European Union

EN

Investing in Europe's future

Fifth report on economic, social and territorial cohesion

Report from the Commission

November 2010

Editor: Eric von Breska, European Commission, Directorate-General for Regional Policy

This publication can be consulted on line at:
http://ec.europa.eu/regional_policy/sources/docoffic/official/reports/cohesion5/index_en.cfm

This publications was produced with the technical assistance of Applica (Belgium) in cooperation with SeproTec Multilingual Solutions SL (Spain).

Cataloguing data can be found at the end of this publication.

Luxembourg: Publications Office of the European Union, 2010

ISBN 978-92-79-17800-9
doi: 10.2776/29620

Printed in Belgium

PRINTED ON ELEMENTAL CHLORINE-FREE BLEACHED PAPER (ECF)

Investing in Europe's future

Fifth report on economic, social and territorial cohesion

European Commission

Foreword

The Union, especially during these difficult times, needs Cohesion Policy. It needs a policy that can make the investments that will help the Union and its regions emerge from the crisis, reduce disparities, and contribute to meeting the ambitious objectives of the Europe 2020 strategy.

Cohesion Policy has already helped to improve economic, social and environmental conditions within our Union, as shown by our evaluations. However, these same evaluations concluded that focussing on a few key priorities, especially in the more developed regions, would be more effective. Therefore, Cohesion Policy should become more selective.

Future programmes should concentrate on only a few priorities closely linked to the Europe 2020 strategy so that each priority receives enough funding to deliver a real impact. These priorities will be identified in a dialogue between the Commission, the Member States and regions, based on a joint assessment of the strengths and weaknesses of each Member State and of its regions.

We all share an interest in a Cohesion Policy that brings results. That is why we need to agree with the Member States and regions a more limited number of objectives per programme and carefully monitor progress.

In the current period, Cohesion Policy has already been closely aligned with the objectives of the Lisbon Strategy. The link to the Europe 2020 strategy must be even stronger in the future. This requires putting in place good programmes, with clear conditions and strong incentives. Pre-conditions could require, for example, that investment in environmental infrastructure is preceded by a transposition of the relevant EU environmental legislation. Incentives would reward regions and countries that have performed well and reached agreed European objectives.

This report and its proposals has also benefitted from the past public consultations. In response to the consultation following the *4th Cohesion Report*, we have proposed ways to streamline and simplify the delivery mechanisms to reduce the administrative burden for beneficiaries. Following the debate launched by the *Green Paper on territorial cohesion,* this report explains what territorial cohesion adds to Cohesion Policy and presents new indicators that reveal the territorial dimension of issues like poverty and access to services. Consultations with stakeholders and Member States' experts on the future of the Cohesion Policy have also highlighted the importance of enhancing the impact and visibility of the funds that support it, including for the investments made in human capital which are an important element of our new strategy.

The Cohesion Policy proposed for the period after 2013 allows all Member States and regions to actively pursue smart, sustainable and inclusive growth. Our efforts will in particular support development in the poorest regions in line with our commitment to solidarity. But the Commission will also consider the difficulties and potential for

growth in other parts of the Union, such as urban deprived neighbourhoods, regions undergoing economic restructuring and more generally the necessary shift to a more innovative and knowledge based economy thanks to a better educated workforce.

The crisis has underlined the continued need for a policy that invests in the competitiveness of Europe, the well-being of its citizens and the quality of our environment. Yet this policy can only succeed through coordinated action focused on the key priorities. Only in this way can we promote economic, social and territorial cohesion and Europe 2020.

Johannes Hahn
European Commissioner
for Regional Policy

László Andor
European Commissioner
for Employment, Social Affairs
and Inclusion

Table of contents

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-27 + Iceland, Liechtenstein, Norway and Switzerland)

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: EU-15

Nordic Member States: SE, DK, FI

Baltic States: EE, LV, LT

Benelux: BE, NL, LU

By level of development

Less developed Member States: (BG, RO, PL, LV, LT, HU, EE, SK) (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% of EU average)

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

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 inhabitants 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 50% of the population lives in a mountainous area or 50% of the land 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 km^2.

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

The fifth report on economic, social and territorial cohesion 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 Agreement (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 ser-

vices, 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 four regions, but it will require a substantial effort in many regions to achieve it, especially in Malta and the 17 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 markers and researchers alike. The crisis has highlighted the need for stable macroeconomic 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 identified 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 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 nega-

tive. 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 careful 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 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.

Conclusions: the future of Cohesion Policy[1]

1. Introduction

Europe faces a daunting task. It must exit from a deep crisis and reduce unemployment and poverty, while switching to a low-carbon economy. Such an ambitious task requires swift action on many fronts, which is why the European Council adopted the Europe 2020 Strategy[2]. For Europe to succeed, European, national, regional and local levels all need to play their part. Cohesion policy should continue to play a critical role in these difficult times, in order to deliver smart, sustainable and inclusive growth, while promoting harmonious development of the Union and its regions by reducing regional disparities.

Cohesion policy has made a significant contribution to spreading growth and prosperity across the Union, while reducing economic, social and territorial disparities. The fifth report on economic, social and territorial cohesion shows that the policy has created new jobs, increased human capital, built critical infrastructure and improved environmental protection, especially in the less developed regions. Undoubtedly, without Cohesion Policy, disparities would be greater. Yet the lasting social effects of the crisis, the demand for innovation arising from increased global challenges and the imperative to make the most of every euro of public expenditure call for an ambitious reform of the policy.

As indicated in the EU budget review[3], in particular, progress needs to be made in the following key areas: concentrating resources on the Europe 2020 objectives and targets; committing Member States to implementing the reforms needed for the policy to be effective; and improving the effectiveness of the policy with an increased focus on results. The explicit linkage of Cohesion Policy and Europe 2020 provides a real opportunity: to continue helping the poorer regions of the EU catch up, to facilitate coordination between EU policies, and to develop Cohesion Policy into a leading enabler of growth, also in qualitative terms, for the whole of the EU, while addressing societal challenges such as ageing and climate change.

With these conclusions, the Commission opens a public consultation on the future of Cohesion Policy. This is organised around a series of questions on the main ideas for its reform.

The following sections look, in turn, at how the policy can be made more effective and its impact improved so as to enhance the European added value (Section 2), at how governance of the policy can be further strengthened (Section 3), at how the delivery system can be streamlined and made simpler (Section 4) and at the architecture of the policy (Section 5).

1 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, COM(2010) 642 final, 9.11.2010.

2 'Europe 2020: A strategy for smart, sustainable and inclusive growth' — COM(2010) 2020, 3.3.2010.

3 'The EU budget review' — COM(2010) 700, 19.10.2010.

2. Enhancing the European added value of Cohesion Policy

The added value of Cohesion Policy is recurrently debated by policy-makers, academics and stakeholders. Some argue that Cohesion Policy is loosely linked to EU priorities, that it spreads resources too thinly across policy areas and that its impact is often difficult to measure. Though the report shows that Cohesion Policy has contributed to economic and social development of regions and to the well-being of people, the Commission takes these criticisms very seriously.

Further reforms of Cohesion Policy, while preserving its overall objective, should therefore aim to steer the policy decisively towards results and enact the reforms needed in order to achieve results, while cutting red-tape and simplifying the daily management of the policy.

2.1. Reinforcing strategic programming

Cohesion Policy has already been substantially aligned with the Lisbon Strategy, in particular by earmarking financial resources. However, this alignment is not sufficient due to a governance gap between the two strategic processes. More can be done in the future to further align Cohesion Policy with the Europe 2020 Strategy. This requires, first of all, clear guidance at European level and a more strategic negotiating process and follow-up.

The EU budget review outlined a new strategic programming approach for Cohesion Policy with a view to closer integration of EU policies to deliver the Europe 2020 Strategy and the Integrated Guidelines. This approach would consist of:

- a **common strategic framework** (CSF) adopted by the Commission translating the targets and objectives of Europe 2020 into investment priorities. The framework would cover the Cohesion Fund, the European Regional Development Fund, the European Social Fund, the European Agricultural Fund for Rural Development and the European Fisheries Fund;

- a **development and investment partnership contract** which, based on the common strategic framework, would set out the investment priorities, the allocation of national and EU resources between priority areas and programmes, the agreed conditionalities, and the targets to be achieved. This contract would cover Cohesion Policy. In order to promote economic, social and territorial cohesion in a coherent and integrated manner, it might be useful to extend its scope to other policies and EU funding instruments. The contract will be the fruit of the discussions between Member States and the Commission on the development strategy presented in their National Reform Programmes. It would also describe the coordination between EU funds at national level; and

- **operational programmes** (OPs) which, as in the current period, would be the main management tool and would translate the strategic documents into concrete investment priorities accompanied by clear and measurable targets — which should contribute to reach the national targets set in the framework of Europe 2020.

The timing of the **annual reports** monitoring progress towards the targets would be aligned with the Europe 2020 governance cycle. On this basis, a regular **political debate** in the relevant Council formations and European Parliament committees would improve transparency, accountability and assessment of the effects of Cohesion Policy.

Three proposals in the EU budget review have a particular impact on Cohesion Policy: concentrating financial resources, the system of conditionality and incentives, and focus on results.

2.2. Increasing thematic concentration

The ex post evaluations of Cohesion Policy concluded that greater concentration of resources is required to build up a critical mass and make a tangible impact.

In the future it will therefore be necessary to ensure that Member States and regions **concentrate EU and national resources** on a small number of priorities responding to the specific challenges that they face. This could be achieved by establishing, in the Cohesion Policy regulations, a list of thematic priorities linked to the priorities, Integrated Guidelines and flagship initiatives of Europe 2020.

Depending on the amount of EU funding involved, countries and regions would be required to focus on more or fewer priorities. Thus, Member States and regions receiving less funding would be required to allocate the entire financial allocation available to two or three priorities, whereas those receiving more financial support may select more. Certain priorities would be obligatory.

At the same time, thematic concentration should not prevent Member States and regions to experiment and fund innovative projects. Ring-fencing expenditure for specific target groups or experimental approaches (e.g. local development) might also be considered, possibly in the form of global grants.

2.3. Strengthening performance through conditionality and incentives

The financial and economic crisis has already compelled the Commission to propose measures to improve the economic governance of the Union[4]. Sound macroeconomic policies, a favourable microeconomic environment and strong institutional frameworks are preconditions for creating jobs, stimulate growth, reduce social exclusion and bring about structural changes.

This is even truer of Cohesion Policy, since its effectiveness largely depends on the economic environment in which it operates. It is therefore possible to strengthen the links between Cohesion Policy and the economic policy framework of the Union.

First, to support the new economic governance system new conditionality provisions would be introduced creating incentives for reforms. Member States would be required to introduce the reforms needed to ensure effective use of financial re-

4 'Enhancing economic policy coordination for stability, growth and jobs — Tools for stronger EU economic governance' — COM(2010) 367, 30.6.2010..

sources in the areas directly linked to Cohesion Policy, for example environmental protection, flexicurity policies, education or research and innovation.

For each thematic priority the CSF would establish the key principles which interventions should follow. These principles must leave room for adaptation to national and regional contexts. Their main purpose would be to help countries and regions to tackle the problems that past experience has shown to be particularly relevant to policy implementation. These principles could be linked to, for example, transposition of specific EU legislation, the financing of strategic EU projects, or administrative, evaluation and institutional capacity.

On this basis, specific binding conditionality in the areas directly linked to Cohesion Policy would be agreed with each Member State and/or region — depending on the institutional context — at the beginning of the programming cycle in the programming documents (i.e. the development and investment partnership contracts and the operational programmes), in a coordinated approach with all relevant EU policies. Their fulfilment could be a prerequisite for disbursing cohesion resources either at the beginning of the programming period or during a review in which the Commission would assess progress towards completing agreed reforms.

Achievement of institutional reform is critical to underpin structural adjustment, foster growth and jobs and reduce social exclusion, notably by reducing regulatory and administrative burdens on businesses or by improving public services. As now, these would be complemented by support under Cohesion Policy to develop administrative and institutional capacity and effective governance. This should be available to every Member State and region.

Second, financial sanctions and incentives linked to the Stability and Growth Pact have been so far limited to the Cohesion Fund. The Commission has proposed to extend it to the rest of the EU budget as complementary leverage to ensure the respect of key macroeconomic conditions in the context of the corrective arm of the Pact. In cases of non-compliance with the rules of the Pact, incentives should be created by suspending or cancelling part of current or future appropriations from the EU budget without affecting end-beneficiaries of EU funds. Resources cancelled would remain within the EU budget.

Still in the context of the wider economic governance of the EU, the verification of the **principle of additionality** should be reformed by linking it to the EU economic surveillance process, using indicators already provided in the Stability and Convergence Programmes which Member States submit to the Commission every year.

Co-financing is one of the fundamental principles of Cohesion Policy ensuring ownership of the policy on the ground. Its level should be reviewed and, possibly, differentiated to reflect better the level of development, EU added value, types of action and beneficiaries.

Finally, other instruments which could further strengthen the effectiveness of Cohesion Policy also need to be explored. For example, a **performance reserve** could be established at EU level to encourage progress towards Europe 2020 targets and related national targets and objectives: a limited share of the cohesion budget would

be set aside and be allocated, during a mid-term review, to the Member States and regions whose programmes have contributed most — compared to their starting point — to the 2020 targets and objectives. Also, the experience gained over the current period has demonstrated that the Commission needs some resources to support directly **experimentation and networking**, along the lines of the innovative actions of previous programming periods.

2.4. Improving evaluation, performance and results

Higher-quality, better-functioning monitoring and evaluation systems are crucial for moving towards a more strategic and results-oriented approach to Cohesion Policy. A number of changes would support this shift.

First, the starting point for a results-oriented approach is ex ante setting of clear and **measurable targets and outcome indicators**. Indicators must be clearly interpretable, statistically validated, truly responsive and directly linked to policy intervention, and promptly collected and publicised. Indicators and targets should be agreed in the discussions on the programming documents in addition to a few core Fund-specific indicators for all operational programmes linked to the Europe 2020 framework. Moreover, timely and complete submission of accurate information on the **indicators** and on the progress towards the agreed targets would be central to the annual reports.

Second, **ex ante evaluations** should focus on improving programme design so that the tools and incentives for achieving objectives and targets can be monitored and evaluated during implementation.

Third, evaluation should make much greater use of rigorous methods in line with international standards, including **impact evaluation**. Whenever possible, impact evaluations would be designed at an early stage to ensure collection and dissemination of the appropriate data. Moreover, plans for **on-going evaluation** of each programme would become an obligation, since they facilitate transparency at EU level, foster evaluation strategies and improve the overall quality of evaluations. Evaluations could also be envisaged once a certain amount of the funds has been certified to the Commission.

Finally, Member States could prepare a report synthesising results of on-going evaluations they conduct during the programming period with a view to giving a comprehensive summative evaluation of programme performance.

2.5. Supporting use of new financial instruments

The EU budget review makes a strong case for increasing the leverage effect of the EU budget. New forms of finance for investment have been developed in the 2007–2013 programming period, moving away from traditional grant-based financing towards innovative ways of combining grants and loans. The Commission would like Member States and regions to make a more extended use of such instruments in the future.

Financial instruments help to create revolving forms of finance, making them more sustainable over the longer term. This is also one way of helping Europe to increase resources for investment, especially in times of recession. It opens new markets to different forms of public-private partnership, bringing in the expertise of international financial institutions.

To improve financial engineering instruments within Cohesion Policy, a number of measures could be examined:

- provide greater **clarity and differentiation between rules** governing grant-based financing and rules governing repayable forms of assistance in the regulatory framework, especially on eligibility of expenditure and audits;
- channel **generic financial support to firms** mainly via financial engineering instruments and use grants to co-finance targeted support schemes (innovation, environmental investments, etc.);
- **extend both the scope and scale of financial engineering instruments**: in terms of scope, to encompass new activities (e.g. sustainable urban transport, research and development, energy, local development, lifelong learning or mobility actions, climate change and environment, ICT and broadband); in terms of scale, to combine interest subsidies with loan capital or other forms of repayable financing.

- How could the Europe 2020 Strategy and Cohesion Policy be brought closer together at EU, national and sub-national levels?
- Should the scope of the development and investment partnership contract go beyond Cohesion Policy and, if so, what should it be?
- How could stronger thematic concentration on the Europe 2020 priorities be achieved?
- How could conditionalities, incentives and results-based management make Cohesion Policy more effective?
- How could Cohesion Policy be made more results-oriented? Which priorities should be obligatory?

3. Strengthening governance

3.1. Introducing a third dimension: territorial cohesion

The Lisbon Treaty has added territorial cohesion to the goals of economic and social cohesion. As a result, it is necessary to address this objective in the new programmes, with particular emphasis on the role of cities, functional geographies, areas facing specific geographical or demographic problems and macro-regional strategies.

Urban areas can be the engines of growth and hubs for creativity and innovation. Higher growth levels and new jobs can be created provided a critical mass of actors like companies, universities and researchers is established. Urban problems, whether related to environmental degradation or to social exclusion, call for a specific response and for direct involvement of the level of government concerned. Accordingly, an ambitious **urban agenda** should be developed where financial resources are identified more clearly to address urban issues and urban authorities would play a stronger role in designing and implementing urban development strategies. Urban action, the related resources and the cities concerned should be clearly identified in the programming documents.

For the future, one aspect which should be examined is whether the regulatory architecture of Cohesion Policy should allow **greater flexibility** in organising operational programmes in order to reflect the nature and geography of development processes better. Programmes could then be designed and managed not only at national and regional levels, but also, for example, at the level of groups of towns or of river and sea basins.

The report has shown that in some cases **geographical or demographic features** could intensify development problems. This is particularly true of the outermost regions but also of northernmost regions with very low population density and island, cross-border and mountain regions, as explicitly recognised by the Lisbon Treaty. It will be necessary to develop targeted provisions to reflect these specificities, without unnecessarily multiplying instruments and programmes. Territorial cohesion also means addressing urban-rural linkages in terms of access to affordable and quality infrastructures and services, and problems in regions with a high concentration of socially marginalised communities.

Finally, further work on new **macro-regional strategies** should be based on a thorough review of existing strategies and the availability of resources. Macro-regional strategies should be broad-based integrated instruments focused on key challenges and supported by a reinforced trans-national strand, although the bulk of funding should come from the national and regional programmes co-financed by Cohesion Policy and from other national resources.

3.2. Reinforcing partnership

Effective implementation of Europe 2020 requires a governance system that involves the actors of change in Member States and that links the EU, national, regional and local levels of administration.

In order to mobilise fully all involved, representation of local and regional stakeholders, social partners and civil society in both the policy dialogue and implementation of Cohesion Policy should be strengthened. With this in mind, support for the dialogue between public and private entities, including socio-economic partners and non-governmental organisations, should be maintained.

In this context, the role of **local development approaches** under Cohesion Policy should be reinforced, for example, by supporting active inclusion, fostering social innovation, developing innovation strategies or designing schemes for regenera-

tion of deprived areas. These should be closely coordinated with similar actions supported under rural development and maritime policies.

- How can Cohesion Policy take better account of the key role of urban areas and of territories with particular geographical features in development processes and of the emergence of macro-regional strategies?
- How can the partnership principle and involvement of local and regional stakeholders, social partners and civil society be improved?

4. A streamlined and simpler delivery system

Although it is too early to draw final conclusions on the effectiveness of the delivery system of Cohesion Policy in the period 2007–2013, Member States have argued against too frequent and drastic amendments of the rules that could hamper implementation. Nevertheless, a number of targeted changes deserve to be examined.

4.1. Financial management

In line with the recent proposal for revision of the Financial Regulation[5], each year the authority responsible for managing Cohesion Policy programmes would present a management declaration accompanied by the annual accounts and an independent audit opinion. This would strengthen the line of accountability for expenditure co-financed by the EU budget in any given financial year.

On the basis of the annual management declaration, the Commission proposes to introduce a periodical clearance of accounts procedure for Cohesion Policy. This would reinforce the assurance process and also allow regular partial closure of programmes.

The Commission has to consider whether not reimbursing national authorities until the corresponding EU contribution has been paid to beneficiaries would speed up payments of grants to beneficiaries and increase the incentive for strong national control.

Also, the Commission will examine the possibility of introducing output- or results-based elements for disbursement of the EU contribution to operational programmes or parts of programmes, depending on the type of action.

Finally, simplified methods of reimbursement, such as the standard scale of unit costs and lump-sum payments for grants introduced for 2007–2013, should be further promoted, thus increasing their impact. This would be another way of moving towards a more results-based approach.

5 'Proposal for a Regulation of the European Parliament and of the Council on the Financial Regulation applicable to the general budget of the European Union' — COM(2010) 260, 28.5.2010.

4.2. Reducing the administrative burden

The general approach for 2007–2013, under which eligibility rules are set at national level, should be retained. However, common rules should be adopted on key points such as overheads covering different EU Funds. Alignment of rules on eligibility of expenditures across policy areas, financial instruments and funds would simplify use of funds by beneficiaries and management of funds by national authorities, reducing the risk of errors while providing for differentiation where needed to reflect the specificities of the policy, the instrument and the beneficiaries.

In line with the proportionality principle, it would also be useful to examine how control measures could be made more cost-effective and risk-based to improve their effectiveness and efficiency while ensuring adequate coverage of the inherent risks at a reasonable cost, in accordance with the principle of sound financial management.

4.3. Financial discipline

The de-commitment rule aims to ensure that projects are implemented within a reasonable timeframe and to encourage financial discipline. However, it can distort the behaviour of Member States and regions by concentrating too much attention on quick, and too little on effective, use of resources. Furthermore, application of the de-commitment rule has been complicated by a number of derogations. There is a need to strike a careful balance between ensuring the quality of investment and smooth and rapid implementation. One possibility would be to apply N+2 with the exception of the first year to all programmes and remove exemptions and derogations.

4.4. Financial control

With regard to management and control systems, there is a need not only to deliver stronger assurance but also to achieve greater commitment, on the part of Member States, to quality control. This would allow the European Parliament, the Commission and Member States to focus more on the results and impact of the policy.

The first proposal is to review the procedure for ex ante assessment of the systems, taking account of the experience gained from the ex ante compliance assessment for 2007–2013 programmes in order to prevent problems in management and control systems. The procedure should be streamlined whilst retaining its benefits. This can be achieved by targeting the assessment on the main management body responsible by means of an accreditation process and by reviewing the Commission's involvement in this process.

The second proposal is to reinforce assurance by concentrating responsibilities. An accredited body would assume sole responsibility for proper management and control of the operational programme.

- How can the audit process be simplified and how can audits by Member States and the Commission be better integrated, whilst maintaining a high level of assurance on expenditure co-financed?
- How could application of the proportionality principle alleviate the administrative burden in terms of management and control? Should there be specific simplification measures for territorial cooperation programmes?
- How can the right balance be struck between common rules for all the Funds and acknowledgement of Funds' specificities when defining eligibility rules?
- How can financial discipline be ensured, while providing enough flexibility to design and implement complex programmes and projects?

5. The architecture of Cohesion Policy

Cohesion policy aims to promote harmonious development of the Union and its regions by reducing regional disparities (Article 174 of the Treaty). It also underpins the growth model of the Europe 2020 strategy including the need to respond to societal and employment challenges all Member States and regions face. The policy supports such development with a clear investment strategy in every region by increasing competitiveness, expanding employment, improving social inclusion and protecting and enhancing the environment. The multilevel governance system for the policy helps to make the EU more visible to its citizens.

All regions and Member States would be eligible to Cohesion Policy and able to tailor their strategy in an integrated manner to their specific strengths and weaknesses.

As today, support would be differentiated between regions based on their level of economic development (measured by GDP per capita), drawing a clear distinction between 'less' and 'more' developed regions. To soften the transition between these two categories and ensure a fairer treatment for regions with similar level of economic development, the question could be asked as to whether a simpler system with a new intermediate category of regions could replace the current phasing-out and phasing-in system. This category would also include regions currently eligible under the 'convergence' objective but whose GDP would be higher than 75% of the Union average according to the latest statistics.

At the same time, and consistently with the EU budget review, there is a need to consider for the future architecture of Cohesion Policy, how the ESF could be refocused on securing the 2020 targets and objectives and how to achieve greater visibility and predictable funding volumes. It is also important to examine how the Fund could better serve the European employment strategy and contribute to the comprehensive European employment initiative called for by the EU budget review.

The policy will continue to focus on implementing the Integrated Guidelines for economic and employment policies.

The Cohesion Fund would continue to benefit Member States whose GNI per capita is lower than 90% of the Union average.

Finally, Cohesion Policy would continue to foster territorial dimensions of cooperation (cross-border, transnational and inter-regional). This would include a review and simplification of the current arrangements for cross-border cooperation, including IPA, ENPI and EDF cross-border cooperation at the EU's external borders, and also of current practices in transnational action supported both by the ERDF and the ESF.

- How can it be ensured that the architecture of Cohesion Policy takes into account the specificity of each Fund and in particular the need to provide greater visibility and predictable funding volumes for the ESF and to focus it on securing the 2020 objectives?
- How could a new intermediate category of regions be designed to accompany regions which have not completed their process of catching up?

6. Next steps

The fifth Cohesion Report sets out some of the Commission's key ideas for the reform of Cohesion Policy following a long discussion which started with the fourth Cohesion Report in 2007. These will be fine-tuned and consolidated in the next few months.

The Commission invites all stakeholders to give their responses to the questions presented in this Communication. Comments can be posted until 31 January 2011 on: http://ec.europa.eu/regional_policy/consultation/index_en.htm.

Due account will be taken of the responses received when drafting the legislative proposals to be presented immediately after the adoption of the new Multi Annual Financial Framework in 2011.

The fifth Cohesion Forum which will take place in Brussels on 31 January and 1 February 2011 will provide a good opportunity to discuss these ideas.

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 Communication[1], covers both objective and subjective indicators of well-being and several indicators which have never been presented at the regional level before.

Section 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 head[2] between 2000 and 2007 (Table 1.1), largely due to the higher growth rates of the less developed and moderately developed EU Member States.

1.1 Growth of GDP per head in real terms, 2000–2007

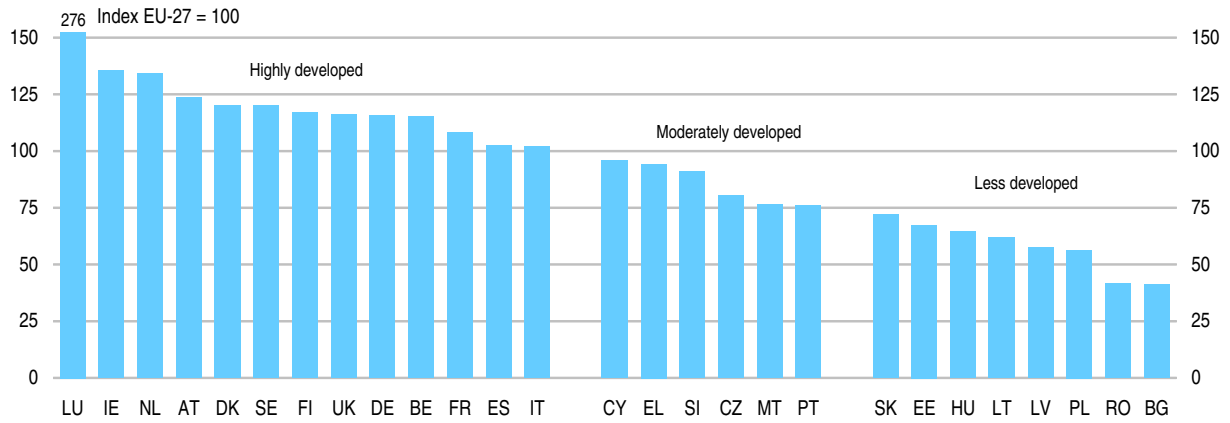
	Annual average change (%)
Brazil[1]	3.1
Russian Federation	7.7
India	5.2
China	9.9
Mexico[2]	0.6
USA	1.4
Canada[2]	1.4
Japan	1.5
EU-27	1.8
Highly developed MS	1.4
Moderately developed MS	2.9
Less developed MS	5.2

1 : 2002–2007
2: 2000–2006
Source: OECD and National Statistical Offices

1 COM(2009) 433.

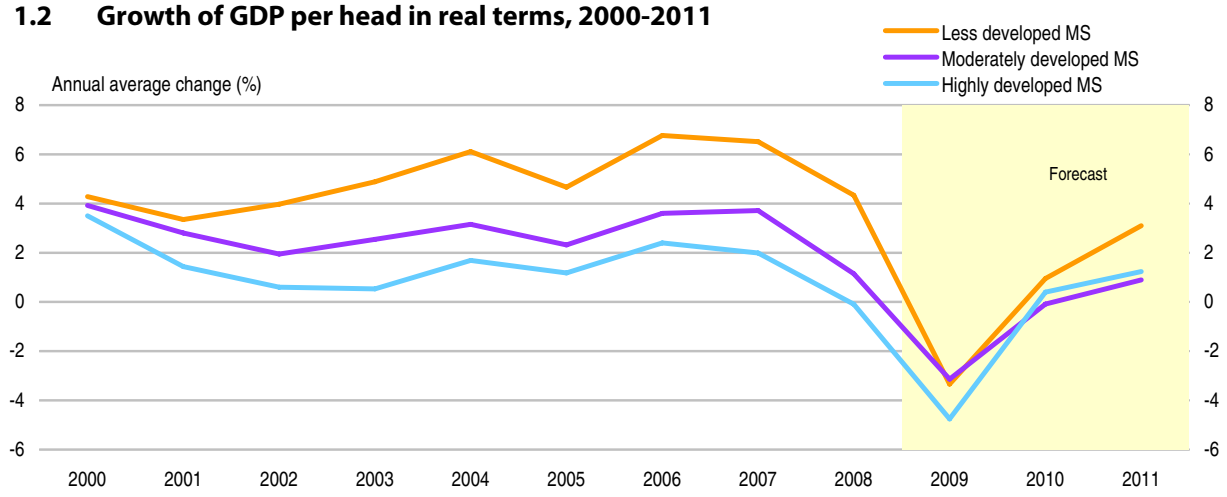
2 Measuring GDP growth per head corrects for difference in population growth. It is a more comparable and more accurate measure of the additional value added created per person (Stiglitz et al 2009). These results may come as a surprise as the media usually only reports GDP growth, which is higher in the US than in the EU due to its higher population growth.

1.1 GDP per head (PPS), 2008



Note: RO 2007
Source: Eurostat

1.2 Growth of GDP per head in real terms, 2000-2011



Source: Eurostat

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

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

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).

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 study[3], 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.

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.

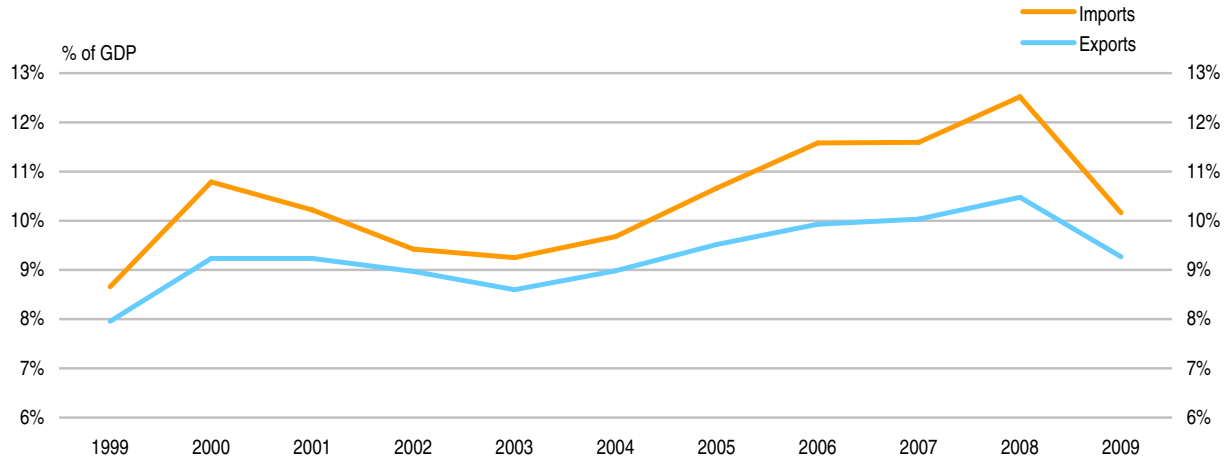
A relatively fast recovery is projected in some prosperous regions in Germany and the North of Belgium as well as some capital city regions in the North and the Centre of the EU. Regions in Poland are also projected to continue to perform relatively well and most other regions in the EU-12 are projected 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.

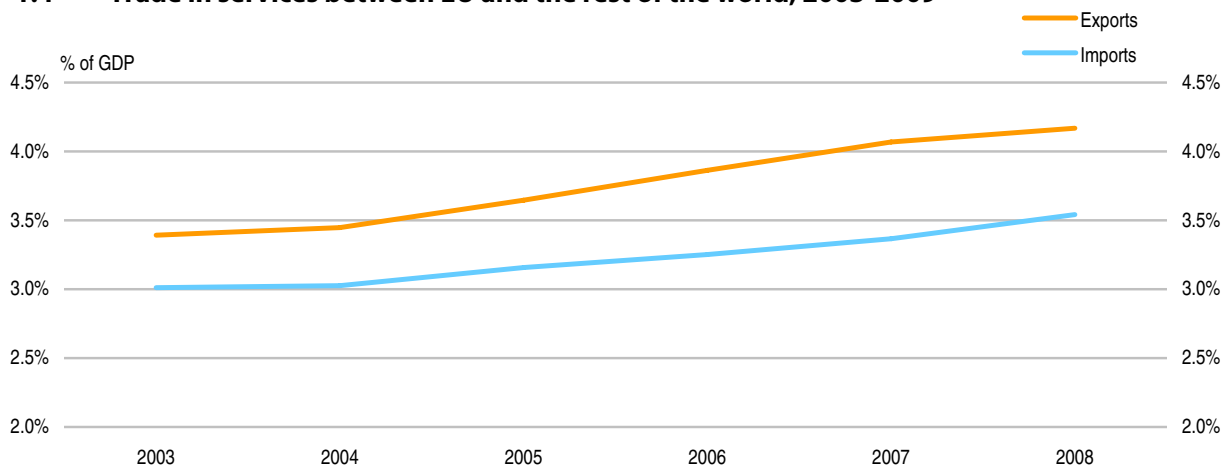
3 EU regions vulnerable to globalisation and increase trade (2008), http://ec.europa.eu/regional_policy/sources/docgener/studies/study_en.htm

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



Source: Eurostat

1.4 Trade in services between EU and the rest of the world, 2003-2009



Source: Eurostat

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 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

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

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).

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.

expanded, especially after 2005. Trade in services has also been less affected by the economic crisis.

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 world[5].

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.

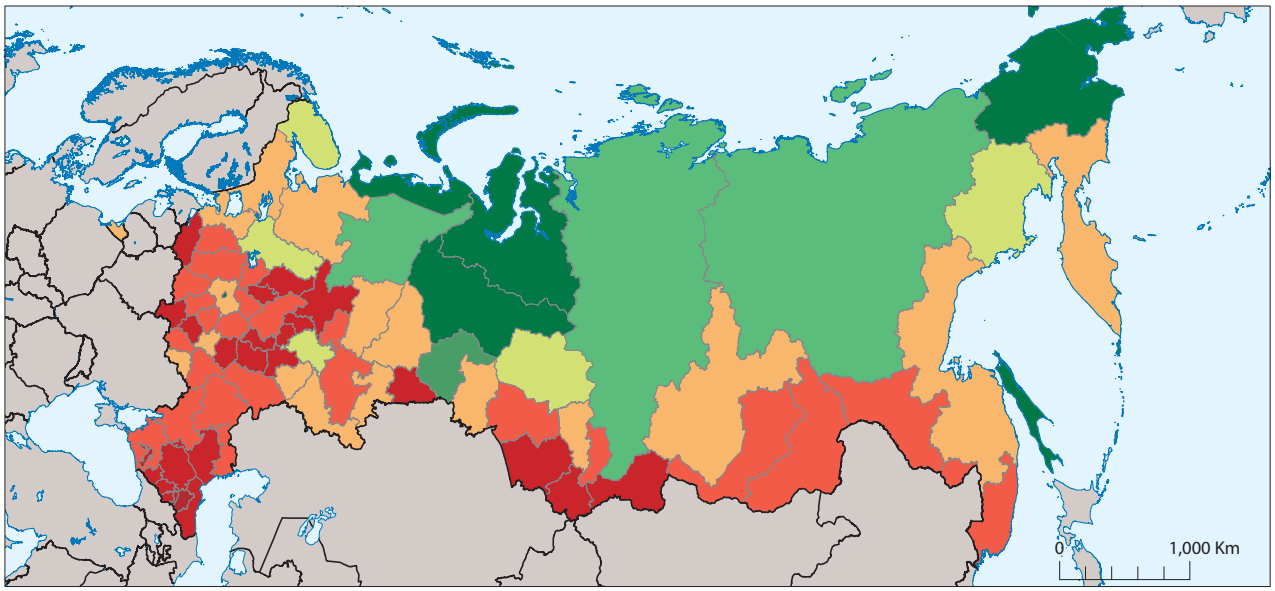
EU integration through the flows of goods, services, investments, remittances and people

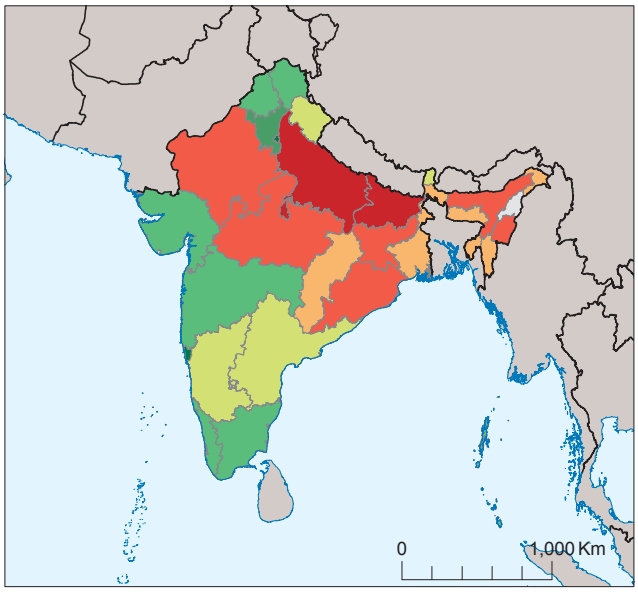
The EU has created a unique environment for businesses to trade freely in the Single Market and for individuals to move freely to live and work in other Member States. No other group of Nation States has gone so far in economic integration. The effect of this integration is evident in the growth of intra-EU 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.

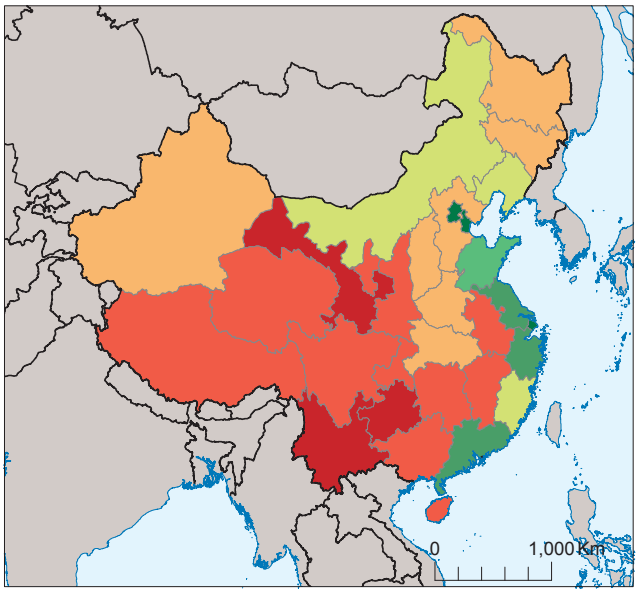
Trade

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

5 EU regions benefitting from globalisation and increased trade. (2009), http://ec.europa.eu/regional_policy/sources/docgener/studies/study_en.htm







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

Index, national average = 100

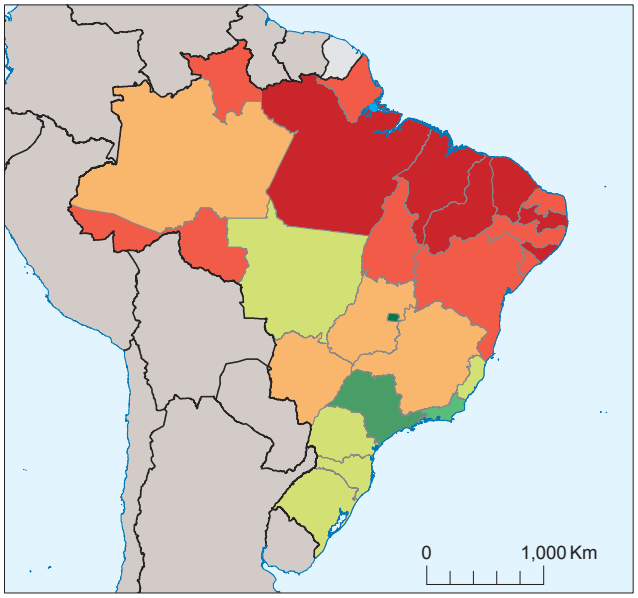
- < 25
- 25 - 50
- 50 - 75
- 75 - 100
- 100 - 125
- 125 - 150
- 150 - 200
- > 200

National GDP/head in PPS of Euro (index, EU-27 = 100):
Russia: 54
India: 10
China: 20
Brazil: 34

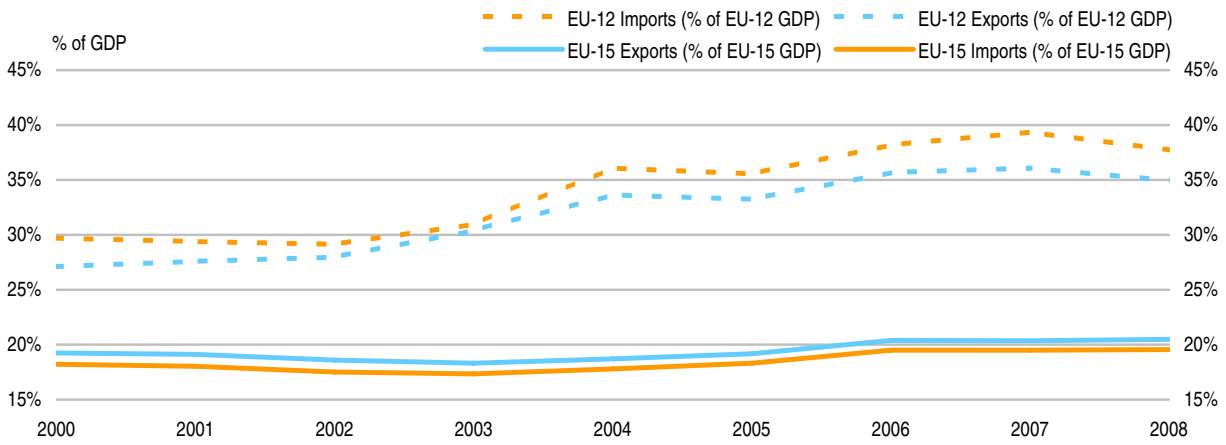
Source: NSO, World Bank, DG REGIO

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

REGIOgis



1.5 Exports and imports to other EU Member States, 2000-2008



Source: COMEXT, Eurostat

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).

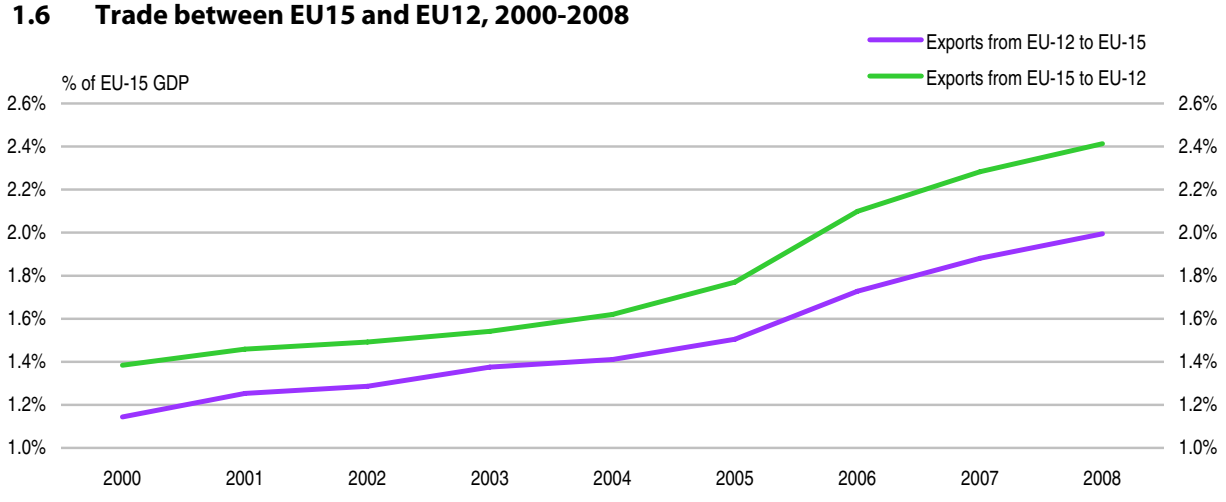
Trade increased markedly in countries that were already export oriented, such as the Czech Republic, where trade to the rest of the EU rose from 44% of GDP to 58% over the period, but also in the less export oriented, such as Poland, whose exports to the rest of the EU rose from 15% of GDP to 25%.

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).

FDI

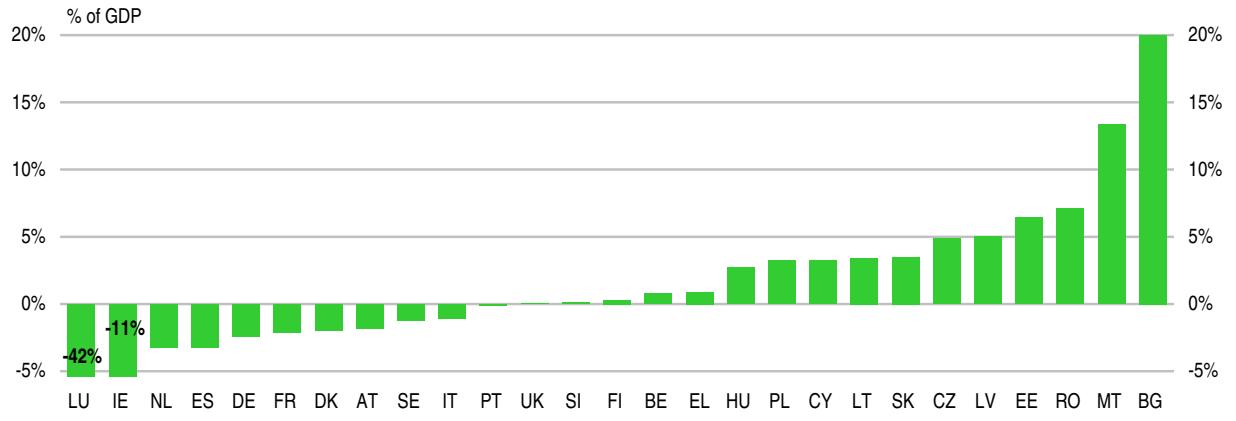
Inflows of foreign direct investment (FDI) averaged 4.6% of GDP in the EU over the period 2004–2008 and FDI outflows, 6.1% of GDP (Figure 1.7). The EU, therefore, invested more abroad than foreign companies in the EU. Inflows, however, substantially exceeded outflows in all the countries which joined the EU in 2004 and 2007. FDI has, in fact, proved an important engine of growth in these countries. FDI flows from the EU-

1.6 Trade between EU15 and EU12, 2000-2008



Source: COMEXT, Eurostat

1.7 Balance of net FDI inflows and outflows, average 2004-2008



Note: Data for EL are for 2006-2008

Source: Eurostat

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.

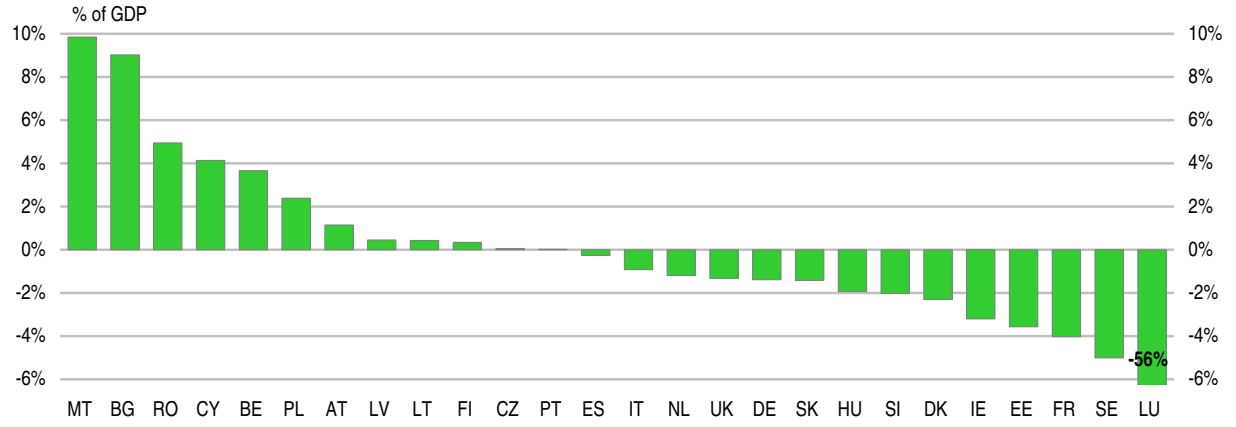
FDI is volatile and highly sensitive to the economic cycle. It contracted markedly in the economic crisis and ensuing period of uncertainty about economic prospects. Both inflows and outflows declined much more than GDP in 2009. Total FDI inflows amounted to just under 3% of GDP in 2009 and net outflows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

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.

Romania and Bulgaria are the main recipients of remittances

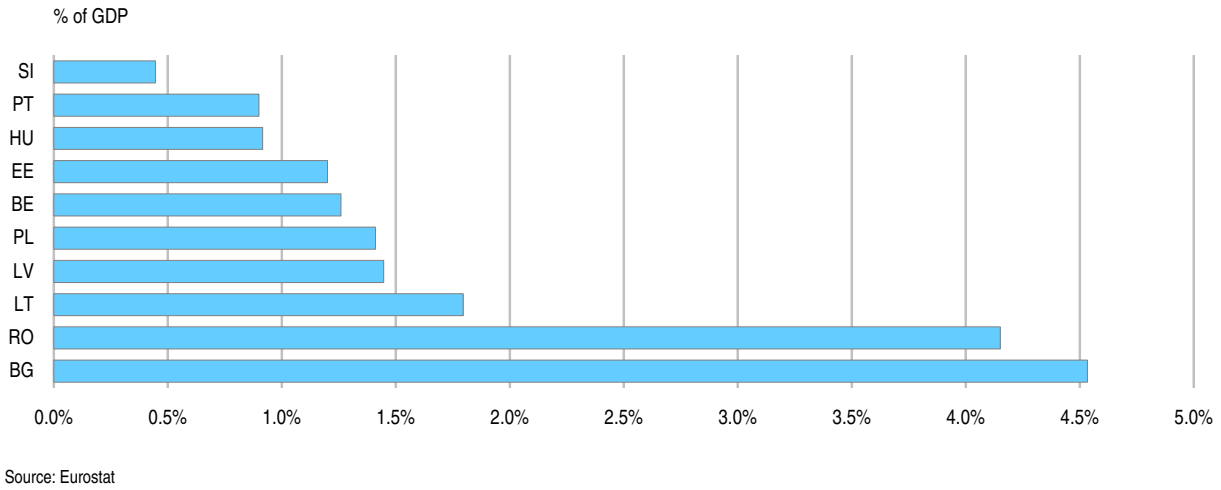
With enlargement and the opening up of employment opportunities in the EU-15 to people in the

1.8 Balance of net FDI inflows and outflows, 2009



Source: Eurostat

1.9 Net personal remittances, 2008



Source: Eurostat

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.

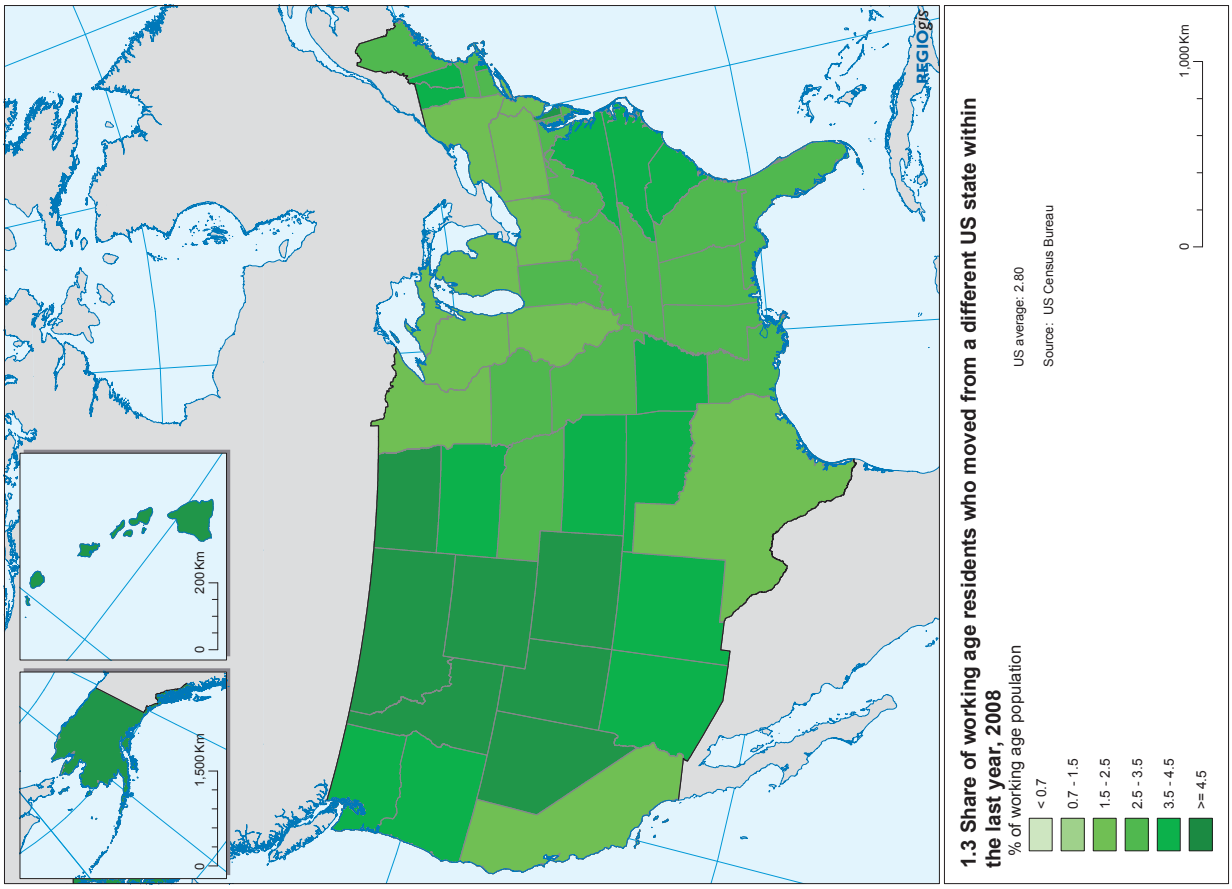
In Romania and Lithuania, remittances were 40% lower in the first three quarters of 2009 than in the same period in 2008. This reduction was less in Bulgaria, Poland and the two other Baltic countries (around 15% or less). These differences reflect the non-uniform effect of the crisis on jobs in the 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.

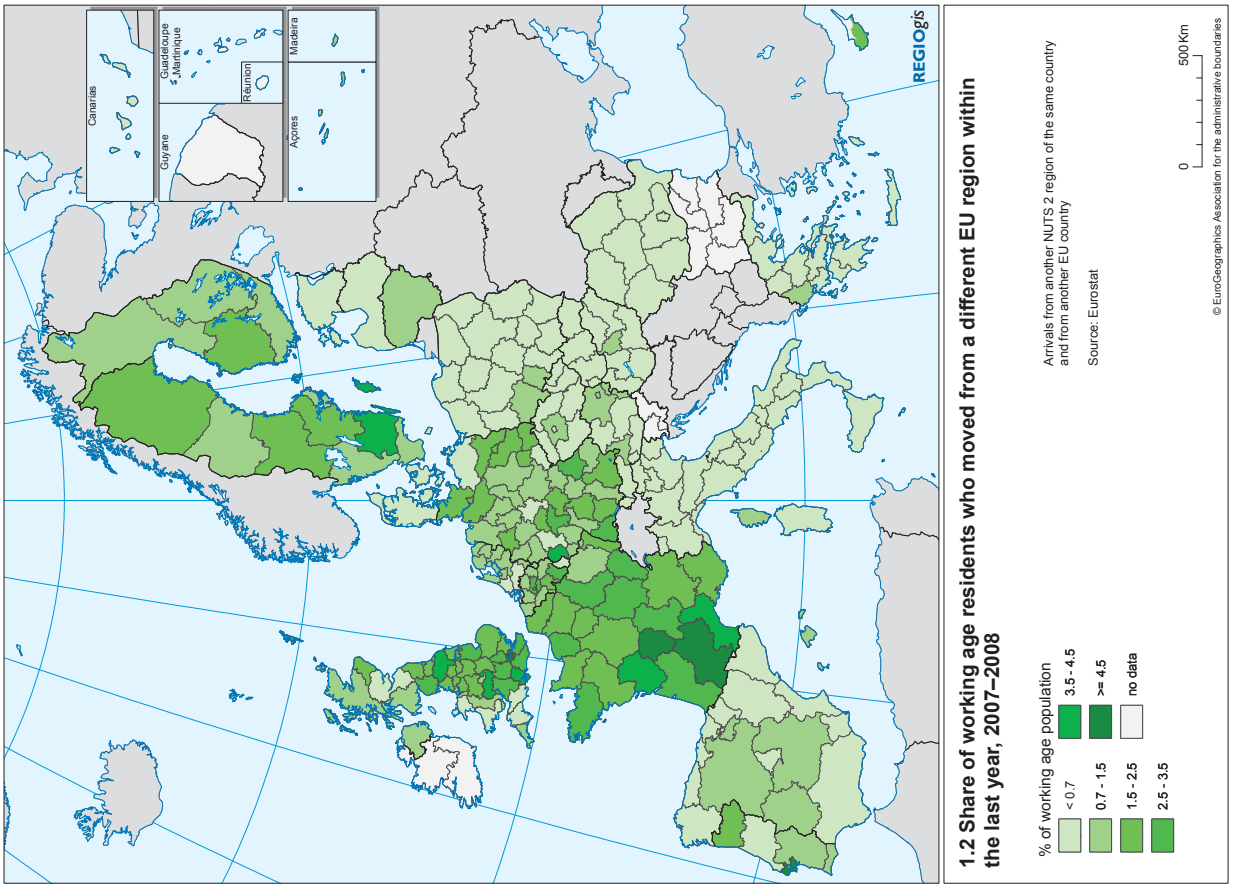
Labour mobility in the EU and the US

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.

Within the EU, however, there are significant differences between countries in the extent of regional

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


REGIOGIS
0 200 Km
0 1,500 Km
1.3 Share of working age residents who moved from a different US state within the last year, 2008
% of working age population
< 0.7
0.7 - 1.5
1.5 - 2.5
2.5 - 3.5
3.5 - 4.5
>= 4.5
US average: 2.80
Source: US Census Bureau
0 1,000 Km


REGIOGIS
Canarias
Guyane
Guadeloupe
Martinique
Réunion
Açores
Madeira
1.2 Share of working age residents who moved from a different EU region within the last year, 2007–2008
% of working age population
< 0.7
0.7 - 1.5
1.5 - 2.5
2.5 - 3.5
3.5 - 4.5
>= 4.5
no data
Arrivals from another NUTS 2 region of the same country and from another EU country
Source: Eurostat
0 500 Km
© EuroGeographics Association for the administrative boundaries

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 Bucureşti-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.

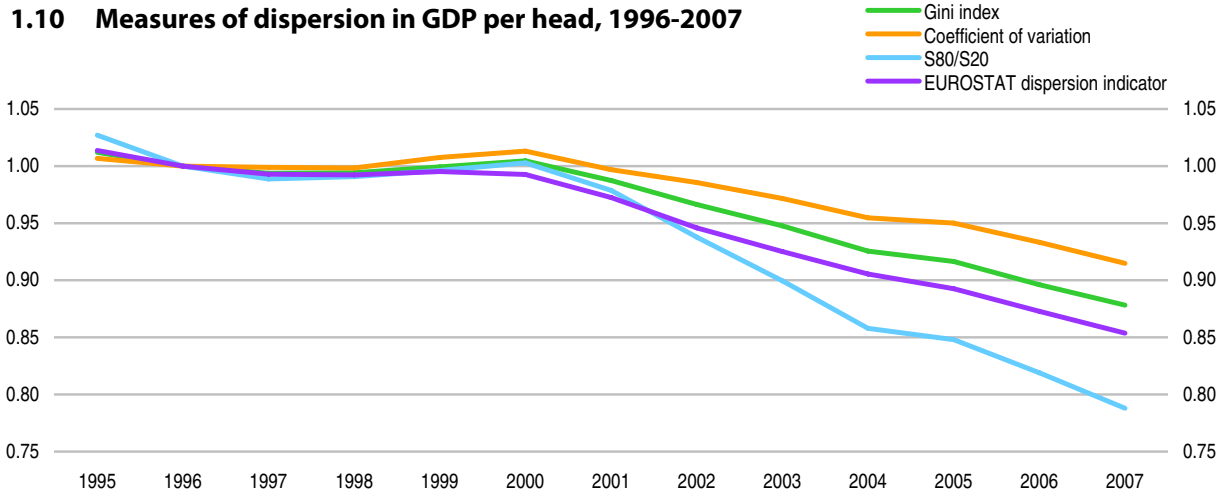
The low movement between Member States can be explained in terms of linguistic, cultural and labour legislation differences. In the case of those from the EU-12, it is also due to a number of restrictions on their mobility, which will be completely phased out by 2011. Currently, only Germany and Austria 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.

Regional growth and convergence

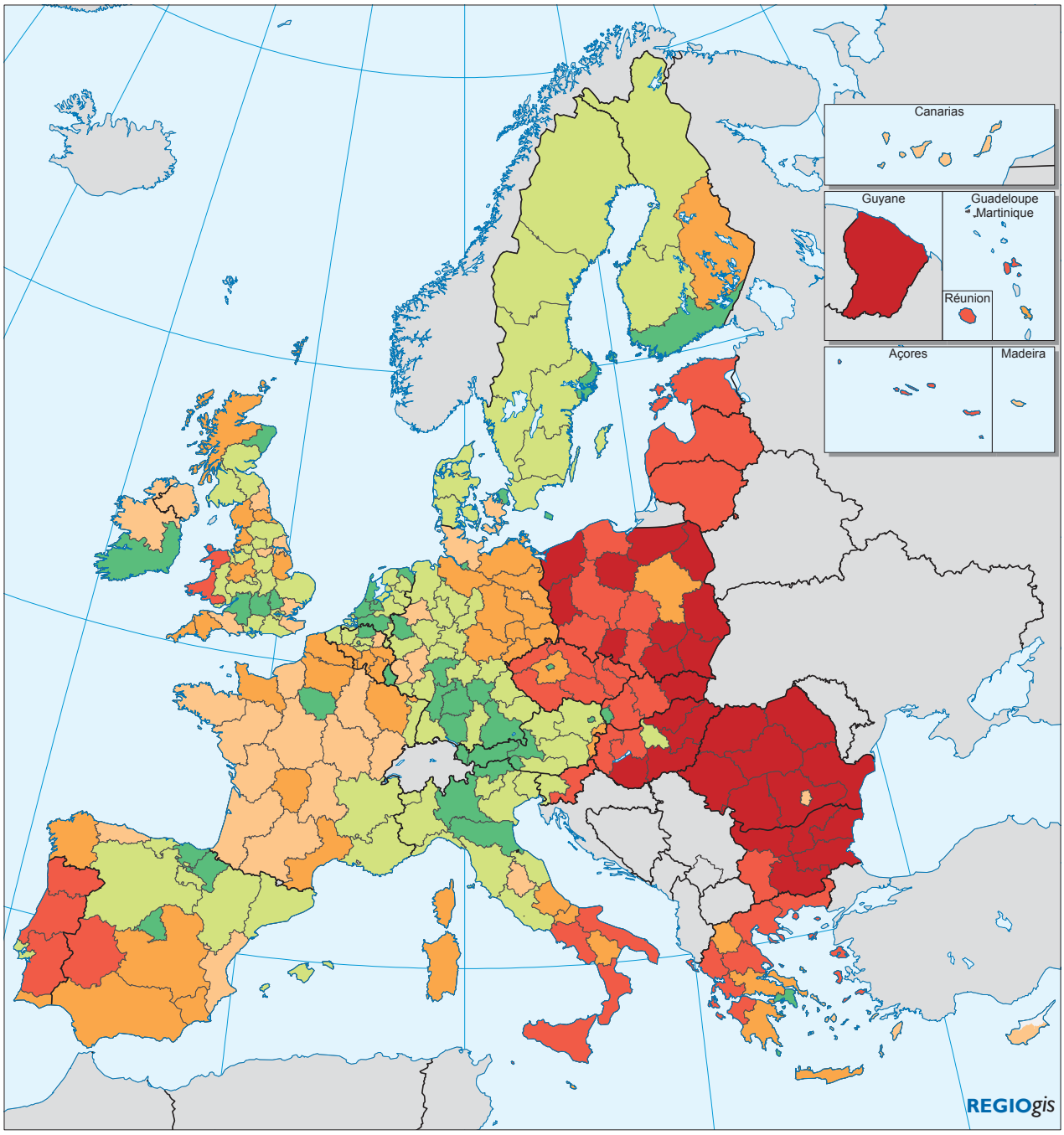
Growth in EU-12 regions especially has led to a marked narrowing of regional disparities in GDP per head in PPS terms across the Union. Nevertheless, disparities remain pronounced with levels less than a third of the EU average in 7 Romanian and Bulgarian regions and levels over 50% higher than the EU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

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).

1.10 Measures of dispersion in GDP per head, 1996-2007



Source: Eurostat, DG REGIO's calculation



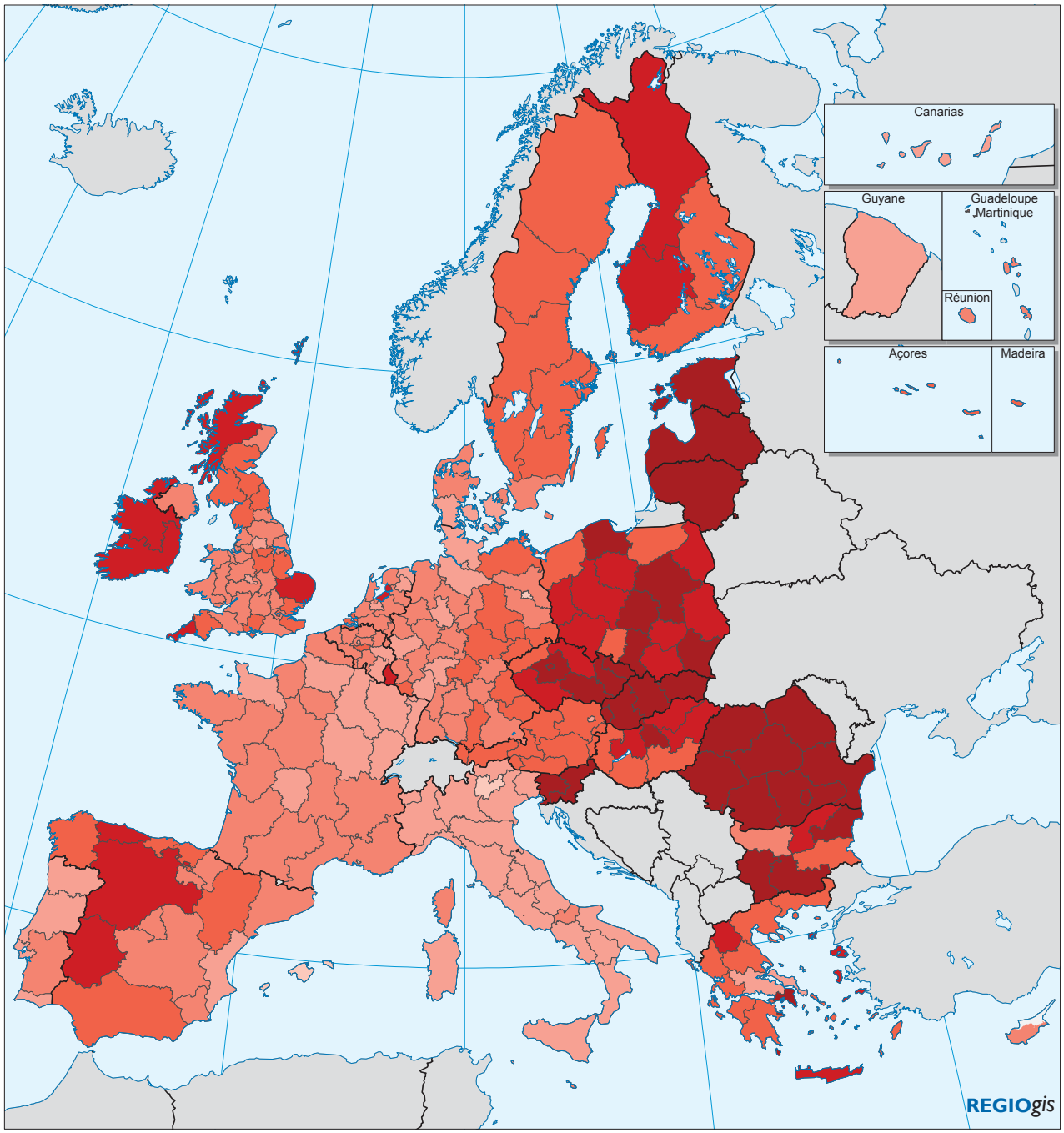
1.4 GDP per head (PPS), 2007

Index, EU-27 = 100

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

Source: Eurostat

0 500 Km



1.5 Growth of GDP per head in real terms, 2000–2007

Annual average % change

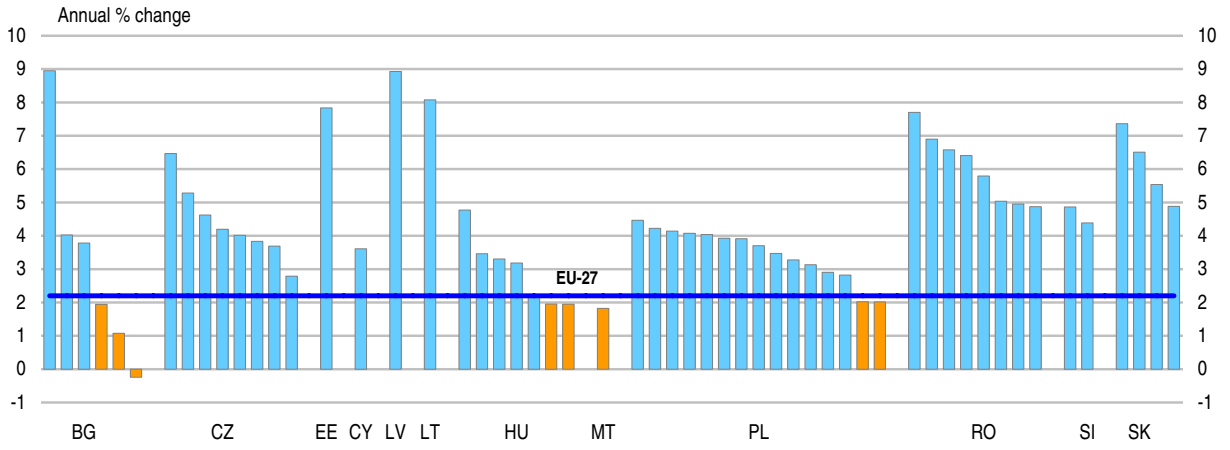
- < 0
- 0 - 1
- 1 - 2
- 2 - 3
- 3 - 4
- > 4

EU-27 = 1.8

Source: Eurostat, DG REGIO

0 500 Km

1.11 Growth rates of GDP per head, EU-12 NUTS 2 regions, 2000-2007



Source: Eurostat, 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).

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.

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.

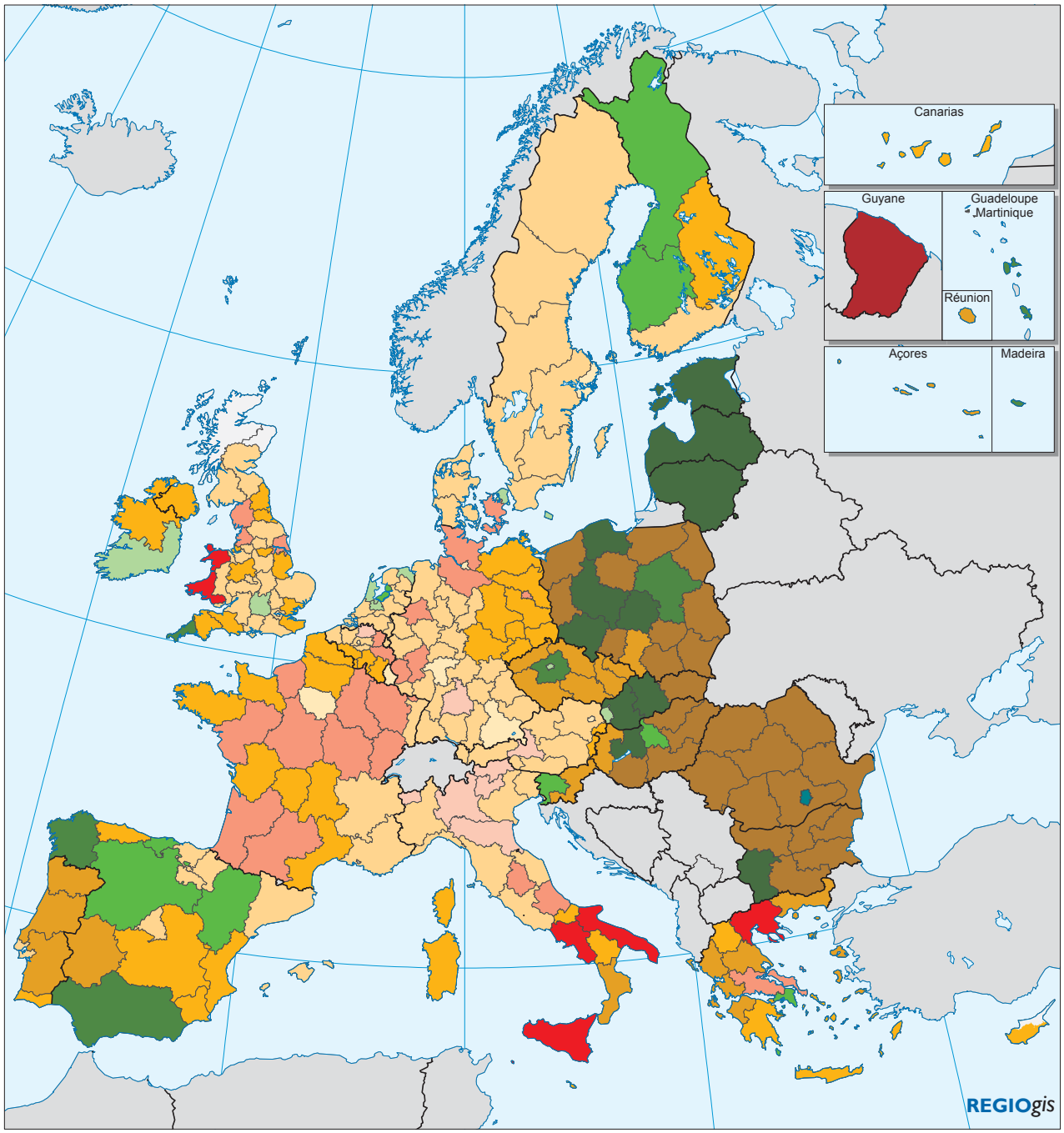
Geography of growth

Metropolitan regions

Metropolitan regions[7] 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

7 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.



1.6 Change in regional GDP per head (PPS), 1995–2007

Index, EU-27 = 100

1995 \ 2007	< 50	50 - 75	75 - 100	100 - 150	> 150
< 50					
50 - 75					
75 - 100					
100 - 150					
> 150					

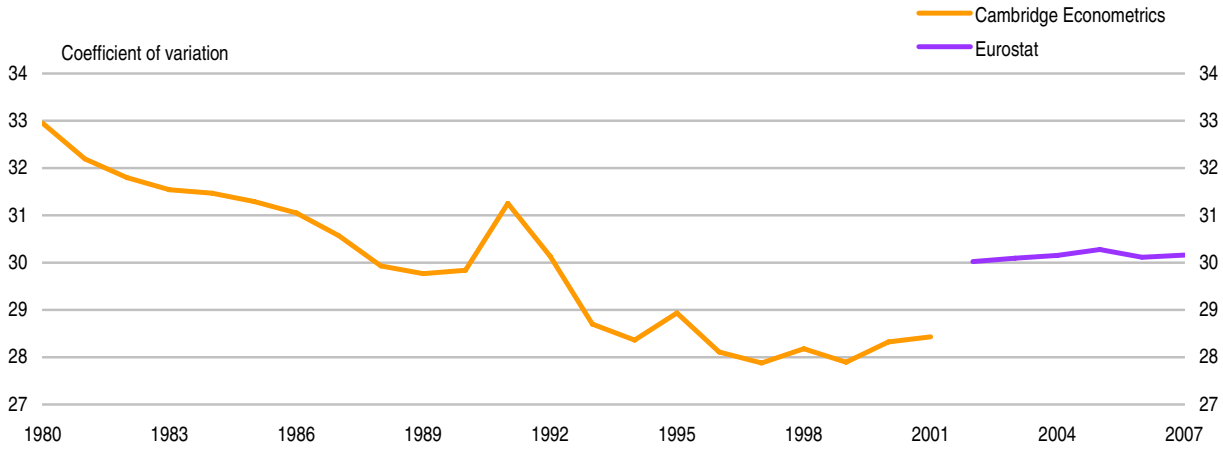
Source: Eurostat

0 500 Km

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.

1.12 Dispersion of GDP per head, EU-15 NUTS 2 regions, 1990-2007



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

Source: Cambridge Econometrics, 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.

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.

In the EU-15, the difference between the capital city region and the second metropolitan region[8] 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.

8 ESPON 2013 study on Secondary Growth Poles (ongoing).

Economic and social development in candidate countries and the Western Balkans

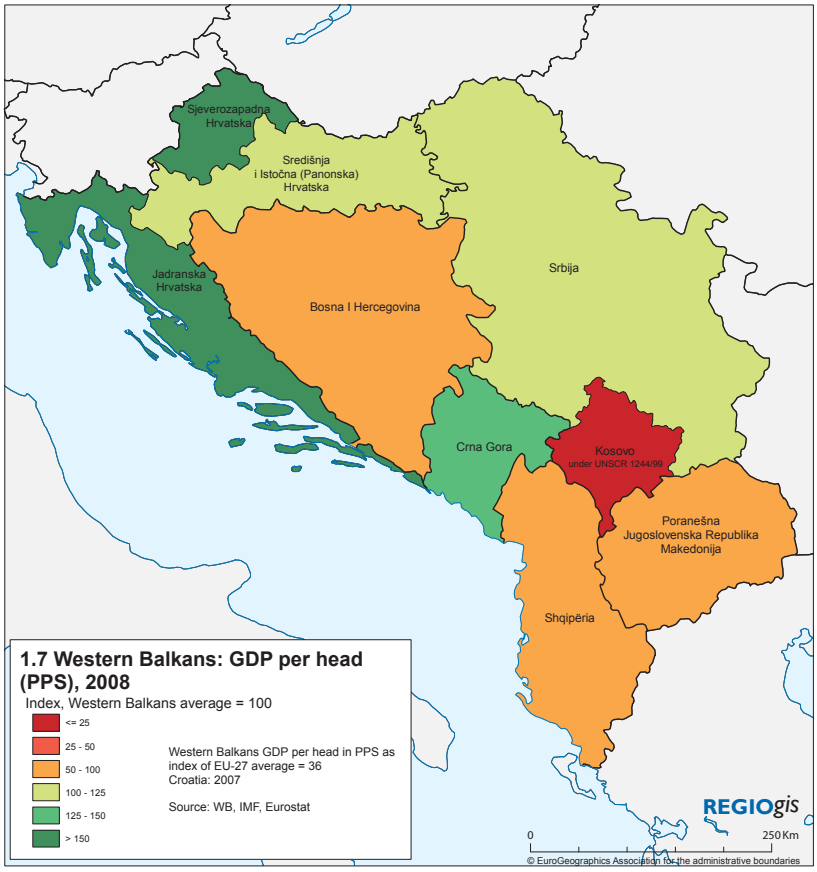
Croatia, FYROM and the Western Balkans

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 Sjeverozapanda 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.

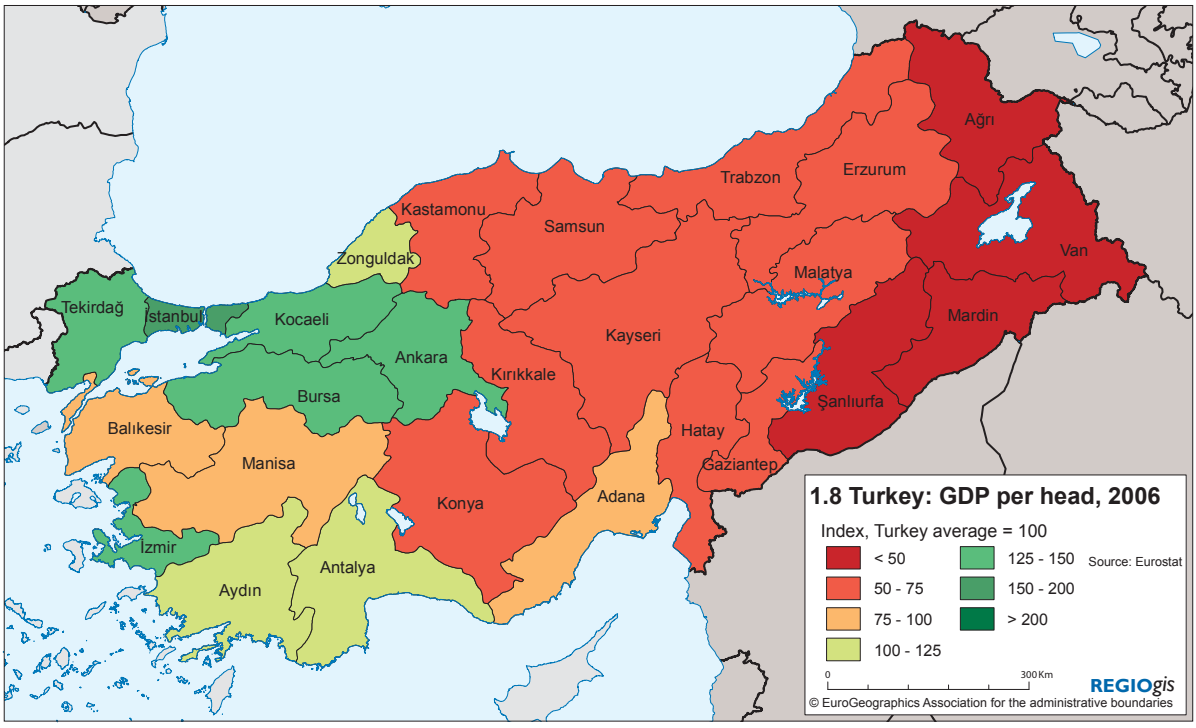
Except in Serbia and Kosovo, population either remained unchanged over the period 2000–2008 or increased — by 0.8% a year in Bosnia and Herzegovina, the highest growth in the region.

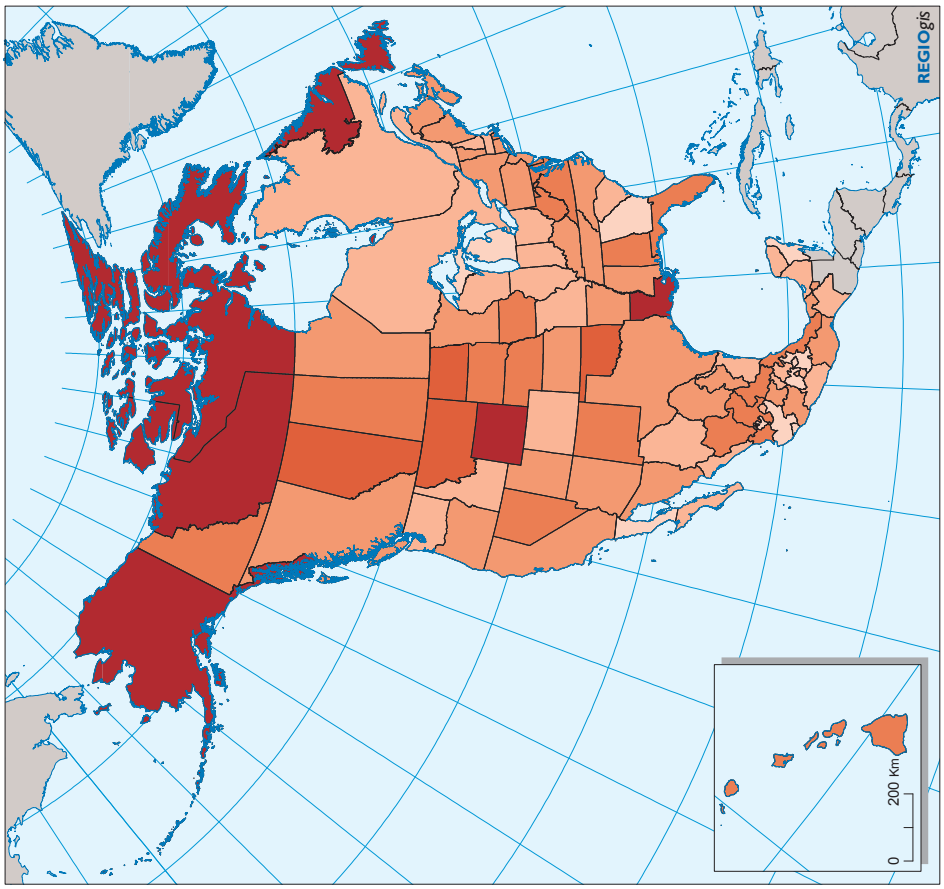
All the potential candidate countries in the Western Balkans have similar structural problems to other transition countries. Overcoming them will be key to determining economic performance and EU entry.

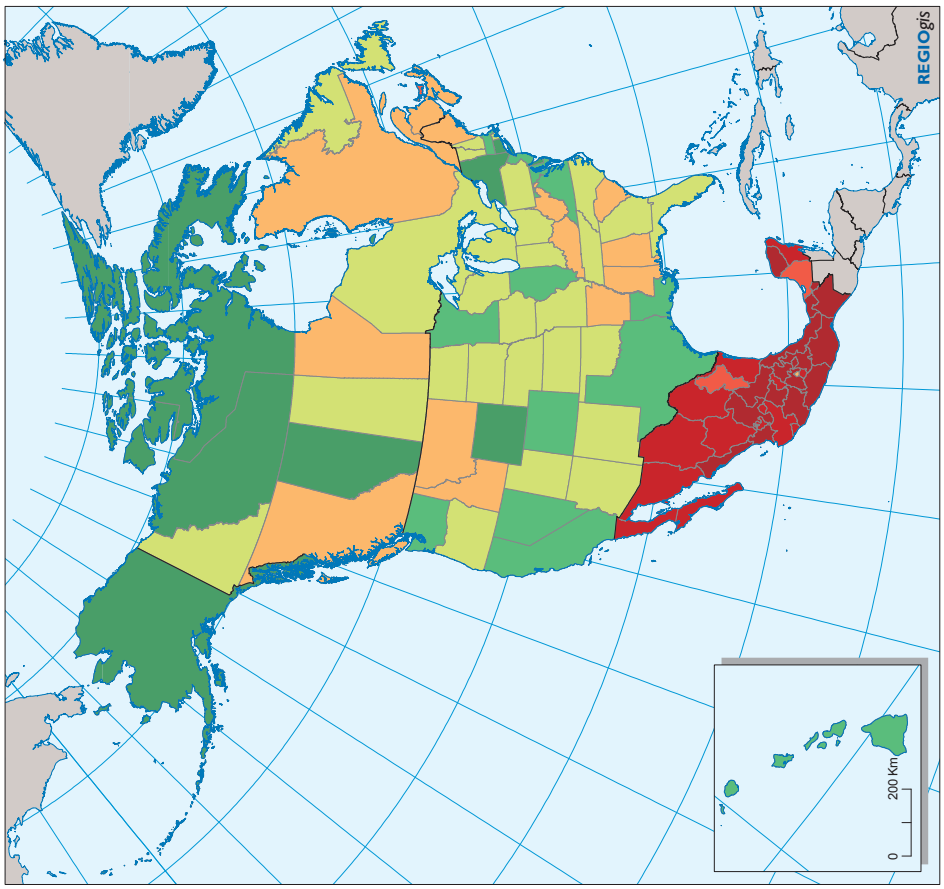
Turkey

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 boost foreign direct investment in the future.




REGIOgis
200 Km
0
1.10 NAFTA: Growth of GDP per head in real terms, 2000–2006
Annual average % change
< 0
0 - 1
1 - 2
2 - 3
3 - 4
>= 4
NAFTA average = 1.16
Source: OECD
Source of Administrative boundaries: The Global Administrative Unit Layers (GAUL) dataset, implemented by FAO within the EC FAO Food Security for Action Programme
0
1,000 Km


REGIOgis
200 Km
0
1.9 NAFTA: GDP per head (USD PPS), 2006
Index, NAFTA average = 100
< 25
25 - 50
50 - 75
75 - 100
100 - 125
125 - 150
150 - 200
> 200
Source: OECD
Source of Administrative boundaries: The Global Administrative Unit Layers (GAUL) dataset, implemented by FAO within the EC FAO Food Security for Action Programme
0
1,000 Km

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.

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.

Economic and social development in the NAFTA countries

When the North American Free Trade Agreement (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 best[1]. Between 2000 and 2006, for example, regional disparities in GDP per head inside NAFTA did not change.

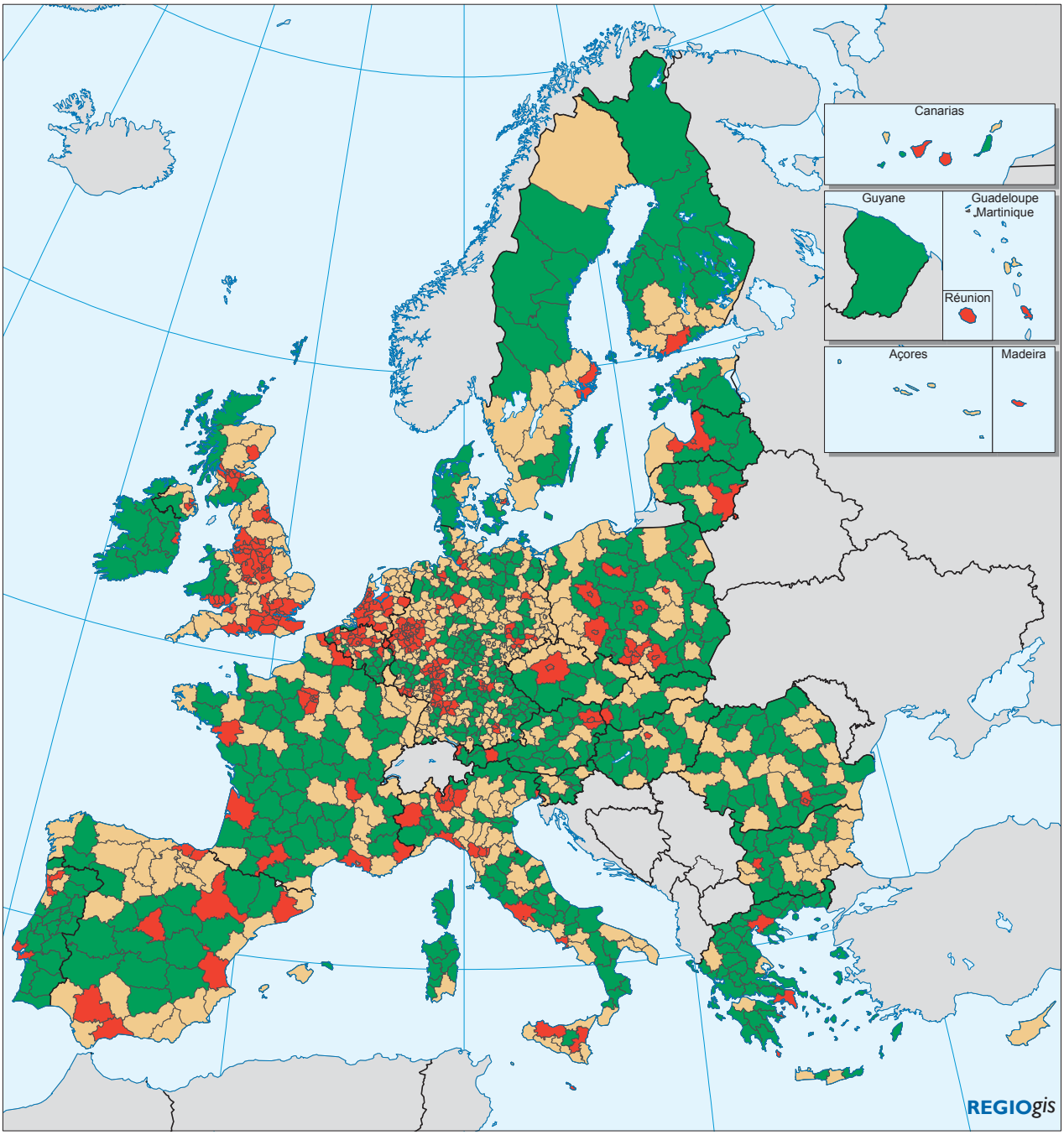
Major factors inhibiting a stronger economic convergence identified in the literature include the low quality of institutions, which can hinder or even block regional economic convergence, and the development gap. An analysis of the convergence process indicates that the more developed Mexican regions gained more from trade integration than the less developed[2]. 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.

1 Wise, C. (2007), Great Expectations: Mexico's Short-Lived Convergence under NAFTA. Available at SSRN: http://ssrn.com/abstract=964913.

2 Easterly, W. et al (2003), NAFTA and Convergence in North America: High Expectations, Big Events, Little Time in Economía, Vol. 4, No. 1, pp. 1–53, The Brookings Institution.



1.11 Urban-rural typology of NUTS 3 regions

Predominantly urban regions
Intermediate regions
Predominantly rural regions

Typology based on a definition of urban and rural 1 km² raster cells.

Source: Eurostat, JRC, EFGS, REGIO-GIS

0 500 Km

Predominantly rural, intermediate and predominantly urban regions

In the EU-27, around 24% of the population live in predominantly rural regions[9], 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.

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.

1.2 Share of population by urban-rural typology, 2007

% of total population

	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-27	40.9	35.5	23.7	100

Source: Eurostat, DG REGIO calculations

1.3 GDP per head (PPS) in 2007 and change 2000–2007 by 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[1]	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[1]	-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[1]	20.4	10.0	6.9	10.9
EU-15				
GDP per head index	128	101	91	112
Change in GDP per head index[1]	-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]	-1.6	-0.3	2.1	0.0

1: percentage point change in index
Source: Eurostat, DG REGIO

9 Dijkstra, L. and Poelman, H. (2010), A revised urban-rural typology. Chapter 15 of the Eurostat Regional Yearbook.

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).

As underlined in a recent study[10], 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.

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.

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

1.4 Sources of economic growth, 2000–2007

Annual average % change

	Change in GDP per head	=	Change in productivity	+	Change in employment rate	+	Change in share of working-age population
EU-27	1.79	=	1.40	+	0.40	+	0.00
Type of region							
Convergence	3.03	=	2.54	+	0.21	+	0.26
Transition	2.26	=	1.00	+	1.26	+	0.00
Regional Competitiveness and Employment	1.39	=	1.10	+	0.38	+	-0.10

Source: DG REGIO, Eurostat

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

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 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 development[1]

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 Assessement in Chapter 3).

1 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

Border regions

Border regions[1] 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 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 NUTS 3 level regions eligible for cross-border cooperation programmes under the ERDF regulation.

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 Transition[11] regions. The number of people employed 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 regions[12], 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[13], 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).

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.

11 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.

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

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

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 smaller[14]. 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 head[15] 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).

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 rate 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).

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.

Innovation and restructuring have the largest impact

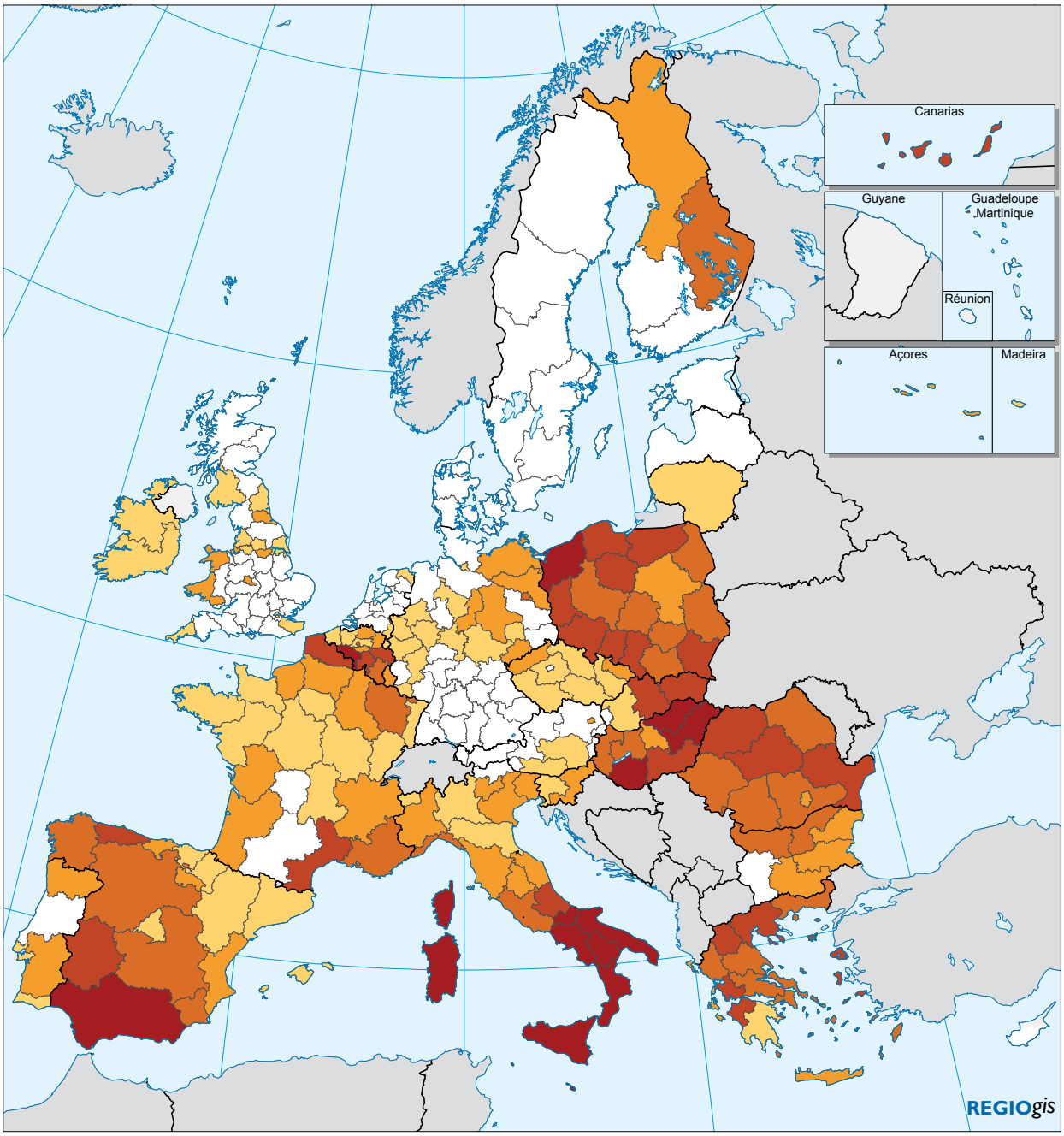
Productivity growth is the combined effect of improvements in productivity within a sector (i.e. innovation) and shifts between sectors (i.e. restructuring). Restructuring shifts employment to more productive sectors. This occurs mostly in countries at an earlier stage of economic development. Productivity 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 ex-

14 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.

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



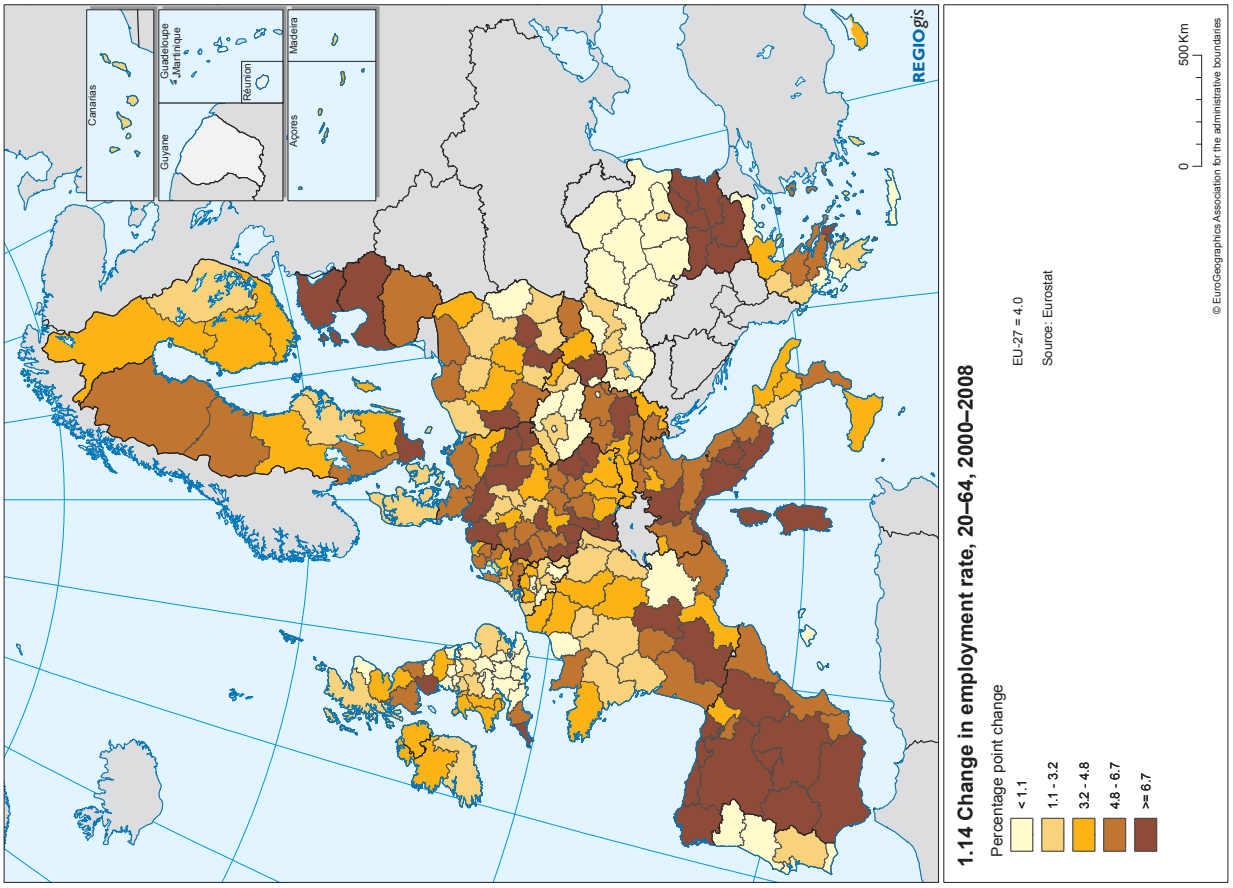
1.12 Potential increase in GDP per head from raising employment rate, 20–64, to 75%, 2007

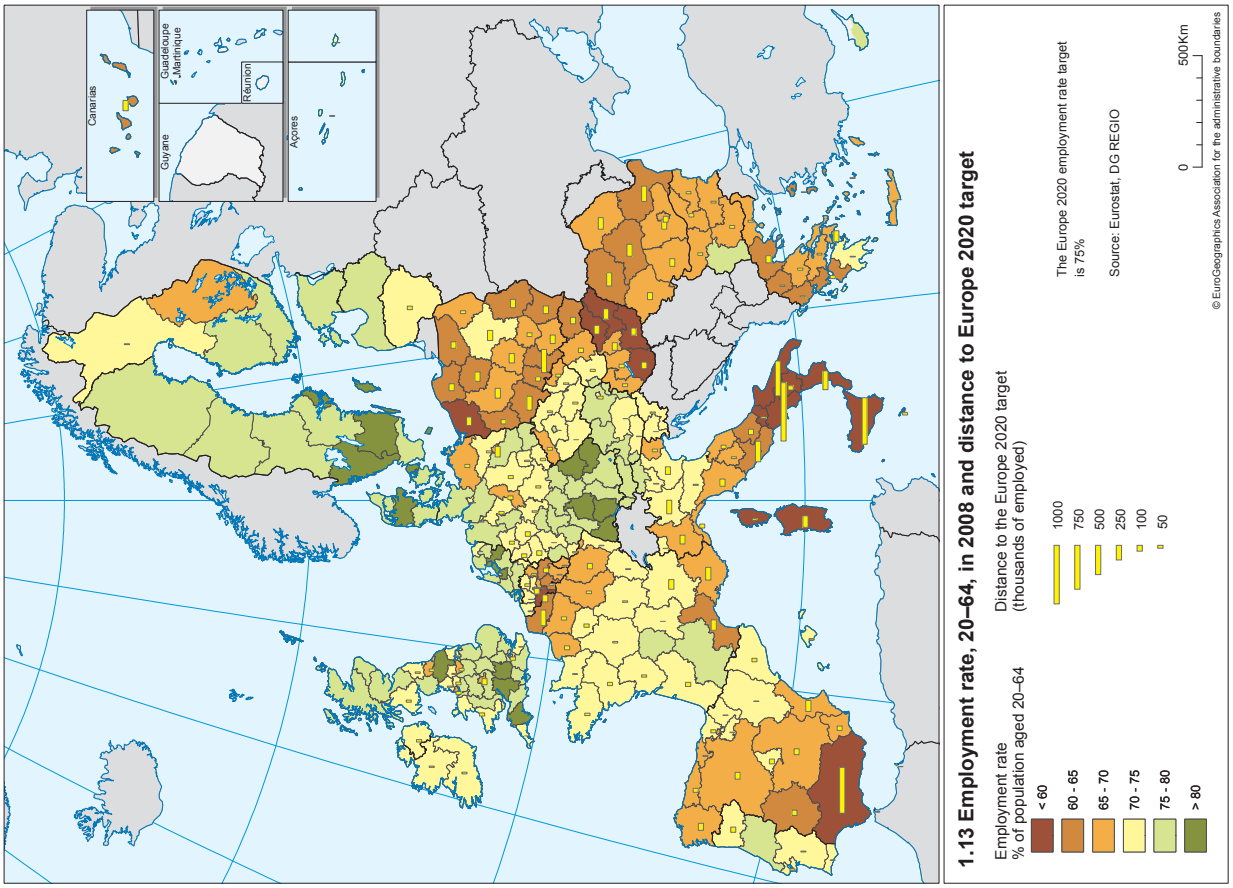
Percentage change

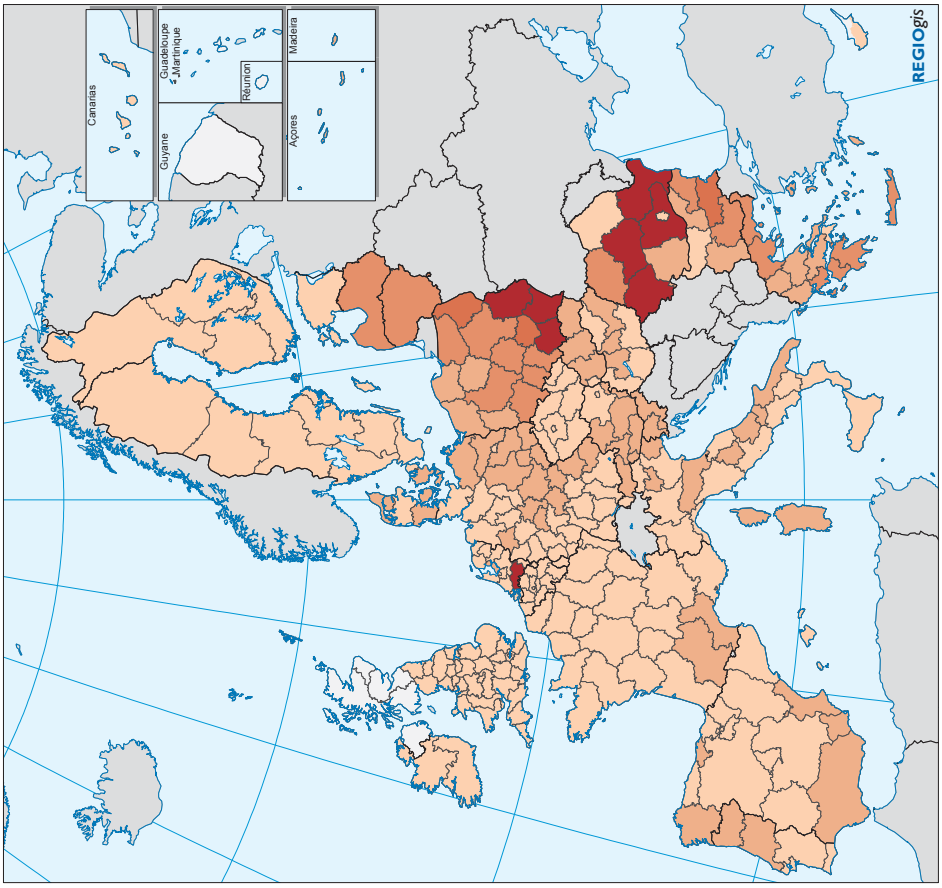
- not applicable
- 0 - 5
- 5 - 10
- 10 - 15
- 15 - 25
- > 25

EU-27 = 6
Source: Eurostat, DG REGIO

0 500 Km


REGIOgis
Canarias
Guadeloupe
Martinique
Réunion
Guyane
Açores
Madeira
1.14 Change in employment rate, 20–64, 2000–2008
Percentage point change
< 1.1
1.1 - 3.2
3.2 - 4.8
4.8 - 6.7
>= 6.7
EU-27 = 4.0
Source: Eurostat
0
500 Km
© EuroGeographics Association for the administrative boundaries


Canarias
Guadeloupe
Martinique
Réunion
Guyane
Açores
1.13 Employment rate, 20–64, in 2008 and distance to Europe 2020 target
Employment rate
% of population aged 20–64
< 60
60 - 65
65 - 70
70 - 75
75 - 80
> 80
Distance to the Europe 2020 target
(thousands of employed)
1000
750
500
250
100
50
The Europe 2020 employment rate target is 75%
Source: Eurostat, DG REGIO
0
500 Km
© EuroGeographics Association for the administrative boundaries



1.15 Productivity growth within sectors, 2000–2007

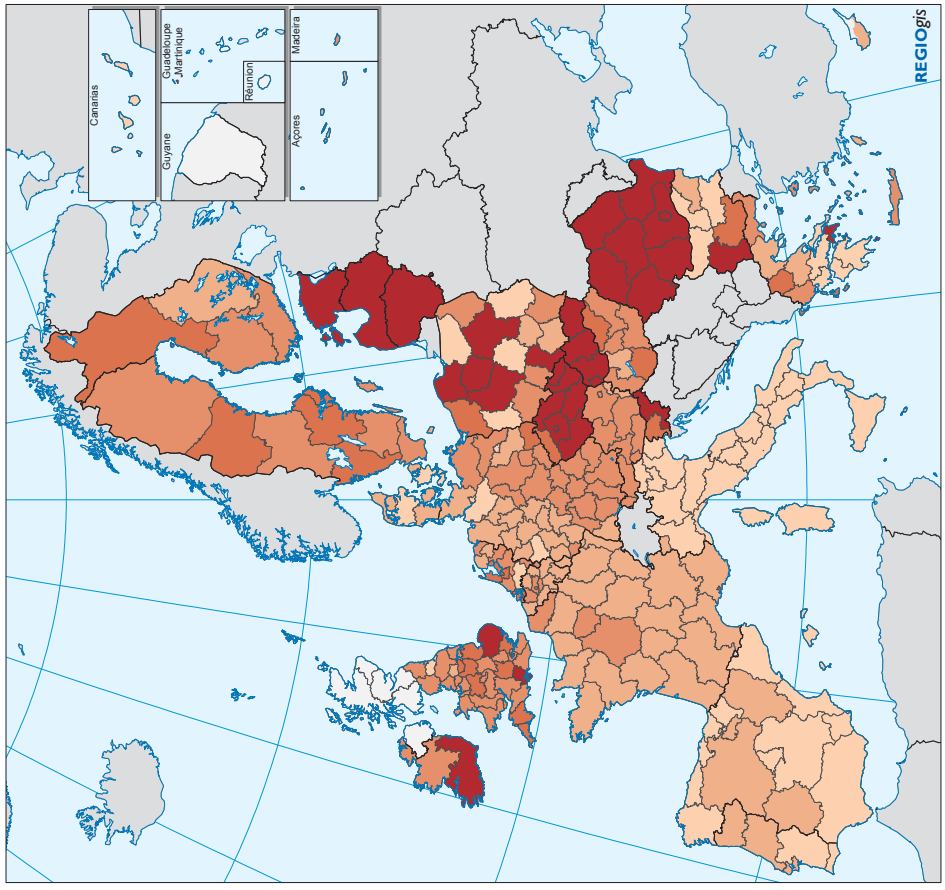
Increase in average productivity due to higher productivity within sectors

EU-27 = 1.0

Source: Eurostat, DG REGIO

< 0.3
0.3 - 1.0
1.0 - 2.0
2.0 - 3.0
> 3.0
no data

0 500 Km



1.16 Productivity growth through employment shifts between sectors, 2000–2007

Increase in average productivity due to employment shifts to more productive sectors

EU-27 = 0.4

Source: Eurostat, DG REGIO calculations

< 0.3
0.3 - 1.0
1.0 - 2.0
2.0 - 3.0
> 3.0
no data

0 500 Km

1.5 Sources of growth in labour productivity, 2000–2007

Annual average % change

	Growth of productivity	=	Growth of productivity within sectors	+	Employment shifts between sectors
EU-27	1.4	=	1.0	+	0.4
Type of region					
Convergence	2.5	=	1.3	+	1.2
Transition	1.0	=	0.7	+	0.3
Regional Competitiveness and Employment	1.1	=	1.0	+	0.1

Source: DG REGIO, Eurostat

amples of Finland, Sweden, UK and Ireland show that innovation can increase productivity at any stage of economic development.

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).

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

1.6 Employment and productivity by sector, 2007

Share in 2007 (%)	Employment				GVA			
	CONV	TRANS	RCE	EU-27	CONV	TRANS	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	TRANS	RCE	EU-27	CONV	TRANS	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

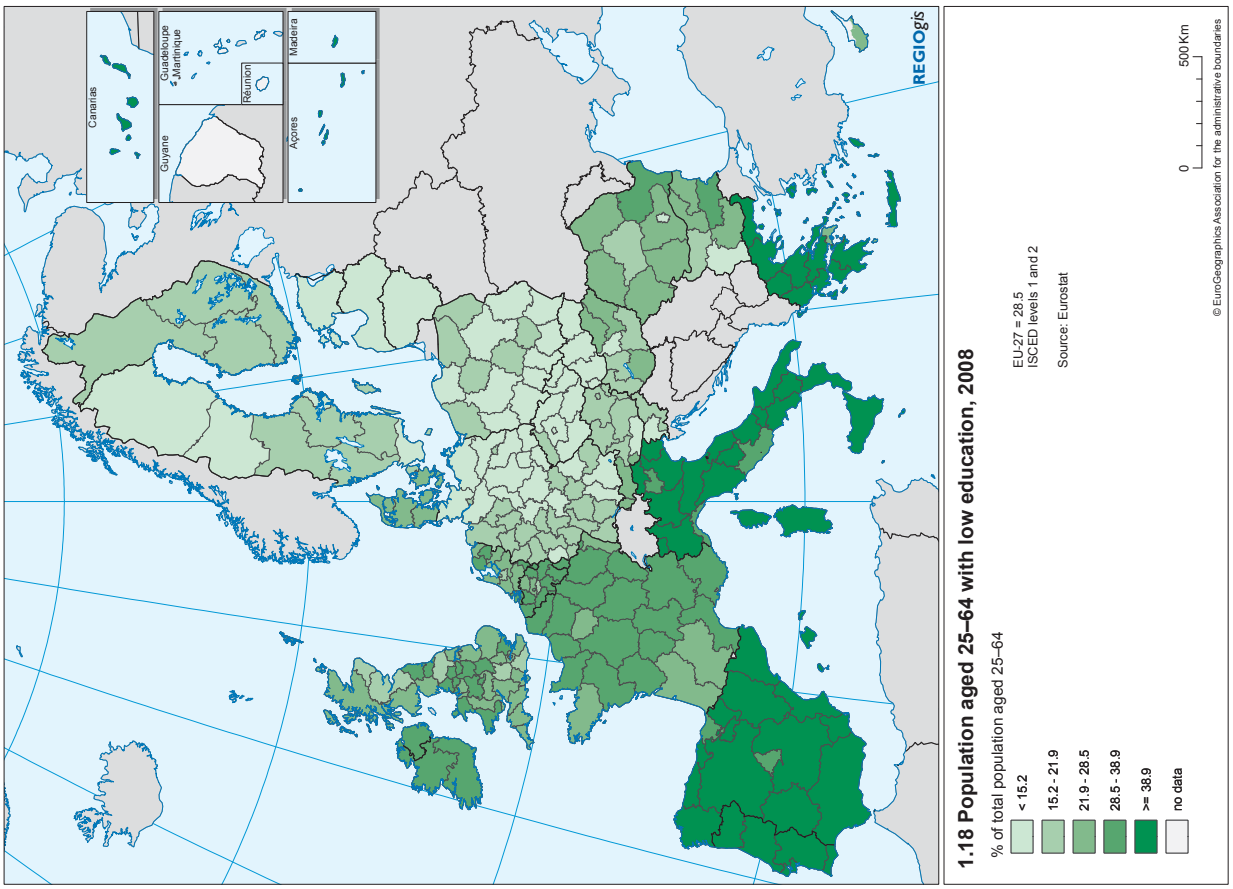
Productivity (GVA in PPS per person employed)	Index (EU=100), 2007				Annual average % change, 2000–2007			
	CONV	TRANS	RCE	EU-27	CONV	TRANS	RCE	EU-27
Agriculture, hunting and fishing	20	52	64	34	6	0	1	5
Total industry, including energy	69	109	135	111	4	3	3	3
Construction	62	78	97	84	0	0	-0	0
Trade, 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

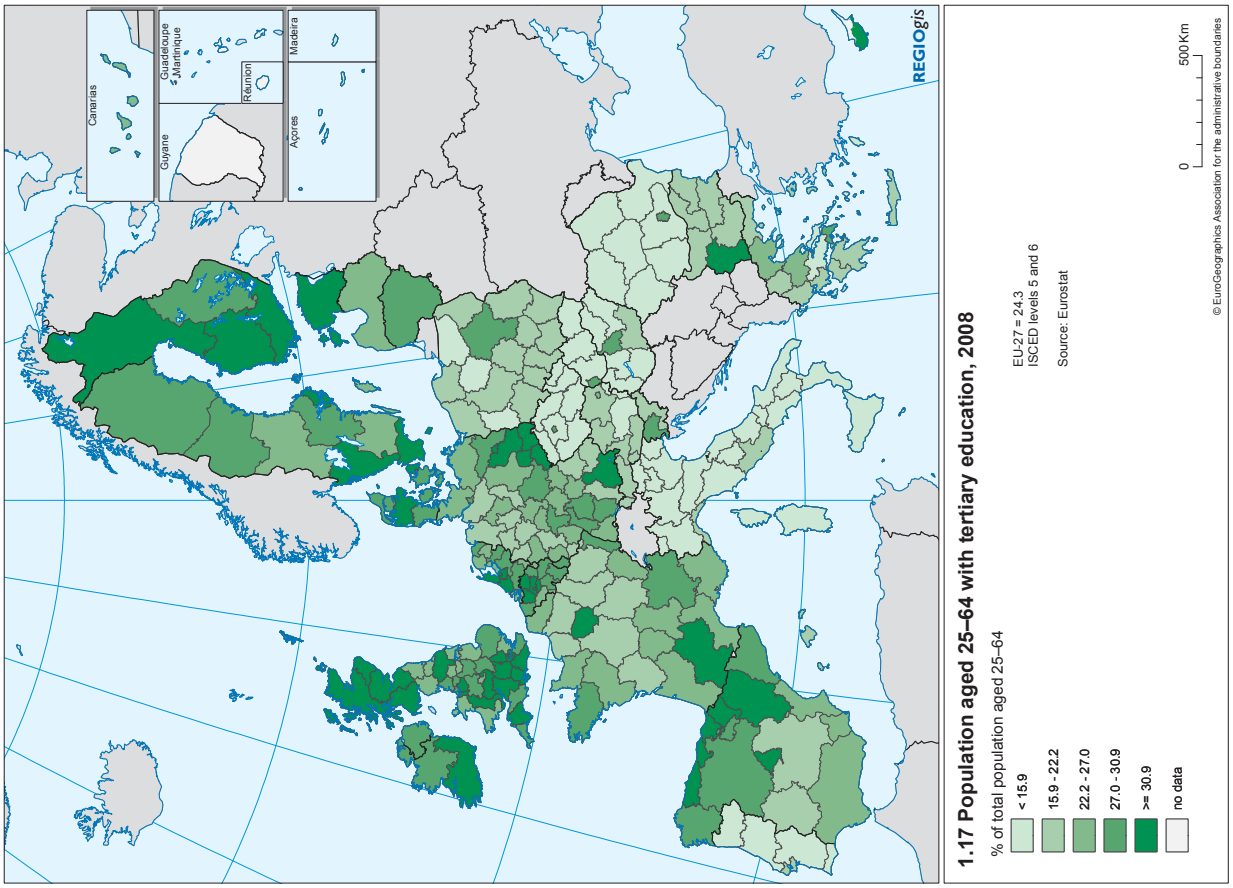
Source: Eurostat

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.

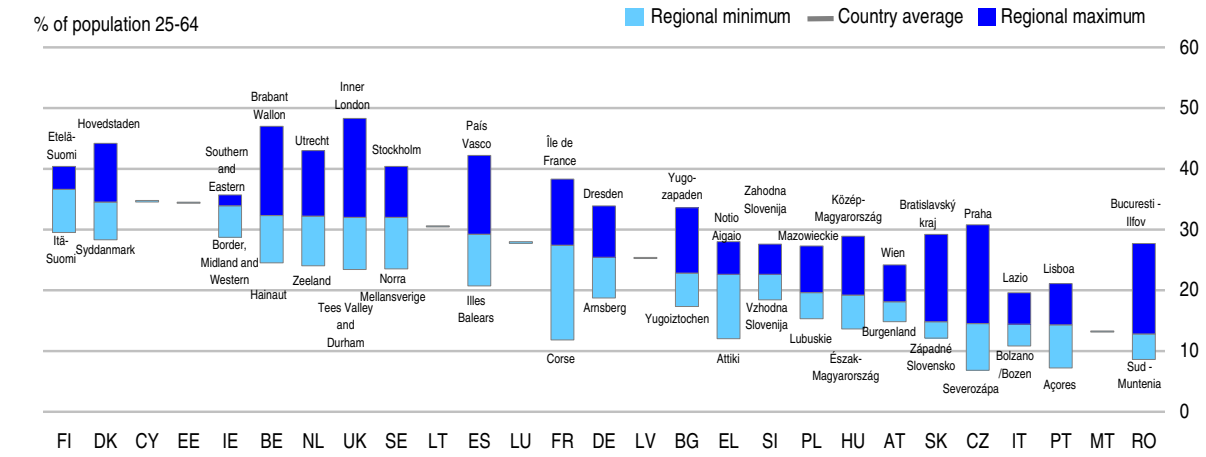
Human capital

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


REGIOgis
Canarias
Guyane
Guadeloupe
Martinique
Réunion
Madeira
Açores
1.18 Population aged 25–64 with low education, 2008
% of total population aged 25–64
< 15.2
15.2 - 21.9
21.9 - 28.5
28.5 - 38.9
>= 38.9
no data
EU-27 = 28.5
ISCED levels 1 and 2
Source: Eurostat
0
500 Km
© EuroGeographics Association for the administrative boundaries


REGIOgis
Canarias
Guyane
Guadeloupe
Martinique
Réunion
Madeira
Açores
1.17 Population aged 25–64 with tertiary education, 2008
% of total population aged 25–64
< 15.9
15.9 - 22.2
22.2 - 27.0
27.0 - 30.9
>= 30.9
no data
EU-27 = 24.3
ISCED levels 5 and 6
Source: Eurostat
0
500 Km
© EuroGeographics Association for the administrative boundaries

1.13 Proportion of population with tertiary education by country and regional extremes, 2008



Source: Eurostat, Labour Force Survey

Germany and Spain, the capital city region has the largest share of people with tertiary education (see also the section on metropolitan regions).

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.

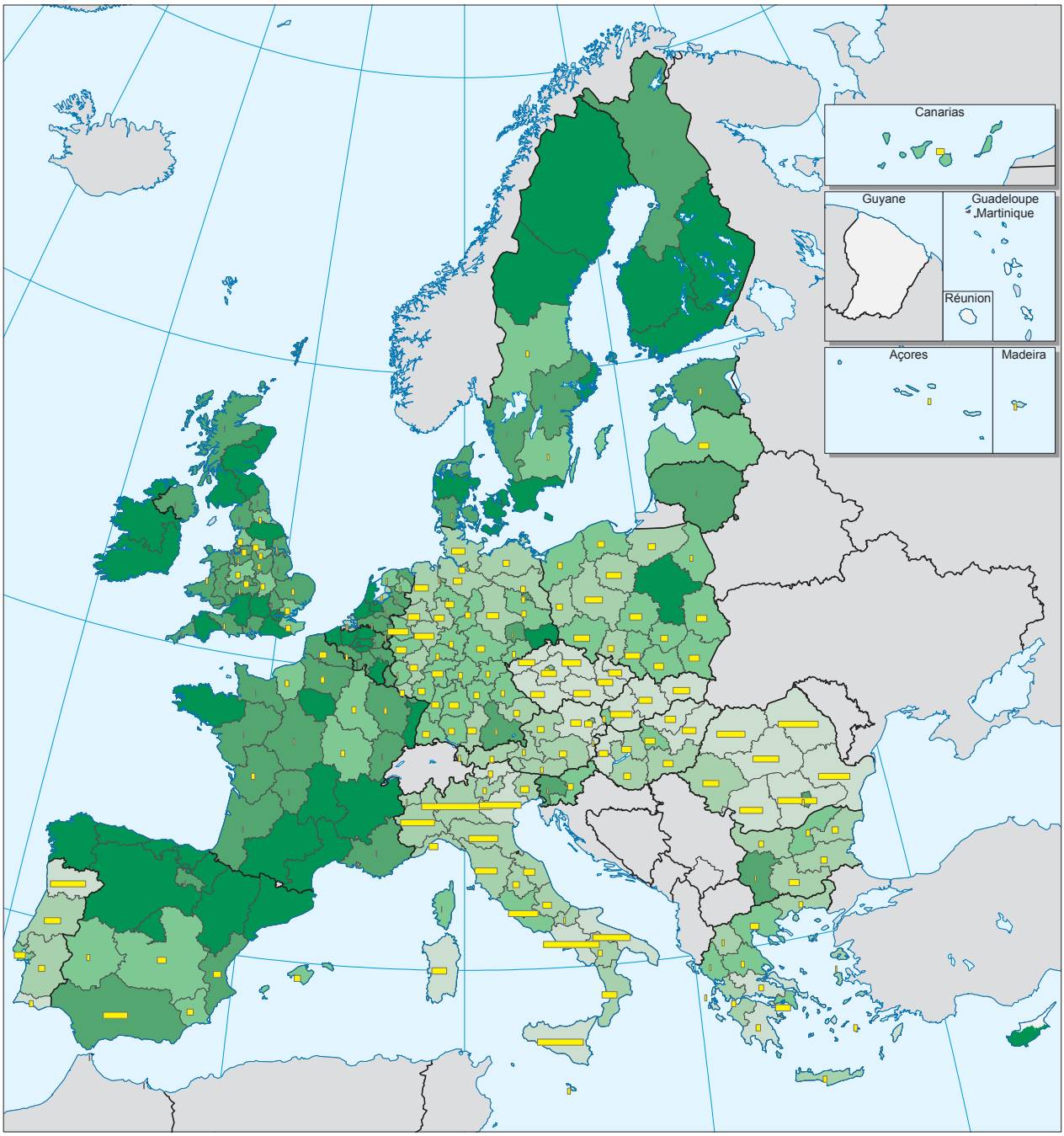
Figure 1.13 indicates the extent to which the regional variation is concealed by the national averages. For example, Belgium has a smaller average share than Ireland, but in Brussels and the surrounding two regions, the share is larger than in the capital city region of Ireland. The same holds true for 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 average[16]. 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%.

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



1.19 Population aged 30–34 with a tertiary education in 2008 and distance to Europe 2020 target

% of population aged 30–34

- < 17.5
- 17.5 - 25
- 25 - 32.5
- 32.5 - 40
- >= 40
- No Data

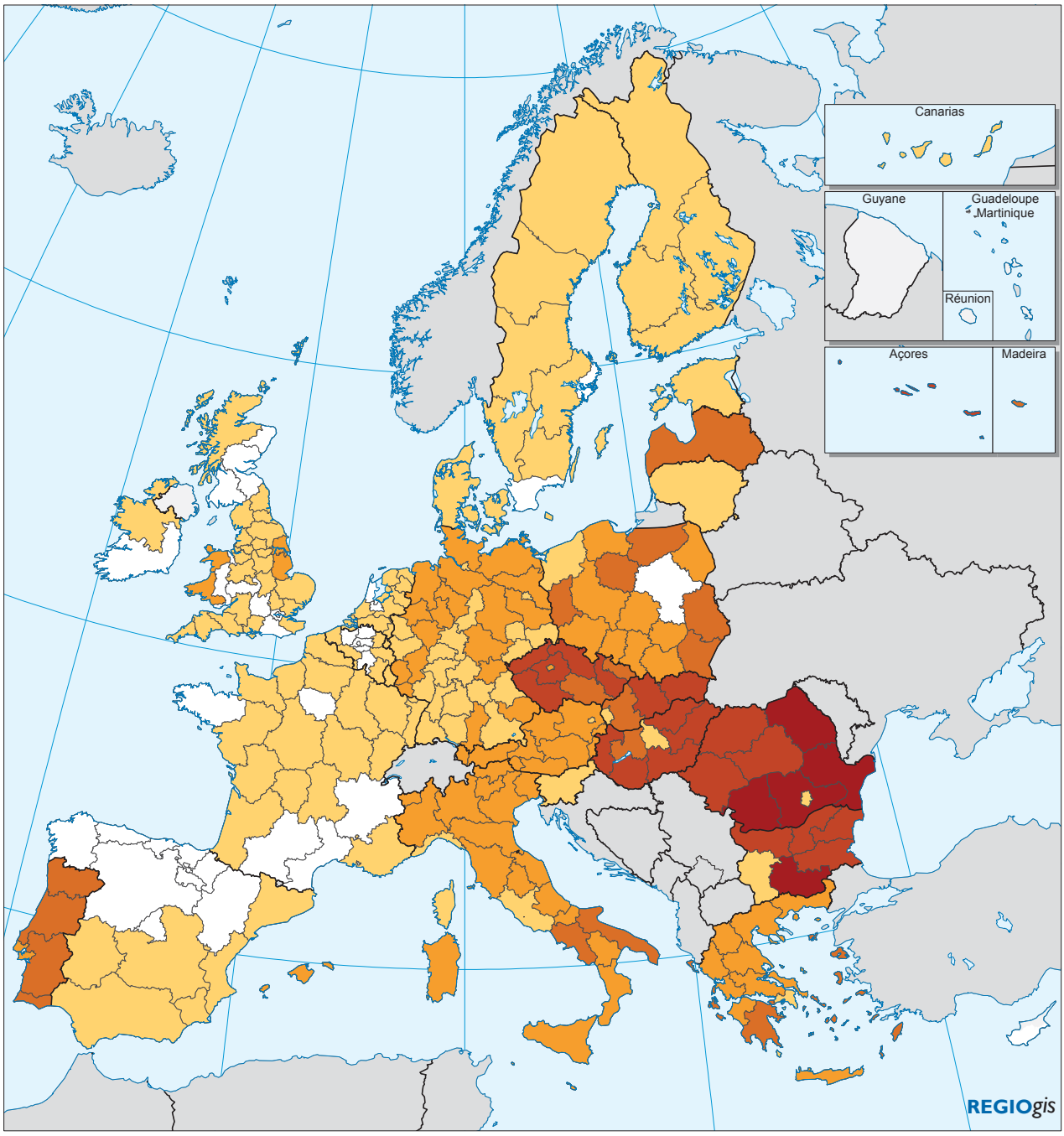
Distance to the Europe 2020 target (thousands of persons)

- 142
- 106
- 71
- 36
- 12
- 4

The Europe 2020 target for the share of population aged 30–34 with tertiary education is 40%
EU-27 = 31.1
ISCED levels 5 and 6

Source: Eurostat, DG REGIO

0 500 Km



1.20 Potential increase in GDP per head from raising the share of tertiary-educated aged 25–34 to 40%, 2007

Percentage change

- not applicable
- 0 - 5
- 5 - 10
- 10 - 15
- 15 - 25
- > 25

EU-27 = 4

Source: Eurostat, DG REGIO

0 500 Km

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 level[17] (Map 1.21).

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%[18]. 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 then 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

1.7 Potential increase in GDP per head from achieving the Europe 2020 targets for the employment rate and tertiary education, 2007

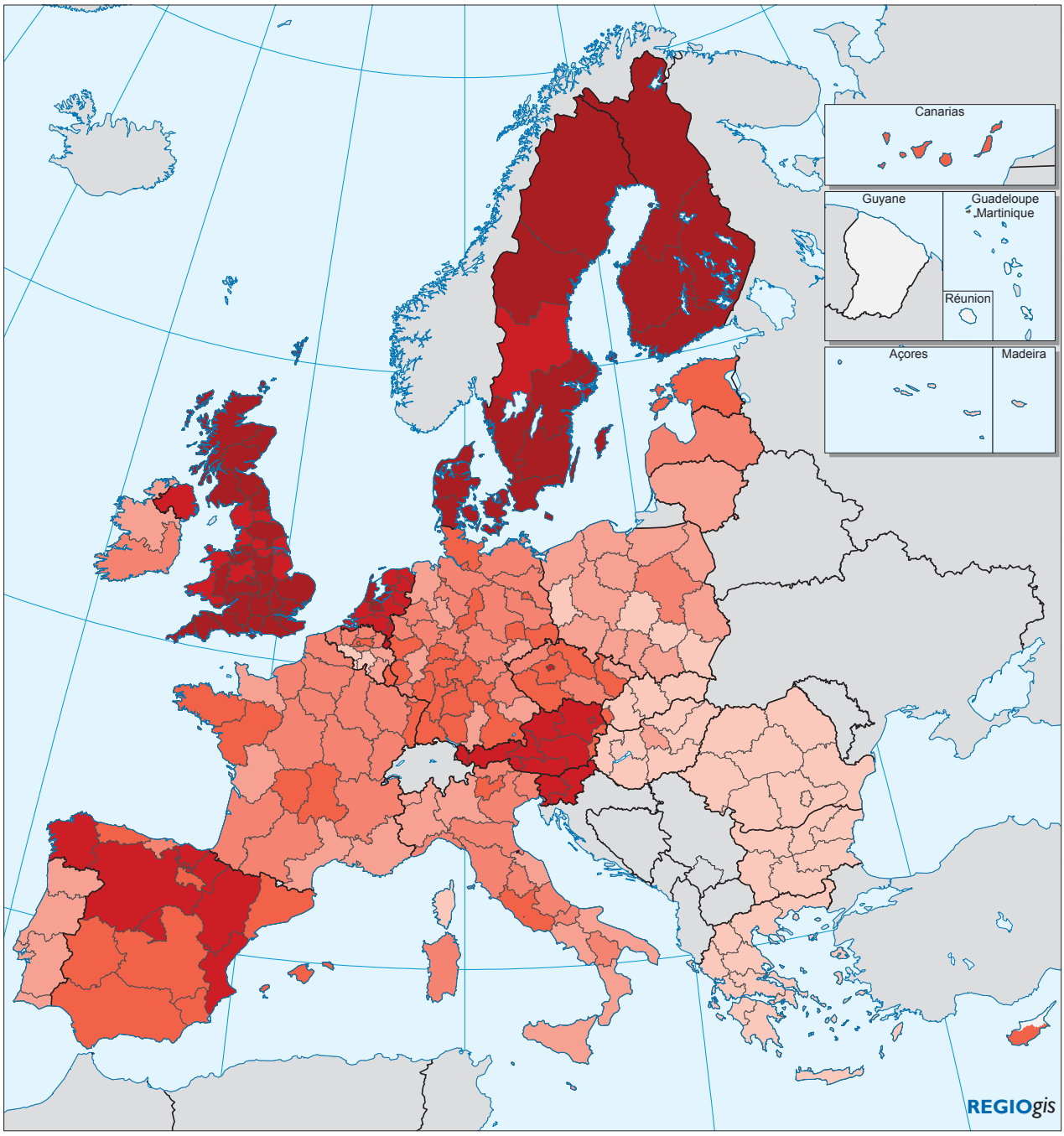
% change

		EU-27	CONV	TRANS	RCE
1	Increasing the employment rate, 20–64, to 75%	6	17	11	3
2	Increasing the share of tertiary educated population, 25–34, to 40%	4	10	4	3
3	1 and 2 simultaneously	11	29	16	6

Source: Eurostat, DG REGIO calculations

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

18 Cedefop (2010) Skills supply and demand in Europe. Medium term forecasts to 2020.



1.21 Participation of adults aged 25–64 in education and training, 2008

% of population 25–64

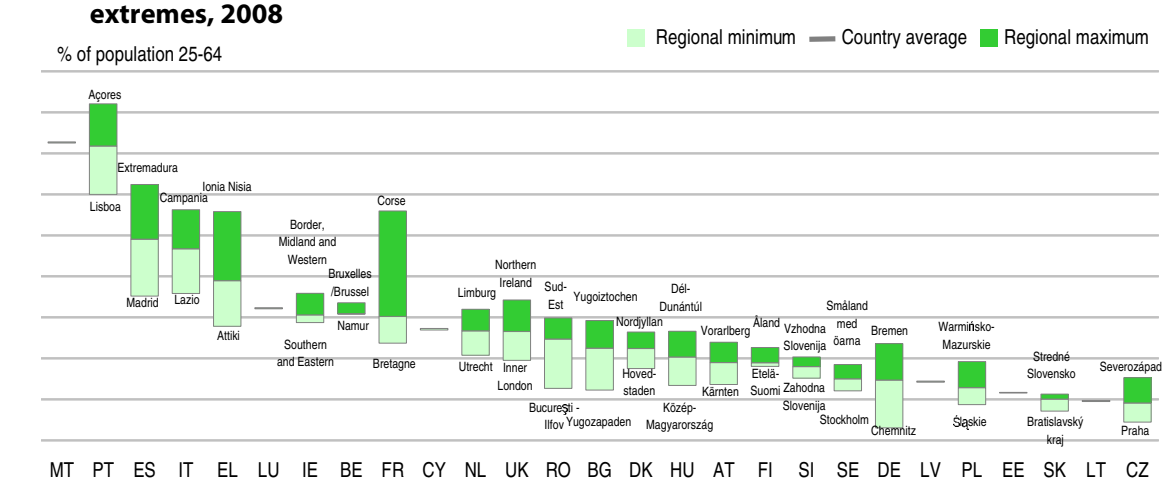
- < 4.0
- 4.0 - 6.5
- 6.5 - 8.0
- 8.0 - 11.0
- 11.0 - 18.0
- > 18.0

EU-27: 9.3

Source: Eurostat

0 500 Km

1.14 Proportion of population with only basic education by country and regional extremes, 2008



Source: Eurostat, Labour Force Survey

benefit the economy but will also contribute to better local institutions.

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. 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 73 NUTS 2 regions, around one in four, but it will require a substantial effort in many regions to achieve it, especially in Malta and the 17 regions in Spain and Portugal where the rate is still above 30% (Map 1.22).

The quality of secondary education, however, is as important as the quantity. Surveys carried out by the OECD in this regard (Map 1.23) shows that 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.

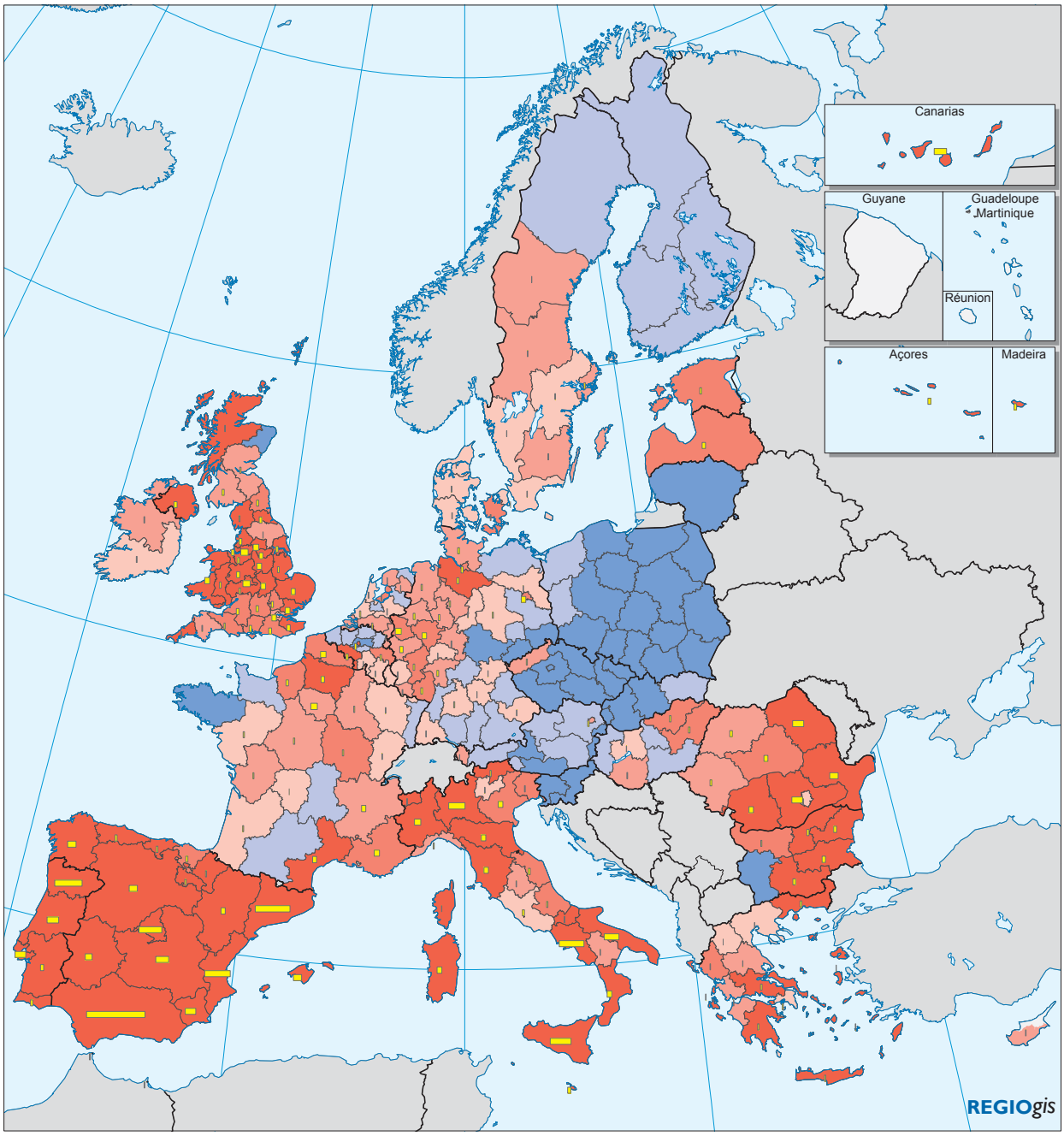
Regional innovation systems

Innovation and creativity have many sources ranging from cultural diversity and tolerance, to entrepreneurship and the creative class[19]. 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)[20], 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 aver-

19 COM(2009) 295.

20 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).



1.22 Early school leavers aged 18–24 in 2007–2009 and distance to Europe 2020 target

% of population aged 18–24

- < 8
- 8 - 10
- 10 - 12
- 12 - 14
- 14 - 16
- > 16
- No Data

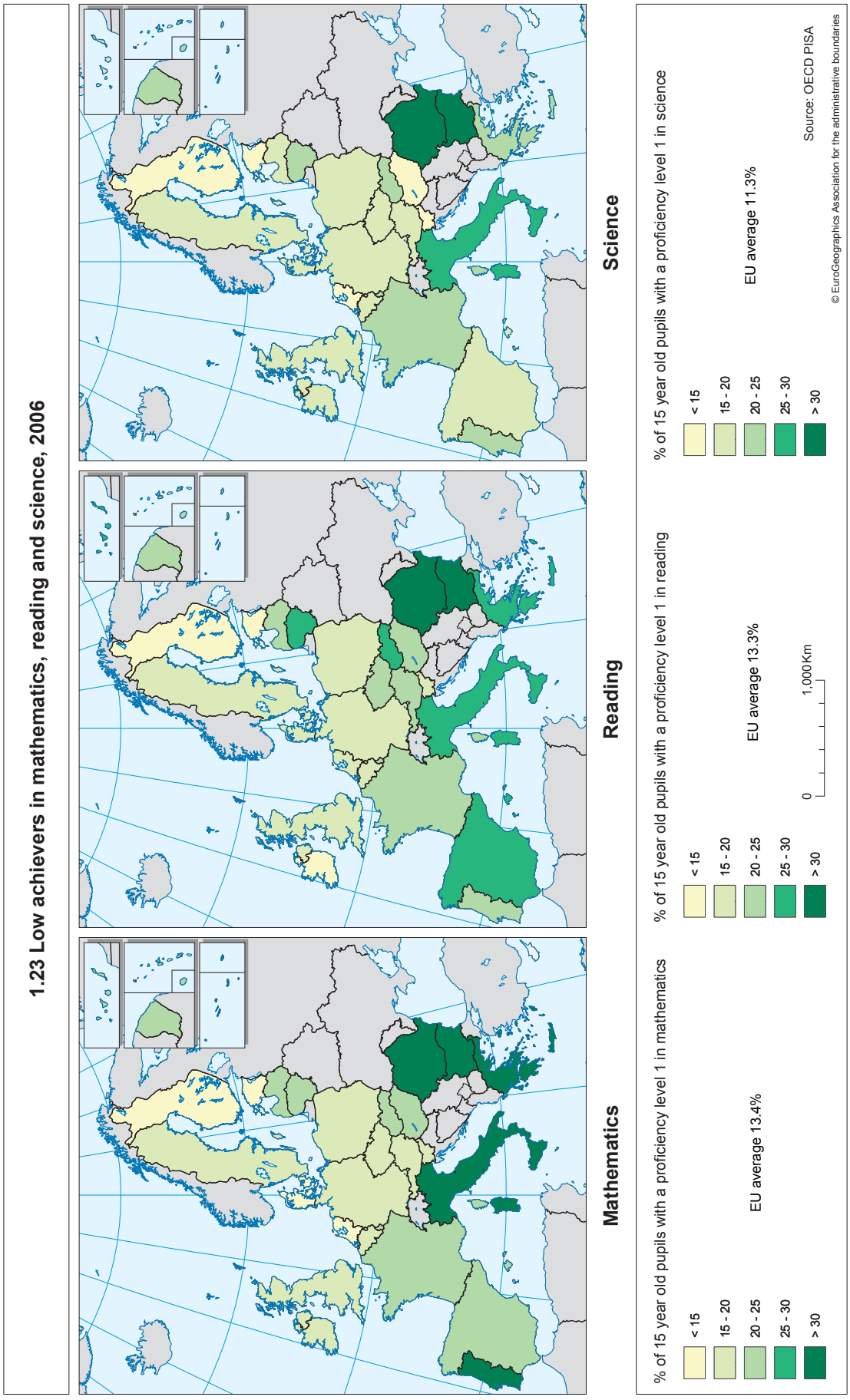
Distance to the Europe 2020 target (thousands of persons)

- 240
- 180
- 120
- 60
- 20
- 10

The Europe 2020 target for early school leavers aged 18–24 is 10%
EU-27 = 14.8

Source: Eurostat, DG REGIO

0 500 Km


1.23 Low achievers in mathematics, reading and science, 2006
Mathematics
Reading
Science
% of 15 year old pupils with a proficiency level 1 in mathematics
% of 15 year old pupils with a proficiency level 1 in reading
% of 15 year old pupils with a proficiency level 1 in science
< 15
15 - 20
20 - 25
25 - 30
> 30
EU average 13.4%
EU average 13.3%
EU average 11.3%
0
1,000Km
Source: OECD PISA
© EuroGeographics Association for the administrative boundaries

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

According to the Regional Innovation Scoreboard[21] 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.

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

21 http://www.proinno-europe.eu/page/regional-innovation-scoreboard

Factors of growth

As emphasised by the OECD[1], 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 categories[2]:

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.

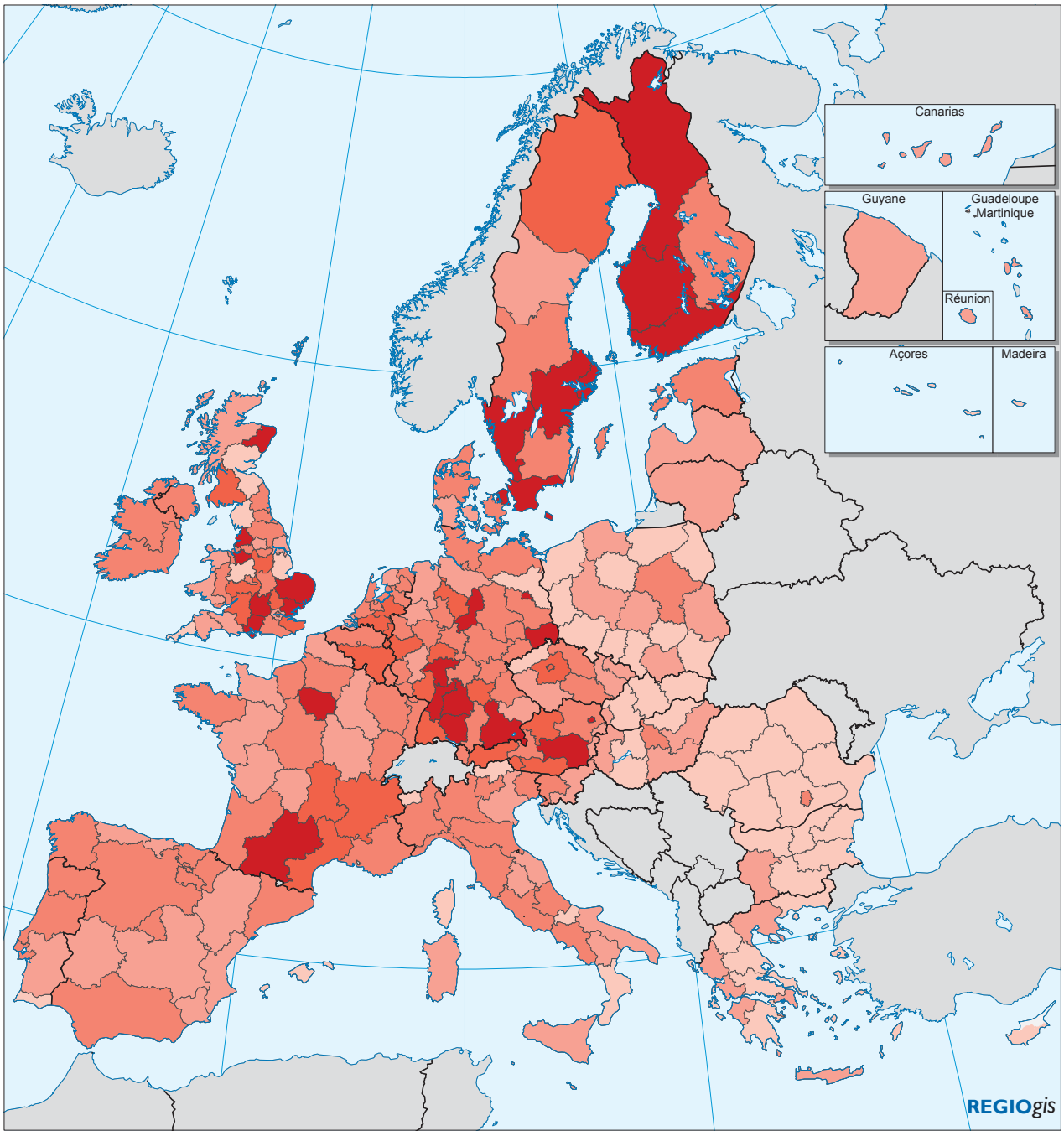
Up to date econometric techniques have been used to assess which of a large number (more than 60) of potential growth determinants included in the categories above are the most robust drivers of regional growth:

- 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 growth.

1 OECD (2009), Investing for Growth: Building Innovative Regions, Background Report for the Meeting of the Territorial Development Policy Committee at Ministerial Level.

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



1.24 Total expenditure on R&D, 2007

% of regional GDP

- < 0.5
- 0.5 - 1
- 1- 2
- 2 - 3
- >= 3

EU-27 = 1.85
EL, IT: 2005; FR: 2004; NL: 2003
The Europe 2020 R&D target is 3%

Source: Eurostat

0 500 Km

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.

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 (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.

High-tech employment

The relative number of people employed in high-tech sectors is also a measure of R&D input (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.

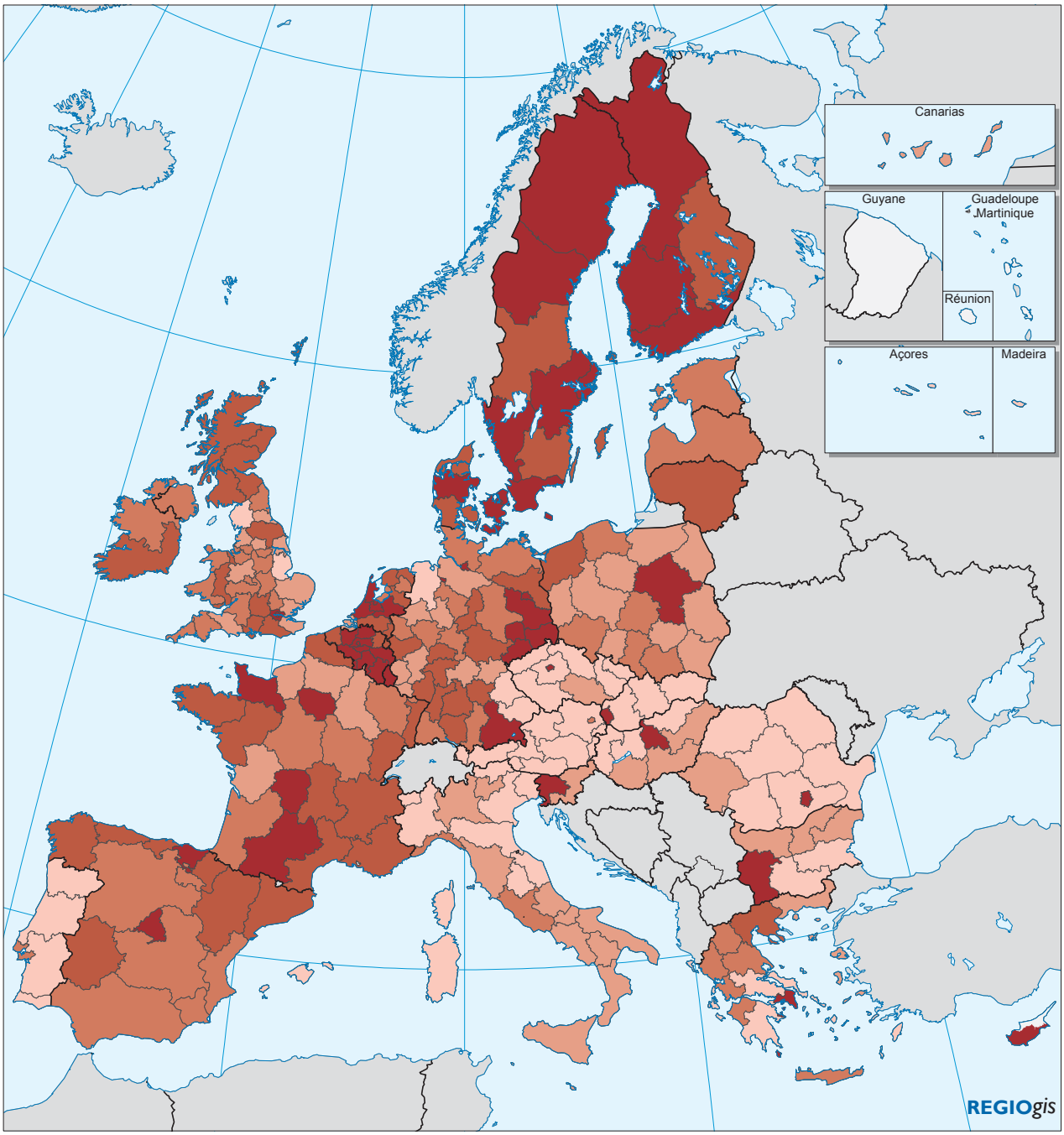
Increases in the proportion of employment in high tech sectors also occur more often in more developed regions than in lagging regions, only 3 of the 20 regions where the increase was highest between 2000 and 2007 having a GDP per head below 75% of the EU average (Vest in Romania, Západné Slovensko in 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,



1.25 Human Resources in Science and Technology (core), 2008

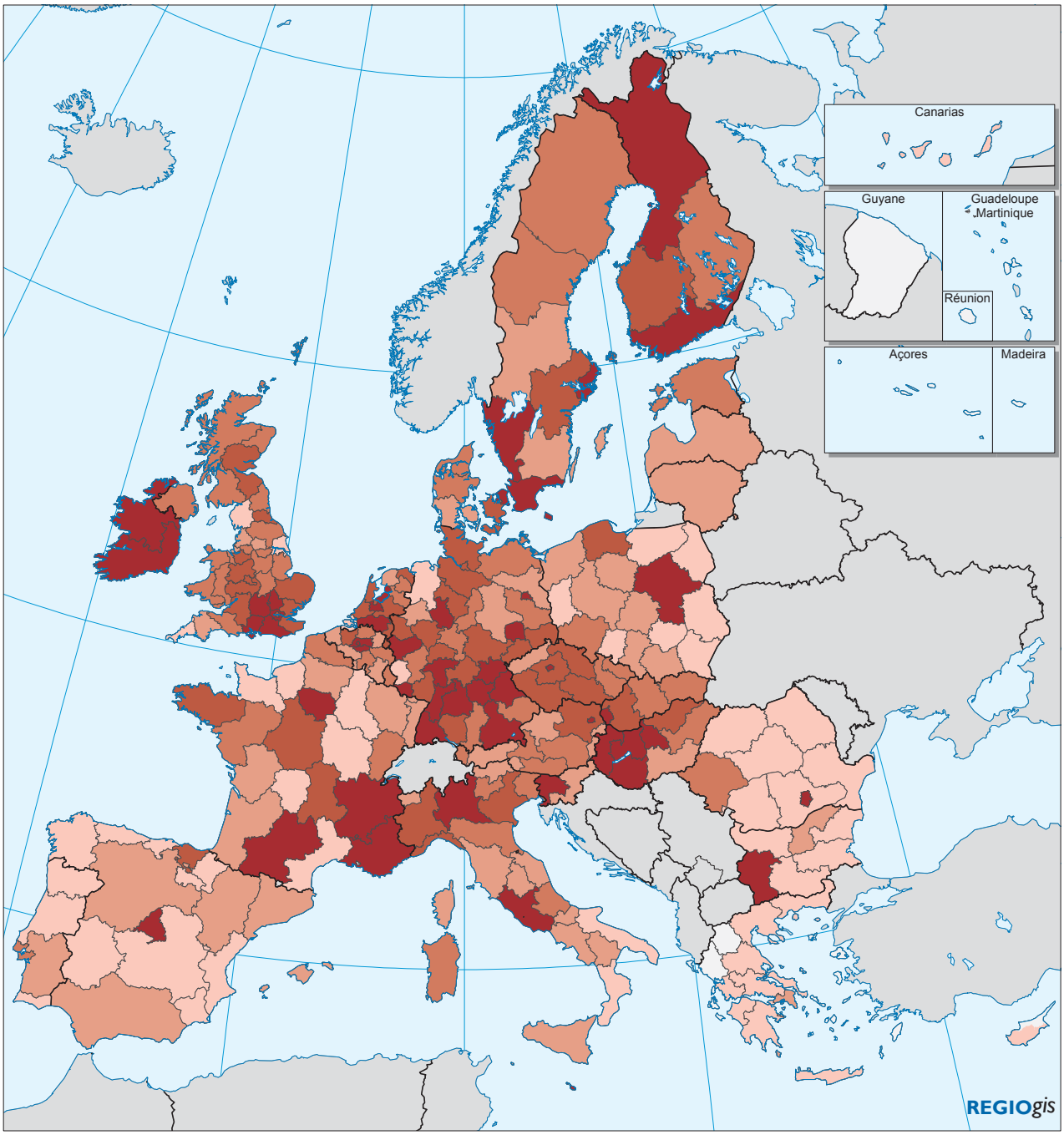
% of total employment

- < 12.5
- 12.5 - 15.3
- 15.3 - 17.8
- 17.8 - 21.0
- >= 21.0

EU-27 = 17.5
Core: people employed in a S&T occupation and having successfully completed education at the third level in a S&T field of study

Source: Eurostat

0 500 Km



1.26 Employment in high-technology sectors, 2008

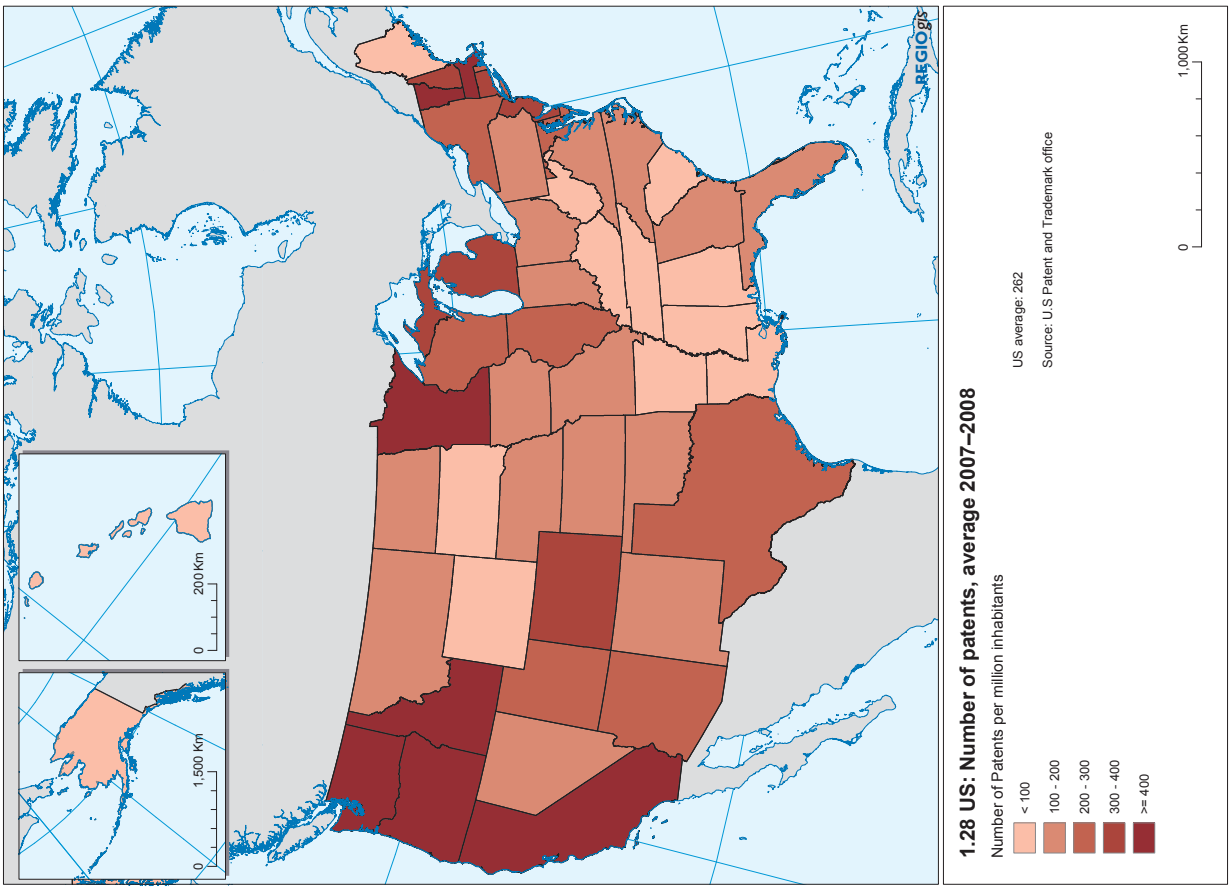
% of total employment

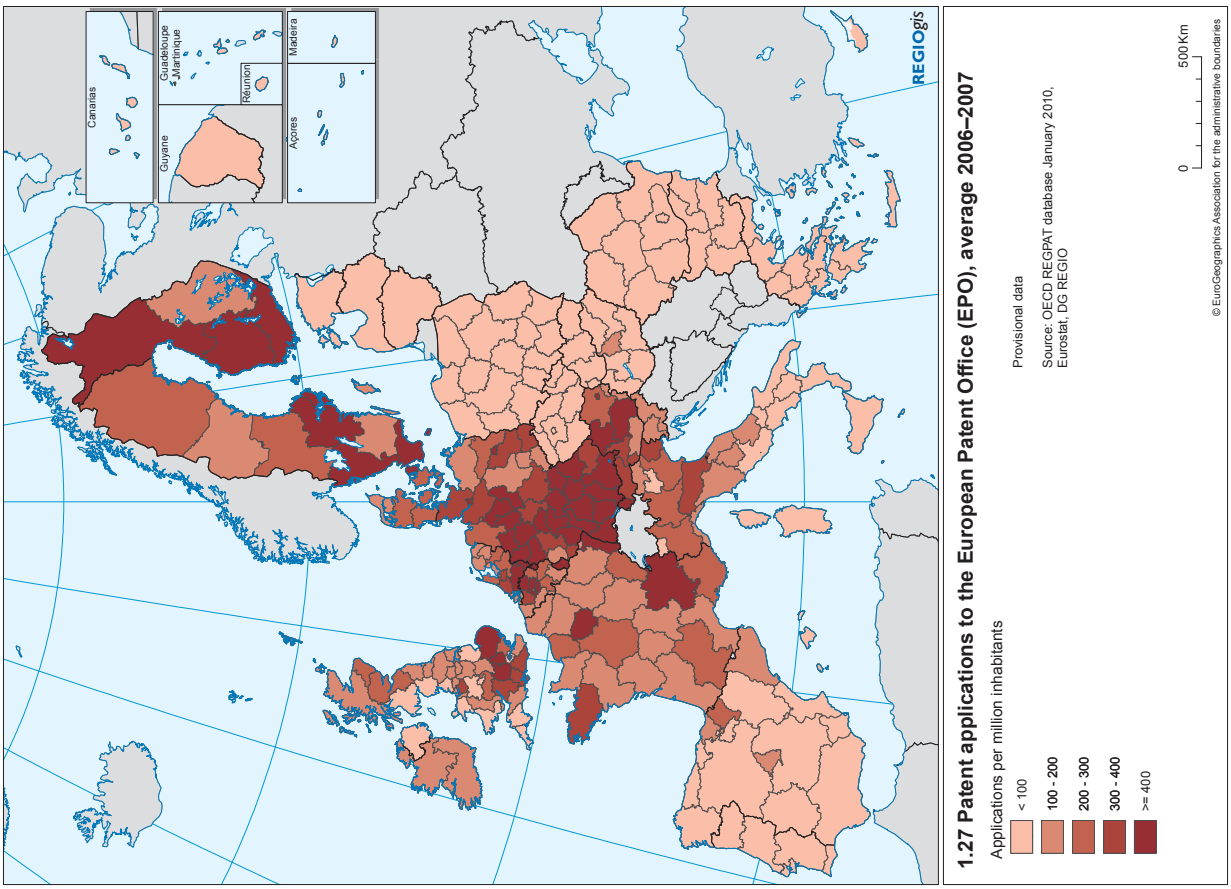
- < 2.3
- 2.3 - 3.5
- 3.5 - 4.4
- 4.4 - 5.4
- >= 5.4

EU-27 = 4.4
BG, PL, SE, SI, EU-27: 2007

Source: Eurostat

0 500 Km


REGIOGIS
200 Km
0
1,500 Km
0
1.28 US: Number of patents, average 2007–2008
Number of Patents per million inhabitants
< 100
100 - 200
200 - 300
300 - 400
>= 400
US average: 262
Source: U.S Patent and Trademark office
0
1,000Km


REGIOGIS
Canarias
Guadeloupe
Martinique
Réunion
Guyane
Açores
Madeira
1.27 Patent applications to the European Patent Office (EPO), average 2006–2007
Applications per million inhabitants
< 100
100 - 200
200 - 300
300 - 400
>= 400
Provisional data
Source: OECD REGPAT database January 2010, Eurostat, DG REGIO
0
500Km
© EuroGeographics Association for the administrative boundaries

Açores in Portugal and Ceuta and Melilla in Spain did not record any patents.

1.8 Regional innovation performance

	CONV	TRANS	RCE	EU-27
		Levels		
EPO patents applications, 2006–2007 (applications per inhabitant, Index EU-27=100)	11.3	32.7	153	100
Total R&D expenditure, 2007 (% of GDP)	0.89	0.99	2.08	1.85
Human resources in S&T, 2008 (% of total employment)	14.7	17.8	18.8	17.6
Employment in high-technology sectors, 2008 (% of total employment)	3.1	3.4	5.1	4.4
		Percentage point change		
Human resources in S&T, 2000–2008 (% of total employment)	3.9	2.8	3	3.3
Employment in high-tech sectors, 2000–2008 (% of total employment)	1.1	0.5	-0.2	0.3

Source: Eurostat

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 EIS[22]. It covers 201 regions (Map 1.29) at various geographical levels according to data availability[23].

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.

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.

Productivity

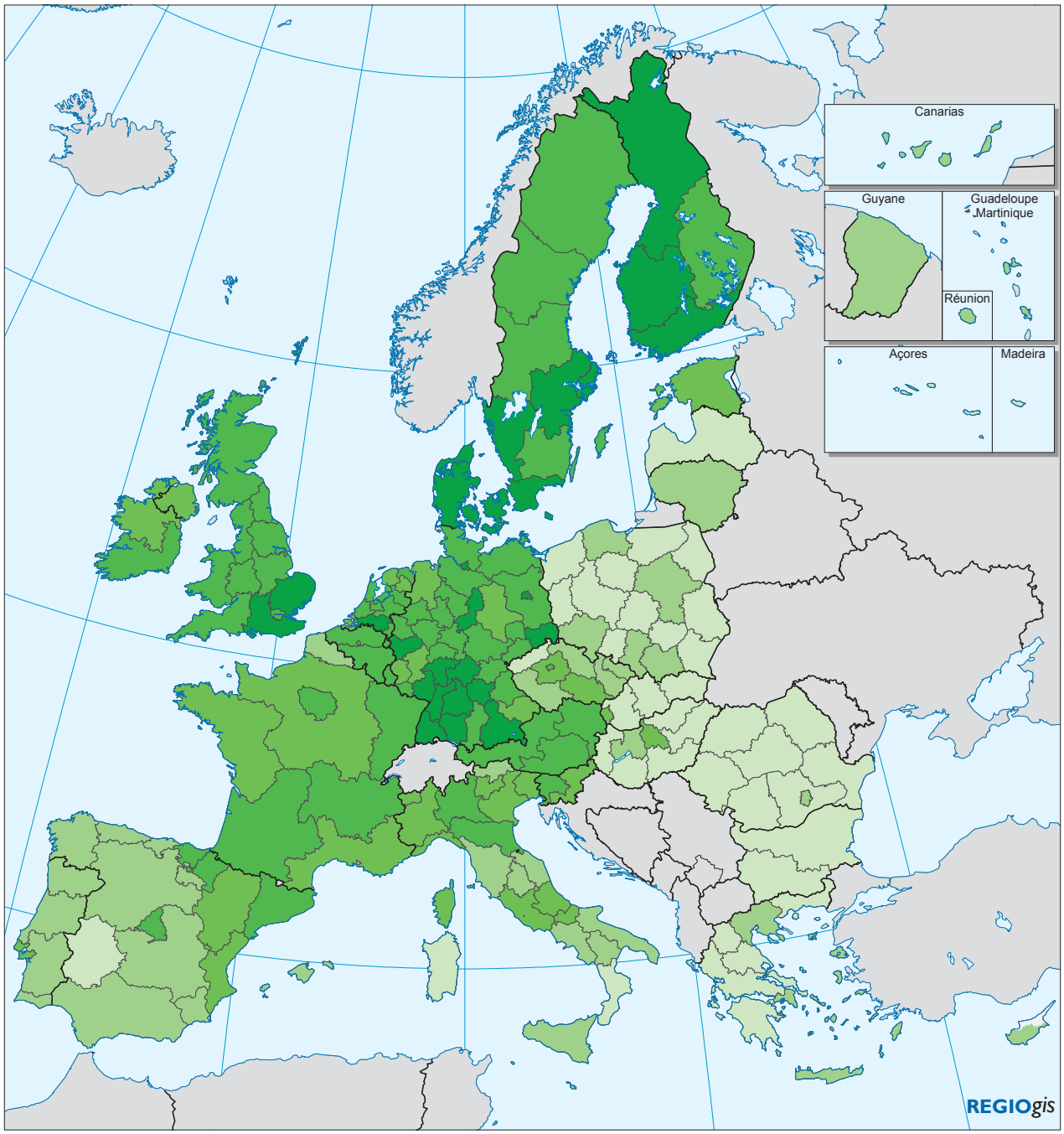
Although the indicators described above are helpful in measuring regional innovation performance, they also have serious limitations[24]. In particular, they fail in the main to capture some important inputs into the innovation process, such as product design, market analysis, training of employees or 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 organisa-

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

23 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 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.

24 See for instance: Kleinkecht, A., Van Monfort, K. and Brouwer, E. (2002),The non-Trivial Choice Between Innovation Indicators, Economics of Innovation and New Technology, Volume 11, Issue 2, pp. 109–121.

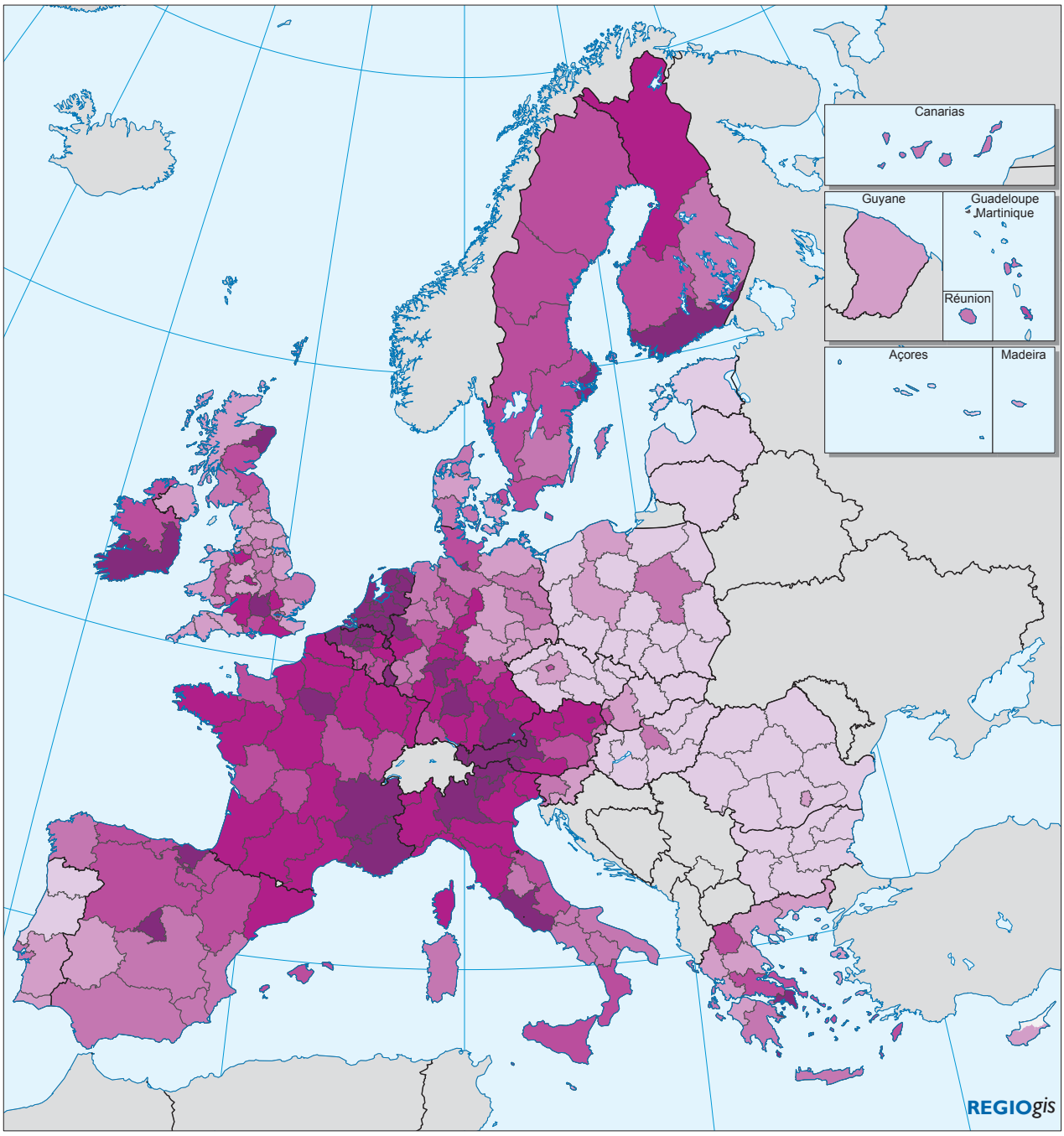


1.29 Regional Innovation Performance Index, 2006

Low innovation performance
Medium - Low innovation performance
Average innovation performance
Medium - High innovation performance
High innovation performance

Source: DG Enterprise, MERIT

0 500 Km



1.30 Labour productivity in industry and services, 2007

GVA per person employed in industry and services. EU-27 = 100

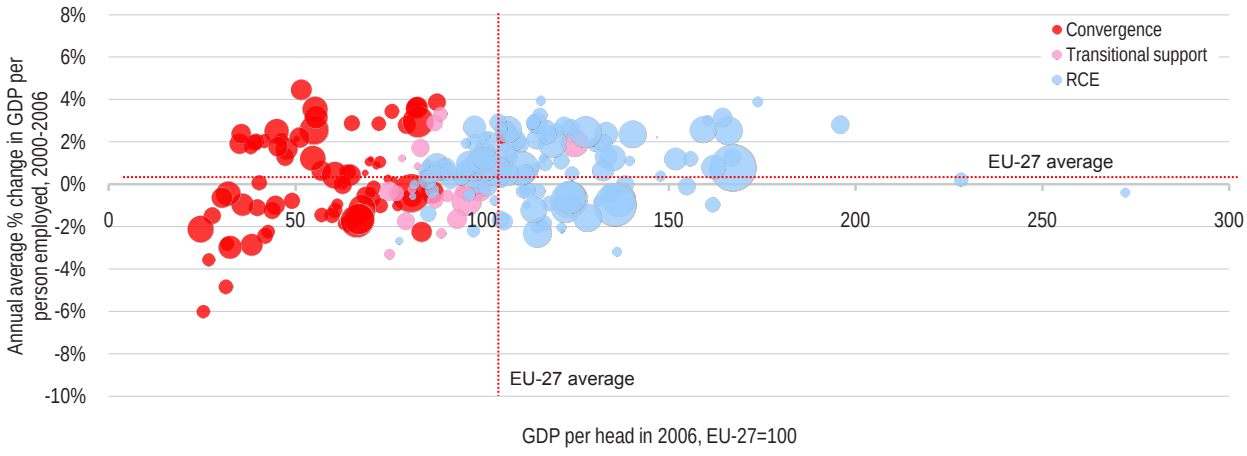
- < 67.8
- 67.8 - 88.1
- 88.1 - 98.1
- 98.1 - 103.9
- 103.9 - 111.5
- >= 111.5

UKN0: 2005

Source: Eurostat

0 500 Km

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



Source: Eurostat

1.9 Labour productivity in industry and services, 2007

	CONV	TRANS	RCE	EU-27
GDP per person employed in PPS, 2007	65	97.6	115.9	100
Annual average % change, 2000–2007	3.5	1.3	1.2	1.9

Source: Eurostat, DG REGIO calculation

tion. 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.

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.

This underlines the fact that a broad definition of innovation[25] 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).

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.

25 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'.

Regions matter for innovation policy[1]

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.

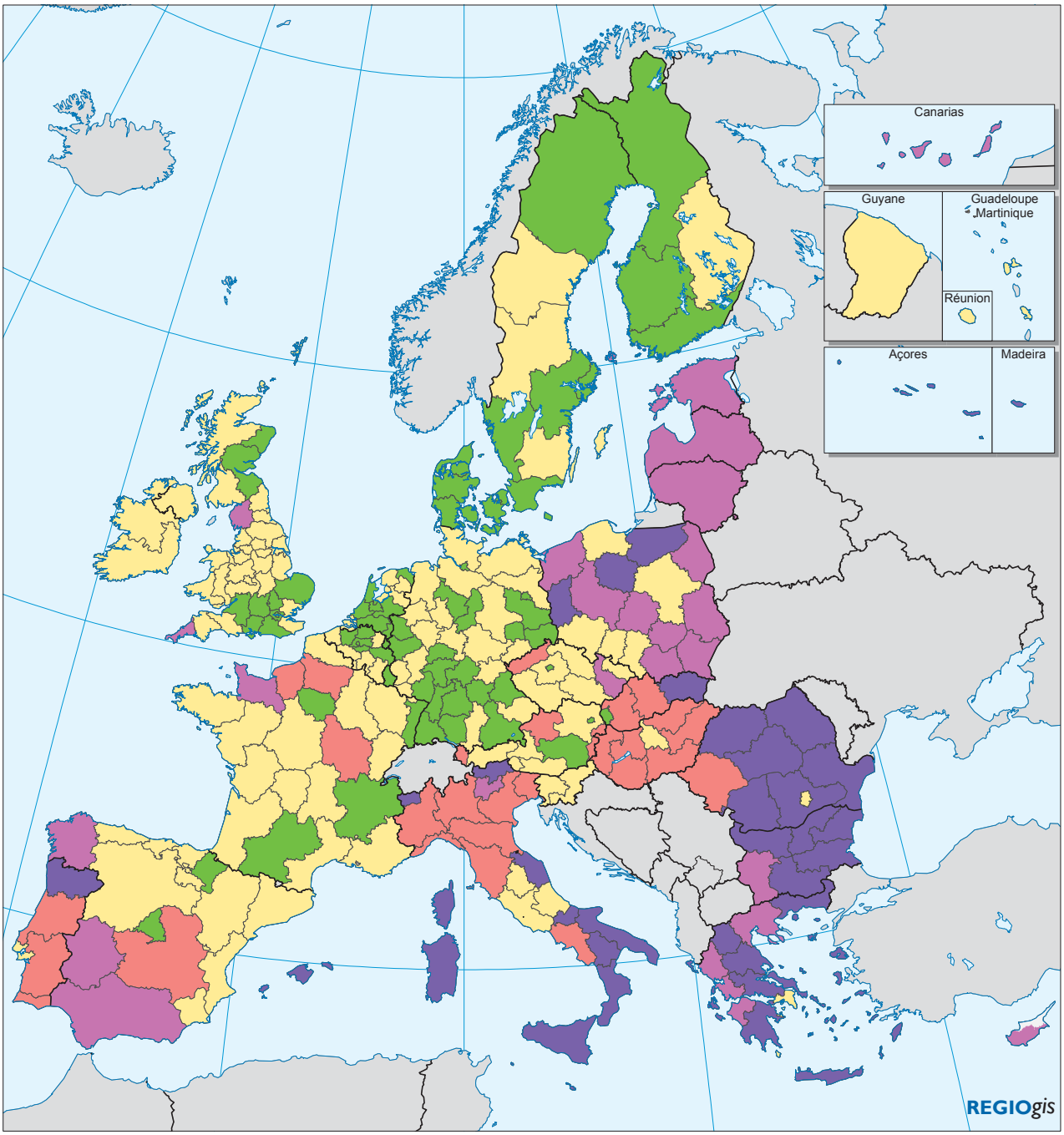
Many innovations, however, occur without R&D. The share of firms with new-to-market products that did not invest in R&D is at least 30% in several countries, such as Austria, the Czech Republic, Ireland, and Luxembourg. Other analysis estimates that 52% of innovating firms do not perform R&D for their innovations[2]. 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.

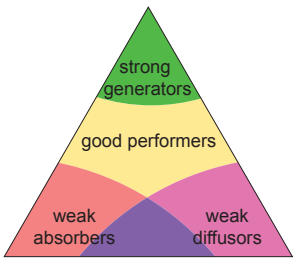
Regional governments in the OECD are also determining their own innovation policies. On average, 64% of all capital expenditure in OECD countries comes from regional or local governments. Comparable budget information at this level for investment and spending in innovation does not yet exist, but according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

2 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



1.31 Regional innovation potential, 2008



Source: Eurostat, CWTS, OECD, JRC, DG REGIO

0 500 Km

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).

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 study[26]. 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.

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 growth[27].

Transport

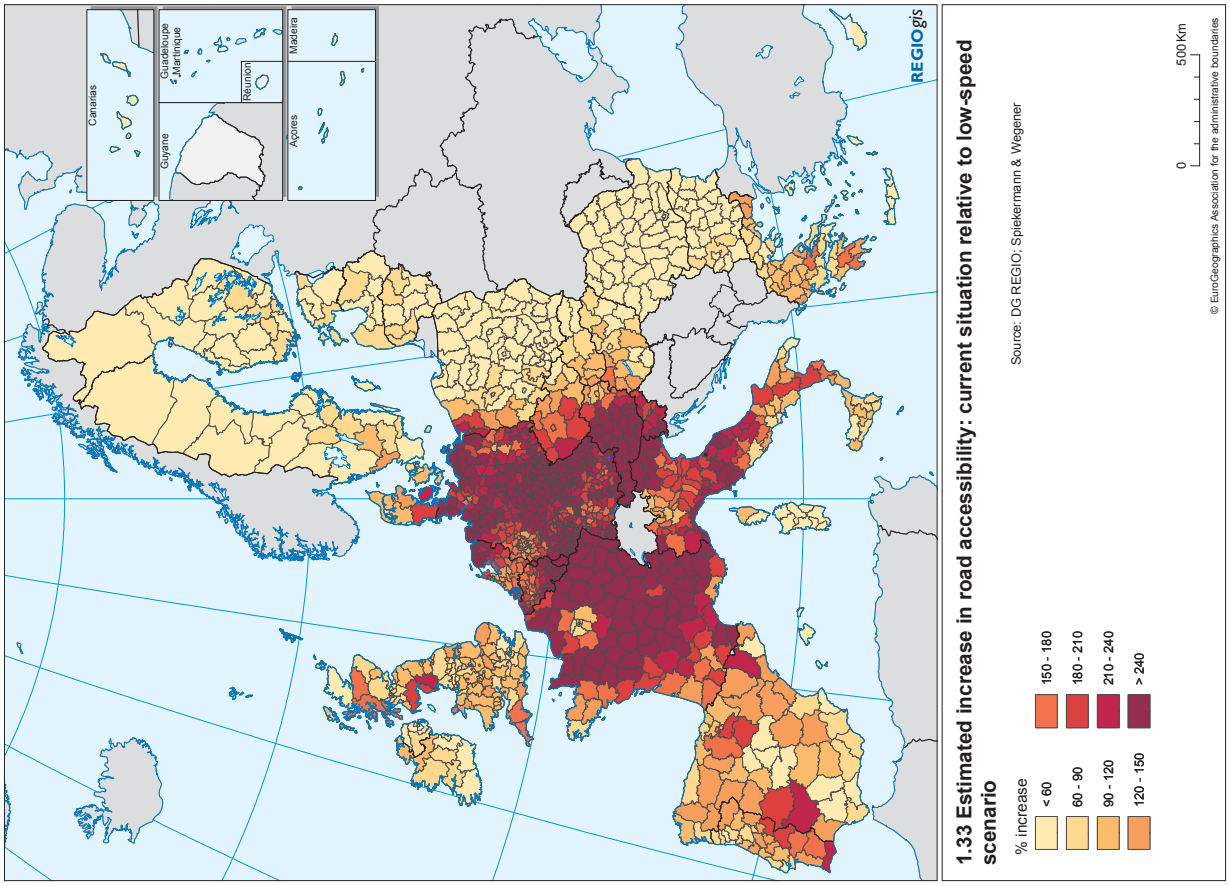
A good transport system is important for regional economic development. It reduces journey times and, accordingly, production costs, so increasing competitiveness. It improves access to markets for consumers, workers and business and is an important aspect of the attractiveness of a region for investors.

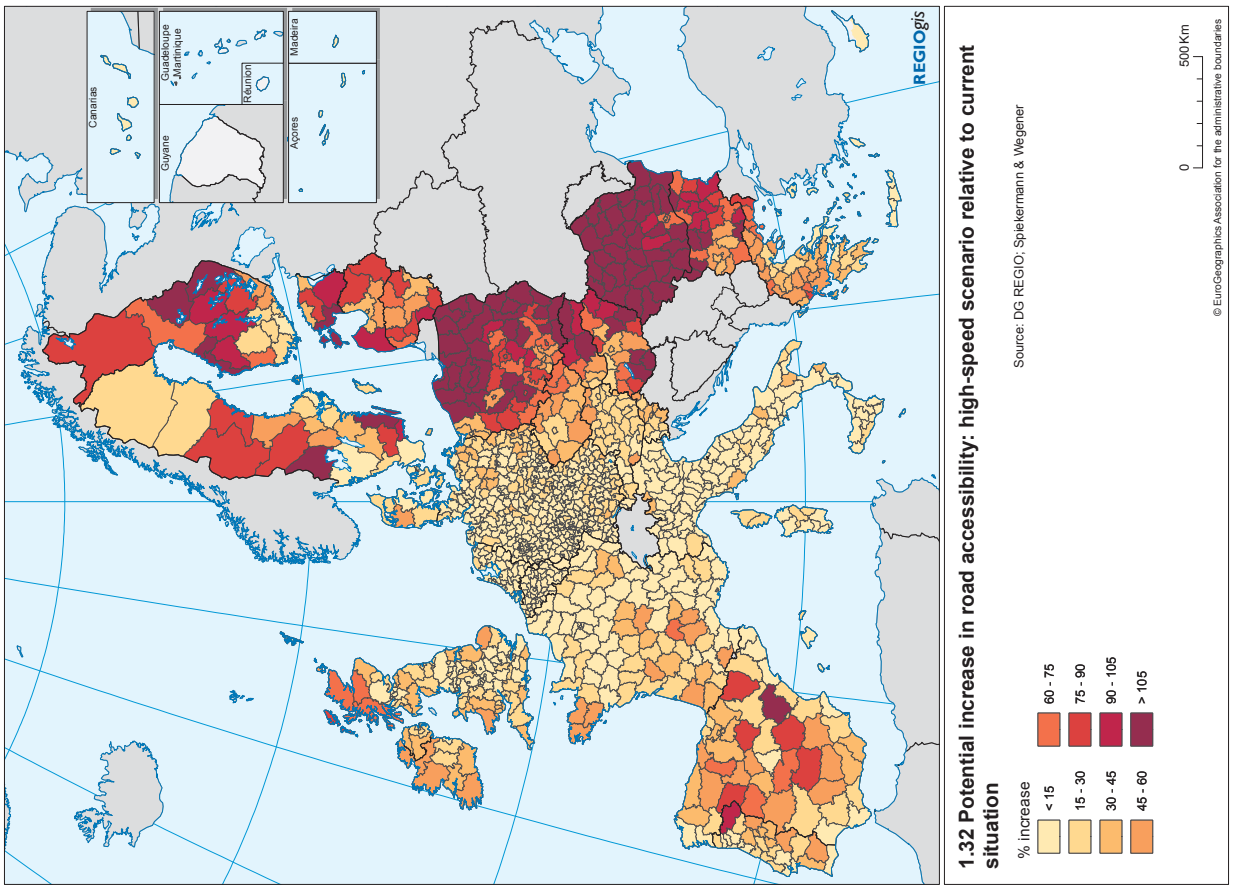
However, a good transport system in itself is not sufficient to ensure regional development. The effect of investment in transport and other infrastructure on economic performance also depends on the region's capacity to use it efficiently, as well as on investment in other factors important for development, 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

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

27 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.


Canarias
Guadeloupe
Martinique
Réunion
Guyane
Açores
Madeira
REGIOgis
1.33 Estimated increase in road accessibility: current situation relative to low-speed scenario
Source: DG REGIO; Spiekermann & Wegener
% increase
< 60
60 - 90
90 - 120
120 - 150
150 - 180
180 - 210
210 - 240
> 240
0
500 Km
© EuroGeographics Association for the administrative boundaries


Canarias
Guadeloupe
Martinique
Réunion
Guyane
Açores
Madeira
REGIOgis
1.32 Potential increase in road accessibility: high-speed scenario relative to current situation
Source: DG REGIO; Spiekermann & Wegener
% increase
< 15
15 - 30
30 - 45
45 - 60
60 - 75
75 - 90
90 - 105
> 105
0
500 Km
© EuroGeographics Association for the administrative boundaries

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 motorways[28] 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.

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.

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 scenarios[29] (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 scenario[30]. 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.

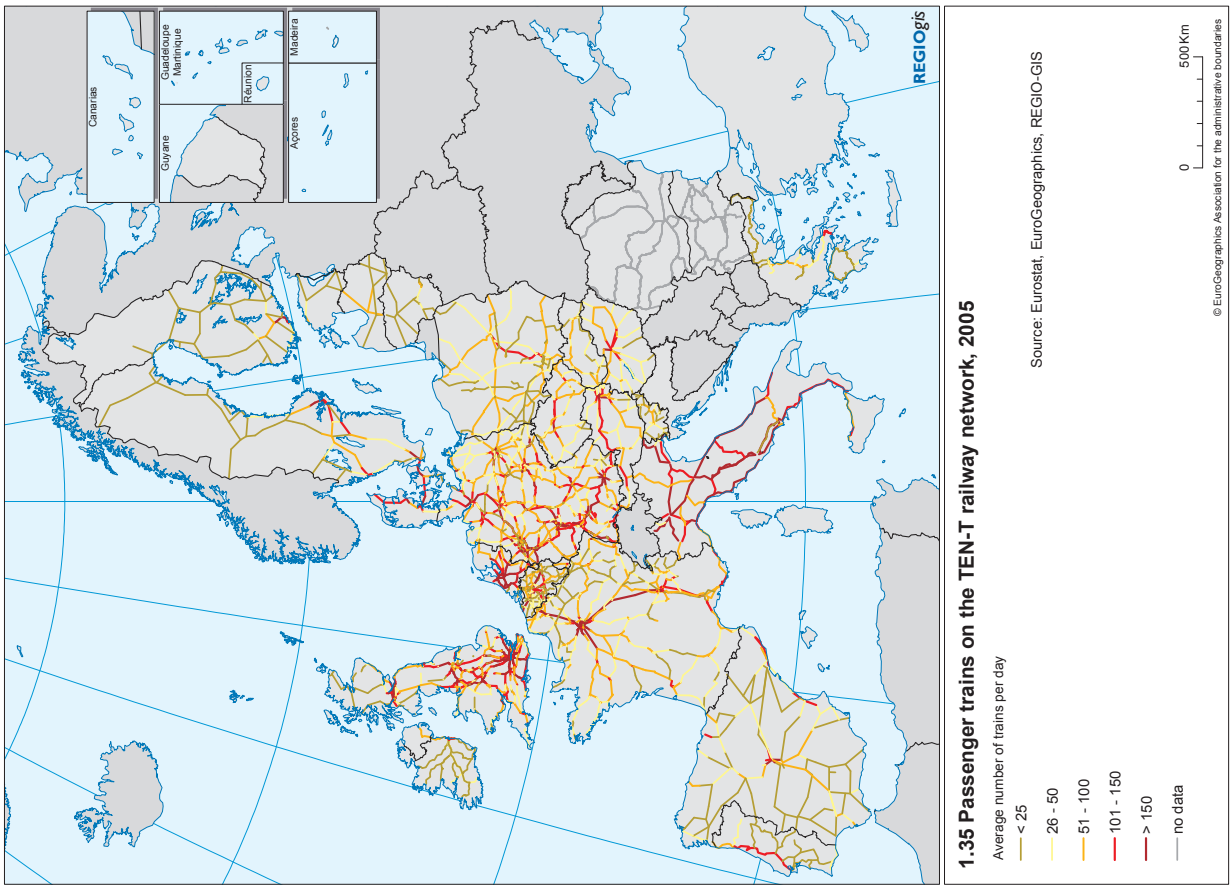
In the EU-15, substantial potential benefits are also identified, in particular, through better links between regions inside countries, notably Spain and Germany, so enabling development to spread out from the major centres to smaller cities. In the EU-12, inter-regional connections are mostly missing,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

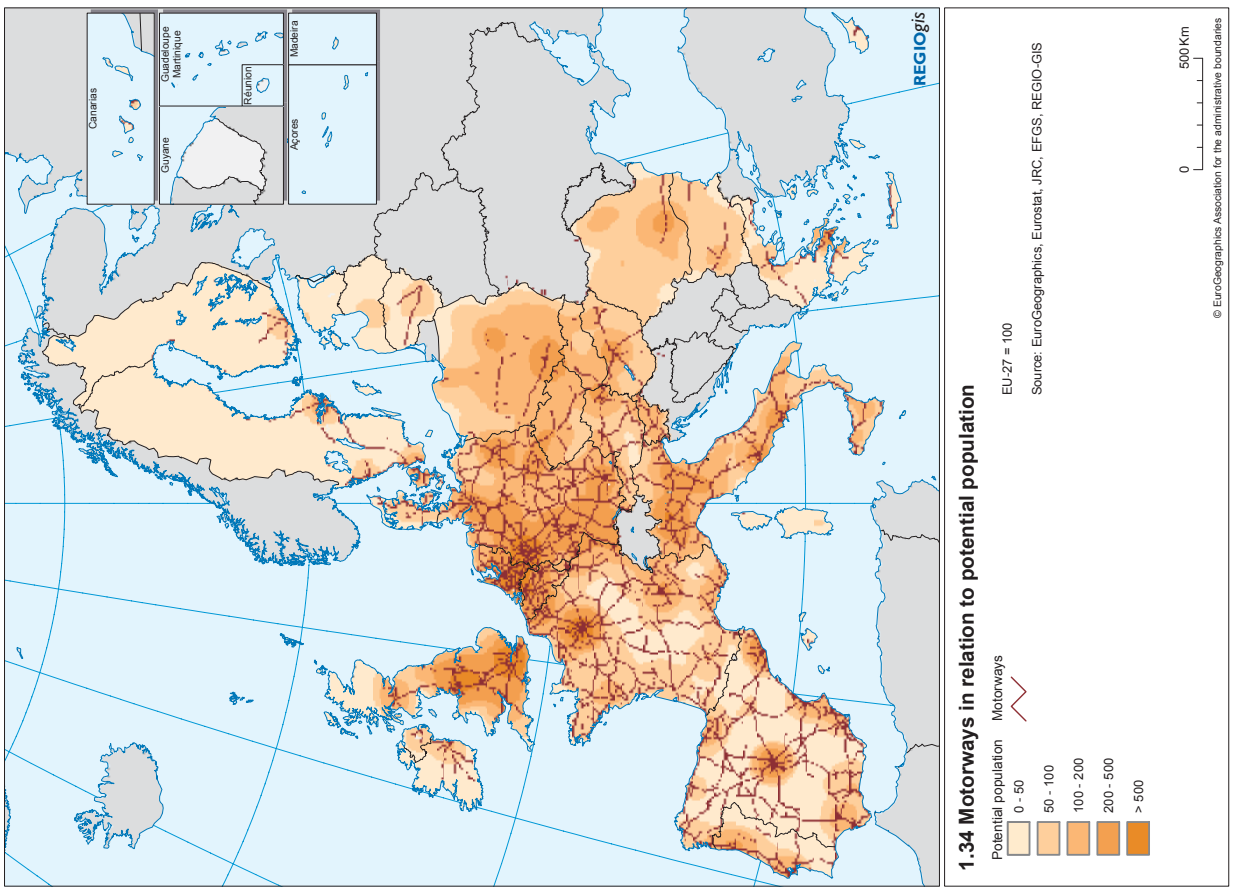
Regional disparities are less as regards railways, at least in terms of the density of track, though not of its efficiency (Map 1.35). Some 37% of Convergence regions have a density of railways which is less than half

28 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.

29 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.

30 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.


Canarias
Guadeloupe
Martinique
Réunion
Guyane
Açores
Madeira
REGIOgis
1.35 Passenger trains on the TEN-T railway network, 2005
Average number of trains per day
< 25
26 - 50
51 - 100
101 - 150
> 150
no data
Source: Eurostat, EuroGeographics, REGIO-GIS
0
500 Km
© EuroGeographics Association for the administrative boundaries


Canarias
Guadeloupe
Martinique
Réunion
Guyane
Açores
Madeira
REGIOgis
1.34 Motorways in relation to potential population
Potential population
Motorways
0 - 50
50 - 100
100 - 200
200 - 500
> 500
EU-27 = 100
Source: EuroGeographics, Eurostat, JRC, EFGS, REGIO-GIS
0
500 Km
© EuroGeographics Association for the administrative boundaries

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.

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 scenario[31] 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.

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.

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 report[32], the average national coverage of DSL networks[33] 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 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 2020[34] strategy and the EU Digital Agenda[35] 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

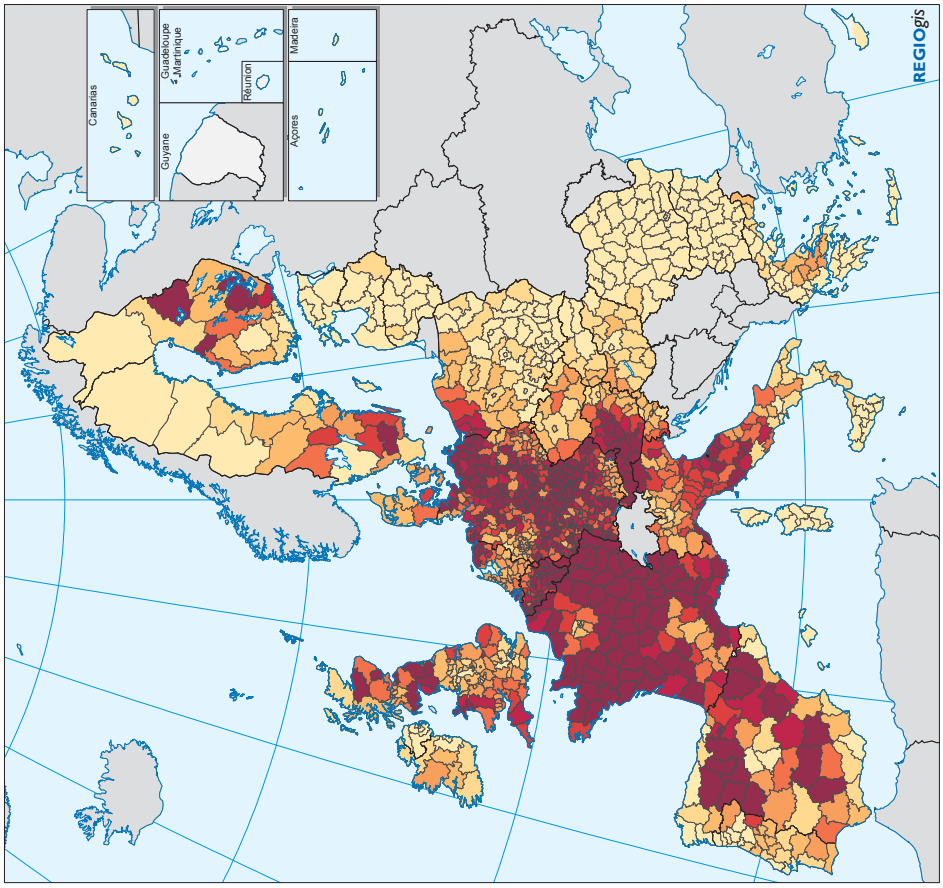
31 The high speed scenario does not consider whether in practice all the railway links can be improved to accommodate higher speeds, which may be very difficult to do, particularly in mountainous regions. Accordingly, the increases in accessibility of regions like Corsica or the regions in the Massif 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.

32 European Commission, Europe's Digital Competitiveness Report, Main achievements of the i2010 strategy 2005–2009, 2010.

33 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.

34 COM(2010) 2020.

35 COM(2010) 245.



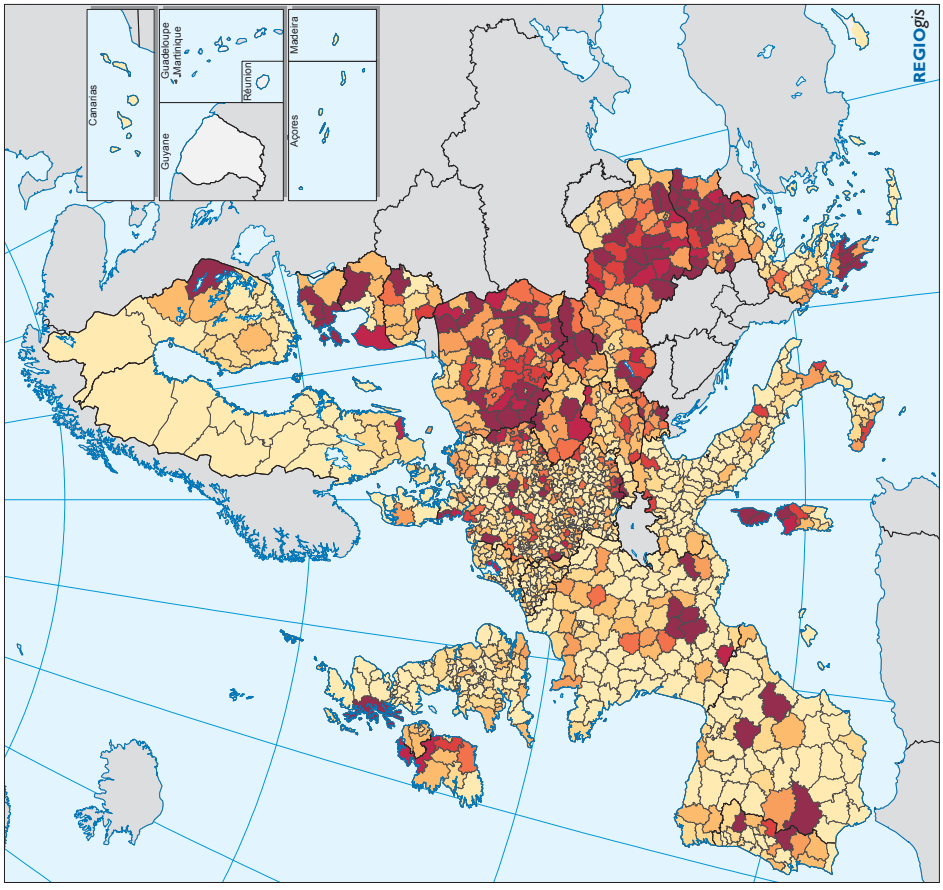
1.36 Potential increase in rail accessibility: high-speed scenario relative to current situation

Source: DG REGIO; Spiekermann & Wegener

% increase
< 30
30 - 45
45 - 60
60 - 70
70 - 80
80 - 90
90 - 100
> 100

0 500 Km

© EuroGeographics Association for the administrative boundaries



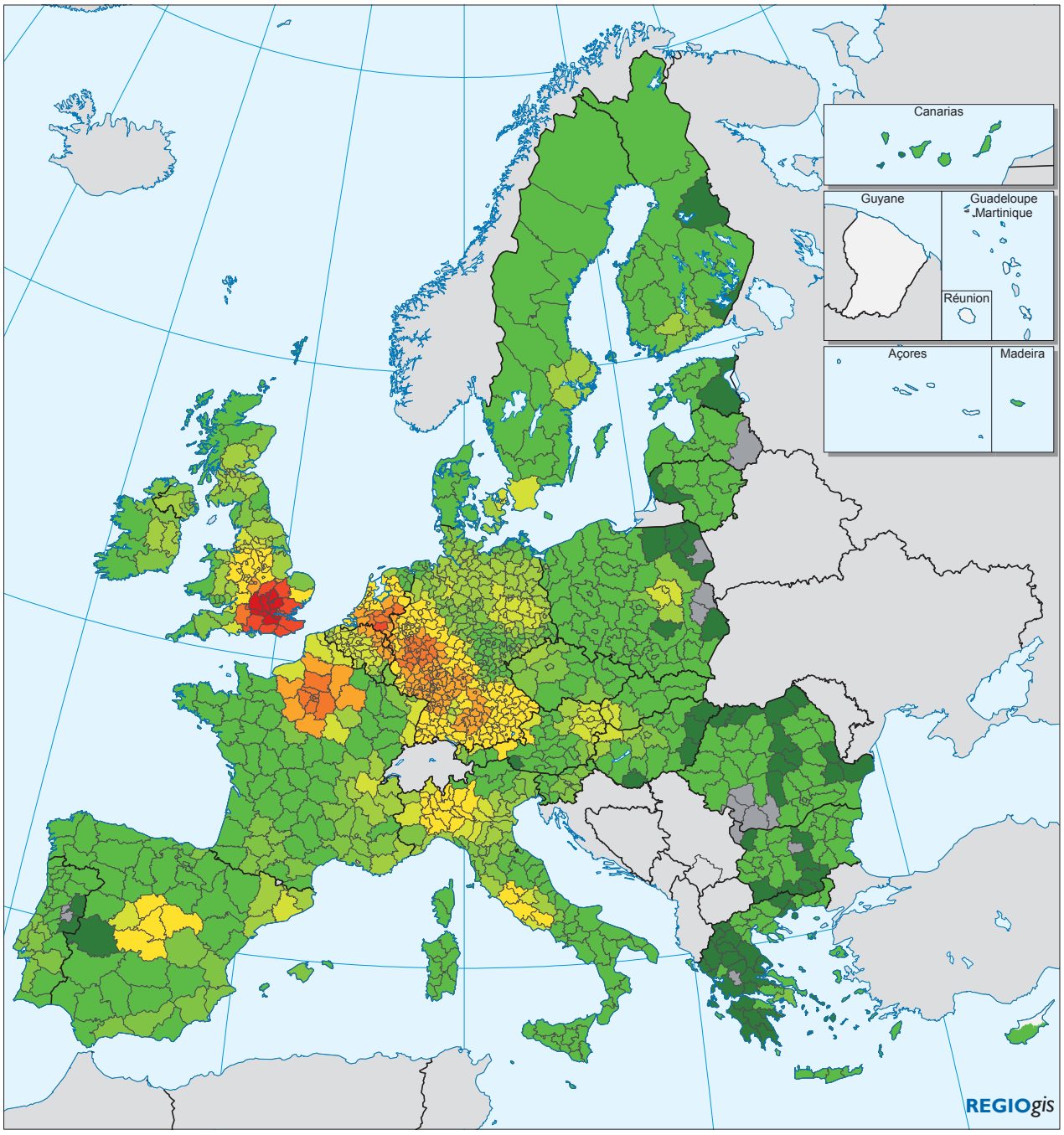
1.37 Estimated increase in rail accessibility: current situation relative to low-speed scenario

Source: DG REGIO; Spiekermann & Wegener

% increase
< 60
60 - 90
90 - 120
120 - 150
150 - 180
180 - 210
210 - 240
> 240

0 500 Km

© EuroGeographics Association for the administrative boundaries



1.38 Accessibility to passenger flights, 2008

Number of passenger flights per day

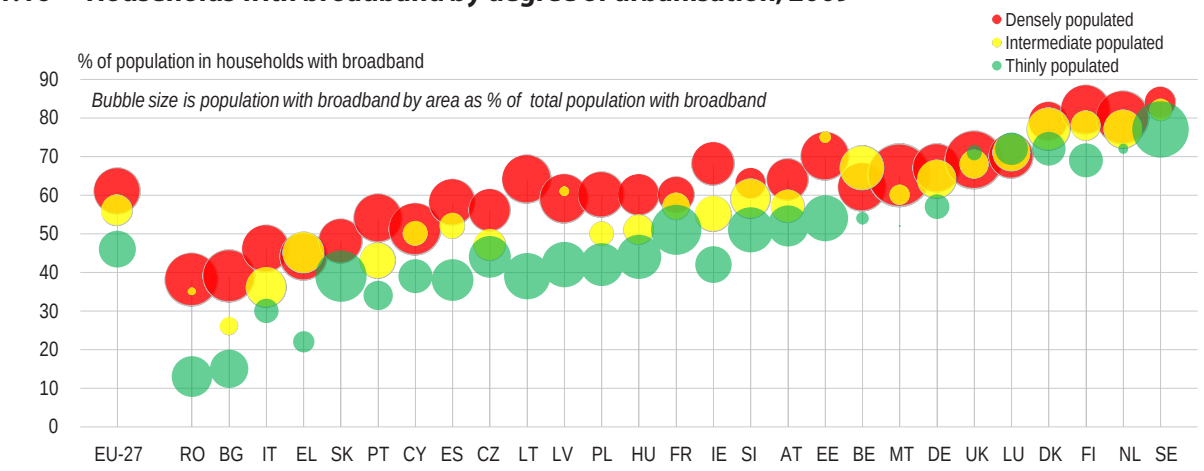
- travel time to nearest airport > 90min.
- 0 - 10
- 10 - 250
- 250 - 500
- 500 - 750
- 750 - 1000
- 1000 - 1500
- 1500 - 2000
- 2000 - 2500
- 2500 - 3000
- > 3000
- no data

Population-weighted average number of flights

Source: Eurostat, EuroGeographics, JRC, EFGS, REGIO-GIS

0 500 Km

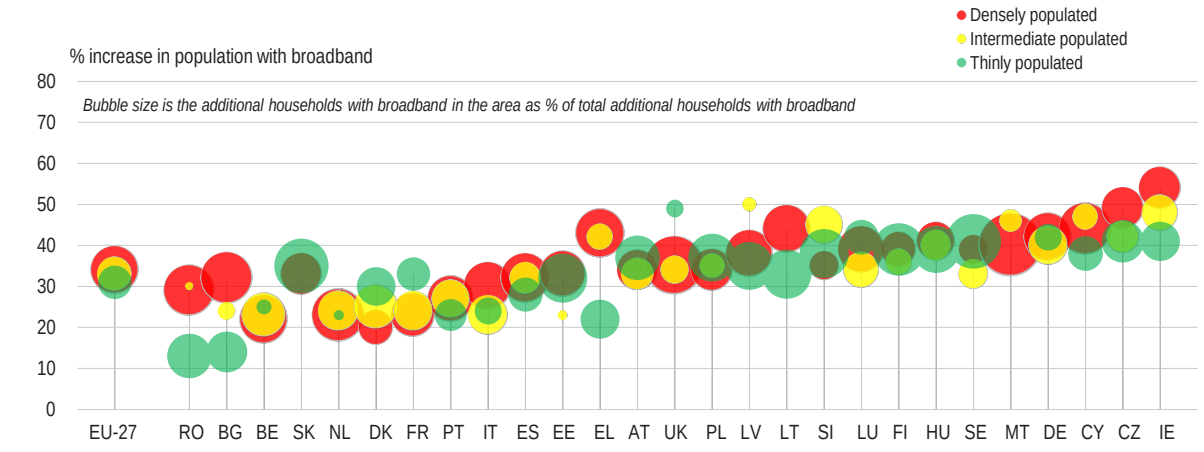
1.16 Households with broadband by degree of urbanisation, 2009



Note: Countries ranked by share of population with access to broadband

Source: Eurostat, EU-SILC

1.17 Increase in household broadband connections, 2005-2009



Note: Countries ranked by increase in households with broadband connections as % of total population
Densely populated: FR, RO 2006/2009, BG 2007/2009; Intermediate populated: EE, FR, RO 2007/2009, SI 2005/09; Thinly populated: FR 2005/2009

Source: Eurostat, EU-SILC

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 broadband[36]. 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%.

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

In general, disparities remain between thinly and more densely populated 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).

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).

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).

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 (SO_2, NO_x, PM, CO_2). 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

Macroeconomic situation

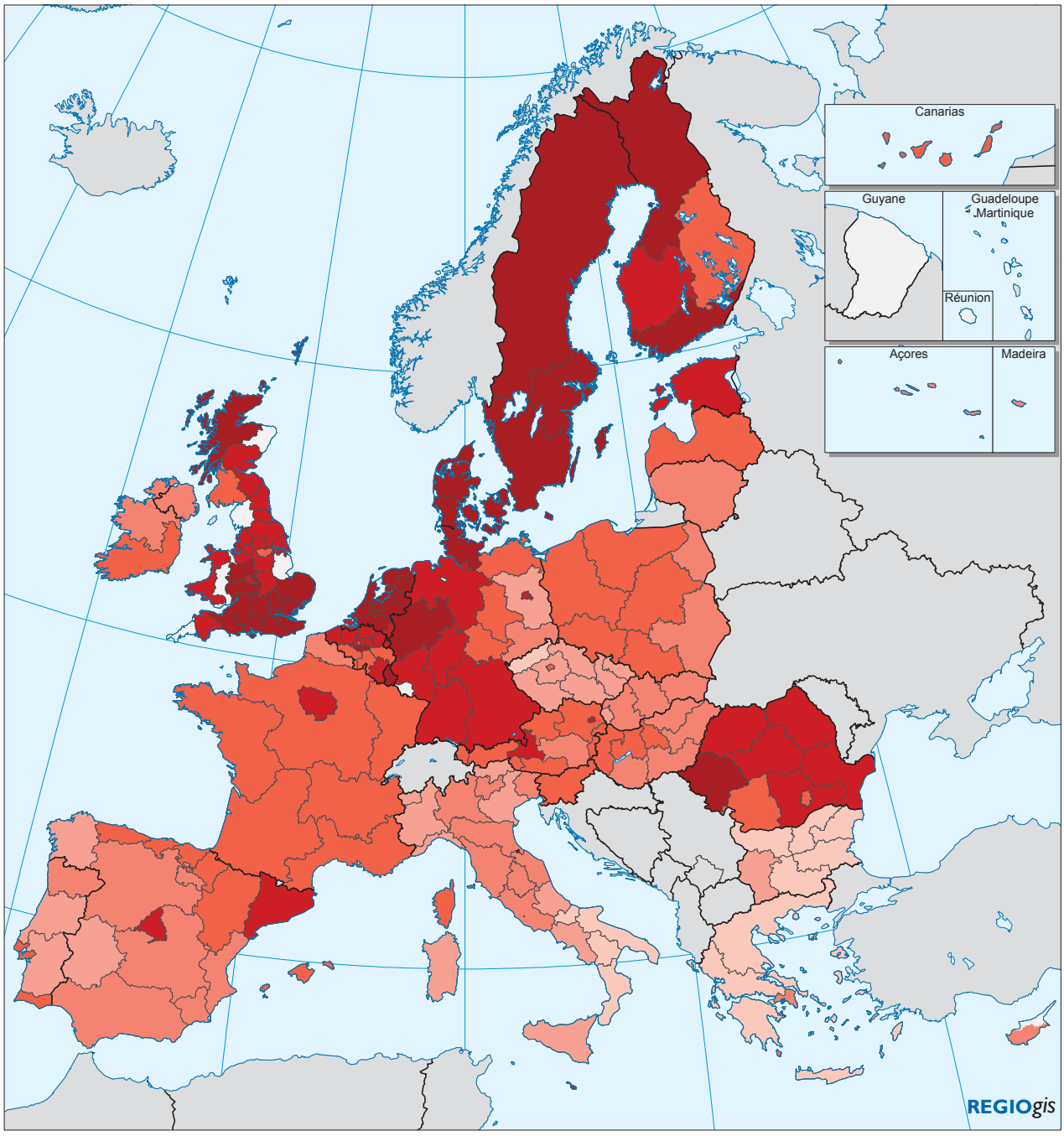
It is widely accepted that a necessary condition for sustained growth is the stability of the macroeconomic framework. According to the World Bank, macroeconomic stability is where inflation is low and predictable, real interest rates are appropriate, fiscal policy is stable and sustainable, the real 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)[37], 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 defi-

37 Fisher, S. (1993), The role of macroeconomic factors in growth, Journal of Monetary Economics, Volume 32, Issue 3, pp. 485–512.



1.39 Households with broadband connection, 2009

% of all households

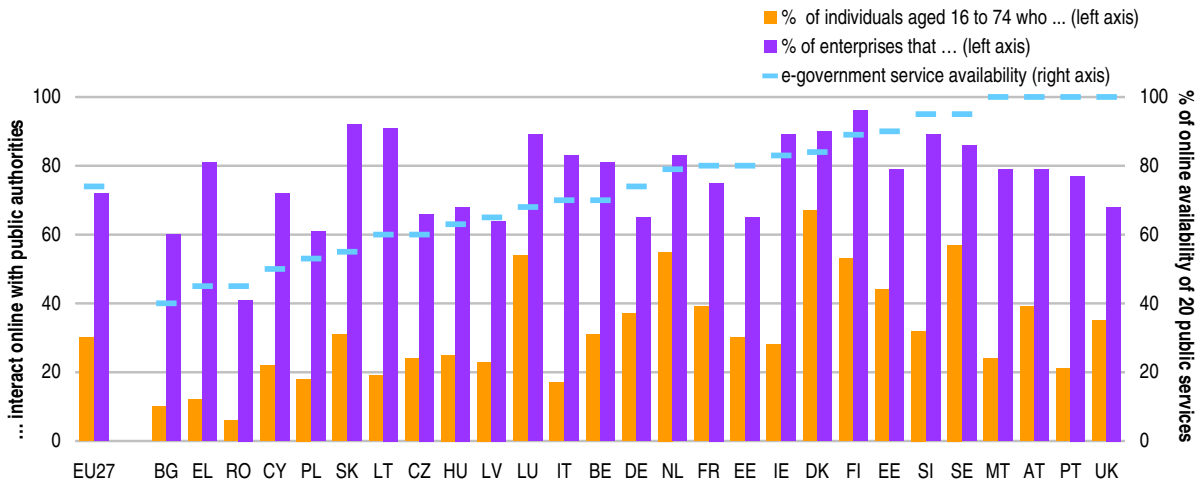
< 30
30 - 40
40 - 50
50 - 60
60 - 70
=> 70
No Data

EU-27 = 56.0

Source: Eurostat

0 500 Km

1.18 Availability and use of e-Governement services, 2009



Source: Eurostat

cits 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.

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 Bank[38] has put more emphasis on the need to improve institutions and governance. They use the following definition of governance:

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[39].

38 World Development Report 2009, World Bank, Washington.

39 Kaufmann, D., Kraay, A. and Mastruzzi M. (2005), Governance Matters IV: Governance Indicators for 1996–2004. World Bank Policy Research Working Paper No. 3630. Available at SSRN: http://ssrn.com/abstract=718081

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 survey[1].

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.

1 Quality of Government Institute. Measuring the quality of government and subnational variation. financed by DG REGIO (forthcoming).

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

The concept of the 'degree of urbanisation' was defined as part of the Labour Force Survey. 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.

- 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

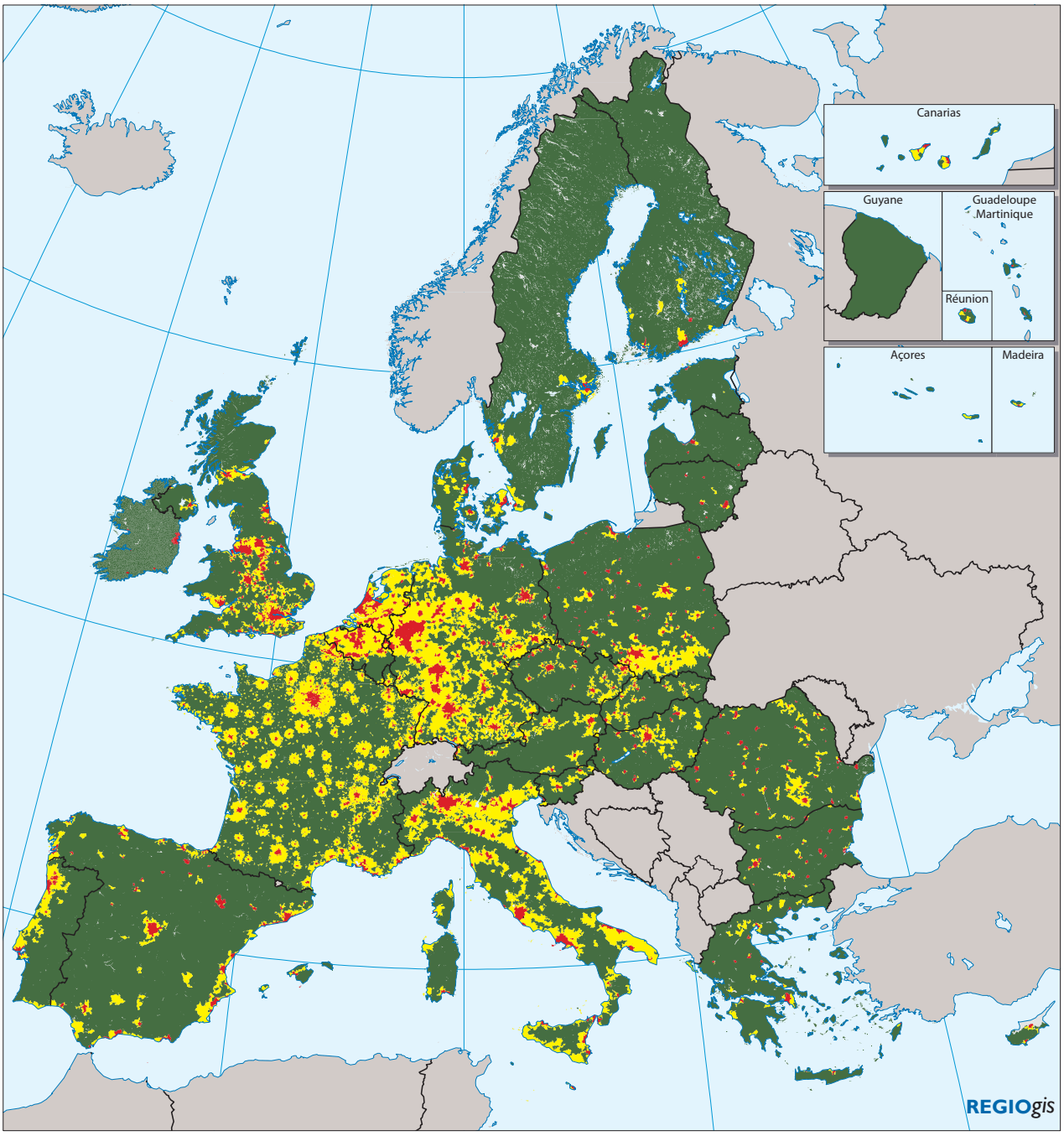
- Finland

  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



1.40 Degree of urbanisation

Densely populated area
Intermediate density area
Thinly populated area

Source: Eurostat, NSOs

0 500 Km

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 since compared to the 1990s.

E-government services can contribute to making public administrations more efficient and transparent. The European Digital Competitiveness Report[40] 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 2009 (Figure 1.18). In all Member States, with the exception of Romania, more than one in two enterprises interacted with public authorities online in 2009. Only 30% individuals interacted online with public authorities as compared to 72% of enterprises. Only in the Nordic Member States, the Netherlands and Luxembourg did at least one in two individuals interact online with public authorities in 2009.

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

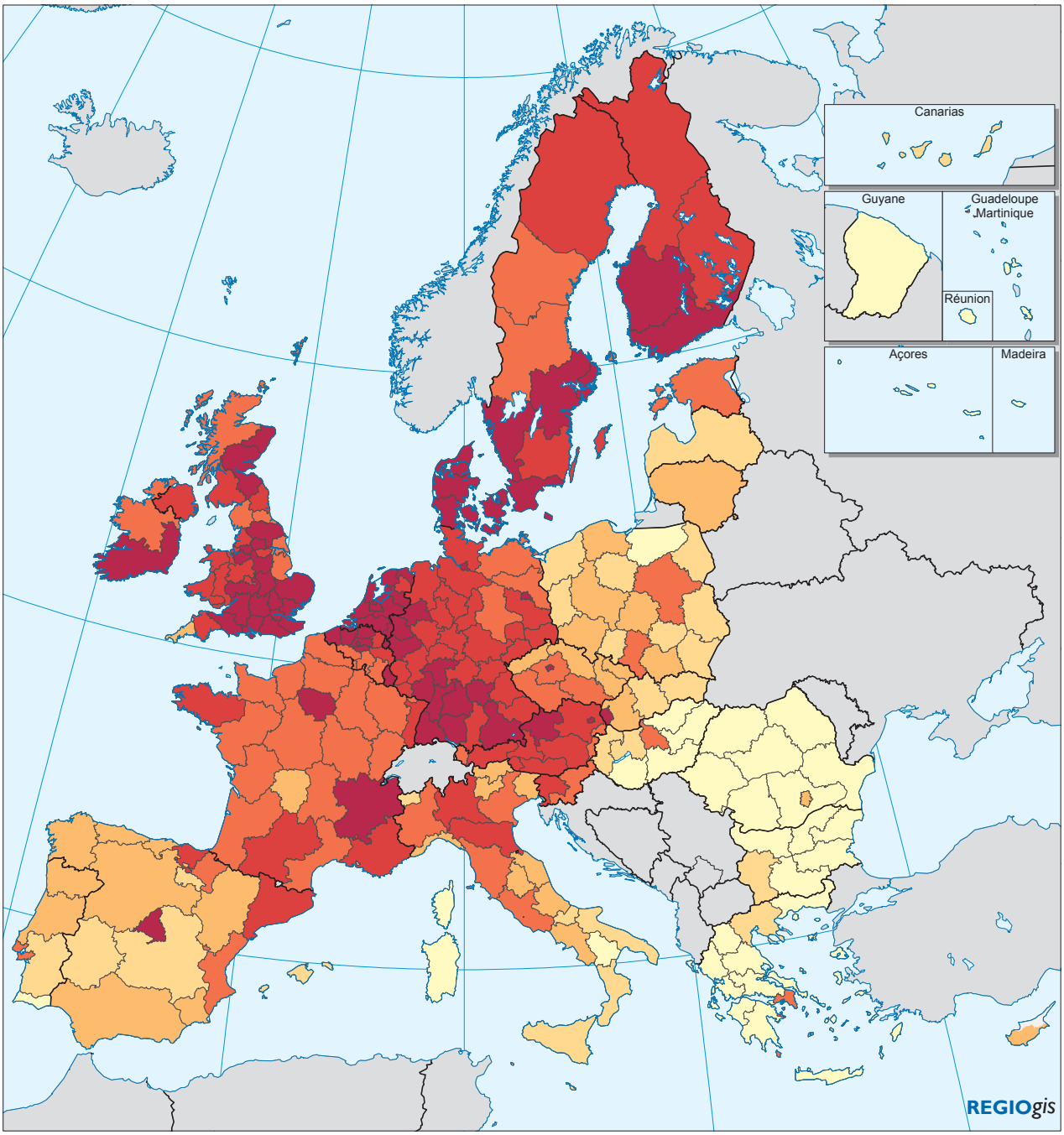
Each of these pillars allows the performance of a region to be assessed in relation to all the other EU regions. As a result, they can be seen as indicating the strengths and weaknesses of every NUTS 2 region in an EU perspective.

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

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



1.41 Competitiveness Index, 2010

Index - Values range between 0 (low) and 100 (high)

- < 30
- 30 - 40
- 40 - 50
- 50 - 60
- 60 - 70
- >= 70

EU-27 = 55

Source: JRC and DG REGIO

0 500 Km

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:

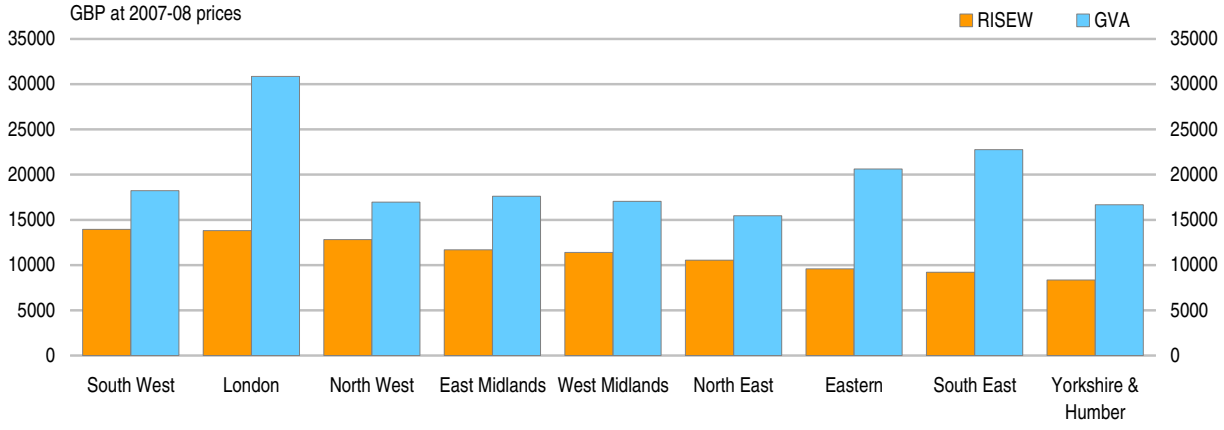
… by 2020, the East Midlands will be a flourishing region — with growing and innovative businesses, skilled people in good quality jobs, participating in healthy, inclusive communities and living in thriving and attractive places. (Flourishing Region RES 2006)

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.

1.19 Regional Index of Sustainable Economic Well-being and gross value-added per head in England, 2007



Source: RISEW for EN 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.

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.

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.