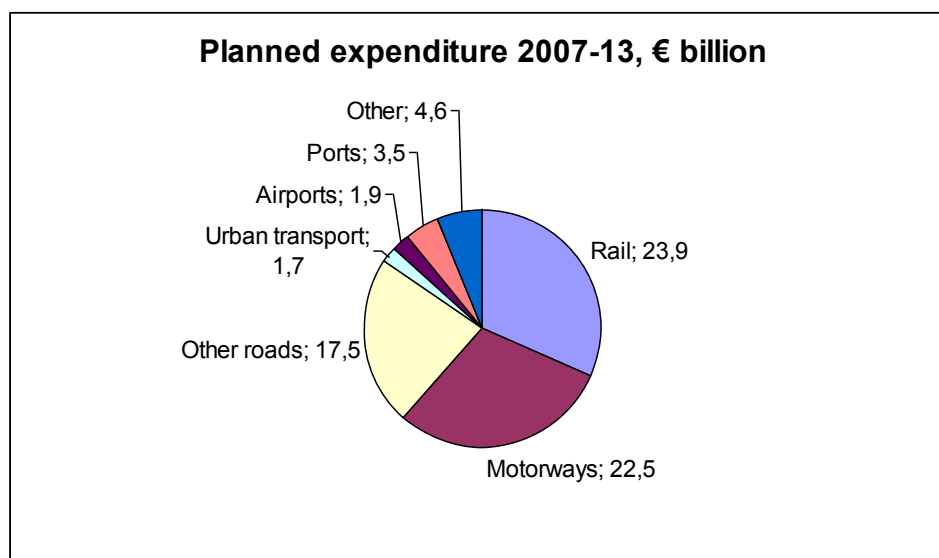
Map 4. 2 Planned investments of Cohesion Policy in transport infrastructure, 2007-2013

The transport network in a region is as important as links to the outside and tends to determine the ease of access of businesses and people to support services of various kinds as well as social and cultural amenities. Rural areas often depend on access to regional centres, while urban areas need a good public transport system to function effectively.

There has been a growing concern, however, over the past decade to reduce transport emissions and save energy, which has led to an increasing need to shift between modes of transport – notably from road to rail. Environmental considerations have also led to an expansion in urban public transport systems, which needs to be further strengthened in the future.

Investment in transport infrastructure is particularly important to Convergence regions (formerly Objective 1). The largest share of funding continues to be spent on roads, though the share of rail is substantial.

Figure 4- 9



Source: expenditure plans, including Cohesion Fund

Transport problems in the EU10²³⁰ were particularly pressing at accession. The main deficiency was not so much gaps in the network, but general deficiencies. Journey times tended to be long both because of the poor state of repair of roads and railways and because they were not designed for present traffic volumes. There were, in particular, few dual carriageway roads and even fewer motorways. In Poland, for example, there were just 358 kms of motorway in 2000 – only just over a third of those in Denmark despite having a population 7 times larger.

Road building – much achieved in the EU-15, much to be done in the EU-12

Despite substantial investment in Objective 1 regions in previous programming periods, there remained major disparities in endowment across the EU at the beginning of the 2000-2006 period as regards both fast means of travel between regions and efficient connections within them. This was particularly the case in Greece and Ireland as well as in the EU-10.

The emphasis on road means that Cohesion Policy was a major source of finance for motorway building. Of the 6034km increase in Cohesion countries (4954km in the former Cohesion Four²³¹, 1080km in the EU10), some 4691km (77% of the total) was co-funded by the ERDF and Cohesion Fund. As a result, the motorway density in these countries went from 90% of the EU average in 2000 to 111% in 2006. Some 2080 km of extra motorway were built in Spain, linking major cities in Andalucia in particular and boosting development in the surrounding regions.

In the EU10, most of the funding focussed on bringing the normal road network up to international standards, reducing average travel time in the Czech Republic, for

²³⁰ The EU10 refers to those Member States acceding in 2004, that is the current EU-12 minus Bulgaria and Romania. This classification is of significance in the 2000-2006 period only, where these countries had the common experience of joining in the middle of the programming period.

²³¹ Spain, Greece, Portugal and Ireland.

example, by 7%. Almost 100,000 km of road were built or reconstructed in the 2000-2006 period with the aid of the ERDF, though only 13% of this was new construction. Motorway density in these countries grew from 31% to 34% of the EU25 average over the 2000-2006 period.

While the funding provided under Cohesion Policy has improved the EU transport network and helped to support economic and development in the regions assisted, it is clear that in terms of motorway density, they have now largely caught up with the more developed regions. The road network in the EU-12 still needs substantial improvement, but increasingly transport investment needs to focus on delivering sustainable transport solutions at both national and regional level. Explicit account has to be taken of the need to reduce carbon and other emissions, relieve congestion and secure improvements in road safety, which involves investment in modes other than road.

Rail

Over the 2000-2006 period, 56% of all new high speed rail links in the EU15 were co-financed by the ERDF and the Cohesion Fund. In Spain in particular, the high speed network expanded from 471km to 1594km and this increase was wholly co-financed by Cohesion Policy.

These new links have led to a dramatic reduction in journey times: between Rome and Naples (nearly halving the journey time, from 114 minutes to 65 minutes), as well as between Madrid and cities in Andalusia (the journey time from Madrid to Malaga fell by a third, from 240 minutes to 160 minutes).

The ERDF and Cohesion Fund also helped to finance the improvement of around 7,260 km of non-high speed lines. A significant investment in a context where the overall rail network was reduced by 1,500 km because of rationalisation.

Though high speed rail can have a dramatic effect on journey times, the ERDF evaluation found that investment projects should be examined and justified on a case-by-case basis, only providing funding in cases where regional development is stimulated beyond the main centres served, leaving the development of the EU strategic rail network to be financed from other sources (e.g. the Cohesion Fund and the TEN-T budget). In any event, investment in standard rail is often a better choice, achieving similar results more cheaply and with less delay.

Urban public transport – a good investment

At the beginning of the 2000-2006 period, there were acute problems of congestion in major cities in Objective 1 regions, especially in Athens and Dublin but also in Lisbon and Thessaloniki. According to the ex post evaluation, Cohesion Policy co-financing of investment in public transport systems in these cities brought significant gains in both economic and social terms.

A good example is the extension of the Athens metro (see box), together with the construction of the tramway and the renewal of the bus and trolley bus fleets, which has substantially reduced traffic in the city below what it otherwise would be.

Athens Metro

Traffic congestion is an acute problem in Athens. The construction of the Athens Metro, including the extensions co-financed by the ERDF and Cohesion Fund over the 2000-2006 period, served to reduce the number of car journeys in the city by an estimated 120,000 a day. This has cut journey times by an average of 20 minutes, relieved pressure on car parking space and reduced traffic emissions by an average of 25%.

The continuing increase in car ownership, however, conceals these gains. Nevertheless, as compared with what the situation would be without the metro, it has markedly improved the quality of life for those living in Athens. It has also added to tourist numbers, created, directly and indirectly, an estimated 600 permanent jobs and boosted the economic development of areas not previously accessible by public transport.

Ports and airports – the best investment is their link to the wider network

In the case of other modes of transport, the contribution of the ERDF is more difficult to assess, but it helped to finance the modernisation of 31 airports across the EU, almost all of them in Objective 1 regions, and some 45 ports, 33 of them in Objective 1 and 12 in Objective 2 regions.

However, ex post evaluation concluded that the economic and social benefits of such investment are not so clear. In fact, because for airports and ports there is often a commercial return from expansion, the social and economic benefits for the region in question need to be demonstrated before funding is given.

The evaluation also found that improving multi-modal links sometimes yields more benefits than expansion of the port or airport itself. At the very least, connections to road and rail should be improved at the same time as facilities are expanded.

Management and strategic co-ordination are challenges

Managing transport projects is often challenging because their typically high costs and long completion times. This is especially so for new infrastructure, where the process of construction from planning to completion might take 10 years or more, spanning more than one 7-year programming period, which might in itself lead to major projects being postponed in favour of minor ones. At regional level, a further challenge is to coordinate expenditure with national transport policy and to ensure that the two are coherent.

2.5. Interreg and territorial co-operation

From Community Initiative to a full Objective of Cohesion Policy

Borders place artificial barriers in the way of development. Overcoming these barriers and fostering transnational and inter-regional linkages has long been an important aim of Cohesion Policy. In 2007, Territorial Co-Operation became one of the three Objectives of the Policy. There are 3 main strands:

- Strand A (cross-border co-operation) is aimed at "filling the gaps" created by borders which cut off communities in economic, social and cultural terms. The ex post evaluation noted that cross-border areas were often neglected by national policies and, as a result, their economies often lagged behind. ERDF financing in the current period amounts to EUR 5.6 billion.
- Strand B (transnational co-operation) is aimed at promoting collaboration across large groupings of regions. The 13 programmes, which have a budget of EUR 1.8 billion, cover areas such as the Baltic Sea, Alpine and Mediterranean regions.
- Strand C (interregional co-operation plus Interact, ESPON and, in the current period, URBACT (various exchange and analysis networks), with a budget of EUR 445 million, is aimed at improving the effectiveness of cohesion policies through exchange of experience between regional and local authorities.

The evaluation²³² of Interreg III in 2000-2006 gives important insights into the achievements of the previous round of programmes as well as ideas for improvements. Over the period, it contributed to the creation or safeguarding of 115,200 jobs and nearly 5,800 new businesses with another 3,900 assisted. Over 544,000 people attended events on cooperation issues.

Cooperation was further assisted by the creation of nearly 12,000 networks, leading to some 1,285 separate plans being formulated dealing with cross-border or transnational issues and almost 63,000 agreements being concluded.

Over 18,000 km of roads, railways or pathways were built or upgraded in border areas, along with investment in telecommunications and environmental improvement, and over 25,000 local and regional initiatives supported

Interreg, therefore, extended well beyond mutual learning, supporting a large number of innovative projects in the EU-15, while in the EU10, it initiated new forms of cooperation between the areas concerned and established arrangements for longer-term collaboration.

There were more difficulties in establishing the institutional arrangements for cooperation in the new border areas (i.e. between EU-15 and EU-12 regions) and agreeing common strategies and objectives.

The evaluation also concluded, however, that policy learning would have been enhanced if better links had been established with mainstream programmes, since all too often, the knowledge gained from the experience of undertaking programmes stayed within the Interreg community.

Main areas for further development

The lessons learned from the evaluation for the future design and conduct of policy were:

²³² http://ec.europa.eu/regional_policy/sources/docgener/evaluation/expost2006/interreg_en.htm

- Territorial co-operation needs to have clearer and more realistic policy goals that are in line with the resources available, which means *inter alia* recognising the difficulties created by differences in circumstances between regions, such as between EU-15 and EU-12 regions.
- To be more effective, programmes need to define better and more focussed strategies, which means identifying the needs in the cooperation areas and defining concrete and measurable targets. This is critical if the effect of interventions is to be quantified.
- The measures funded need to be better coordinated with other EU-assisted programmes in the co-operation areas to ensure their compatibility and to realise potential synergies.
- The evidence is that the exchange of experience and good practice which is a key feature of interregional programmes is valuable and could usefully be extended to mainstream programmes to improve policy-making.

3. WORKING FOR THE WELL-BEING OF EU CITIZENS

The ESF is the main EU source of finance to directly support individuals and their access to employment, education, training and equal opportunities as well as structural reforms. The ex post evaluation of the ESF found that support increased the national action taken in pursuit of EU priorities, extended its scope, supported policy reforms and innovation, and promoted good governance through the partnership principle and innovations in procedures.

Map 4.3 Planned investments of Cohesion Policy in human capital, 2007-2013

Employment is an important concern of people across the EU. The ESF has been addressing this concern since it was established helping the unemployed to find jobs, workers to keep their jobs, the disadvantaged into work and the conciliation of family and work life and stimulating the modernisation of employment, training and education systems.

The ESF supports people

In the 9 years 2000 to 2008, the ESF assisted more than 82 million²³³ people in various ways. In Ireland, Portugal and Spain, every year one tenth of the working age population received ESF support. In the EU as a whole, nearly 50% of participants were women, while in some Member States (Malta, Lithuania, Ireland, Portugal, Greece and Austria) this rose to over 55%. Some 60% of participants were unemployed. About 40% of them

²³³ 75 million were supported under the programming period 2000-2006; 7.2 million people have already received support under the programming period which started in 2007. No data is available on the number of persons assisted under the 2000-2006 programmes in 2007 and 2008. These figures do not take into account double counting, the extent of which is unknown: participants may have benefitted from more than one ESF intervention.

found a job immediately after the end of the intervention, and evaluations²³⁴ show that many more achieved this step within 12 months of the end of the measure.

In the present programming period, the share of inactive receiving ESF support has increased relative to 2000-2006. In 2007 and 2008, a third of all participants in supported schemes were inactive as against only 6% in the previous period. In 2009, the share increased to 42%.

The ESF extended the scope of national programmes, supporting groups included people with disabilities (e.g. in UK and Ireland), long-term unemployed and women (e.g. in Hungary), prisoners (e.g. in Malta and Italy), young people without basic qualifications (in the Netherlands), people in jobs (in Estonia), and small and micro-sized enterprises (in Germany, Sweden, Belgium).

The ESF ex-post evaluation of the 2000-2006 period estimated that 65% of the working-age population in the EU live in places where Public Employment Services have been improved with support from the ESF and 68% where training systems had been improved, while improvements in education systems covered 25-30% of the population aged 6 to 18.

3.1. Integration into the labour market

The ESF helps people enter or return to the labour market through supporting active labour market policies (ALMP), including through measures to prevent and combat unemployment, increase employment and maintain employability. These measures were implemented to a large extent by Public Employment Services (PES) across the EU.

In 2000-2006, EUR 18 billion were allocated to ALMP. For 2007-2013, the share of programmes which involve ALMP has increased to 90% against 71% in 2000-2006.

The ESF was used in 2000-2006 to provide:

- personalised services and integrated action plans;
- training for the unemployed, those at risk of unemployment, and the inactive;
- incentives for direct job creation and to safeguard employment, promoting business start-ups, assisted employment and the inclusion into the labour market of those excluded;
- active measures for specific target groups, such as young or people with disabilities.

About 28 million people participated in ALMP activities co-funded by the ESF over the period, half of them women, three out of four unemployed and four out of 10,

²³⁴ In fact, typically half or more of the unemployed participants find employment within 12 months of completing an intervention. This varies by programme and by type of unemployed person (long term unemployment in particular can be very challenging) but the range is 40 to 80%. Source: Bernard Brunhes International (2010) "Reporting on ESF interventions in the EU: The European Social Fund and Active Labour Market Policies and Public Employment Services".

young people under 25²³⁵. On average, a third of the unemployed in the EU participated in ESF supported programmes each year. Evaluations carried out by Member States illustrate the positive effects of support. As noted above, around 40% of the participants in training programmes found a job immediately afterwards, and many more in the months following.

ESF support went particularly to measures targeted at disadvantaged groups needing assistance to find a job, such as the long-term unemployed. In Austria, 64% of women and 60% of men found employment within 9 months after completing training under the 'Prevent and combat unemployment' priority. Monitoring over the subsequent 9 months showed that 69% of the people concerned stayed in employment for more than 3 months. In the UK, a survey carried out among participants in measures supported by the Objective 3 programme in England, open to both the employed and unemployed, indicated that the proportion employed among those completing courses, rose from an initial 41% (when entering the course) to 56% at the time of leaving and 61% 4-8 months later. The programme, however, had less of an effect on the inactive. Some 19% of participants in measures were inactive on entry, this only falling to 14% at the time of leaving and rising marginally to 15% 4-8 months later²³⁶.

An evaluation of ESF support for measures combining reduced working time ("*Kurzarbeit*") in Germany concluded that, on average, a slightly larger share of people completing ESF schemes (44%) were in employment two years afterwards than those in completing national schemes (just under 40%)²³⁷.

Many ESF assisted measures involved the personalisation of support, in order to ensure a better match between people's skills and available jobs. This often carried over into training, training for a specific job being offered before that intended to increase a person's general employability.

An evaluation of the training for the unemployed in Italy found that those completing a training course were significantly more likely to have found a job one year after than those in the control group.²³⁸ A similar evaluation in Germany of further vocational training for the unemployed concluded that, compared to unemployed non-participants, participants in ESF supported measures were more successful on average in the labour market over the medium and long run.²³⁹

The ESF was also used to support to business creation. An evaluation of the Hamburg OP for 2007-2013, covering support for business start-ups, concluded that

²³⁵ BBI study "ESF, Active Labour Market Policies and Public Employment Services", January 2010.

²³⁶ Department for Work and Pensions, Research Report No 376, European Social Fund Objective 3, The 2005 Beneficiary Survey for England, 2006

²³⁷ IAB Forschungsbericht 3/2009, Qualifizierungsmaßnahmen während Kurzarbeit nach endgültigem Arbeitsausfall.

²³⁸ Study on the return on ESF investment in human capital, draft final report, June 2010, p. 76.

²³⁹ IAB Forschungsbericht 1/2009, Evaluation der Förderung beruflicher Weiterbildung im Rahmen des ESF-BA Programms.

ESF assisted projects tailored their support to the specific needs and characteristics of migrants in general and female migrants in particular, unlike national programmes, which were not flexible enough to address the specific needs of the target group concerned.^{240,241}

Germany: the “Thüringen model“

The German Federal Employment Office (*Die Bundesagentur für Arbeit*), in cooperation with municipalities in Thüringen, implemented a range of projects to integrate the unemployed directly into the labour market. The three-phase model combined initial qualification, job placement and accompanying training on the work place. This multi-stage approach was designed following a study demonstrating that short-term qualifications tailored to the needs of individuals and a specific work place were the most likely to succeed. A survey conducted 4 years after the scheme being introduced found that 42% of participants found a job within 6 months after completing training.

Fostering people's mobility

Geographical and occupational mobility can help to increase people’s chances of finding a job, raise their professional qualifications and achieve a better match with job requirements. In the previous programming period, almost 220,000 people were reported as being assisted to move abroad or into a new job by ESF-supported mobility measures, either in the form of grants or scholarships or incentive schemes. A further 450,000 received training or guidance that increased their possibility of moving. Almost 17,000 organisations (mostly firms) participated in mobility related support measures.²⁴²

Improving the work-life balance

The balance between working and private life has become an increasingly important element of individual well-being over the years. This is particularly the case for those with caring responsibilities, for whom support has made it possible for them to enter or return to the labour market. Such support has helped an increasing number of women take up employment and, accordingly, has been a key factor in raising GDP per head.

Over the 2000-2006 period, EUR 1.2 billion of ESF financing, 26% of the budget for gender measures, went to improving the work-life balance through support to child care, and flexible forms of employment and working time arrangements. The ESF played a special role in facilitating pilot projects, such as in Greece where full-time primary schools and day care were introduced for younger children to allow mothers to work.

²⁴⁰ "Ad-hoc-Evaluierung der Aktion A.5 – Forderung des Unternehmergeistes – im Rahmen des ESF-OP Hamburg 2007-2013"

²⁴¹ PAG Uniconsult, The Impact of Structural Funds on Employment, Final Report, August 2007.

²⁴² BBI study The ESF and labour mobility, 2009.

Childcare provisions in Ireland

In Ireland, half of the ESF measures on gender were aimed at improving the quality of childcare provision in disadvantaged areas by assisting community based projects to fund salary costs of qualified childcare workers. This led not only to an increase in the children cared for but also to a number of local childcare networks being established (20 partnerships were set up in the Southern and Eastern region and 17 in the Border, Midland and Western region) and to more national non-statutory childcare organisations being supported (7 in both regions).

The England survey of beneficiaries of the ESF Operational Programme for 2000-2006 found that one in five (22%) participants had caring responsibilities which limited their daily activities and the work they could do. Most of these were women (76%) and one in four (24%) lone parents. As a result of the measures, the women concerned either found work, or were more willing to look for work or felt they had a better chance of finding work.

The ESF as a catalyst for change: support to systems

The effects of the ESF are more difficult to quantify in the case of innovative measures or structural reforms but are often sustained over a longer period and have greater leverage effects.

ESF assistance to employment and education systems was aimed, on the one hand, at improving institutional arrangements so as to improve the matching of demand and supply in the labour market and, on the other, at modernising training and education systems so that they included the qualifications needed in a globalised economy and adapt quicker to changes in job profiles. Funding was used to: a) foster local initiatives and networks better to anticipate labour market developments by harnessing the strengths and competences of different stakeholders; b) support the modernisation of systems, such as reforming Public Employment Services (PES) into needs-driven providers instead of inflexible bureaucracies, and c) support the modernisation of professional qualification schemes so that they are more capable of adapting in the future and reflect the permeability of education and training systems.

Over the 2000-2006 period, around EUR 5.1 billion was spent on reforming labour market and education systems²⁴³, 55% of this on improving the conditions for employment growth, 24% on local employment initiatives and 21% on modernising the PES.

Both the scale and pattern of ESF expenditure on the reform of systems differed between Member States, reflecting the fact that labour market institutions are complex and rooted in national traditions. Modernisation efforts have to take this into account and adapt. The effects of ESF in this regard have to be judged against this background.

²⁴³ BBI ESF, Active Labour Market Policies and Public Employment Services, January 2010.

The Public employment services in Poland

The performance of the PES in Poland has improved since 2004. Support to job-seekers and training of the unemployed has been extended increasingly to include active labour market policy measures and support to employers has also been extended. To achieve this, almost 20,000 PES employees were trained to acquire new skills and competences and the entire organisation was restructured. Without the ESF, neither would have been possible within a short period of time. Surveys among the unemployed and employers have recorded a higher level of satisfaction with PES services.

While in Poland the ESF has been used to reform the whole of the PES, shifting the focus from passive to active measures, in the EU 15 especially, it has been used to support organisational innovation and to fill specific gaps (see Box on Flanders and Brandenburg).

Career guidance in Flanders and Brandenburg

In Flanders, 16 career guidance centres, spread across the region were co-financed by the ESF over the 2000-2006 period. The most tangible effect is the establishment of career guidance in the region.

In Brandenburg, new types of service for SMEs were tested by the INNOPUNKT pilot project. These included counselling, career guidance and placement, coaching and training. According to an evaluation, 60% of these services will continue after ESF support has ended, and 85% of beneficiaries considered that the services were both sustainable and useful for the future.

3.2. Social Inclusion

One of the tasks of the ESF is to reinforce the social inclusion of disadvantaged people, to make sure that they have a better chance of staying in work over the long-term. The ex post evaluation of 2000-2006 concluded that considerable efforts went into measures relating to social inclusion, especially after the mid-term review of programmes.

For the 2007-2013 period, all Member States have an ESF priority on social inclusion (amounting to EUR 9 980 million), or at the very least plan significant measures in this respect within broader priorities (e.g. Denmark). In Spain, an entire Operational Programme has been dedicated to "Counteracting Social Exclusion". Activities target a broad range of disadvantaged people, such as ethnic minorities, migrants, people with health problems or disabilities, ex-offenders, older people, the homeless, lone parents and carers.

The ERDF equally provided financial support for the social integration of vulnerable groups, complementing the activities of the ESF in this regard by funding investment in infrastructure. For example, programmes in Eastern Scotland, Liguria and Gelderland included the construction of community centres which

catered for the specific needs of migrants. In addition, the Don Bosco Institute in Genoa (Liguria) provides a wide range of services (education, sporting and cultural facilities and practical assistance) to various sections of the population, including both young and older people and those with disabilities as well as migrants).

The ex post evaluation on ESF support to the Open Method of Co-ordination in respect of social inclusion indicated that the main types of intervention were those included under the headings “Reducing unemployment and increasing employability” and “Tackling disadvantages in education and training”. An online survey carried out as part of the evaluation²⁴⁴ revealed that the young unemployed (49%) and the long-term unemployed (45%) were the main target groups.

An evaluation of ESF support in London concluded that ESF-financed measures focused on young people with the lowest formal qualifications. Around 67% of participants from this group achieved a basic skills qualification (Skills for Life), while much lower success rates were recorded for national programmes targeted at other groups (e.g. the homeless - 28 % and families - 23%). The same was the case for ESF-financed measures targeted at migrants (24%) and ethnic minorities (20%). The evaluation suggested that for these particular groups, the need is to change prevailing cultural attitudes and to direct intervention to this end.

Social inclusion in England

The Objective 3 programme for 2000-2006 in England allocated a large share of the ESF budget to people with difficulties entering the labour market. Overall, two-thirds of participants experienced one or more disadvantages – being lone parents or carers, belonging to an ethnic minority, or having a disability or long-term health condition. Some 29% of participants were disadvantaged in one respect, 21% in two and 16% in three or more. Those with multiple disadvantages were more than twice as likely to have been inactive on entry to the programme and much less likely to have been employed (12% as against 40%).²⁴⁵ The evaluation found that ESF-funded projects engaged successfully with participants with multiple disadvantages and identified the added value of the ESF in terms of:

- the provision of services to a more people;
- a higher quality of provision, including: a broader range of services on offer,
- a stronger focus on individually tailored support, more intensive support, better quality equipment;
- more leverage of additional funding.

Integrating people with special needs

In 2000-2006, some EUR 3.7 billion of the ESF, together with EUR 4.8 billion of national and private co-funding, went on measures for people with disabilities.

²⁴⁴ Ex-post evaluation of the support of ESF to the social OMC, p. 38-39.

²⁴⁵ Department for Work and Pensions, Research Report No 376, European Social Fund Objective 3, The 2005 Beneficiary Survey for England, 2006

An evaluation of the effects of the ESF 2004-2006 programme in Estonia on people with special needs concluded that an individual approach was key and that for those with multiple disadvantages, it was necessary to adopt a case-by-case approach so as to find the most efficient solution²⁴⁶.

Every Spanish OP in 2000-2006 contained a 'pathways' measure targeted specifically at people with disabilities. While there was some variation in emphasis, a common approach was followed across OPs. This included counselling, insertion services, promotion of self-employment and teleworking and enhancement of service provision to people with disabilities. Social services were used to support people seeking training and basic competences of job seekers were developed through vocational workshops.

The pathways approach - Conciliation Famille Handicap (France)

Pathways approaches are designed to move people closer to the labour market, by transferring them from protected to non-protected work and finding them employment in social economy organisations or as self-employed.

The project gave support to families (particularly mothers) with children with disabilities by providing information and training on disability. The ultimate aim was the upgrading and formal recognition of the skills of the parents concerned. Parent associations and training centres co-promoted the project and worked with companies employing parents of children with disabilities to encourage them to adapt their working hours and conditions.

Integrating migrants and minorities into the labour market

Cohesion Policy has played an important role in supporting the integration of migrants and minorities²⁴⁷. The ESF regulations for the periods 2000-2006 and 2007-2013 contain provisions for supporting both either indirectly, through measures combating social exclusion or directly by identifying them as target groups.

For the period 2000-2006, 12 Member States²⁴⁸ collected data on migrants and minorities, 1.2 million participating in ESF programmes. Spain alone accounted for 58% of them, followed by Italy (14%) and Greece (8%). Measures were aimed at people or systems. They included developing inter-cultural education in schools and tailoring support to needs.

²⁴⁶ Evaluation of Results of Labour Market Projects Intended for Persons with Special Needs, Supported by Resources of Measure 1.3 of Estonian Single Programming Document 2004–2006, and Their Applicability in Policies, Research summary.

²⁴⁷ EC, Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, Third Annual Report on Migration and Integration, COM(2007) 512 final, Brussels, 11.9.2007.

²⁴⁸ Belgium, Germany, Spain, Finland, United Kingdom, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Sweden

Integrating Immigrants into the Swedish work force

The project focused on immigrants who had poor language skills and in some cases, mental or physical difficulties. The idea was to apply the “supported employment method” to the group. The method, already successfully used with those with disabilities, involves an individual coach to accompany participants first to their work placement, and subsequently to their new place of employment to support them through the difficult early stages of finding and maintaining a new job. Key to the method is that the coach should themselves have an immigrant background.

Helping asylum seekers in Greece

In Greece, an EQUAL project was designed to tackle the problem of the dramatic increase in asylum seekers, who have difficulties in finding a job, even after obtaining a work permit, and who are often discriminated against, with the result that they can in many cases obtain only temporary low skilled jobs. Many of them have multiple disadvantages – they do not speak the local language and lack certified educational qualifications and work experience. The project culminated in the creation of an electronic network and common online database connecting all organisations providing services to asylum seekers. The referral system developed by the project was also innovative, in that it not only registered the request for asylum but followed it up until it was treated by the relevant official.

Roma are one of the largest minority groups in a number of Member States, especially in Central and Eastern Europe. In 2000-2006, however, ESF Managing Authorities in only 5 Member States reported on participation of Roma in supported measures –Finland (500 participants), Greece (33,000), Hungary (23,000), Ireland (7,000) and Spain (35,000)²⁴⁹.

Actions supporting Roma people

The Roma are one of the largest ethnic minorities in the EU. They often live in marginalised areas and in poor socio-economic conditions. The social exclusion of Roma is caused by a combination of factors: low education levels, high unemployment (close to 80-90% in some areas of Central and Eastern Europe), poor health and wide-ranging discrimination. Because of this, they have high mortality rates and 10-12 years lower life expectancy than the norm.

The segregation of Roma is one of the most important barriers to their social inclusion. Roma children who are enrolled in segregated schools often end up in unemployment or outside the labour market altogether. Roma communities in segregated neighbourhoods have limited access to basic services and to labour market opportunities.

Member States are making different uses of the ESF to tackle the specific problems of Roma.

In Hungary, support has been implemented through “*Fighting social exclusion by promoting access to the labour market*”, one of the priorities of the 2004-2006 ESF Operational Programme. With the aim of those excluded from the labour market, measures

²⁴⁹ BBI, The European Social Fund and Roma: Background Report developed under the “Reporting on ESF interventions in the EU” project. Contract VC/2007/0555. Approved Draft, Brussels 15 March 2010.

were targeted at the most disadvantaged, including Roma. Support was given, for example, to NGO initiatives in education and training and social services. The 2007-13 Hungarian "Social Renewal ESF OP" contains a specific measure for "Reducing the segregation of severely disadvantaged and Roma pupils" by increasing their access to public education through:

- detection of negative selection mechanisms that exist at system level and strengthen segregation;
- support for civil initiatives aimed at reducing discrimination in education;
- extending the range of schools engaged in integrated education by means of the formulation and application of an appropriate quality assurance and verification system;
- preventive programmes (mentor-sponsoring programmes, the development of tuition networks, support for dormitory programmes and mobility) to encourage enrolment in pre-school of multiple disadvantaged children;
- analysis of the reasons for dropping out of secondary school;
- dissemination of "A new chance", and "A second chance" type programmes offering flexible and personalised learning paths for getting young people who have dropped out of the education system back into school.

EQUAL

The EQUAL Community Initiative was about promoting change and fighting discrimination and exclusion in the labour market. The ex-post evaluation concluded that it was very successful in enabling the *development and mainstreaming of a large number of useful innovations*. A database of EQUAL good practices has been left for policy-makers and practitioners. The evaluation reported 924 innovative approaches, 783 of them linked to social inclusion and 141 to equal opportunities, as well as 285 successful cases of "mainstreaming", 211 linked to social inclusion, and 74 to equal opportunities.

EQUAL had positive effects *on policies and systems* rather than on job creation. These included legislative changes (e.g. facilitating the provision of innovative credit and support mechanisms for the unemployed, migrants and Roma; and fiscal incentives to increase the labour market participation of vulnerable groups), new policies, the inclusion of EQUAL principles in new policies and new ESF operational programmes. It also had effects on education and training systems and labour market intermediation and support services and led to some operational changes in employment and public services. EQUAL, in addition, contributed to increasing the quality of governance and professionalism of civil society organisations. It was an important means of capacity building for those that participated in the programmes - especially in the EU10 –and had a long-term effect in raising awareness and changing mindsets.

Moreover, EQUAL was a source of Community added-value by acting as a catalyst for funding for groups that would not have received much otherwise, providing resources for new areas of intervention, creating new partnerships, raising awareness of new ways of doing things and stimulating changes in ways of thinking, developing practical solutions to problems and filling gaps in national policies or complementing national measures.

However, the long-term effect of EQUAL on the situation of vulnerable people is not expected to be significant because it involved small-scale, pilot projects and depended on the integration of these into national or regional ESF programmes.

3.3. Demographic change

Demographic change has become increasingly prominent on the policy agenda. First, working-age population is set to decline in many parts of the EU and the number of people beyond retirement age to rise. This is a challenge for the economy, as well as for health and social services and communal amenities. Secondly, the significant migration flows both from developing countries outside the EU and within the Union from East to West since 2004 has given rise to concerns about integration and the pressure on infrastructure (on housing, schools and so on) in destination countries and about loss of skilled and educated labour in the countries left behind.

Demography was not an explicit theme in the EU Guidelines for the 2000-2006 period. Nevertheless, it featured in programmes in many regions (often implicitly) in the EU-15 and in some in the EU10 from 2004 onwards. An evaluation²⁵⁰ found that measures addressing demographic issues indirectly accounted for 23% of total ERDF financing in a sample of regions.

This illustrates a strength of the "bottom-up" approach of Cohesion Policy, that even when a theme is not an explicit priority in the regulations, there is the flexibility for regions to take it up.

Demographic trends show common features across the EU, but individual regions are affected in different ways. Ageing and migration flows have stronger and more immediate effects in some parts than others. Demographic issues have come to the fore in Poland and the Baltic States especially and are likely to feature more in Cohesion Policy in the future.

Measures meeting the needs of an ageing population

The ERDF supported the provision of care facilities for the elderly in rural and urban disadvantaged areas in a number of regions in 2000-2006. For example, in Castilla y León, it co-funded the construction of 47 health centres and the enlargement and refurbishment of 91 others, 24-hour medical attention centres and hospitals providing care at local level for elderly, people with disabilities and other vulnerable groups. This reduced the need for travel to larger towns to access health care, while equally reducing the work load of carers (mainly women) in the rural areas concerned. It also created some 2,900 jobs, mainly for women.

Older workers aged 55 years and over accounted for around 4% of all participants in ESF measures (over 300 000 people²⁵¹) in 2007 and 2008 when the new programmes were still starting up, most of them on training courses or receiving advice aimed at enabling them to remain in employment longer.

²⁵⁰ Ex post evaluation: gender equality and demographic change
http://ec.europa.eu/regional_policy/sources/docgener/evaluation/expost2006/wp7_en.htm

²⁵¹ Source: AIR reports. Because participants' age is not always recorded, the true figure is likely to be higher.

The ex-post evaluation of 2000-2006 found that ESF supported-measures contributed to extending the working lives of older people as well as to pursuing the Healthcare and Long-Term Care Open Method of Co-ordination Objectives²⁵² in 5 countries, in particular (Greece, Finland, Poland, Portugal, and Sweden).

BOX Synergy between Cohesion Policy and the Healthcare and Long Term Care Open Method of Co-ordination (OMC) Objectives

In Finland, the ESF contributed to the pursuit of healthy lifestyle objectives by encouraging cooperation between workplaces, rehabilitation centres and healthcare services. In Poland, it supported the development of human resources in screening centres and other healthcare institutions. In Sweden, it was focused on helping to develop the local healthcare system and in Portugal, where an entire programme was devoted to healthcare, high quality human resources in the care sector.

Measures for maintaining demographic balance in regions

A key aspect of responding to demographic change at regional level is to try to maintain a reasonably balanced age distribution of the population, to encourage young people to stay and to ensure not only that there are sufficient employment opportunities for people of working age but also adequate social and cultural facilities. Accordingly improving the attractiveness of a region through creating or upgrading social infrastructure and social services is an important part of Cohesion Policy.

In Gelderland in the Netherlands, for example, the ERDF supported investment in cultural centres in small villages and towns, making it more attractive for younger people to seek work in the area. As a by-product, it also created employment opportunities for vulnerable groups. The provision of day-care facilities enabled more women to work, while elderly people had access to more convenient care facilities.

The local provision of education and training can also be important in that it tends to reduce "educational commuting" while improving the employability of young people, so making the region more attractive for businesses to locate there. In Salzburg, the ERDF supported the upgrading of a vocational centre for apprenticeships by funding the acquisition of machinery in the "Mechatronic Cluster", each young person being guaranteed a job in a local firm after finishing (around 100 young participate in the programme every year). In Salzburg too, the EDRF helped to construct a training centre which provided IT courses attended by 100 people over 60 each year.

²⁵² The objectives focus on issues related to access, quality and sustainability of healthcare and long-term care.

3.4. Equal opportunities

Horizontal measures can work, but need a concrete implementation strategy – they require sustained commitment and active partnership with relevant stakeholders.

Ensuring that women and men have equal opportunities to access a good education, get a decent job, or pursue a fulfilling career is a goal in its own right and essential to securing a just and equitable society. But it is also important for economic reasons. Not only is it likely to add to the work force but it will also tend to increase the skills available and, accordingly, help to raise the rate of growth and to improve competitiveness.

The ESF has played an important role in supporting gender equality policies and gender mainstreaming in Member States, in particular by helping women into employment, especially from vulnerable groups such as migrants, promoting their lifelong learning, combating gender segregation in career selection and professions, supporting their participation in science and technology as well as assisting them to start up businesses.

Evaluations show that the ESF has helped challenge existing practices in all Member States with respect to gender equality issues. Indeed, in many cases, gender equality was neither at the forefront of the political agenda nor recognised by the public generally as being important. In the 2000-2006 period, a total of EUR 4.4 billion of ESF financing, or 7% of the total, went on measures to promote gender equality and gender mainstreaming, including reconciliation measures. The EQUAL Initiative added an extra EUR 753 million (15% of its budget). The largest expenditure on gender-related measures was in Germany, accounting for 25% of the total across the EU. In some Member States, such as Belgium, a large number of measures were undertaken on gender mainstreaming and in Flanders, a monitoring system was set up to track these. In Sweden and Denmark, gender issues were fully mainstreamed and there were, therefore, no specific measures.

The ERDF has contributed to gender mainstreaming in all relevant areas, in particular, in the provision of support to education and training, to women entrepreneurs and to investment in care facilities.

Evaluation²⁵³ of a sample of regions suggests that ERDF measures in the 2000-2006 period addressing (directly or indirectly) gender equality accounted for 21% of total funding. The evaluation found that the effective implementation of the principle of gender equality requires effort, political leadership, long-term commitment and – above all – sound measures. Gender equality issues were explicitly included in the conception of most programmes in the 2000-2006 period, but evidence is more mixed when it comes to follow through in implementation and results.

The need for long-term effort and commitment continues in the current period. Article 16 of Regulation EC 1083/2006 requires that gender equality, non-discrimination and accessibility for people with disabilities be taken into account in all stages of programme implementation. Though it is clearly too early to measure

²⁵³ Ex post evaluation: gender equality and demography change
http://ec.europa.eu/regional_policy/sources/docgener/evaluation/expost2006/wp7_en.htm

effects, evaluation²⁵⁴ evidence on their inclusion in measures is mixed. While all programmes mention gender equality and gender mainstreaming, there is less evidence that gender equality considerations have been taken into account in the implementation of the programmes.

The evaluation of the implementation of the cross-cutting themes²⁵⁵ under the Welsh Objective 1 and 3 programmes in 2000-2006 found that project managers often paid only lip service to the horizontal issues, including equal opportunities, because they found it difficult to see how they could be applied in a horizontal manner in practice. In most cases (70% of those examined), equal opportunities were treated as a horizontal priority without a specific strategy. In 22% of the programmes examined the three themes were included as statements of intent without clear targets, relevant selection criteria or obligations in terms of monitoring. Only 8% of the programmes integrated the three themes in a comprehensive strategy with clear identification of problems and quantified targets. Nevertheless the evaluation considered that the high profile of the issues in the Programmes has raised their importance and has meant that project sponsors have been encouraged to take account of them²⁵⁶.

Discrimination is perceived differently across countries. While in the EU-15 the focus of non-discrimination measures tends to be on women, migrants and the elderly, in the EU-12 the focus is more on ethnic minorities, especially the Roma (see box above).

Case studies suggest that effective involvement of relevant stakeholders in the design and implementation of measure is crucial if they are to be effective. However, while involvement of stakeholders in equal opportunity programmes was relatively high, this was less so in respect of minorities, migrants and people with disabilities.

Specific actions are effective – especially childcare and support to women entrepreneurs

Specific, tangible measures are often an essential complement to horizontal ones. The evaluation of Article 16 found that programmes in the current period are centred on public transport, child care facilities, social services and support for entrepreneurship.

The regional case studies carried out as part of the ERDF evaluation for 2000-2006 identified a number of positive outcomes from support, including:

²⁵⁴ Study on the translation of Article 16 on the promotion of gender equality, non-discrimination and accessibility for disabled persons into Cohesion Policy Programmes 2007-13
http://ec.europa.eu/regional_policy/sources/docgener/evaluation/eval2007/art16_gender_en.htm

²⁵⁵ The horizontal themes under the programmes were equal opportunities, environmental sustainability and ICT.

²⁵⁶ Ecotec, Cross-cutting themes research project, final report, April 2006.

- the creation in Eastern Scotland, of over 2 000 new businesses managed by women and the introduction by some 600 organisations of "active people friendly policies" to help manage the work-life balance;
- the creation in Norra Norrland in Sweden of nearly 100 IT jobs for women and over 1000 new businesses managed by women;
- The creation in Southern and Eastern Ireland of over 400 new childcare facilities and the upgrading of 800 more.

The regional case studies showed strong evidence of both job creation and business start-ups for women as a result of support for both "hard" measures (direct investment aid, physical infrastructure, purchase of machinery, etc.) and "soft" measures (advice, support for networks and associations of women business owners and mentoring activities by and for women). They also indicated that support was most effective when it combined both hard and soft measures. For example, many women entrepreneurs - as men – encounter difficulties in maintaining and sustaining a business, especially in meeting the financial and administrative requirements. Such problems usually stem either from lack of experience and knowledge or from difficulties in accessing finance. Soft measures tackle such obstacles and increase the effectiveness of the hard measures.

The data available for the ESF for the period²⁵⁷ suggest that support for gender measures assisted 4.6 million people of which 76% were women and that over 800,000 women participated in measures supporting entrepreneurship. In Spain, 150,000 participated in such measures and 5,500 SMEs were assisted. In France, some 220,000 women received support in this regard.

Limited data are available on the jobs created. In England, the 2005 beneficiary survey for the Objective 3 programme for 2000-2006 found that female participants in relevant ESF supported activities were more likely to gain qualifications than men (73% as against 62%). The most significant employment outcomes occurred in the more innovative projects, which were usually smaller and followed a more integrated approach (i.e. those providing multiple-level support to individuals in a personalised way).

Evaluations also tend to highlight the less tangible effects of ESF-supported measures in this area – in particular the empowerment of women and their sustained commitment to looking for work and remaining, and progressing, in employment. This empowerment stems from the skills that they acquire, their higher self-confidence and new aspirations, including, in some cases, pursuing further education, and new opportunities for reconciling work with family obligations. These positive consequences are a latent force for increasing employment in the longer- term.

For the 2007-2013 period, EUR 2.4 billion, (3% of the total ESF budget) has been allocated to broad priority of improving access to employment, increasing sustainable participation, progress of women in employment to reduce gender-based

²⁵⁷ Bernard Brunhes International (BBI), 2010. "Reporting on ESF interventions in the EU: The European Social Fund: Women, gender mainstreaming and reconciliation of work and private life".

segregation in the labour market and reconciling work and private life. In Denmark and Sweden, however, gender equality is considered a priority across the whole OP, so has no specific budget allocated to it.

Both the ESF and EQUAL have had important institutional and policy effects as regards gender equality as evidenced by new legislation, new policy processes being adopted, new organisations being set up and existing approaches being adapted.

However, more could be done – small scale measures and general statements are no substitute for a more comprehensive approach

As noted above, progress is mixed and more could be done. All programmes include some kind of formal commitment, many are provided at least some social infrastructure and care services, which have clear benefits locally. But a complete translation of Article 16 into practice requires effort and long-term commitment, backed by a comprehensive strategy, with a specific budget and quantified targets. For example, only 8% of the ERDF programmes have gone this far in the 2007-13 period.

3.5. Local development

Local development is a model which can be applied to a wide range of activities. The key features are:

- A well defined local area, usually small scale.
- A strong partnership with, and the close involvement of, all the relevant local actors, mobilising their unique strengths and local knowledge. This work often requires a degree of capacity building and administrative support from larger units.
- An integrated strategy tackling the various challenges facing the area. This strategy should be developed in close partnership between the various local public and private actors, as well as different administrative levels (local authorities and territorial units of central or regional government).

A good example of the model in practice is the second round of the Urban Community Initiative ("URBAN II") in 2000-2006. Local partnerships were encouraged to develop an integrated approach to the social, economic and environmental challenges facing deprived urban areas, an approach which was 'mainstreamed' in the ERDF in 2007-13.

Local development and local partnership – the example of URBAN II

A striking conclusion from the ex post evaluation of URBAN II is that the success of projects did not depend on the specific issue concerned or the specific means of tackling – successful projects covered a wide range of issues and means. The key feature was local leadership and local ownership. They were in line with local perceptions of need, with the involvement of local people and organisations in both their design and implementation. Unsuccessful projects were usually imposed from above with little local involvement.

The involvement of local authorities was a key factor. The ex post evaluation noted that 80% of URBAN II programmes were led by the local authority concerned – and case studies revealed a clear difference in effectiveness between these and the minority of programmes which were not.

In addition, over 80% of the local partnerships could be defined as inclusive, involving a wide range of interests such as community groups, private firms, employment agencies, training providers development agencies and specialist professionals. The voluntary sector was involved in the implementation of many projects, which had a spill-over benefit in terms of building the capacity of local partners for other projects in the future.

Larger partners (e.g. city or regional authorities or development agencies) often played a key role by:

- providing expertise and helping build the capacity of local participants;
- sustaining projects in the longer term – 60 % of URBAN II projects continued after funding ended and the support of a larger partner was usually key to this;
- helping to provide favourable economic conditions in the wider city or region – the evaluation highlighted the strong influence on local areas of the situation in surrounding areas.

Local employment initiatives were an important facet of the ESF too, helping to boost job creation and improve the matching of supply and demand at local level. They took different forms across the EU. In Germany, Spain, Greece and Belgium, for example, partnerships were set up between local public and private stakeholders. In other countries, employment and/or business creation networks, human resource development foundations or 'houses of employment' were established.

In 2000-2006, 16 of the 25 Member States used the ESF to support urban areas and local employment. The amount allocated was over EUR 11 billion, (11% of the total) and overall 1.8 million people participated in the initiatives: 80% of them unemployed, 50% long-term unemployed and 53% women.

The participation figures, however, do not convey the importance of the initiatives. As in the case of URBAN, by involving stakeholders in a common strategy, these ESF Initiatives, together with the Territorial Employment Pacts, yielded results that intervention at regional or national level could not achieve. An evaluation of ESF funded projects in East London highlighted the establishment of strong partnership

working as a key strength along with the use of local support services, particularly in engaging with young people.²⁵⁸ A common evaluation finding was that local initiatives and territorial pacts led to greater specialisation and better adaptation to labour market needs.

Territorial Employment Pacts in Asturias

The Territorial Employment Pacts (TEP) in Gijón and Avilés (Asturias) are examples of the adaptation of support to the specific economic and territorial characteristics of the region in two main respects:

- They focused on local employment problems and, specifically, on the in unemployed with special needs.
- During the implementation of the main measures in the TEP (financing and hiring people for training and work experience) the profile of the target groups changed significantly. Initially there was a strong emphasis on training and employing under-qualified people at risk of exclusion in municipal activities (such as gardening, urban maintenance, construction and social assistance) However, it was also discovered that such experience was very useful for recently qualified students as a way of helping them into employment. In a second stage, therefore, students were also supported.

The partnership principle and exchange of experience were central aspects of LEADER, which was designed to help those on the ground and to implement innovative strategies for sustainable development in their local area. LEADER is an integral part of the rural development policy financed under the EAFRD.

Local Development is also at the core of the Fisheries Local Action Groups that have been established with support of the Axis 4 of the European Fisheries Fund in order to alleviate the negative effect of the crisis of the fishing sector in fisheries-dependent areas.

Local development measures were also an integral part of INTERREG and continue to be so in the cross-border strand of the Territorial Cooperation Objective.

The local development model is a strong feature of Cohesion Policy. It mobilises the strengths, knowledge and enthusiasm of local people. It encourages better choices and "joined-up actions" and local measures which are more coherent, effective and cost efficient. It also serves to boost the democratic and civil participation aspects of Cohesion Policy and gives a high visibility to Community intervention in some of the EU areas facing the most difficult challenges.

However, successful local development measures require sustained, long-term commitment, from different levels of government as well as from local people. The success of projects is heavily dependent on an enabling and supportive framework, but also on training and building the administrative capacity of local participants.

²⁵⁸ BMG Research, Evaluation report: ESF-funded projects in East London, September 2008.

3.6. Urban regeneration

The example of URBAN II

The second round of the URBAN Community Initiative, "URBAN II", ran from 2001 to 2006 and was aimed at assisting neighbourhoods in crisis. Those selected had a wide range of social and economic problems, including high unemployment (an average of 17% across URBAN II) and a poor urban environment. Green spaces, for example – an indicator of the environment and amenities – were only half the average for all cities in the EU for which data are available (10.5% of total surface area, as opposed to 20.5%).

Le Havre, France – an example of the problems facing neighbourhoods in crisis

In 2001, the area supported in Le Havre had traditional industries in decline, unemployment at 21% and a high benefit dependency rate. Low education levels, a high crime rate and lack of an enterprise culture hampered recovery. The quality of the physical environment was poor – including land pollution and many vacant and derelict buildings.

URBAN II provided support amounting to EUR 754 million, rising to EUR 1.6 billion with co-funding, to 70 programmes across the EU-15 over the period. The areas in question had a total population of 2.2 million. There were three main areas of spending (Figure 4.6):

- Physical and environmental regeneration projects to reverse urban decay and investment in transport hubs and new transport facilities and in new community facilities (museums, libraries, crèches). The ex post evaluation recorded, for example, 2,314,000 square metres of buildings converted and renovated and the creation of 3,238,000 square metres of green space.
- Building the local economy by providing business support services, and incubators for new businesses, as well as training. The ex post evaluation recorded 108,000 people trained and 6,000 businesses supported over the period, resulting in 2,000 jobs created.
- Social inclusion. Of the 108,000 people trained, more than half were from vulnerable groups and were helped to overcome illiteracy and continue their education or to enter the labour market for the first time. Moreover there were 247 projects to reduce local crime, including the provision of street wardens, CCTV, landscaping and street lighting, in collaboration with community groups and neighbourhood watches.

Inclusion and local services

Social inclusion projects helped to reduce crime, improve educational performance, improve the skills of local people and support disadvantaged groups in various ways. They also built up the capacity of civil society groups and the voluntary sector.

In Scotland, a large majority of deprived households (77%) are concentrated in urban areas, half of them in Glasgow. In order to improve their situation, ESF activities included support to those aged 12-16 in school in the form of careers advice and guidance in order to reduce early school leaving. Public authorities also played an important role in helping those excluded to find jobs and in addressing skills deficits and other barriers to employment (such as a lack of social skills). Some 1,067 ex-offenders, 451 homeless people and 363 drug users participated in the measures, out of over 53,000 who were assisted. More than 7,000 companies were actively involved in the initiative.²⁵⁹

2007-2013: URBAN enters the mainstream...

Following the success of URBAN II, urban regeneration has been included in the mainstream of the ERDF, with an expanded budget²⁶⁰ - around EUR 10 billion being allocated to urban development at Priority Axis level. Possible operations at sub-Priority Axis level increase the total to an estimated EUR 30 billion.

More than half of the ERDF programmes have an identifiable urban dimension, and explicitly address urban challenges. Operations range from the regeneration of disadvantaged areas to actions boosting innovation and competitiveness in urban growth poles. Roughly half of Cohesion Programmes include provision for the JESSICA initiative (see box).

The ESF too has been used to support actions in education, training and employment in deprived urban areas. In particular, the ESF puts emphasis on social inclusion of disadvantaged people through the involvement of local communities and companies and the promotion of local employment initiatives. In the 2007-2013 period, 22 out of the 27 Member States have specifically foreseen support to urban areas and local employment initiatives in their operational programmes.

JESSICA – financial engineering at the service of Europe's cities

The "Joint European Support for Sustainable Investment in City Areas" is a joint initiative of the Commission, the EIB (European Investment Bank) and the CEB (Council of Europe Development Bank) to increase the use of financial engineering for sustainable urban development and regeneration. JESSICA gives managing authorities the possibility of using outside expertise, including in the private sector, to bring not just money but associated skills and resources.

Nine JESSICA Fund agreements have already been signed with the EIB as fund manager. In addition, three other operations are being implemented by national or regional financial institutions (Brandenburg, East Midlands, Estonia).

At present, over EUR 1.1 billion is already committed under JESSICA fund agreements. Operations in the pipeline suggest that this could reach EUR 1.8 billion by end-2010. An advantage of financial engineering is that in 2015 there will be a "legacy fund" for reinvestment in further urban regeneration actions.

²⁵⁹ BBI study, ESF support to urban areas and local employment, p. 42.

²⁶⁰ A first full picture of mainstreaming can be found in the Working Document "Fostering the Urban Dimension – Analysis of the Operational Programmes co-financed by the European Regional Development Fund (2007-2013)".

... but the local development model – key to URBAN success – needs further work

As indicated above, the ex post evaluation of URBAN II found that the key factor behind successful urban regeneration projects was local involvement. Creating local partnerships entailed much effort. For example, in just one initiative (in Burnley in the UK), 134 people became involved in community management.

In the 2007-13 programmes, however, direct local involvement has started at a low level and the option of delegating responsibilities to local authorities has been used in only a few cases. Even informally, most cities have so far had a limited role in policy design and implementation and there are few signs of active participation of local residents. It remains to be seen how the mainstreaming of the measures will work out in the longer term.

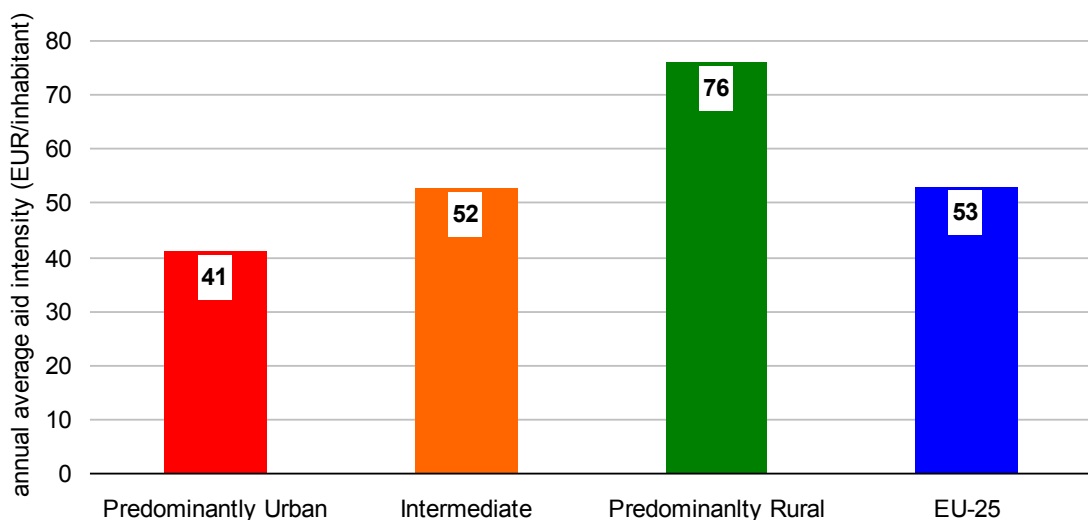
Good practice for partnership in the mainstream: Nordrhein-Westfalen in Germany

Nearly 30% of the programme is allocated to “Sustainable urban and regional development”. The programme is built directly on previous experience with Dortmund URBAN II, involving an integrated approach with strong local partnership. Evaluations show that previous interventions created a leverage effect for public and private investment, increased economic activity and improved the quality of life.

3.7. Rural areas

Figure 4- 10

Aid intensity of ERDF, CF and ISPA according to the urban-rural typology in the EU-25, 2000-2006



Source: regional estimates of commitments under ERDF, Cohesion Fund and ISPA

Rural areas are a key element in any strategy for sustainability and territorial balance. There is increasing emphasis on tailoring policy to the specific features of regions – rural regions often share particular strengths and assets, on which Cohesion Policy can build. Equally, the growing focus on sustainability means that development should not be at the expense of the rural environment or endanger social cohesion.

The situation of rural areas, however, differs greatly across the EU. They vary from remote areas in population decline (such as in Romania, eastern Poland, and northern Sweden and Finland.) to more central areas with population increase (e.g. in northern Greece and southern Sweden and Finland). In some areas, tourism predominates, in others agriculture and forestry.

There is therefore no single "one size fits all" strategy for rural areas, although a recurrent theme is the need to maintain economic activity (or access to economic activity) along with services and social amenities (such as child-care, care for the elderly and leisure facilities). In addition, there is usually an implicit concern to preserve the rural character of the area and for development to involve local participation (the "local development model") rather than being imposed from outside. Finally, rural depopulation is a major concern in the Mediterranean for forest management and fire risks.

The task of supporting rural development was divided in the 2000-2006 period between the ERDF, ESF and EAGGF (guidance section only²⁶¹). The EAGGF guidance section focussed on support for farming activities and their conversion, including the maintenance and reinforcement of a viable social fabric in rural areas, the ESF on developing human capital, while the ERDF assisted a broad range of measures, including:

- The creation of new economic activity, tourism and regeneration of polluted or damaged areas
- Transport links, often the lifeline of rural communities and economies
- Access to social and environmental infrastructure and services

In Andalucia, for example, ERDF support to business was found by the evaluation to have been of key importance for the local economy. Measures included co-funding premises for craft businesses and small-scale firms, investment in hotels and catering, improvements to villages, the construction of community centres and the provision of support services for SMEs.

²⁶¹ Within the EAGGF, only the Guidance Section was implemented in the framework of cohesion policy, providing support in the then Objective 1 areas. The EAGGF Guarantee section, separate from cohesion policy, provided support in non-Objective 1 areas and for certain types of rural development measures across the EU.

Promoting economic activity in the Centre region of France

The ERDF was mainly used to attract new companies, in particular small firms with under 10 employees, and to provide them with the necessary infrastructure and services. Other measures were aimed at improving the attractiveness of rural areas for businesses.

The effect was particularly pronounced on the distributive trades and the crafts sector. 15 ORACs (*Opérations de restructuration de l'artisanat et du commerce* – actions for the restructuring of crafts and trade, especially local suppliers) were co-financed, which brought together representatives of the various local authorities and of local businesses.

The ERDF also co-financed many tourist projects which had a measurable impact on increasing the number of visitors (e.g. bringing some of the numerous visitors to the Loire chateaux to visit the rural areas of the region).

Source: ex post evaluation of Cohesion Policy, WP9

Better access to services often took the form of improvements in water supply and wastewater treatment, but many other measures were also co-funded across the EU, including:

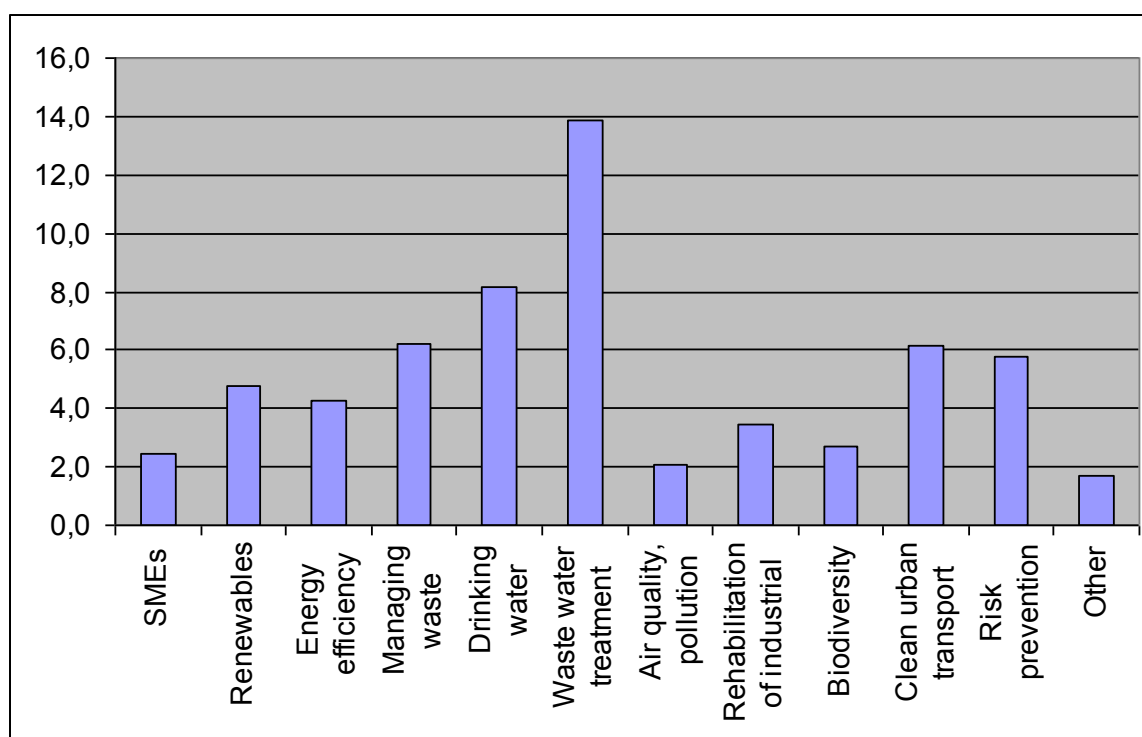
- the renovation of rural villages in many areas across the EU,
- the restoration of historical buildings and monuments in rural towns in Italy co-financed under both Objective 1 and Objective 2,
- support for social infrastructure in rural areas in Portugal, in particular, and to a lesser extent in Greece;
- support for social infrastructure in the form, for example, of childcare centres and catering facilities in the Centre region of France;
- support to social infrastructure in rural areas in the EU10 countries, especially in Estonia, where over 40% of the ERDF in remote rural areas was allocated to this, though also in Lithuania, where the proportion was over 20%.

Such actions contributed to improved living conditions and more balanced territorial development as well as strengthening social cohesion.

4. PROTECTING THE ENVIRONMENT

Regional economic growth without sound management of the environment is not sustainable. As well as being important in its own terms, a good environment is an essential input to the quality of life and the attractiveness of regions. Environmental problems entail social costs, hold back local business expansion and deter outside investment.

Figure 4- 11: Cohesion Policy Spending on environment by sub-theme, 2007-13 (EUR billion)



Source: spending plans

Some EUR 50 billion has been allocated to environmental protection and risk prevention over the 2007-13 period under the ERDF and Cohesion Fund (Figure 4.11), with a further EUR 0.8 billion going to renewable energy and EUR 2.5 billion to help SMEs adopt environmentally friendly processes and develop environmentally-friendly products.

Map 4. 4 Planned investments of Cohesion Policy in environment, 2007-2013

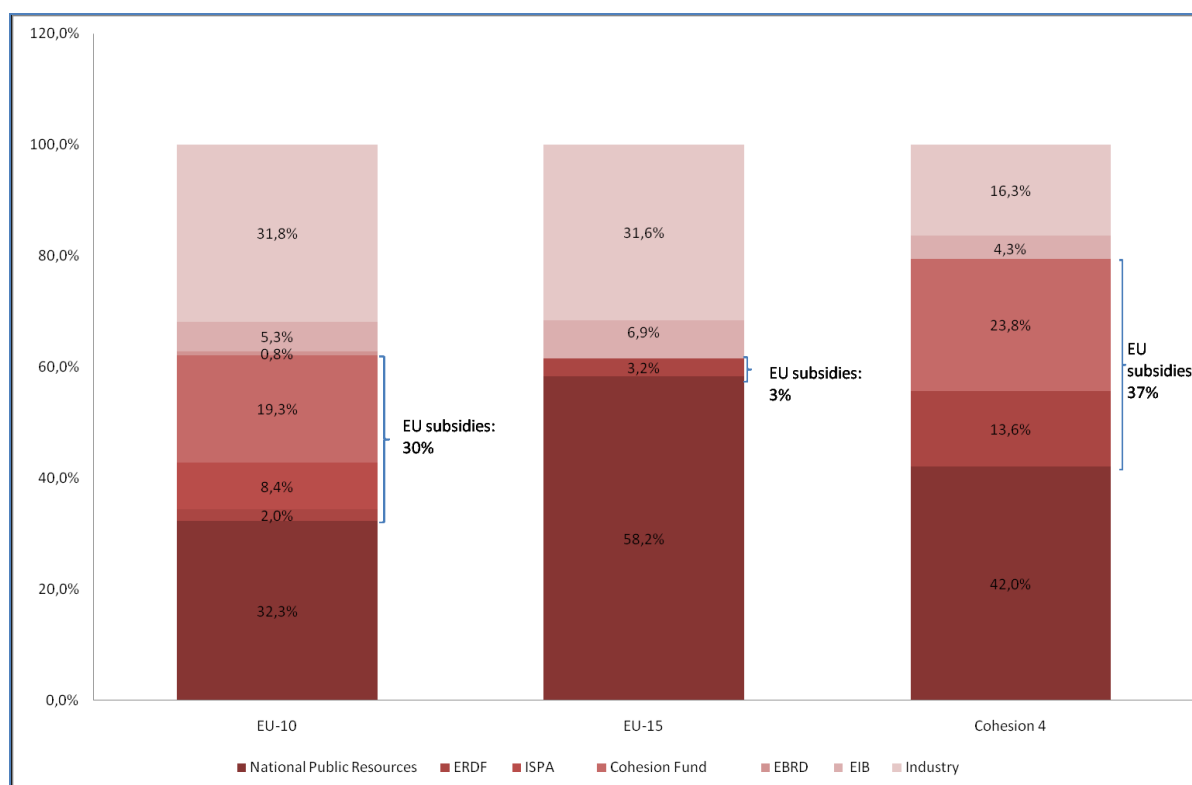
The largest programme is the Polish infrastructure and environment OP, with a total of EUR 28 billion coming from the ERDF and the Cohesion Fund. Although it includes infrastructure of various kinds, a majority of the operational priorities (7 out of 13) concern the environment, including energy efficiency, water and waste management, environmentally-friendly transport and habitat protection.

Traditionally the focus of support has very much been on environmental infrastructure (notably clean drinking water supply, waste water treatment and household and industrial waste management), especially in Objective 1, or Convergence, regions. Increasingly however the focus is also on renewable energy, green transport, the green economy and a greener governance of Cohesion Policy.

4.1. Water and waste infrastructure – a significant investment

A large amount of funding under Cohesion Policy goes to investment in water supply, wastewater treatment, sewerage and solid waste management (Figure 4.12), to assist lagging regions comply with EU standards, the so-called "acquis". This was a key reason for setting up the Cohesion Fund in 1993. The rationale is essentially to improve the environment per se, rather than to increase economic development, though it undoubtedly makes the areas in which this occurs more attractive places to live and work.

**Figure 4- 12: Infrastructure for water, waste water and solid waste
- main sources of investment 2000-2006**



Source: ex post evaluation of Cohesion Policy 2000-2006

The ERDF and the Cohesion Fund²⁶² together invested EUR 27.4 billion in this area over the 2000-2006 period, accounting for 14% of all investment of this kind across the EU, and typically a third of the investment in Cohesion Countries.

The result has been a significant improvement in environmental infrastructure across the EU. The total additional population connected to wastewater collection and treatment of an adequate standard is estimated at least 40 million (12% of the population) over the period 2000-2006; the ERDF and Cohesion Fund being involved in financing over half of this total. At the same time, at least 20 million people were connected to a clean supply of drinking water and 964 unauthorised landfills were closed or rehabilitated.

The private sector has become increasingly involved with application of polluter pays principles, though this varies greatly between countries. It was especially important in the EU10 in 2000-2006, as well as in many more prosperous EU-15 countries, accounting for almost a third of investment. The private sector is most important in the waste treatment industry, where there are signs of a "European waste market" emerging.

User charges tend to cover a large part of maintenance and operating costs, so ensuring financial sustainability. These, moreover, create an incentive for efficient

²⁶² The impact of ERDF and CF projects cannot always be neatly separated. In many cases the two funds financed different elements in the same system, e.g. ERDF supported collection and CF supported treatment facilities.

use and management of resources, though there is still a major role for the public sector and Cohesion Policy both to reduce financial uncertainty over the operation of the infrastructure and to ensure that users can afford to pay by covering the difference between costs and affordability, to ensure that people use the facilities.

Costs depend on the capacity installed, and the ex post evaluation noted the difficulties of estimating the correct capacity in advance because of the need to forecast demand over a long time horizon. Moreover, demand is affected by user reactions to charges and possible changes in these, as well as by migration. Cohesion Policy can play a role not only in mitigating the consequences of these risks but in encouraging more realistic long-term planning.

4.2. Regeneration and environmental protection

Over the 2000-2006 period, EUR 11.5 billion of ERDF financing was allocated to planning and rehabilitation, of which the renewal of urban areas was the largest area of intervention (EUR 4.5 billion). The two other main areas were the protection and improvement of the natural environment (EUR 2.8 billion) and the reclamation of old industrial and military sites (EUR 2.2 billion).

These activities were very important in Objective 2 regions: mainly in urban areas (25% of all ERDF support for the environment) and in cleaning up industrial and military sites (21%).

The measures concerned were aimed primarily at improving living conditions in the areas and their attractiveness for tourists and for companies contemplating investment. Their economic impact tended by their nature to be limited to the local area and was usually greater when targeted at very specific problems, such as the pollution of coastal areas with significant tourist activity.

4.3. A greener economy and long term economic development

An increasing focus of Cohesion Policy is the green economy and translating EU technical know-how into globally competitive resource efficient production, in line with the Europe 2020 objectives.

Cohesion Policy measures cut across traditional sectoral boundaries – creating a competitive, greener economy requires the installation of high-speed internet, the development of smart transport systems, increased energy efficiency and use of renewables, environmentally-aware public procurement and well functioning administrations. To achieve this requires an integrated framework for investment, combining expenditure in different areas (innovation, human resource development, business support, infrastructure etc.) in a coherent policy package that fits the national, regional or local context and meets local needs.

Cohesion Policy provides such a framework by integrating policies in different areas into a single development strategy which takes account of the real needs and conditions on the ground.

In particular, Cohesion Policy can help regions realise the potential of the green economy as a new source of growth. Promoting eco-innovation and new green jobs, especially in SMEs is a high priority. In the 2007-13 period, Cohesion Policy is contributing EUR 2.5 billion to support the development of environmentally-

friendly products, processes and services in SMEs, as well as research and innovation in green technologies.

Promoting the low carbon economy in the East of England

The 2007-13 programme is focused on helping to achieve low carbon economic growth. It comprises enterprise and innovation initiatives with the main selection criteria for projects being the potential to reduce the region's carbon footprint and to integrating economic, environmental and social goals. A major project is the creation of a low carbon venture capital fund of around EUR 20 million, operated by the Low Carbon Innovation Centre. The programme is aimed at putting the region at the forefront of innovation in low carbon growth, clean technology and renewable energy.

Lahti Science and Business Park (Finland)

Funding of EUR 1.5 million went to develop the Lahti Cleantech Science and Business park in the 2000-2006 period. The aim was "intellectual cross fertilisation" between different areas of expertise and to encourage innovation and development of environmental technologies by bringing together small and large firms, universities and regional authorities. A research agenda was established together with a professorship in waste management and a Master's programme in environmental technology.

The result was the creation of 170 new jobs and 20 new clean-tech companies and the attraction of investment of over EUR 30 million. The ERDF has, therefore, contributed to the formulation of a coherent innovation strategy and the transformation of Lahti into a leader in environmental innovation and an attractive centre for companies engaged in this activity.

4.4. Green governance

The environmental challenge cuts across borders. Cohesion Policy, with its numerous cross-border, transnational and interregional programmes, provides a means for new types of green cooperation. An example is the EU Baltic Sea Region Strategy for improving the environmental state of the Baltic, which is the first EU strategy designed at the level of a "macro-region" involving neighbouring countries such as Russia.

In addition, Cohesion programmes are "green-proofed": prior to approval by the Commission, in the sense that Member States have to submit a strategic environmental assessment (SEA)²⁶³ to demonstrate that their programmes respect EU environmental rules. An environmental impact assessment (EIA)²⁶⁴ must also be carried out for certain schemes, such as major transport projects. Beyond this,

²⁶³ Directive 2001/42/EC

²⁶⁴ Directive 85/337/EEC, as amended

environmental sustainability remains one of the two cross-cutting principles for all co-financed actions²⁶⁵.

Applied strategically²⁶⁶ green public procurement²⁶⁷ can improve the competitiveness of suppliers of goods and services. A range of techniques and methods are already available²⁶⁸ and European Public Procurement directives allow public authorities to take environmental and social considerations into account in their purchasing procedures. Cohesion Policy can help tackle the challenge of training and informing officials in charge of public purchasing at all levels of public authorities.

In this vein, nearly half of the Member States (Austria, Bulgaria, the Czech Republic, France, Germany, Hungary, Italy, Poland, Portugal, Romania, Slovakia, Slovenia and the UK) have included indicators for the reduction of greenhouse gas emissions into their Cohesion Policy programmes. France, for example, has developed a carbon evaluation tool to estimate CO₂ emissions produced by all projects funded with EU support²⁶⁹ and the Interreg project GROW has developed a statistical tool for regional environmental accounting involving several countries²⁷⁰.

Networks of Environmental Authorities have been established in several countries (ES, IT, UK, PL, DE), as well as at EU level, the European Network of Environmental and Managing Authorities²⁷¹.

Project sustainability assessment tool in Brandenburg

A good practice example is the project sustainability assessment tool developed under the ERDF for the Brandenburg Objective 1 Programme in Germany in 2000-2006, which has become a standard monitoring method in the 2007-13 period. The managing authority is seeking to develop the tool further and make it a legally binding part of the project approval process. The financial institution that developed the tool is considering extending it to other funding programmes.

5. GOVERNANCE

Well-established, efficient and effective governance systems are a pre-condition for the success of Cohesion Policy. This is not just a question of ensuring that the funds

²⁶⁵ Article 17 of the General Provisions Regulation 1083/2006/EC

²⁶⁶ Report by the European Network of Environmental Authorities (ENEA) on "Improving the climate resilience of Cohesion Policy funding programmes"

²⁶⁷ COM (2008)400 final, 16.7.2008, section 5.2, pp.8-9

²⁶⁸ http://ec.europa.eu/environment/gpp/index_en.htm

²⁶⁹ "NECATER". For more information, see:
http://www.datar.gouv.fr/IMG/Fichiers/DEVELOPPEMENT_DURABLE/Necater_presentation.pdf

²⁷⁰ http://www.grow3c.com/project_detail.php?id=21

²⁷¹ http://ec.europa.eu/environment/integration/cohesion_policy_en.htm

allocated are spent in the ways agreed, but also of ensuring that the strategy is well designed and coherent, the relevant participants are mobilised, high quality projects are selected and rigorous monitoring and evaluation systems are established to ensure that programmes are on track to achieve the objectives set.

Day-to-day management of Cohesion Policy on the ground is delegated to Member States and regions under the principle of shared management. Management systems are, therefore, a function partly of Cohesion Policy regulations and partly of the institutional and administrative context in each Member State.

Shared management is a challenge in terms of ensuring the active involvement of all the key actors, including civil society. But it gives an opportunity for increasing ‘ownership’ of programmes on the ground and for strengthening their effectiveness and efficiency.

It also generates spillover benefits to national policies. By creating procedures for the discussion and formulation of strategies, project selection, monitoring and evaluation as well as by allocating funds for administrative capacity building, Cohesion Policy helps to strength the policy-making and management ability of the authorities concerned. Accordingly, Cohesion Policy can help to improve the effectiveness of policies in other areas.

Centralised sectoral policies and decentralised integrated ones: getting the balance right²⁷²

Highly developed Member States rely more on integrated policies to achieve synergies between different policy goals in different parts of the country. In the process, they often give regions a larger role in policy design and implementation. Less developed Member States rely more on nation-wide sectoral policies. As they develop, the benefits of avoiding negative externalities and creating synergies tend to outweigh the costs of integration and decentralisation. As a result, they may also shift towards more integrated and decentralised policies.

This shift can clearly be observed in transport policy. For example, the development of the French high-speed rail network started in the 1950s as a national policy with the main goal of reducing travel times by rail. During the 1980s and 1990s, the policy changed and incorporated other goals such as improving development in depressed cities or regions and reducing pollution by shifting travel from cars and airplanes to high-speed rail.

In addition, regional and local authorities became active partners in the preparation and identification of new links and stations. In several cases, this has allowed a strong synergy to emerge between rail investment and urban development, for example, in Lille and Lyon.

This shift towards more integrated and decentralised policies can also be detected in innovation policies. Sweden and Finland, two of the global top performers in innovation, have shifted the emphasis of policy away from simple sectoral measures such as R&D support to creating regional innovation systems. The focus is on investing in a long-term partnership between firms, research centres and the public sector (the 'triple helix' or knowledge triangle) to improve not just innovation in the firms involved but the competitiveness of the region as a whole.

This is not to say that centralised sectoral policies do not play an important role, but more and more Member States recognise that they are a necessary but not sufficient condition for effective and efficient policy making which recognises spatial differences and the need for coordination between different measures.

5.1. Effective governance and results based management

The quality of public management has improved in the EU10

The ex post evaluation in 2000-2006²⁷³ showed that the EU10 countries successfully put in place a system in the period for managing the EU funding available and to comply with regulatory requirements. This was a big achievement in itself given the short programming period and the lack of prior experience of handling the much larger sums allocated to them than involved in pre-accession aid.

Though there were initial problems, the new systems were working reasonably effectively by the end of the period as a result of learning by doing and some reform

²⁷² See Forthcoming study *Intralab: In search of inspiring policy practices* by Ecorys.

²⁷³ European Policies Research Centre: Ex Post Evaluation of Cohesion Policy Programmes 2000-2006 Co-financed by the European Regional Development Fund, Work Package 11: Management and Implementation Systems (July 2009).

of public administration, largely triggered by Cohesion Policy management practices. The evaluation found evidence of improvements which extended in many cases to national policy, such as:

- better strategic planning and more efficient coordination and collaboration between authorities;
- simplification of procedures, more openness, transparency and accountability and provision of better guidance. The evaluation noted, for example, reductions in processing times for applications and claims;
- improved management practices, staff expertise, professionalism and human resource management;
- strengthened and broader partnership, with, for example, extensive regional involvement in project implementation in the Czech Republic and Poland;
- more systematic monitoring and evaluation.

Nevertheless, the evaluation found that there was still room for improvement and continuous investment in this broad area is necessary, especially in Bulgaria and Romania which only started the process in 2007.

... and continue to improve in the EU-15, where there are spillover benefits to national policies

In the EU-15, the evaluation found further improvements in strategic management of programmes in 2000-2006, particularly in terms of better planning, increased partnership and more evaluation. The quality of monitoring also improved, but some factors hindered its further development, over-complicated indicator systems, IT operational difficulties and data inconsistencies.

The evaluation showed that Cohesion Policy in the EU-15 also had positive spillover effects on domestic management practice. These were particularly evident as regards strategic planning, the quality of monitoring and evaluation and the extent of partnership. In addition, they included institutional changes such as the creation or strengthening of territorial bodies and the establishment of new coordination arrangements. There was also evidence of changes in the administrative culture, with more positive attitudes towards monitoring and evaluation.

Spillovers tend to become more visible over time – improvements detected in the 2000-2006 period often originated in the previous period and are continuing in 2007-2013. The influence on other policies was strongest when driven by committed policy managers and where the scale of Cohesion Policy funding was significant.

Spending the funds is not enough – performance and quality are of prime importance

Compliance with the regulations and maintaining the pace of spending dominated programme management in many Member States, with excessive focus on financial absorption at the expense of the effective of expenditure.

While spending funds in time and in line with financial and auditing rules are both essential preconditions for the success of Cohesion Policy, there is a need to put more emphasis on performance. It is therefore important to improve programme design, monitoring and evaluation, to invest further in institutional and administrative capacity and to encourage exchange of experience as well as to strengthen the professionalism of those concerned.

An example is the 'Regions for Economic Change' initiative, cofinanced by the ERDF, which promotes good practice in managing Cohesion Policy programmes. The initiative was a response to the general recognition of the need for a more coordinated approach to exchange of good practice and more effective networking between regions to improve the quality of programmes.

The initiative has introduced new ways of making regional networks more dynamic and to help them to work closely with the Commission, test innovative ideas and to transfer them into the programmes themselves. It also includes communication activities such as a web site, a database of case studies and the RegioStars Awards scheme.

5.2. Administrative costs are relatively low

The administrative costs of Cohesion Policy are similar to or lower than those of the funding schemes of other international organisations, e.g., the European Bank for Reconstruction and Development, the World Bank, the United Nations Development Programme or the International Monetary Fund. A recent study for the European Commission²⁷⁴ estimated the total costs for the administration of Cohesion Policy in 2007-2013 at just 3.5% of the total budget.

Programme management accounts for most of the workload (80% of the total) and most of the costs (78% of the total). The most time-consuming tasks within this are project selection and the verification of deliverables. Both costs and workload, however, vary between Member States and programmes, the former as a result of differences in salary levels, the workload because of:

- Geographical scale: national programmes generally have a lower administrative workload per EUR of total budget than regional programmes which, in turn, have a lower workload than territorial cooperation programmes. This is at least partly because programmes with national coverage usually focus on a particular policy area rather than a number of these. Furthermore, territorial cooperation programmes often have a broad scope and involve coordinating many participants.
- Financial scale : in general, the smaller the programme, the larger the share spent on administration, simply because of economies of scale – management, certification and audit include many tasks which do not vary much with the size of the programme.

²⁷⁴ SWECO Ltd: Regional governance in the context of globalization: reviewing governance mechanisms and administrative costs (March 2010).

- Policy areas covered: in general, programmes focused on infrastructure or the environment have lower administrative workloads than those focused on innovation or capacity building. Innovative projects (which are intellectually challenging and often require specialised expertise and much co-ordination) are particularly management-intensive. ‘The same can also apply to training.

A significant finding is that different management systems, in particular centralised as against regionalised, are not associated with major differences in administrative costs.

In itself, the application of EU regulations does not add notably to the administrative workload. On the other hand, "gold plating", where national regulations go beyond what is necessary, could increase the administrative burden considerably.

Box: Cohesion Policy – a valued partner of local government

To assess the value of EU funding, the Local Government Association (LGA) in the UK conducted a survey in 2009 of 450 local authority staff with at least 7 years experience of EU projects.

The survey covered all the main EU funding programmes, including the ERDF and ESF. The 157 responses received demonstrated that local authorities appreciated the benefits from EU programmes and considered that EU funds should continue to play a strong role in regional development after 2013.

- 93% of respondents agreed that their local authority values the support from the funds for local communities.
- 49% of respondents reported that EU funds allowed them to undertake projects which would not normally qualify for national funding. They also identified a stable 7-year funding period and the ability to lever in matching-funding as key advantages.
- There was high awareness of the ERDF and ESF (73%) as compared with other EU funds for specific purposes (typically between 10% and 20%).
- 88% of respondents expressing a view stated that they would increase or at least maintain their current level of involvement with EU funds after 2013.
- On the other hand, 62% of respondents felt that Cohesion Policy administrative requirements were too complex relative to the size of funding and. 95% considered that the associated administrative burden can dissuade voluntary and local organisations from applying for funds.

The survey, the first of its kind to be undertaken, provided valuable evidence for the LGA in discussions with central government and the EU. The LGA intention is to explore the possibility of an EU-wide survey being undertaken in the future.

Full results are available at: www.lga.gov.uk/euregionalpolicy

5.3. Partnership

Broad partnership with a wide range of actors has long been a key principle of Cohesion Policy since the mobilisation of the skills and knowledge of the various partners has the potential to make both planning and implementation more effective. It can also make the programme more inclusive, allowing partners to think beyond their own particular interests and come to a more strategic, "regional viewpoint". The ex post evaluation²⁷⁵ of 2000-2006 found that the application of the partnership principle was a widely recognised added value of Cohesion Policy, especially in local development measures²⁷⁶.

The ex post evaluation found that partnership increased in the 2000-2006 period in the EU-15 with greater involvement of local and regional bodies, businesses, social partners and other organisations. In Spain and France, for example, a system of co-responsibility between regional and central governments was introduced which allowed regions to take on more of the strategy design, monitoring, reporting and managing, which increased their skills and capacity in these respects.

Partners improve programmes: the case of the environment in Poland

Environmental issues can be particularly challenging in terms of project preparation. All of the Polish programmes in the 2007-2013 period (except for the technical assistance programme) had environmental experts in their Monitoring Committee, whether from NGOs or the academic and research community. Their input was found to be invaluable, notably during the planning phase and in establishing the selection criteria for projects.

Partners improve programmes: the case of innovation in France

The Directorate General for Regional Policy and the French authorities ("DATAR") established in 2005 a working group to help regions formulate their innovation strategies. This was extended to include other public bodies, businesses, universities and research centres. The initiative laid the groundwork for putting in place strategies for the 2007-13 period.

In most of the EU-15, the involvement of partners was found to be stronger in the development of strategies and programme design than in implementation. An exception was in Finland where, through the Oulu Growth Agreement model, the involvement of local actors, especially business, was strong in the implementation stage as well.

The application of the partnership principle was challenging for many EU10 countries in the 2004-2006 period since they largely lacked a partnership tradition and established means of identifying and involving partners. Moreover, partners

²⁷⁵ European Policies Research Centre: Ex Post Evaluation of Cohesion Policy Programmes 2000-2006 Co-financed by the European Regional Development Fund, Work Package 11: Management and Implementation Systems (July 2009).

²⁷⁶ http://ec.europa.eu/regional_policy/sources/docgener/evaluation/expost2006/urban_ii_en.htm

sometimes found it hard to influence decisions, especially at the beginning of the period, when their knowledge of Cohesion Policy was limited.

These challenges were less pronounced in countries where there was experience of domestic policy consultation forums. In Malta, for example, the Council of Economic and Social Development established a forum for consultation and social dialogue in 2001. Similarly in Poland, a Cohesion Policy Working Group was set up within the existing Tripartite Commission for Socio-Economic Issues, involving representatives of government, trade unions and employers, to support the implementation of Cohesion Policy.

An indicator of the success of the partnership principle is that the ex post evaluation found partner involvement to be generally higher in EU programmes than in domestic policies, though there are examples of the principle spreading to domestic regional development policies:

- the attribution of increased powers to regional self-governments in the negotiation and implementation of Contrats de Projets Etat-Région (CPERs)²⁷⁷ in France, together with more negotiating powers to the regional Prefects;
- the devolution in England of responsibility for regional policy to Regional Development Agencies (RDAs), leading to increased cooperation with local authorities and organisations in the regions.

5.4. Institutional capacity building

Effective public policies require a competent and efficient administration, that is impartial and client oriented. Strengthening institutional and administrative capacity while creating a stable business environment facilitates structural adjustment and contributes to growth and jobs.

In the 2000-2006 period, the ESF played an important role in the modernisation of public administration. In Portugal, it took 11 procedures and 78 days to start a business in 2005. With the introduction of the one-stop shop, supported by the ESF, it now takes only 7 days and only seven procedures to be completed. As a consequence, the total cost of setting up a business has declined significantly.

In the 2007-2013 period, a new ESF priority on Institutional Capacity has been introduced for Convergence regions and Cohesion Member States, aimed at strengthening the capacity of public administration and public services at national, regional and local level. Four Member States have devoted an Operational Programme to Institutional Capacity (Hungary, Greece, Romania and Bulgaria) and in many others, it is priority within OPs.

The Institutional Capacity priority supports investment in human capital development and ICT in administrative and public services at all territorial levels. The aims are to improve legislation, facilitate business creation, increase the effectiveness of the management of public policies and improve the services

²⁷⁷ "Contrats de Projets Etat-Région" – formal agreements between the state and region on a multi-annual programme around themes of common interest.

provided to individuals and businesses generally by cutting red tape. The focus in the OPs across the EU is: better regulation (in Poland, Cyprus and Slovakia); reinforcement of the judiciary system (Slovenia and Poland); capacity building of employment institutions (Malta and Slovenia); ethics and integrity (Poland and Hungary); reduction of administrative burden for business (Latvia and Lithuania) and enhancing the level of transparency and anti-corruption (Italy and Romania). In Bulgaria, the ESF is providing support for a full review of the national administration that could serve as basis for structural reform.

Improving Administrative Capacity in Bulgaria

The ESF programme in Bulgaria includes a broad range of measures to support of the ongoing administrative and judicial reforms in the country. Its goal is to introduce specific tools for policy making and implementation (impact assessment, public consultations, policy evaluation, public-private partnerships) in the everyday administration of policy at central, regional and local level. It is also intended to strengthen organisation and management of human resources in public institutions, provide training for civil servants and magistrates and improve service delivery, as well as to develop a common methodology for functional review and its application. The OP, in addition, is aimed at improving management of courts and their human and information resources and is supporting a number of training programmes for improving the knowledge of magistrates about different areas of European law.

6. CONTRIBUTING TO REGIONAL AND GLOBAL GROWTH

6.1. Using macroeconomic models to estimate effects

Cohesion Policy aims to improve the economic performance of regions in terms, in particular, of GDP, employment, productivity, investment and the trade balance. Since these and other macroeconomic factors interact at the regional, national and EU level and are affected by a range of influences both internal and external, the only way of examining the effect of Cohesion Policy on them is by using macroeconomic models

Two macroeconomic models – HERMIN²⁷⁸ and QUEST – are used to do this²⁷⁹ concentrating on the convergence objective. HERMIN is a macro econometric

²⁷⁸ For a description of the HERMIN model and the results of the ex-post impact evaluation of the 2000 – 2006 programming period, see: European Commission, Directorate General for Regional Policy, *Analysis of EU Cohesion Policy 2000-2006 using the CSHM: Aggregate impacts and inter-country comparisons*, 2009.

Link: http://ec.europa.eu/regional_policy/sources/docgener/evaluation/pdf/expost2006/wp3_hermin_aggregate.pdf

²⁷⁹ For a description of the QUEST model and the results of the ex-post impact evaluation of the 2000 – 2006 programming period, see: *Varga, J., in 't Veld, J. (2010). The Potential Impact of EU Cohesion Policy Spending in the 2007-13 Programming Period: A Model-Based Analysis. ECFIN European Economy Economic Paper, no. 422 .*

Link: http://ec.europa.eu/economy_finance/publications/economic_paper/2010/index_en.htm

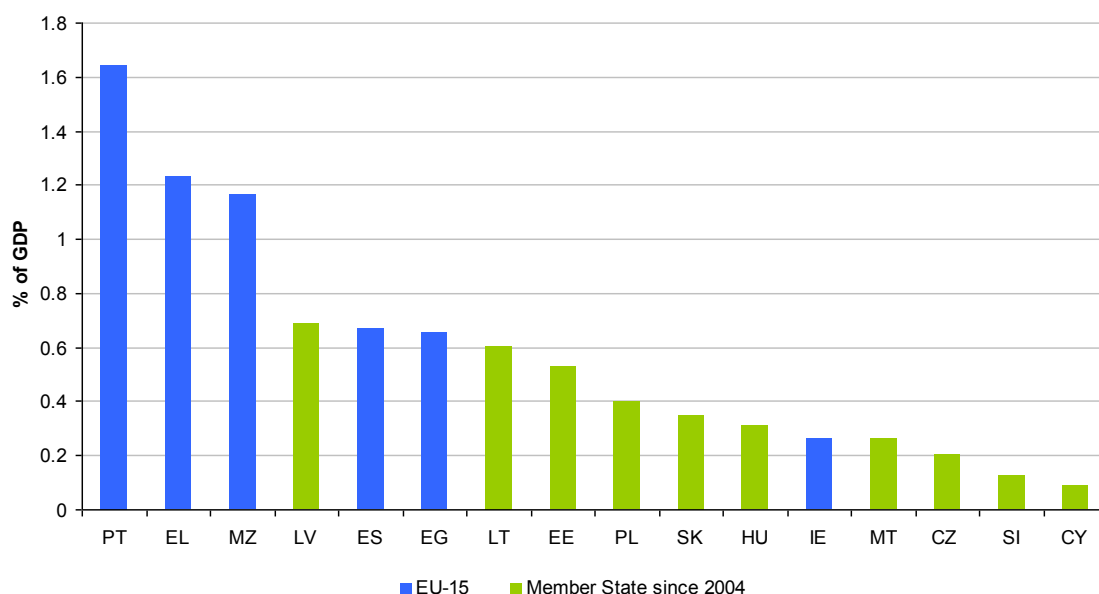
model with neoclassical features on the supply side. QUEST is a New-Keynesian micro-founded dynamic general equilibrium (DGE) model with endogenous growth. The use of two different models with very different assumptions about how economic forces work makes the results more robust.

Nevertheless, it must be borne in mind that both HERMIN and QUEST do not measure the impact of policy, they model it. So far as possible, the properties of the model are in line with empirical evidence, though this is not always unambiguous. However, the incorporation of a number of assumptions about the workings of the economy, even if reasonably plausible ones is inevitable.

Like any evaluation method, macroeconomic models have their strengths but need to be used with other evaluation methods to complete the picture. This especially so, since Cohesion Policy has goals which go much further than only GDP growth.

Figure 4- 13

Average share of Cohesion Policy expenditure as % of GDP, 2000 - 2006



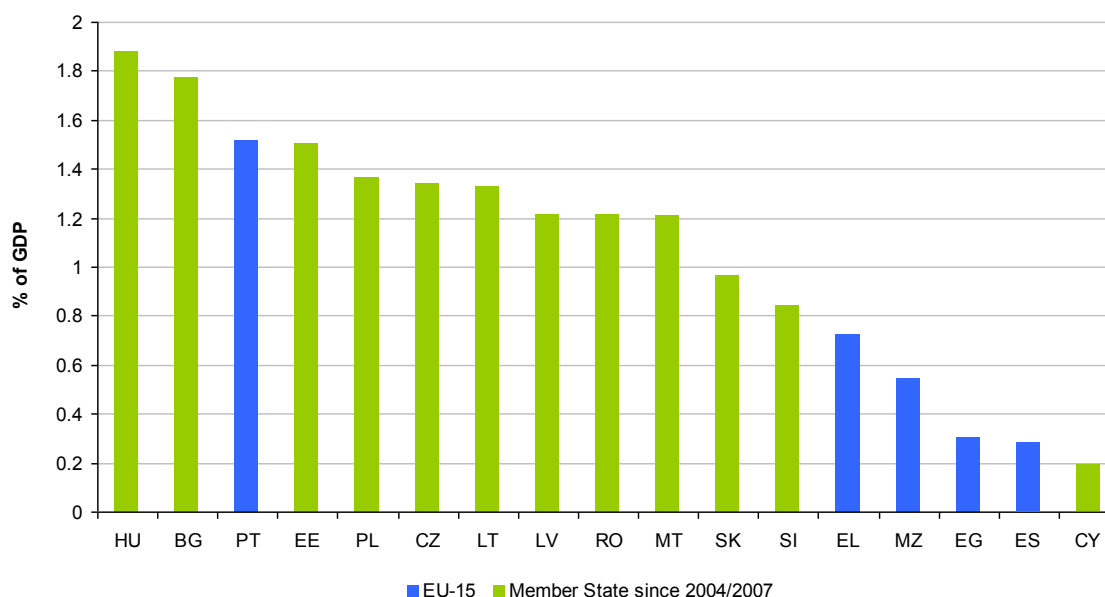
Source: HERMIN

Any assessment of macroeconomic impact must start from the actual expenditure funded by Cohesion Policy (see chart). Since funding in the EU10 countries only became substantial after they joined the EU in 2004, Spain, Portugal, Greece, Ireland and the regions in East Germany and Southern Italy (Mezzogiorno) were the main recipients in the 2000-2006 period (Figure 4.13).

In the 2007–2013 period, the situation is very different. The EU-12 countries now account for just over half of Cohesion Policy expenditure, with much of the rest going to the EU-15 countries or regions listed above (Figure 4.14).

Figure 4- 14

Average share of Cohesion Policy expenditure as % of GDP, 2007 - 2013



Source: HERMIN

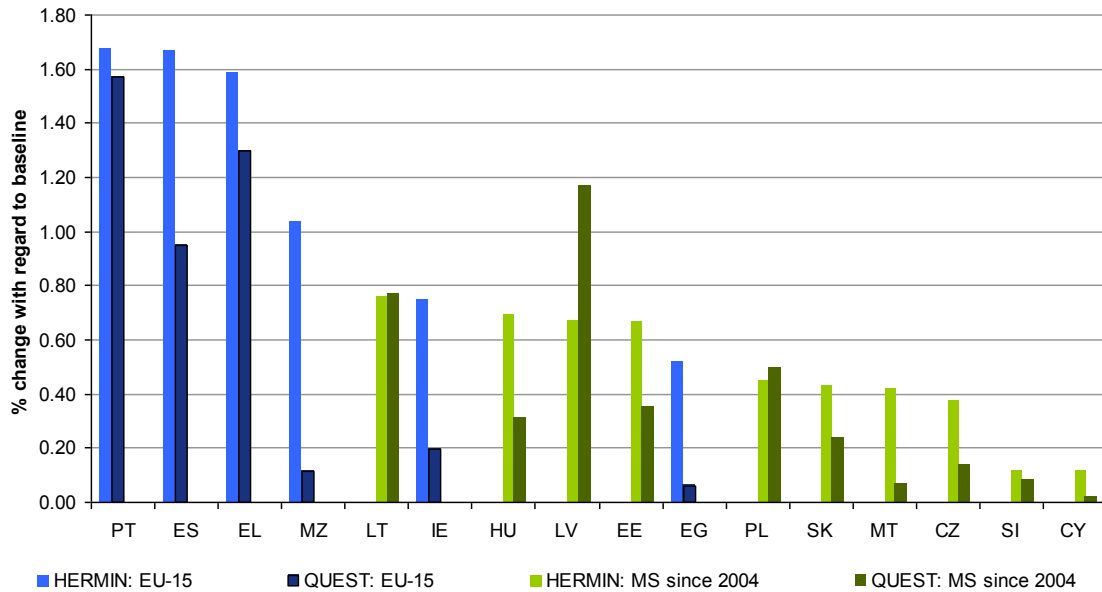
6.2. Macroeconomic impact of the 2000-2006 programmes

When assessing the impact of Cohesion Policy, there is a need to distinguish between the short-term (largely ‘demand-side’) effects and long-term (largely ‘supply-side’) effects. The short-term effects occur during the period when the programmes are being implemented. Expenditure on, for example, road construction or training schemes, tends to boost output and employment (e.g. of construction workers or trainers) which creates additional demand. As firms as well as individuals earn more, they also invest and consume more, which further adds to output (the so-called Keynesian multiplier effect). This effect largely occurs in the implementation period when expenditure is taken place, though can extend beyond it because of multipliers. For the 2000-2006 programmes, the implementation period lasted until the end of 2009 (Figure 4.15).

The demand-side effect can be seen in the HERMIN model especially which has a strong focus on this. According to HERMIN, Cohesion Policy is estimated to increase GDP in the main recipient Member States by an average of 1.2% each year over the course of the spending period. These effects, it should be emphasised are cumulative, so that by 2009, GDP in these countries is estimated to have been around 11% higher than it otherwise would have been as a result of Cohesion Policy.

Figure 4- 15

Average annual impact on GDP, 2000 - 2009



Source: HERMIN, QUEST

As would be expected, the impact in the different countries is closely related to the scale of funding. However, there are differences in the results of the two models. In HERMIN the financing costs of cohesion spending are ignored. In QUEST the EU15 Member States also contribute to the financing costs of Cohesion spending and as a result *net* Cohesion receipts for these countries are smaller than the gross receipts shown in the section above and simulated in HERMIN. Also, in QUEST, the stimulus to demand is estimated to be less than in HERMIN because Cohesion expenditure leads to real appreciation of exchange rates (in those countries not part of the Euro zone) and crowding out of some private expenditure and therefore the effect on output is smaller. The short-term demand-side effect, though positive, is not the 'raison d'être' of Cohesion Policy, which is bring about structural change and long-term growth through 'supply-side' effects –a better transport system, a stronger enterprise base, an increased rate of innovation and more skilled people. These effects in improving the productive potential of regional economies are long-lasting.

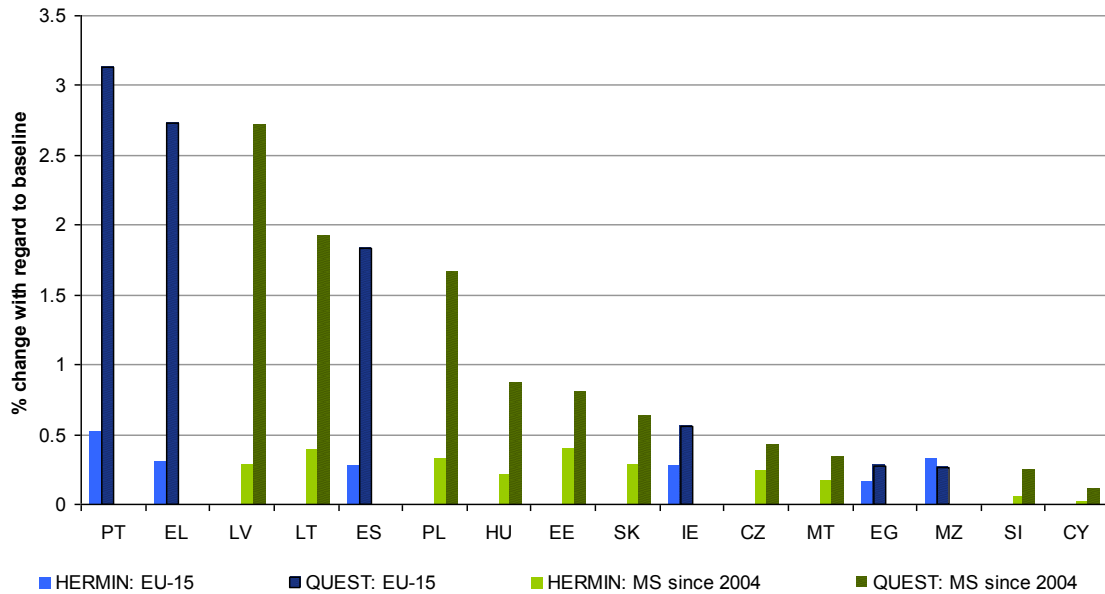
The estimates of the two models of the effect on GDP of Cohesion Policy for the 2000-2006 period in 2014, 5 years after spending came to an end, again differ (Figure 4- 16).

In this case, QUEST estimates the effect on GDP to be bigger, largely because, being an endogenous growth model, it captures the impact of investment in human capital development and RTD on *growth*. HERMIN, on the other hand, assumes that the effect from investment gradually declines over time. The clear message, however, is that, under different assumptions about how economies work, Cohesion Policy has strong effects on GDP and growth – both in the short term and in the long term. Even under the HERMIN model's more conservative assumptions, Cohesion Policy over the 2000-2006 period resulted in a return of EUR 2.1 for each euro invested. According to QUEST, the return in 2009 is the equivalent of EUR 1.2

per euro invested. However, by 2020, the return is estimated at EUR 4.2 per euro invested.

Figure 4- 16

Impact on GDP, 2014

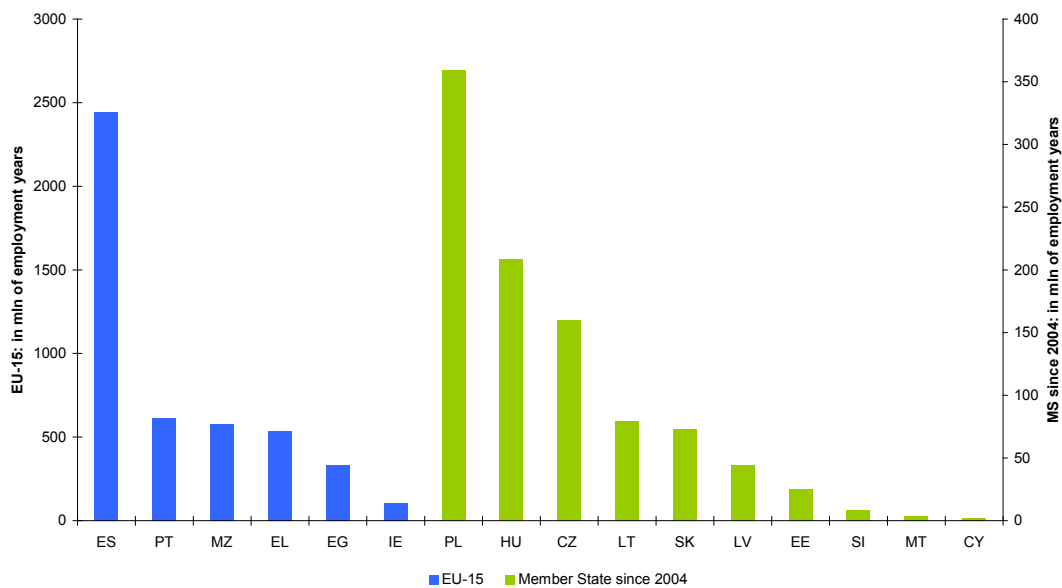


Source: HERMIN, QUEST

Cohesion Policy also helped to increase the level of employment. HERMIN estimates that in 2009, the number employed was 5.6 million higher as a result of policy in 2000-2006 (see Figure 4- 17), or an average of 560 thousand more a year than without Cohesion Policy.

Figure 4- 17

Cohesion Policy induced employment creation, 2000 - 2009

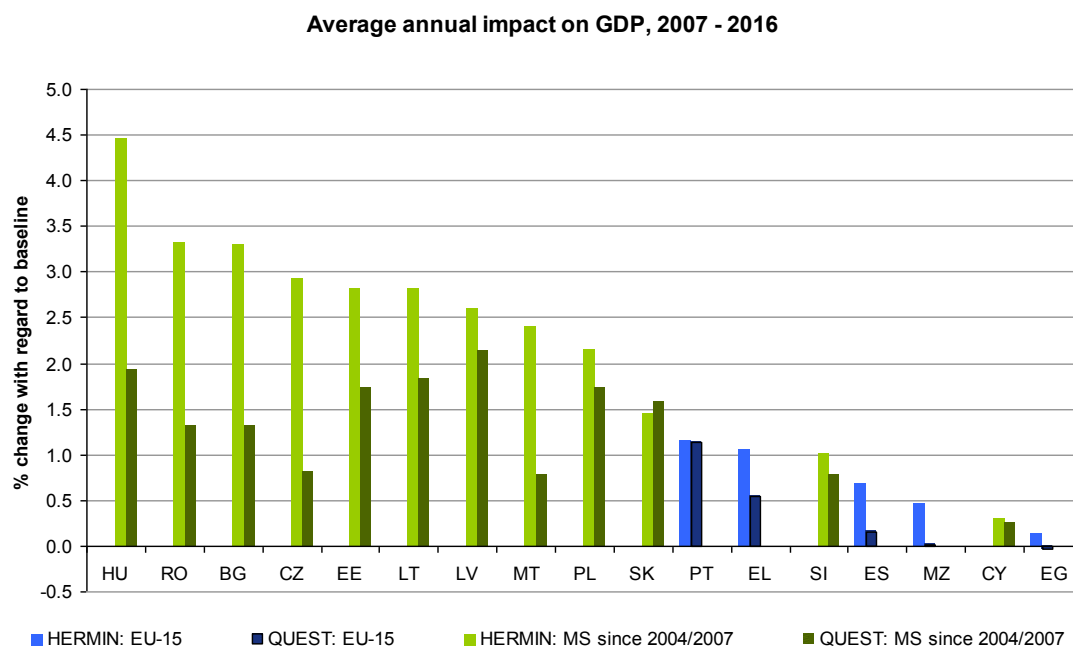


Source: HERMIN

6.3. The macroeconomic impact of Cohesion Policy 2007 - 2013²⁸⁰

As a result of larger funding in the EU-12 in the 2007-2013 period, the expected impact of Cohesion Policy on their GDP is much bigger than in 2000-2006. As before, HERMIN estimates larger demand effects during the period, though the effects estimated by both models are significant for all countries and in line with spending (Figure 4.18).

Figure 4- 18



Source: *HERMIN, QUEST*

Again, there are significant and persistent long-run effects on GDP estimated as well as a substantial impact in the short-term.

The application of a HERMIN-type model in Poland shows that these results are reproduced at the regional level²⁸¹. Estimates of the cumulative results of expenditure in 2004-2006 and 2007-2013 indicate that all Polish regions are likely to derive considerable gains to GDP from Cohesion Policy.

The gains depend in part on the scale of spending, but also on the economic structure and spending profile of the region. Central and western regions, with sizeable manufacturing sectors, are estimated to benefit most, while eastern regions with large agricultural sectors and smaller and less efficient manufacturing sectors

²⁸⁰ A forthcoming working paper, based on the HERMIN model, will provide a detailed description of the country results and the main features of the beneficiary economies.

²⁸¹ Zaleski, J. (2009): "Regionalisation of the HERMIN macro-economic modelling framework in Poland", Paper presented at the Sixth European Conference on Evaluation of Cohesion Policy, New Methods for Cohesion Policy Evaluation: Promoting Accountability and Learning, Warsaw, November 30-December 1, 2009. Full technical details are available on the WARR web site www.hermin.pl

the least, although the estimated effects here are still significant, ranging from 8% to 12% of GDP.

Map 4. 5 Impact of Cohesion policy in Poland: cumulative effect on GDP in 2013

Map 4. 6 Impact of Cohesion policy in Poland: cumulative effect on unemployment in 2013

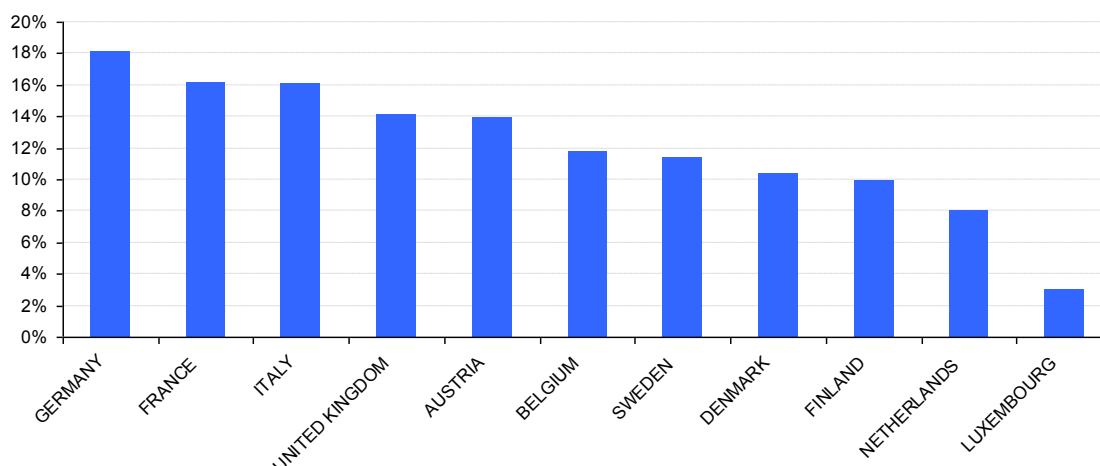
6.4. Impact on net contributors and on the EU-27

Cohesion Policy, of course, also affects the countries which are net contributors and, accordingly, have higher taxes than they otherwise would in order to provide the finance required. The countries concerned, however, tend to have more advanced economies, producing many of the kinds of capital goods and services that are required by the net recipient countries as they develop. As a result, the effect on them of needing to raise finance is mitigated by their increased exports.²⁸²

This is confirmed by the HERMIN model, which indicates that the boost to exports is significant, though more in some countries than others, depending on trade relations²⁸³. For instance, France and the UK gained considerably from their relative high trade with Spain and Ireland, respectively, while Germany exports relatively large amounts to most of the net recipient countries (Figure 4- 19).

Figure 4- 19

Share of the main beneficiary MS in the total exports of the net donor countries



Source: Eurostat, COMEXT database

The QUEST model has been used to estimate the net effects of Cohesion Policy on the EU economy as a whole. The cumulative net effect on the GDP of the EU-25 of

²⁸² The impact of Cohesion Policy on the net donors can take also other forms (e.g. procurement contracts being awarded to contractors from donor states).

²⁸³ Study for the European Parliament, Directorate General for Internal Policies, Policy Department B: Structural and Cohesion Policies, Regional Development, *The Economic Return of Cohesion Expenditure for Member States*, 2009.

the 2000-2006 programmes expenditure is estimated at 0.7% in 2009 (i.e. GDP was higher to this extent as a result of policy). This was estimated to rise to 4% by 2020. In the EU-15 alone, the estimate is a cumulative net effect on GDP of just over 3% by 2020.

**Table 4.2 Cumulative net effect of Cohesion Policy on GDP
– long term gains in QUEST**

	2000-09	2000-15	2000-20
EU-15	0.5	1.9	3.3
EU-10	3.7	10.2	15.9
EU-25	0.7	2.4	4.0

Note: Cumulated % change in the level of GDP as compared to a non Cohesion Policy baseline

Source: Varga J., In't Veld J., A model-based analysis of the impact of cohesion Policy expenditure 2000-06: Simulation with the QUEST III endogenous R&D model, European Commission, Directorate General for Economic and Financial Affairs, 2010

Box on RHOMOLO

The impact of investments in the TEN-T network in five countries (Czech Republic, Germany, Hungary, Poland and Slovakia) spread out over time, as shown by a prototype of a new regional model, RHOMOLO²⁸⁴. In the first place, these investments lead to significant reductions in transport costs in the areas where they take place but also in others given the general improvement of the transport network (see Map 4. 7).

Reduced transport costs facilitate trade as well as movements of people which results in significant increase in GDP. In the short term, the impact is generally bigger in the areas which directly benefit from the improved transport network, like for instance Warmińsko-mazurskie in north-eastern Poland or Moravskoslezsko in the Czech Republic (see Map 4. 7).

In the medium and long term however, GDP gains progressively build up, because these investment need time to reach their full impact. Moreover, due to inter-regional spill-overs, the positive impact on GDP slowly spreads in space to other neighbouring regions, even to regions where no investment took place (like for instance Zachodniopomorskie in north-western Poland). In the end, taking all direct and indirect effects into account, Polish and Hungarian regions gain most from these investments in the TEN-T network.

The models used so far to evaluate the impact of EU Cohesion Policy are based on national economies without much consideration for sub-national variation. As a result, they did not capture the heterogeneity often present at regional level or other links like inter-regional spill-overs or migration.

RHOMOLO can simulate the impact of Cohesion Policy on EU regions through actions that:

- build up the infrastructure, human capital stock and R&D capacity;
- increase the region's attractiveness for productive activities and employment;
- shift national expenditures between regions or policy domains due to co-financing;
- lower the cost of transport between regions.

²⁸⁴ As developed by Commission, DG for Regional Policy, in close co-operation with JRC-IPTS and a consortium led by TNO

The model has the ambition to not only assess the economic, but also the social and environmental impacts at the regional level. Its main characteristics are:

- use of the regional economy at NUTS 2 (NUTS 1 for Germany) as the basic building block;
- inclusion of elements of endogenous growth theory, in which human capital and knowledge gains sustain regional growth as well as elements from the new economic geography, with agglomeration and dispersion forces determining the distribution of firms and workers in space; and
- explicit links between regional economies through trade and migration flows in a general equilibrium setting, allowing for imperfect competition and frictional unemployment.
-

Map 4. 7 GDP change due to TEN-T investments in short, medium and long term

7. CONCLUSIONS

Cohesion Policy has a broad vision. This vision encompasses not just the economic development of lagging regions and support for vulnerable social groups, but also the social and environmental sustainability of development and respect for the territorial and cultural features of different parts of the EU. The breadth of vision is reflected in the variety of Funds, of programmes, of areas of intervention and of partners.

In terms of the **regional economy**, Cohesion Policy has created some 1 million jobs in enterprises across the EU, as well as perhaps adding as much as 10% to GDP in Objective 1 regions in the EU15. As various studies indicate, this tends to boost the trade and exports of net contributor countries, offsetting their contribution to the funding the policy.

Nevertheless, there is room for improvement: grants to enterprise and R&D are a useful tool, but too often in the past they have been used at the expense of other instruments. The trend towards a more balanced mix, including financial engineering (loans and venture capital) as well as "indirect" instruments (i.e. non-financial instruments such as advice, networking and clustering) is a welcome one. The European Commission, in close partnership with the EIB, is actively encouraging such diversification through initiatives such as JEREMIE, JASMINE, JASPERS and JESSICA.

In addition, past Cohesion Policy investment in motorways and roads in the less developed parts of the EU15 means that the job is now largely done. Investment should shift towards more environmentally-friendly modes of transport (notably rail and urban transport systems), though in the EU12, the need to improve transport links considerably remains a challenge.

Cohesion Policy also trains around 10 million people a year, with a strong focus on young people, the long-term unemployed and the low-skilled. Through various local development initiatives, Cohesion Policy has a strong track record of cross-border co-operation, regenerating deprived urban neighbourhoods, and contributing to access to services in rural areas.

Involving regional and local communities is key for improving policy in the future. Evaluation evidence has clearly demonstrated that the active participation of people and organisation on the ground at regional and local level, from the design to the implementation stage, is a crucial success factor in making development initiatives work. In fact, such partnership is one of the key sources of the added-value of Cohesion Policy, mobilising their skills and knowledge to make programmes more effective and inclusive.

In terms of **protecting the environment**, more than half the Member States are tracking the reduction of greenhouse gas emissions as a target in their Cohesion Policy programmes for the 2007-2013 period. More than 23 million people were connected to wastewater collection and treatment systems and at least 20 million people connected to clean supply of drinking water through ERDF and Cohesion Fund support in 2000-2006.

As a result, Cohesion Policy has helped many regions to meet the requirements of EU environmental Directives. This has also improved the quality of the environment and the quality of life. However, the sustainability of the facilities constructed needs more careful consideration: investment in environmental infrastructure was sometimes made without clear plans for long term financing.

In terms of **management**, strong and sound administration at national, regional and local levels is important for the success and lasting effect of cohesion policy. While evaluations have found that the new EU12 countries in particular have made very significant strides in the years since accession, there is a need for continued and intensified effort to ensure that the administrative capacity is there at all levels to deliver cohesion policy effectively throughout the EU.

A recurrent evaluation finding across all areas of investment was a preoccupation with "absorption", i.e., with spending the money more than focusing on what the programmes are actually designed to achieve. While the former is obviously a precondition for success, the latter is ultimately what matters. For example, monitoring systems typically prioritise spending and outputs (such as the number of people trained or kilometres of new roads constructed) rather than results (such as the number of people getting a job after training or the amount of journey time saved) let alone on impacts (the effect of a better trained work force or more efficient transport networks on regional development).

Cohesion Policy needs to cultivate a focus on performance. This has to start from programmes identifying only a limited number of policy priorities (concentration) with a clear view of how they will be achieved and how their achievement will contribute to the economic, social and territorial development of the regions, or Member States, concerned.

Monitoring and evaluation systems need to be improved across the EU to track performance and to help redirect efforts as necessary to ensure that objectives are attained. This requires a clear strategic vision of what the programme aims to achieve and how success will be recognised and measured (proper target setting). It also requires a greater recourse to rigorous evaluation methods, including counterfactual impact evaluation, cost benefit analysis, beneficiary surveys, as well as a more rigorous use of qualitative methods such as case studies.

Map 1.1:	Russia, India, China, and Brazil: Regional GDP per head, 2007	26
Map 1.2:	Share of working age residents who moved from a different EU region within the last year, 2007-2008	30
Map 1.3:	Share of working age residents who moved from a different US State within the last year, 2008	31
Map 1.4:	GDP per head (PPS), 2007	31
Map 1.5:	Growth of GDP per head in real terms, 2000-2007	32
Map 1.6:	Change in regional GDP per head (PPS), 1995-2007	33
Map 1.7	Western Balkan: GDP per head in the Western Balkans (PPS), 2008	35
Map 1.8:	Turkey: GDP per head, 2006	36
Map 1.9:	NAFTA GDP/ per head (USDPPS), 2006	37
Map 1.10:	NAFTA Growth of GDP/ per head growth in real terms, 2000-2006	37
Map 1.11:	Urban-rural typology of NUTS3 regions	38
Map 1.12:	Potential increase in GDP per head from raising the employment rate 20-64, to 75%, 2007	46
Map 1.13:	Employment rate, 20-64, in 2008 and distance to the Europe 2020 target	46
Map 1.14:	Change in employment rate, 20-64, 2000-2008	46
Map 1.15:	Productivity growth within sectors, 2000-2007	47
Map 1.16:	Productivity growth through employment shifts between sectors, 2000-2007	47
Map 1.17:	Population aged 25-64 with tertiary education, 2008	49
Map 1.18:	Population aged 25-64 with low education, 2008	49
Map 1.19 :	Population aged 30-34 with a tertiary education in 2008 and distance to Europe 2020 target	51
Map 1.20 :	Potential increase in GDP per head from raising the share of tertiary educated aged 25-34 to 40%, 2007	51
Map 1.21:	Participation of adults aged 25-64 in education and training, 2008	52
Map 1.22	Early school leavers aged 18-24, 2007-08 and distance to the Europe 2020 target	53
Map 1.23:	Low achievers in mathematics, reading and science - 2006	53

Map 1.24:	Total expenditure on R&D, 2007	57
Map 1. 25:	Human resources in Science and Technology (core), 2008	57
Map 1. 26:	Employment in high-technology sectors, 2008	57
Map 1.27:	Patent applications to the European Patent Office (EPO), average 2006-2007	59
Map 1.28:	US: Number of patents, average 2007-2008.....	59
Map 1.29:	Regional Innovation Performance Index, 2006	60
Map 1.30:	Labour Productivity in industry and services, 2007	61
Map 1.31:	Regional Innovation Potential, 2008	62
Map 1.32:	Improved road accessibility due to a high speed scenario as compared to the current situation	66
Map 1.33:	Improved road accessibility due existing infrastructure as compared to a low speed scenario	66
Map 1.34:	Motorways in relation to potential population	67
Map 1.35:	Passenger trains on the TEN-T railway network, 2005	67
Map 1.36:	Improved rail accessibility due to a high speed scenario as compared to the current situation	67
Map 1.37:	Improved rail accessibility due to existing infrastructure as compared to a low speed scenario	68
Map 1.38:	Accessibility to passenger flights, 2008	68
Map 1.39:	Households with broadband connection, 2009	71
Map 1.40:	Degree of urbanisation.....	71
Map 1.41:	Competitiveness Index, 2010.....	76
Map 1.42:	Female life expectancy a birth, 2007	82
Map 1.43:	Male life expectancy at birth, 2007	82
Map 1.44:	Infant mortality rate, 2006-2007.....	82
Map 1.45:	Standard death rate from cancer for population under 65, 2006-2008	83
Map 1.46:	Standard death rate from heart diseases for population under 65, 2006-2008	83
Map 1.47:	Road fatalities, 2004-2006.....	84

Map 1.48:	Standardised death rate from suicide for population under 65, 2006-2008	84
Map 1.49:	Unemployment rate, 2008.....	87
Map 1.50:	Change in unemployment rate, 2000-2008.....	87
Map 1.51:	Long-term unemployment rate, 2008	89
Map 1.52:	Youth unemployment rate – 2008	89
Map 1.53:	Young people aged 15-24 not in work, education or training, average 2006-2008	89
Map 1.54:	Net migration into NUTS 3 regions, 2001-2007	90
Map 1.55:	Natural population growth, 2001-2007.....	90
Map 1.56:	Total population change, 2001-2007	92
Map 1.57:	Difference between female and male unemployment rates, 2008.....	94
Map 1.58:	Difference between female and male employment rates, 20-64, 2008.....	94
Map 1.59:	Gender balance of population aged 55-64 with tertiary education, 2008.	94
Map 1.60:	Gender balance of population aged 25-34 with tertiary education, 2008.	94
Map 1.61	Population aged 15-64 born outside the EU, 2008	96
Map 1.62	US: Foreign-born population aged 18-64, 2008	96
Map 1.63:	Urban-rural typology of NUTS3 regions including remoteness.....	99
Map 1.64:	NAFTA: Urban-rural typology including remoteness.....	99
Map 1.65 :	Homocide rate in the EU 2005	100
Map 1.66 :	US: Homicide rate in the US 2006-2008	100
Map 1.67:	Net adjusted disposable income of private households (PPCS), 2007 ...	105
Map 1.68:	Population at-risk-of-poverty after social transfers, 2008	107
Map 1.69:	Population suffering from severe material deprivation, 2008	108
Map 1.70	EU Human Development Index, 2007.....	114
Map 1.71	UN Human Poverty Index 2, 2007	114
Map 1.72	Projected change in number of tropical nights between 1961-1990 and 2071-2100	121
Map 1.73	Projected change in annual number of days with snow cover between 1961-1990 and 2071-2100	121

Map 1.74	Projected change of temperature and precipitation between 1961-1990 and 2071-2100	122
Map 1.75	Projected change in Tourism Climate Index, 1970-2080	123
Map 1.76	Vulnerability of NUTS 2 regions to climate change	123
Map 1.77	Wind energy potential.....	128
Map 1.78	Average of solar energy resources.....	128
Map 1.79:	Congestion index on the main road network, 2009	130
Map 1.80:	Passengers flights of less than 500km, 2008	130
Map 1.81:	Highest speed on railway sections according to timetables, 2010.....	130
Map 1.82:	Land use in selected cities, 2006	133
Map 1.83:	Urban waste water treatment capacity, 2007	134
Map 1.84:	Concentration of PM10 at surface level, 2009	134
Map 1.85:	Ozone concentration exceedances in NUTS 3 regions, 2008.....	135
Map 1.86:	Soil sealed area, 2006	135
Map 1.87:	Soil sealing per inhabitant, 2006	135
Map 1.88:	Natura 2000 areas, 2009	136
Map 2.1	Estimated public investment per head in PPS (average 2002-2006).....	159
Map 2. 2:	Private investment per head (PPS), average 2002-2006.....	161
Map 2. 3:	Share of ERDF and Cohesion Fund in total Public Investment	162
Map 2. 4:	Net effect of taxes and public transfers, 2007	165
Map 3. 1:	Regional aid 2011-2013.....	181
Map 3.2:	6 th FP, funding per head (index)	186
Map 3. 3:	7 th FP, funding per head (index)	186
Map 3. 4:	CAP Pillar 1 expenditure per utilized agricultural area, 2000-2006	193
Map 3. 5:	CAP Pillar 2: EAFRD expenditure per head, 2007-2009.....	193
Map 3. 6:	Map of Less Favoured Areas	194

Map 3. 7:	Lisbon Index 2008	197
Map 3. 8:	Change in Lisbon Index 2000-2008	197
Map 3. 9:	Ozone concentration exceedances in cities over 50 000 inhabitants, 2008	199
Map 4. 1	Planned investments of Cohesion Policy in RTD, innovation, enterprise environment, 2007-2013	210
Map 4. 2	Planned investments of Cohesion Policy in transport infrastructure, 2007-2013	224
Map 4. 3	Planned investments of Cohesion Policy in human capital, 2007-2013.	229
Map 4. 4	Planned investments of Cohesion Policy in environment, 2007-2013 ...	252
Map 4. 5	Impact of Cohesion policy in Poland: cumulative effect on GDP in 2013	270
Map 4. 6	Impact of Cohesion policy in Poland: cumulative effect on unemployment in 2013	270
Map 4. 7	GDP change due to TEN-T investments in short, medium and long term	272