

# Eurostat regional yearbook 2007





# Eurostat regional yearbook 2007

*Europe Direct is a service to help you find answers  
to your questions about the European Union*

Freephone number (\*):

**00 800 6 7 8 9 10 11**

(\*) Certain mobile telephone operators do not allow access  
to 00 800 numbers or these calls may be billed.

More information on the European Union is available on the Internet (<http://europa.eu>).

Luxembourg: Office for Official Publications of the European Communities, 2007

ISBN 978-92-79-05077-0

ISSN 1681-9306

Cat. No. KS-AF-07-001-EN-N

(Printed publication KS-AF-07-001-EN-C)

**Theme: General and regional statistics**

**Collection: Statistical books**

© European Communities, 2007

Copyright for the photos: cover and the Introduction, Household accounts, Labour productivity, Urban statistics, Tourism and Education chapters: © the Central Audiovisual Library of the European Commission; the Population and Agriculture chapters: © Jean-Jacques Patricola; the Gross domestic product, Labour market, Science, technology and innovation, Structural business statistics and Transport chapters: © the Digital Photo Library of the Regional Policy DG of the European Commission.

For reproduction or use of these photos, permission must be sought directly from the copyright holder.



## Preface

Dear Reader,

Once again Eurostat is pleased to provide you with an overview of the most recent developments in the regions of the European Union, covering as far as possible the current 27 Member States as well as EFTA countries. The themes selected represent those that we consider to have something interesting to show about the various facets of economic, social and demographic development across Europe's regions. For the first time we have included a contribution on the GDP aspect, authored in cooperation with the Regional Policy DG, our primary client for regional data.

This is a very significant moment in regional policy in that it is the first year of implementation of the new cohesion policy of the Union, which runs until 2013 and carries with it the largest ever investment the Community has made in regional development, some EUR 347 billion. These regional statistics will form part of the yardstick against which the development of the EU regions will be measured. You will also find in this publication a chapter on urban statistics, which is the result of our cooperation with the Regional Policy DG on the Urban Audit exercise. This is an increasingly important component of the regional development policy initiative.

Meanwhile, in cooperation with our ESS partners we shall continue to progressively expand the regional information, both in terms of detail and coverage that we have available, to provide an increasingly complete picture of the complexities of regional development across the EU.

I wish you a pleasant and interesting reading.



Hervé Carré  
Director-General, Eurostat



## Acknowledgements

The editors of *Eurostat regional yearbook 2007* would like to thank all those who were involved in its preparation. We thank the following chapter authors for making publication of this year's edition possible.

- **Population:** Gregor Kyi (Unit F.1 at Eurostat: Demographic and migration statistics)
- **Gross domestic product:** Lewis Dijkstra (Unit B.2 at the Directorate-General for Regional Policy: Development of Cohesion Policy, accession negotiations)
- **Household accounts:** Andreas Krüger (Unit C.2 at Eurostat: National accounts — production)
- **Labour market:** Pedro Ferreira (Unit D.2 at Eurostat: Regional indicators and geographical information)
- **Labour productivity:** Berthold Feldmann (Unit D.2 at Eurostat: Regional indicators and geographical information)
- **Urban statistics:** Teodóra Brandmüller (Unit D.2 at Eurostat: Regional indicators and geographical information)
- **Science, technology and innovation:** Bernard Felix, Tomas Meri and Håkan Wilén (Unit F.4 at Eurostat: Education, science and culture statistics)
- **Structural business statistics:** Ulf Johansson (Unit G.1 at Eurostat: Structural business statistics)
- **Transport:** Anna Bialas-Motyl (Unit G.5 at Eurostat: Transport statistics) and An Heirman
- **Tourism:** Ulrich Spörel (Unit F.6 at Eurostat: Information society and tourism statistics)
- **Education:** Lene Mejer (Unit F.4 at Eurostat: Education, science and culture statistics)
- **Agriculture:** Peter Szabo (Unit E.1 at Eurostat: Agriculture statistics — methodology)

The process of editing and coordinating this publication was done by Åsa Önnerfors (Unit D.2 at Eurostat: Regional indicators and geographical information) with the help of Pavel Bořkovec (Unit B.6 at Eurostat: Dissemination). Baudouin Quennery (Unit D.2 at Eurostat: Regional indicators and geographical information) produced the statistical maps.

We are also very grateful to:

- the **European Free Trade Association (EFTA)**, and in particular Richard Ragnarsøn;
- the **Directorate-General for Translation of the European Commission**, and in particular the German, English and French translation units;
- the **Office for Official Publications of the European Communities**, and in particular Peter Johansson in Unit B.1, Cross-Media Publishing, and the proofreaders in Unit B.2, Editorial services.



# Contents

INTRODUCTION .....	9
Only regional statistics give the complete picture .....	10
The NUTS classification .....	10
Coverage .....	10
More regional information .....	10
Data extraction .....	11
1 POPULATION .....	13
Unveiling the regional pattern of demography .....	14
The drivers behind population change .....	14
Demographic ageing: the situation today ... ..	17
... and its impact in the future .....	21
<i>Methodological notes</i> .....	23
2 GROSS DOMESTIC PRODUCT .....	25
Large regional disparities in GDP per inhabitant .....	26
Cohesion policy 2007–13 .....	26
GDP growth is accelerating outside the EU's core .....	28
The EU is converging but what is happening within Member States? .....	28
Conclusion .....	31
<i>Methodological notes</i> .....	31
3 HOUSEHOLD ACCOUNTS .....	35
Introduction: measuring wealth .....	36
Private household income .....	36
Results for 2004 .....	36
Primary income .....	36
Disposable income .....	37
Dynamic development on the edge of the Union .....	42
Executive summary .....	42
<i>Data availability</i> .....	45
4 LABOUR MARKET .....	47
EU employment objectives .....	48
Target 1: Overall employment rate above 67 % .....	48
Target 2: Female employment rate above 57 % .....	51
Target 3: Older workers above 50 % .....	51
Gender gap narrowing .....	53
Unemployment .....	56
Conclusion .....	59
<i>Methodological notes</i> .....	59
<i>Definitions</i> .....	59



<b>5 LABOUR PRODUCTIVITY</b> .....	61
Introduction .....	62
Still considerable differences in regional labour productivity .....	62
Differing productivity growth rates are leading to increased convergence .....	62
Labour productivity in manufacturing industry and the services sector .....	65
Conclusion .....	67
<i>Methodological notes</i> .....	70
<b>6 URBAN STATISTICS</b> .....	73
Introduction .....	74
Measuring quality of life in cities .....	74
The spatial units .....	74
Time .....	74
Indicators .....	74
Exploring the patterns of population change .....	74
The perceived picture .....	81
Beyond the growth rates .....	81
<b>7 SCIENCE, TECHNOLOGY AND INNOVATION</b> .....	85
Introduction .....	86
Research and development .....	86
Human resources in science and technology .....	89
High-tech industries and knowledge-intensive services .....	89
Patents .....	92
Patstat .....	92
Patenting in the regions .....	92
Conclusion .....	94
<i>Methodological notes</i> .....	95
<b>8 STRUCTURAL BUSINESS STATISTICS</b> .....	97
Introduction .....	98
The most specialised regions in different activities .....	98
Specialisation in business services .....	100
Employment growth in business services .....	103
Characteristics of the top 30 most specialised regions in business services .....	107
Conclusion .....	107
<i>Methodological notes</i> .....	109
<b>9 TRANSPORT</b> .....	111
Introduction .....	112
Transport infrastructure .....	112
Transport equipment .....	112
Maritime transport .....	115
Road freight .....	117
Air transport .....	119





Conclusion.....	119
<i>Methodological notes</i> .....	121
<b>10 TOURISM</b> .....	123
Introduction .....	124
Accommodation capacity.....	124
Capacity utilisation data .....	126
Tourism intensity .....	128
The development of tourism 2000–05 .....	128
Inbound international tourism .....	130
Outlook.....	130
<i>Methodological notes</i> .....	133
<b>11 EDUCATION</b> .....	135
Introduction .....	136
Participation of 4-year-olds in education.....	136
Students in upper secondary education and post-secondary non-tertiary education .....	136
Students in tertiary education.....	138
Tertiary educational attainment .....	141
Participation in lifelong learning .....	141
Conclusion.....	141
<i>Methodological notes</i> .....	144
<b>12 AGRICULTURE</b> .....	147
Introduction .....	148
Contribution of agriculture to GDP .....	148
Labour productivity of agriculture .....	148
Income diversification in the farming community .....	151
Use of chemicals in agriculture .....	151
Agricultural productivity .....	151
Conclusion.....	155
<i>Methodological notes</i> .....	157
<b>ANNEX</b> .....	159
European Union: NUTS 2 regions .....	159
EFTA countries: Statistical regions at level 2 .....	162



# Introduction



### Only regional statistics give the complete picture

Regional statistics are of the utmost importance for understanding economic and social trends in the European Union. The enormous Structural Funds budget of EUR 347 billion for 2007–13 highlights how much importance the EU attaches to reducing the gaps between regions in terms of their economic and social development.

Should you want to dig deeper into the way the regions of Europe are evolving in a host of very different statistical domains, this is the publication for you! The texts and statistical maps offer a wealth of information on life in the European regions. In its second chapter (on gross domestic product), this edition of the regional yearbook also gives for the first time an overview of the European Union's cohesion policy, written by a specialist from the Directorate-General for Regional Policy, one of the main users of statistics at a regional level.

This year we also see the welcome reappearance of statistics on tourism and on education, two very interesting topics we are happy to address again. The chapter on labour productivity, which appeared for the first time last year, focuses this year on productivity in different business areas. And of course, when we analyse regional trends in Europe, we also cover the situation in European cities; hence the chapter on urban statistics, this time concentrating on demographic trends in cities.

### The NUTS classification

All statistics at regional level within the EU are based on the nomenclature of territorial units for statistics (NUTS). The NUTS classification has been used for many decades for regional statistics, and was always the base for regional funding policy. It was only in 2003, though, that NUTS acquired a legal basis, when the NUTS regulation was adopted by the Parliament and the Council <sup>(1)</sup>.

Whenever new Member States join the EU, the NUTS regulation is of course amended to include the regional classification in those countries. This was the case in 2004, when the EU took in 10 new Member States. Bulgaria and Romania became members of the European Union on 1 January 2007. Both countries have had statistical regions, similar to NUTS, since 1998. For NUTS purposes, though, they acquired new codes, and these have been valid since 1 January 2007.

The NUTS regulation provides for a review to be conducted every three years whereby the regional classification can be changed and adapted to new administrative boundaries or economic circumstances. In 2006, this exercise took place for the first time, but since the resultant changes to the NUTS classification will only be put into practice at the beginning of 2008, this edition still follows the 2003 version of NUTS. Next year's edition will thus see a number of changes to the regional classification of countries.

With this publication you will find a folding map showing all the regions corresponding to NUTS level 2 in the 27 Member States of the EU (EU-27) and the EFTA countries, and in Annex 1 you will find the full list with the codes and names of these regions.

### Coverage

This regional yearbook contains statistics for all 27 Member States of the European Union, including the two new Member States, Bulgaria and Romania. This year coverage has been extended to take in the EFTA countries, so you will now also find commentaries on regional developments in Iceland, Liechtenstein, Norway and Switzerland.

Regions in the EFTA countries are called statistical regions and follow the same rules as the NUTS regions in the EU, except that there is no legal base. Data from the EFTA countries are still unavailable in some policy areas, but the data availability situation is improving, and next year we hope to have even better coverage. It is often interesting to compare regional data from the EFTA countries with the neighbouring Member States, for instance to compare Norway with Sweden or Switzerland with Austria. Of course there are many similarities between neighbouring regions in different countries, but sometimes the disparities can be just as interesting.

Data from the three candidate countries, Croatia, the former Yugoslav Republic of Macedonia and Turkey, have not been included in this year's edition of the regional yearbook, because we still have too little data at regional level.

### More regional information

Under the theme 'General and regional statistics' on the Eurostat website you will find tables with statistics on both 'Regions' and the 'Urban Audit' with more detailed time series (some of them going back as far as 1970) and more

<sup>(1)</sup> More information on the NUTS classification can be found on the Internet ([http://ec.europa.eu/eurostat/ramon/nuts/splash\\_regions.html](http://ec.europa.eu/eurostat/ramon/nuts/splash_regions.html)).



detailed statistics than in this yearbook. You will also find a number of indicators at NUTS level 3 (such as area, demography, gross domestic product and labour market data). This is important because there are currently eight Member States (Denmark, Estonia, Cyprus, Latvia, Lithuania, Luxembourg, Malta and Slovenia) that do not have a NUTS level 2 classification. Next year, when the amended NUTS classification comes into use, Denmark too will have NUTS level 2 regions.

For more detailed information on the contents of the regional and urban databases please consult the Eurostat publication *European regional and urban statistics — Reference Guide — 2007 edition*, which you can download from the Eurostat website.

Previously, a CD-ROM was always attached to this publication. This tradition has now been stopped as all the information that used to be on the CD-ROM can now be found on the Eurostat website. This includes the specific data used for producing the maps in this regional yearbook, which can be found as Excel tables on the website.

## Data extraction

The statistical data set out in the *Eurostat regional yearbook 2007* were extracted during the first few months of 2007; the final closure date was 15 May 2007, so the data represent the latest available information at that time. For the very latest statistics on each subject, please consult the Eurostat website (<http://ec.europa.eu/eurostat>).



# Population

1



## Unveiling the regional pattern of demography

Demographic trends have a strong impact on EU society. Consistently low fertility levels, combined with extended longevity and the fact that the baby boomers are reaching retirement age, are resulting in demographic ageing of the EU population. The share of the older generation is increasing while the share of those of working age is on the decline.

This chapter presents the regional pattern of demographic developments as can be discerned today. The analysis is mainly based on demographic trends that have been observed during the period 1 January 2000 to 1 January 2005. For this purpose, five-year averages have been calculated of the total annual population change and of its components. Given that demographic trends are long-term developments, the five-year averages provide a stable and accurate picture. They help identify regional clusters that often stretch well beyond national borders.

Some demographic developments might become considerably more important in the coming decades. Eurostat calculates national and regional population projections that reveal the effects that current trends might have if continued in the future. Eurostat's population projections should not be regarded as forecasts, but as 'what if' scenarios: they show possible demographic developments based on assumptions about fertility, mortality and migration that in turn have been derived from observed trends and expert opinion (see the methodological notes).

This regional yearbook presents some results of the regional population projections that have become available at the beginning of 2007. More data can be found on the Eurostat website (in the data navigation tree under: Population/Population projections).

## The drivers behind population change

During the last four and a half decades, the population of the 27 countries of today's European Union has grown from around 400 million persons (1960) to almost 500 million persons (2006). However, the strength and composition of the population growth has varied significantly over the years.

The total population change has two components: natural increase, which is defined as the

difference between the numbers of live births and deaths; and net migration, which ideally represents the difference between inward and outward migration flows (see the methodological notes).

Until the end of the 1980s, natural increase was by far the major component of population growth. However, there has been a steady decline in the natural increase since the early 1960s. On the other hand, international migration has gained importance to become the major force of population growth since the beginning of the 1990s.

Maps 1.1, 1.2 and 1.3 show the total population change and its components since the start of the new century. For the sake of comparability, the population change is presented in relative terms, i.e. it is related to the size of the total population. The maps show the five-year average for the resulting 'crude rates of population change' (average for the years 2000, 2001, 2002, 2003 and 2004).

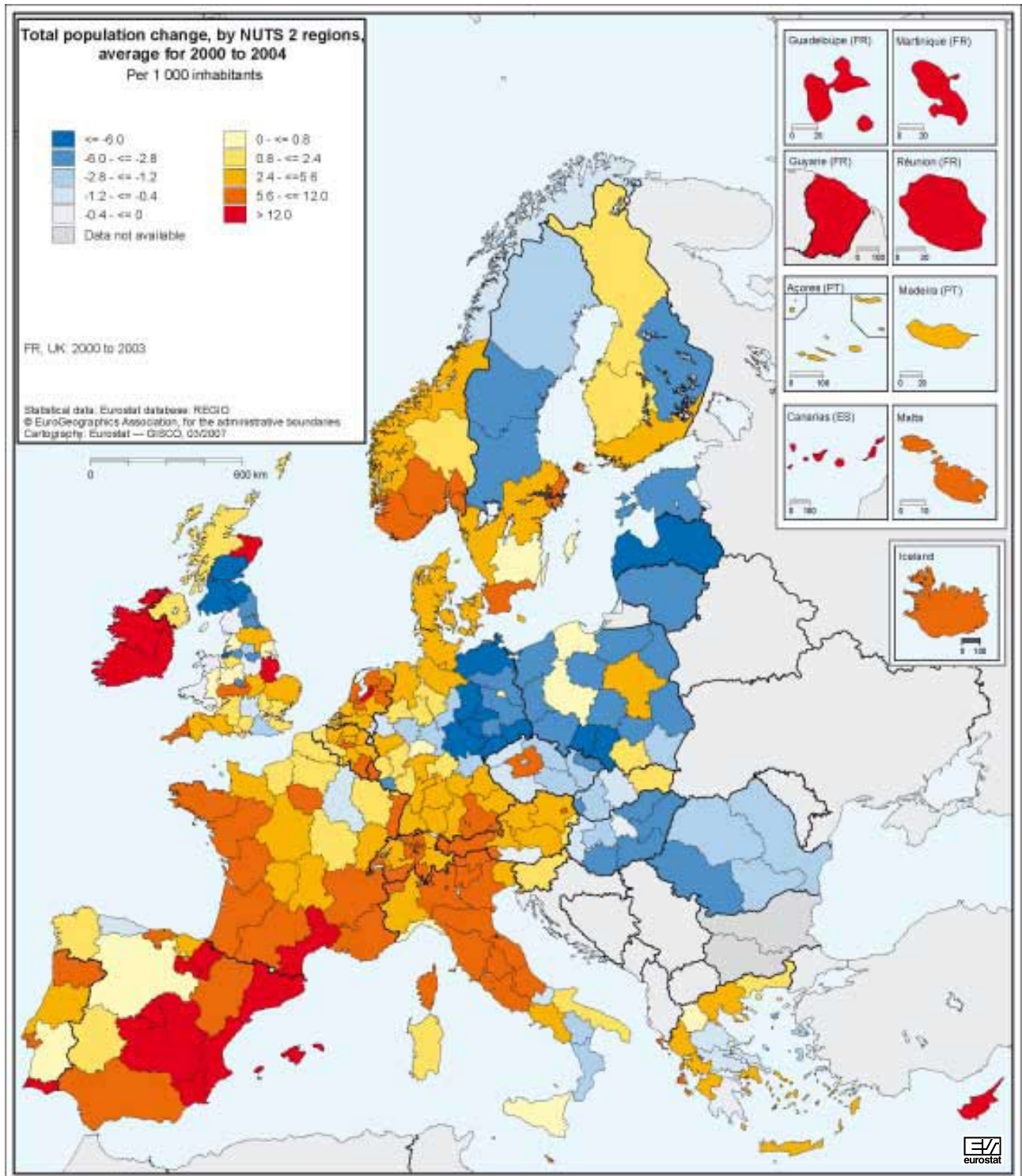
In the north-east and east of the European Union, the population is decreasing. Map 1.1 is marked by a clear divide between the regions there and in the rest of the EU. Most affected by decreasing population are eastern Germany, Poland, the Czech Republic, Slovakia, Hungary and Romania, and to the north the three Baltic States, and parts of Sweden and Finland.

Map 1.2 shows that in many regions of the EU more persons have died than have been born since the start of the new century. The resulting negative 'natural population change' is widespread and the pattern is less pronounced than for the total population change. Ireland, France, the three Benelux countries and Denmark have mainly a natural increase in population. The natural population change is predominantly negative in Germany, the Czech Republic, Slovakia, Hungary, Slovenia, Romania and adjacent regions, as well as the Baltic States, Sweden in the north and Greece in the south. The situation of the other Member States is, overall, more balanced.

A major reason for the slowdown of the natural increase in the population is the fact that, on average and over time, the inhabitants of the EU are having fewer children. In the 27 countries that today make up the European Union, the total fertility rate declined from a level of around 2½ in the early 1960s to a level of about 1½ in 1993, where it has since remained (Figure 1.1; for the definition of the total fertility rate, see the methodological notes). The slight increase in recent years might partly be attributable to the fact that more women are having their first child later in their lives today than in the past.



**Map 1.1:** Total population change, by NUTS 2 regions, average for 2000–04  
Per 1 000 inhabitants





For comparison: in the more developed parts of the world today, a total fertility rate of around 2.1 children per woman is considered to be the replacement level, i.e. the level at which a population would remain stable in the long run if there was no inward or outward migration.

Concerning net migration, five cross-border regions where more persons have left than have arrived can be identified on Map 1.3:

- the northernmost regions of Sweden and Finland;
- an eastern group, comprising most of eastern Germany, Poland, Lithuania and Latvia as well as parts of the Czech Republic, Slovakia, Hungary and Romania;
- regions in the north of France;
- regions in the south of Italy;
- Northern Ireland and parts of Scotland.

In some regions a negative natural change has been compensated by positive net migration. This is most conspicuous in western Germany, eastern Austria, the north of Italy, and Slovenia, as well as the south of Sweden and regions in Spain, Greece and the United Kingdom. The opposite is much rarer: in only a few regions (namely in the north of Poland) has a positive natural change been compensated by negative net migration.

Regions without compensation have often experienced a sharp swing, upwards or — in some

regions — downwards. In Ireland, the Benelux countries, many regions in France and some in Spain, a natural increase has been accompanied by positive net migration. However, in eastern Germany, Lithuania and Latvia, as well as some regions in Poland, the Czech Republic, Slovakia, Hungary and Romania, both components of population change were negative. In some regions this has led to a sustained population loss.

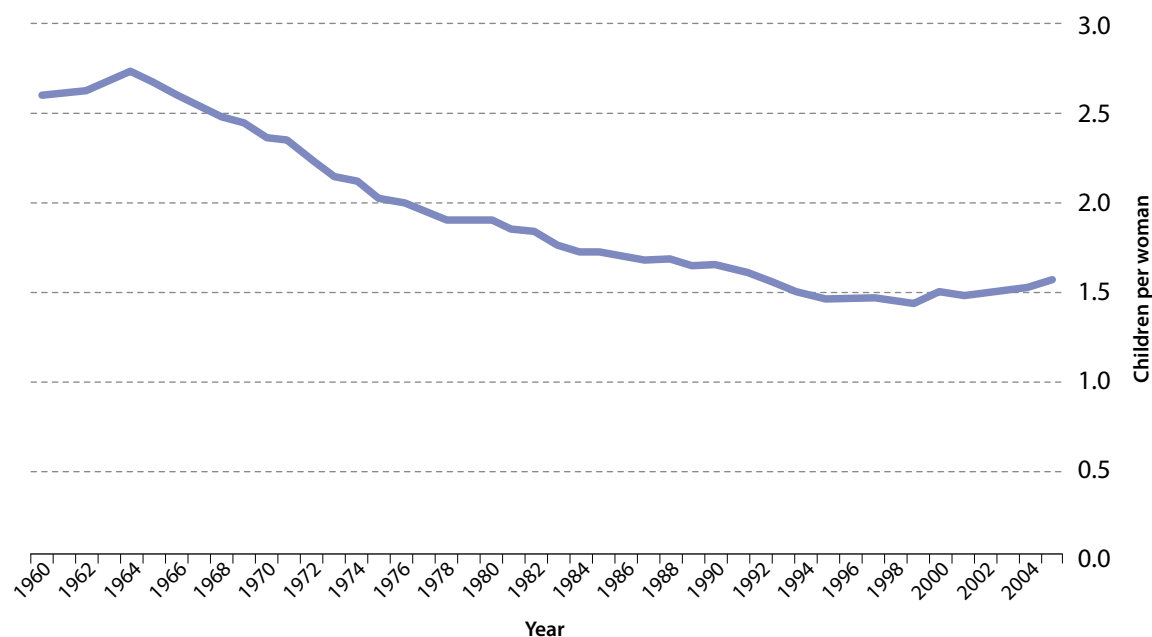
### Demographic ageing: the situation today ...

Age dependency ratios are important demographic indicators that relate the young and old age population to the population of working age. 'Old age' roughly approximates to the age of retirement. Today, different demographic reports present dependency ratios based on different definitions for the age groups. In this publication the following age groups are used.

- 'Young age dependency ratio': the population aged up to 14 years related to the population aged between 15 and 64 years.
- 'Old age dependency ratio': the population aged 65 years or older related to the population aged between 15 and 64 years.

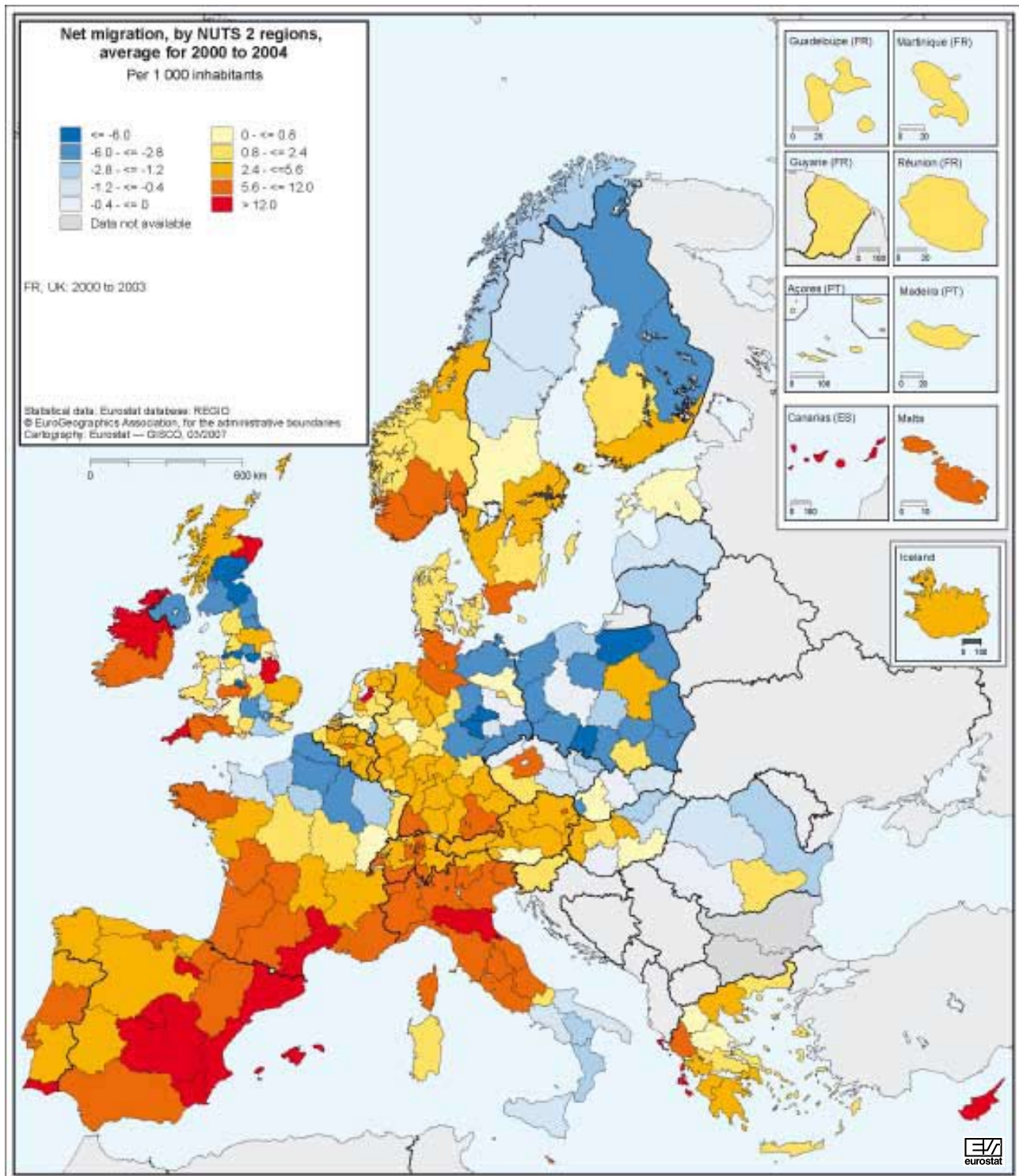
Maps 1.4 and 1.5 show the population structure at the beginning of the year 2005. The young age dependency ratio is influenced by recent fertility levels. Countries with higher fertility tend

**Figure 1.1:** Total fertility rate in the EU-25, 1960–2005

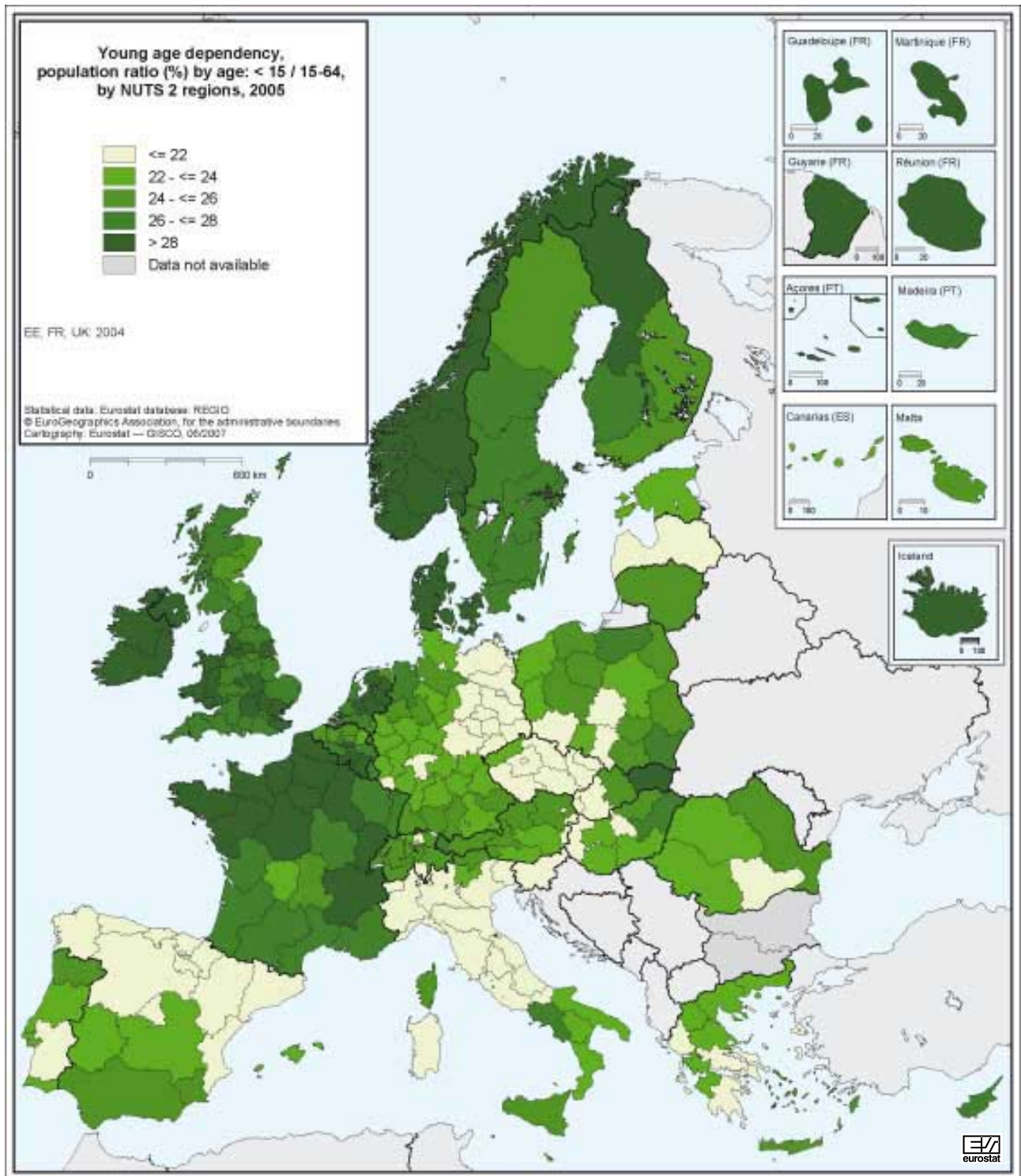




**Map 1.3:** Net migration, by NUTS 2 regions, average for 2000–04  
Per 1 000 inhabitants

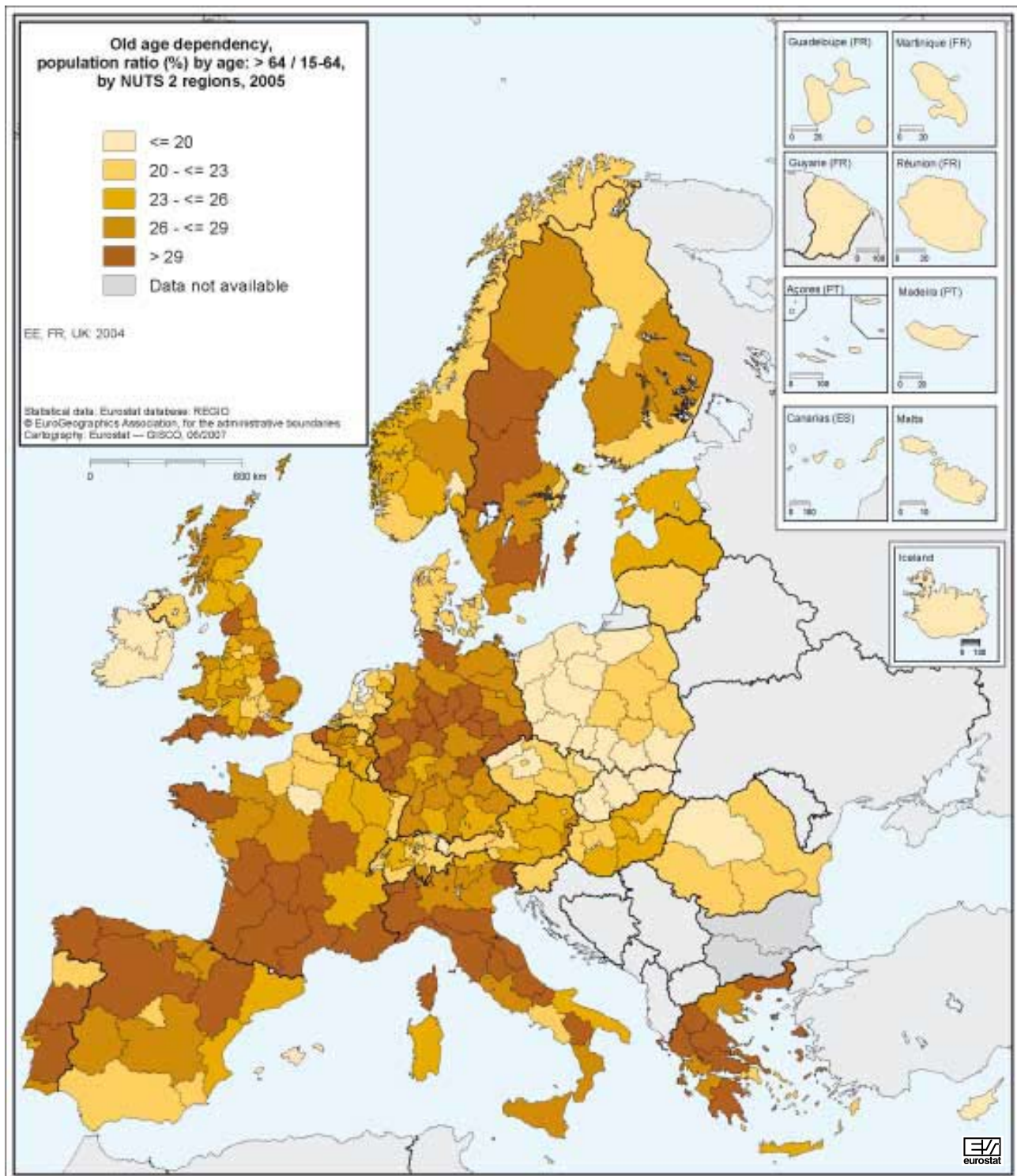


**Map 1.4:** Young age dependency, population ratio (%) by age: < 15 / 15-64, by NUTS 2 regions, 2005





**Map 1.5:** Old age dependency, population ratio (%) by age: > 64 / 15–64, by NUTS 2 regions, 2005



to have a higher young age dependency (i.e. more young people per 100 of working age) when compared with countries with low fertility levels. This is conspicuous for Ireland, France, the United Kingdom, the Benelux countries, Denmark, Sweden and Finland. The young age dependency is below average in regions in Italy, Greece, Spain, Germany, the Czech Republic, Latvia and Romania. The regional pattern for old age dependency is less clear cut.

### ... and its impact in the future

Eurostat's population projections allow a fair anticipation of how the demographic situation will develop if current trends continue.

Map 1.6 illustrates the general direction of the population change (i.e. growth or decline) that can be projected to take place during the period 2004 to 2030. The regional pattern of the projection continues some general developments already visible today, e.g. the population decline in the north-east and east of the European Union. However, the population will probably also decline in many more regions, e.g. in Germany, Italy, Spain and Greece.

In most regions that might see their population growing, the main driver behind this growth will be migration (85 out of 96 regions, i.e. 89 %). Map 1.6 depicts these regions in dark red. Correspondingly, there are only a few scattered regions where the population will be growing mainly

because more babies are being born than persons dying. The most conspicuous exception is France. (Unfortunately, a regional breakdown is not available for France; see the methodological notes.)

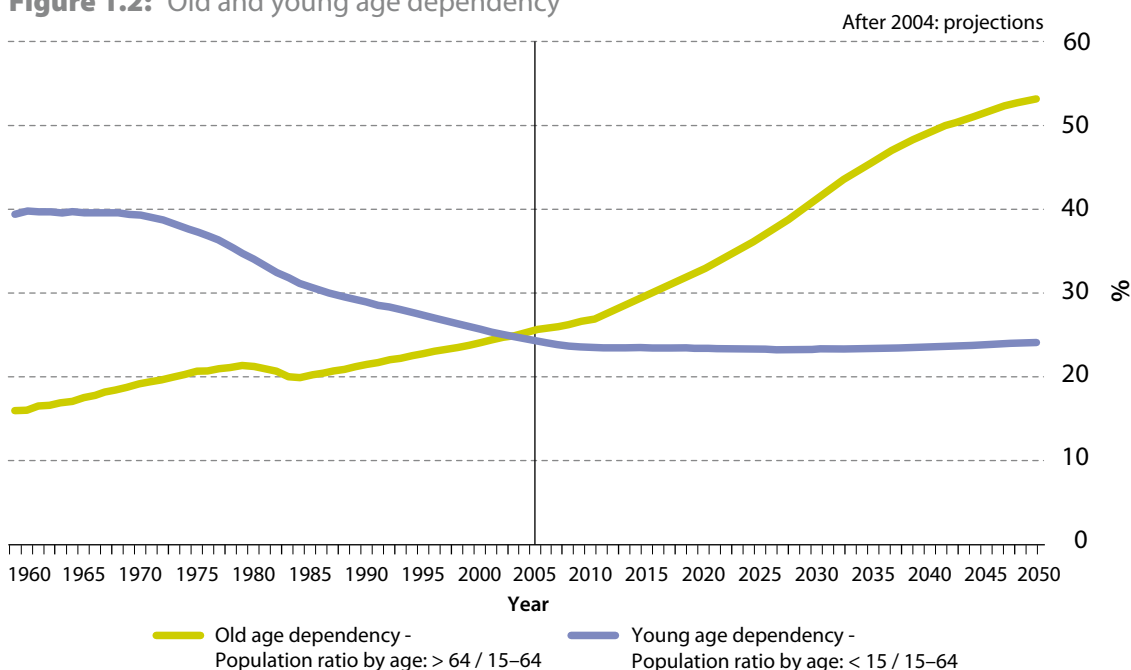
On the other hand, the regions that will probably experience a decline in their population will almost all decline because more persons will die there than babies will be born (negative natural change in the population). These regions are shown in light blue. The most prominent exceptions are regions in Poland and Italy where net migration might be the major driver behind the population decline.

The old age dependency ratio will be a particularly dynamic indicator. It is a reasonable projection that, on average for the EU-27 and if current trends prevail, the old age dependency ratio will approximately double during the next 50 years (Figure 1.2). This means that in the year 2050 a person of working age might have to provide for up to twice as many retired people as is usual today.

Demographic ageing is a general process. There are regions where, for a person aged 65 years or older, there are less than three persons of working age (old age dependency ratio of over 33 %). In 2004, this was the exception: less than 5 % of the EU's population lived in such regions. By 2030, this will be the rule (almost 90 % of the EU population).

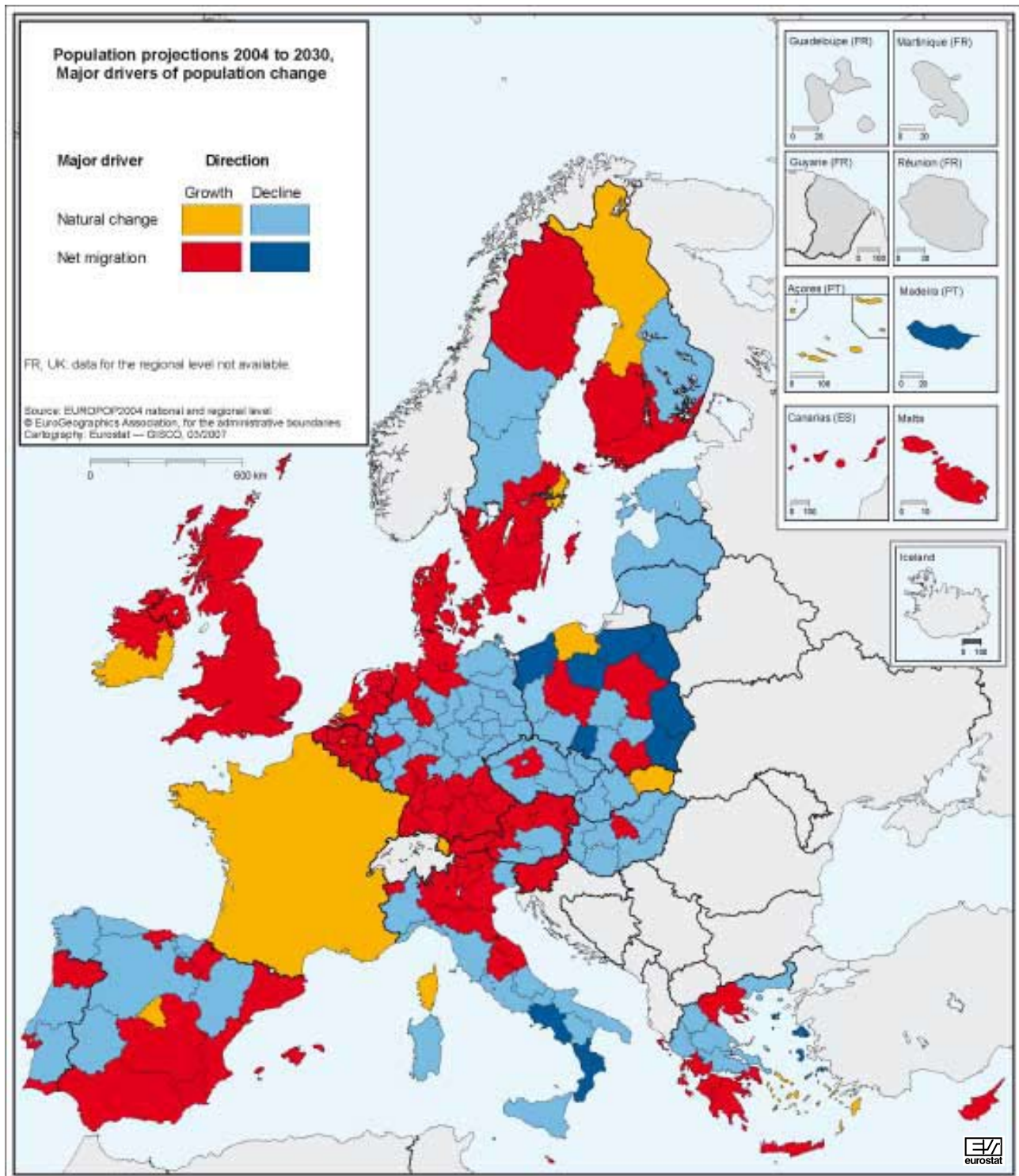
However, the regional differences already visible today might lead to a more dramatic development in some regions than in others.

**Figure 1.2:** Old and young age dependency





**Map 1.6:** Population projections 2004–30, major drivers of population change





## Methodological notes

*Source:* Eurostat — Demographic statistics. For more information please consult the Eurostat website (<http://ec.europa.eu/eurostat>).

The **total fertility rate** is defined as the average number of children that would be born to a woman during her lifetime if she were to pass through her childbearing years conforming to the age-specific fertility rates that have been measured in a given year.

The **Eurostat population projections** presented here correspond to the baseline variant of the Trend scenario. The Eurostat set of population projections is just one among several scenarios of population evolution based on assumptions of fertility, mortality and migration. The current Trend scenario does not take into account any future measures that could influence demographic trends. It comprises different variants: the 'baseline' variant as well as the 'high population', 'low population', 'zero migration', 'high fertility', 'younger age profile' and 'older age profile' variants, all available on the Eurostat website. It should be noted that the assumptions adopted by Eurostat may differ from those adopted by national statistical institutes. Therefore, results can be different from those published by Member States.

The regional breakdown at NUTS level 2 of the population projections is computed, making the assumptions already formulated for the national-level exercise into region-specific assumptions. The regional variation in demographic behaviour is expressed using the method of indirect standardisation: the national fertility and mortality age- and sex-specific rates are first applied to the regional population, yielding a hypothetical number of events; subsequently, the observed number of regional events is divided by this hypothetical number to obtain a regional scaling factor. This latter is therefore an estimate of the extent to which regional rates are above or below the national value. For international migration, scaling factors were calculated as the ratio of the regional crude migration rate to the national crude migration rate.

In addition to the traditional components (fertility, mortality and international migration), one issue that is peculiar to the regional dimension has to be considered: interregional migration. The age- and sex-specific rates of interregional migration are estimated by means of a model that uses as input the inter-NUTS 2 departures and arrivals by age, sex and region, and the total number of inter-NUTS 2 migrations by region of origin and region of destination (origin–destination migration matrix).

Because appropriate data are not available for France and the United Kingdom, regional population projections could not be made for these two countries.

*Source:* Europop2004 regional level, baseline variant.

**Migration** can be extremely difficult to measure. A variety of different data sources and definitions are used in the Member States, meaning that direct comparisons between national statistics can be difficult or misleading. The net migration figures here are not directly calculated from immigration and emigration flow figures. As many EU Member States do not have complete and comparable figures for immigration and emigration flows, net migration is estimated here as the difference between the total population change and the natural increase over the year. In effect, net migration equals all changes in total population that cannot be attributed to births and deaths.

The **population density** is the ratio of the mid-year population of a territory on a given date to the size of the territory.



# Gross domestic product

# 2



## Large regional disparities in GDP per inhabitant

Regional disparities within the EU grew substantially with the entry of 10 new Member States in 2004 and a further two in 2007. Following these enlargements, gross domestic product (GDP) per inhabitant is almost five times higher in the top 10 % regions than in the bottom 10 %<sup>(2)</sup>. In the EU-25 it was just under four times higher, while in the EU-15 it was less than three times higher (2004 data). The ratio between GDP per inhabitant in the top and bottom 25 % regions grew from two (EU-15) to two and half (EU-25) to three (EU-27) (see Map 2.1).

GDP per inhabitant is particularly low in the new Member States, where it is below 50 % of the EU average in most regions. Many regions in Greece, southern Italy and Portugal are also below 75 % of the EU average. In the remaining countries, regions tend to have a GDP per inhabitant that is close to the average or above it. Regions that contain a country's capital tend to have a GDP per inhabitant which is significantly higher than that of the surrounding regions. In some cases this is partly due to in-commuting, which increases the number of people producing economic wealth (GDP) relative to inhabitants. But mostly the higher GDP per inhabitant in capital regions reflects the higher levels of productivity in these regions. This is also the case in Norway (a European Free Trade Association member), where the GDP per inhabitant of the region containing Oslo is at least 50 % higher than that of the other regions of the country.

## Cohesion policy 2007–13

Cohesion policy for the period 2007–13 has three main objectives: convergence, regional competitiveness and employment, and territorial cooperation. The first objective, convergence, is designed to reduce these huge disparities in regional economic development.

'Convergence' regions are the NUTS 2 regions whose GDP per inhabitant, measured in purchasing power parities for the period 2000–02, is less than 75 % of the average GDP of the EU-25 for the same period. There are 84 of these regions with a total population of 154 million, in 17 Member States<sup>(3)</sup>. These areas are marked in red on Map 2.2.

As a result of the two most recent enlargements, the EU average for GDP per inhabitant dropped by almost 12 %. The average for the EU-25, which was used for these calculations, was 8 %

lower than the EU-15 average. This meant that a number of regions which received 'Objective 1' funding before were no longer eligible for convergence status (the new Objective 1) in this round of cohesion policy, despite the fact that the objective situation in these regions had not changed. These 16 so-called 'statistical effect regions', with a total of 16.4 million inhabitants, were allocated transitional funding and titled 'phasing-out' regions (marked in light pink on Map 2.2).

The amount available under the convergence objective is EUR 282.8 billion, representing 81.5 % of the total budget for cohesion policy. It is split as follows: EUR 199.3 billion for the convergence regions, plus EUR 14 billion reserved for the 'phasing-out' regions, and EUR 69.5 billion for the Cohesion Fund, the latter applying to 15 Member States. Member States eligible for the Cohesion Fund are those with a gross national income (GNI) per head, measured in purchasing power parities for the period 2001–03, of less than 90 % of the average GNI of the EU-25 (all the 12 new Member States, Portugal and Greece) plus Spain on a transitional basis because it would have continued to be eligible had the eligibility threshold remained at 90 % of the average GNI of the EU-15.

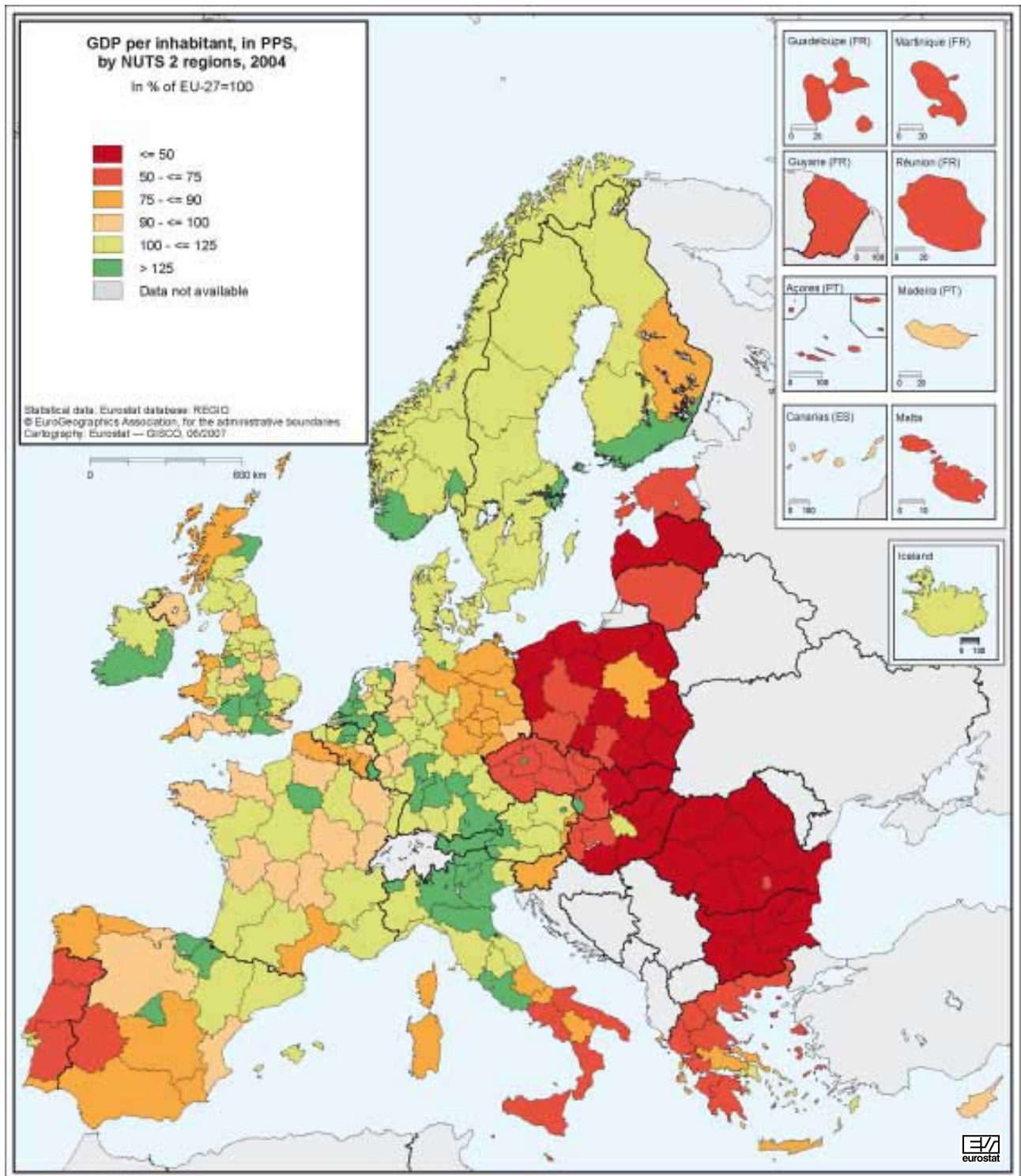
All the non-convergence regions, in 19 Member States, are eligible under the regional competitiveness and employment objective, which aims to strengthen competitiveness and attractiveness, as well as employment, through a twofold approach. First, development programmes will help regions to anticipate and promote economic change through innovation and the promotion of the knowledge society, entrepreneurship, the protection of the environment, and the improvement of their accessibility. Second, more and better jobs will be supported by adapting the workforce and by investing in human resources. In the EU-27, a total of 168 regions will be eligible, representing 314 million inhabitants. Of these, 13 regions with a total of 19 million inhabitants are so-called 'phasing-in' areas and will receive special financial allocations due to their former status as 'Objective 1' regions (they are marked in dark blue on Map 2.2). The amount of EUR 55 billion — of which EUR 11.4 billion is for the 'phasing-in' regions — represents just below 16 % of the total budget for cohesion policy.

The third objective of cohesion policy, territorial cooperation, will strengthen cross-border cooperation through joint local and regional initiatives, transnational cooperation aiming at integrated territorial development, and interregional cooperation and exchange of experience. Some 181.7 million people (37.5 % of the total EU population)

<sup>(2)</sup> Top and bottom 10 % regions are the top or bottom regions that add up to 10 % of the population.

<sup>(3)</sup> Article 5 of Council Regulation (EC) No 1083/2006 of 11 July 2006 laying down general provisions on the European Regional Development Fund, the European Social Fund and the Cohesion Fund and repealing Regulation (EC) No 1260/1999.

**Map 2.1:** GDP per inhabitant, in PPS, by NUTS 2 regions, 2004  
 Percentage of EU-27 = 100





live in cross-border areas, while all EU regions and citizens are covered by one of the existing 13 transnational cooperation areas. The EUR 8.7 billion available for this objective (2.5 % of the total budget for cohesion policy) is split as follows: EUR 6.44 billion for cross-border cooperation, EUR 1.83 billion for transnational cooperation and EUR 445 million for interregional cooperation.

## GDP growth is accelerating outside the EU's core

Looking at the period 1995–2004 (see Map 2.3), we see very high growth rates outside the core of the European Union as defined by the pentagon created by linking London, Paris, Milano, München and Hamburg. Growth was particularly high in Ireland and the three Baltic States, with average annual real GDP growth over 6 %, which means GDP grew by more than 70 % over the period. In the new Member States, Polish, Slovak and Hungarian regions together with Slovenia and Cyprus all achieved high growth rates. In the Czech Republic, Romania and Bulgaria, growth was concentrated in the capital regions.

In the two Member States that joined in 2007, Bulgaria and Romania, the economy contracted in the second half of the 1990s, which explains the overall low growth. Since 2000, however, growth rates in Romanian regions have all been above 4 %, while in Bulgaria growth has also recovered, but is still heavily focused on the capital region.

In the Nordic countries, the Stockholm region and the region containing Helsinki (Etelä-Suomi) achieved robust growth over the period. In the south, several Greek and Spanish regions also achieved high growth rates and the Portuguese regions, with the exception of Norte, grew by more than the average.

By contrast, in Italian regions and most French and German regions growth was sluggish, and in the case of Berlin and Champagne-Ardenne even negative. In Germany, Oberbayern, which contains München, reached the highest average annual growth rate of 3 %. In France, four regions grew at 3 % or faster: Île-de-France, which contains Paris, Rhône-Alpes, which contains Lyon, Provence-Alpes-Côte d'Azur, which contains Marseille and Nice, and Réunion.

Growth in the regions of the Benelux countries varied. Luxembourg achieved a growth rate of 4.6 %. In Belgium the highest rates were found in the two provinces surrounding Brussels (more than 3 %), and in the Netherlands the three regions

which grew faster than 3 % covered Amsterdam or Utrecht or were adjacent to both (Flevoland).

In the United Kingdom, growth was concentrated in southern England, with particularly high growth in Inner London; Gloucestershire, Wiltshire and North Somerset; Berkshire, Buckinghamshire and Oxfordshire; and Cornwall and the Isles of Scilly.

What does this pattern of growth rates mean for the EU? It shows that the regions with a low GDP per inhabitant in the new Member States, Spain and Greece are catching up fast. This trend is confirmed by a statistical analysis which shows that both the Gini coefficient and the coefficient of variation (both weighted by population) reveal regional convergence at the EU level.

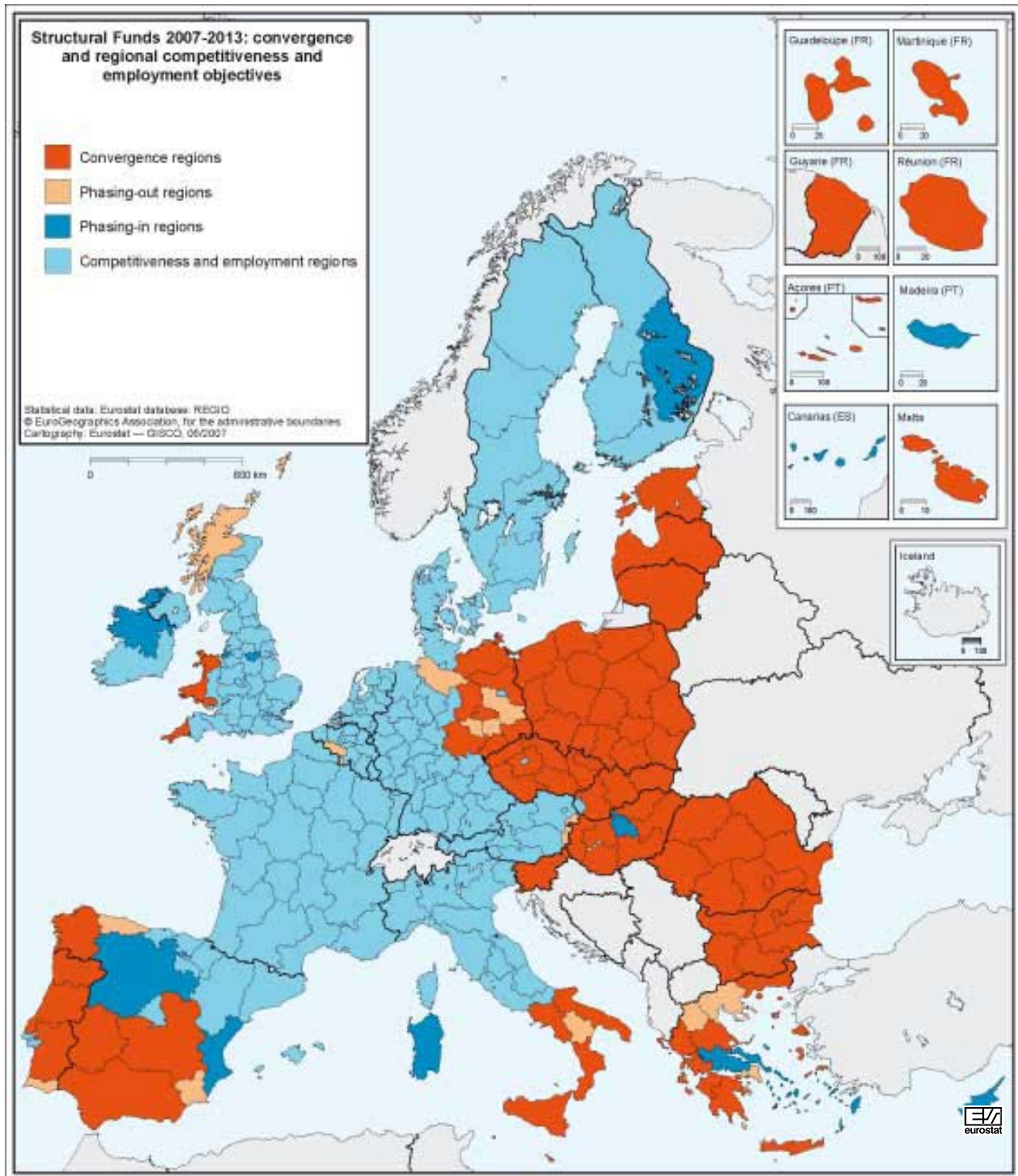
## The EU is converging but what is happening within Member States?

This section analyses the shifts in population and GDP between NUTS 3 regions within a country. To obtain a more detailed view of the changes within Member States, this section uses NUTS 3 regions instead of NUTS 2; this has the additional benefit that it reveals regional trends within an additional six Member States which are covered by just one NUTS 2 level, but are divided into multiple NUTS 3 regions.

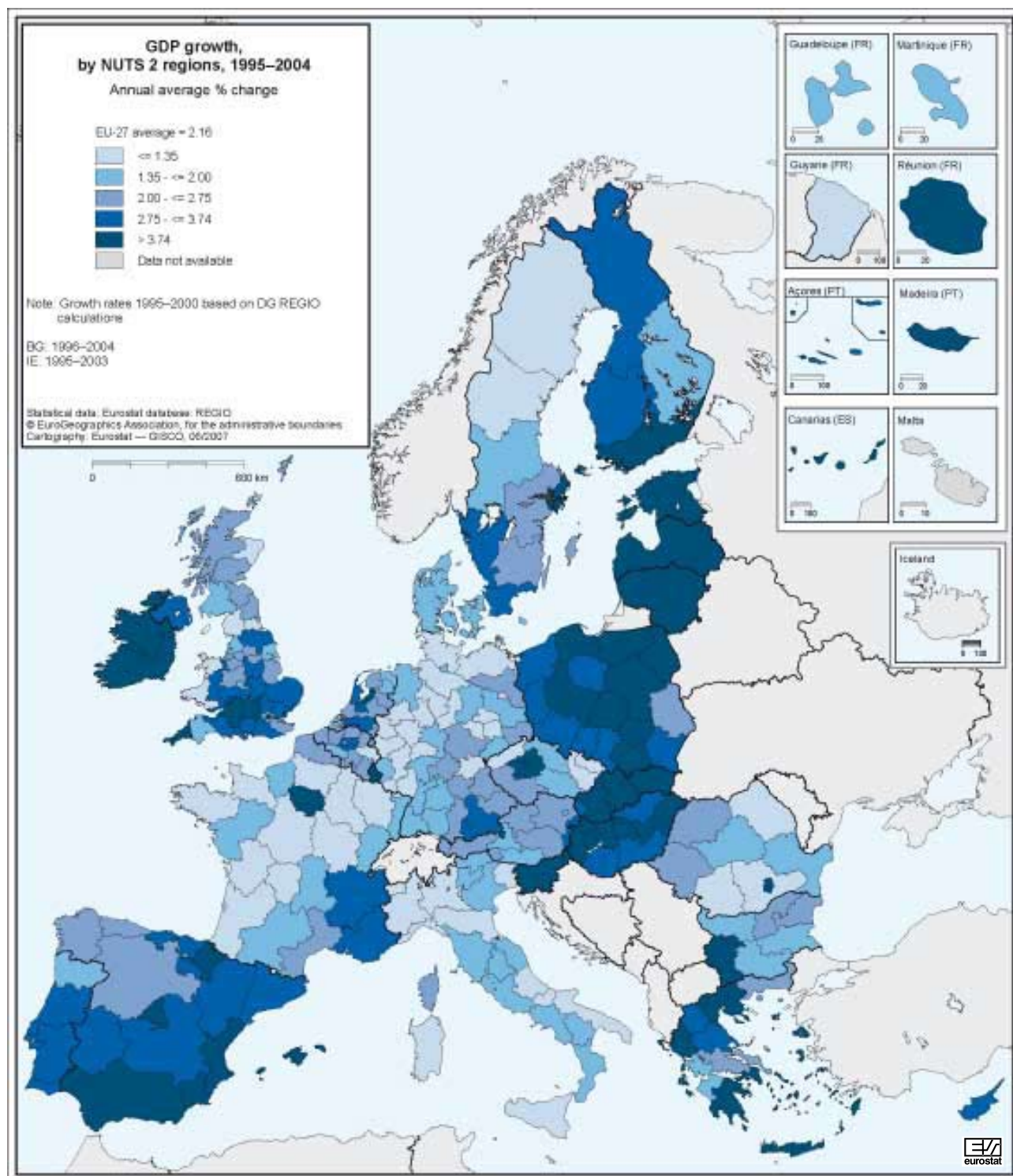
The indicator 'change in the regional share of national population' used in Map 2.4 may seem complex, but it allows us to compare shifts within countries that are experiencing very different overall trends in terms of population change. This indicator calculates how the share of national population of a region has changed. For example, if a region had 10 % of the national population in 1995 and 10.5 % in 2004, the indicator 'change in regional share of national population' would be 5 %. If the national population of the country grew or remained stable over the same period, this region's total population would also have increased. However, as some countries saw their population decline over this period, not all regions with an increased share of national population will see an increase in their total population. For example, in Bulgaria only two regions saw their population increase between 1995 and 2004, but eight regions saw their regional share increase.

There are several countries with clear geographical shifts of population. In Finland, Sweden and the United Kingdom, population shifted to the south. In Italy, population shifted to the north. In France and Portugal population shifted to the coasts. In Spain, population also shifted to the coast, but only

**Map 2.2:** Structural Funds 2007–13: convergence and regional competitiveness and employment objectives



**Map 2.3:** GDP growth, by NUTS 2 regions, 1995–2004  
Annual average percentage change





to the Mediterranean coast, not to the Atlantic as in France. In both Poland and Germany, population tended to shift to the west and the south.

Another clear trend is the concentration of population in the capital region and/or the surrounding region. The regions which include Stockholm, Helsinki, Sofia, Madrid and Inner London all saw their share of the national population increase by more than 5 %. The regions surrounding Dublin, Riga, Berlin, Praha, Budapest, Bucureşti and Bratislava all increased their share of national population, while the capital saw its share decline. This is a clear indication of suburbanisation surrounding these capitals. In other capitals, the NUTS 3 regions are too big to allow us to distinguish the city from its surrounding areas. Therefore, suburbanisation may also be occurring in these other capitals, but this analysis cannot detect it. (The Urban Audit provides more detailed information on cities.)

The shifts in regional share of national GDP tend to follow the population shifts but not entirely. While the population shifts were quite clear, shifts in GDP are not as strong. In Finland, Sweden and the United Kingdom, GDP is also shifting to the south. In France, Portugal and Spain, the population shift to coasts is mimicked by that of GDP. In

Germany, Poland and Italy, however, GDP shifts are not as clear as population shifts.

Whereas the big geographic shifts in regional share of GDP are not as strong as the population shifts, the tendency of GDP to concentrate in capital regions is as strong if not stronger. Most capitals increased their share of national GDP, the only exceptions being Berlin, Dublin, Paris and Wien. The trend is particularly strong in Finland, Sweden and the three Baltic States, but also in Bulgaria, the Czech Republic, Poland, Romania and Hungary.

## Conclusion

The entry of the 12 new Member States has led to a dramatic increase in regional disparities in GDP per inhabitant. The new round of cohesion policy focuses heavily on regions with a GDP per inhabitant below 75 % of the EU average to bolster a nascent trend towards more convergence, while continuing to invest in the competitiveness of the other regions and supporting more territorial co-operation. Within some Member States, population has been shifting south and/or towards the coasts; GDP has also followed this trend in these Member States. The more dominant trend, however, is for population and especially GDP to become more concentrated in the capital regions.

## Methodological notes

To obtain the average growth rates of real GDP between 1995 and 2004, two different sources were used. For the period 2000–04, annual growth rates as provided by Eurostat were used. For the period 1995–2000, growth is estimated by using a method based on a six-branch breakdown of regional gross added value (GVA): the calculation is based on a branch-specific regional breakdown of national GDP at constant prices.

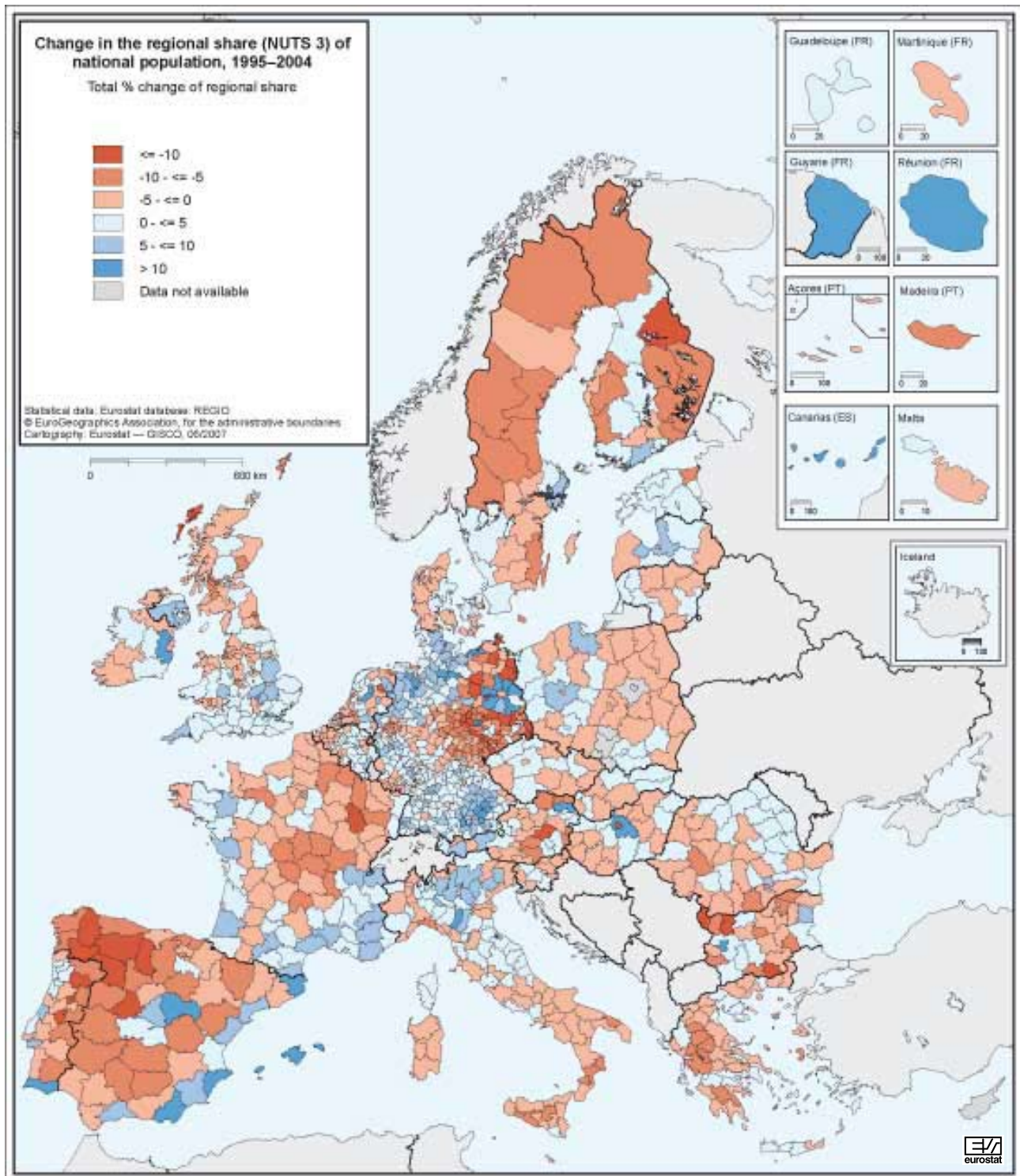
1. For each year, we take the national GDP at constant prices.
2. Branch parts at national level are calculated using the national accounts six-branch GVA breakdown at constant prices. Hence, the GVA–GDP difference is allocated pro rata over the branches.
3. Each national branch part is broken down by region, using the weight of the region within each individual branch (these weights come from the branch-specific regional GVA series at current prices).
4. The resulting branch-specific parts are finally summed by NUTS region. Consequently, we obtain an estimated time series of constant-price regional GDP values.

These estimates of regional GDP at constant prices provide the annual growth rates between 1995 and 2000.

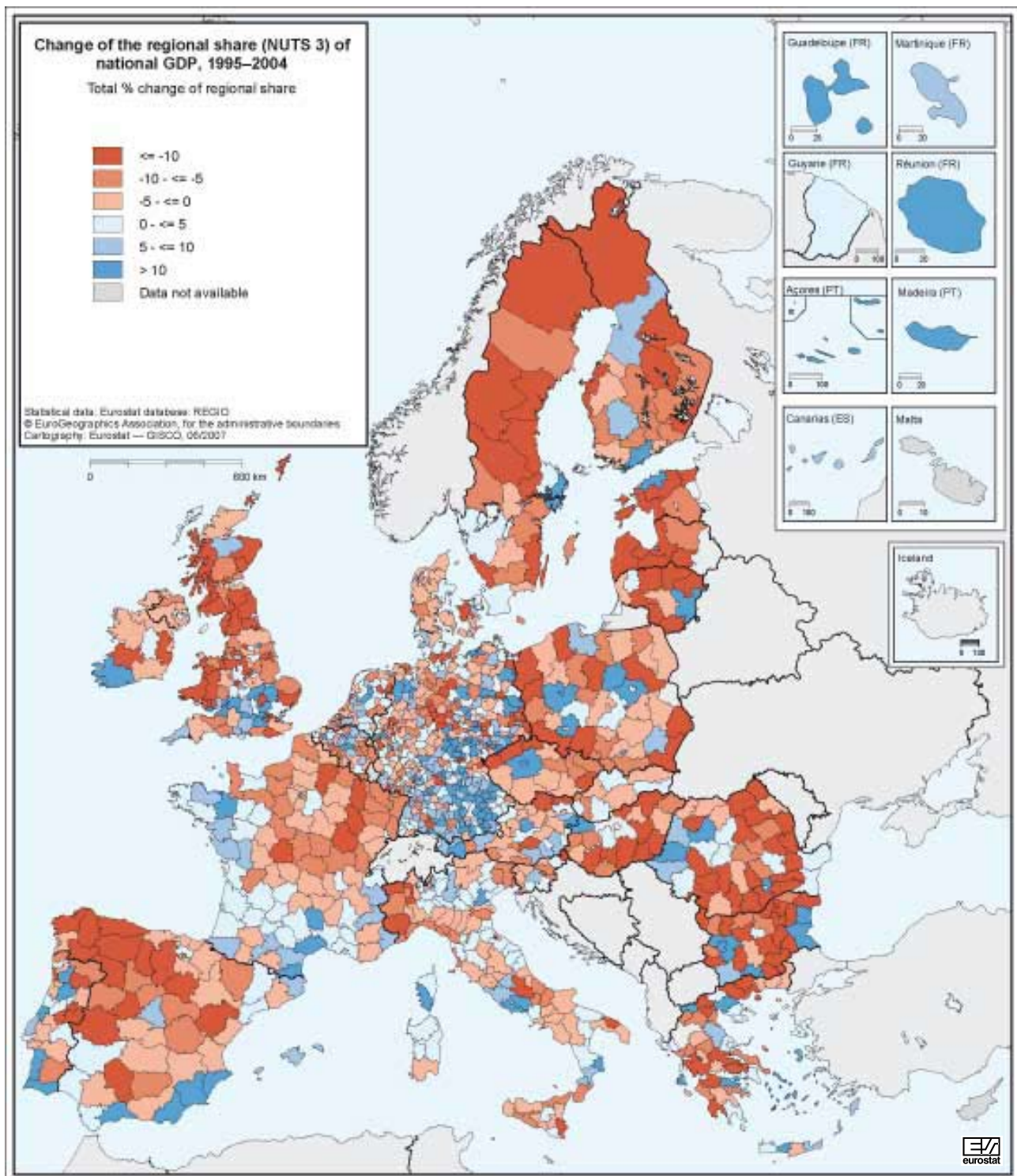
To calculate the change in the regional share of national GDP or population, the share of GDP or the population is calculated for each region in 1995 and 2004. To calculate the change, the share in 2004 is divided by the share in 1995 minus one. For example this means that if a region has a value of 10 %, it means that by 2004 its share had increased by 10 % from, for example, 10 to 11 %.

To ensure comparability between the population map and the GDP map, population was used as defined in regional accounts.

**Map 2.4:** Change in the regional share (NUTS 3) of national population, 1995–2004  
*Total percentage change of regional share*



**Map 2.5:** Change of the regional share (NUTS 3) of national GDP, 1995–2004  
*Total percentage change of regional share*





# Household accounts

3



## Introduction: measuring wealth

One of the primary aims of regional statistics is to measure the wealth of regions. This is of particular relevance as a basis for policy measures which aim to provide support for less-well-off regions.

The indicator most frequently used to measure the wealth of a region is regional gross domestic product (GDP). GDP is usually expressed in purchasing power standards (PPS) and per inhabitant to make the data comparable between regions of differing size and purchasing power.

GDP is the total value of goods and services produced in a region by the persons employed in that region, minus the intermediate consumption. However, owing to a wealth of inter-regional flows and State interventions, the GDP generated in a given region does not tally with the income actually available to the inhabitants of the region.

One drawback of per inhabitant regional GDP as an indicator of wealth is that a 'place-of-work' figure (the GDP produced in the region) is divided by a 'place-of-residence' figure (the population living in the region). This inconsistency is of relevance wherever there are commuter flows — i.e. more or fewer people working in a region than living in it. The most obvious example is the 'Inner London' region of the United Kingdom, which has by far the highest per inhabitant GDP in the EU. Yet this by no means translates into a correspondingly high income level for the inhabitants of the same region, as thousands of commuters travel to London every day to work there but live in the neighbouring regions. Hamburg, Wien, Luxembourg and Praha are other examples of this phenomenon.

Apart from the commuter flows, other factors can also cause the regional distribution of actual income not to correspond to GDP distribution. These include, for example, income from rent, interest or dividends received by the residents of a certain region but paid by residents of other regions.

This being the case, a more accurate picture of a region's economic situation can be obtained only by adding the figures for income accruing to private households.

## Private household income

In market economies with State redistribution mechanisms, a distinction is made between two stages of income distribution.

The primary distribution of income shows the income of private households generated directly from market transactions, i.e. the purchase and sale of factors of production and goods. These include in particular the compensation of employees, i.e. income from the sale of labour as a factor of production. Private households can also receive income on assets, particularly from interest, dividends and rents. Then there is also income from operating surplus and self-employment. Interest and rents payable are recorded as negative items for households in the initial distribution stage. The balance of all these transactions is known as the primary income of private households.

Primary income is the point of departure for the secondary distribution of income, which shows the effects of the State redistribution mechanism. All social benefits and transfers other than in kind (monetary transfers) are now added to primary income. Households have to pay taxes on income and wealth, pay their social contributions and effect transfers from their income. The sum remaining after these transactions have been carried out, i.e. the balance, is called the disposable income of private households.

Prior to an analysis of household income, a decision must be made about the unit in which data are to be expressed if comparisons between regions are to be meaningful.

For the purposes of making comparisons between regions, regional GDP is generally expressed in purchasing power standards (PPS) so that meaningful volume comparisons can be made. The same process should therefore be applied to the private household income parameters. These are therefore converted with specific purchasing power standards for final consumption expenditure called PPCS (purchasing power consumption standards).

## Results for 2004

### Primary income

Map 3.1 gives an overview of primary income in the NUTS 2 regions of the 22 countries examined here. Centres of wealth are clearly evident in southern England, Paris and Alsace in France, northern Italy, Wien in Austria, Madrid, the regions País Vasco and Comunidad Foral de Navarra in Spain, Flanders in Belgium, the western Netherlands, Stockholm in Sweden and Nordrhein-Westfalen, Hessen, Baden-Württemberg and Bayern in Germany. There

is also a clear north–south divide in Italy and a west–east divide in Germany, while the regional distribution is relatively homogeneous in France. A south–north divide is evident in the United Kingdom, although to a lesser extent than in Italy and Germany.

In the new Member States, only the capital regions have relatively high income levels, particularly Praha, Bratislava, Közép-Magyarország (Budapest) and Mazowieckie (Warszawa). These, along with all the other Czech regions and two other Hungarian regions, are the only ones where the primary income of households is over half the EU average. The Romanian capital region of București-Ilfov stands at around 45 % of the average. It is also noticeable that the peripheral regions of some of the new Member States are even further behind the respective national level.

The regional values range from 2 696 PPCS per inhabitant in north-east Romania to 29 411 PPCS in the UK region of Inner London. The 10 regions with the highest per inhabitant income include five regions in the United Kingdom alone, three in Germany and one each in France and Belgium. This clear concentration of regions with the highest incomes in the United Kingdom and Germany is also evident when the ranking is extended to the top 30 regions: this group contains 11 German and 9 UK regions, along with three each in Belgium and Austria, and one each in France, Italy, the Netherlands and Sweden.

It is no surprise that the 30 regions at the foot of the ranking are all located in the new Member States; this list contains 13 of the 16 Polish regions, all eight Romanian regions, four in Hungary, two in Slovakia, plus Estonia, Latvia and Lithuania.

With the enlargement of the European Union, the range between the EU regions with the highest and lowest primary incomes has risen to a factor of 10.9. Five years earlier, in 1999, this factor for the same 22 countries was 11.2. There has therefore been no clearly measurable convergence between the opposite ends of this distribution table even over a fair period of time.

### Disposable income

A comparison of primary income with disposable income (Map 3.2) shows the levelling influence of State intervention. This increases the relative income level in some regions of Italy and Spain, in the west and north of the United Kingdom and in parts of eastern Germany and Greece. Similar effects can be observed for the new Member States, particularly in Hungary, Slovakia and Poland.

However, the levelling out of private income levels in the new Member States has generally been less pronounced than in the EU-15.

In spite of State redistribution and other transfers, most capital regions maintain their prominent position with the highest disposable income for the country in question.

Of the 10 regions with the highest per inhabitant disposable income, five are in the United Kingdom, three in Germany, and one each in France and Greece. The Greek capital region Attiki has moved into the group of the first 10 regions, whilst the Belgian region of Vlaams-Brabant has moved out — a reflection of the fact that the levelling effect of State intervention on private income is less pronounced in Greece than in Belgium. At 11 038 PPCS per inhabitant, Közép-Magyarország (Budapest) is the region with the highest disposable income in the new Member States, the first time that it has moved ahead of the Praha region, which led the ranking for the new Member States until 2003.

When the ranking is extended to the top 30 regions, the dominance of German and UK regions is just as clear: this list contains a total of 11 regions of the United Kingdom (i.e. two more than featured in the top 30 for primary income), and 12 German regions (one more than for primary income). The ranking is completed by four regions in Austria and one each in Belgium, Greece and France.

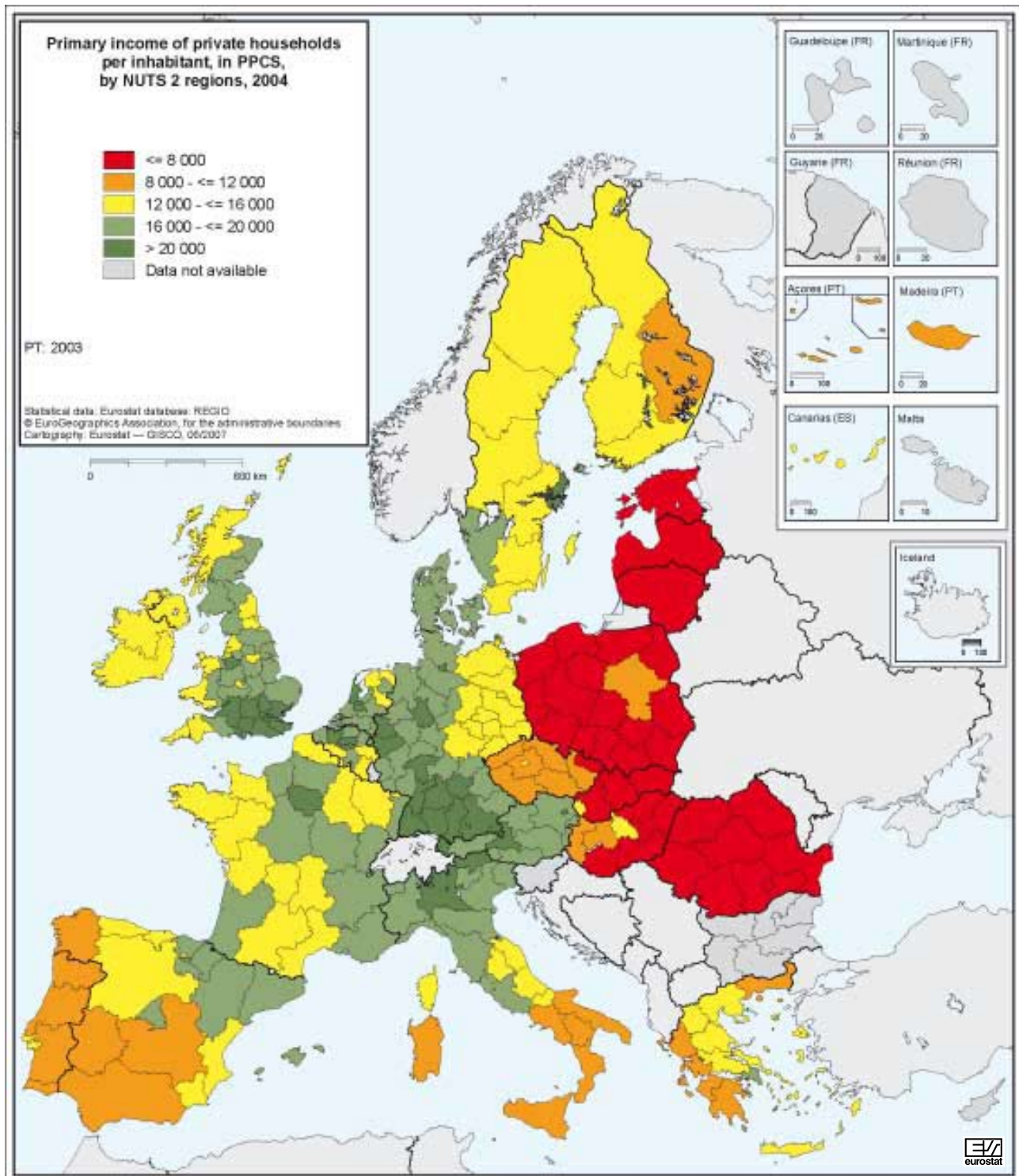
The foot of the table is very similar to the ranking for primary income. Once again the bottom 30 includes 13 Polish and all eight Romanian regions, three each in Hungary and Slovakia, and the three Baltic States. The only slight change from the table for primary income is in the order.

The regional values range from 3 263 PPCS per inhabitant in north-east Romania to 22 405 PPCS in the UK region of Inner London. State activity reduces the range between the highest and the lowest regional value of the 22 countries dealt with here significantly from a factor of around 10.9 to 6.9.

In contrast to primary income, there is a clear trend in disposable income towards a narrowing of the range in regional values: between 1999 and 2004 the factor between the highest and lowest value fell from 8.3 to 6.9.

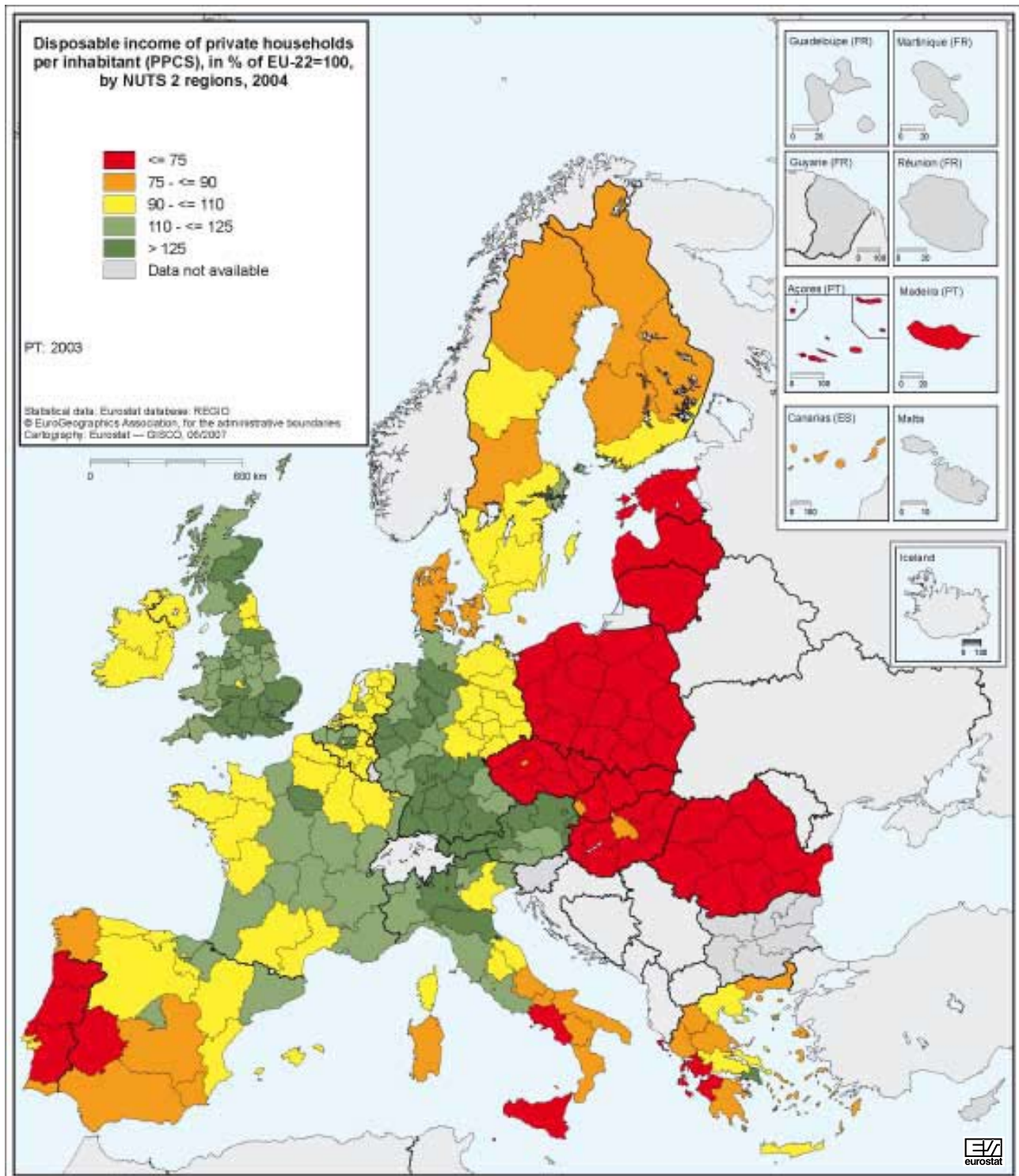
It can, in short, be established that there has been no visible regional convergence in the primary income of private households generated directly from market transactions since 1999. The clear

**Map 3.1:** Primary income of private households per inhabitant, in PPCS, by NUTS 2 regions, 2004





**Map 3.2:** Disposable income of private households per inhabitant (PPCS), percentage of EU-22 = 100, by NUTS 2 regions, 2004



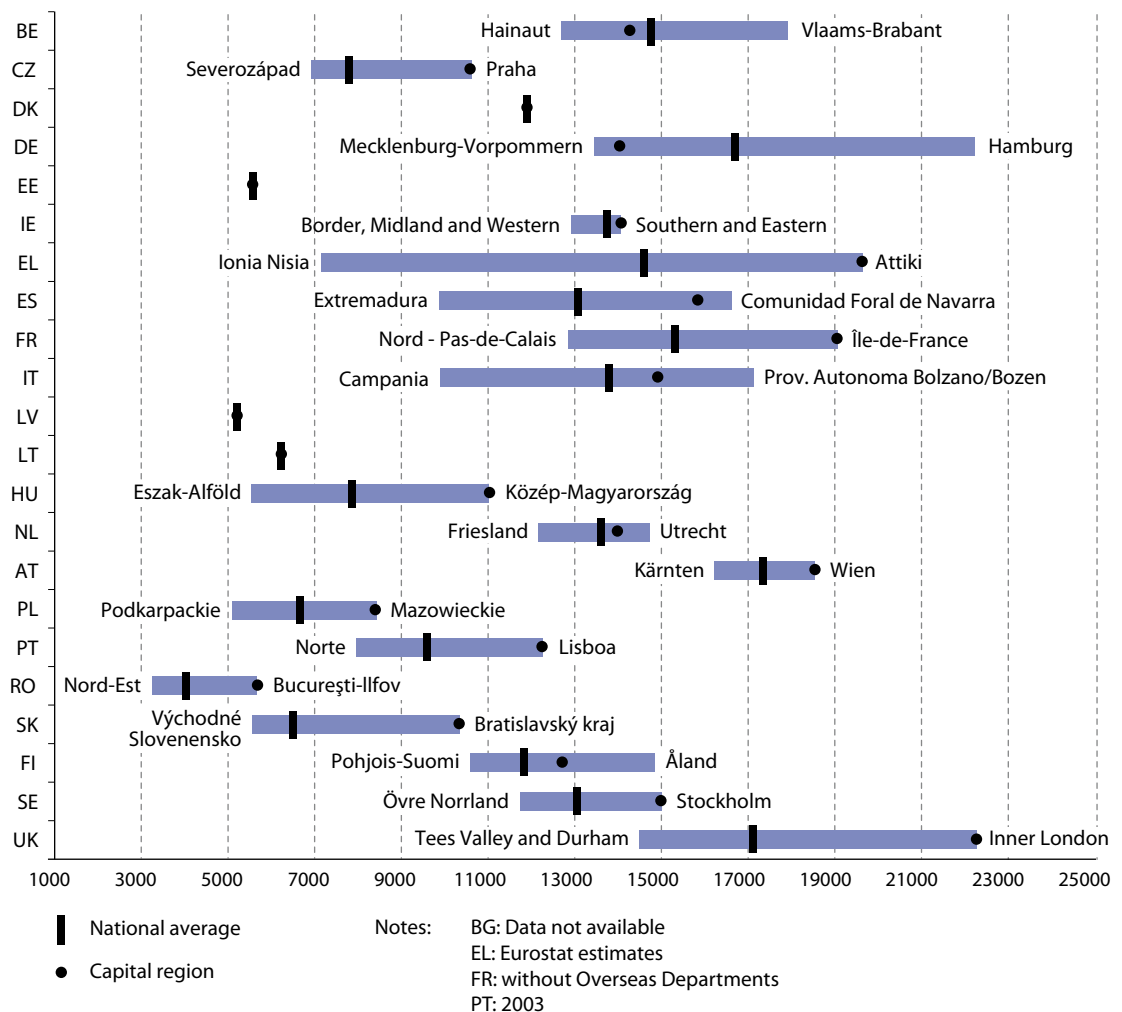
narrowing of the range in disposable income observed over the same period was mainly achieved by State intervention.

The regional range in disposable income within the individual countries is naturally much lower than for the EU as a whole, but varies considerably from one country to another. Figure 3.1 gives an overview of the range of disposable income per inhabitant between the regions with the highest and the lowest value for each country. The highest regional disparity can be found in Greece, with a factor of 2.75. This means that disposable income per inhabitant in the Attiki region is more than two and a half times that in Ionia Nisia. Italy is the second EU-15 Member State among the five countries with the highest regional income disparities, alongside Hungary, Slovakia and Romania; in these four countries, the highest regional values exceed the lowest by at least 73 %.

The Czech Republic has the lowest income disparity of the new Member States (53 %), which is very close to that of Germany, Spain, Poland and the United Kingdom. The smallest regional income disparities are to be found in Ireland, Austria, the Netherlands and Sweden, where the maximum values exceed the minimum values by between 9 % and 28 %.

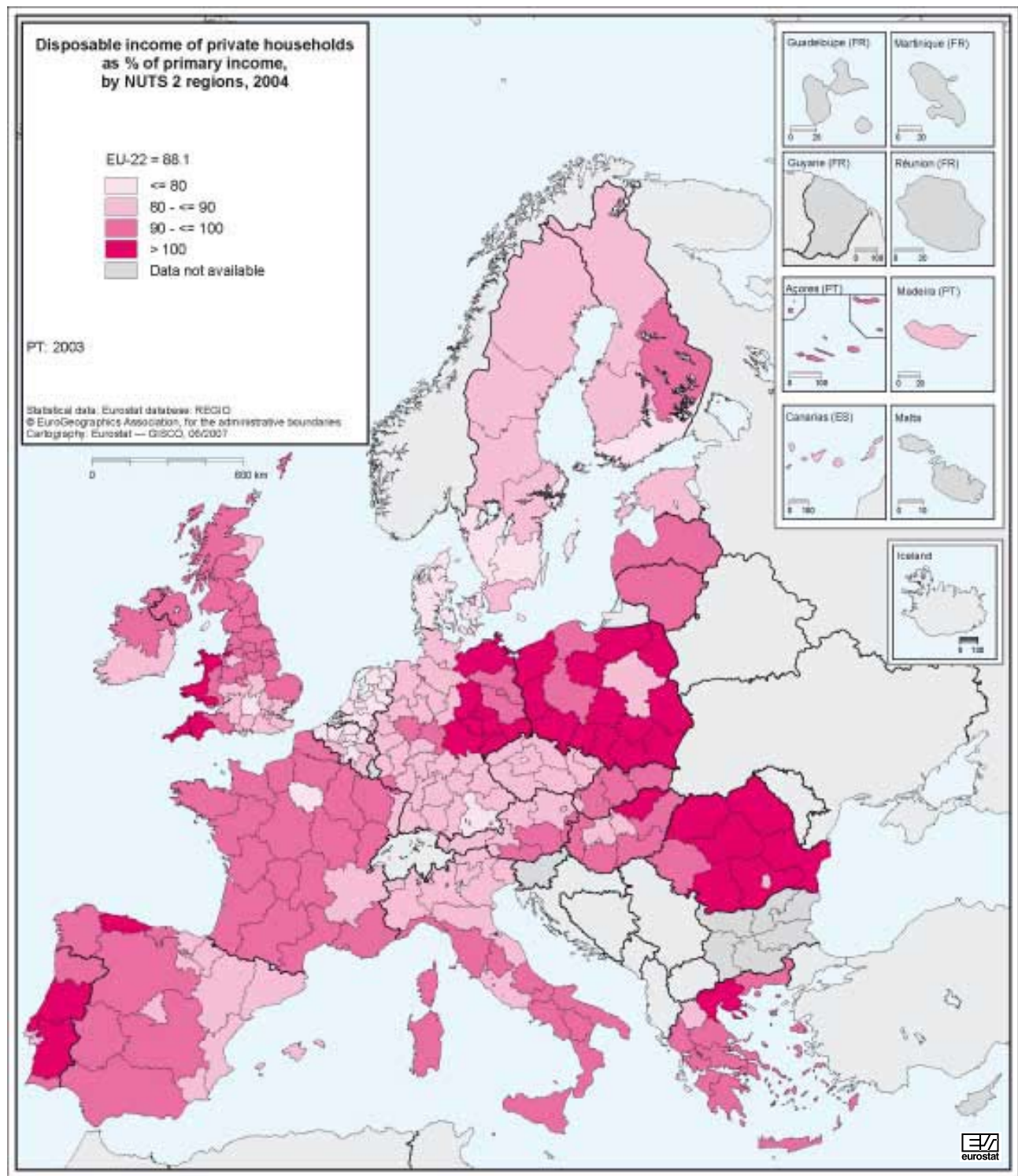
Figure 3.1 also shows that the capital cities of 12 of the 18 countries with several NUTS 2 regions also have the highest income values. This group includes all the larger new Member States. The economic dominance of the capital regions is also evident when their income values are compared with the national averages. In four countries (Greece, Hungary, Romania and Slovakia), the capital cities exceed the national values by more than one third. In only two countries (Belgium and Germany) are the values for the capital region lower than the national averages.

**Figure 3.1:** Disposable income of private households per inhabitant (in PPCS), by NUTS 2 regions, 2004





**Map 3.3:** Disposable income of private households as percentage of primary income, by NUTS 2 regions, 2004





To assess the economic situation in individual regions, it is important to know not just the level of primary and disposable income but also their relationship to each other. Map 3.3 illustrates this ratio, which gives an idea of the effects of State activity and of other transfer payments. The average regional disposable income in the 22 countries examined here is 88.1 % of primary income, with the EU-15 Member States generally lying below this figure and the new Member States above.

Substantial differences between the regions of the Member States are evident. Disposable income in the capital cities and other prosperous regions of the EU-15 is generally below 80 % of primary income. Correspondingly higher percentages can be observed in the less affluent areas, in particular on the southern periphery of the EU, in the west of the United Kingdom and in eastern Germany.

Differences in the regional redistribution of wealth are generally less significant in the new Member States than in the EU-15. For the capital regions the values are between 80 % and 90 % and are almost without exception at the bottom end of the national ranking. This shows that incomes in these regions require much less support through social benefits than elsewhere. The difference between the capital region and the rest of the country is particularly large in Romania at 20 percentage points.

In the 22 EU Member States examined here, there is a total of 37 regions in which disposable income exceeds primary income. This is primarily the case in Poland, where, out of 16 regions, only the centres of economic activity around Warsaw, Gdansk and Poznan record values of below 100 %, and in Romania where six out of eight regions lie above the 100 % mark. In the EU-15 Member States, the most noticeable instances are the eight eastern German and four UK regions.

When interpreting these results, however, it should be borne in mind that it is not just monetary social benefits from the State which may cause disposable income to exceed primary income. Other transfer payments (e.g. transfers from people temporarily working in other regions) can play an important role in some cases. Map 3.3 clearly shows that this is frequently the case in the less prosperous regions of the countries in question.

### Dynamic development on the edge of the Union

The focus finally turns to an overview of medium-term trends in the regions compared with

the EU-22 average. Map 3.4 uses a five-year comparison to show how per inhabitant disposable income (in PPCS) has developed between 1999 and 2004 compared with the average for the 22 Member States examined here.

The map reveals that the relative trend in private incomes both in the EU-15 countries and in some of the new Member States is far from uniform. It shows, first of all, the powerful dynamic processes in action on the edge of the Union; particularly in the case of most UK, Spanish and Romanian regions and in the Baltic States.

On the other hand, it is apparent that there have been below-average trends in income in Germany, Portugal and especially Italy, where even regions with only average levels of income have been affected. The losses in Denmark (- 5.8) and Wien (- 9.2) are less severe, however, as these regions have very high income levels.

The range of this trend stretches from + 14.3 percentage points in the Comunidad Foral de Navarra (Spain) and Hamburg to - 22.9 percentage points in Lombardia (Italy).

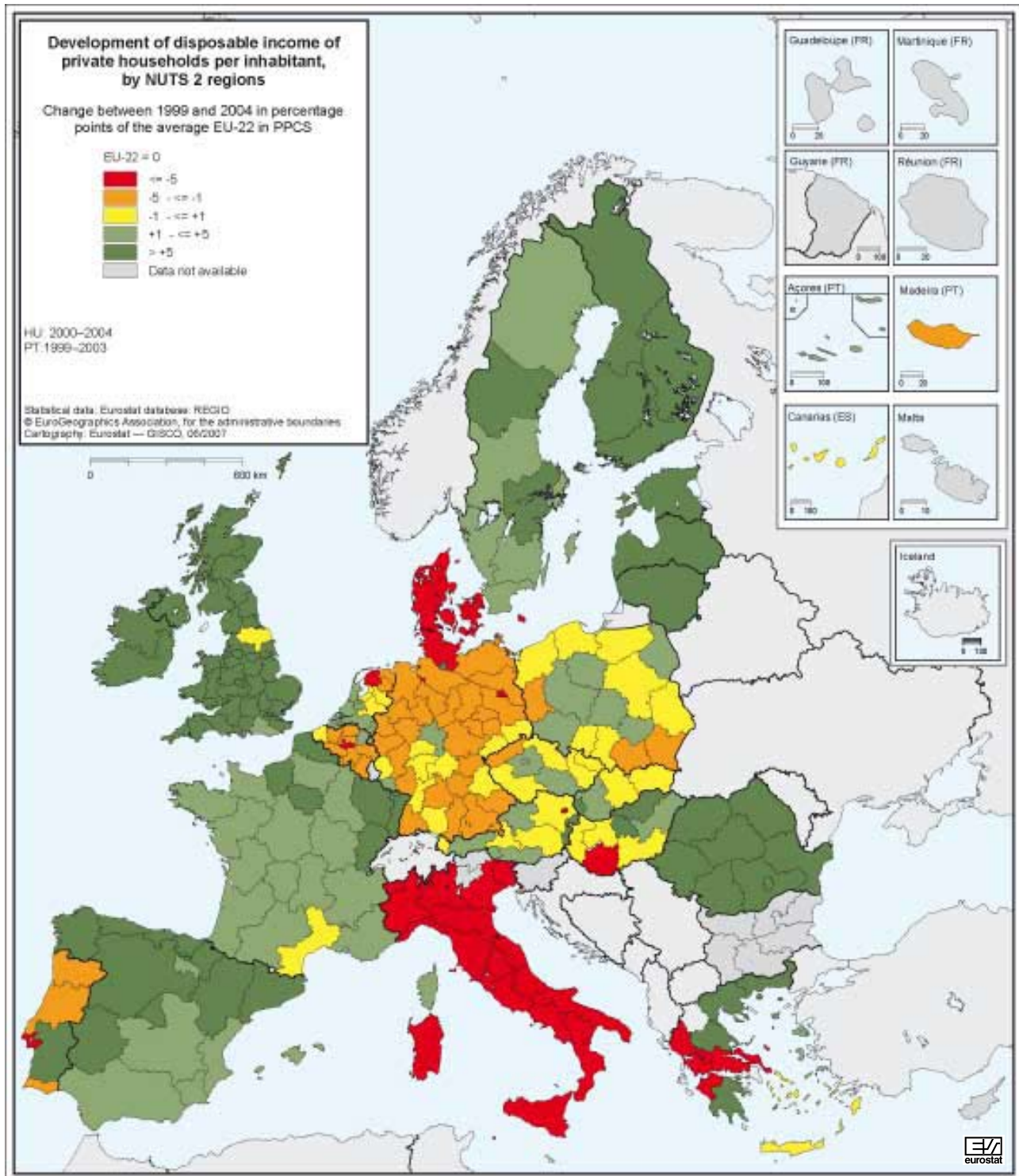
Despite clear evidence of a catching-up process, the positive trend has not been uniform across all the new Member States. Income in five of Poland's 16 regions fell short of the EU average by up to 1.8 percentage points, four of the eight regions in the Czech Republic also fell back slightly and in Hungary the trend was disappointing in two out of seven regions. The figures for Romania, on the other hand, are very encouraging. With an increase of + 11.6 percentage points, the București-Ilfov region has achieved the fifth-highest relative improvement of all regions, with even the north-east region (the region with the lowest income in the whole EU) catching up 5.2 percentage points on the average income level in the EU. The structural problem nevertheless remains that in all the new Member States except Poland the wealth gap between the capital and the poorer parts of the country has widened further.

On the whole, the trend between 1999 and 2004 resulted in a slight flattening of the upper edge of the regional income distribution band, especially on account of fairly large relative falls in regions with high levels of income. At the same time, eight of the 10 regions at the foot of the ranking have caught up considerably on the EU average.

### Executive summary

The regional distribution of household income differs from the distribution of regional GDP in a

**Map 3.4:** Development of disposable income of private households per inhabitant, by NUTS 2 regions  
Change between 1999 and 2004 in percentage points of the average EU-22 in PPCS





number of NUTS 2 regions. This is mainly the result of State intervention in the form of monetary social transfers and the levying of direct taxes, which levels out the disparities between regions considerably. In some cases, other transfer payments and types of income received by private households from outside their region can also play an important role.

Taken together, State intervention and other items of income bring the range of disposable income between the most prosperous and the economically weakest regions to a factor of about 6.9, whereas the two extreme values of primary income per inhabitant differ by a factor of up to 10.9. The flattening out of regional income distribution desired by most countries is therefore being achieved.

The income level of private households in the new Member States continues to be far below that in EU-15; in only a small number of capital regions are income values more than two thirds of the EU average. In terms of per inhabitant disposable income, the Hungarian region Közép-

Magyarország (Budapest) moved ahead of the Praha region in 2004 for the first time ever.

An analysis over a five-year period from 1999 to 2004 shows that incomes in some regions of the new Member States are catching up only slowly. Some Polish, Czech and Hungarian regions have actually fallen back in comparison with the EU average. Romania, on the other hand, clearly seems to be catching up — a development which, fortunately, extends beyond the Bucureşti – Ilfov capital region.

In contrast to primary income, there is a clear trend in disposable income towards a narrowing of the range in regional values: between 1999 and 2004 the factor between the highest and lowest value fell from 8.3 to 6.9.

With regard to the availability of data concerning income, the comprehensiveness of the data and the length of the time series have gradually improved. Once a complete data set is available, the income statistics for private households could be taken into account in the decision-making process for regional policy, alongside statistics on GDP.

## Data availability

Eurostat has had regional data on income categories for private households for a number of years. The data are collected in the framework of the regional accounts at NUTS level 2. Until recently, derogations still applied to several Member States, allowing their data to be submitted to Eurostat later than the 24 months after the end of the reference year stipulated in the regulation or not at all; other Member States have not always kept to the deadline laid down in the regulation.

There are still no data available for the following regions at NUTS 2 regional level: Bulgaria, the départements d'outre-mer in France, Cyprus, Luxembourg, Malta and Slovenia. Values for the EU-27 in this part of the regional accounts cannot therefore be calculated. This chapter therefore relates to the other 22 Member States or 254 NUTS 2 regions. Four of these 22 Member States consist of only one NUTS 2 region: Denmark, Estonia, Latvia and Lithuania. When reference is made to EU average values, this means the average of the 22 Member States for which data are available. This EU-22 average diverges by only around 1 % from the expected EU-27 average and can therefore be regarded as a good approximation.

Regional income data for Greece were only available before deduction of the consumption of fixed capital. Eurostat has therefore estimated the consumption of fixed capital using national data, in order to make the figures comparable with those of other countries. The data for Greece for 2000–04 have been revised; on account of the ensuing break in the time series, Greece could not be included in the five-year comparison 1999–2004. The income data after the deduction of the consumption of fixed capital for the United Kingdom were estimated by the UK's national statistical office. In the United Kingdom itself, however, only income data before deduction of the consumption of fixed capital were published.

Data which reached Eurostat after 12 April 2007 are not taken into account in this chapter of the publication.





# Labour market

4

## EU employment objectives

Three main objectives were set by the Lisbon European Council (March 2000) for 2010: sustained economic growth, more and better jobs and greater social cohesion. The aim should be to raise the overall EU employment rate to 70 %, that is total employment regardless of gender or age group, and to increase the number of women in employment to an average of more than 60 % by 2010.

One year later, at the Stockholm European Council (March 2001), two intermediate objectives were added — by 2005 the employment rate should be over 67 % and the female employment rate should be over 57 % — plus one new target: the employment rate for older workers should be above 50 % in 2010.

Those are collective targets for the EU as a whole. Nevertheless, it is interesting to examine individual countries against the European targets. Also, since the social cohesion objective cannot be forgotten, regional disparities with regard to the overall European targets should be spotlighted. The ability to achieve the desired employment targets at regional level should be analysed in order to identify underperforming regions and as a way of measuring territorial cohesion.

The reference year for the data in this chapter is 2005, which is the perfect time to focus on the intermediate targets set in Stockholm. Regional performance towards the Lisbon targets is analysed, focusing more on regional disparities than on the country as a whole.

It should be noted that the two new Member States — Bulgaria and Romania — were not part of the European Union in 2005. But since the targets set by the Stockholm Council were just a step on the way to the more important ones for 2010, and since including the data for those two countries in the analysis pulls down the employment rates by less than half a percentage point, the analysis was conducted for the EU-27.

### Target 1: Overall employment rate above 67 %

The intermediate target set by the Stockholm Council for the overall average employment rate for the European Union was missed. In 2005 the overall rate was 63.3 %, still 3.7 percentage points below the target. It is true that from 2001 to 2005 there was a trend towards convergence with the targets set, driven by rising female participation in the labour market, but the rate was not fast enough.

At country level, four categories can be identified: countries that have already achieved the 2010 overall employment target set in the Lisbon strategy; countries that have achieved the 2005 target set by the Stockholm Council; countries that have missed the Stockholm target but have made significant progress towards it; and countries which have missed the Stockholm target and show no clear convergence pattern or are even moving away from the targets.

Four of the EU-27 countries have already achieved the Lisbon strategy target of 70 % for the overall employment rate. They are Denmark (75.9 %), the Netherlands (73.2 %), Sweden (72.3 %) and the United Kingdom (71.7 %). Out of these four countries, the United Kingdom has also showed a consistent upward trend in its employment rate over the last five years.

Five of the EU-27 countries have achieved the 67 % intermediate target set for the overall employment rate by the Stockholm Council. They are Austria (68.6 %), Cyprus (68.5 %), Finland (68.4 %), Ireland (67.6 %) and Portugal (67.5 %). Of those countries, Ireland has showed a significant upward trend over the last five years.

All the other countries missed the Stockholm target. But some of them have shown a clear upward trend in employment rates, like Estonia, Spain, France, Greece, Italy, Hungary and Bulgaria. Malta and Romania fell short of the Stockholm overall employment target and are in fact moving away from it, since they have shown a significant downward trend in their employment rates over the last five years. The other countries that failed to achieve the Stockholm target showed no significant trend either.

Map 4.1 shows which NUTS 2 regions have achieved the targets (light green for the Stockholm targets and dark green for the Lisbon targets).

A cluster of NUTS 2 regions at the crossroads between Germany, Austria and the Czech Republic have shown high employment rates.

All the east European regions which had low or very low employment rates are found to the east of that central cluster. Employment rates are especially low in the western regions of Poland and the eastern regions of Slovakia, Hungary and Romania. The French regions that also had low employment rates are found to the west of the central cluster, with two exceptions: Centre and Limousin.

Almost every region in the United Kingdom recorded good performances in employment rates, and most of them have already achieved the Lisbon



targets. One exception is Inner London, with an employment rate below 65 %. All regions in the Netherlands have met the Stockholm employment targets, as have all the regions of Sweden.

The southern regions of Europe, except for those in Portugal, have low employment rates, especially the south of Italy, Sardinia and Corsica.

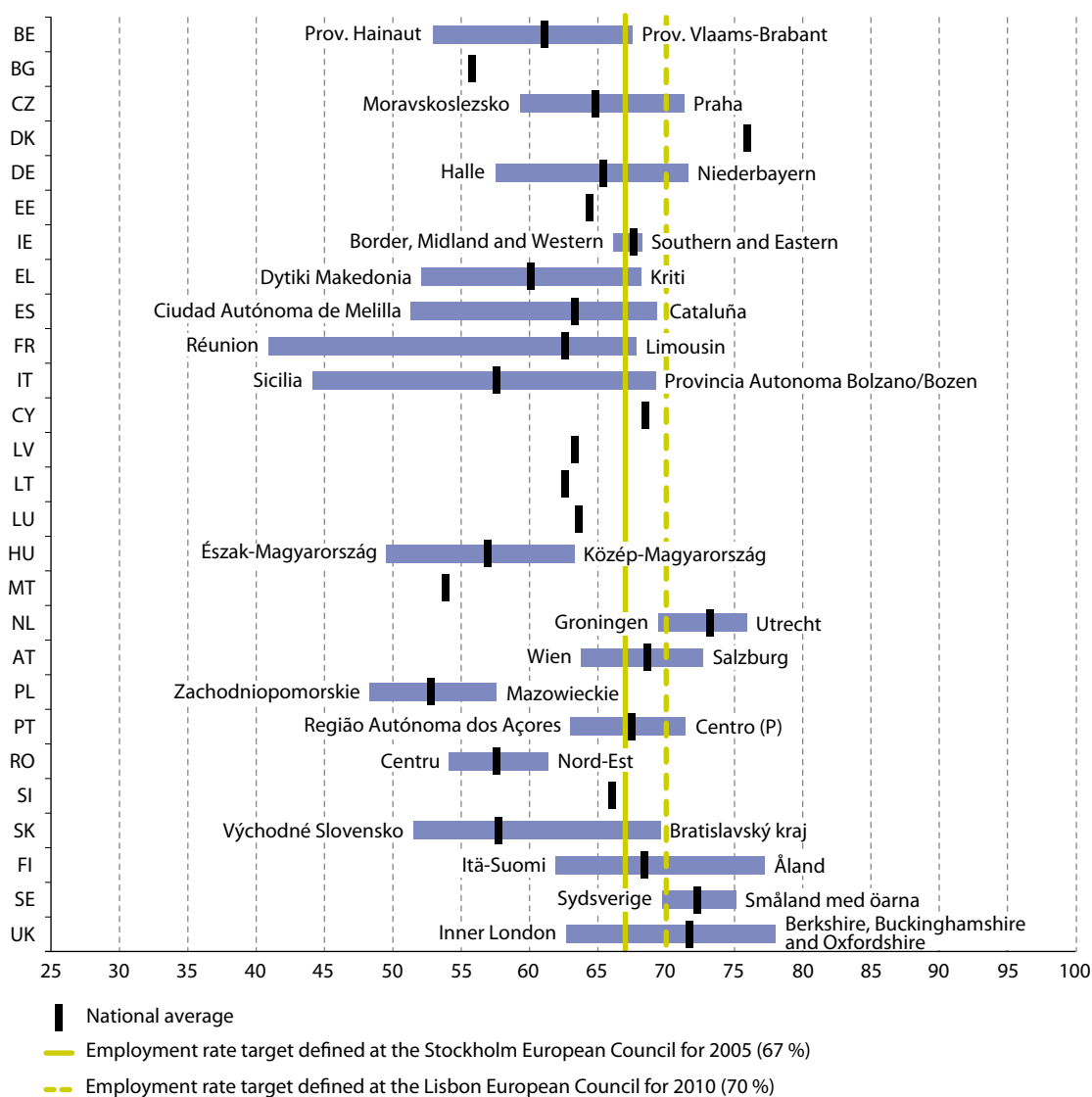
All the islands have also recorded low employment rates, except Madeira (Portugal), the Balearic Islands (Spain) and Cyprus, all of which have achieved the Stockholm target.

The employment rates are not the same for every region within a given country. The dispersion of regional employment rates is calcu-

lated whenever a country has several NUTS 2 regions and indicates the level of homogeneity of employment across the regions (see Figure 4.1). Of the 19 countries for which it is possible to measure the dispersion rate, Bulgaria, Spain, Italy, Finland and the United Kingdom have shown a significant decrease in the dispersion of employment rates over the last five years. This means that the NUTS 2 regions in those countries are more similar now in terms of employment rates.

Over the last five years the growth in the employment rate in the EU-27 has not been very high. Three countries have shown a clear downward trend: Sweden, Portugal and Malta. While there

**Figure 4.1:** Employment rate for the 15–64 age group, by NUTS 2 regions, 2005  
Percentage



Notes: There are no data available for Bulgaria at NUTS 2 level  
Countries which comprises a single NUTS 2 region: DK, EE, CY, LV, LT, LU, MT and SI

was a decrease in almost every region of Sweden over the last five years, in Portugal behaviour has differed between individual regions: employment rates have shown a significant increase in Alentejo and the Portuguese islands, but at the same time they have decreased significantly in the other regions.

In contrast, Spain, Latvia and Lithuania have shown a marked steady improvement over this period. All the regions in Spain have recorded a general and consistent improvement in their overall employment rates.

In 2005 the EFTA countries had higher employment rates, with all NUTS 2 regions well above 70 %. Iceland recorded the biggest employment rate of all, based on the available data, with 83.8 %.

### Target 2: Female employment rate above 57 %

The female employment rate for the EU-27 was below the Stockholm target, but this was much closer to being achieved than any other target. Nevertheless, the rate of growth towards the 2010 Lisbon target is still insufficient.

Over the last five years, almost half the countries have increased their female employment rates while the other half have shown no clear trends. Sweden is the only country that has shown a consistent decrease over the last five years, but in 2005 it was already above the 2010 Lisbon target for female employment.

Four countries had female employment rates below 50 % — Malta, Poland, Italy and Greece — although in the last two participation by women in the labour market has improved.

Female employment rates in the NUTS 2 regions are illustrated by Map 4.2. The better performance on female employment rates than overall employment is clearly seen by comparing Map 4.2 with Map 4.1.

More than half of the NUTS 2 regions had female employment rates above the Stockholm target.

Almost every region of France, Greece, Italy and Spain has shown a significant increase in female employment rates over the last five years. The regions in the central Netherlands have also shown an increase in female employment rates over the last five years yet, at the same time, a decrease in the overall employment rates. This means that in those regions substitution of men by women has occurred on the labour market.

Female participation in the labour market is quite high in the EFTA countries, all of which have employment rates above 70 %.

### Target 3: Older workers above 50 %

In 2005 the employment rate for older workers (aged 55 to 64) in the EU-27 was 42.2 %. A target of 50 % employment by 2010 was set at the Stockholm Council. Judging from the behaviour of older workers' employment between 2001 and 2005, it will be difficult to achieve this target by 2010. Despite the clear upward trend observed over this period, the pace is not fast enough.

Eight of the 27 Member States already have a rate above the desired 50 %, but 12 were still below 40 % in 2005. Romania is one of those and was the only country that even recorded a significant decrease over the period 2001–05.

The upward trend in the EU-27 rate is driven by almost every Member State, with the exception of Poland and Romania, and 20 of the 27 countries showed an increase of more than 3 percentage points between 2001 and 2005.

Map 4.3 shows the regional employment rates for older workers for NUTS 2 regions. A cluster of regions with high employment rates for older workers can be identified right in the centre of Europe; this includes the southern regions of Germany and the western regions of the Czech Republic.

Many regions in northern countries, notably Estonia, the United Kingdom and Ireland, and in Portugal also have high levels of older workers employed, compared with other EU-27 regions.

There are no big discrepancies between regional employment rates for older workers within each country. Exceptions have been seen in Slovakia and Romania, where certain NUTS 2 regions have shown very different behaviour from the rest. In Slovakia, in 2005 the employment rate for older workers was 52.2 % in the Bratislavský kraj region, while it stayed below 30 % in all the other regions of the country. In Romania, the Nord-Est and Sud-Vest Oltenia regions have stayed above 50 %, whereas all the other regions have recorded significantly less.

Older workers' participation in the labour market has been significantly higher in the EFTA countries than in the EU-27. Every region recorded employment rates higher than 60 %. Iceland achieved an impressive 84.3 % for this age group.



## Gender gap narrowing

The difference between male and female participation in the labour market is narrowing and has been doing so consistently for the last five years. The gap was 16.6 percentage points in 2001, but was down to 14.7 percentage points by 2005. Even so, the target set in Stockholm for 2005 was that this difference should be at most 10 percentage points.

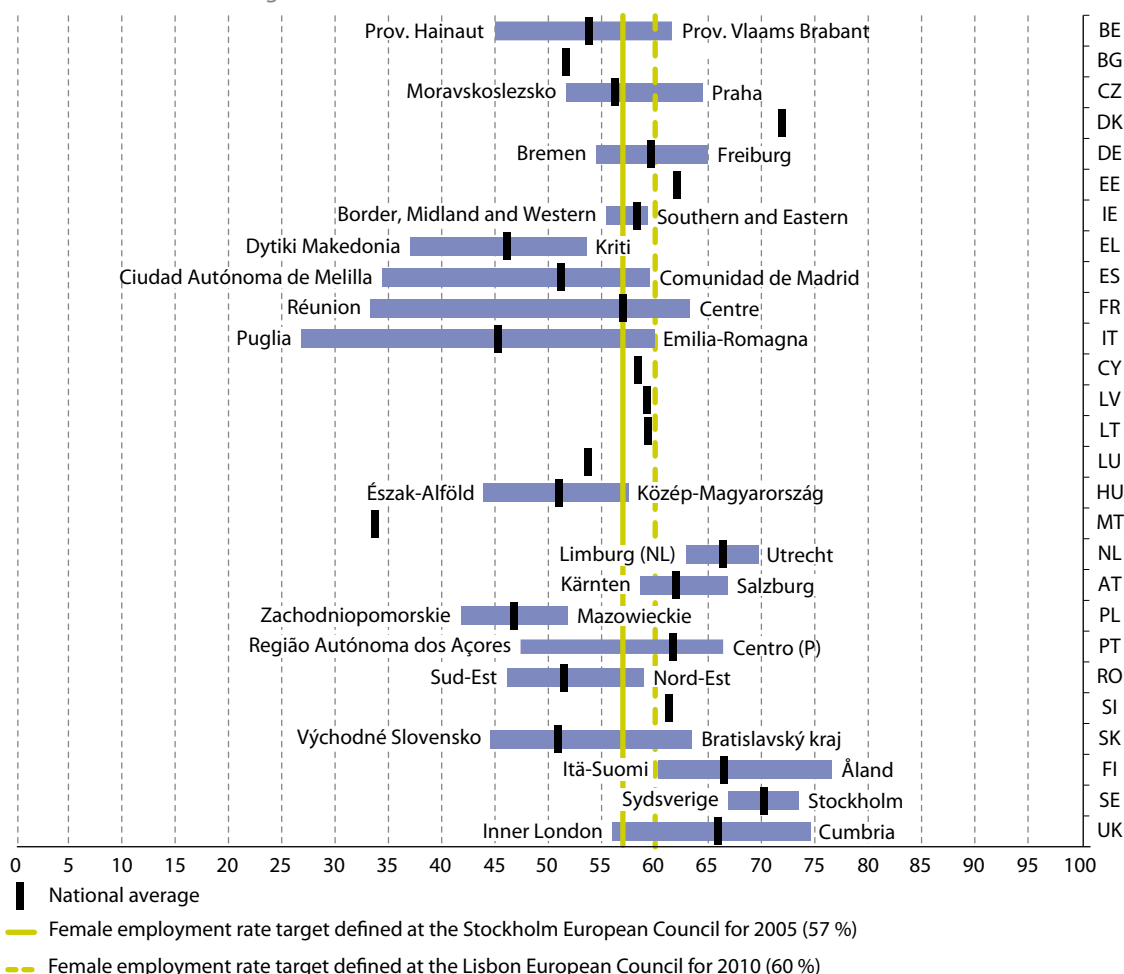
Eight of the EU-27 countries have narrowed the gap to the maximum proposed by the Lisbon Council: Bulgaria, Denmark, Estonia, Latvia, Lithuania, Slovenia, Finland and Sweden. Eight more have a gender gap in employment rates of between 10 and 15 points and, at the same time, are showing a marked trend towards narrowing that gap: Belgium, Germany, France, Hungary, the Netherlands, Austria, Portugal and the United Kingdom.

The difference between male and female employment rates in percentage points is illustrated in Map 4.4. Clearly, southern countries have a bigger gap than the northern ones. Ireland and Portugal both deviate a little from this general pattern. In Germany the gender gap in employment rates is much lower in the eastern part of the country.

The south of Italy, almost every NUTS 2 region in Greece, Malta and the central and southern regions of Spain had significantly wider gender gaps than the rest of the NUTS 2 regions in the EU-27.

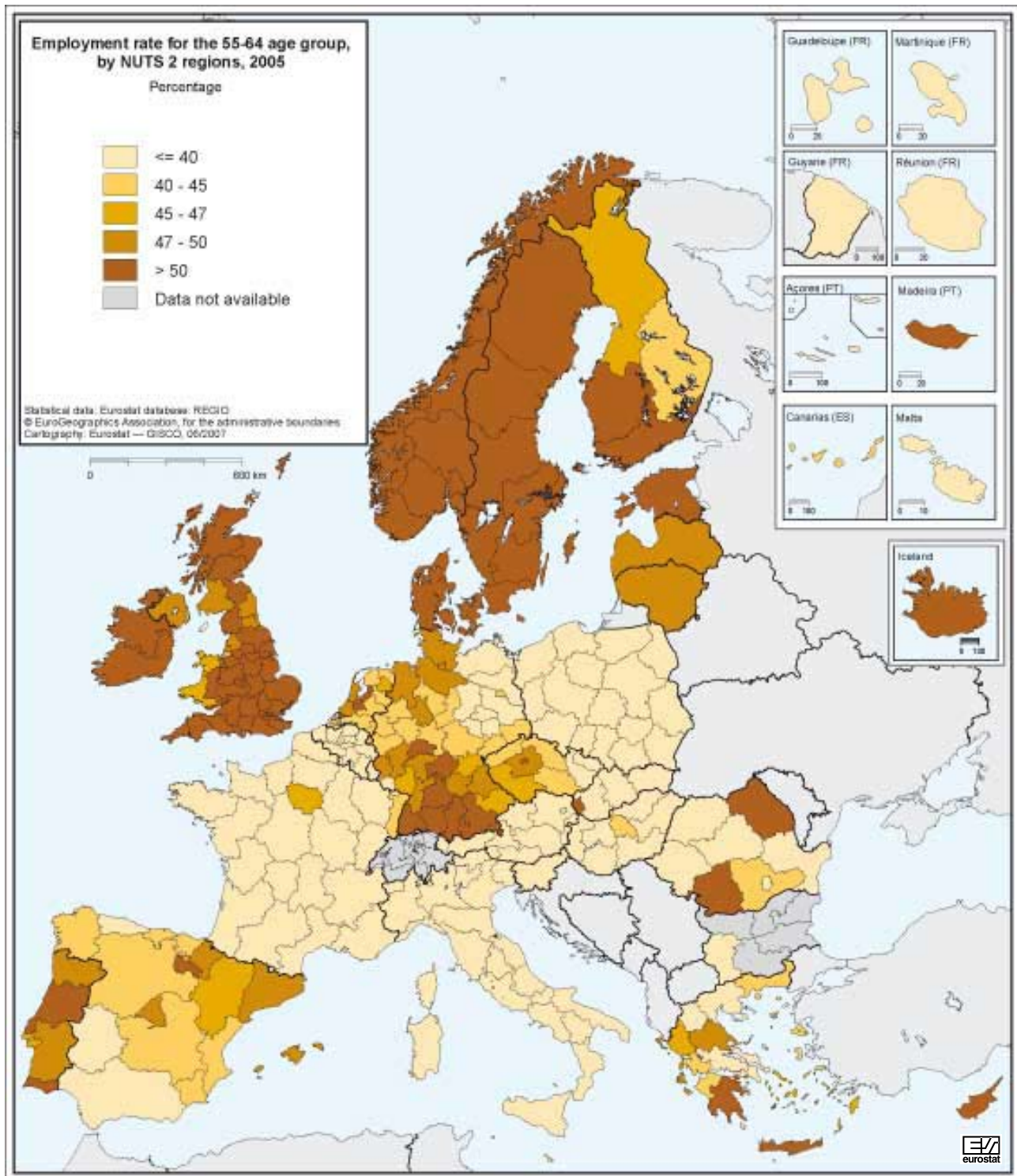
There were no big discrepancies in the employment rate gender gap between NUTS 2 regions within each country. There are two exceptions though: the Açores (Portugal), with a gap of 30.8 percentage points, and Corse (France), with 30.2 points. Both these regions are islands and showed a much higher difference in gender employment rates in 2005 than the mainland or other islands belonging to the same country.

**Figure 4.2:** Female employment rate for the 15–64 age group, by NUTS 2 regions, 2005  
Percentage



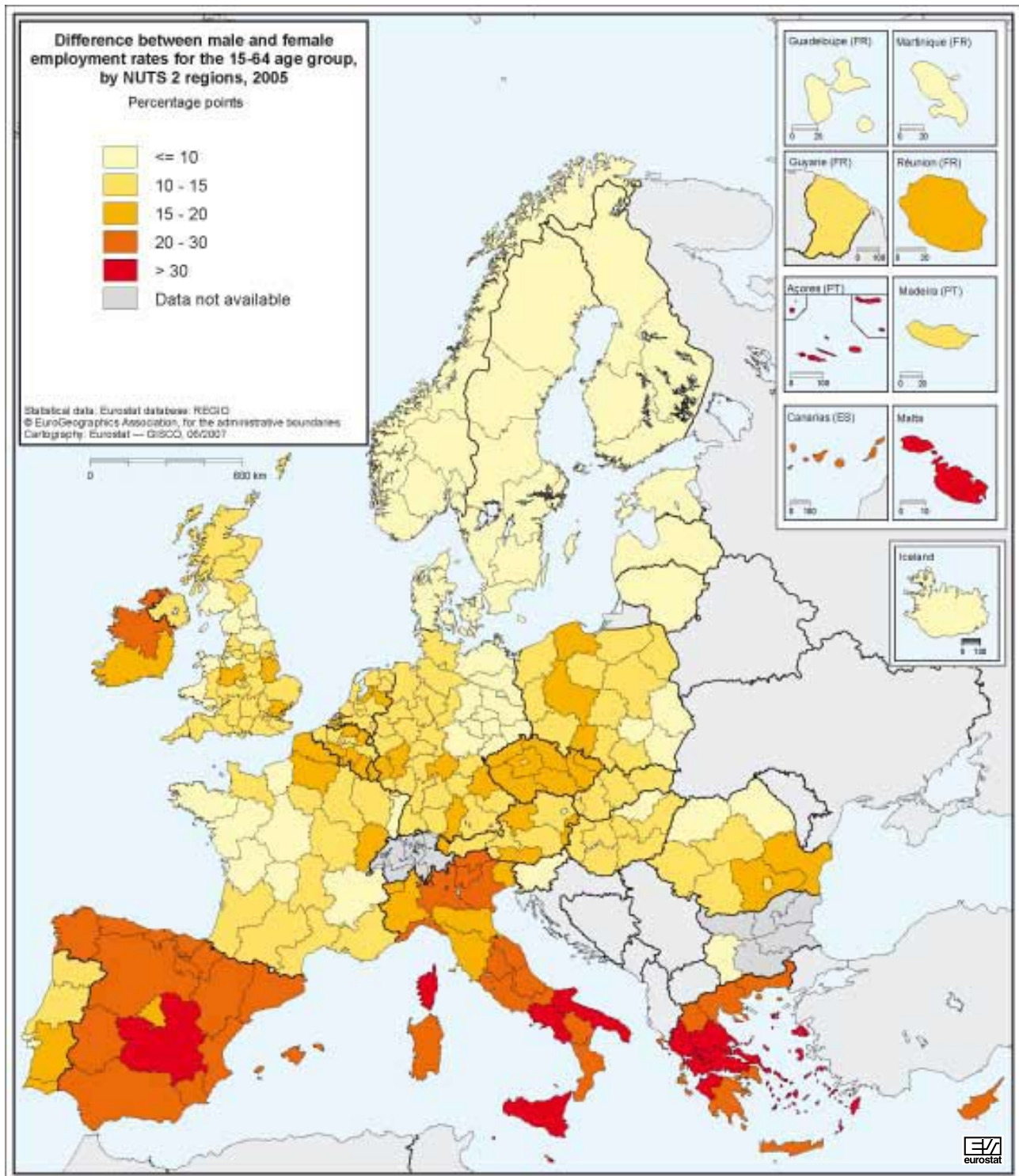
Notes: There are no data available for Bulgaria at NUTS 2 level  
Countries which comprises a single NUTS 2 region: DK, EE, CY, LV, LT, LU, MT and SI

**Map 4.3:** Employment rate for the 55–64 age group, by NUTS 2 regions, 2005  
Percentage





**Map 4.4:** Difference between male and female employment rates for the 15–64 age group, by NUTS 2 regions, 2005  
Percentage points



The gender gap between employment rates is closing — not fast enough to achieve the Lisbon targets for 2010, but it is closing. Regions that had traditionally high gender gaps have produced positive results on female participation in the labour market in the last five years.

The EFTA countries showed no big differences between male and female employment rates, with the exception of Switzerland, which had a gender gap of 13.8 percentage points. Iceland and all regions of Norway stayed below 8 percentage points.

## Unemployment

The unemployment rate in the EU-27 countries in 2005 was 9.0 %, breaking the negative trend of the last five years. The unemployment rate for women (9.8 %) was still higher than for men (8.3 %), but the difference decreased over this period.

At country level, there were big differences in unemployment rates. There were countries with unemployment rates below 5 %, like Ireland (4.3 %) or the United Kingdom (4.7 %), and others above 15 %, like Slovakia (16.3 %) and Poland (17.7 %). While Slovakia has shown a clear positive trend over the last five years, with its unemployment rate dropping by 3.0 percentage points over this period, Poland has not achieved such positive results.

Over the last five years Denmark, Ireland and the United Kingdom have kept their unemployment rates stable and below 6 %. The biggest increases in unemployment rates were observed in Portugal (3.6 percentage points) and Germany (3.3 percentage points), driven mainly by youth unemployment. Bulgaria has achieved a remarkable improvement, with unemployment falling by 10.2 percentage points over the last five years, staying at 10.1 % in 2005.

High unemployment is mainly concentrated in the north-eastern regions: parts of Poland, eastern Germany and eastern Slovakia (see Map 4.5). The départements d'outre-mer (France), Extremadura (Spain) and Sicilia (Italy) also have high unemployment rates.

The change in regional unemployment rates is illustrated in Map 4.6. It clearly shows that the increase in unemployment is mainly situated in regions of Germany, Portugal and Sweden. The biggest decreases in unemployment have been in the south of Spain and the south of Italy and in Estonia, Latvia and Lithuania, where the whole country comprises a single NUTS 2 region.

Over the last five years the gender gap in EU-27 unemployment rates has narrowed from 1.9 to 1.4 percentage points, because male unemployment has grown faster than female unemployment. This was observed in more than half of the NUTS 2 regions, particularly in the Italian regions of Calabria, Sicilia and Molise, where it fell by more than 4 percentage points. In two German regions, Dessau and Halle, the gender gap has even been reversed: the unemployment rates fell enough for female unemployment to overtake male unemployment, so that female unemployment is now lower than male unemployment in these regions.

In some regions the gender gap widened between 2001 and 2005, a trend particularly marked in the Spanish regions of Ceuta and Melilla and in the Greek regions of Voreio Aigaio and Ionia Nisia.

Approximately 70 % of the NUTS 2 regions in the EU-27 have seen their youth unemployment rates increase over the last five years. The biggest increases in unemployment rates were observed in the Spanish regions of Ceuta and Melilla and in the French region of Corsica, with an increase of more than 25 percentage points over this period. But other regions also achieved significant improvements in youth unemployment rates, for example Bulgaria and Latvia and the Italian region of Campania have cut their rates by more than 15 percentage points over the last five years.

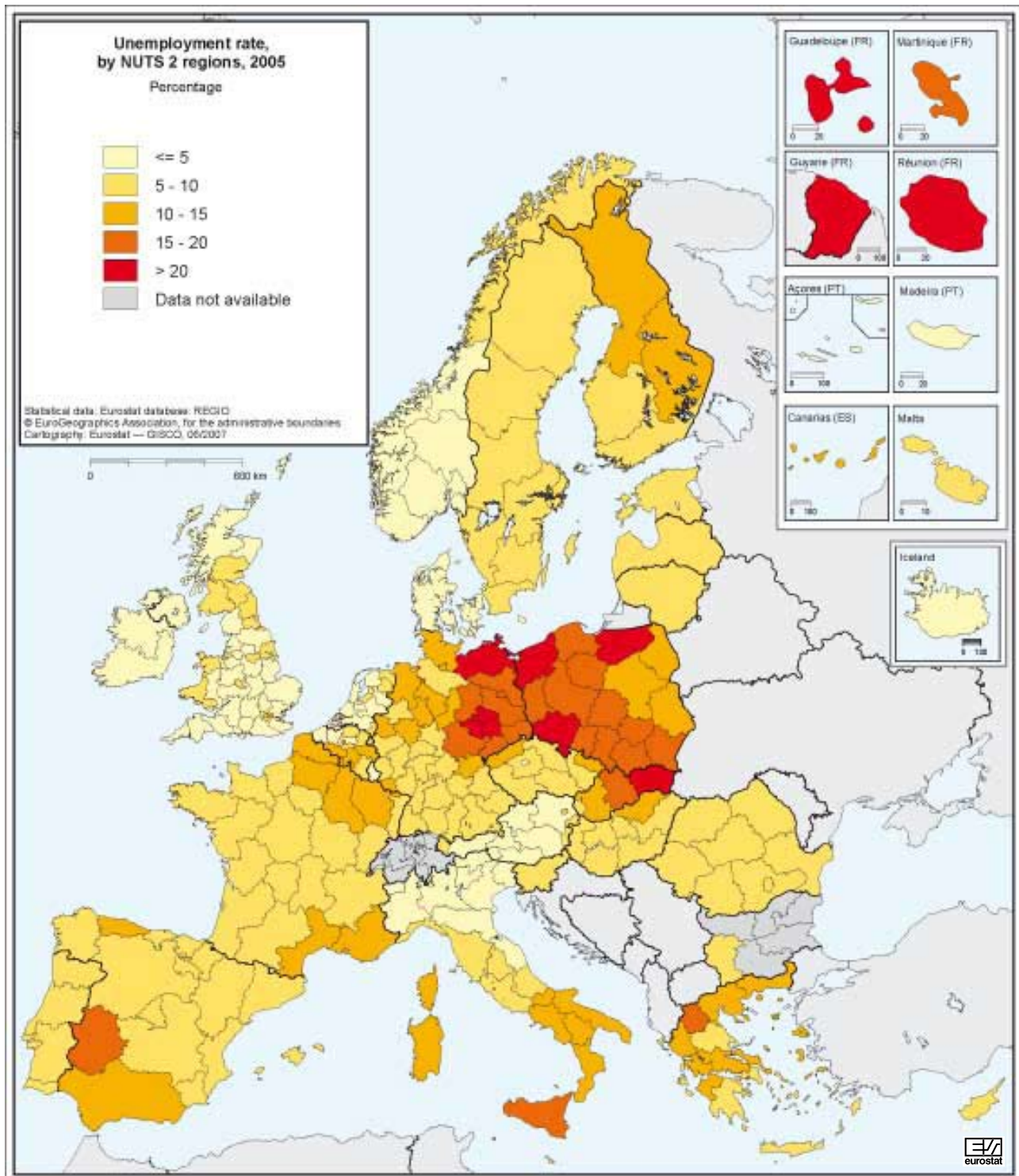
Long-term unemployment is the most severe form of joblessness, with significant consequences on people's lives. In 2005, 46 % of the unemployed had been seeking a job for a year or more. In the EU-27 the ratio between long-term unemployment and total unemployment has shown little improvement over the last five years.

In Belgium, Estonia, Poland and Slovakia, more than half of the unemployed in 2005 had been seeking a job for more than a year, and this number has been growing over the last five years. In Spain, Sweden and the United Kingdom, under 30 % of the job-seekers had been waiting for more than a year to find a job and significant improvements have been seen in long-term unemployment over the last five years.

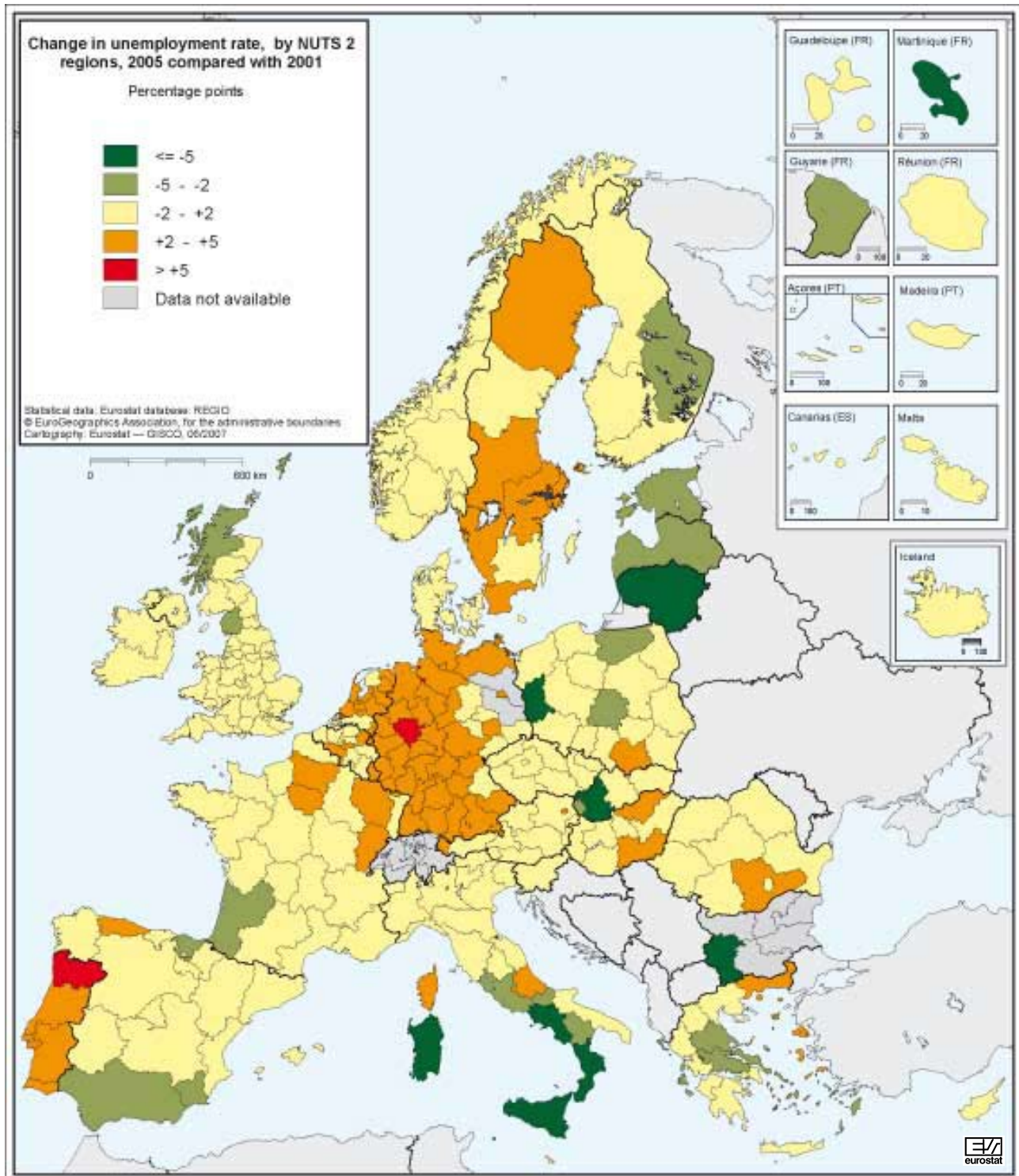
Long-term unemployment is especially high in the overseas regions of France and in all regions of Slovakia, with the exception of Bratislavský kraj, where more than 70 % of the unemployed have been looking for a job for 12 months or more.

Iceland, Norway and Switzerland had low unemployment rates in 2005. Iceland reported

**Map 4.5:** Unemployment rate, by NUTS 2 regions, 2005  
Percentage



**Map 4.6:** Change in unemployment rate, by NUTS 2 regions, 2005 compared with 2001  
*Percentage points*



2.5 %, the lowest unemployment rate out of all the figures available. All the Norwegian NUTS 2 regions, except Nord-Norge, had unemployment rates below 5 %.

## Conclusion

The results in this chapter show that more should be done to achieve the 2010 employment targets set by the Lisbon Council. Some encouraging results have been seen on female and older workers' participation in the labour force but they

have not been enough to meet the objectives of the Lisbon strategy.

Analysing the labour market at regional level is useful in order to identify underperforming regions. It shows that there are still strong disparities to be addressed in the labour market at regional level. Disparities also exist between regions within the same country, which goes against the desired social cohesion.

As a final conclusion, the labour market performance can be said to have been generally positive, but there is still a long way to go.

## Methodological notes

The source for regional labour market information down to NUTS 2 level is the EU labour force survey (LFS). This is a quarterly household sample survey conducted in the Member States of the European Union.

The LFS target population is made up of all members of private households aged 15 or over. The survey follows the definitions and recommendations of the International Labour Organisation (ILO). To achieve further harmonisation, the Member States also adhere to common principles of questionnaire construction.

All the regional results presented here concern NUTS 2 regions.

For further information about regional labour market statistics, see the metadata on the Eurostat website (<http://epp.eurostat.ec.europa.eu>) under data/general and regional statistics/regions/regional labour market.

## Definitions

**Population** means persons aged 15 and over, living in private households (persons living in collective households, i.e. residential homes, boarding houses, hospitals, religious institutions, workers' hostels, etc., are not included). This comprises all persons living in the households surveyed during the reference week. This definition also includes persons absent from the households for short periods owing to studies, holidays, illness, business trips, etc. (but having retained a link with the private household). Persons on obligatory military service are not included.

**Employed persons** means persons aged 15 years and over (16 and over in Spain, the United Kingdom and Sweden (1995–2001); 15 to 74 years in Denmark, Estonia, Hungary, Latvia, Finland, Norway and Sweden (from 2001 onwards); and 16 to 74 in Iceland) who, during the reference week, worked, even for just one hour a week, for pay, profit or family gain or were not at work but had a job or business from which they were temporarily absent because of, for example, illness, holidays, industrial dispute or education and training.

**Unemployed persons** means persons aged 15 to 74 (16 to 74 in Spain, Norway, Sweden (1995–2000), the United Kingdom and Iceland) who, during the reference week, were without work, were currently available for work and had either actively been seeking work in the past four weeks or had already found a job to start within the next three months.

**Employment rate** means employed persons as a percentage of the population.

**Unemployment rate** means unemployed persons as a percentage of the economically active population. The unemployment rate can be broken down further by age and sex. The youth unemployment rate relates to persons aged 15 to 24.

**Long-term unemployment rate** means long-term unemployed (12 months or longer) as a percentage of the sum of the unemployed for less than one year plus the long-term unemployed.



# Labour productivity

5



## Introduction

As in last year's regional yearbook, the purpose of this section is to analyse trends in regional labour productivity. This analysis deliberately diverges from the usual studies of regional economic development which focus on gross domestic product (GDP) per inhabitant. Instead, GDP is considered in relation to the number of persons employed in the region.

It is common knowledge that the analysis of GDP per inhabitant has certain weaknesses: the numerator refers to the value of the goods and services produced in the region under consideration, while the denominator relates to the resident population, which is not necessarily involved in the production process in the region. In regions with sizeable commuter flows, this is like comparing apples with pears. Well-known examples are the regions Inner London, Luxembourg and Hamburg. The net number of persons who commute daily into these regions increases production to a level that could not be achieved by the resident working population alone. As a result, the GDP per capita in these regions cannot really be compared with the GDP per capita of the regions where the commuters live.

In the analysis of labour productivity, on the other hand, a region's output is related to the input of the labour factor, thus eliminating the problem of distortions by commuter flows.

Whereas last year an analysis of labour productivity taking account of the working hours actually worked was attempted, this section tries to determine what differences there are in regional labour productivity between manufacturing industry and the services sector.

## Still considerable differences in regional labour productivity

Map 5.1 shows a substantial gap in labour productivity between central Europe (England, the Benelux countries, France, western Germany, northern Italy) on the one hand and the 12 new Member States on the other.

Whereas in the Grand Duchy of Luxembourg, Île-de-France (i.e. the greater Paris region), southern and eastern Ireland and Brussels more than EUR 80 000 per person employed were generated in 2004, the corresponding figure in all the regions of Bulgaria and all the regions of Romania except Bucharest was less than EUR 10 000 per person employed. In almost all the regions of the

2004 accession countries too, labour productivity is very low, at less than EUR 20 000 per person employed, except in Cyprus, Malta and Slovenia and the capital regions in the Czech Republic (Praha), Slovakia (Bratislava), Hungary (Közép-Magyarország) and Poland (Mazowieckie).

A clear pattern is thus emerging both for countries with high labour productivity and for countries with low productivity. In the capital region, labour productivity is generally higher than in the other regions of the country. In smaller countries which have no regional division at NUTS level 2, the same phenomenon can be seen if NUTS 3 data are used.

In the old Member States, labour productivity in 2004 was less than EUR 40 000 per person employed in the following regions only: all regions of Portugal, Castilla-La Mancha and Extremadura (Spain), in Cornwall and Isles of Scilly and Highlands and Islands (United Kingdom).

A sharp east-west (low labour productivity-high labour productivity) divide can be seen in Germany and a north-south (high labour productivity-low labour productivity) divide in Italy. In other Member States there is not such a pronounced geographical divide in labour productivity.

## Differing productivity growth rates are leading to increased convergence

If we consider the growth rates for regional labour productivity from 1999 to 2004, what is immediately striking are the well above average growth rates in the 12 new Member States, i.e. the regions with particularly low labour productivity show the strongest growth rates. This is confirmed by a correlation coefficient of  $-0.68$  between labour productivity in 1999 and the growth rates for 1999-2004.

A gradual process of convergence is thus taking place in regional labour productivity in the EU. A look at the change in the coefficient of variation, i.e. the usual relative measure of spread, in labour productivity between 1995 and 2004 confirms this: the coefficient of variation fell from 0.51 to 0.42 in this period.

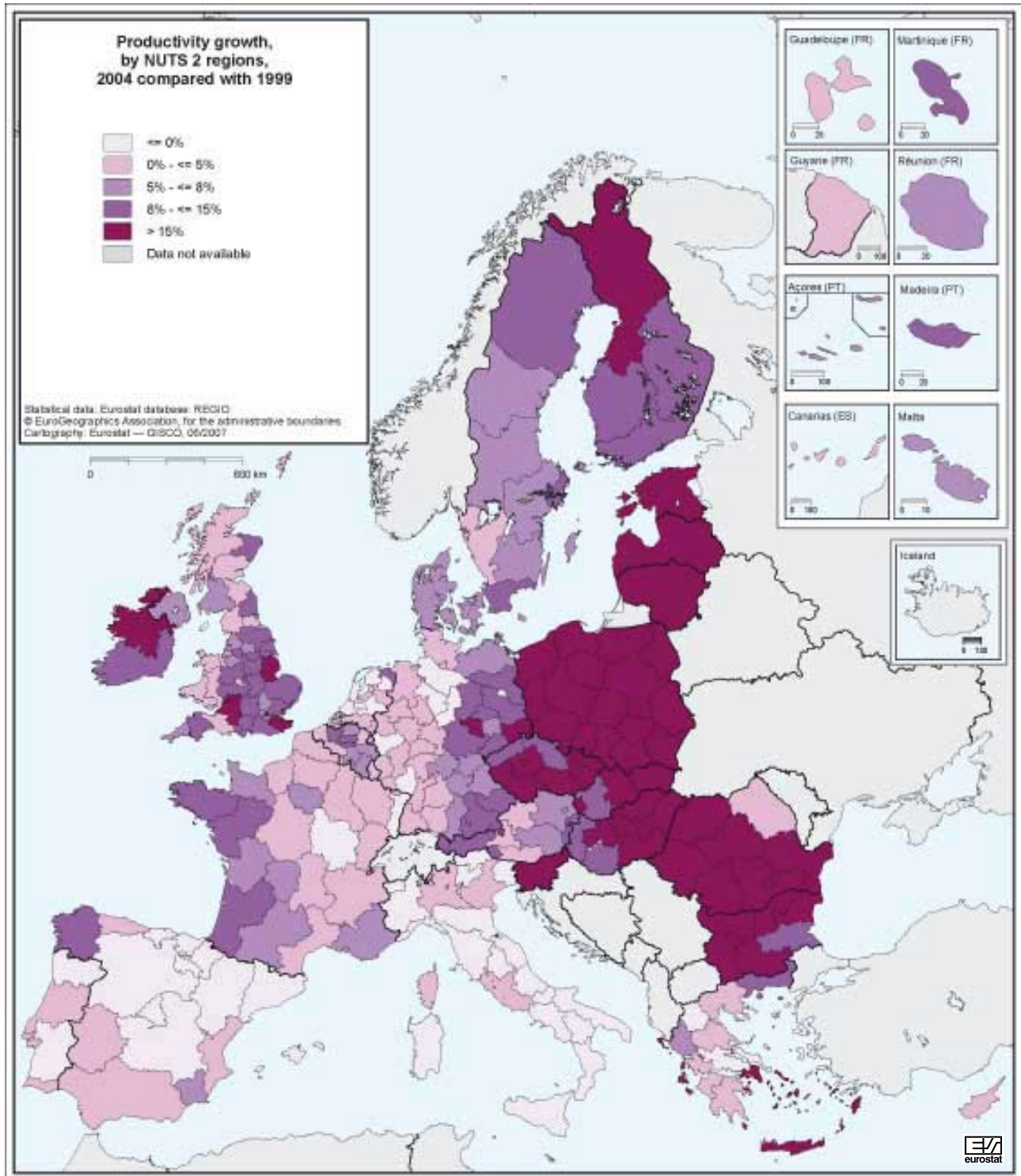
In contrast, Figure 5.1 shows that, although for GDP per capita the spread is somewhat smaller, it had the same value of 0.39 in 2004 as in 1995. The spread in disposable household income between the regions of the EU is even smaller. For







**Map 5.2:** Productivity growth, by NUTS 2 regions, 2004 compared with 1999



both this measure of prosperity and labour productivity, a reduction can be seen in the spread of the values, i.e. increasing convergence.

It could be that the EU's structural policy is very successful, as can be seen from the increasing convergence in labour productivity and disposable household income, but that the spread of GDP per capita is remaining at the same level because the commuter effect from the surrounding areas to the major cities is tending to increase over time, offsetting the reduction in the spread of GDP per capita.

Let us now take a look at the growth rates for labour productivity in the individual regions: labour productivity is increasing particularly sharply (by more than 50 %) in all regions of Romania (except Nord-Est) and in the Polish regions Małopolskie, Podkarpackie, Świętokrzyskie and Opolskie.

Most of the regions with falling labour productivity are to be found in Italy and Spain, but there are also some in the Netherlands and Germany.

### Labour productivity in manufacturing industry and the services sector

Let us now consider the major sectors agriculture, manufacturing industry and services. To start with, it may be of interest to look at which sector is predominant in the individual regions.

For this purpose the shares of GDP generated in each of the sectors were calculated in order to identify regions with well above-average shares in one of the three sectors.

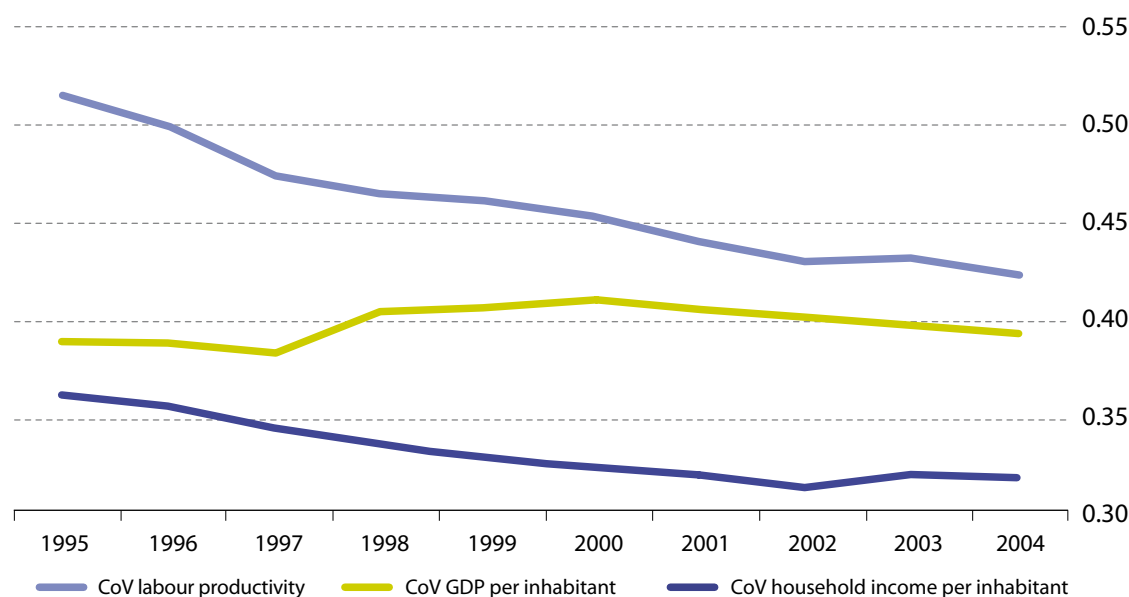
Regions where agricultural production dominates are shown in green, regions with a predominance of manufacturing industry are shown in yellow and regions where the services sector dominates are shown in blue. For many regions no strong predominance of one sector is discernible; these are shown in white.

Map 5.3 shows that agricultural activities dominate in central and southern Spain, southern Hungary, the whole of Romania, most regions of Bulgaria, central and eastern Poland, eastern Finland and the north of Scotland. Manufacturing industry dominates in northern Spain, northern Italy, Baden-Württemberg (Germany), Sachsen (Germany), all regions of the Czech Republic except Praha, Austria, southern Poland, Lithuania, central and northern Sweden and northern Finland.

The services sector is predominant in all capital cities, Denmark, northern Germany, several regions of the Netherlands and in the south of England. These are in all probability banking and insurance services and other business services. However, central and northern Norway are also dominated by the services sector, presumably in connection with petroleum production in the North Sea.

The predominance of the services sector is shown in blue for the regions where tourism is pre-

**Figure 5.1:** Coefficient of variation for three different economic aspects, EU-27  
(for household income: only EU-23, excluding BG, CY, MT, LU, SI)





sumably dominant: the south of France, southern Portugal, southern Italy, the Greek Islands, France's overseas islands, the Canaries, Cyprus and Malta.

Unfortunately, it was not possible to subdivide the services sector further in the analysis, e.g. into the tourism-related NACE Section H (hotels and catering) on the one hand and the business-related Division K on the other hand, because no employment data according to the ESA 95 are available for the United Kingdom. Without such a large Member State the analysis would be pointless.

Let us now take a look at labour productivity in manufacturing industry in 2004. Map 5.4 shows that labour productivity is particularly high in this sector in northern Sweden, northern Finland, several regions of the Netherlands, northern Belgium, southern Germany and Austria. Labour productivity of manufacturing industry is rather moderate in southern Portugal, almost all regions of Spain, southern Italy, eastern Germany and Norway.

On the whole, the picture shown in Map 5.4 is very similar to that shown in Map 5.1, i.e. the labour productivity of all branches of the economy. The regional labour productivity for all sectors also correlates with the labour productivity of manufacturing industry with + 0.89.

The labour productivity of manufacturing industry is very low in all the regions of the 12 new Member States. Comparably low labour productivity in the old Member States is found only in northern and southern Portugal.

Labour productivity in the services sector shows a different picture. Above all, the regions of France, especially the south, the regions of northern and central Italy, the regions of south-west Germany, the Netherlands, southern Finland and southern Norway show a particularly high labour productivity. As already mentioned, these regions have a mixture of tourism services and business services.

On the other hand, all the regions of the new Member States again show a particularly low labour productivity in this sector.

## Conclusion

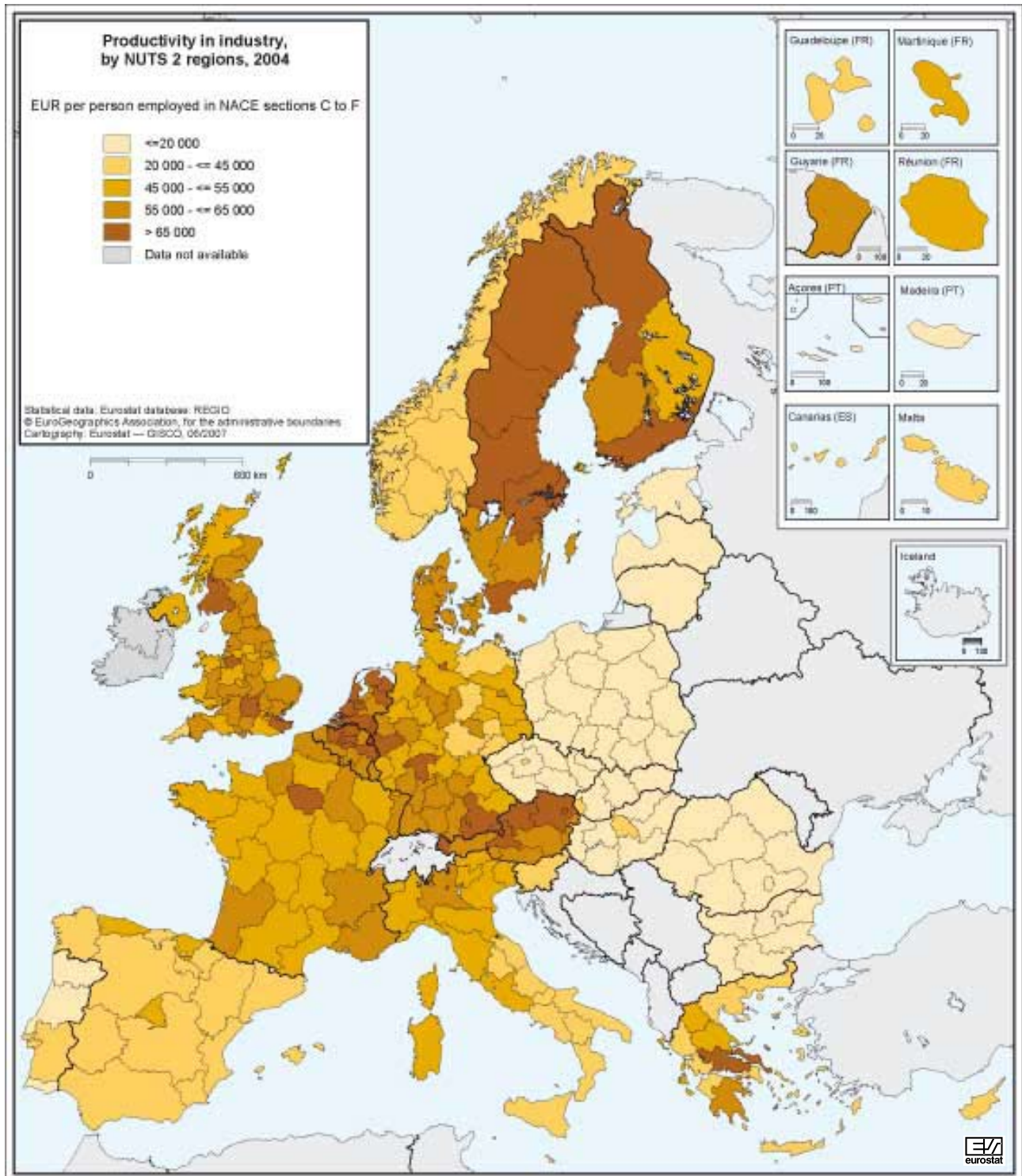
The gap in labour productivity between the regions of Europe is still very large, although productivity in the countries with a low level of labour productivity is increasing much more sharply than in the regions with a high level, with the result that cohesion is increasing from year to year.

Labour productivity in manufacturing industry and in the services sector also shows a sharp east-west divide in Europe. Regions where the main activity is in one of these sectors do not necessarily show a particularly high labour productivity in that sector.

This chapter was intended to show what interesting indicators in addition to GDP per capita can be obtained from Eurostat's regional statistics and what economic analyses can be carried out with them. It is to be hoped that readers will be encouraged to use Eurostat's database themselves and to carry out their own calculations and analyses.

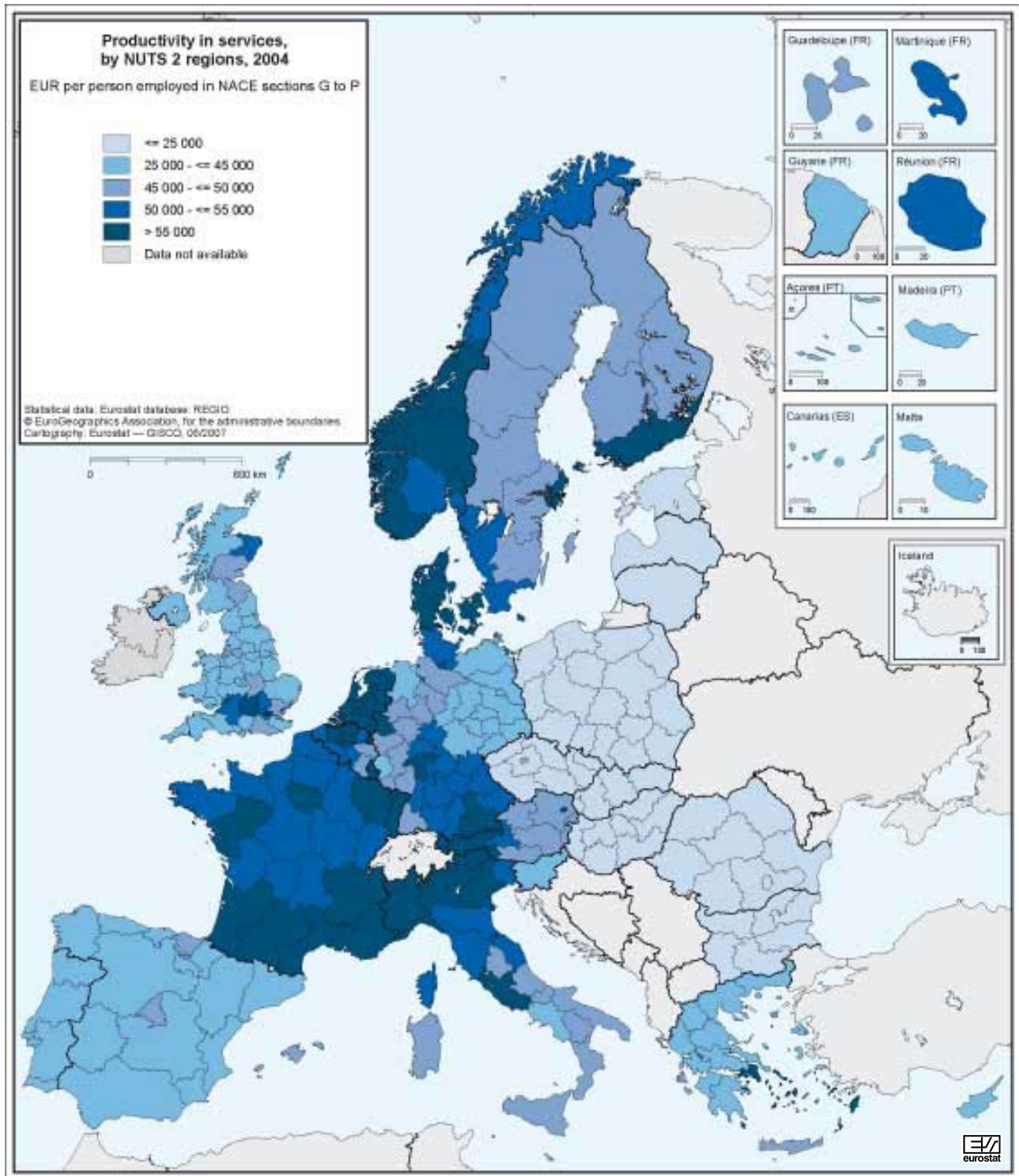


**Map 5.4:** Productivity in industry, by NUTS 2 regions, 2004  
 EUR per person employed in NACE Sections C to F





**Map 5.5:** Productivity in services, by NUTS 2 regions, 2004  
 EUR per person employed in NACE Sections G to P





## Methodological notes

GDP values in euro and not in purchasing power parities were used for the calculations of regional labour productivity, since this analysis looks at the production capacity of the different regions in Europe. Goods and services competing with one another must be sold on the market in euro (or other national currencies), not in purchasing power parities.

The extra-regio value added, which in our publications is allocated proportionately to the regional GDP values, was again calculated in such a way that the GDP values include only the value added that was also generated in this region.

On account of a review of the Greek national accounts statistics, which were subjected to extensive revisions, the labour productivity figures for Greece are not interpreted in this text.

For the calculations at constant prices (rate of change in labour productivity 1999–2004) only national deflators are available and therefore the same deflator was used for all the regions of a country.

For the numbers of persons employed, i.e. the denominator of labour productivity, the data from the regional economic accounts were used, so that the same methodological approach was applied for both numerator and denominator. In the case of Bulgaria, however, only figures from the labour force survey were available. Some conversions had to be made in order to ensure comparability of the results for the Netherlands and Austria with those of other countries. No data are available for the United Kingdom for 2004. These had to be estimated from the labour force survey (LFS) statistics, applying the growth rates from these statistics to the employment figures shown in the regional economic accounts.

The spread of regional labour productivity is measured by the coefficient of variation, i.e. the standard deviation divided by the average of all the available values. The closer the coefficient of variation is to zero, the smaller the spread of the observed values. Figure 5.1 also shows the trends in the coefficient of variation of GDP per capita in PPS and of private households' disposable income, likewise calculated for all regions of the EU. However, in the case of households' disposable income there are not yet any data for Cyprus, Malta, Bulgaria and Slovenia, which means that these countries' regions are not included in the calculation.

The calculations of labour productivity in manufacturing industry refer to NACE Sections C to F and those for the services sector to NACE Sections G to P.







# Urban statistics

6



## Introduction

Cities should provide places to live, work and enjoy. Successful urban policy combines sustainable economic growth and greater competitiveness with attention to social inclusion and environmental concerns. The aim of the Urban Audit is to provide information on how cities master these challenging tasks and material for research into urban policy.

The Urban Audit project would not have been possible without the sustained help and support of a wide range of colleagues. In particular, we would like to acknowledge the effort made by the cities, the national statistical institutes and the European Commission's Directorate-General for Regional Policy.

## Measuring quality of life in cities

The Urban Audit is not a one-shot operation, but a revolving project: the previous data collection finished in 2005 and a new collection was launched in 2006. It is more than just a repeat exercise, as Eurostat is constantly seeking to improve the quality of data — coverage, comparability and relevance. The data set currently available in Eurostat's statistical databases will be updated by the end of 2007. This chapter of the yearbook presents the first results of the new data collection available in spring 2007. The data set is structured around three major dimensions: spatial units, time and indicators.

### The spatial units

The most extensive development in the data collection was along the spatial dimension. The audit launched in 2003 covered 189 cities in the EU-15, which were joined in 2004 by a further 69 from the then new Member States, 7 from Bulgaria and 14 from Romania. In 2005, 26 cities from Turkey entered the project. The cities included in the Urban Audit are displayed on Map 6.1.

The new data collection round is unprecedented in its scope. To improve the geographical coverage, 42 cities were added from the EU-27. The project attracted six Norwegian and four Swiss cities as well. The combined population of the 357 Urban Audit cities is more than 146 million inhabitants, with the combined population of the 321 EU-27 cities amounting to more than 120 million inhabitants, covering approximately 25 % of the EU-27 population. This extended sample ensures that the results provide a more reliable picture of urban Europe.

For each participating city, several spatial levels were defined. Most of the data are collected at core city level, i.e. the city as defined by its administrative/political boundaries. To complement this information, an additional level known as the larger urban zone was delineated. The larger urban zone is an approximation of the functional urban area centred around the city. For several cities, the larger urban zone was redefined in 2006 to better correspond to the actual commuting area around the city. Figure 6.1 uses data at the core city level, while Figure 6.2 illustrates the same indicator for both the larger urban zone and the core city. To provide information on internal disparities within a core city, a subset of data is also collected at the sub-city district level.

### Time

Four reference periods have been defined for the Urban Audit: 1989–93, 1994–98, 1999–2002 and 2003–05. Within each period a reference year was set: 1991, 1996, 2001 and 2004. Where possible, cities were asked to provide data for these years. For the years 1991 and 1996, data were collected only for a reduced number of 80 variables.

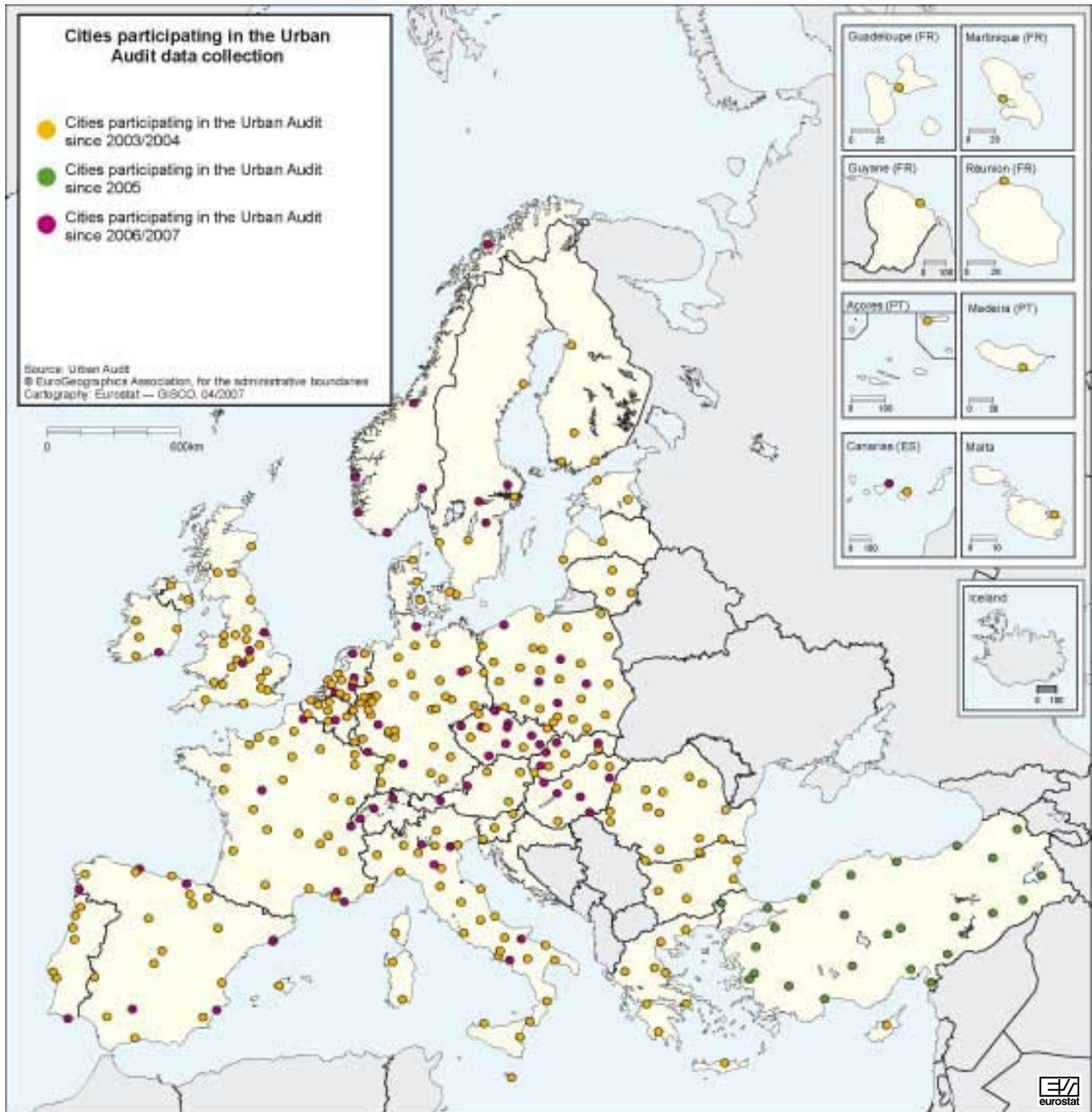
### Indicators

The lists of variables and indicators have all been reviewed and modified with regard to policy relevance, data availability and comparability. More than 300 derived indicators will be calculated from the variables defined for the 2006/07 data collection exercise, covering several aspects of urban life, i.e. demography, housing, health, crime, labour market, economic activity, income disparity, local administration, civic involvement, educational qualifications, cultural infrastructure and tourism. Environment and travel are the fields that have seen the most extensive improvements.

## Exploring the patterns of population change

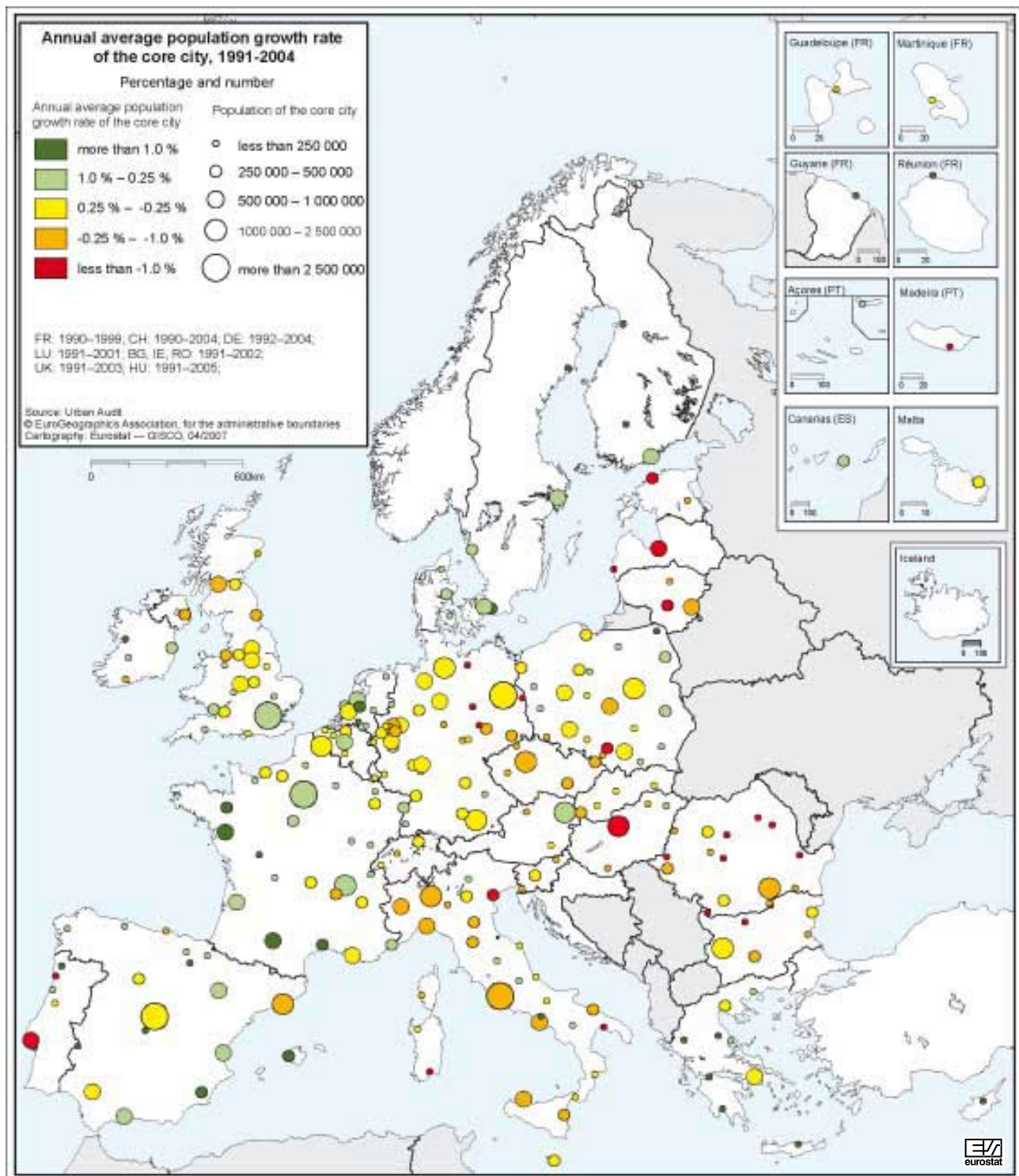
Between 1991 and 2004 Europe witnessed major changes. The European integration process intensified, with several barriers to movement disappearing. Several central and east European countries radically transformed their political and economic systems and joined the EU in 2004. Which cities grew during these years and which cities declined in terms of population? Map 6.2 gives the answer to these questions.

**Map 6.1:** Cities participating in the Urban Audit data collection





**Map 6.2:** Annual average population growth rate of the core city, 1991–2004  
Percentage and number



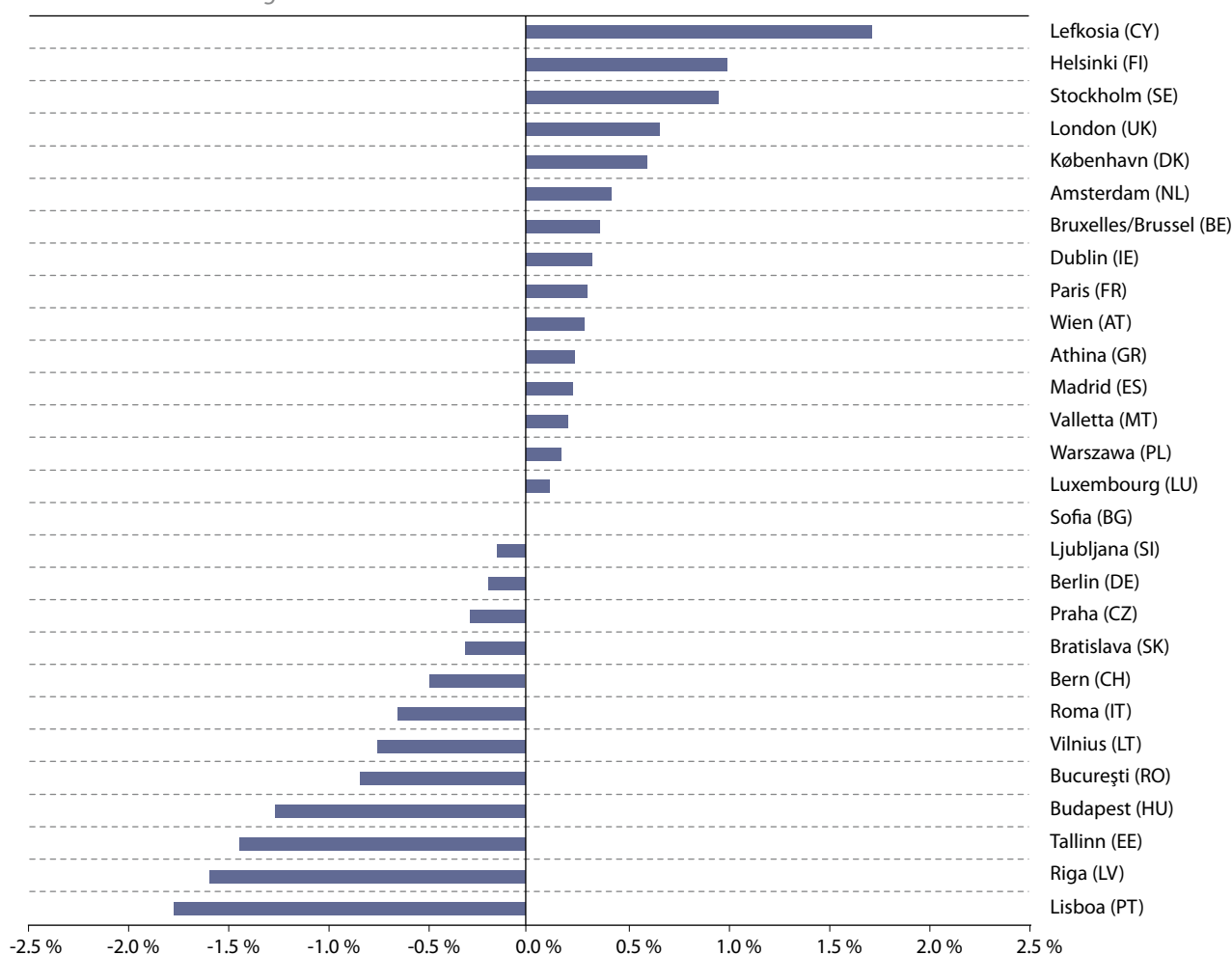


In most cities of the former Soviet bloc, including the cities in eastern Germany, the population decreased between 1991 and 2004, except for Poland, where we find a combination of declining, stagnating and growing cities. In these countries, the total population at national level fell as well. Cities with more than 500 000 inhabitants in southern Europe also saw a drop in population, while smaller cities in Greece and Spain grew. The fastest growing cities were in Scandinavia, France and Ireland. We should bear in mind that the data shown refer to the core city, i.e. the population living within the administrative boundaries. In certain cities like Athina (Greece), Milano (Italy), Napoli (Italy), Barcelona (Spain) or Katowice (Poland) the urban built-up area stretches well beyond these boundaries. Among

the capital cities, Lefkosia (Cyprus) had the highest growth rate, followed by Helsinki (Finland) and Stockholm (Sweden), as shown in Figure 6.1. London (United Kingdom) and Paris (France) also experienced an increase in population from 1991 to 2004.

After looking at the long-term changes, we now turn to more recent developments. Cities are generally considered to have significant potential for population and employment growth, which makes them particularly important in pursuing the objectives set by the European Union for growth and jobs. Figure 6.2 presents the population growth rate between 2001 and 2004. The capital of Cyprus remained the fastest growing capital followed by Sofia (Bulgaria), where the population increased substantially after stagnation in the 1990s.

**Figure 6.1:** Annual average population change rate in core cities in European capitals, 1991–2004  
Percentage



■ Core city  
Source: Urban Audit

Notes: Data: LU 1991–2001; IE, RO 1991–2002; HU 1991–2005; CH 1990–2004; DE 1992–2004  
Data not available: NO, TR



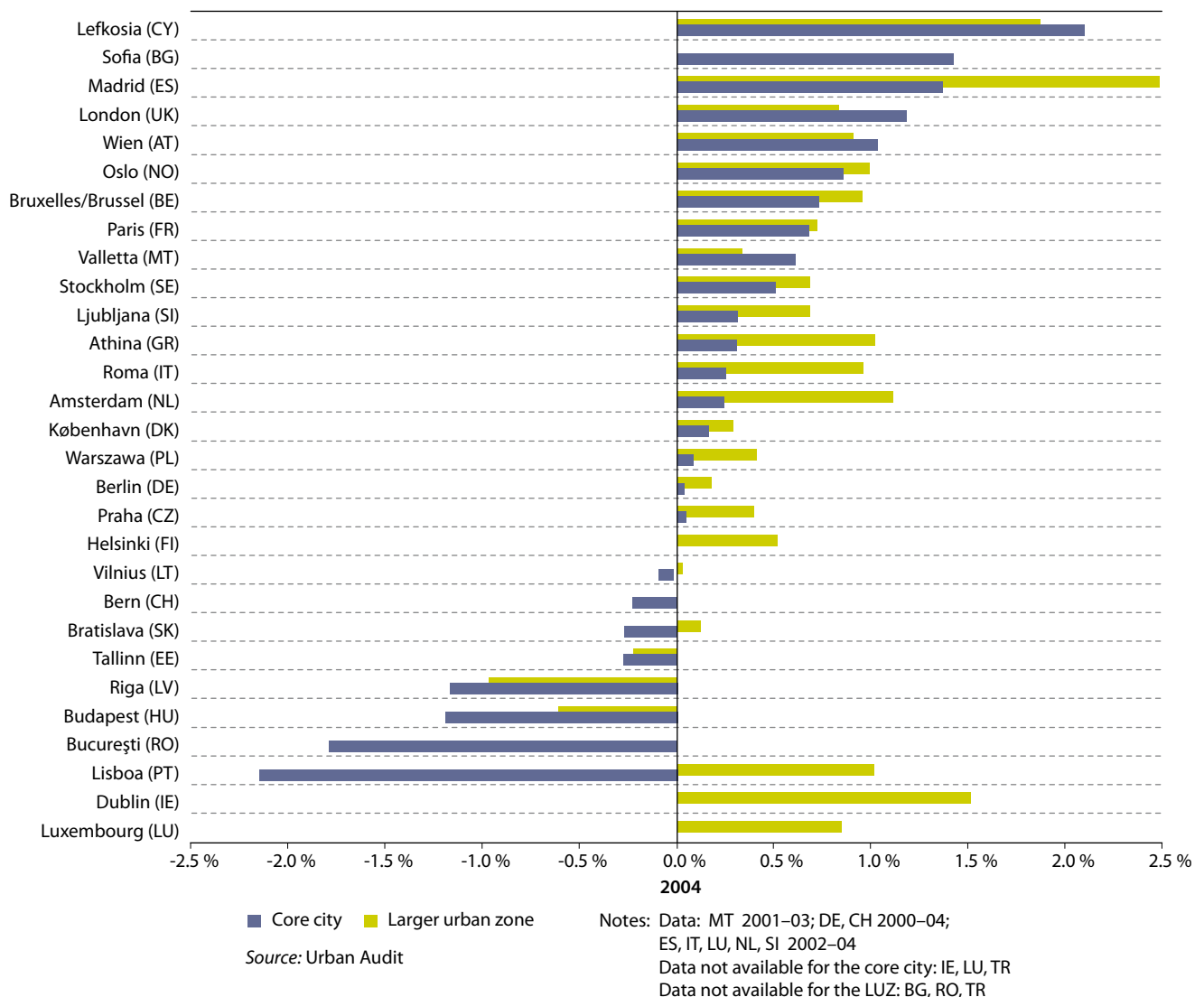
Factors such as means of transport, housing prices and preferences, demographic trends and the attractiveness of dense inner cities, influence the interaction between the larger urban zone as a whole and the core city. In most European capitals, the larger urban zones grew faster than the core cities, potentially indicating an unfavourable trend towards urban sprawl. Figure 6.2 focuses on the different patterns of this phenomenon. The absolute differences in growth rates are greatest in Madrid (Spain) and Lisboa (Portugal). In London and Paris, the two largest cities of Europe, the population growth rates in both the core and the entire urban zone are well balanced.

Maps 6.3 and 6.4 allow us to compare the growth rates of the core city and the larger urban zone for all cities in the Urban Audit. The core city is part of the larger urban zone, so their evolu-

tion is obviously linked. In most Urban Audit cities the population of the larger urban zone grew faster than the population of the core city. Map 6.4 shows more growth rates of over 1 % (dark green circles) than Map 6.3. Nevertheless, in some German cities like Dresden, Leipzig, Weimar or Erfurt, as well as in some Danish and Hungarian cities, higher growth was recorded in the core city.

It can be seen from Maps 6.2 and 6.3 that the growth rates of the core cities appear to be consistent over time. Most Urban Audit cities fall into identical or only slightly different groups in both maps but significant differences may be noted in some Austrian, German, Italian and Spanish cities, where the recent growth rates are considerably higher, marking a change from population decline to population growth.

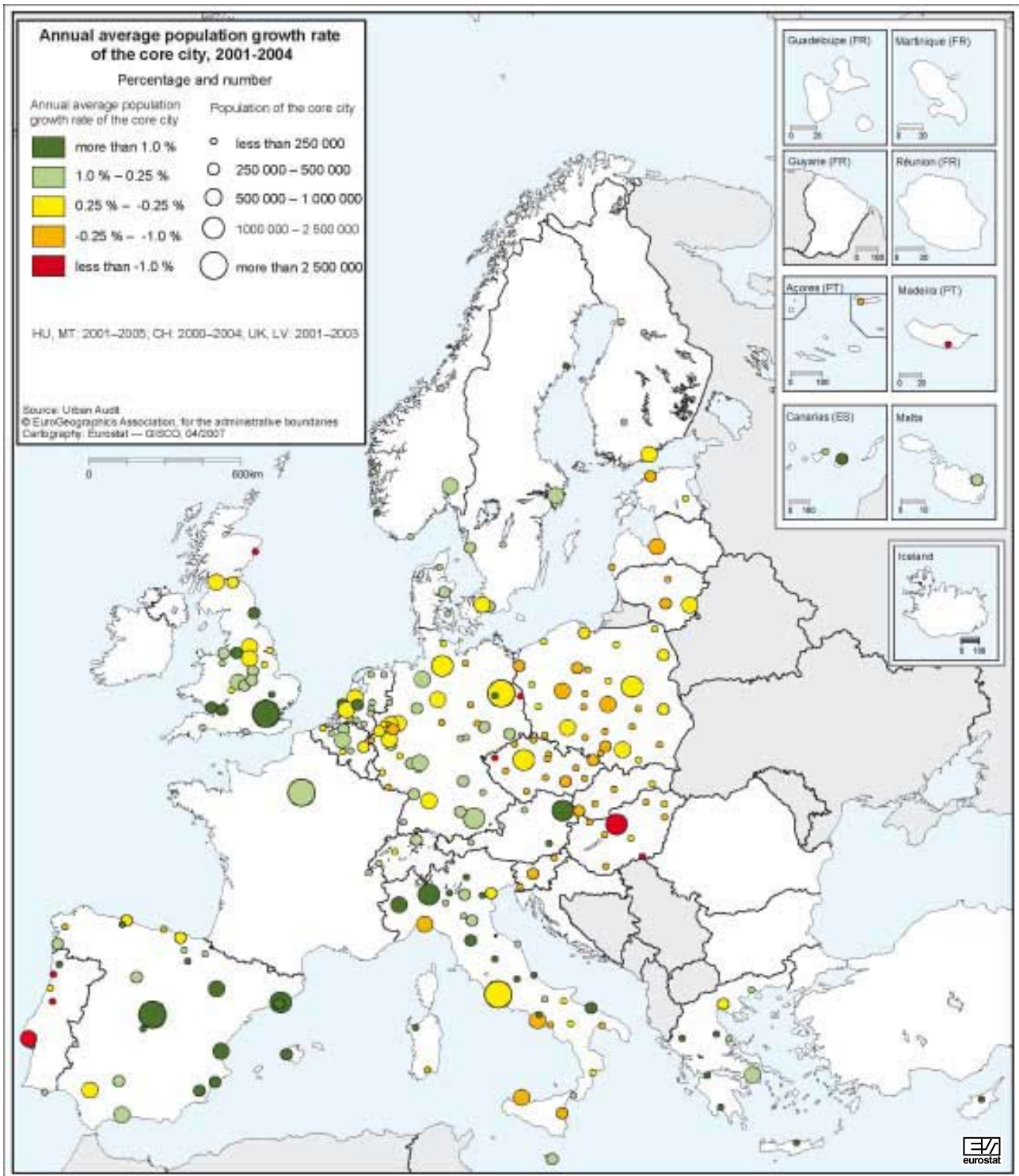
**Figure 6.2:** Annual average population change rate in European capitals, 2001–04





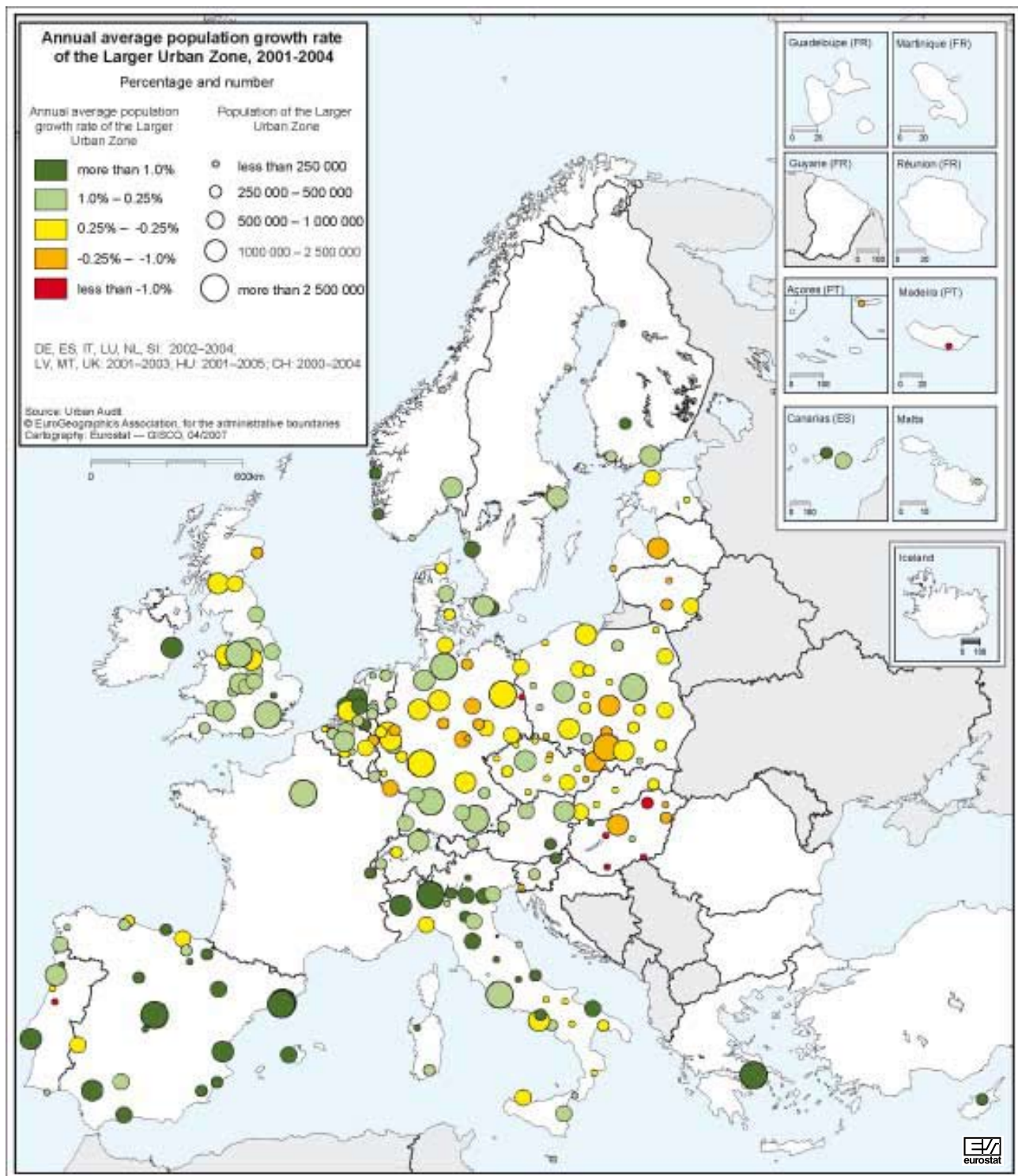


**Map 6.3:** Annual average population growth rate of the core city, 2001–04  
*Percentage and number*





**Map 6.4:** Annual average population growth rate of the larger urban zone, 2001–04  
Percentage and number





Map 6.4 gives an overview of recent population growth rates for the larger urban zones. It is strikingly evident from the map that the larger urban zones with more than 2.5 million inhabitants are growing rapidly, except for some German and Polish cities. These results suggest that already densely urbanised areas are experiencing further increases in population.

## The perceived picture

Measuring the perception of the quality of life in cities is crucial in understanding how citizens sense and observe the states and trends reflected in the statistical data. The most recent Urban Audit perception survey was carried out in November 2006. Survey data were collected through telephone interviews of samples of 500 persons in 75 major cities in the EU-27, Croatia and Turkey.

The perceived quality of housing and job opportunities are main factors attracting people to a city. Figures 6.3 and 6.4 illustrate the responses to the questions in the public opinion survey on housing and job opportunities. More than two thirds of respondents in Praha (Czech Republic) agreed with the statement that 'in this city it is easy to find a good job'. København (Denmark) and Dublin (Ireland) returned similar positive results, as depicted in Figure 6.3. Job opportunities are considered to be very limited in the cities of eastern Germany and southern Italy. In former centres of traditional heavy industry, such as Miskolc (Hungary), Kosice (Slovakia) or Dortmund (Germany), job seekers also face substantial difficulties.

The opinions on housing are also markedly diverse across cities, as can be seen from Figure 6.4. Respondents in Paris, Luxembourg and Dublin almost unanimously disagreed with the statement that 'in this city it is easy to find good housing at reasonable prices'. On the other hand, the majority of answers were positive for Leipzig (Germany), Aalborg (Denmark) and Braga (Portugal). Noticeably, but not surprisingly, four cities ranking among the top 10 in terms of housing opportunities are to be found in the bottom 10 where job prospects are concerned. On both aspects, the survey yielded favourable results for Oulu (Finland), Irakleio (Greece) and participating cities in the United Kingdom, excluding London. In Aalborg, the results were especially positive.

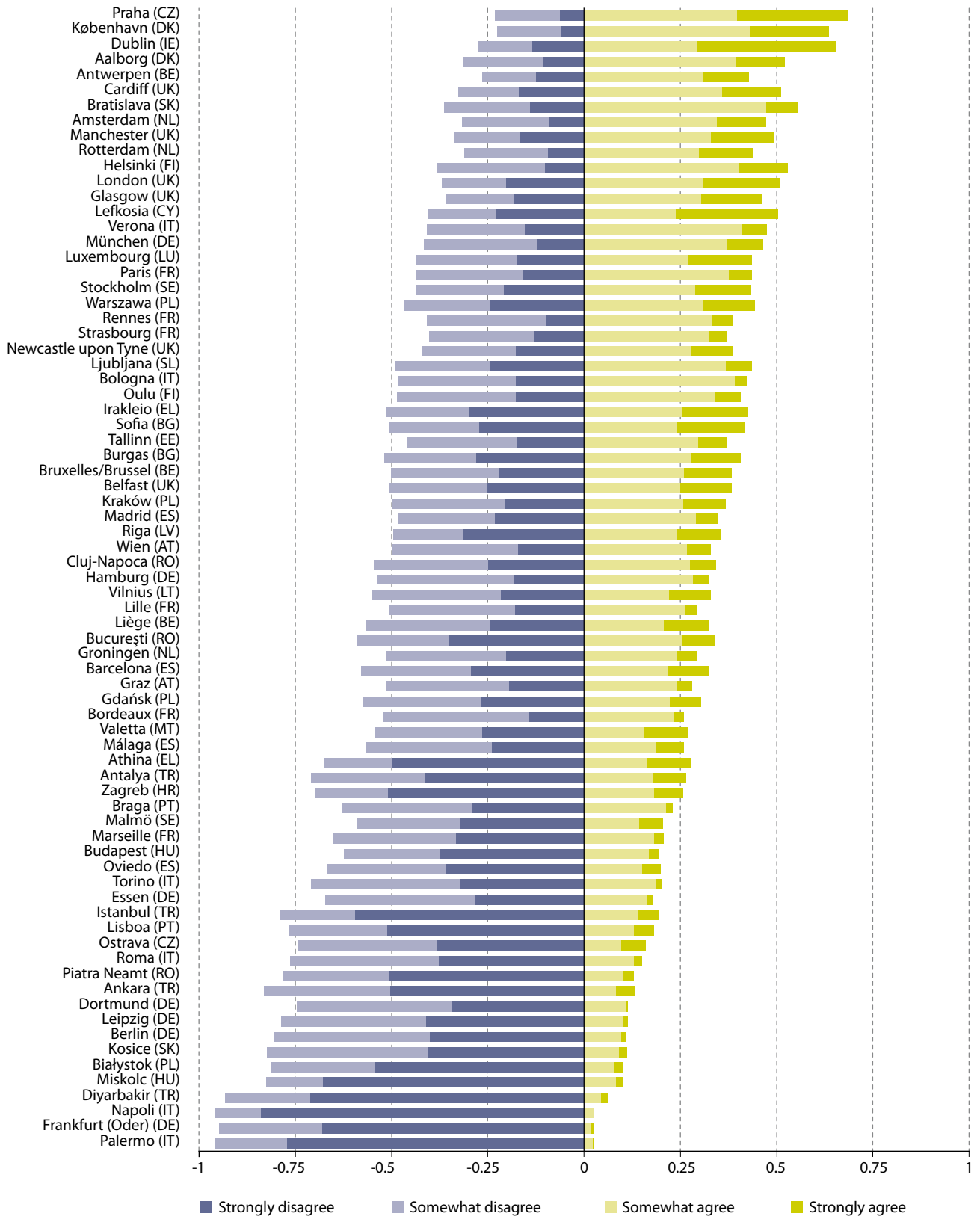
## Beyond the growth rates

This chapter has presented the annual average population growth rates of cities over longer and shorter periods, focusing on different spatial levels. Why do cities grow or decline in terms of population? The reasons are many. Besides the natural change in population, there are considerable migration flows. Some people move to a place to work: a city with strong skill bases, with positive economic prospects and with employment opportunities. Some move to a place to live: a city with favourable housing, with a safe and clean environment and with an inclusive community. Some move to a place to enjoy: a city with mild weather conditions, with cultural amenities and with recreational areas. We invite everyone to verify, quantify or reject these assumptions by examining for themselves the Urban Audit data on Eurostat's website.



**Figure 6.3:** Perception of job opportunities in selected cities, 2006

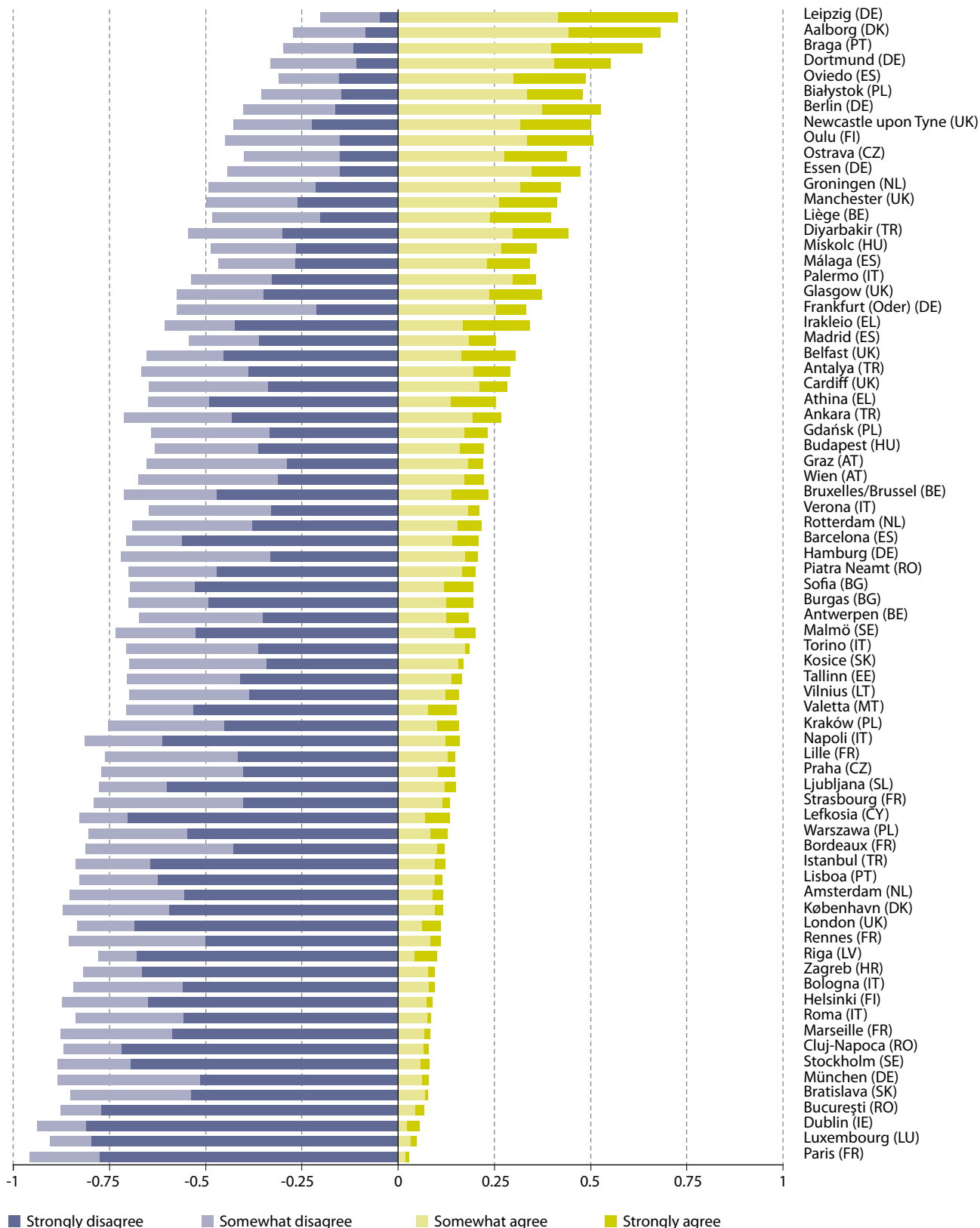
Percentage of respondents who strongly agree, somewhat agree, somewhat disagree or strongly disagree with the statement that in this city it is easy to find a good job



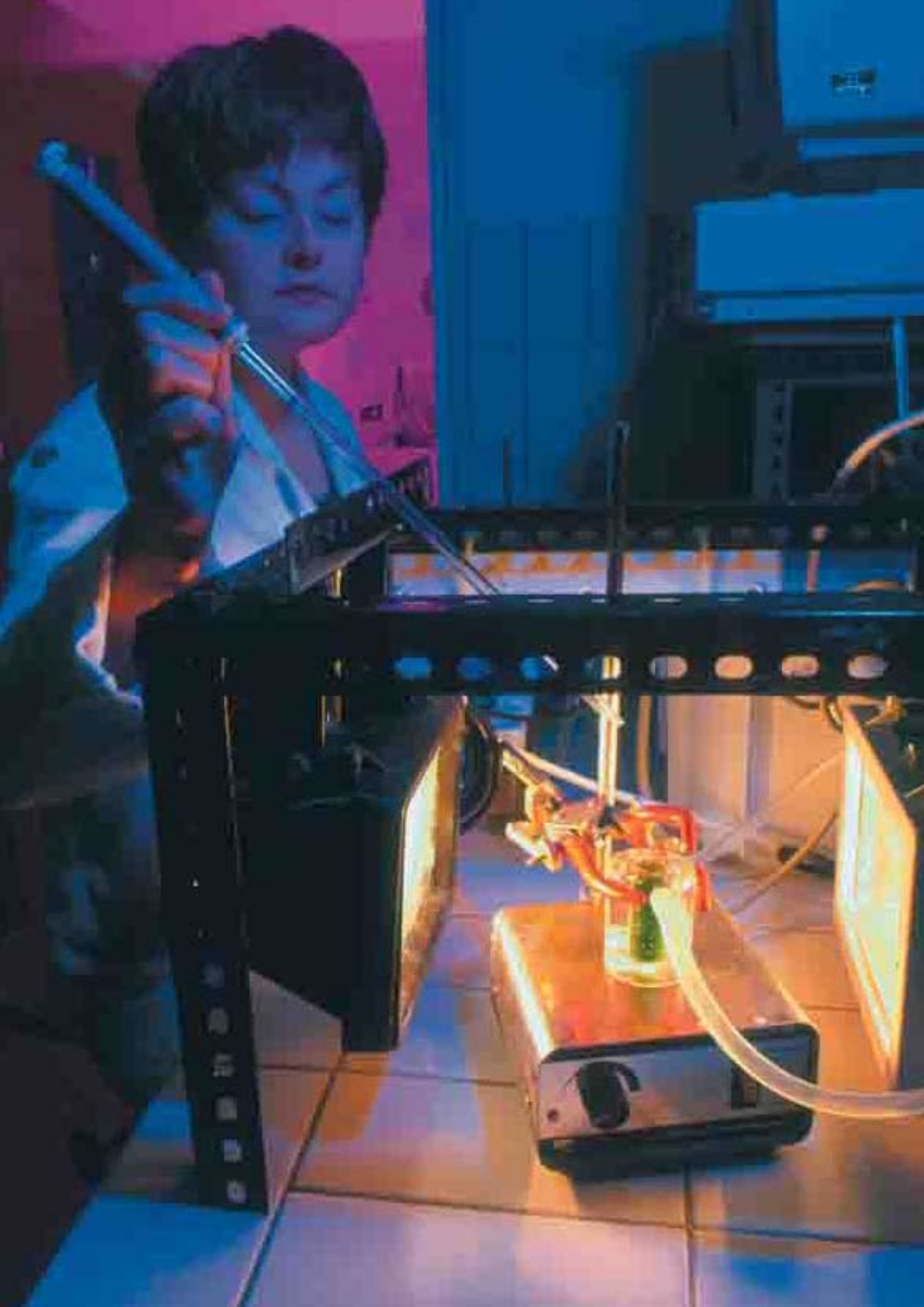
Source: Urban Audit perception survey



**Figure 6.4:** Perception of housing in selected cities, 2006  
 Percentage of respondents who strongly agree, somewhat agree, somewhat disagree or strongly disagree with the statement in this city it is easy to find good housing at a reasonable price



Source: Urban Audit perception survey



# Science, technology and innovation

7

## Introduction

The Lisbon and Barcelona European Councils signalled the important role of research and development (R & D) and innovation in the EU. One of the goals set by the European Union was to raise overall research investment in the EU from around 1.9 % of GDP to approaching 3 % by 2010. Based on this, in March 2005 the European Council decided to relaunch the Lisbon strategy with the initiative on growth and jobs.

**Knowledge and innovation for growth** then became one of three main areas for action in the new Lisbon partnership for growth and jobs. Science, technology and innovation were put at the heart of EU policies, EU funding and business.

The concept of a European research area, introduced in 2000 as the contribution by research policy to the broader Lisbon strategy, has been another highly successful tool for moving research higher up on the political agenda.

Statistics on science, technology and innovation reflect Europe's recent performance on R & D, innovation, high-tech industries and knowledge-based services, patenting and human resources in science and technology. In recent years much progress has been made, with more and more up-to-date data produced in the various domains concerned.

This chapter illustrates how dynamic regions have been in providing regional indicators on research and development, human resources in science and technology, high-tech patent applications and employment in high-tech manufacturing and in knowledge-intensive services. These are just a few of the regional indicators available on the Eurostat webpage under 'science and technology' (see the methodological notes for the link).

## Research and development

Map 7.1 shows R & D expenditure as a percentage of GDP (R & D intensity) in the regions of Europe in 2003. Several clusters with high R & D intensity can be identified, mainly spreading across the Nordic countries, the United Kingdom, Belgium, the Netherlands, France, Germany, the Czech Republic and Austria.

One of the goals set for the EU by the Lisbon summit in March 2000 is to achieve an R & D intensity (= ratio of R & D expenditure to GDP) of 3 % by 2010. The map identifies 21 European regions which have already achieved the 3 %

target. The German regions form strong centres for European R & D activities, nine of them having already achieved this ratio, among them Braunschweig, the region with the highest R & D intensity of all, at 8.7 %.

The other regions that have exceeded the 3 % target are in Sweden (four regions out of seven), Finland (three regions out of five), France and Austria (two regions each) and the United Kingdom (one region).

In addition to the abovementioned 21 regions, R & D expenditure exceeded 2 % of GDP in another 17. Most of these regions were, once again, in Germany (five), with another four in France, two each in the Czech Republic and the Netherlands and one each in Belgium, Denmark, Sweden and the United Kingdom. Iceland, the only EFTA country for which figures on regional R & D intensity are currently available, was also above the 2 % mark.

The regions with the lowest R & D intensity are mainly in the eastern and southern parts of the EU. Of the 104 EU regions with R & D intensity not exceeding 1 %, 41 are in the new EU Member States (counting both the 2004 and 2007 enlargements). They include 15 regions in Poland, seven in Romania, six in Hungary, five in the Czech Republic and three in Slovakia.

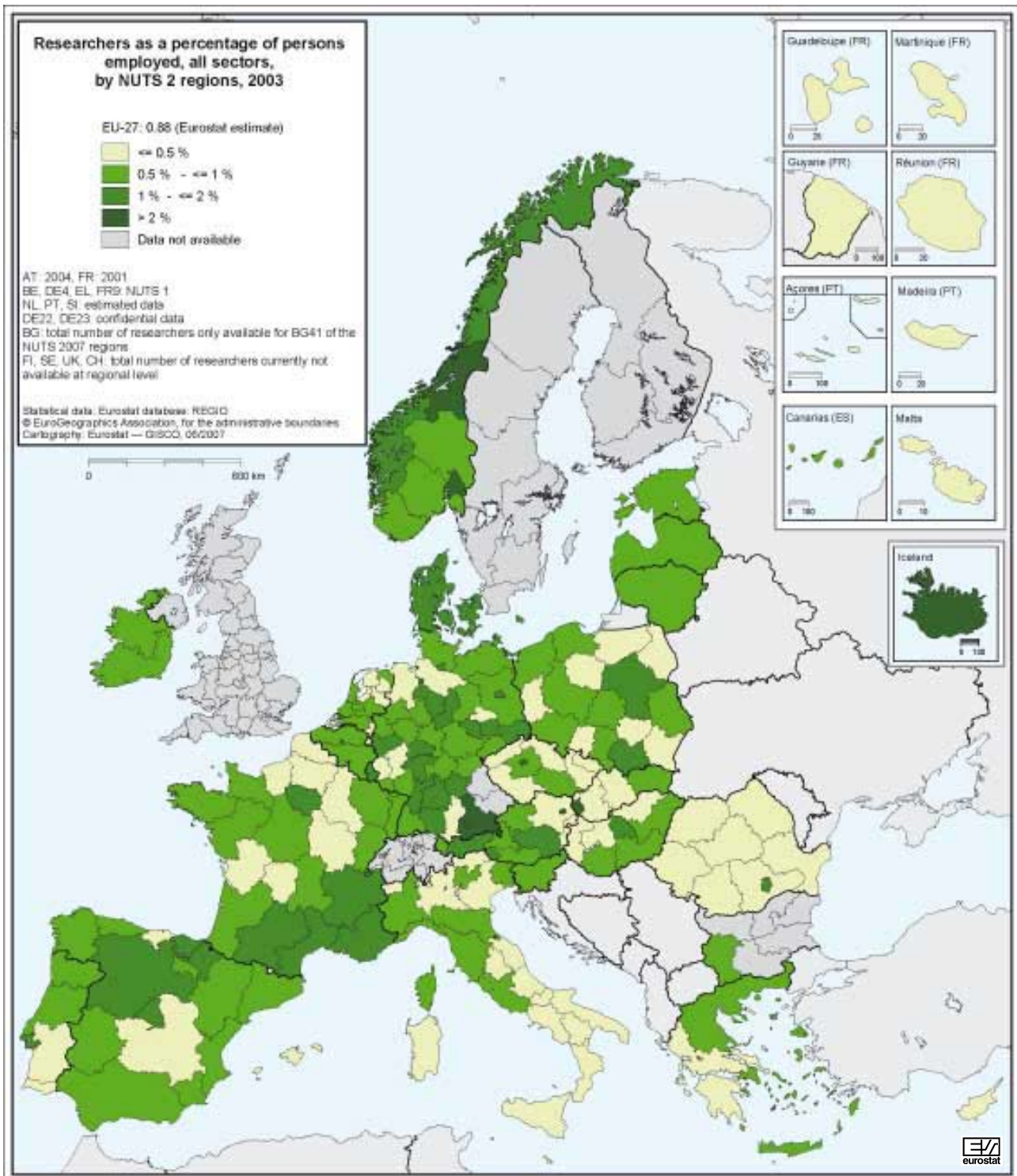
Personnel involved in R & D activities are classified into three categories: researchers, technicians and other support staff. Map 7.2 illustrates the share of researchers in total employment across Europe. Comparison with Map 7.1 gives the impression that researchers are less concentrated in clusters than R & D expenditure.

In nine of the 197 regions on which data are available more than 2 % of all persons employed are classified as researchers. Of these the Norwegian region Trøndelag has the highest concentration of researchers (2.95 %). One more Norwegian region is found in this group, along with two German regions and one each from the Czech Republic, Belgium, Slovakia, Austria and Iceland. Only two of these regions are also in the highest bracket for R & D intensity, as shown in Map 7.1. The two regions with relatively high concentrations of both researchers and R & D expenditure are Wien (Austria) and Oberbayern (Germany).

Going further, including the 34 regions that have a concentration of researchers of between 1 % and 2 % adds eight more countries to the list: Denmark, Spain, France, Hungary, Luxembourg, Poland, Portugal and Romania. Two particularly interesting members of this group with relatively





**Map 7.2:** Researchers as a percentage of persons employed, all sectors, by NUTS 2 regions, 2003

high concentrations of researchers are the Spanish region Castilla y León and the Polish region Małopolskie, both of which are ranked among the regions with low R & D intensity in Map 7.1.

Regions with low concentrations of researchers (less than 0.5 % of total employment) are found in Italy (14 regions), France (eight), Poland and Romania (seven each), Germany and the Netherlands (six each), the Czech Republic (five), Spain and Portugal (four each), Hungary (three), Slovakia (two), Austria (two), Cyprus, Greece and Malta (one region each).

## Human resources in science and technology

Without sufficient human resources there can be no growth. As science and technology have been recognised as key fields for European development it is therefore highly important for policy-makers at regional (and also at EU and national) level to analyse the stock of human resources in science and technology (HRST).

HRST means persons who have completed tertiary education in a field of science or technology and/or are employed in science and technology in an occupation for which tertiary education is normally required. HRSTO is a subgroup of HRST made up of persons employed in a scientific or technological occupation.

HRSTO are concentrated in urban areas, especially in capital cities, as can be seen from Map 7.3. Around capital cities there is often a high concentration of highly qualified jobs, for example because headquarters and government institutions are often located there. But this is also because capitals are generally big cities that naturally contain large groups of highly skilled people. This makes these and nearby regions safe places for new companies to open up business, considering the supply of highly skilled human resources. At the same time, highly skilled people are often attracted to large cities as they are more likely to find a qualified job in a place with so many companies.

This urban concentration of human resources employed in science and technology can be seen in Map 7.3 not only around the capitals but also in one of the two large regional clusters with shares of HRSTO exceeding 30 %. This particular cluster stretches from the Italian region Liguria in the south up through Switzerland and then across the southern, western and northern parts of Germany up to the Benelux coun-

tries. The regions in this cluster are mainly very densely populated. The second cluster is in the Scandinavian countries but, apart from the capitals, these regions are very sparsely populated. Scandinavia also has the regions with the second and third highest shares of HRSTO — Stockholm (Sweden) and Oslo og Akershus (Norway). The highest share is, however, found in Praha, where 47 % of the labour force are HRSTO.

## High-tech industries and knowledge-intensive services

The statistics on high-tech industries and knowledge-intensive services include employment data by sector. Based on the ratio of R & D expenditure to GDP or R & D intensity, sectors can be subdivided into more specific subsectors for analysing employment in science and technology. Two subsectors of great importance to science and technology are high-tech manufacturing and medium high-tech manufacturing, despite accounting for only 1.1 % and 5.5 % of employment in the EU in 2005 respectively.

High-tech manufacturing includes, for example, manufacture of computers, televisions and medical instruments, while medium high-tech manufacturing includes, for example, manufacture of chemicals, machinery and transport equipment. The 25 leading regions for these subsectors can be seen in Table 7.1.

In terms of the share of employment in high-tech manufacturing, five out of the seven regions in Hungary are among the leading regions in Europe and two of them, Közép-Dunántúl and Nyugat-Dunántúl, are in the top three. The top 25 includes both regions of Ireland and also Malta.

Twelve of the 25 regions with the highest percentage of employment in medium high-tech manufacturing are in Germany. It is even more remarkable that all the top seven regions are German. With 17.7 % of employment in medium high-tech manufacturing, Stuttgart stands out amongst these leading regions; it is also one of the seven regions which are in the top 25 in both medium high-tech and high-tech manufacturing. What is not shown in the table is that out of the 36 German regions for which data are available on this subsector, only four have a share below the EU average of 5.5 %.

Around 66 % of employment in the EU in 2005 was in the services sector. For science and technology it is interesting to look at the knowledge-intensive services (KIS) subsector, in which



**Table 7.1:** 25 leading regions in employment in high and medium high-tech manufacturing, by NUTS 2 regions, 2005

High-tech manufacturing			Medium high-tech manufacturing		
	% of total employment	Total number (1 000s)	Total number (1 000s)	% of total employment	
Freiburg (DE)	4.7	49	330	17.7	Stuttgart (DE)
Közép-Dunántúl (HU)	4.6	21	103	15.0	Braunschweig (DE)
Nyugat-Dunántúl (HU)	4.3	18	118	14.4	Tübingen (DE)
Espace Mittelland (CH)	3.4	31	76	13.5	Niederbayern (DE)
Border, Midlands and Western (IE)	3.2	16	170	13.5	Karlsruhe (DE)
Malta (MT)	3.1	5	113	13.0	Rheinhessen-Pfalz (DE)
Karlsruhe (DE)	3.0	38	79	13.0	Unterfranken (DE)
Franche-Comté (FR)	3.0	14	54	11.5	Franche-Comté (FR)
Mittelfranken (DE)	2.9	23	201	11.1	Piemonte (IT)
Pohjois-Suomi (FI)	2.9	8	56	10.9	Oberpfalz (DE)
Stuttgart (DE)	2.8	52	74	10.8	Severovýchod (CZ)
Oberbayern (DE)	2.8	57	34	10.5	Prov. Limburg (BE)
Észak-Magyarország (HU)	2.7	12	83	10.3	Schwaben (DE)
Hampshire and Isle of Wight (UK)	2.6	23	106	10.2	Freiburg (DE)
Kärnten (AT)	2.6	6	82	10.2	Západné Slovensko (SK)
Southern and Eastern (IE)	2.5	36	55	10.1	Střední Morava (CZ)
Dél-Dunántúl (HU)	2.4	9	55	10.0	Střední Čechy (CZ)
Etelä-Suomi (FI)	2.4	30	76	9.8	Alsace (FR)
Západné Slovensko (SK)	2.3	19	56	9.8	Jihozápad (CZ)
Ostschweiz (CH)	2.2	13	92	9.6	Pais Vasco (ES)
Zürich (CH)	2.2	16	401	9.6	Lombardia (IT)
Berkshire, Bucks and Oxfordshire (UK)	2.2	24	70	9.5	Haute-Normandie (FR)
Észak-Alföld (HU)	2.1	11	61	9.3	Chemnitz (DE)
Střední Morava (CZ)	2.1	12	160	9.2	Darmstadt (DE)
Střední Čechy (CZ)	2.0	14	25	9.1	Comunidad Foral de Navarra (ES)

32 % of EU employees work. Examples of KIS include water transport, air transport, post and communications, financial intermediation and education.

In all, 60 % of the human resources in science and technology by occupation (HRSTO) shown in Map 7.3 are employed in knowledge-intensive services, which show similar patterns with high shares of KIS in capitals and regions close to capital cities. Inner London and Stockholm stand out among the top regions, with 57.4 % and 56.5 % of employment in knowledge-intensive services respectively. Nevertheless, the 10 regions most specialised in KIS include three densely populated regions a long way from the capital: Åland (Finland), Övre Norrland (Sweden) and Trøndelag (Norway). Åland is unique as it has a much higher share of KIS than Etelä-Suomi (the capital region of Finland) with 50.7 % compared with 42.5 %. This could partly be explained by the fact that Åland is a region made up of islands and with a population of only around 25 000. That combination would logically result in a high proportion of employment in water transport, which is counted as a knowledge-intensive service.

What is more, in every region of Sweden and Norway over 40 % of all employment is in knowledge-intensive services. This is also the case for Denmark, Luxembourg and Iceland.

## Patents

Patents reflect a country's inventive activity and its capacity to convert knowledge into potential economic gains.

A patent is an intellectual property right for technical inventions. A patent granted by a national patent office is valid for just one country and generally for 20 years. A patent application to the European Patent Office (EPO) can be valid in several countries, at most in all 32 that have signed the European Patent Convention.

In this context, indicators based on patent statistics are widely used to assess the inventive and innovative performance of a country or region. The current emphasis on innovation as a source of industrial competitiveness has raised awareness of patents. Patents are used to protect R & D results, but they are equally significant as a source of technical information, which may avoid reinventing and redeveloping ideas because of lack of information. Use of patents is relatively limited within the European Union. This could be for a number of reasons, including the relative cost, the overlap between national and European

procedures and the need for translation. These issues have been addressed by the European Commission, which for years has been seeking to introduce a Community patent (the latest attempt was launched in January 2006).

## Patstat

Since 2004 the OECD interinstitutional patent statistics task force has been developing a worldwide patent statistics database (Patstat). Patstat has to be understood as a single raw database on patent statistics, held by the European Patent Office (EPO) and developed in cooperation with the World Intellectual Property Organisation (WIPO), the OECD and Eurostat. Patstat should meet the needs of the various international organisations, which will draw on this raw database to produce their own statistics. Patstat came into operation in 2006 and concentrates on raw data, leaving indicator production mainly to its users, such as the OECD, Eurostat or others. Patstat is updated twice a year (on 30 March and 30 September) and made available to the users represented in the task force. The objective is that Patstat should be sustainable over time.

## Patenting in the regions

Most European countries' patenting is concentrated in certain regions. Often the regions most active in patenting are geographically close together, i.e. they form economic clusters. This is the case, for example, in the southern part of Germany, the south-east of France and the north-west of Italy. The most active patenting regions (in the different classes ranging between 100 and 300 applications and with more than 300 applications per million inhabitants) are in Scandinavia and in the centre of the EU-27.

Map 7.4 shows that in relative terms, Noord-Brabant (Netherlands) led with 885 patent applications per million inhabitants, followed by seven German regions.

The top two German regions were Stuttgart with 736 patent applications per million inhabitants and Oberbayern with 669. The region ranked ninth (Stockholm, Sweden) scored less than half the total of the region in first place.

In absolute terms, Île-de-France (France) ranked first with 3 282 patent applications followed by two German regions (Stuttgart with 2 918 and Oberbayern with 2 769) which also took second and third places in relative terms. The region



ranked fifth — Lombardia (Italy) — lodged 1 612 patent applications, less than half of the 3 282 from Île-de-France.

A look at regional patenting can reveal other interesting points. Looking at the average number of patent applications per NUTS 2 region and taking into account that several small countries are counted as a single NUTS 2 region, Denmark (1 167) ranked first, followed by Germany (598) and France (329). The Netherlands (328), Sweden (323) and Finland (319) all came close behind France.

Alongside this, the data on the leading region in each country in terms of total number of patent applications show that Île-de-France (France) was the leader. Stuttgart (Germany) came second, followed by Noord-Brabant (Netherlands). Ranking the same regions by 'EPO patent applications per million labour force', Noord-Brabant came first, Stuttgart second and Stockholm (Sweden) third.

## Conclusion

Relevant and meaningful indicators on science, technology and innovation are paramount in keeping policymakers informed about where European regions stand in their quest for more knowledge and growth and how their position is evolving. The statistics and indicators presented in this chapter highlight European regions' recent performance on R & D, high-tech industries and knowledge-based services, patenting, and human resources in science and technology. The range of data and indicators produced is continuously evolving to cover the regional dimension broadly in all the areas mentioned.

Further work is being carried out to produce more regional data in various fields of activity, for example innovation statistics based on the regional results from the fourth Community innovation survey.



## Methodological notes

The data in the maps or tables in this chapter are extracted from the 'science and technology' domain and the research and development, high-tech industry and knowledge-based services, patent statistics and human resources in science and technology subdomains.

**Statistics on research and development** are collected by Eurostat on the basis of Commission Regulation (EEC) No 753/2004, which stipulates the data sets, breakdowns, frequencies and transmission deadlines. The methodology for R & D statistics is also laid down in the *Frascati manual* (2002 version), which is applied worldwide.

The data on **employment in high-tech and medium high-tech manufacturing and in knowledge-intensive high-tech and market services** are compiled annually based on data collected from a number of official sources (Community labour force survey, structural business statistics, etc.). The high-tech or knowledge-intensive aggregates are generally defined in terms of R & D intensity, calculated as the ratio of the R & D expenditure on the relevant economic activity to its value added.

The data on **patent applications to the EPO** are compiled on the basis of micro-data received from the European Patent Office (EPO). The patent data reported include the patent applications filed at the EPO during the reference year, classified by the inventor's region of residence and in accordance with the international patents classification of applications. Patent data are regionalised using procedures linking postcodes and/or place names to NUTS 2 regions.

Since 2004 the OECD interinstitutional patent statistics task force has been developing the worldwide raw database on patent statistics (Patstat). Patstat has to be understood as a single raw database on patent statistics, held by the EPO and developed in cooperation with the World Intellectual Property Organisation (WIPO), the OECD and Eurostat. Patstat should meet all the needs of users from the various international organisations who will draw on this raw database to produce their own statistics.

Finally, **statistics on human resources in science and technology** (HRST) are compiled annually based on micro-data extracted from the European labour force survey. The basic methodology for these statistics is laid down in the *Canberra manual* which lists all the HRST concepts.

For further information on methodology see the relevant Eurostat webpage ([http://epp.eurostat.cec.eu.int/portal/page?\\_pageid=1996,45323734&\\_dad=portal&\\_schema=PORTAL&screen=welcomeref&open=/&product=EU\\_science\\_technology\\_innovation&depth=2](http://epp.eurostat.cec.eu.int/portal/page?_pageid=1996,45323734&_dad=portal&_schema=PORTAL&screen=welcomeref&open=/&product=EU_science_technology_innovation&depth=2)).



# Structural business statistics

8

## Introduction

What effects do the European Union's economic and regional policies have on the business structure of the regions? Which sectors are growing, which are contracting and which regions are likely to be most affected? What are the differences in wage levels and what effects will this have on the future location of business activities? A detailed analysis of the structure of the European economy can only be made at regional level. Regional structural business statistics (SBS) provide data with a detailed sectoral breakdown which can be used for this kind of analysis.

This chapter starts by looking at the different activities that make up the regional business economy and which of all European regions are the most specialised in the different activities. The remainder of the chapter focuses on one particular type of activity — 'business services'. The considerable political interest in business services, often seen as a driver of the knowledge-based economy, has been triggered by the sector's high growth rates and its complex relationship with clients elsewhere in the economy. Moreover, its labour-intensive nature has also attracted interest as a potential provider of new jobs in the future. Business services are services that are usually (but not always) provided to other businesses — examples include software development, auditing of accounts, preparation of building plans by an architect, or labour recruitment. Some of these services are also performed in-house. However, there has been a growing trend to outsource more and more of these activities, leading to an increase in the demand for business services.

## The most specialised regions in different activities

Table 8.1 shows which of all regions in the EU-27 and Norway (data for Bulgaria, Greece, Malta and Luxembourg are not available) is the single most 'specialised' region in different parts of the business economy (excluding financial services), on the basis of shares of the total workforce. There are a number of factors that contribute to regional concentrations and specialisation. Geographical and geological factors help explain why some regions are particularly specialised in mining and quarrying, energy production or the forest-based activities of wood and paper manufacturing. Śląskie (Poland) and Bratislavský kraj (Slovakia) are centres of coal production, while

over 70 % of Norra Mellansverige (Sweden) and Itä-Suomi (Finland) are covered by forests, around which much of the local economy has developed. In a similar vein, it is not surprising that Bretagne (France) is the most specialised region for food and beverage manufacturing; it is a largely rural area with a long coastline and a high proportion of agricultural land. The weather, landscape and location are key factors driving relative specialisation within the hotels and restaurants sector, where the most specialised regions are all popular holiday destinations. Location close to a critical mass of clients (other enterprises or private consumers), as well as a concentrated skills base help explain why many of the knowledge-intensive service sectors (such as research and development, computer services or other business services) tend to be concentrated within capitals or other densely populated regions. In many activities there are strategic clusters of enterprises, such as manufacturers of motor vehicles and their parts around Stuttgart or Wolfsburg in Braunschweig, or communications in Köln (all Germany). It should be stressed that specialisation ratios in relatively small regions, and for relatively small activities, can be heavily influenced by the location of a few specific producers.

In most activities, the leading region has retained its position since 2003, although in several cases there was a decline in the number of persons employed in 2004. Among these, the publishing and printing sector of Inner London in the United Kingdom (– 12.8 %) and the clothing industry of Nord-Est in Romania (– 9.2 %) recorded the largest reductions. In contrast, strong growth of over 10 % was recorded in the hotels and restaurants sector in the Illes Balears (Spain), medical, precision and optical instruments manufacturing in Border, Midlands and Western (Ireland), recycling in Sud-Est (Romania), and wholesale trade in Flevoland (Netherlands). A change in the top position occurred in pulp and paper and motor trades, where Norra Mellansverige (Sweden) and Brandenburg — Südwest (Germany) both moved up from third place. In four activities, the former number two has taken over the top position: fabricated metal products (Arnsberg, Germany), office machinery and computers (Southern and Eastern, Ireland), computer services (Berkshire, Bucks and Oxfordshire, United Kingdom) and research and development (Oberbayern, Germany). Finally, in construction and distributive trades, the two now leading Spanish regions (País Vasco and Ciudad Autónoma de Ceuta) were not among the top 20 in 2003.

**Table 8.1:** Most specialised region by activity, EU-27 and Norway, 2004  
*Percentage of total non-financial business economy employment*

ACTIVITY (NACE)	REGION (NUTS 2)	% of total
MINING AND QUARRYING (C 10-14)	Śląskie (PL22)	11.5
MANUFACTURING (D 15-37)	Západné Slovensko (SK02)	61.7
Food products and beverages (DA 15)	Bretagne (FR52)	c
Tobacco (DA 16)	Trier (DEB2)	c
Textiles (DB 17)	Prov. West-Vlaanderen (BE25)	6.5
Clothing (DB 18)	Nord-Est (RO21)	11.9
Leather (DC 19)	Marche (ITE3)	8.4
Wood (DD 20)	Itä-Suomi (FI13)	6.3
Pulp and paper (DE 21)	Norra Mellansverige (SE06)	5.0
Publishing and printing (DE 22)	Inner London (UK11)	4.7
Coke, refined petroleum products, nuclear fuels (DF 23)	Cumbria (UKD1)	c
Chemicals (DG 24)	Rheinessen-Pfalz (DEB3)	c
Rubber and plastics (DH 25)	Auvergne (FR72)	9.1
Other non-metallic mineral products (DH 26)	Centro (PT16)	5.5
Basic metals (DJ 27)	Východné Slovensko (SK04)	c
Fabricated metal products (DJ 28)	Arnsberg (DEA5)	9.0
Machinery and equipment (DK 29)	Tübingen (DE14)	12.2
Office machinery and computers (DL 30)	Southern and Eastern (IE02)	1.6
Electrical machinery and apparatus (DL 31)	Západné Slovensko (SK02)	10.0
Radio, TV and communication equipment (DL 32)	Pohjois-Suomi (FI1A)	6.8
Medical, precision and optical equipment (DL 33)	Border, Midlands and Western (IE01)	5.6
Motor vehicles, trailers and semi-trailers (DM 34)	Braunschweig (DE91)	c
Other transport equipment (DM 35)	Agder og Rogaland (NO04)	6.5
Furniture and other manufacturing (DN 36)	Warmińsko-Mazurskie (PL62)	8.1
Recycling (DN 37)	Sud-Est (RO22)	0.6
ELECTRICITY, GAS AND WATER SUPPLY (E 40-41)	Bratislavský kraj (SK01)	7.6
Energy (E 40)	Bratislavský kraj (SK01)	c
Water supply (E 41)	Stredné Slovensko (SK03)	3.8
CONSTRUCTION (F 45)	País Vasco (ES21)	26.6
DISTRIBUTIVE TRADES (G 50-52)	Ciudad Autónoma de Ceuta (ES63)	43.0
Motor trades (G 50)	Brandenburg — Südwest (DE42)	7.4
Wholesale trade (G 51)	Flevoland (NL23)	15.4
Retail trade (G 52)	Ciudad Autónoma de Ceuta (ES63)	26.4
HOTELS AND RESTAURANTS (H 55)	Illes Balears (ES53)	27.7
TRANSPORT AND COMMUNICATIONS (I 60-64)	Åland (FI20)	48.7
Land transport (I 60)	Bratislavský kraj (SK01)	18.0
Water transport (I 61)	Åland (FI20)	39.1
Air transport (I 62)	Outer London (UK12)	3.6
Supporting transport activities, travel agencies (I 63)	Bremen (DE50)	10.5
Post and telecommunications (I 64)	Köln (DEA2)	26.2
REAL ESTATE, RENTING, BUSINESS ACTIVITIES (K 70-74)	Inner London (UK11)	46.8
Real estate (K 70)	Latvia (LV00)	5.1
Renting (K 71)	Guadeloupe (FR91)	2.1
Computer services (K 72)	Berkshire, Bucks and Oxfordshire (UKJ1)	7.7
Research and development (K 73)	Oberbayern (DE21)	2.0
Other business services (K 74)	Inner London (UK11)	36.0

## Notes:

BG, EL, LU, MT not available

CY excluding Real estate (K 70) and Research and development (K 73). NO excluding Water supply (E 41)

CY national data based on enterprises instead of local units

c: confidential data

## Specialisation in business services

Services are an important and growing area of the EU economy which has in recent years attracted increasing political and economic interest. This interest has to some degree been focused on the area of business services, where growth has been rapid due to the outsourcing phenomenon. These services can be produced either internally by the enterprise itself or they can be purchased. Many enterprises have outsourced some of their services activities previously produced in-house in order to procure these services on a competitive market, with the objective of reducing costs and gaining in flexibility. Business services enterprises enable their clients to focus on their core business activities and reduce their need to occupy their own personnel on ancillary or supporting functions.

Map 8.1 shows how specialised different regions are in one of the two main segments of business services — computer services. Computer services (NACE Division 72) cover consultancy activities for hardware or software, data processing activities, database activities and the maintenance and repair of office and information technology machinery. This sector is at the forefront of the information society, with enterprises that support clients in a broad range of areas, in almost all economic activities. It is quite common for enterprises to outsource their requirements for hardware and software to specialist providers. The possibility to trade such services across borders has been increased by improved telecommunications, notably growing access to broadband Internet.

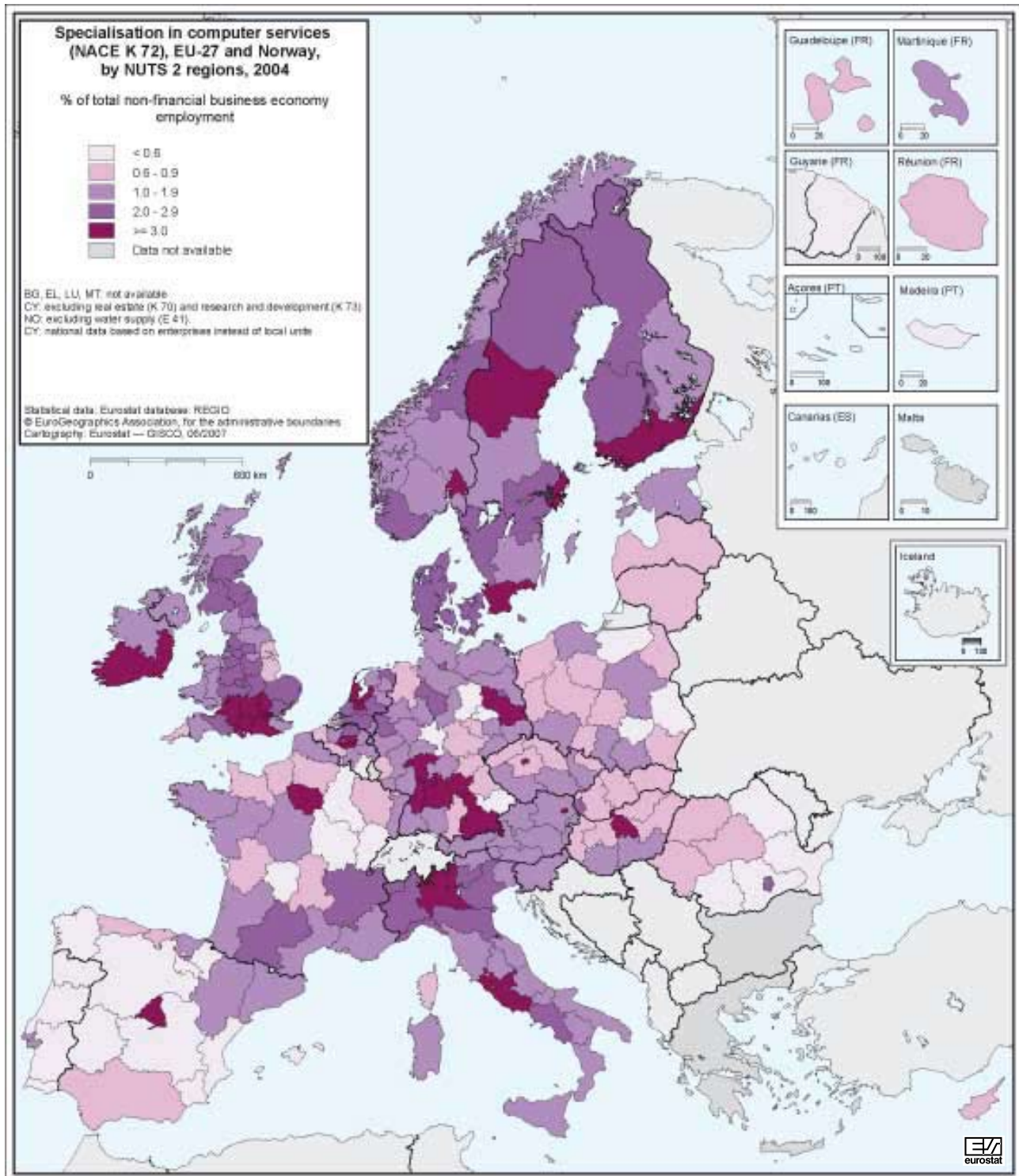
Computer services are particularly concentrated in north-western and central parts of Europe, with generally high degrees of specialisation in most regions in Scandinavia, the United Kingdom, Ireland and the Netherlands. There are two important clusters of regions with very high specialisation in computer services (above 3 % of total employment), one in the South-East (United Kingdom) around London, the other in southern Germany, in a belt from the south-eastern part of Bayern to Darmstadt in Hessen. Within the countries, computer services are generally most developed in and around the capital or other major cities. Ten capital regions were among the 31 regions where computer services accounted for over 3 % of total employment. In fact, the capital region was the most specialised region in all countries except Germany, Belgium, the Netherlands and the United Kingdom. However, it should be noted that also in these countries

more than 2.5 % of the persons employed in the capital region worked in computer services. The capital regions have a high degree of specialisation also in south-western and eastern Europe, where computer services are generally less developed. For example, in Comunidad de Madrid (Spain), computer services account for 3.9 % of total employment and in Bucureşti – Ilfov (Romania) the share is 2.4 %, both around 2.5 times the national average. An interesting exception is Mellersta Norrland in the northern part of Sweden, where 4.1 % of the persons employed work in computer services. This is a region where the population density is very low, although there are large differences between the interior and the more populated coastal areas.

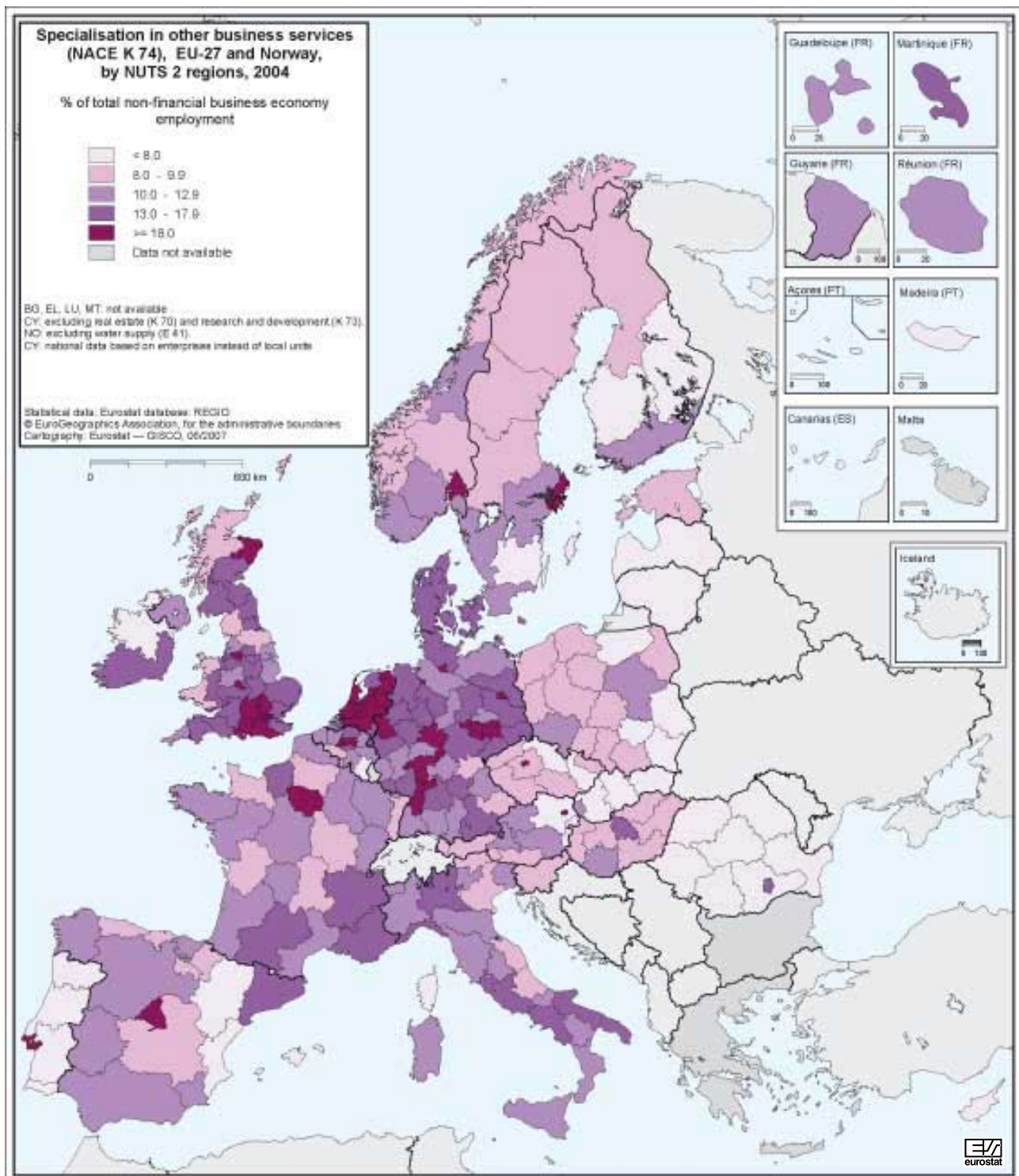
Map 8.2 shows the degree of specialisation in other business services (NACE Division 74). Other business services include many highly specialised knowledge-intensive activities such as legal, accounting and management services, architectural and engineering activities, advertising, and the supply of personnel and placement services provided by labour recruitment enterprises. Security and industrial cleaning services are also included, as well as the provision of secretarial, translation, packaging and other professional business services. Other business services are also highly concentrated on large metropolitan areas. The capital region is the most specialised region in all countries except the Netherlands, where Noord-Holland (which includes Amsterdam) was just behind Utrecht. Three quarters of the regions with the highest specialisation (above 18 % of the persons employed) are located in the Netherlands, Germany or the United Kingdom. The Netherlands is particularly specialised in this activity, which accounts for over 15 % of persons employed in all regions. In the United Kingdom, there is a high degree of specialisation in the regions around London and other metropolitan areas such as Greater Manchester and West Midlands. There is also a relatively high share of persons employed in other business services in Scotland, partly stemming from the location of many call centres in the region.

Figure 8.1 shows the difference in the degree of specialisation in total business services (sum of computer services and other business services) across countries, as well as between the regions with the highest and lowest value in each country. The graph also shows clearly the dominance of the capital region, which is the most specialised in all countries except the Netherlands. There are just as large differences in specialisation within these countries as there are between them.

**Map 8.1:** Specialisation in computer services (NACE K 72), EU-27 and Norway, by NUTS 2 regions, 2004  
 Percentage of total non-financial business economy employment



**Map 8.2:** Specialisation in other business services (NACE K 74), EU-27 and Norway, by NUTS 2 regions, 2004  
 Percentage of total non-financial business economy employment





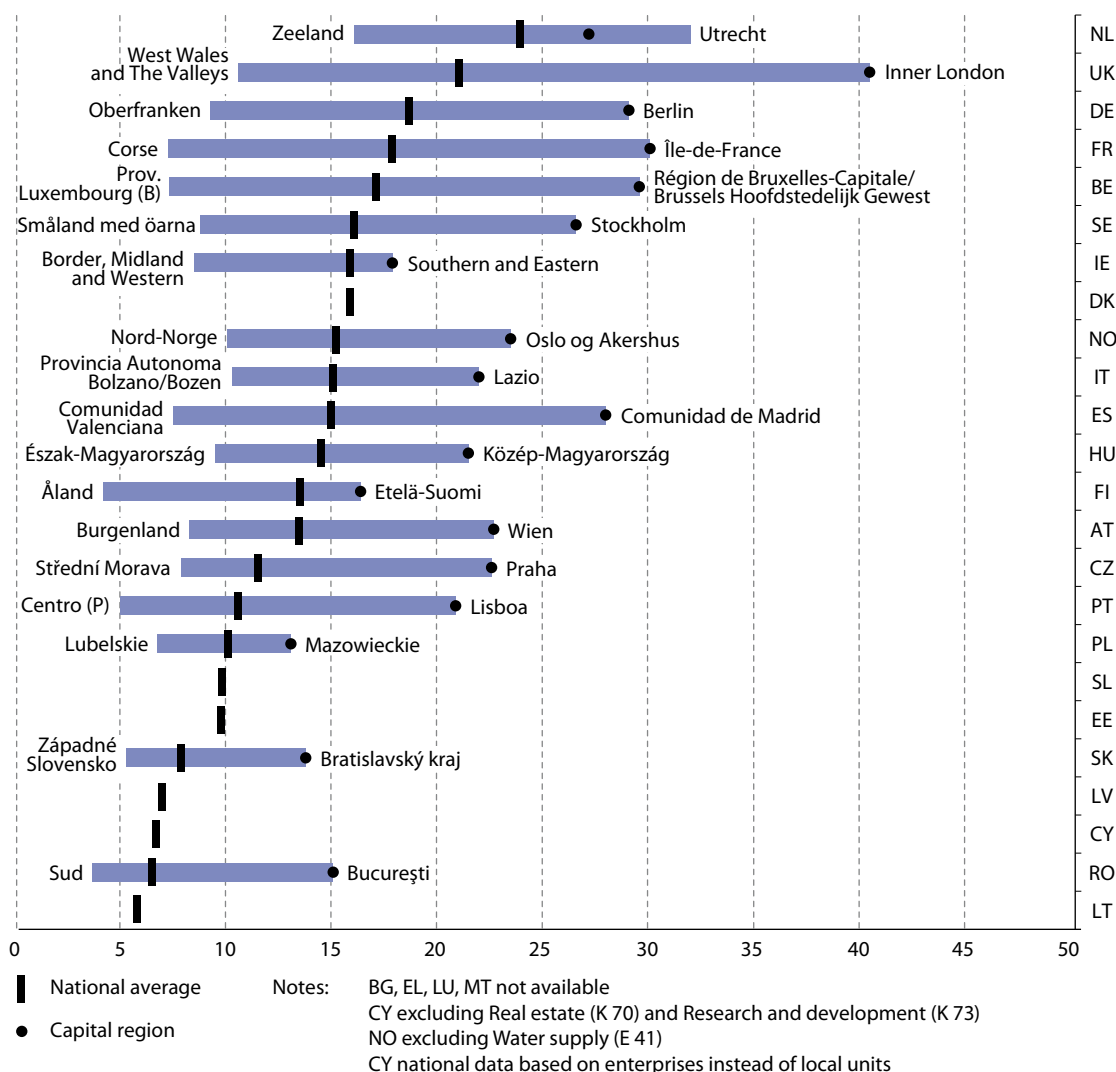
Business services in the most specialised country, the Netherlands, account on average for 24 % of persons employed, around four times more than in the least specialised country, Lithuania. The same factor also differentiates the most and least specialised region in the four countries with the largest regional disparities. Interestingly, these include two of the countries with the lowest average specialisation, Portugal and Romania, and also two of the most specialised countries, France and Belgium. At the other end of the scale are the Netherlands and Poland, with a factor of 2 differentiating the regions with the highest and lowest values. It should be noted that the Netherlands, the United Kingdom, Belgium and France are countries that all have relatively strongly de-

veloped markets in labour recruitment (NACE 74.50). As personnel hired by enterprises in other economic sectors are counted as being employed by labour recruitment enterprises, this contributes to higher labour-intensity ratios in the business services sector of these countries.

## Employment growth in business services

Employment in business services generally (the sum of computer services and other business services) in the EU-27 grew by an impressive 43 % between 1998 and 2006, according to short-term statistics (STS). Employment in

**Figure 8.1:** Specialisation in business services (NACE K 72 and K 74), EU-27 and Norway, by NUTS 2 regions, 2004  
Highest and lowest value per country, percentage of total non-financial business economy employment



computer services grew by nearly 57 %, while employment in other business services grew by around 40 %. Employment in computer services grew particularly strongly up to 2001 and then stabilised, while there was steady growth in employment in other business services over this period. In contrast, employment in manufacturing declined by 11 % in the same period, at the same time as the value added generated steadily increased. This is partly because of technological gains, but also a result of outsourcing, where tasks which partly used to be performed in-house are instead purchased from other sectors, not least from business services providers. In 2004, around 20 % of the turnover in business services came from services provided to manufacturing clients. This includes people employed by labour recruitment enterprises that work directly in manufacturing enterprises. In 2004, around a quarter of the turnover of labour recruitment enterprises came from the supply of industrial personnel <sup>(4)</sup>.

Maps 8.3 and 8.4 show the growth rate of employment in 2004 in computer services and other business services respectively. The pattern for computer services is to a large extent the opposite of that for specialisation shown on Map 8.1. Regions with the highest growth rates are predominantly in eastern or southern Europe, including several of the regions in Romania, Poland, Spain and Portugal. Many of these are among the least specialised regions in computer services. Conversely, regions where employment is decreasing are predominantly in the northern and central parts of Europe, including all regions in Sweden and large parts of the southern half of the United Kingdom. However, although some jobs may have moved to the east and south, there has been a net increase in employment also in the northern and central parts of Europe. In 2004, there was a total net increase of 68 000 persons employed in the regions of the countries with data available. There was a relatively large net increase of 23 000 persons employed in the regions of the Member States (MS) that joined the EU in 2004, equal to a growth rate of 10.3 %. In the regions of Spain and Portugal employment grew by 3.3 % on average, which means a net increase of close to 7 000 people. However, there was also a net increase of around 28 000 people in the regions of the remaining Member States and Norway, although the average growth rate there was clearly lower (+ 1.4 %).

Map 8.3 shows clearly that there are large differences in the evolution of employment between neighbouring regions, not least in the northern

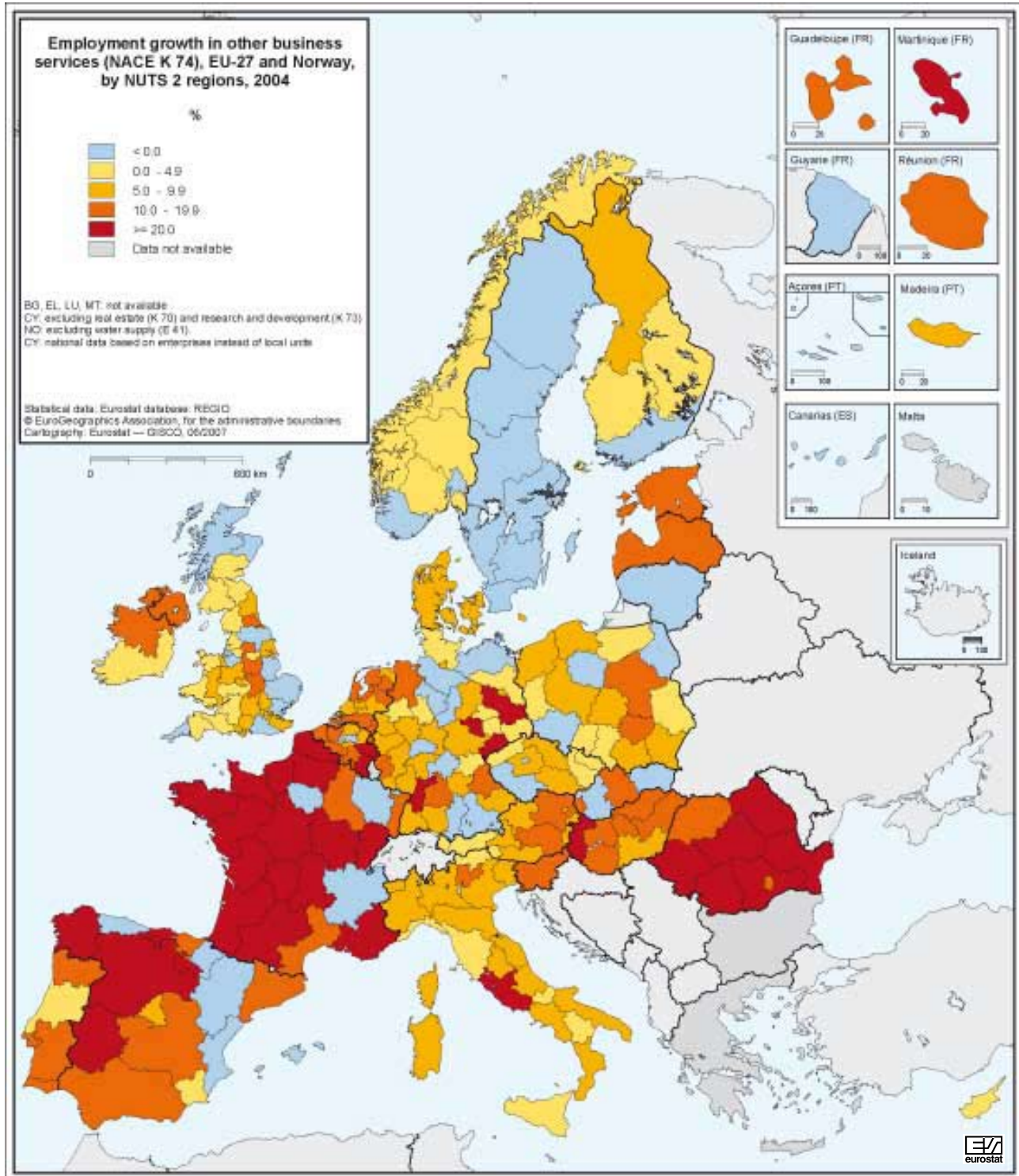
and central parts of Europe. One example is the United Kingdom, where there was an average decrease in employment of 2.2 % in England and Wales, at the same time as there were very high average growth rates in Scotland and Northern Ireland (+ 13.9 %), as well as in neighbouring Ireland (+ 16.9 %). There are no signs that the capital regions are losing importance as a base for the providers of business services. There was a net gain of 35 000 persons employed in the 24 capital regions (including countries where there is only one NUTS 2 region), compared with a total net gain of 23 000 in the remaining 230 regions. Capital regions thus accounted for around 60 % of the total net gains in employment, around twice their share in the total persons employed. Consequently, the share of the capital regions in total employment actually increased from 31.6 % in 2003 to 32.2 % in 2004.

Most regions with a high growth rate of employment in other business services (Map 8.4) are located in the southern half of Europe, with predominantly high growth rates in the regions of Spain and Portugal, Romania, Hungary and particularly France. In 2004, there was a total net increase of 900 000 persons employed in other business services in the regions of the countries with data available. The growth rate of employment in the Member States that joined the EU in 2004 was high, 8.4 %, although clearly lower than in computer services. The employment growth in the regions of Spain and Portugal was almost as high, 8.1 %. Employment grew by 5.1 % on average in the regions of the remaining Member States and Norway, three and a half times as high as in computer services. Interestingly, the high growth rates in many regions in France were offset by a reduction in the persons employed in the capital region, Île-de-France, leading to a comparatively low national average growth rate of 4.1 %. Contrary to the situation for computer services, the capital regions were somewhat losing importance in relation to other regions as a location for other business services providers. There was a net gain of 175 000 persons employed in the 24 capital regions (including countries where there is only one NUTS 2 region), which is around 19 % of the total net gains in employment in the regions of the countries with data available. However, the average growth rate of employment in the capital regions was 4.1 % in 2004, compared with 6.4 % on average in the remaining 230 regions. Consequently, the share of the capital regions in total employment actually decreased, from 26.9 % in 2003 to 26.5 % in 2004.

<sup>(4)</sup> Data refer to an average of the 15 countries with data available, limited to the knowledge-intensive parts of the sector, i.e. excluding security, cleaning and similar services (NACE 74.6 to 8).



**Map 8.4:** Employment growth in other business services (NACE K 74), EU-27 and Norway, by NUTS 2 regions, 2004  
Percentage



## Characteristics of the top 30 most specialised regions in business services

Table 8.2 provides some key indicators for the top 30 most specialised regions in business services (sum of computer services and other business services). The most specialised region of all regions with data available is Inner London (United Kingdom), where around 600 000 people are employed in these activities, which means over 40 % of the total non-financial business economy workforce. Two regions from the countries that joined the EU in 2004 are on the top 30 list, with the capital regions of the Czech Republic and Hungary in 25th and 28th places respectively. The number of persons employed also grew considerably in many of the top-ranked regions in 2004, with by far the highest growth rate, + 23 %, in Karlsruhe (Germany). Strong growth of over 10 % was also recorded in Flevoland, Noord-Brabant and Noord-Holland (Netherlands), as well as the capital regions of Lazio (Italy) and Közép-Magyarország (Hungary). In contrast, large reductions in persons employed in business services were recorded in particular in Stockholm, Sweden (– 10 %) and Prov. Vlaams-Brabant in Belgium (– 21 %). In Stockholm, there was a decline in both subsectors, while in Prov. Vlaams-Brabant there was actually a growth in computer services, which dampened somewhat a huge drop, – 26 %, in employment in other business services. The table also shows clearly the huge variations in average wage costs that exist within Europe. Business services enterprises in Inner London (United Kingdom) had the high-

est average wage costs among these top-ranked regions, with an average of EUR 44 800 per person employed in 2004, followed by Oslo og Akershus (Norway) with EUR 39 200. This can be compared with average wage costs of 5 200 in the Hungarian capital region and 6 900 in Praha (Czech Republic). It should be noted that these figures do not take into account differences in purchasing power or differences in employment characteristics such as the number of unpaid workers, part-time work, or hours worked.

## Conclusion

Regional structural business statistics offer users wanting to know more about the structure and development of the regional business economy a detailed, harmonised data source, describing for each activity: the number of workplaces, number of persons employed, wage costs and investments made. This chapter has shown how some of these data can be used to analyse different regional business characteristics: the focus, diversity and specialisation of the regional business economies and the nature and characteristics of regional business services activities. The analysis in this chapter has generally confirmed the positive expectations for the business services sector, reinforcing the belief that this area will remain one of the key drivers of competitiveness and job creation within the EU economy in the coming years. Globalisation, international market liberalisation and further technological gains are likely to lead to further integration among Europe's regions (and beyond), bringing buyers and sellers of these services closer together.

**Table 8.2:** Top 30 most specialised regions in business services (NACE K 72 and K 74), EU-27 and Norway, 2004  
 Percentage of total non-financial business economy employment

Region (NUTS 2)		Persons employed in business services (NACE K 72 and K 74), 2004					Average wages EUR 1 000 per employed
		Total	% computer services (NACE K 72)	% other business services (NACE K 74)	% of total employed in nonfinancial business economy (NACE C-I+K)	Growth rate (%)	
1	Inner London (UKI1)	596 915	11	89	40.5	2.1	44.8
2	Utrecht (NL31)	120 270	23	77	32.0	5.9	22.8
3	Berkshire, Buckinghamshire and Oxfordshire (UKJ1)	259 194	25	75	30.8	3.6	32.3
4	Île-de-France (FR10)	1 181 527	18	82	30.1	-2.4	34.7
5	Région de Bruxelles-Capitale / Brussels Hoofdstedelijk Gewest (BE10)	109 726	10	90	29.6	6.8	26.8
6	Berlin (DE30)	184 146	9	91	29.1	8.9	22.9
7	Comunidad de Madrid (ES30)	734 718	14	86	28.0	5.4	16.7
8	Noord-Holland (NL32)	227 524	11	89	27.2	10.5	20.2
9	Stockholm (SE01)	171 592	27	73	26.6	-10.1	29.1
10	Surrey, East and West Sussex (UKJ2)	204 526	19	81	26.5	-2.8	29.6
11	Zuid-Holland (NL33)	251 822	11	89	26.2	8.6	20.8
12	Hamburg (DE60)	137 376	8	92	26.1	9.0	24.8
13	Bedfordshire and Hertfordshire (UKH2)	138 873	18	82	25.2	4.2	28.4
14	Outer London (UKI2)	297 870	14	86	25.1	4.1	33.1
15	Darmstadt (DE71)	277 531	13	87	25.0	4.3	30.9
16	Flevoland (NL23)	19 312	16	84	24.1	14.0	c
17	Karlsruhe (DE12)	173 516	19	81	23.9	23.1	22.9
18	Groningen (NL11)	32 359	12	88	23.7	9.8	20.2
19	Düsseldorf (DEA1)	312 929	9	91	23.6	7.2	22.8
20	Prov. Vlaams-Brabant (BE24)	57 958	22	78	23.6	-21.0	33.3
21	Hampshire and Isle of Wight (UKJ3)	133 086	22	78	23.5	7.3	33.2
22	Oslo og Akershus (NO01)	86 246	23	77	23.5	-1.2	39.2
23	Wien (AT13)	114 290	19	81	22.7	4.1	27.1
24	Greater Manchester (UKD3)	183 624	13	87	22.6	1.2	25.2
25	Praha (CZ01)	134 776	16	84	22.6	-1.7	6.9
26	Lazio (ITE4)	301 648	19	81	22.0	15.3	14.2
27	Kassel (DE73)	61 483	2	98	21.8	6.0	15.2
28	Közép-Magyarország (HU10)	206 042	18	82	21.5	13.8	5.2
29	Leipzig (DED3)	39 787	6	94	21.2	4.2	14.4
30	Noord-Brabant (NL41)	156 902	9	91	21.2	11.8	19.6

## Notes:

BG, EL, LU, MT not available

CY excluding Real estate (K 70) and Research and development (K 73); NO excluding Water supply (E 41)

CY national data based on enterprises instead of local units

c: Confidential data

## Methodological notes

Regional structural business statistics (SBS) are collected on the basis of Council Regulation (EC, Euratom) No 58/97 concerning structural business statistics. The data cover all the EU Member States and Norway. (Bulgarian data is not presented here as, at the time of writing, data is only available according to pre-accession regional breakdowns.) These and other SBS data sets are available on the Eurostat website (<http://ec.europa.eu/eurostat/>) under the 'Industry, trade and services' theme (in the data navigation tree under 'Industry, trade and services — Horizontal view'/'Structural business statistics'). Selected publications, data and background information are available in the section of the Eurostat website dedicated to European business, located directly under the 'Industry, trade and services' theme — see the special topic regional structural business statistics. Most data series are continuously updated and revised where necessary. This chapter reflects the data situation as of March 2007.

Structural business statistics are presented by sectors of activity according to the NACE Rev. 1.1 classification, with a breakdown down to the two-digit level (NACE divisions). The data presented here are restricted to the non-financial business economy. The non-financial business economy includes Sections C (Mining and quarrying), D (Manufacturing), E (Electricity, gas and water supply), F (Construction), G (Wholesale and retail trade), H (Hotels and restaurants), I (Transport, storage and communication) and K (Real estate, renting and business activities). It excludes agricultural, forestry and fishing activities and public administration and other non-market services (which are currently not covered by the SBS), as well as financial services (NACE Section J), which are for the time being only collected on a voluntary basis. These activities together accounted for around 20 % of total EU-25 value added in 2004, according to national accounts. They could, however, represent a substantially larger share in certain countries or regions.

The observation unit for the regional SBS data is the local unit, which is an enterprise or part of one situated in one geographically identified place. Local units are classified into sectors (by NACE) according to their main activity. At national level, the statistical unit is the enterprise. As an enterprise can consist of several local units, it is possible for the principal activity of the local unit to differ from that of the enterprise to which it belongs. Hence, national and regional structural business statistics are not entirely comparable. It should be noted that in some countries the activity code assigned is based on the principal activity of the enterprise in question.

Regional data are available at the NUTS 2 level for a limited set of variables: the number of local units, wages and salaries, the number of persons employed and investments in tangible goods. The latter variable is collected on an optional basis, except for Industry (Nace Sections C to E), which results in more limited data availability than for the other variables. Variables are defined according to Commission Regulation (EC) No 2700/98. Below are summary definitions for the variables presented in this publication:

**Number of persons employed:** This is the total number of persons who work (paid or unpaid) in the observation unit, as well as persons working outside the unit who belong to it and are paid by it. It includes working proprietors, unpaid family workers, part-time workers, seasonal workers, etc.

**Wages and salaries:** This concerns the total remuneration, in cash or in kind, payable to all persons on the payroll (including home workers) in return for work done during the accounting year. Wages and salaries include the value of any social contributions, income taxes, etc. payable by the employee, even if they are paid directly by the employer. Wages and salaries do not include social contributions payable by the employer.





# Transport

9



## Introduction

Transport links are often considered to be one of the main factors in regional economic development, and a significant proportion of the Community's regional budgets are used for investment in transport infrastructure, including the transport component of the trans-European networks.

Regional transport statistics aim to describe regions in terms of a set of transport indicators, and also to quantify the flows of goods and passengers between, within and through regions. Such data help both to analyse the role of transport in relation to a region's economy, and to justify new investment in transport infrastructure. They may also help in measuring and ultimately reducing congestion effects and the environmental impact of transport.

The following two sections of this chapter look at transport infrastructure and equipment in the Member States of the European Union, in particular the density of roads (other than motorways) and the number of passenger cars. The following section analyses maritime passenger transport. The subsequent section deals with road freight in terms of the road journeys involved. The final section then examines freight transport by air.

## Transport infrastructure

Eurostat's statistical databases have data on road, rail and inland waterway networks at NUTS 2 level. Road infrastructure is grouped into two categories: motorways and other roads. Railway links are classified according to two criteria: two or more tracks, and whether or not they are electrified. Data on inland waterways (navigable canals and navigable rivers and lakes) are of varying quality, because many Member States make no distinction between high-capacity broad canals and lower-capacity narrow canals.

An extensive network of major roads and motorways generally gives regions a competitive and developmental advantage. Map 9.1 shows the length of the network of roads other than motorways in the NUTS 2 regions in 2005, expressed as kilometres of road per 100 km<sup>2</sup>.

- Road density is closely correlated with urbanisation, as can be seen in Belgium and Noord-Holland and Zuid-Holland (Netherlands) with more than 400 km of road per 100 km<sup>2</sup>.
- Regions comprising major conurbations generally have higher road densities. These are frequently regions with substantial commut-

er activity. Examples include Inner London in the United Kingdom, Wien in Austria and Île-de-France, including Paris (France).

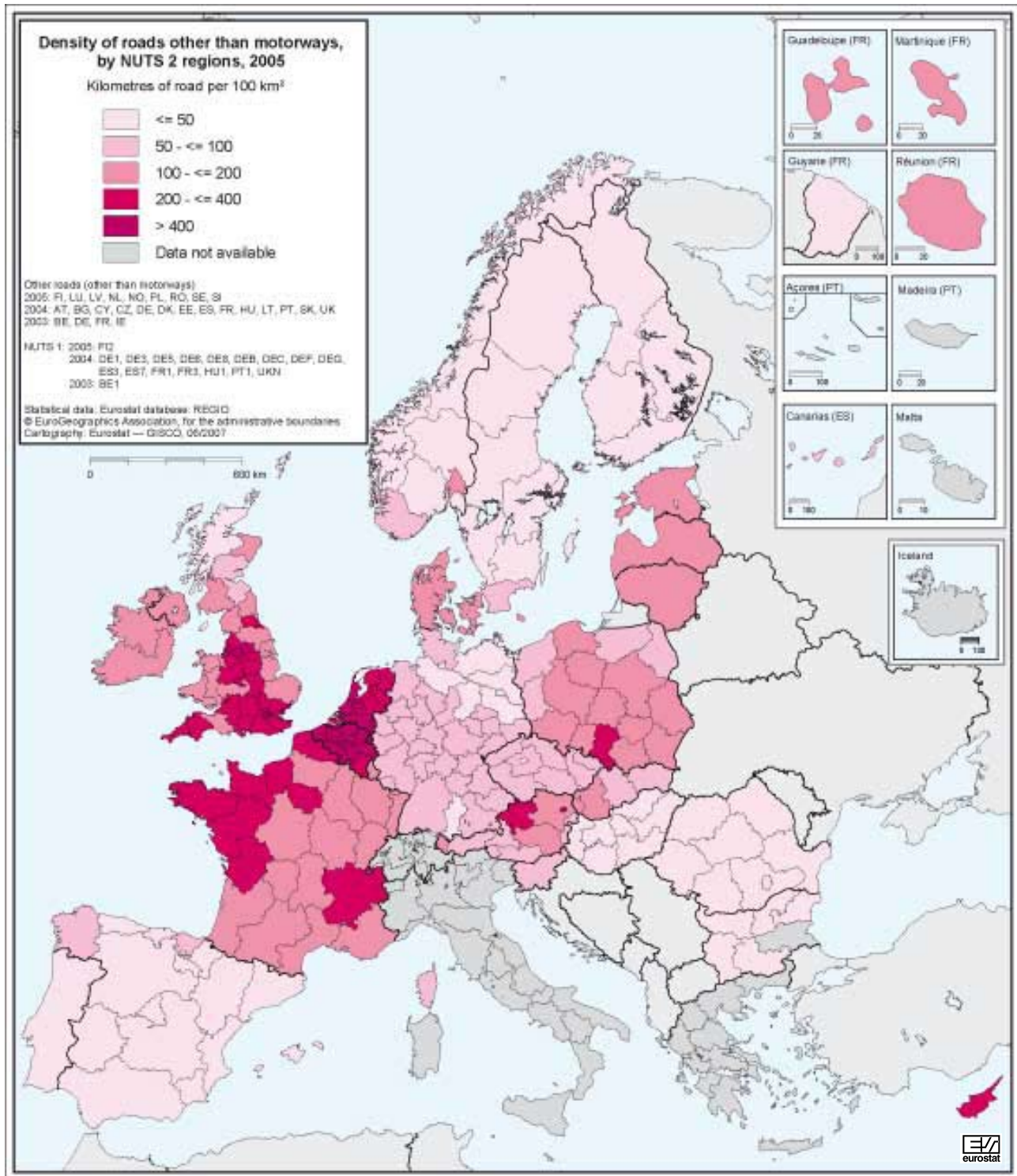
- Some regions with important industrial areas also have a very dense road network. Examples are West Midlands, including Birmingham, Merseyside, including Liverpool, and Greater Manchester, including Manchester (United Kingdom).
- Similarly, regions that include major ports have extensive road networks for the transport of goods to and from the coast. Examples are Nord - Pas-de-Calais (France), Antwerpen and West-Vlaanderen (Belgium), and Zuid-Holland and Noord-Holland (Netherlands).
- The regions on the periphery of the European Union, for example some island regions, generally have low road densities (below 30 km of road per 100 km<sup>2</sup>). Examples are Pohjois-Suomi (Finland), Islands and Highlands (United Kingdom) and Nord-Norge (Norway).
- Some island regions such as Martinique (France) and Cyprus have high road densities, reflecting the importance of a modern transport infrastructure for tourist areas.
- The regions of Bulgaria and Romania for which data are available have a road density comparable to that of the less urbanised regions in the EU, such as most regions in Spain and Portugal (below 50 km of road per 100 km<sup>2</sup>).
- Looking at motorway density, the same major trends can be observed as for other roads. Only Germany has a low density of other roads and a high motorway density. Certain light pink areas in Germany, such as the centre, do have an extensive network of other roads, but road branches and municipality roads are not included in 'other roads'.

## Transport equipment

Transport equipment may be defined as all vehicles carrying goods and/or passengers, and hence covers motor vehicles, trains, seagoing and inland waterway vessels and aircraft. The vehicle data at NUTS 2 level are broken down by vehicle category: passenger cars, buses, lorries, tractors and motorcycles. However, this section looks at only one of these indicators, namely passenger cars.

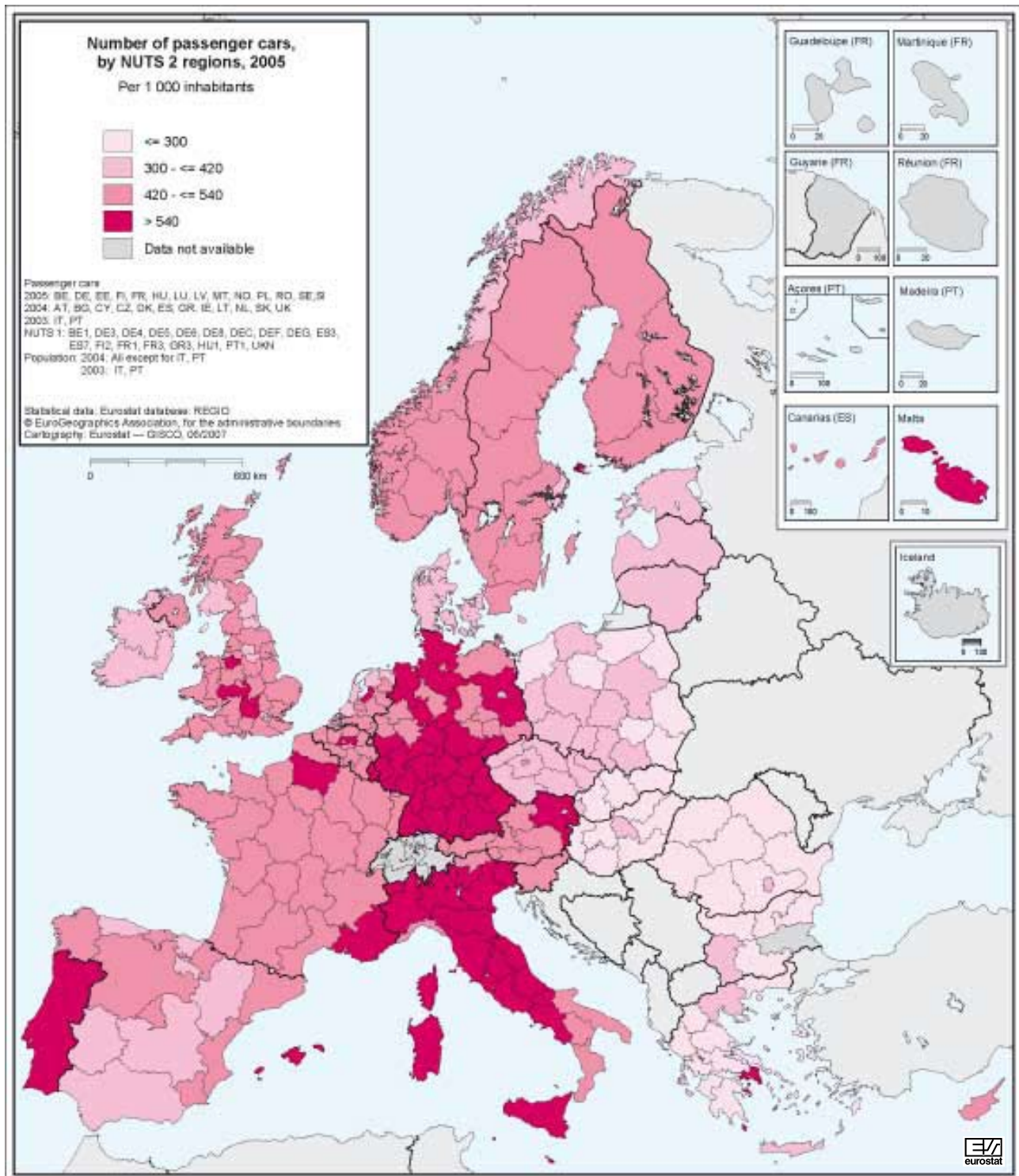
Map 9.2 shows the passenger car fleet by NUTS 2 region, measured in terms of the number of passenger cars per 1 000 inhabitants.

**Map 9.1:** Density of roads other than motorways, by NUTS 2 regions, 2005  
*Kilometres of road per 100 km<sup>2</sup>*





**Map 9.2:** Number of passenger cars, by NUTS 2 regions, 2005  
Per 1 000 inhabitants



- Regions that comprise major urban centres — for example Wien (Austria), Berlin (Germany) and Inner London (United Kingdom) — have a relatively low car ownership (below 420 cars per 1 000 inhabitants), possibly reflecting factors such as an extensive public transport network, parking difficulties or concentrations of students, immigrants and other low-income groups.
- In some countries, the core urban region may be surrounded by a region with high car ownership, possibly indicating many commuters dependent on cars to get to work in the city. This is the case in Vlaams-Brabant (Belgium) with 570 cars per 1 000 inhabitants and Brandenburg (Germany) with 556 cars per 1 000 inhabitants. In contrast, low car ownership around the core may indicate extensive commuter use of public transport, such as in Outer London. In the larger NUTS 2 regions that have a core city and an extensive hinterland, car density tends to be distributed more or less evenly. This is the case in Comunidad de Madrid (Spain) and Île-de-France, including Paris (France), where these factors tend to balance out.
- Since car ownership is often an indicator of economic development in a region (measured by GDP per capita), regions with higher GDP levels would be expected to have a higher car ownership. Indeed, the Grand-Duchy of Luxembourg and numerous regions in Germany display this pattern, whereas most regions in Greece, Romania and Bulgaria have low values for both indicators. However, Map 9.2 shows that there are also a few regions that do not follow this example: Highlands and Islands (United Kingdom) and Molise (Italy) have high car ownership levels but low GDPs.
- In a few thinly populated regions, a car may be essential for travel to and from work. Such regions may include Midi-Pyrénées (France) and the Finnish and Swedish regions away from the capital cities.
- Romania and Bulgaria, the two new Member States, have a level of car ownership of below 300 cars per 1 000 inhabitants, which is found elsewhere in the EU only in Greece, Slovakia, Poland and Hungary (except for the capital city regions in these countries). Apart from the most northerly region, Norway has similar levels to Sweden and Finland (between 400 and 500 cars per 1 000 inhabitants).
- Regions with economies very much dependent on tourism also seem to have high car

densities. The Spanish, French and Italian Mediterranean regions in particular (including the island regions), some of which host large numbers of retired foreign nationals, have a relatively large car fleet.

## Maritime transport

Maritime transport statistics exist at the NUTS 2 regional level for both passengers and freight, showing movements across regions, expressed in thousands of passengers and in thousands of tonnes. There are two time series with these indicators. One goes back to 1978 and ends with the reference year 1998. Since 1999, a new methodology has been used in the Member States to obtain these regional statistics, which are also held in separate tables in the database. The two time series are no longer directly comparable owing to the differences in methodology.

The regional data collected under Council Directive 95/64/EC are obtained only for ports handling passengers and freight over a certain annual threshold, i.e. 200 000 passengers and 1 million tonnes of goods, respectively. This means that the data presented in the following maps may differ from national totals, as traffic at small ports is not taken into account. However, the regional distribution of the volume of traffic can be represented fairly accurately, because the minor ports are considered to make only a small contribution to the total volume of traffic.

The current set of regional indicators for maritime transport comprises freight data divided into tonnes of freight loaded and unloaded and data on embarked and disembarked passengers, both at NUTS 2 level. In this section, just the data on maritime passengers are considered.

Map 9.3 classifies the regions according to the number of passengers in relation to their population, illustrated by the colour of the regions, and the total number of maritime passengers passing through the ports in the regions, indicated by the circles. The maritime passenger figures are expressed as the number of passengers per inhabitant in order to eliminate the variation in absolute numbers due to the differences in regional populations. The figures refer to the national, intra-EU-25 and extra-EU transport of passengers. For national and intra-EU passenger transport, however, it must be noted that passengers are counted twice; once as they embark and again as they disembark. The totals thus overestimate the actual journeys made. The information in Map 9.3 refers only to coastal regions with passenger ports.



- One can observe various 'region pairs' with similar passenger figures. These pairs indicate the major ferry connections in Europe: Helsingborg and Helsingør for the crossing between Sydsverige in Sweden and Denmark, Calais–Dover for traffic between Nord - Pas-de-Calais (France) and Kent (United Kingdom), as well as Reggio di Calabria and Messina for the connection between Calabria and Sicilia (Italy).
- Denmark is the most important region for maritime passenger transport with more than 35 million passengers, due to its numerous ferry connections between its various islands and with Germany, Sweden and Norway. The region of Attiki (Greece) has similarly high figures for the total number of maritime passengers — almost twice the number of passengers for Sydsverige (Sweden) and Sicilia (Italy), which are the next most important regions.
- In general, the regions along the Mediterranean coast of Greece and Italy have high figures in terms of the total number of passengers. However, the double counting of passengers noted above applies especially to the Italian and Greek ports mentioned here, since they all involve national ferry connections.
- Regions with a strong tourist trade, such as some in Greece and the islands of France and Spain, also see high numbers of passengers. Their figures are even more remarkable when compared with the local populations. Examples include Ciudad Autónoma de Ceuta (Spain) with 2 million passengers or 29 819 passengers per inhabitant and Corse (France) with 3 million passengers or 11 138 passengers per inhabitant.

## Road freight

Road freight data are collected under Council Regulation (EC) No 1172/98 on statistical returns in respect of the carriage of goods by road, which replaced the previous directives. The current regulation provides for a larger set of variables to be transmitted to Eurostat in the form of individual data records on vehicles, journeys and goods transport operations. These data are collected via sample surveys of goods vehicles in Member States. Starting from the reference year 1999, micro-data are transmitted on a quarterly basis, five months after the end of the reference period. Each reporting country collects data on the activities of road motor vehicles registered

in its country, both inside and outside its national territory, so there is no double counting at European level. Data on transport by non-European hauliers in the territory of the Member States are not collected. The regulation allows vehicles with a load capacity smaller than 3.5 tonnes to be excluded from the survey.

One major added value provided by the Council regulation is information on the regional origin and destination of intra-EU road transport. At present, national transport is reported at NUTS 3 level. For international transport, the regulation provides for a transitional period during which origins and destinations can be declared with country codes. However, the ultimate aim is to have international transport reported at NUTS 3 level as well.

Map 9.4 shows the total number of road journeys by region divided by the area of the region in square kilometres and the share of loaded journeys. Data from all reporting countries are aggregated by region. The total number of road journeys for a region includes empty and loaded journeys, intra- and extra-EU journeys, and loading and unloading journeys. The share of loaded journeys is defined as the proportion of the total number of journeys for the given region. Intra-regional journeys are included once.

Map 9.4 shows the importance, in terms of road freight journeys, of the regions in the vicinity of the main ports on the North Sea and the Channel coast. Examples include the ports of Rotterdam (in the Dutch region of Zuid-Holland) and Antwerp (in the Belgian region of Antwerpen) (over 2 500 road journeys per km<sup>2</sup>). The map also shows the two main transport axes across Europe: from northern Italy via Germany up to the Netherlands and then over to the United Kingdom, and, running almost parallel, from the Slovak Republic via the Czech Republic and Poland to northern Germany.

- Regions comprising capital cities, for example Inner London (United Kingdom), Praha (Czech Republic) and Lisboa (Portugal), are very busy in terms of road freight journeys. This is probably due to their small size, but on the other hand urban areas with a highly concentrated population may well be more demanding in terms of supplies.
- Regions where there is a strong concentration of industrial activities attract a great deal of freight transport, for example the regions of West and South Yorkshire (United Kingdom),





Moravskoslezsko (Czech Republic) and Śląskie (Poland), where major steel industries are located.

- Looking at the share of loaded journeys in all journeys, the highest proportions are registered in Veneto, Lombardia and Piemonte (the northern regions of Italy) and Hampshire and Isle of Wight (United Kingdom), probably due to their industrial activities. The Belgian regions also have shares above 80 %. The proportions of loaded journeys are fairly low (below 70 %) in Spain, Portugal and southern France. The same can be said for the Czech Republic, Hungary, Poland and Slovenia. The share of loaded journeys in all journeys in the EU is 73.7 %.

## Air transport

Eurostat's statistical databases contain air transport statistics at regional level for passengers and freight. These series show passenger and freight movements over NUTS 2 regions measured in thousands of passengers and tonnes, respectively. The passenger data are divided into passengers embarking, disembarking and in transit. The freight statistics data are divided into tonnes of freight loaded and unloaded. Two series are also available here, based on different methodologies. The series going back to 1978 ended with reference year 1998 and was replaced by a new time series with different definitions as from 1999.

Data on air transport are currently collected under Regulation (EC) No 437/2003 of the European Parliament and the Council on statistical returns in respect of the carriage of passengers, freight and mail by air. Data come from national surveys on airports. The regulation provides for the collection of detailed monthly data for airports handling more than 150 000 passengers per year. For airports handling fewer than 150 000 but more than 15 000 passengers, only aggregated annual data are required, while no data need be provided for minor airports. Consequently, the data presented in Map 9.5 may differ from national totals, as the figures for minor airports and airports reporting only aggregated data are not included. Nevertheless, even without data for minor airports the regional distribution can be considered representative.

In this section on air transport, the focus is on freight data. The figures cover all Member States, except Sweden and Bulgaria, and the EFTA countries Iceland, Norway and Switzerland. Note that for Denmark, the Copenhagen airport freight data are not available.

Map 9.5 shows two indicators: the total amount of freight transported by air in each region as expressed in tonnes, illustrated by the colour of the regions, and the share of loaded and unloaded freight for each region, indicated by the pie charts.

- The top-ranking regions in terms of tonnes of total freight are Darmstadt (Frankfurt), Noord-Holland (Amsterdam), Outer London and Île-de-France (Paris), with more than 1 million tonnes of goods freighted. This confirms the importance of the main national airports in Germany, the Netherlands, the United Kingdom and France. The ability to carry freight on the many passenger routes flown from these airports explains the dominant position of these four airports. For these regions, the volumes of freight loaded and unloaded are roughly equal. Vlaams-Brabant (Belgium), Köln (Germany), the Grand-Duchy of Luxembourg, and Lombardia (Italy) record volumes of about half a million tonnes of goods loaded.
- Unloaded freight exceeds loaded freight in most regions, illustrating the European Union's dependence on imports (44 % loaded and 56 % unloaded for the European Union as a whole). Exceptions where the freight loaded was greater than the freight unloaded are Lancashire and Hampshire and Isle of Wight (United Kingdom) (over 75 % loaded freight), probably due to the presence of industrial activities.
- The ratio of goods unloaded to goods loaded is particularly high, i.e. more goods are unloaded than loaded, in island regions, where tourism is the main economic activity. Examples are Notio Agaio in Greece and Região Autónoma da Madeira (Portugal). The share of loaded goods is low in Latvia and Cyprus as well.
- The volume of freight transported by air in Romania is low in comparison with most of the other EU countries (17 000 tonnes compared with the average of 78 189 tonnes for the EU-26; no data are available for Bulgaria).

## Conclusion

The data shown in the five maps in this chapter represent only part of the broader set of regional transport statistics available in Eurostat's statistical databases. Regional transport statistics show patterns of variation across regions where transport-related variables are often closely related



to levels of economic activity. As already mentioned, transport policies are at the very heart of efforts to reduce regional inequality and improve regional cohesion. In an enlarged Europe, economic and infrastructure disparities are now more evident than before. One of Eurostat's long-term objectives is to expand the current regional transport indicators in order to provide a better

understanding of the impact of transport policies on economic growth, transport needs and the environment.

For Bulgaria and Romania, the new Member States, the regional variation seen in transport indicators is quite similar to that seen across the rest of the EU. The volume of traffic is comparable to that of the southern countries in the EU.

## Methodological notes

Eurostat collects, compiles and disseminates a variety of regional indicators. Data on road and railway infrastructures, inland waterways, vehicle stocks and road accidents are currently collected in Member States and candidate countries on a voluntary basis via annual questionnaires, while data on road, maritime and air transport for passengers and goods are directly derived from the data collections required by legislation. In addition, journeys made by vehicles are derived from a specific study of road transport data.

Regional transport indicators are freely disseminated on Eurostat's website under the 'Transport' theme and are mirrored in 'General and regional statistics'. Data are organised in 18 tables for transport, covering infrastructure, the vehicle fleet, journeys by road, sea and air (with, in each case, separate tables for freight and passengers), and road safety (as reflected in numbers of deaths and injuries in road accidents). All data are annual, with time series going back to the reference year 1978 for transport infrastructures, air and maritime transport, while for road safety data the series start from 1988.

Due to the nature of transport, a spatial breakdown is built into most legislation dealing with the collection of transport flow statistics, which, as mentioned above, allows us to directly derive regional indicators for maritime and air transport. Moreover, other regional transport indicators on transport flows can be found under the separate domains of the 'Transport' theme: 'Road transport', 'Railways transport' and 'Inland waterways transport'. Further information on transport flows between airports and ports can be also obtained under the 'Maritime transport' and 'Air transport' domains.

In order to show the potential of transport statistics for analysing regional patterns, this year's contribution focuses on the data on regional transport flows derived from the maritime, air, and road data collections required by legislation. The data in the maps above have been extracted and aggregated from the databases for these individual modes of transport and cannot be found directly on Eurostat's website. The aim here is to provide an added value over and above the data already available to the public on the website.



# Tourism

# 10



## Introduction

Tourism is an important part of the economy for the Member States of the European Union altogether. However, the economic importance of tourism for the various regions within the EU differs a lot. In rural regions in particular, which are usually peripheral to the economic centres of their respective countries, tourism is often the main source of income and the most important factor for creating and securing an adequate level of employment.

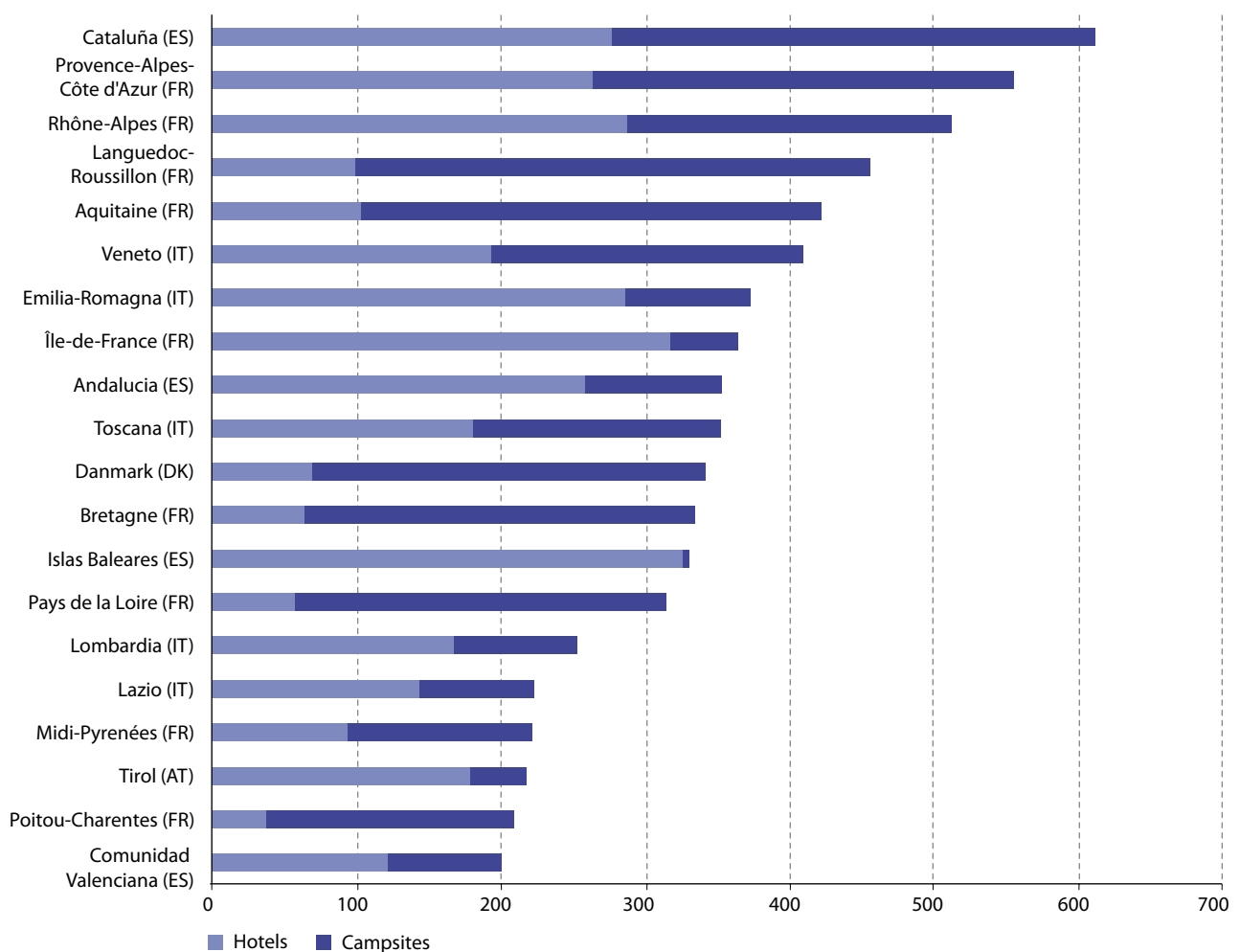
Tourism is an industry that typically cuts across many different sectors, all of which offer services to tourists and whose development is thus largely dependent on the demand created by them — the main examples being accommodation, transport and cafés/restaurants. In regions where tourism is developed, the retail sector also benefits considerably from the demand created by tourists. The same applies to many cultural and leisure facilities.

## Accommodation capacity

Figure 10.1 shows the 20 regions in the EU-27 with the largest hotel and campsite capacity. Accommodation capacity on campsites is made comparable with that in hotels by multiplying the number of pitches by four, assuming that an average of four people can stay on each pitch.

The EU region with the greatest capacity is the Spanish region of Cataluña, with 612 000 bed places, followed by the four French regions of Provence-Alpes-Côte d'Azur (555 000 bed places), Rhône-Alpes (511 000), Languedoc-Roussillon (455 000) and Aquitaine (422 000), and the two Italian regions of Veneto (409 000) and Emilia-Romagna (373 000). Eighteen of the top 20 regions in terms of accommodation capacity are in France, Spain or Italy, with just two elsewhere — Denmark with 339 000 bed places, which, in its entirety, constitutes a NUTS 2 region, and Tirol in Austria (218 000 bed places).

**Figure 10.1:** Top 20 EU-27 tourist regions, distribution of bed-places by type of accommodation, by NUTS 2 regions, 2005





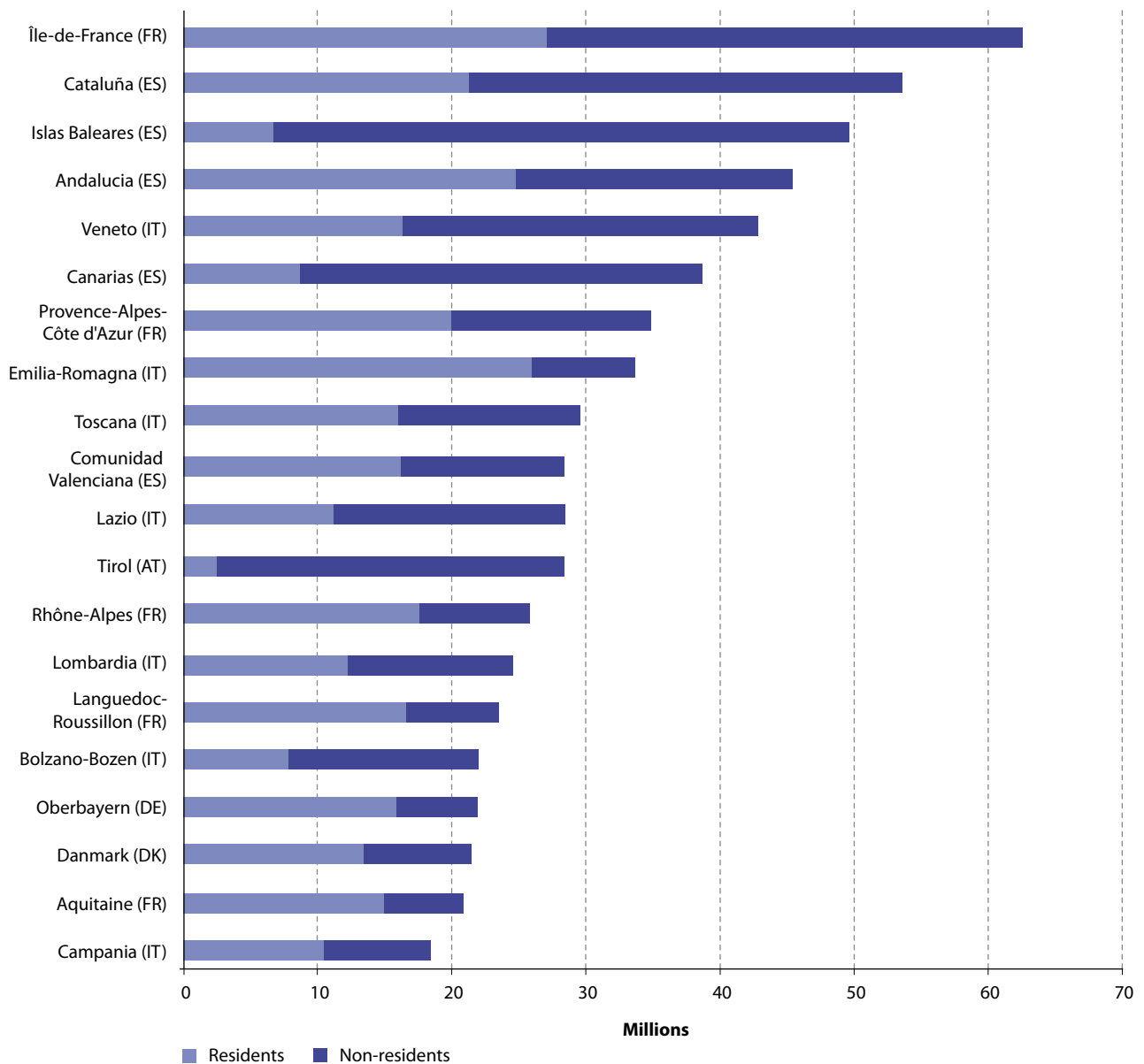


Map 10.1 shows the number of bed places in hotels and on campsites per 1 000 inhabitants (bed density) for the countries of Europe. This link with the number of inhabitants shows the relative importance of tourism capacity per head of population. This indicator is therefore affected not only by the number of available bed places (accommodation facilities) but also by the population figure. It can be seen that the highest bed densities are to be found primarily in coastal regions and on certain islands, as well as in most Alpine regions and in Luxembourg, together with its two neighbouring regions to the east and west.

## Capacity utilisation data

The capacity utilisation data show the extent to which the tourism capacity of a region actually meets the demand. The number of overnight stays by guests in hotels is normally used as a basis. The 20 regions (see Figure 10.2) accounting for most overnight stays are, not surprisingly, mainly the same as those with the highest number of beds available. With 6.3 million overnight stays, Île-de-France is at the top of the list, followed by the three Spanish regions of Cataluña (5.4 million), Illes Balears (5.0 million) and Andalucia (4.5 million).

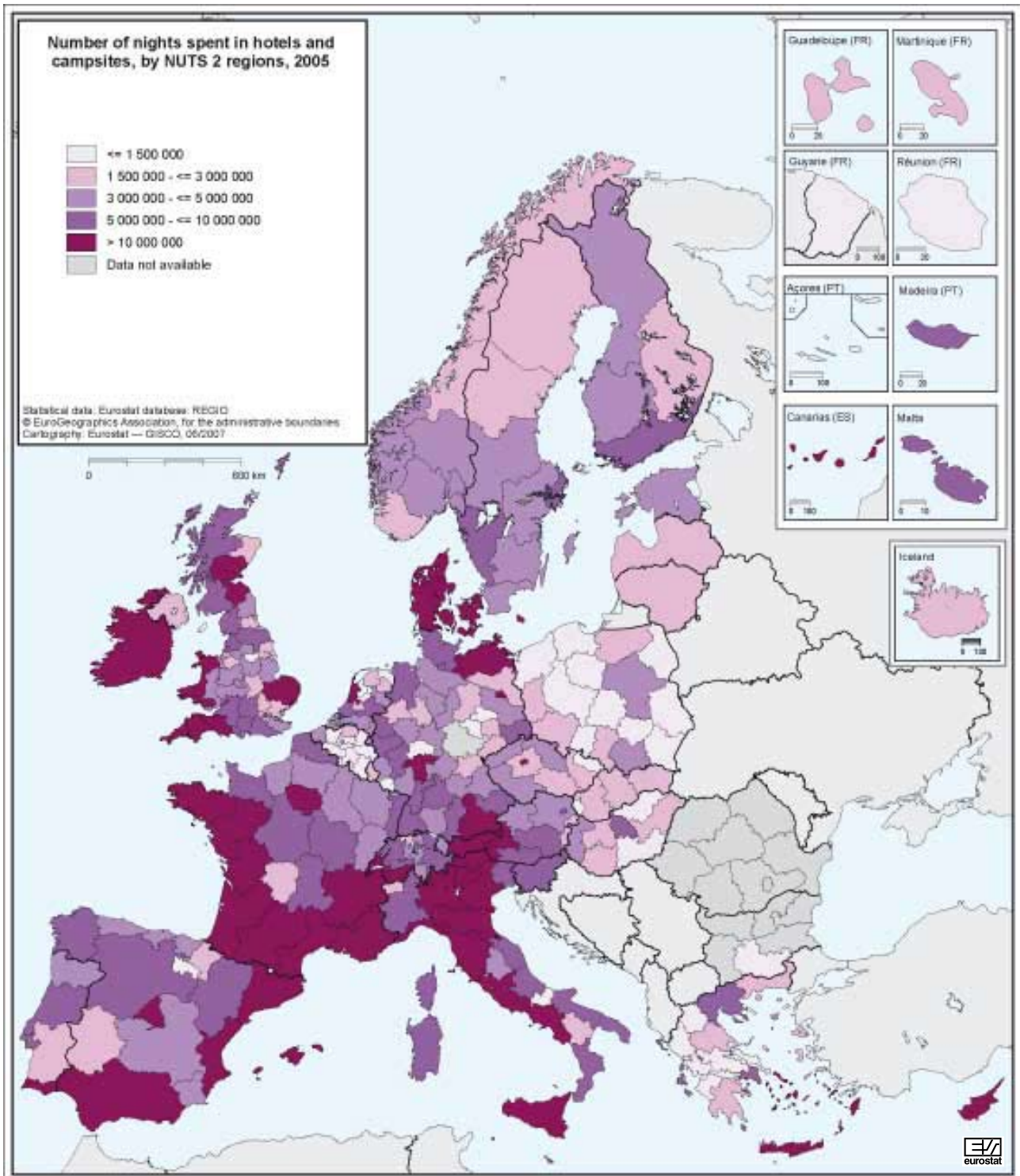
**Figure 10.2:** Top 20 EU-27 tourist regions, number of nights spent in hotels and campsites, by NUTS 2 regions, 2005  
*Breakdown by residents and non-residents*







**Map 10.2:** Number of nights spent in hotels and campsites, by NUTS 2 regions, 2005





million). The top 20 regions in terms of the number of overnight stays is also heavily dominated by regions in Italy, France and Spain. Only Tirol (Austria), Oberbayern (Germany) and Denmark make it into this group despite not being in one of these three countries.

Map 10.2 gives an overview for all regions of the number of overnight stays in hotels and on campsites. It shows clearly that the areas most frequently visited by tourists are the coastal regions and islands belonging to the EU. It can also be seen that tourism is much more important in southern Europe, particularly in the Mediterranean countries, than in northern Europe.

### Tourism intensity

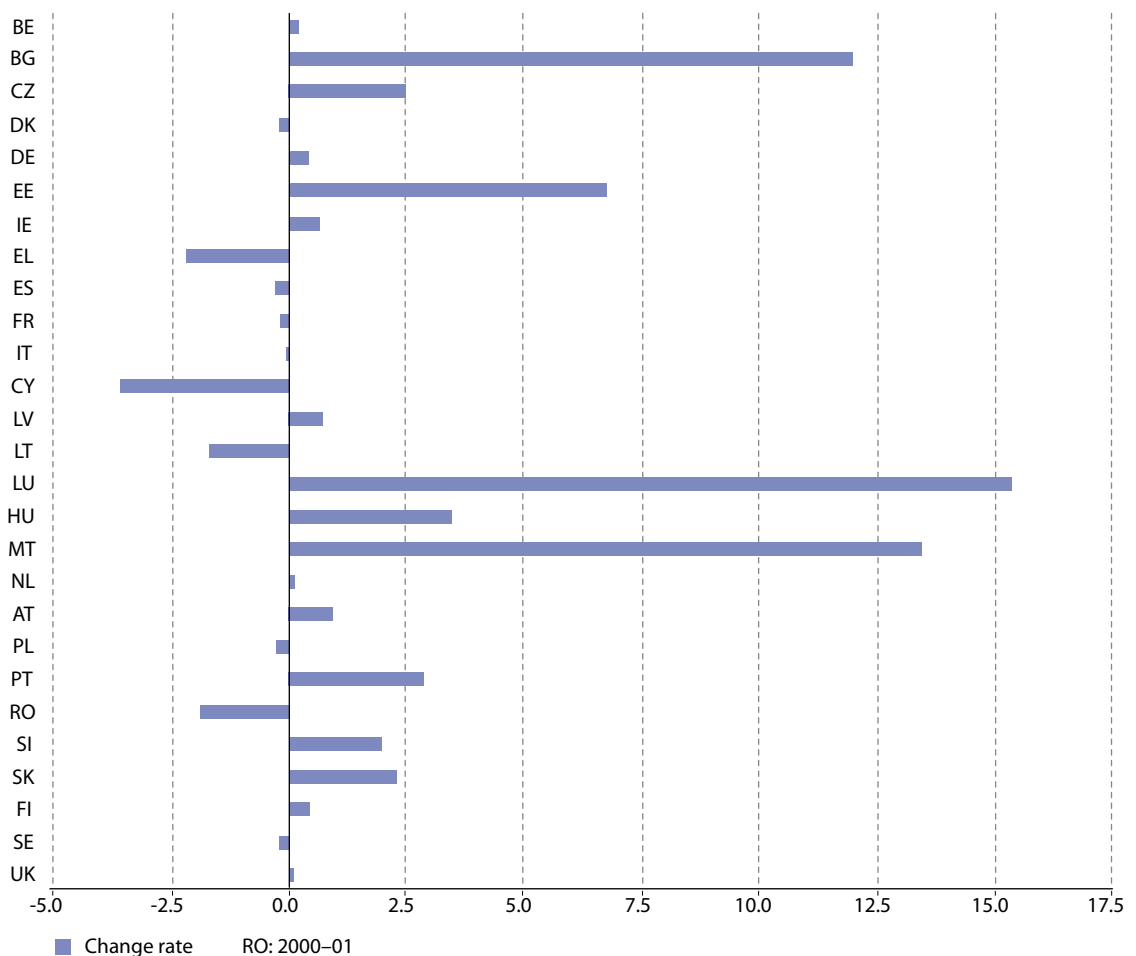
Comparing the number of overnight stays to the number of inhabitants yields the tourism intensity (see Map 10.3). This map serves as an indicator of the relative importance of tourism for a region. It is generally a better guide to the economic im-

portance of tourism than the absolute number of overnight stays. The considerable importance of tourism can be seen for many of Europe's coastal regions and islands, as well as for the Austrian, Italian and Swiss Alpine regions. The Spanish Illes Balears, with 51 754 overnight stays per 1 000 inhabitants, have the highest tourism intensity, followed by the Italian Alpine Provincia Autonoma Bolzano/Bozen (46 385 overnight stays per 1 000 inhabitants), the Greek Notio Aigaiο (42 126), the Austrian Tirol (41 073), the Portuguese Algarve (37 827) and the Greek Ionia Nisia (32 100).

### The development of tourism 2000–05

Tourism showed a generally positive trend in the Member States of the EU between 2000 and 2005. The number of overnight stays in hotels and on campsites increased in the EU countries by an average of 0.9 % a year (see Figure 10.3).

**Figure 10.3:** Nights spent in hotels and campsites, EU-27, change rate 2000–05  
Percentage







Primarily the new Member States experienced above-average growth in the number of overnight stays (see Map 10.4), particularly the three Baltic States, of which Lithuania saw the highest growth at 18.7 %. However, Latvia and Estonia, with growth rates of 12.2 % and 9.3 % respectively, were also far above the EU average. Most regions of Poland, northern Spain, Ireland, Malta and most of the United Kingdom regions also saw above-average growth in overnight stays.

### Inbound international tourism

Of particular interest to the analysis of the tourism development of a region is inbound international tourism, i.e. visits to the region by foreigners. Their status as foreigners, or more precisely as non-resident visitors, is determined in the tourism statistics according to their usual place of residence. The proportion of foreign tourists is an indicator of the attractiveness and competitiveness of a region internationally. Foreign tourists tend to spend more money than resident tourists, and the revenue thus earned has a positive impact on a country's balance of payments. It may, for instance, help to offset deficits on external trade in goods. On average in 2005, around 41 % of all overnight stays in the EU were by foreign guests. Here too, the differences between regions are interesting. In Malta,

Luxembourg und Cyprus, more than 90 % of stays were by foreigners (in small countries such as these, the high proportion of foreign tourists is due to statistical factors), as was also the case in Praha, Kriti and Tirol, whilst the figure was less than 10 % for certain regions of Germany, the United Kingdom, the Netherlands, France and Italy (see Map 10.5).

### Outlook

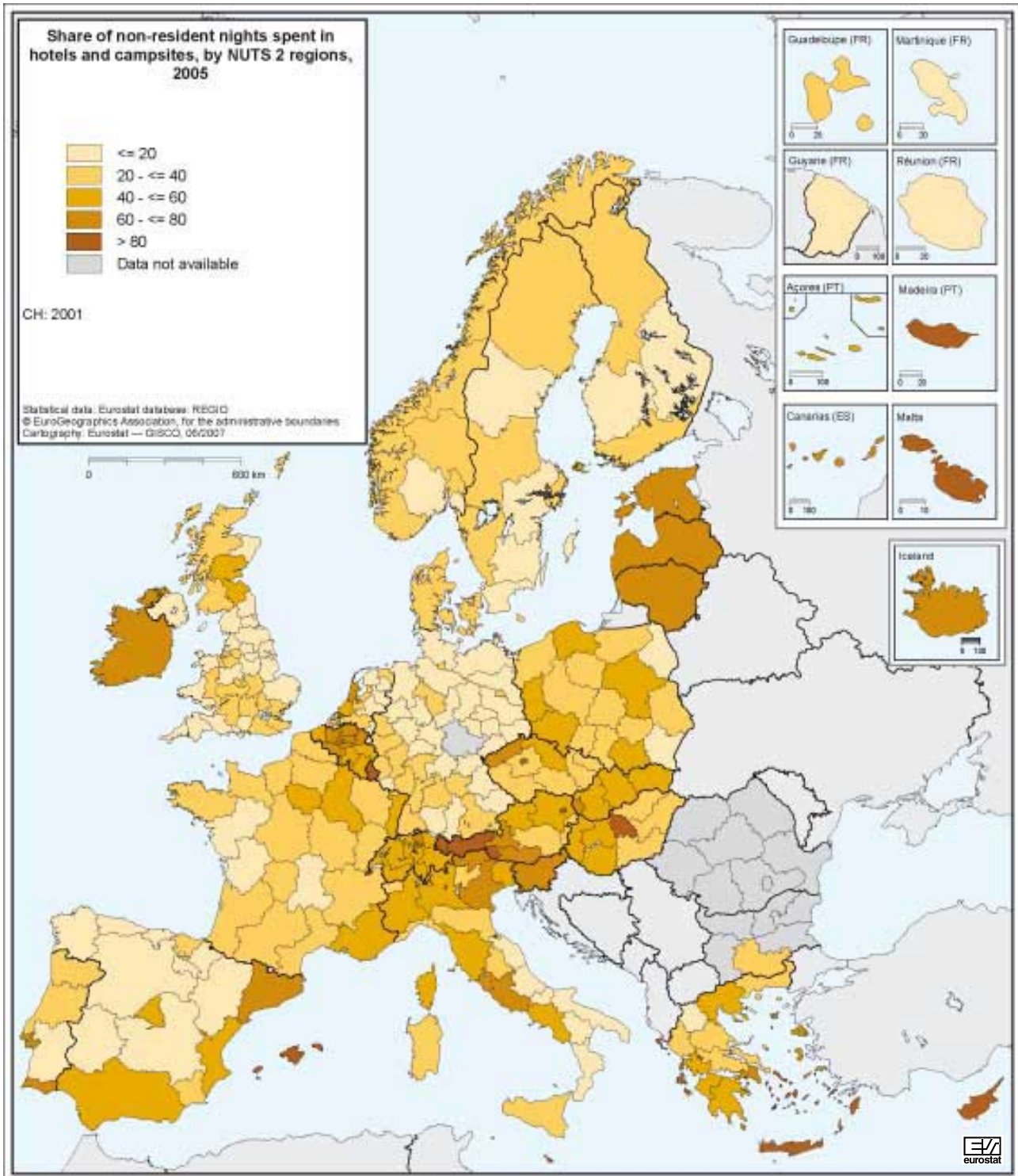
According to the World Tourism Organisation, Europe is the most visited continent on earth. The diversity of its cultures and variety of its landscapes are the main reasons for this exceptional position, and both of these aspects have been further strengthened by the accession of the 12 new Member States in 2004 and 2007. These new Member States are developing their tourism infrastructure particularly dynamically. They offer new and attractive destinations for visitors from both the old Member States and non-EU countries.

In parallel, tourism in the traditional tourist centres has remained remarkably stable. The public's desire to travel has not been permanently curbed by dramatic events such as terrorist attacks. We can therefore expect, in the light of a clearly improving economic background, that tourism in Europe will continue to develop positively over the coming years.





**Map 10.5:** Share of non-resident nights spent in hotels and campsites, by NUTS 2 regions, 2005





## Methodological notes

The data in this chapter are based on surveys carried out by the Member States to meet the requirements of Council Directive 95/57/EC of 23 November 1995 on the collection of statistical information in the field of tourism. Under that directive, information is collected about accommodation capacity (establishments, rooms and beds), use of that accommodation (guest arrivals and overnight stays) and the population's travel behaviour. As this yearbook is concerned with results for the regions of the EU, this chapter is confined to information about accommodation capacity and its use, as only these data are available with a regional breakdown (NUTS 2). Information on travel behaviour is available only at Member State (national) level.

All the information in this chapter relates to hotels and campsites. The other types of accommodation, such as holiday dwellings and other forms of accommodation, mentioned in the tourism statistics directive are not taken into account as the surveys conducted in the Member States are currently very varied and the results for these different kinds of accommodation are difficult to compare. Neither are they available in full for all the Member States.





# Education

11



## Introduction

Education, vocational training and lifelong learning play a vital role in the economic and social strategy of the European Union. The relaunched Lisbon process, implemented by the 'Education and training 2010' programme, cannot be completed without efficient use of resources, quality improvements in the education and training systems and implementation of a coherent lifelong learning strategy at national level. Securing education and lifelong learning opportunities in every region and for every inhabitant, wherever they live, is one of the cornerstones of the national strategies to achieve this goal. Eurostat's regional statistics on enrolment in education, educational attainment and participation in lifelong learning make it possible to measure progress at regional level and monitor regions lagging behind.

Comparable regional data on enrolment in education from 1998 onwards are available from Eurostat's website, while data on educational attainment levels and participation in lifelong learning are available for the period since 1999.

The Eurostat website contains information on the total number of enrolments by level of education and sex and also by age and sex plus indicators relating enrolments in education to the total population. Data on enrolments in education are generally available for the 15 'old' Member States for the period since 1998 and for the 12 'new' Member States since 2000 or 2001. Information on the educational attainment of the population and on participation in lifelong learning is available for all the Member States and also for Norway.

A revised NUTS 2 nomenclature was recently introduced for Bulgaria. No regional education data based on this revised nomenclature are available yet. The data for Bulgaria are therefore presented only at national level in the maps in this chapter.

## Participation of 4-year-olds in education

In recent years the focus has been on extending universal and equal access to education to pre-primary level before compulsory education starts. The Presidency conclusions adopted at the 2002 Barcelona summit set a target of increasing participation in pre-primary education to 90 % of all children between 3 years of age and the beginning of compulsory education (benchmark for 2010).

The indicator shown here measures the percentage of 4-year-olds who are in either pre-primary

or primary school. By far the majority of 4-year-olds attend pre-primary school (non-compulsory). Only in Ireland (44.9 % in 2004) and the United Kingdom (29.9 % in 2004) are a significant proportion of 4-year-olds in compulsory primary education.

Pre-primary education is defined as the initial stage of organised instruction, designed primarily to introduce very young children to a school-like environment, that is to provide a bridge between the home and school. In this context, the boundary between education and childcare is delimited by looking at the characteristics of early childhood programmes, for example whether they are centre- or school-based, they are designed to meet the educational development needs of children from the age of 3 and the staff are qualified to provide an educational programme for this age group.

At the age of 4 most children in the European Union are therefore in pre-primary education which is generally available from at least 3 to 4 years of age in the EU Member States. On average, 85 % of 4-year-olds in the EU are in education; 80 % are in pre-primary and 5 % (in Ireland and the United Kingdom) are in primary education.

Education is largely embedded in national policy. The regulations on compulsory education and the programmes described above illustrate this fact. In some countries, such as Belgium, Spain, France and Italy, all 4-year-olds are enrolled in pre-primary education.

In general, there are few regional differences between the participation rates of 4-year-olds in education. Nevertheless, Map 11.1 shows certain regional variations in these rates, even if the national patterns are obvious.

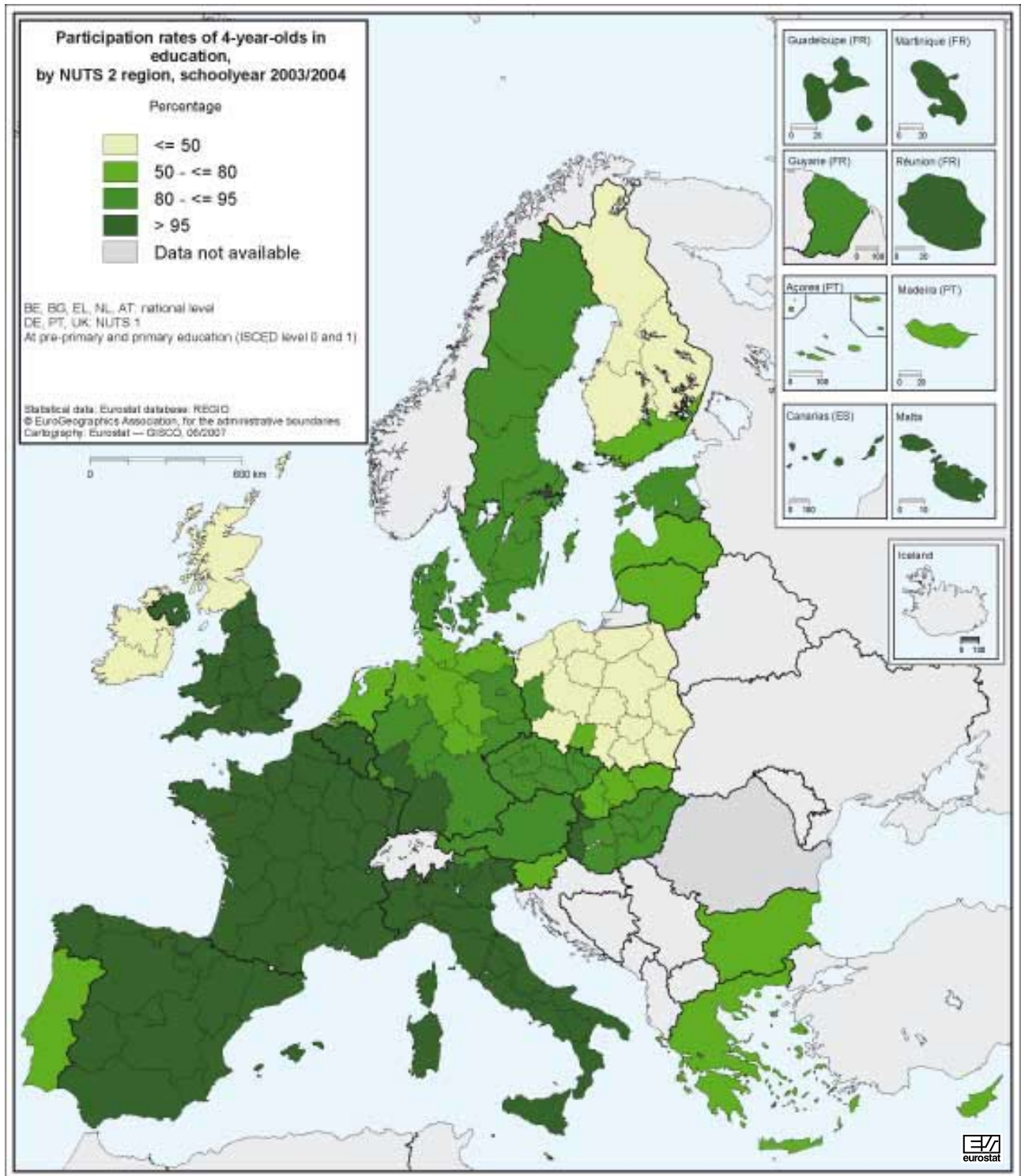
The lowest participation rates are found in the Polish regions (between 17 % and 53 %), in Ireland, the rural parts of Finland and Scotland. The Baltic States, the Netherlands, Greece, Cyprus, Slovakia, Bulgaria and a number of German regions have participation rates between 55 % and 75 %. Participation of 100 % is found in the Member States where attendance is compulsory, such as Spain, France, Italy and parts of the United Kingdom.

## Students in upper secondary education and post-secondary non-tertiary education

Map 11.2 shows students enrolled in upper secondary education (ISCED level 3) and post-



**Map 11.1:** Participation rates of 4-year-olds in education, by NUTS 2 region, schoolyear 2003/04  
*Percentage*





secondary non-tertiary education (ISCED level 4) as a percentage of the population aged between 15 and 24 years old in the region.

Upper secondary education usually begins at the end of full-time compulsory education and typically requires nine years or more of full-time education (since the beginning of primary level) for admission. General upper secondary education includes school programmes which, upon successful completion, would normally give access to university-level programmes. Vocational upper secondary education is designed mainly to introduce students to the world of work and prepare them for further vocational or technical education programmes. Post-secondary non-tertiary education (ISCED level 4) covers programmes which are beyond the boundary of upper secondary education but are not considered university level. Often they are more advanced technical and vocational programmes for teacher training or the medical professions and/or commerce and marketing programmes.

Students generally start upper secondary education at the age of 15 to 17 and finish it three or four years later. The starting/finishing ages and the age range depend on the national educational programmes. However, students can normally attend upper secondary education programmes relatively close to where they have grown up. For this indicator a broad age group has been defined to cover the relatively wide spread in ages, depending on the country.

The highest participation rates in ISCED levels 3 and 4 programmes are found in all the regions in the United Kingdom as well as in Pays de la Loire and Nord - Pas-de-Calais, around the Île-de-France region, in France.

The Belgian regions, some Swedish regions, the Praha region (Czech Republic) and rural parts of Finland also have participation rates between 50 % and 70 %. Low participation rates are found in a number of mainly rural regions of France. In general, participation rates are below 30 % in the whole of Spain and Portugal and most parts of Greece, Lithuania, Cyprus and Malta.

### Students in tertiary education

Map 11.3 shows the number of students in tertiary education (ISCED levels 5 and 6) as a percentage of the population aged 20 to 24 years old in the region. As in Map 11.2, the student population is related to the population in the relevant age group in order to see the relative size of the student population at regional level. The student

population covers all age groups which is why the percentages can be more than 100.

Tertiary education is normally university-level education, which requires three or more years of study (ISCED level 5A), can be more practical and employment oriented (ISCED level 5B) or can lead to an advanced research qualification (ISCED level 6, PhD-like studies). Access to tertiary-level educational programmes typically requires successful completion of ISCED level 3 and/or 4 programmes and the students entering tertiary education are normally older than for upper secondary education.

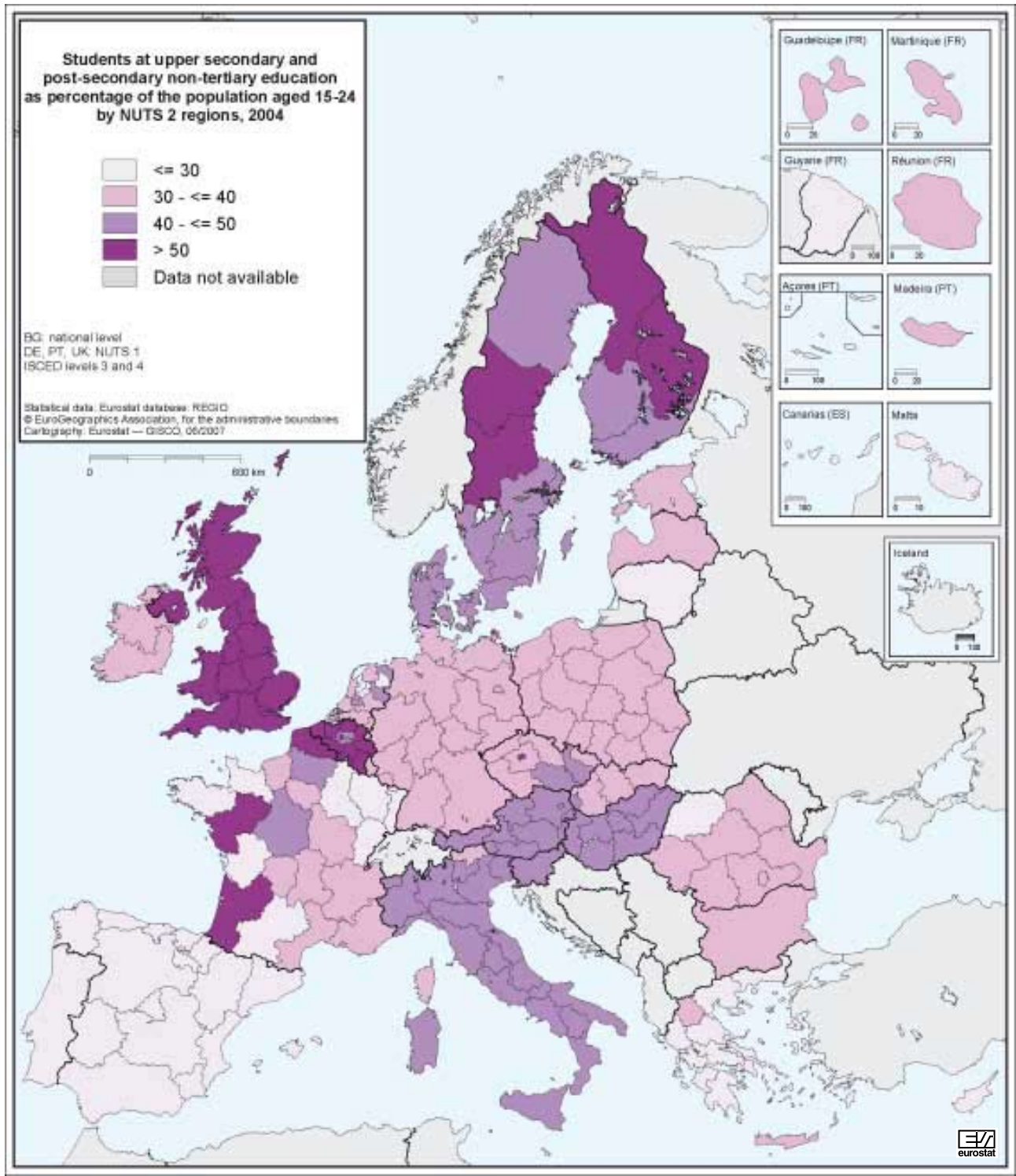
This indicator is based on data on where the students are studying, not on where they come from or live. Regions with universities and other tertiary education institutions, often big cities, therefore tend to have high percentages, as students often travel or move to them for higher education. This is in contrast to younger pupils and students in lower levels of education who usually attend a school close to where they live. Therefore, the first thing which this indicator shows is not uneven participation in higher education but, instead, uneven distribution of higher education institutions across regions.

On average, 56 % of the population aged 20 to 24 years in the European Union are in tertiary education, with Malta lowest on 26 % and Finland highest with more than 90 %. However, many students at tertiary level originating in Malta (and also in Cyprus) go abroad to study. They are not included here, which is one of the main reasons why the figures for Malta and Cyprus are relatively low.

In the regions with the highest percentages students in tertiary education outnumber the population of 20- to 24-year-olds. In regions such as Praha, Wien, Brussels, Brabant Wallonia (south of Brussels), Bratislava, Dytiki Ellada (Greece), Mazowieckie, including the capital Warsaw (Poland) and Övre Norrland (Sweden), the figures are more than 100 %, signifying a large student population among the younger cohorts. Many of these regions are around capital cities, although Övre Norrland is in fact the thinly populated northern part of Sweden.

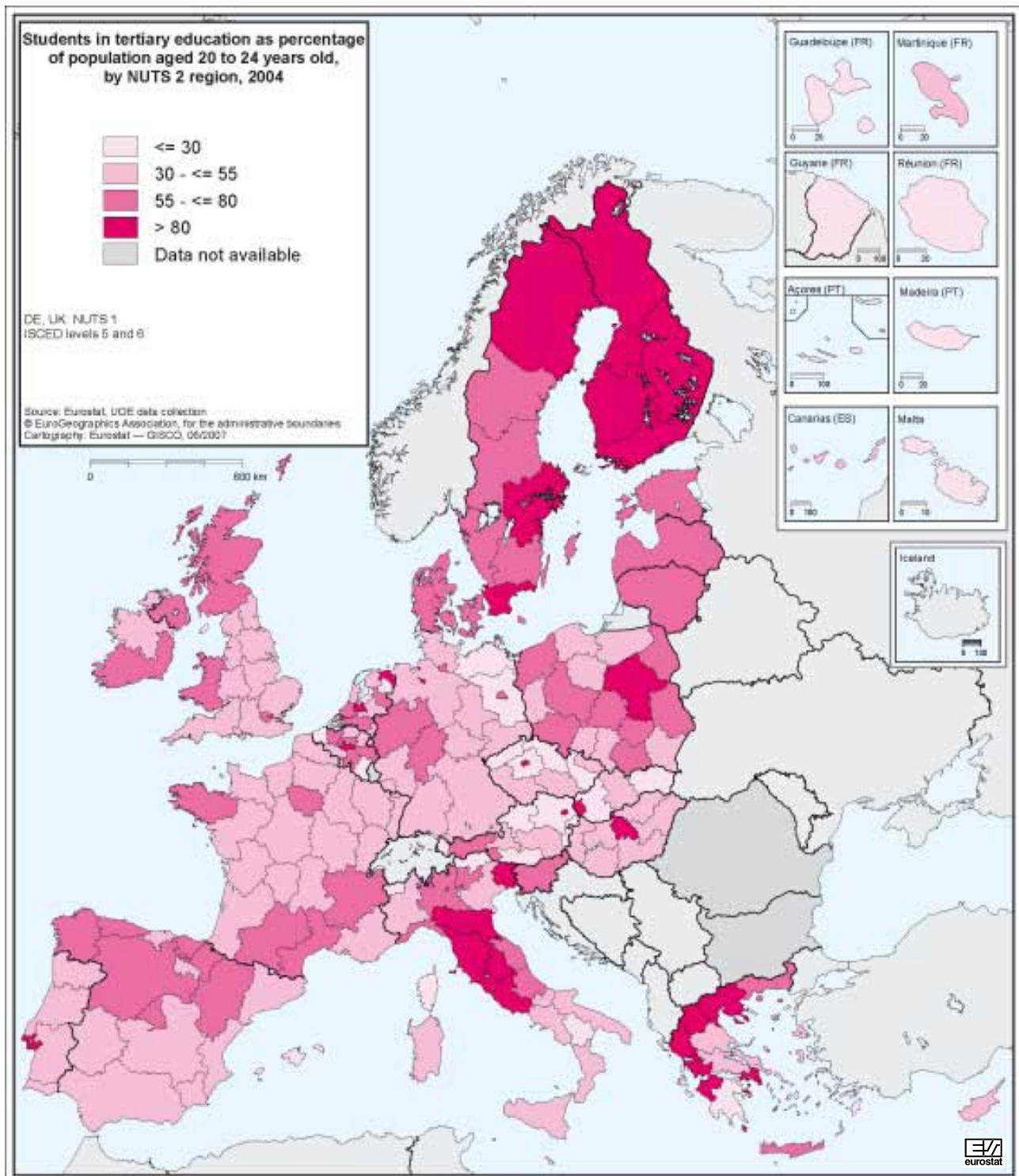
Relatively few regions have tertiary-level student populations below 30 % of the 20 to 24 years old age group and those that do are spread out among many Member States. Many of them have features which easily explain the low percentages, such as being in the rural parts of a country or being islands: départements d'outre-mer (France), Madeira and Açores (Portugal),

**Map 11.2:** Students at upper secondary and post-secondary non-tertiary education as percentage of the population aged 15 to 24, by NUTS 2 regions, 2004





**Map 11.3:** Students in tertiary education as percentage of population aged 20 to 24 years old, by NUTS 2 regions, 2004





Canarias (Spain), Corse (France) or the Åland Islands (Finland). Most of these regions have little, if any, tertiary-education infrastructure, and the younger generations have to move away in order to obtain higher education.

## Tertiary educational attainment

The proportion of the population aged 25 to 64 years who have completed university or university-like (tertiary-level) education is shown in Map 11.4. The pattern in this map is similar to the pattern in Map 11.3. In most countries the highest proportions of tertiary-level attainment are found in the same regions as the students in tertiary education, that is where the tertiary education institutions are located. These are often also the public administrative centres which employ persons with a high level of education. The demographic profile of a region also has some influence on the educational attainment levels, as younger generations tend to have higher educational attainment levels than older generations.

Only 17 regions in the EU have a proportion of persons with higher education above 35 %; these include capitals such as Brussels, London, Paris, Helsinki, Stockholm, Madrid and Amsterdam; Oslo (Norway) also falls into this category.

In general, the relative concentration of persons with tertiary education is high around Paris, Île-de-France (France) and in Madrid and the northern parts of Spain. On the other hand, in EU Member States such as Ireland, Sweden, Finland, the Netherlands, Belgium and Germany educational attainment levels are generally high across the whole country.

The regions with the lowest percentages of people with higher education are largely concentrated in the rural parts of six countries, namely the Czech Republic, Portugal, Romania, Italy and, to a lesser extent, Slovakia and Greece. They also include islands such as Sardegna and Sicilia (Italy), Açores and Madeira (Portugal) and Malta.

## Participation in lifelong learning

Lifelong learning means participation in any kind of education or training — formal, informal or

non-formal; at the workplace, in the formal education system or elsewhere — during the four weeks preceding the survey. The data are collected via the labour force survey but cover all education or vocational training, whether or not relevant to the current or future employment. Continuous refreshing of the skills of the labour force via participation in lifelong learning and training schemes has repeatedly been underlined in EU policies following up the Lisbon objectives.

Most formal education systems are regulated at national level and governed by national policies. As Map 11.5 shows, participation in lifelong learning is largely nationally profiled. In fact, this is the education indicator showing the smallest regional variation compared with the others discussed earlier in this chapter.

Participation in lifelong learning is high in every region of Finland, Sweden, the United Kingdom and the Netherlands (except one region) and also in Norway. At national level, Denmark and Slovenia also have relatively high participation rates.

Within countries, the highest participation rates in lifelong learning are often found around the capitals, although the spread seems to be determined nationally rather than at regional level. For example, Spain, France and Italy generally have from above-average to below-average participation rates, with the regions around the capital having higher participation rates. These are usually also the regions with the highest levels of educational attainment (see previous section).

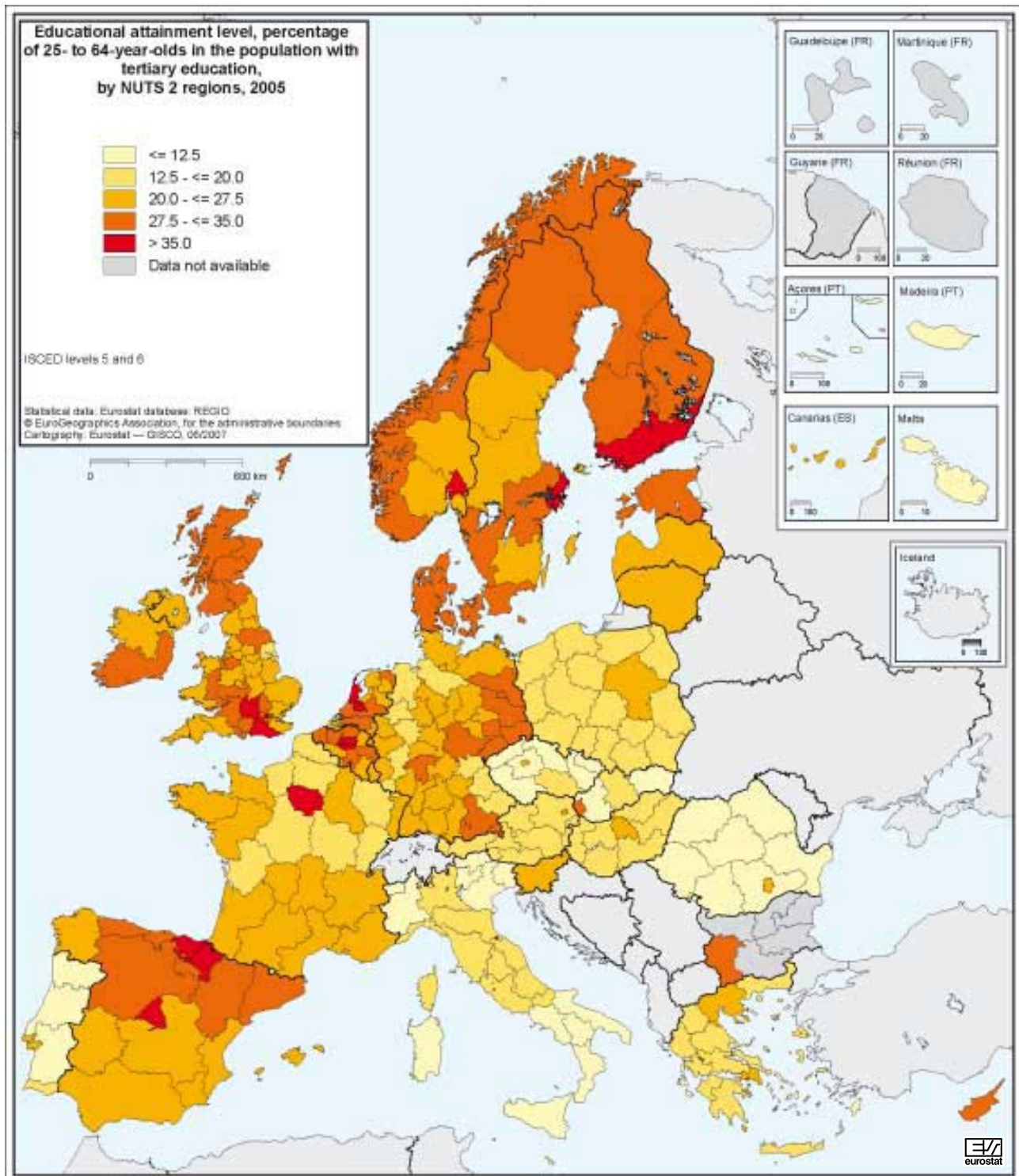
On the other hand, EU Member States on the fringes of the continent, such as Greece, Romania, Poland, Hungary, Slovakia and Portugal, generally have low participation rates in lifelong learning.

## Conclusion

The examples given above are intended merely to highlight a few of the many possible ways of analysing education and lifelong learning in the regions of the EU and do not constitute a detailed analysis. We hope, however, that they will encourage readers to probe deeper into all the data on education freely available on the Eurostat website and to make many further interesting discoveries.



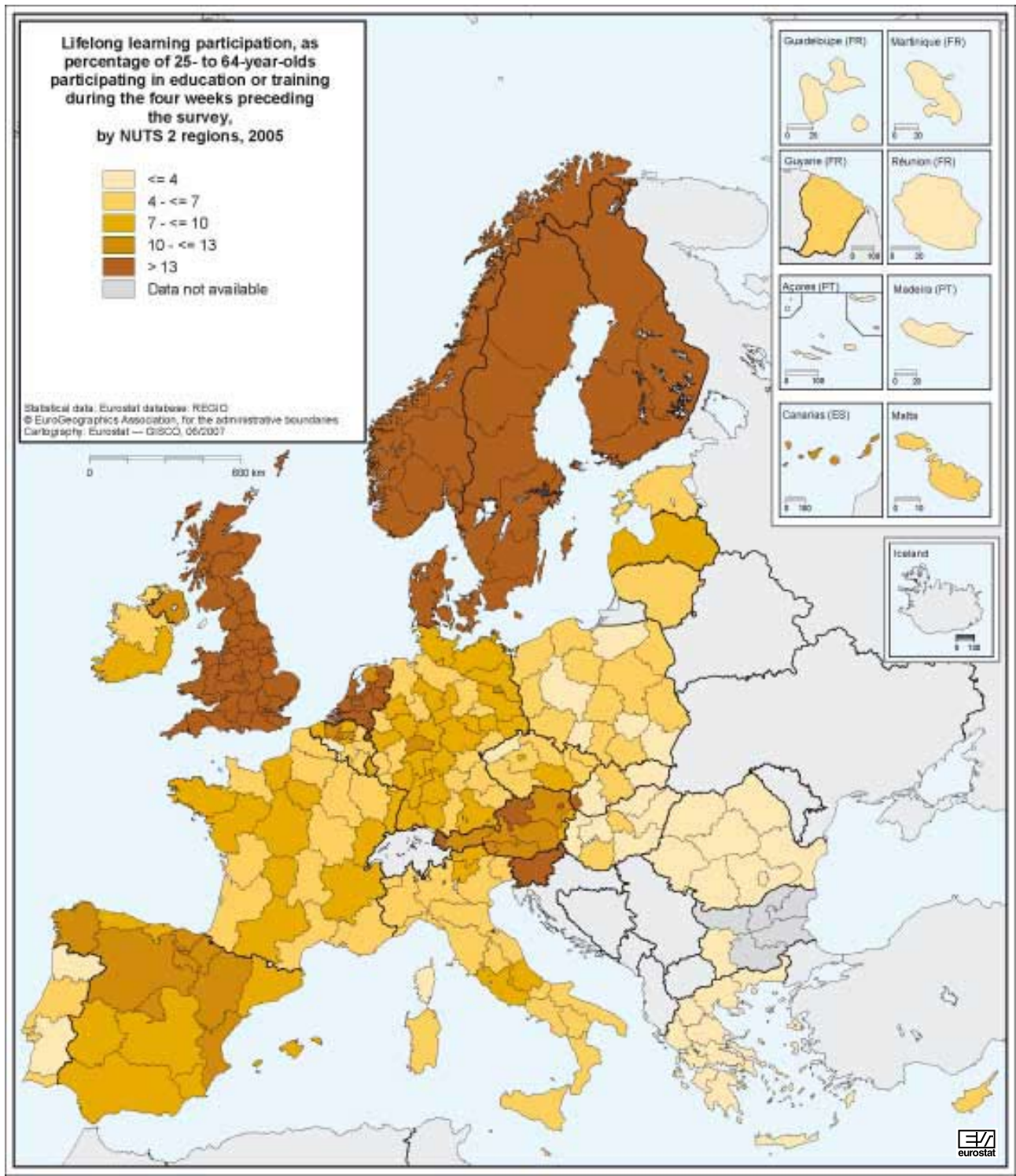
**Map 11.4:** Educational attainment level, percentage of 25- to 64-year-olds in the population with tertiary education, by NUTS 2 regions, 2005







**Map 11.5:** Lifelong learning participation, as percentage of 25- to 64-year-olds participating in education or training during the four weeks preceding the survey, by NUTS 2 regions, 2005





## Methodological notes

The maps are presented at NUTS 2 level, except the educational enrolment indicators for Germany and the United Kingdom, where data are available at NUTS 1 level only. In Belgium, Greece, the Netherlands, Austria and Portugal no data on enrolments by age are available at regional level. The participation rates for 4-year-olds in education include only the national figure for these countries.

As the structure of education systems varies widely from one country to another, a framework for collecting and reporting data on educational programmes with a similar level of content is a prerequisite for international comparability. The ISCED international classification of education provides the basis for collecting data on education. ISCED97, the latest version, draws a distinction between seven levels of education, from ISCED 0, pre-primary education, to ISCED 6, second-stage tertiary education leading to an advanced research qualification (PhD). A full description of ISCED97 is available on the Unesco Institute of Statistics website ([http://www.uis.unesco.org/ev.php?ID=3813\\_201&ID2=DO\\_TOPIC](http://www.uis.unesco.org/ev.php?ID=3813_201&ID2=DO_TOPIC)).

Qualitative information about school systems in the EU Member States is organised and disseminated by Eurydice ([www.eurydice.org](http://www.eurydice.org)), for example on compulsory school attendance ages and numerous issues relating to organisation of school life in the Member States (decision-making, curricula, school hours, etc.).

The statistics on enrolments in education include enrolments in all regular education programmes and in all adult education with content similar to regular education programmes or leading to qualifications similar to the corresponding regular programmes. All special education is included. Apprenticeship programmes are included except those which are entirely work-based and which are not supervised by any formal education authority.

The statistics on educational attainment and on participation in lifelong learning are based on the EU labour force survey (LFS), which is a quarterly sample survey. The indicators refer to the spring 2005 LFS. The educational attainment level reported is based on ISCED97. Participation in lifelong learning includes participation in all kinds of education and training during the four weeks prior to the survey.





# Agriculture

12

## Introduction

The maps in this chapter are based mainly on the data from the regional Economic Accounts for Agriculture (regional EAA). The EAA are a satellite account of the European System of Accounts (ESA 1995), providing detailed monetary data on agriculture. The main purpose of the EAA is to analyse the production process and the primary income which it generates. They integrate a wide range of statistics and administrative information on agriculture. The maps in this publication show some of the ways that regional EAA data can be used for analyses and combined with agricultural statistics from other domains (farm structure survey, etc.).

Eurostat has been collecting, processing and publishing data on the EAA in the form of a regional breakdown for more than 15 years. Eurostat's free dissemination database contains detailed information on the EAA in a NUTS 2 regional breakdown covering the period 1990–2005.

## Contribution of agriculture to GDP

In national accounts terminology, gross domestic product (GDP) at market prices is the final result of the production activity of the various branches ('resident producer units') of an economy. It equals the sum of the gross value added (GVA) by the various branches. Comparison of the GVA of a given branch with the overall GDP therefore gives a rough measure of the economic importance of that particular branch. It is only a rough measure because, given the close economic relationships between the individual branches, it would be somewhat short-sighted to consider each of them in isolation. Map 12.1 shows that the contribution made by agriculture to GDP is generally quite low; however, the recent enlargements of the EU (especially the accession of Bulgaria and Romania) have made this picture more colourful.

Looking at the EU-27 average, the contribution made by agriculture to GDP was only around 2 % in 2004. The economic importance of agriculture is much greater in the east and the south of the EU than in the west and the north. Its share in GDP is higher than 5.8 % in one in every five regions (for which regional data are available): eight regions in Poland, seven each in Spain and Romania, five in Bulgaria, two each in Italy, Hungary and Portugal and one region in France. All the top 10 regions with the highest share of agriculture are in Bulgaria or Romania.

The share of agricultural activity is typically very small in the regions around big cities (especially capitals). The regions with the lowest share are mainly in the United Kingdom, Germany, Austria and the north of Sweden.

## Labour productivity of agriculture

Productivity indicators are ratios of measures of output to measures of input. They can be used to measure and compare levels and rates of growth in productivity between Member States and industries. Agriculture is a highly labour-intensive sector. It is revealing to compile a partial productivity indicator from the gross value added data from the EAA and the agricultural labour input data from the latest farm structure survey (FSS). This indicator is also used in the statistics on rural areas.

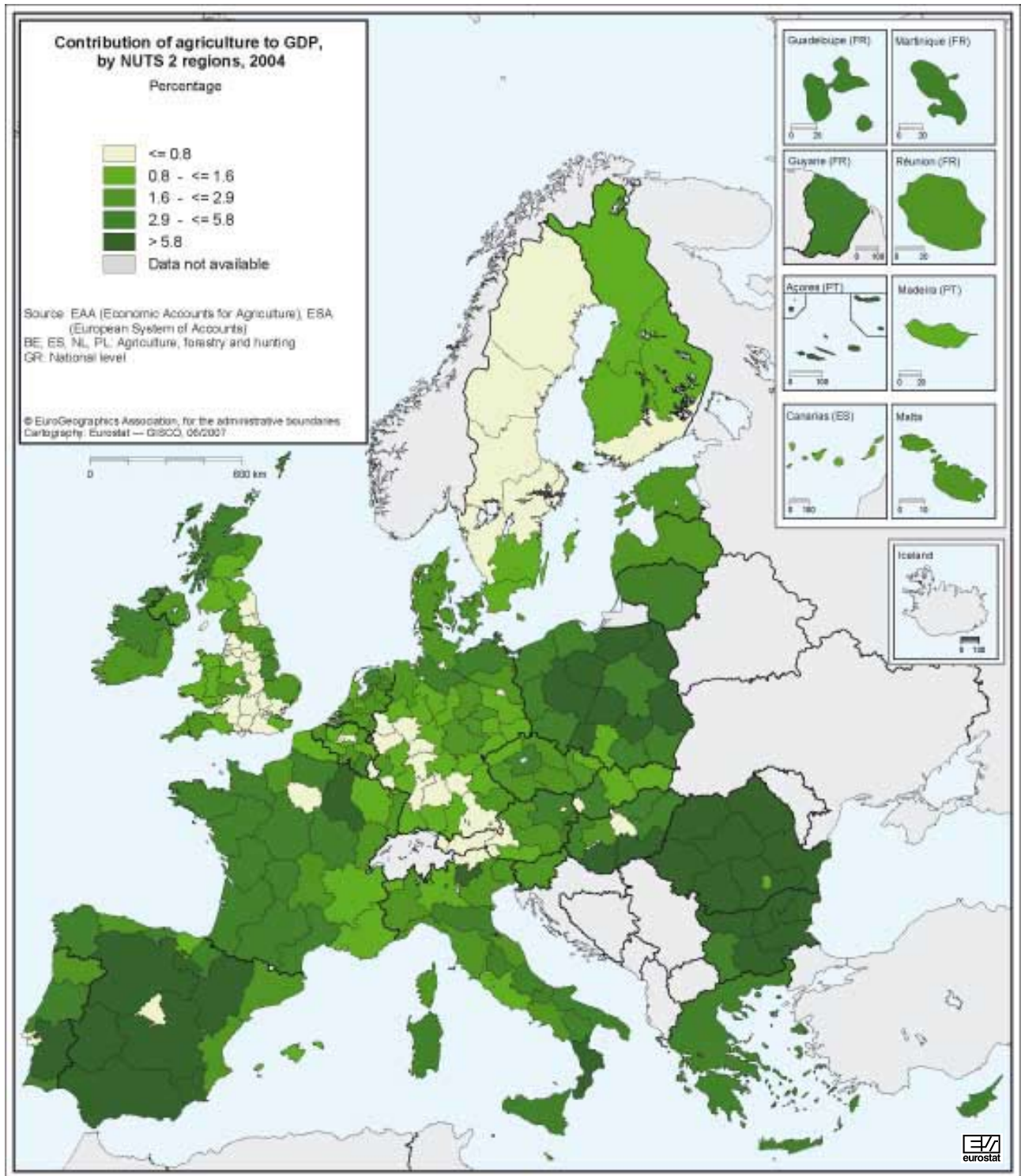
In order to take account of part-time and seasonal work, agricultural labour is measured in annual work units (AWUs). One AWU corresponds to the input, measured in working time, of one person engaged in agricultural activities in an agricultural unit on a full-time basis over an entire year. Map 12.2 shows the gross value added in agriculture per AWU. When comparing the levels between Member States and regions, it should be borne in mind that these data are not adjusted by purchasing power parities. In other words, they do not reflect differences in price levels.

Map 12.2 clearly shows a big difference between the western and eastern parts of Europe. Their labour productivity is strongly influenced by farm structures. In most of the eastern (and also in some southern) Member States, the average farm sizes are small, the level of mechanisation is low and a significant part of production is for on-farm consumption. The influence of farm structures on labour productivity can be clearly seen in the cases of the Czech Republic and Slovakia, where the share of corporate farming and the average farm size are high. In the western regions of these countries the level of labour productivity is closer to that in the western Member States.

Another factor which influences the productivity of agricultural labour is the structure of production. Production of fruit and vegetables, for example, requires more labour than production of arable crops. The share of these labour-intensive products is typically high in most of the eastern and southern Member States. Extreme weather conditions may limit the level of productivity due to lower yields and product quality. This could explain the lower results for the northern parts of Finland and Sweden.



**Map 12.1:** Contribution of agriculture to GDP, by NUTS 2 regions, 2004  
Percentage







## Income diversification in the farming community

The EAA include information not only on agricultural output but also on the output of inseparable non-agricultural activities. These are defined as activities so closely linked to agricultural production that information on their production, input, etc. cannot be separated from the information on the main agricultural activity. These are mainly activities which are a continuation of agricultural activity and which use agricultural products (food processing etc.) or activities involving the agricultural holding and its means of agricultural production (agro-tourism etc.). The share of secondary activities in output shown in Map 12.3 gives an indication both of the viability of farms and of the availability of alternative employment opportunities in the local economy.

On average, the share of inseparable non-agricultural activities is less than 3 % in the EU-27, but there are big regional differences. The relative economic importance of secondary activities can be explained in various ways.

- In the rural areas (northern Europe, the extreme south of Europe and mountain areas) and also in the eastern part of Europe, the high proportion of secondary activities reflects the insufficient income generated by the farms themselves.
- Elsewhere (especially in the northern part of Germany and some regions in France), agriculture is more professional, generating incomes that make alternative sources of revenue less necessary.

On the basis of the regional data available, the regions with a share of secondary activities in output above 10 % are situated in Austria (Kärnten, Salzburg, Vorarlberg and Tirol), France (Poitou-Charentes and Champagne-Ardenne), Italy (Valle d'Aosta and Provincia Autonoma Trento), Sweden (Stockholm) and Latvia.

## Use of chemicals in agriculture

Environmental aspects are becoming more and more important in agricultural policy and in the production process itself. The heavy demand for agro-environmental statistics calls for development of a brand new statistical system. The indicator illustrated in Map 12.4 is a good example of making better use of existing data sources. However, although this was not the original aim, the EAA can also be used to some extent to as-

sess the environment friendliness of agricultural production. The ratio of chemical input to agricultural output shows the share of intermediate consumption of chemicals (fertilisers and plant protection products) in the value of agricultural output. The higher this share is, the more chemicals are used in the production process. It should be noted that this indicator is a simple but rough measure, because the chemical inputs are recorded on the basis of their monetary value and not of their effects on the environment.

The production structure has an influence on this indicator. Regions where the livestock density (especially the density of grazing animals) is high show lower rates of chemical use: Bretagne (France), Ipeiros (Greece), Etelä-Suomi (Finland), Lombardia (Italy), Malta, etc. In contrast, in regions where crop production predominates, the ratio of chemical input to output is higher: Östra Mellansverige (Sweden), Bratislavský kraj (Slovakia), Centre (France), Halle (Germany), etc.

## Agricultural productivity

Map 12.5 shows the value of crop output per hectare of utilised agricultural area (UAA). This can be regarded as a kind of productivity indicator calculated on the basis of the output values in the EAA and the land-use data from the FSS. It is a measure of the average annual value generated by one hectare of agricultural land.

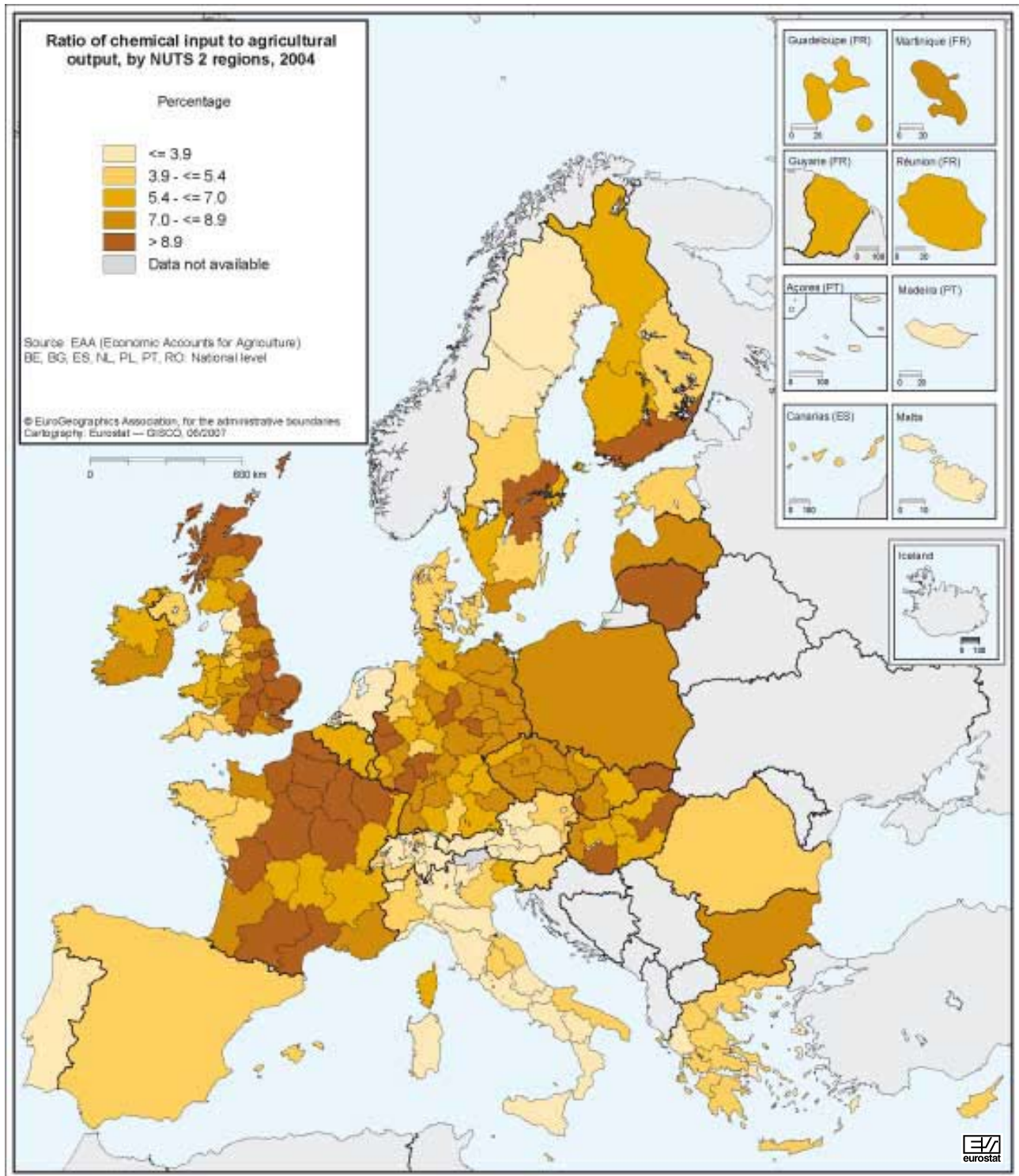
The value of crop output per hectare depends mainly on the type of crop. Horticulture (especially vegetable- and flower-growing under glass or plastic), fruit-growing and olive oil production can generate over 10 times higher value per hectare than cereal production, etc. The regions with the highest values are known for growing vegetables, fruit or ornamental plants. Most of them are situated in the southern part of Europe, in the Netherlands and in Belgium.

Low crop production values per hectare can be explained in various ways. Where livestock grazing predominates, the main use of land is as grassland which generally provides low production values (Ireland and the eastern and northern parts of the United Kingdom). Extreme weather conditions can also have a negative effect in the form of lower average yields (northern Finland and Sweden, etc.). Lower levels of production technology (mechanisation and use of chemicals) could also result in lower yields and, hence, lower output per hectare (eastern Member States).





**Map 12.4:** Ratio of chemical input to agricultural output, by NUTS 2 regions, 2004  
 Percentage





Map 12.6 shows the value of animal output per livestock unit, in other words the value of output of live animals and animal products per 500 kg of live animal.

There is a sharp borderline between the eastern Member States and the others. The only exceptions are Cyprus, Malta, Ireland, northern and eastern parts of the United Kingdom and Provence-Alpes-Côte d'Azur and Corse (France). The main reason for this wide gap is probably the difference in production technology. In the eastern Member States a large proportion of the animal output is still produced by households. This traditional form of production is mainly for households' own consumption and is less efficient than the industrialised large-scale production methods more widely used in the western Member States.

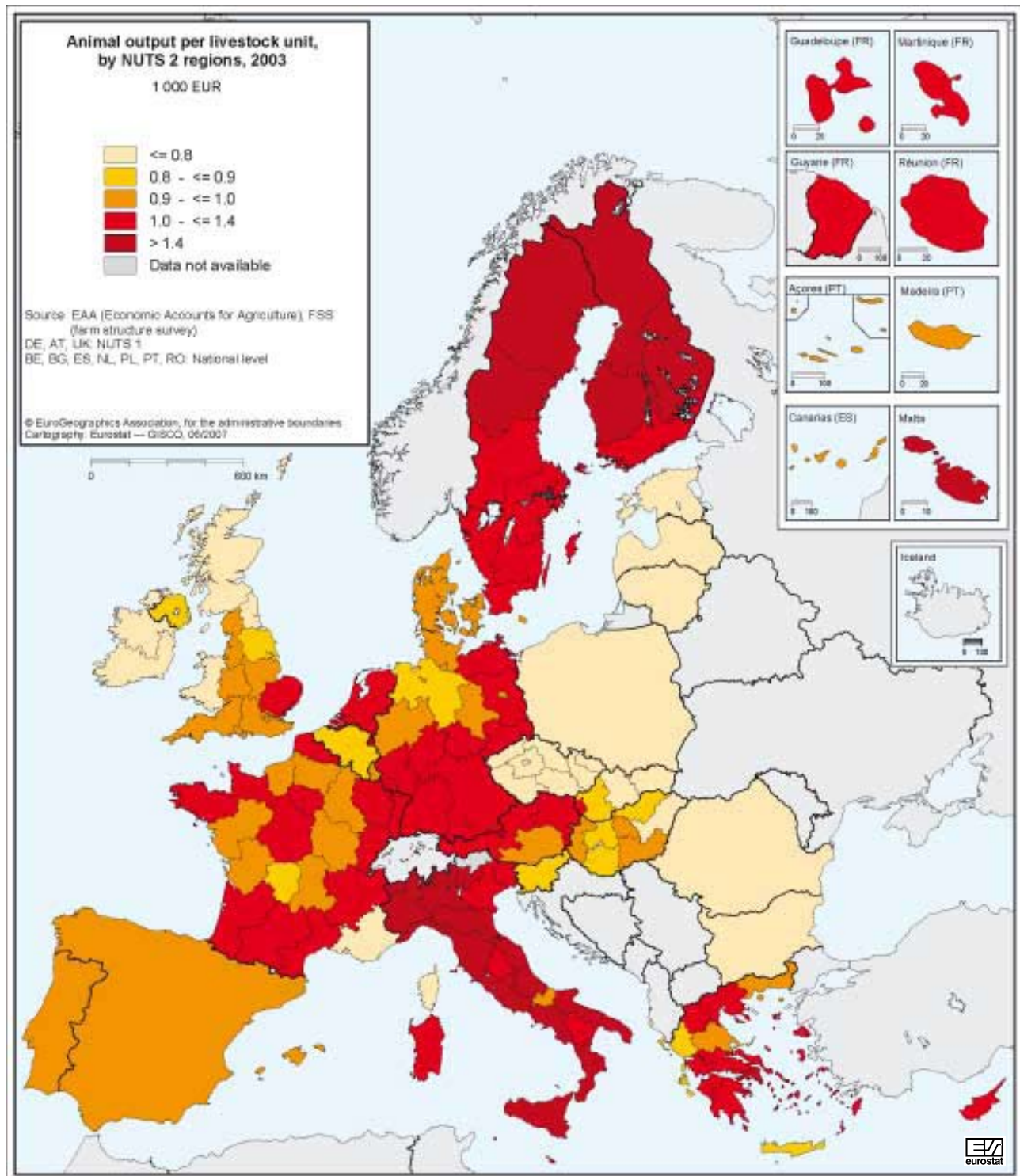
The lowest values are recorded in Latvia, Poland and Lithuania and the highest in Italy, the north of Finland and Sweden and Greece.

## Conclusion

The regional EAA are an appropriate source of information for analysing agricultural production, input and income. Since they are a synthesis of a wide range of statistics and administrative data on agriculture, they can be connected with any other agricultural information systems and data on other branches of the national economy. Recent developments and new demands for data (see Maps 12.1 and 12.2) for rural development statistics have added to their importance. Therefore the current gaps in the data are expected to be filled in the near future.



**Map 12.6:** Animal output per livestock unit, by NUTS 2 regions, 2003  
1 000 EUR



## Methodological notes

The **output** of the agricultural sector is the sum of the output of agricultural products and of the goods and services produced in inseparable non-agricultural secondary activities. Output of agricultural products comprises the total value of sales (except trade in animals between agricultural holdings), changes in stocks held by producers, on-farm final consumption (of agricultural products), processing of agricultural products by producers (in the form of separable activities) and the value of intra-unit consumption of crop products used in animal feed.

**Intermediate consumption** is the value of all goods and services used as inputs in the production process, excluding fixed assets, consumption of which is recorded as fixed capital consumption.

**Gross value added (GVA)** is the difference between the value of output and the value of intermediate consumption.

The **utilised agricultural area (UAA)** is the total area of arable land, permanent pasture and meadows, land under permanent crops and kitchen gardens. The UAA excludes unutilised agricultural land, woodland and land occupied by buildings, farmyards, tracks, ponds, etc.

For certain purposes, various categories of livestock need to be aggregated, e.g. piglets, breeding sows and other pigs. The coefficients used to this end are called **livestock units (LUs)**. The LU is related to the feed requirements of the individual categories of animal. The LU coefficients shown in Table 12.1 are applied in the FSS.

**Table 12.1:** Livestock units (LU) per head for different kinds of livestock categories

Livestock category	LU per head	Livestock category	LU per head
Bovine animals:		Pigs:	
under 1 year old	0.400	piglets	0.027
1 but less than 2 years old	0.700	breeding sows	0.500
male, 2 years old and over	1.000	other pigs	0.300
heifers, 2 years old and over	0.800	Poultry:	
dairy cows	1.000	broilers	0.007
other cows	0.800	laying hens	0.014
Sheep and goats	0.100	other poultry	0.030
Equidae	0.800	Rabbits, breeding females	0.020

To take into account the very large proportion of part-time work in agriculture and opportunities for part-time work in other sectors of the economy, information on employment in agriculture is expressed in **annual work units (AWUs)**. One AWU corresponds to the work performed by one person performing agricultural work on a holding over a 12-month period on a full-time basis. The yearly working time of each such worker is 1 800 hours (225 working days of 8 hours per day), unless national provisions governing contracts of employment specify otherwise.







## Annex

### European Union: NUTS 2 regions

#### Belgium

BE10 Région de Bruxelles-Capitale/  
Brussels Hoofdstedelijk Gewest  
BE21 Prov. Antwerpen  
BE22 Prov. Limburg (B)  
BE23 Prov. Oost-Vlaanderen  
BE24 Prov. Vlaams-Brabant  
BE25 Prov. West-Vlaanderen  
BE31 Prov. Brabant Wallon  
BE32 Prov. Hainaut  
BE33 Prov. Liège  
BE34 Prov. Luxembourg (B)  
BE35 Prov. Namur

#### Bulgaria

BG31 Severozapaden  
BG32 Severen tsentralen  
BG33 Severoiztochen  
BG34 Yugoiztochen  
BG41 Yugozapaden  
BG42 Yuzhen tsentralen

#### Czech Republic

CZ01 Praha  
CZ02 Střední Čechy  
CZ03 Jihozápad  
CZ04 Severozápad  
CZ05 Severovýchod  
CZ06 Jihovýchod  
CZ07 Střední Morava  
CZ08 Moravskoslezsko

#### Denmark

DK00 Danmark

#### Germany

DE11 Stuttgart  
DE12 Karlsruhe

DE13 Freiburg  
DE14 Tübingen  
DE21 Oberbayern  
DE22 Niederbayern  
DE23 Oberpfalz  
DE24 Oberfranken  
DE25 Mittelfranken  
DE26 Unterfranken  
DE27 Schwaben  
DE30 Berlin  
DE41 Brandenburg — Nordost  
DE42 Brandenburg — Südwest  
DE50 Bremen  
DE60 Hamburg  
DE71 Darmstadt  
DE72 Gießen  
DE73 Kassel  
DE80 Mecklenburg-Vorpommern  
DE91 Braunschweig  
DE92 Hannover  
DE93 Lüneburg  
DE94 Weser-Ems  
DEA1 Düsseldorf  
DEA2 Köln  
DEA3 Münster  
DEA4 Detmold  
DEA5 Arnsberg  
DEB1 Koblenz  
DEB2 Trier  
DEB3 Rheinessen-Pfalz  
DEC0 Saarland  
DED1 Chemnitz  
DED2 Dresden  
DED3 Leipzig  
DEE1 Dessau  
DEE2 Halle  
DEE3 Magdeburg  
DEF0 Schleswig-Holstein  
DEG0 Thüringen

#### Estonia

EE00 Eesti

#### Ireland

IE01 Border, Midland and Western  
IE02 Southern and Eastern

#### Greece

GR11 Anatoliki Makedonia,Thraki  
GR12 Kentriki Makedonia  
GR13 Dytiki Makedonia  
GR14 Thessalia  
GR21 Ipeiros  
GR22 Ionia Nisia  
GR23 Dytiki Ellada  
GR24 Sterea Ellada  
GR25 Peloponnisos  
GR30 Attiki  
GR41 Voreio Aigaio  
GR42 Notio Aigaio  
GR43 Kriti

#### Spain

ES11 Galicia  
ES12 Principado de Asturias  
ES13 Cantabria  
ES21 País Vasco  
ES22 Comunidad Foral de Navarra  
ES23 La Rioja  
ES24 Aragón  
ES30 Comunidad de Madrid  
ES41 Castilla y León  
ES42 Castilla-La Mancha  
ES43 Extremadura  
ES51 Cataluña  
ES52 Comunidad Valenciana  
ES53 Illes Balears  
ES61 Andalucía



ES62 Región de Murcia  
ES63 Ciudad Autónoma de Ceuta  
ES64 Ciudad Autónoma de Melilla  
ES70 Canarias

## France

FR10 Île-de-France  
FR21 Champagne-Ardenne  
FR22 Picardie  
FR23 Haute-Normandie  
FR24 Centre  
FR25 Basse-Normandie  
FR26 Bourgogne  
FR30 Nord - Pas-de-Calais  
FR41 Lorraine  
FR42 Alsace  
FR43 Franche-Comté  
FR51 Pays de la Loire  
FR52 Bretagne  
FR53 Poitou-Charentes  
FR61 Aquitaine  
FR62 Midi-Pyrénées  
FR63 Limousin  
FR71 Rhône-Alpes  
FR72 Auvergne  
FR81 Languedoc-Roussillon  
FR82 Provence-Alpes-Côte d'Azur  
FR83 Corse  
FR91 Guadeloupe  
FR92 Martinique  
FR93 Guyane  
FR94 Réunion

## Italy

ITC1 Piemonte  
ITC2 Valle d'Aosta/Vallée d'Aoste  
ITC3 Liguria  
ITC4 Lombardia  
ITD1 Provincia Autonoma Bolzano/  
Bozen  
ITD2 Provincia Autonoma Trento  
ITD3 Veneto  
ITD4 Friuli-Venezia Giulia  
ITD5 Emilia-Romagna

ITE1 Toscana  
ITE2 Umbria  
ITE3 Marche  
ITE4 Lazio  
ITF1 Abruzzo  
ITF2 Molise  
ITF3 Campania  
ITF4 Puglia  
ITF5 Basilicata  
ITF6 Calabria  
ITG1 Sicilia  
ITG2 Sardegna

## Cyprus

CY00 Kypros/Kıbrıs

## Latvia

LV00 Latvija

## Lithuania

LT00 Lietuva

## Luxembourg

LU00 Luxembourg (Grand-Duché)

## Hungary

HU10 Közép-Magyarország  
HU21 Közép-Dunántúl  
HU22 Nyugat-Dunántúl  
HU23 Dél-Dunántúl  
HU31 Észak-Magyarország  
HU32 Észak-Alföld  
HU33 Dél-Alföld

## Malta

MT00 Malta

## Netherlands

NL11 Groningen  
NL12 Friesland  
NL13 Drenthe  
NL21 Overijssel

NL22 Gelderland  
NL23 Flevoland  
NL31 Utrecht  
NL32 Noord-Holland  
NL33 Zuid-Holland  
NL34 Zeeland  
NL41 Noord-Brabant  
NL42 Limburg (NL)

## Austria

AT11 Burgenland  
AT12 Niederösterreich  
AT13 Wien  
AT21 Kärnten  
AT22 Steiermark  
AT31 Oberösterreich  
AT32 Salzburg  
AT33 Tirol  
AT34 Vorarlberg

## Poland

PL11 Łódzkie  
PL12 Mazowieckie  
PL21 Małopolskie  
PL22 Śląskie  
PL31 Lubelskie  
PL32 Podkarpackie  
PL33 Świętokrzyskie  
PL34 Podlaskie  
PL41 Wielkopolskie  
PL42 Zachodniopomorskie  
PL43 Lubuskie  
PL51 Dolnośląskie  
PL52 Opolskie  
PL61 Kujawsko-Pomorskie  
PL62 Warmińsko-Mazurskie  
PL63 Pomorskie

## Portugal

PT11 Norte  
PT15 Algarve  
PT16 Centro (P)  
PT17 Lisboa



PT18 Alentejo  
PT20 Região Autónoma dos Açores  
PT30 Região Autónoma da Madeira

### Romania

RO11 Nord-Vest  
RO12 Centru  
RO21 Nord-Est  
RO22 Sud-Est  
RO31 Sud — Muntenia  
RO32 București — Ilfov  
RO41 Sud-Vest Oltenia  
RO42 Vest

### Slovenia

SI00 Slovenija

### Slovakia

SK01 Bratislavský kraj  
SK02 Západné Slovensko  
SK03 Stredné Slovensko  
SK04 Východné Slovensko

### Finland

FI13 Itä-Suomi  
FI18 Etelä-Suomi  
FI19 Länsi-Suomi

FI1A Pohjois-Suomi  
FI20 Åland

### Sweden

SE01 Stockholm  
SE02 Östra Mellansverige  
SE04 Sydsverige  
SE06 Norra Mellansverige  
SE07 Mellersta Norrland  
SE08 Övre Norrland  
SE09 Småland med öarna  
SE0A Västsverige

### United Kingdom

UKC1 Tees Valley and Durham  
UKC2 Northumberland and Tyne and Wear  
UKD1 Cumbria  
UKD2 Cheshire  
UKD3 Greater Manchester  
UKD4 Lancashire  
UKD5 Merseyside  
UKE1 East Riding and North Lincolnshire  
UKE2 North Yorkshire  
UKE3 South Yorkshire  
UKE4 West Yorkshire  
UKF1 Derbyshire and Nottinghamshire

UKF2 Leicestershire, Rutland and Northamptonshire  
UKF3 Lincolnshire  
UKG1 Herefordshire, Worcestershire and Warwickshire  
UKG2 Shropshire and Staffordshire  
UKG3 West Midlands  
UKH1 East Anglia  
UKH2 Bedfordshire and Hertfordshire  
UKH3 Essex  
UKI1 Inner London  
UKI2 Outer London  
UKJ1 Berkshire, Buckinghamshire and Oxfordshire  
UKJ2 Surrey, East and West Sussex  
UKJ3 Hampshire and Isle of Wight  
UKJ4 Kent  
UKK1 Gloucestershire, Wiltshire and North Somerset  
UKK2 Dorset and Somerset  
UKK3 Cornwall and Isles of Scilly  
UKK4 Devon  
UKL1 West Wales and the Valleys  
UKL2 East Wales  
UKM1 North Eastern Scotland  
UKM2 Eastern Scotland  
UKM3 South Western Scotland  
UKM4 Highlands and Islands  
UKN0 Northern Ireland



## EFTA countries: Statistical regions at level 2

### **Iceland**

IS Ísland

### **Liechtenstein**

LI Liechtenstein

### **Norway**

NO01 Oslo og Akershus

NO02 Hedmark og Oppland

NO03 Sør-Østlandet

NO04 Agder og Rogaland

NO05 Vestlandet

NO06 Trøndelag

NO07 Nord-Norge

### **Switzerland**

CH01 Région lémanique

CH02 Espace Mittelland

CH03 Nordwestschweiz

CH04 Zürich

CH05 Ostschweiz

CH06 Zentralschweiz

CH07 Ticino

European Commission

**Eurostat regional yearbook 2007**

Luxembourg: Office for Official Publications of the European Communities

2007 — 162 pp. — 21 x 29.7 cm

ISBN 978-92-79-05077-0

ISSN 1681-9306

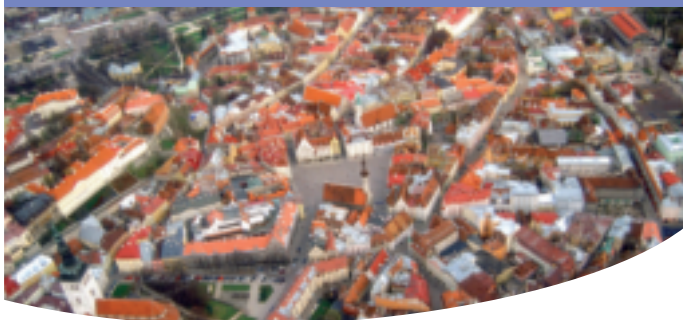
Price (excluding VAT) in Luxembourg: EUR 30



### **How to obtain EU publications**

Our priced publications are available from EU Bookshop (<http://bookshop.europa.eu>), where you can place an order with the sales agent of your choice.

The Publications Office has a worldwide network of sales agents. You can obtain their contact details by sending a fax to (352) 29 29-42758.



## Eurostat regional yearbook 2007

*Eurostat regional yearbook 2007* offers a wealth of information on life in the European regions in the 27 Member States of the European Union and this year also in the EFTA countries. If you would like to dig deeper into the way the regions of Europe are evolving in a number of statistical domains, this publication is something for you! The texts are written by specialists in the different statistical domains and accompanied by statistical maps, figures and tables on each subject. A broad set of regional data are presented on the following themes: population, gross domestic product, household accounts, labour market, labour productivity, urban statistics, science, technology and innovation, structural business statistics, transport, tourism, education and agriculture. The publication is available in German, English and French.

<http://ec.europa.eu/eurostat>

Price (excluding VAT) in Luxembourg: EUR 30



ISBN 978-92-79-05077-0



9 789279 050770



Europäische Union und  
EFTA Staaten

European Union and  
EFTA countries

Union européenne  
et pays AELE

NUTS/Statistische Regionen Ebene 2  
NUTS/Statistical regions, level 2  
NUTS/Régions statistiques niveau 2

NUTS 2003 und statistische Regionen, Stand Anfang 2007  
NUTS 2003 and statistical regions as at the beginning of 2007  
NUTS 2003 et régions statistiques, situation au début de 2007

© EuroGeographics Association, bezüglich der Verwaltungsgrenzen  
© EuroGeographics Association, for the administrative boundaries  
© EuroGeographics Association, pour les limites administratives

Quelle/Source: Eurostat - D2  
Kartographie/Cartography/Cartographie: Eurostat - D2 - GISCO, 2007

