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Regions: Statistical yearbook 2002

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EUROPEAN COMMISSION

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THEME 1
General
Statistics

A great deal of additional information on the European Union is available on the Internet.
It can be accessed through the Europa server (http://europa.eu.int).

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

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I N T R O D U C T I O N

A new year — a new format

This 2002 edition of Eurostat's 'Regions statistical yearbook' is again a blend of continuity and change. As always, it comprises a selection of comparable statistics chosen to best represent the social and economic situation in the regions of the European Union. At the same time, it continues to evolve as part of a development process which, over recent years, has seen the inclusion of tables in machine-readable form on an accompanying CD-ROM (1999), the complete remodelling of the publication to make information even more readily available to the user (2000) and the inclusion of regional data for the candidate countries (2001)([1]). This year, coverage has deliberately been limited in those fields where the situation has changed little since 2001, in order to create space to introduce the reader to fields newly incorporated in the REGIO regional database, such as health and environmental statistics, structural business statistics and urban statistics.

As always, the yearbook can present only a small proportion of the data available in the REGIO database. Extensive time series, and a much wider choice of variables, are available for consultation.

Given the great significance of the 'spread' of statistical data, the key economic chapters relating to GDP and unemployment have been restructured. While continuing to provide the maps valued so highly by users, they focus more specifically in this edition on the measurement of dispersion.

As in earlier editions, the various fields covered by the REGIO database have been given a visual dimension by the use of a series of detailed colour maps and graphs to identify key interrelationships and to highlight how individual regions are affected.

Specialist input

As in each of the past two years, the text for each of the thematic chapters has been written by one of Eurostat's specialists in the respective field. Trends and influences at the national level have therefore been able to be considered when evaluating distributions at regional level. The regional statistics team would like to acknowledge the contribution made by the following authors:

Topic	Author
1. Population	E. Beekink
2. Agriculture	P. Marquer
3. Regional disparities in terms of GDP	A. Behrens
4. Regional disparities in terms of unemployment	A. Behrens
5. Labour-force survey	A. Franco
6. Science & technology	A. Zoppe
7. Structural business survey	P. Feuvrier
8. Transport	J. Oberhausen
9. Health	M. De Smedt A. Montserrat
10. Environment	S. Grall
11. Urban statistics	B. Feldmann T. Carlquist

The regions of the European Union

The nomenclature of territorial units for statistics (NUTS) was established by Eurostat to provide a uniform and consistent breakdown of territorial units for the production of regional statistics for the European Union. Until now, the NUTS classification has had no legal base but, after extensive deliberations in the Council and European Parliament, it is hoped that the NUTS regulation will be adopted in the course of 2002. The NUTS nomenclature is defined only for the 15 Member States of the European Union.

NUTS subdivides each Member State into a whole number of NUTS-1 regions, each of which is in turn subdivided into a whole number of NUTS-2 regions and so on. It is thus a hierarchical classification. The present version of NUTS (NUTS-99) subdivides the economic territory of the Member States of the European Union into 78 regions at NUTS-1 level, 211 regions at NUTS-2 level and 1 093 regions at NUTS-3 level.

Because of their relatively small area or population, some countries do not have all three regional levels. Ireland and Sweden have no level 1 regions; accordingly, the country level and level 1 are identical. Denmark has neither level 1 nor level 2 regions; thus, the country level, levels 1 and 2 are identical. Luxembourg, not having regions at

([1]) Data were included for Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.

levels 1, 2 or 3, is defined at all levels of NUTS as the whole country.

In the maps in this yearbook, the statistics are presented at NUTS level 2. A map giving the code numbers of the regions may be found in the sleeve of this publication. At the end of the publication, there is a list of all the NUTS-2 regions in the European Union, together with a list of the level 2 statistical regions in the candidate countries.

For further information on the NUTS classification, the reader is referred to the booklet 'Regions — Nomenclature of territorial units for statistics — NUTS', which is available free of charge in PDF format. To obtain it, follow the link posted on the public CIRCA site listed at the end of this introduction.

In addition, the latest available NUTS classification can be consulted on the RAMON server, which is available online and will be constantly updated when changes occur. To consult it, again follow the link on the CIRCA site.

The regions of the candidate countries

In preparation for the upcoming enlargement of the European Union, Eurostat and the national statistical institutes of the 13 candidate countries have agreed on a regional breakdown ([2]) to be used by the European Commission for statistical purposes whenever possible. These regions have been defined according to principles similar to those used in the establishment of the Community nomenclature of territorial units for statistics (NUTS). However, this classification does not preclude any decision on the NUTS which will be taken as and when individual countries join the EU. Given that the agreement on the regional structure to be used for Turkey is too recent for data collection to have started, data coverage for candidate countries in this yearbook is restricted to the remaining 12 countries. In individual cases, it has not proved possible to include data for some or all candidate countries in a particular map because the data delivery structure for that specific field of statistics is still in the process of being established.

Full details of these national regional breakdowns, including lists of level 2 and level 3 regions and the appropriate maps, may be obtained from the Eurostat publication 'Statistical regions in the EFTA countries and the candidate countries'. This is available from datashops at cost price in PDF format on CD-ROM. Alternatively, it may be consulted on the RAMON server by following the link posted on the public CIRCA site listed at the end of this introduction.

([2]) In addition to those countries listed above, agreements were reached in 2002 with Cyprus, Malta and Turkey.

More detailed information required?

The tables presented on the CD-ROM represent the most significant regional indicators at NUTS levels 1 and 2 (or the equivalent statistical region level in the case of the candidate countries) for the latest available year. A great deal more data are, however, available in REGIO, Eurostat's database for regional statistics. Moreover, the CD-ROM also contains additional **methodological notes** concerning the data and the **data tables** used as the basis for the **maps** in this publication. This latter option was first included in 2001 to make it easier for users to work with the data as presented on the maps — since these are often figures derived from one or more of the indicators in REGIO, rather than the values for the indicators themselves as they are stored in REGIO.

More extensive time series (which may go back as far as 1970), more detailed statistics than those given in this yearbook (population by single years of age — deaths by single years of age — births by age of the mother — detailed results of the Community labour-force survey — economic accounts aggregates for 17 branches — detailed breakdown of agricultural production — data on the structure of agricultural holdings, etc.) are all available in REGIO.

Moreover, there is coverage in REGIO of a number of indicators at NUTS level 3 (such as area, population, births and deaths, gross domestic product, unemployment rates). This is important because two EU Member States (Denmark and Luxembourg) and four candidate countries (the three Baltic States and Slovenia) do not have a level 2 breakdown.

All REGIO data may be obtained by contacting your nearest datashop.

For more detailed information on the contents of the REGIO database, please consult the Eurostat publication 'European regional statistics — Reference guide 2002', available in PDF format on the accompanying CDROM.

Regional interest group on the web

Eurostat's regional statistics team maintains a publicly accessible interest group on the web ('CIRCA site') with many useful links and documents.

To access it, simply click on the URL:

http://forum.europa.eu.int/Public/irc/dsis/regstat/information

Among other resources, you will find:

— a list of all regional coordination officers in the Member States and the candidate countries;

— the bimonthly 'Regional Gazette';

— the REGIO reference guide;

— Powerpoint presentations of Eurostat's work concerning regional statistics;

— the regional classification NUTS for the Member States and the regional classification of the candidate countries;

— a link to a list of all Eurostat datashops.

Closure date for the yearbook data

The cut-off date for this issue is 21 June 2002.

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POPULATION

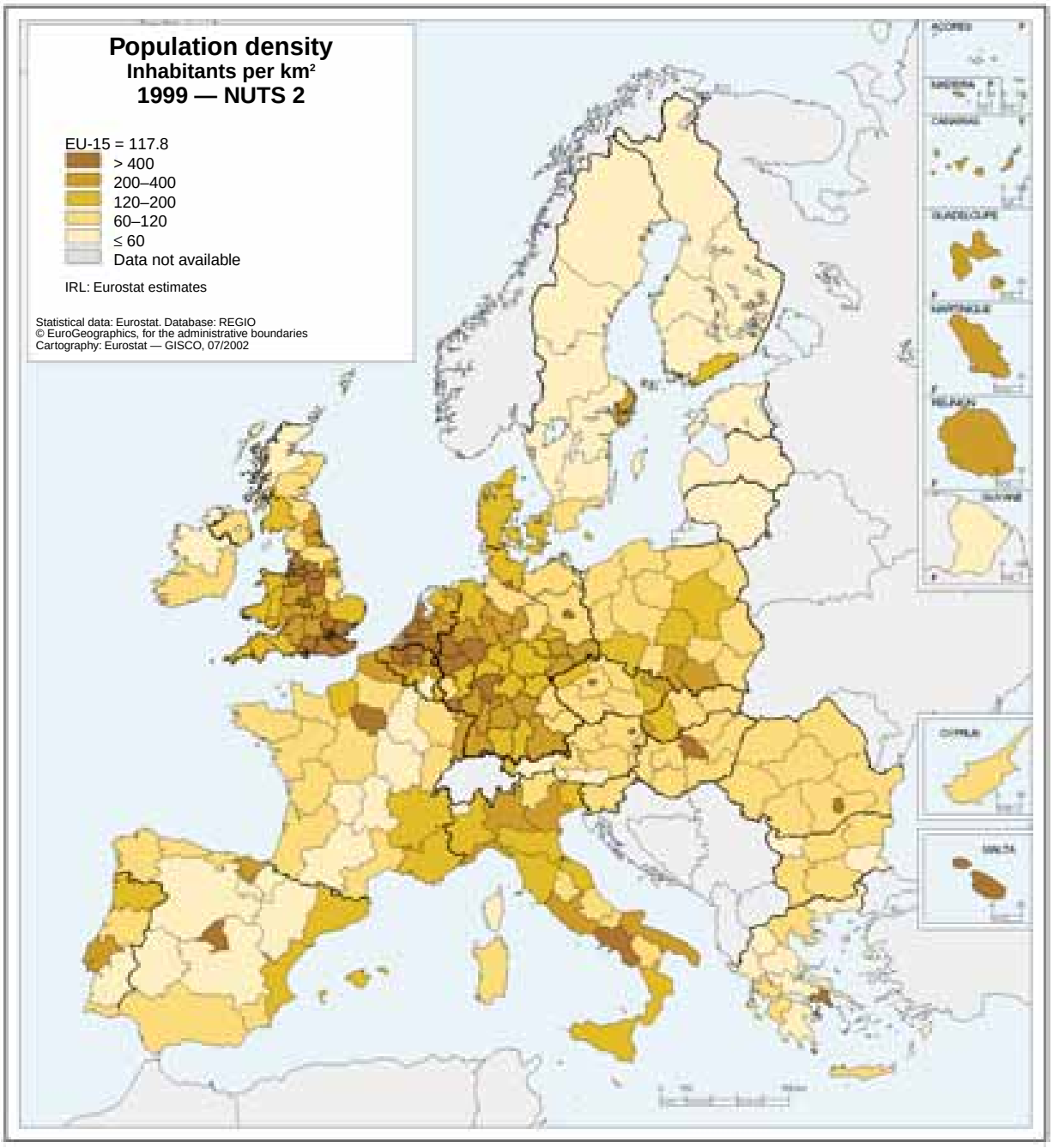
Introduction

The description and thorough analysis of the distribution and changes of **population** are one of the backbones of all human-related spatial analyses. A broad overview of population background data is presented here in three sections, using NUTS-2 level maps for clarification. Besides the Member States of the European Union, the regions of the candidate countries (CC) are also included in the analyses.

First of all, population density in the regions is analysed. Next, population change is dealt with by examining the crude birth rate, the crude death rate, the crude natural population increase and the crude rate of net migration. The following section covers the so-called dependency ratios, in particular the young-age dependency ratio and the old-age dependency ratio. Finally, this chapter ends with a short description of the population pyramids of the EU and the CC, both as a whole.

Population density

Population density tables show the number of inhabitants per square kilometre. In 1999, the total mid-year population of the European Union, 376 million, produced an average population density



Map 1.1

of 118. Together, the candidate countries accounted for an average population of 105 million inhabitants, corresponding to 97 inhabitants per km². Reflecting a process which has already been underway for decades, the population of the EU in 1999 shows a slight growth compared to 1998. The population development in most of the candidate countries shows the opposite. For several years now, the populations of several countries have been decreasing; the figure for 1999 is in line with this trend.

Map 1.1 shows that the population density of the NUTS-2 regions of the European Union varies greatly. At one extreme, there are densities as low as 1.9 persons per square kilometre in French Guyana, much of which is equatorial jungle, 3.3 in Övre Norrland and 4.3 in Pohjois-Suomi (the most northerly NUTS-2-region in respectively Sweden and Finland). At the other extreme, nearly 8 800 people live in each square kilometre of Inner London. The differences between the regions in the candidate countries are less pronounced — ranging from 33 in Estonia to 2 400 in Prague. Two-thirds of the CC regions (36 out of 55) have a population density of between 60 and 120. For the EU regions, this proportion is less then one quarter (48 out of 211).

In general, the most densely populated regions at the national level are those containing the capital of the country. Examples are Inner (and Outer) London, Brussels Capital Region, Vienna, Berlin, Stockholm, Uusimaa (including Helsinki), Prague, Közép-Magyarország (with Budapest) and the region Bucharest in Romania. However, there are exceptions, too. In Italy, Campania has the highest density at 426, while Lazio (including Rome) has only 305. The NUTS-2 region Śląskie has the highest density in Poland at 397, while the region Mazowieckie, in which Warsaw is situated, has only 142 inhabitants per km².

The map shows that the population density is greatest in the middle of the area of the European Union, running like a belt from the north of Italy through southern and western Germany and the Benelux countries to southern and central England.

The least densely populated areas can especially be found on the southern, western and northern margins of the European Union. Of the 44 regions with a population density below 60, 39 are situated in the EU and only 5 in the CC. Most of the least densely populated EU regions belong to Greece (8), France (7), Spain and Sweden (all 6) and Finland (5). Besides the three Baltic States, there are only two other CC regions with a population density of less than 60. These are both part of Bulgaria.

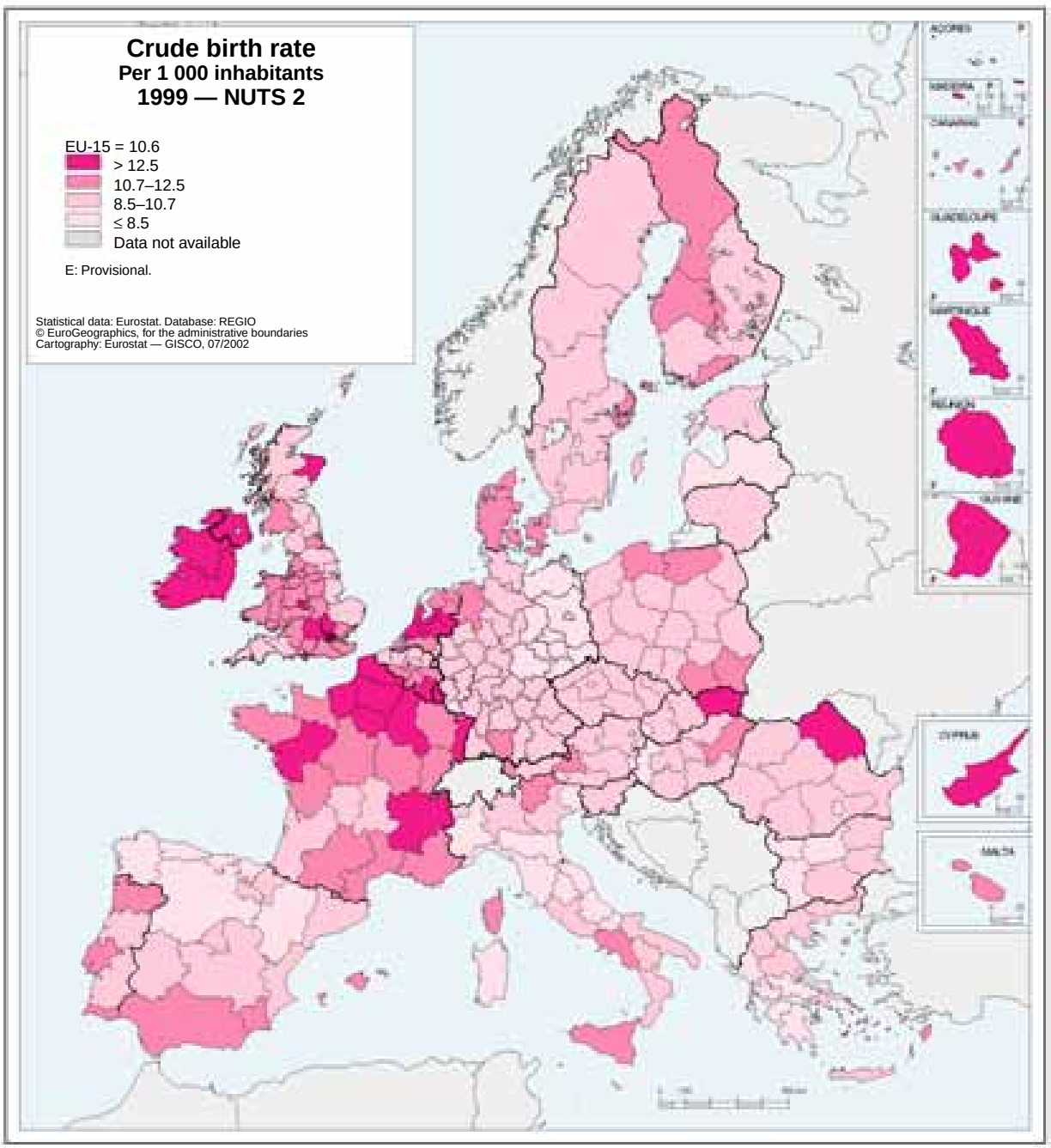
In general, the thinly populated regions are characterised by unfavourable natural conditions (mountainous area, cold or dry climate, etc.), and by specific kinds of land use (extensive agriculture, forestry, etc.). Often, a small number of cities form a stark contrast with an extensive but thinly populated hinterland.

Population change

The main features of **population change** are analysed in this chapter in six maps:

— crude birth rate;
— crude death rate;
— crude natural increase;
— crude rate of net migration;
— components of population change;
— rate of population increase.

Map 1.2 represents the number of births per 1 000 inhabitants in the NUTS-2 regions. In 1999, the average for the European Union was 10.6 and 9.7 for the candidate countries.

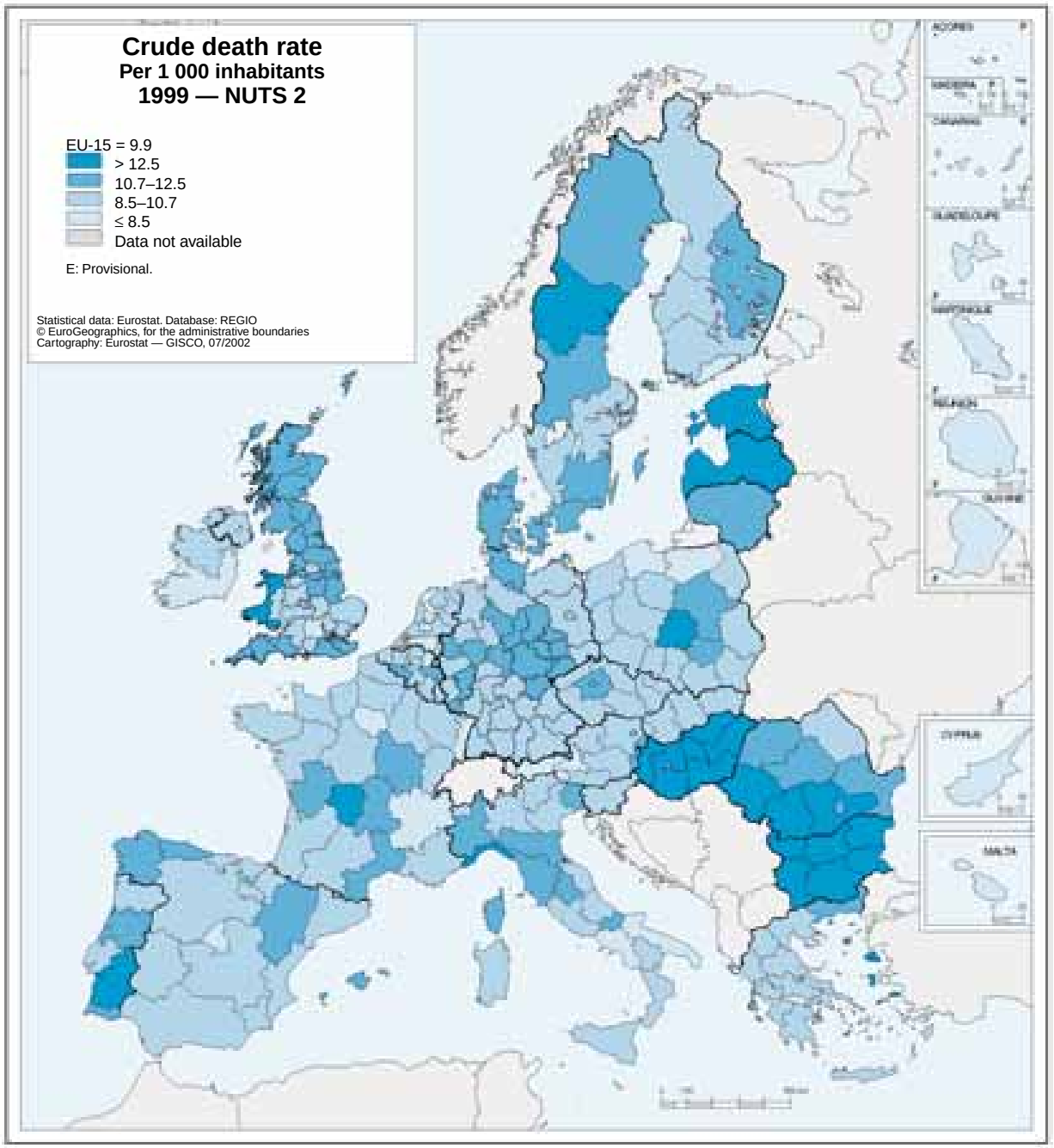


Map 1.2

The map shows that within the EU the regions with the highest crude birth rates (12.5 and higher) are mainly to be found in the Benelux, France, the United Kingdom and Ireland. For the CC, only Cyprus, the region Nord-Est in Romania and Vychodne Slovensko in the Slovak Republic can be mentioned in this context. The five regions with the highest birth rates, besides three of the four French départements d´outre-mer, were Flevoland in the Netherlands with 15.8, Inner London and the region of Leicestershire, Rutland and Northamptonshire, both with 15.9, the Spanish region Ceuta y Melilla with 15.5, and Île-de-France with 15.2 births per 1 000 inhabitants.

EU regions with a birth rate lower than 8.5 are situated particularly in Germany (nearly the entire eastern part), in northern and central Italy, and in northern Spain. Most of the CC regions with the lowest crude birth rates can be found in Bulgaria. Prague in the Czech Republic, Latvia, Bucharest in Romania, and Bratislava in the Slovak Republic also have relatively low birth rates.

Map 1.3 gives an overview of the crude death rates in the various regions. The mean number of deaths per 1 000 inhabitants for 1999 is 9.9 in the current Member States and 11.2 in the candidate countries.

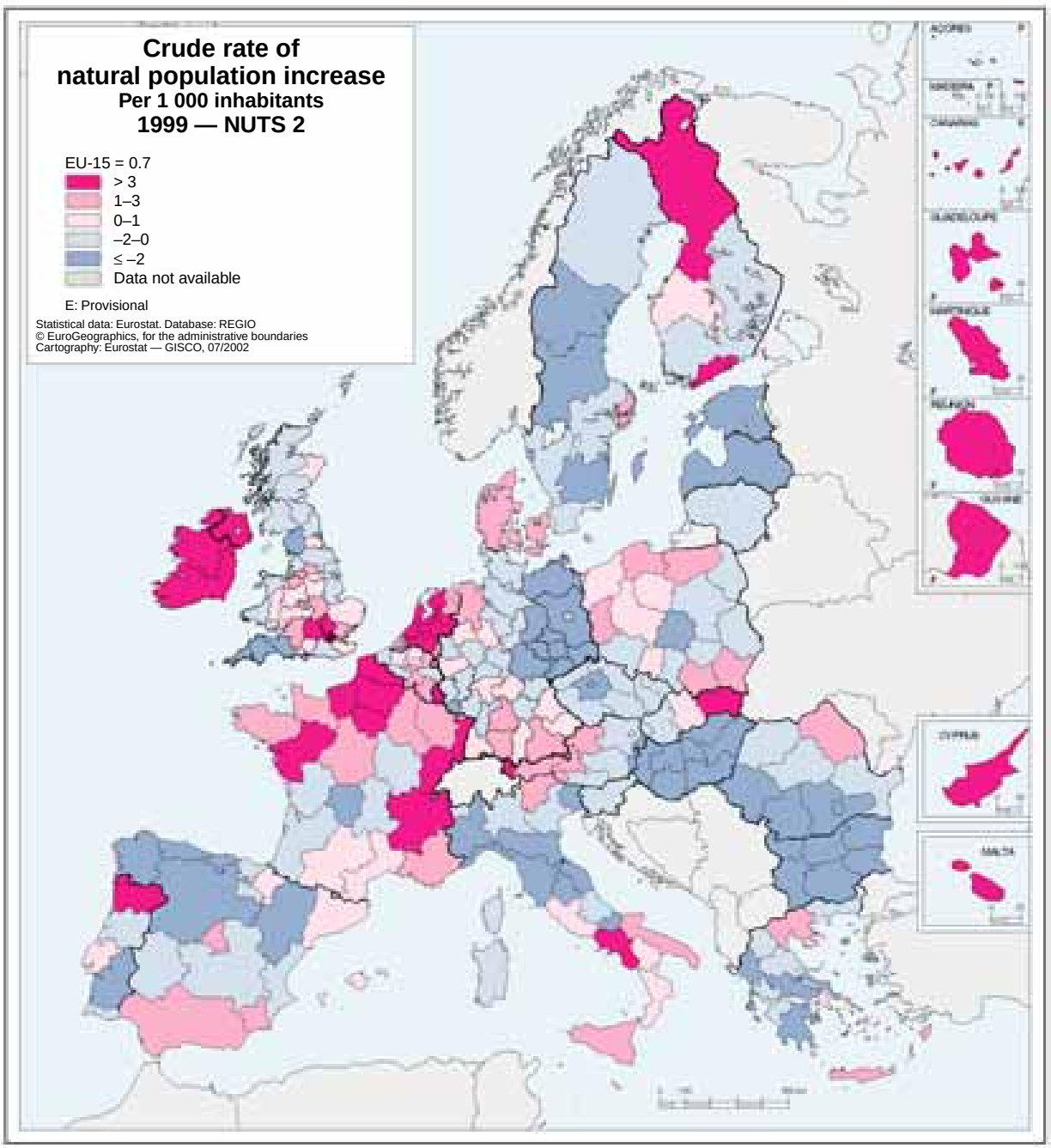


Map 1.3

Within the regions of the European Union and candidate countries, the highest crude death rates, those mapped in dark blue, are mainly to be found in Romania, Bulgaria, Hungary, Estonia and Latvia. Within the EU, three of the five regions with the highest death rates can be found in the southern part of the Union; the regions Alentejo (14.8) in Portugal, Greece's Voreio Aigaio region (13.9) and Liguria (13.8) in Italy. The fourth and the fifth places are taken by the Swedish region of Mellersta Norrland (12.9) and the French region of Limousin with 12.7 deaths per 1 000 inhabitants.

Regions with a death rate lower than 8.5 are mainly situated in Austria (Salzburg, Tyrol and Vorarlberg), France (Alsace, Rhône-Alpes, Île-de-France, and all the départements d'outre-mer, the Netherlands (Utrecht, Noord-Brabant, Flevoland) and Spain (Canaries, Comunidad de Madrid and Ceuta y Melilla). The seven regions in the candidate countries with the lowest crude death rate (lower then 8.9) are, besides Cyprus and Malta (7.6 and 8.2), all to be found in Poland (Pomorskie and Warminskio-Mazurskie, both death rates lower than 8.5; Zachodniopomorskie (8.8), Opolskie (8.7) and Podkarpavkie, also with 8.7 death per 1 000 inhabitants).

Map 1.4 shows the natural growth rate per NUTS-2 region, being the difference between births and deaths per 1 000 inhabitants. While the overall natural growth rate is still positive for the European Union (0.7), it is negative for the candidate countries (– 1.5).



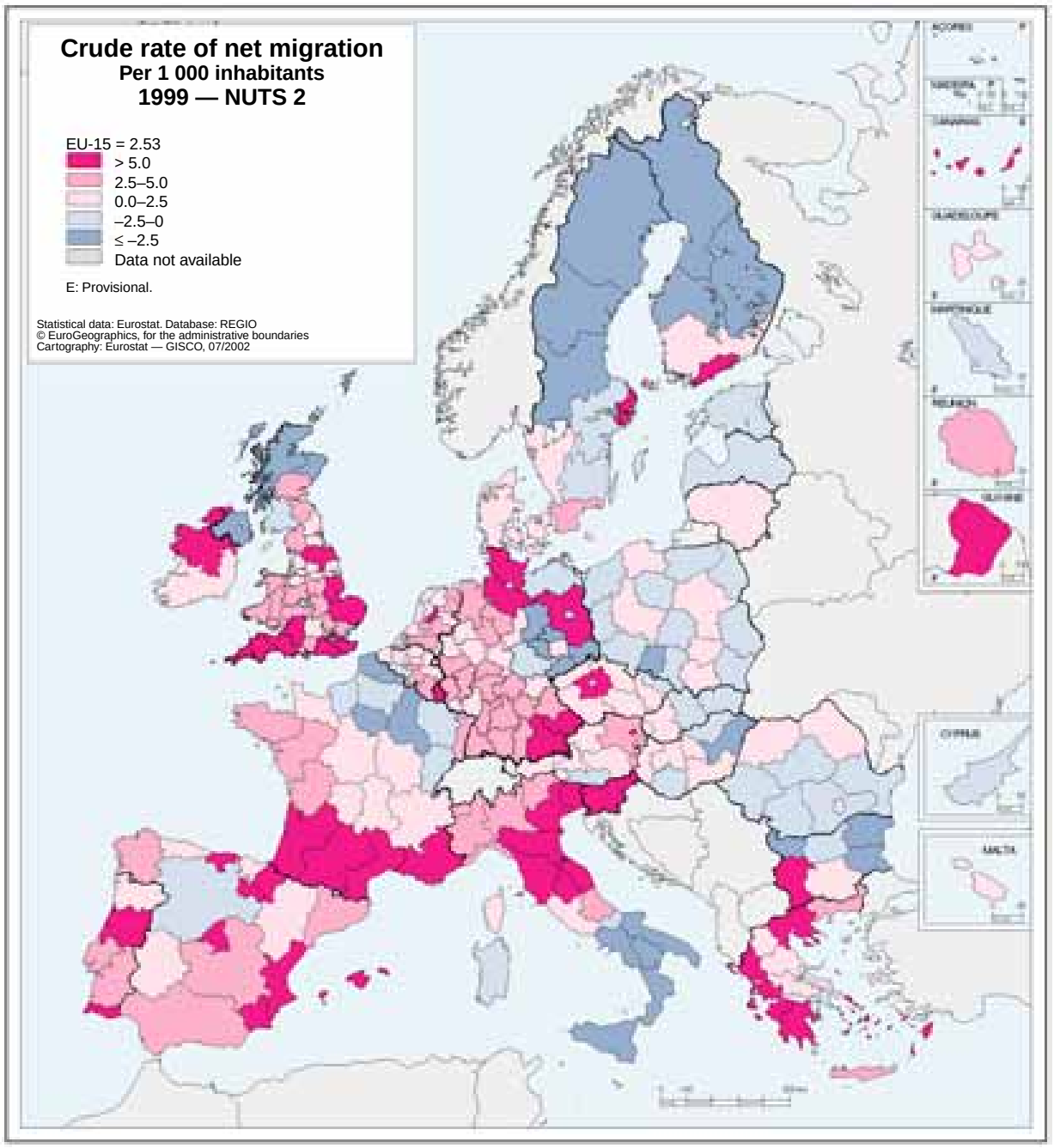
Map 1.4

Just focusing on the blue-coloured regions on the map, it can be concluded that 43 % of EU regions (92 out of 211) and nearly 75 % of the CC regions (41 out of 55) experienced a negative natural population increase in 1999. Due to relatively low crude birth rates and/or high crude mortality rates, the five regions with the strongest population decrease were Severozapaden (– 9.7 per thousand of the population) and Severen Tsentralen (– 7.5), both in Bulgaria, Liguria in Italy (– 7.0), Dél-Alföld in Hungary (– 6.0) and Alentejo in Portugal with – 5.9 per thousand of the population.

EU regions with a natural growth rate of + 3 per thousand or higher are mainly situated in Ireland, France, the Netherlands, Finland and Luxembourg. Only three CC regions showed such a high growth rate in 1999, one in Slovakia (Vychodné Slovensko) and Cyprus and Malta. The five regions with the largest natural population increase were Flevoland in the Netherlands (10.3), Ceuta y Melilla in Spain (8.7), Île-de-France (8.4), Inner London (8.2) and southern and eastern Ireland (6.6).

In Map 1.5, the difference between in- and out-migration per 1 000 inhabitants on the regional level is presented.

Nearly one quarter of the EU regions showed a negative migration figure in 1999. For the CC regions, this proportion was more than twice as high. Especially in Poland and Romania, the vast majority of regions had a negative migration balance. As a result, the overall net migration rate for



Map 1.5

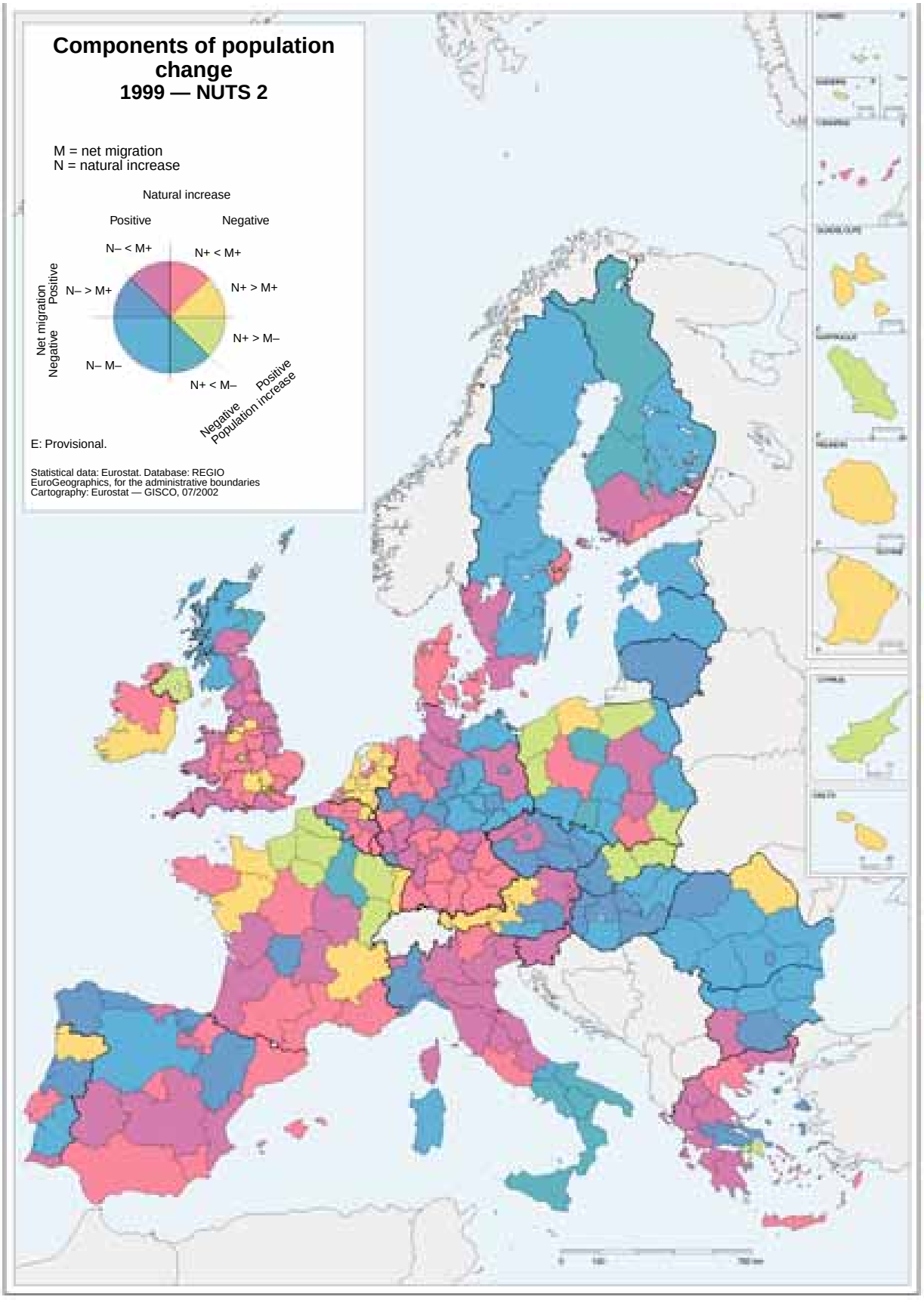
the EU regions was 2.5 in 1999, while for the CC regions – 1.3 was recorded. However, the top five regions losing population due to migration are to be found in Italy (Calabria and Campania, with respectively – 7.8 and – 5.7 per thousand), Germany (Halle with – 6.4 and Dessau – 6.3) and Finland (Itä-Suomi with – 6.3). Other EU regions with strong negative migration figures are located in the southern part of Italy, the northern part of France, central and eastern Germany and central and northern Sweden and Finland. The first CC region on this list is only in 17th place: Severozapaden in Bulgaria (– 4) followed in 19th, 20th and 25th place, respectively, by Yugoiztochen (– 3.6) in Bulgaria, Opolski in Poland (– 3.5) and Severoiztochen (– 3), once more in Bulgaria.

Regions that received relatively many migrants are mainly located in the southern part of the UK, the southern part of France and the central and northern part of Italy. Apart from one region in the Netherlands (Flevoland, 24.6), the top five regions in the league table for incoming migration are situated in Spain (Islas Baleares and Canarias), Portugal (Algarve) and Greece (Ionia Nissia and Ipeiros). In the candidate countries, there are two regions with a crude net migration that equals or exceeds 5, namely Střední Čechy in the Czech Republic and Slovenia.

Summarising, it may be said that there are significant net migration flows in England going from north to south, in France, again from north to south, and in Italy from the southern to the

central and northern parts of the country. Economic push-and-pull factors, which often cause young people to move to other regions, are the main cause of these shifts.

In Map 1.6, both aspects of population dynamics — natural growth and net migration — have been combined. If natural increase is denoted with N and net migration with M, there are six combina-



Map 1.6

tions of these components which determine the sign (+, –) of the total population increase. A positive increase will result from combinations, N+, M+ (both natural increase and net migration are positive; in the map, this has been further divided into two subclasses showing which of the components has a bigger role in the positive total increase, N+ < M+ and N+ > M+, |N–| < |M+| (absolute value of negative natural increase is smaller than absolute value of positive net migration) and, finally, |N+| > |M–| (absolute value of positive natural increase is greater than absolute value of negative net migration).

A negative increase (decrease) will result from combinations N–, M– (both natural increase and net migration are negative), |N–| > |M+| (absolute value of negative natural increase is greater than absolute value of positive net migration), and |N+| < |M–| (absolute value of positive natural increase is smaller than absolute value of negative net migration).

Because of low fertility levels, migration has become the decisive factor for the still positive, but slow, population increase in the European Union as a whole. It is important also at regional level. As could be seen in Map 1.4, there were 92 NUTS-2 regions (out of the 211) in the European Union with negative natural population increase in 1999. Because of positive net migration, the total increase was negative in only half of those regions. This effect does not occur in the candidate countries: 41 (out of the 55) regions showed a negative natural growth, while 35 regions showed a negative population growth.

EU regions of 'severe population decrease' (with both negative natural increase and negative net migration and a total population decrease of 7.5 per thousand or more) can mainly be found in Germany (Thüringen, Halle, Magdeburg, Chemnitz, Dresden, Berlin and Mecklenburg-Vorpommern). Among the candidate countries, these regions are Severozapaden and Severen Tsentralen in Bulgaria.

EU regions with a strong population increase (with both positive natural increase and positive net migration and a total population increase of 7.5 per thousand or more) are, besides Denmark, situated in the Netherlands (Gelderland, Flevoland, Noord- and Zuid-Holland, Noord-Brabant and Utrecht), in Sweden (Stockholm), in Finland (Uusimaa), in the United Kingdom (Inner and Outer London, Leicestershire, Rutland and Northamptonshire, East Anglia, Bedfordshire and Hertfordshire, Essex, Berkshire, Buckinghamshire and Oxfordshire, Hampshire and the Isle of Wight, Kent, Gloucestershire, Wiltshire and North Somerset), in Spain (Catalunia, Andalucia, the Canaries, Islas Baleares, Comunidad de Madrid and Región de Murcia), in Portugal (Norte), in Ireland (Border, Midlands and Western Region and Southern and Eastern Region), in France (Languedoc-Roussillon, Centre, Alsace, Pays de la Loire, Bretagne, Midi-Pyrénées, Rhônes-Alpes, Provence-Alpes-Côte d'Azur and Réunion), in Greece (Kentriki Makedonia), in Italy (Lazio), and in Germany (Stuttgart, Freiburg, Tübingen, Oberbayern, Schwaben, Darmstadt, Weser-Ems and Münster) . In the CC, there is no single region that complies with all the above-mentioned conditions. There are five CC regions with both positive natural increase and positive net migration (Nord-Est in Romania; Pomorskie, Małopolskie and Wielkopolskie in Poland, and Malta), the region Nord-Est in Romania and Małopolskie in Poland had a population increase of 7.5 per thousand or more in 1999.

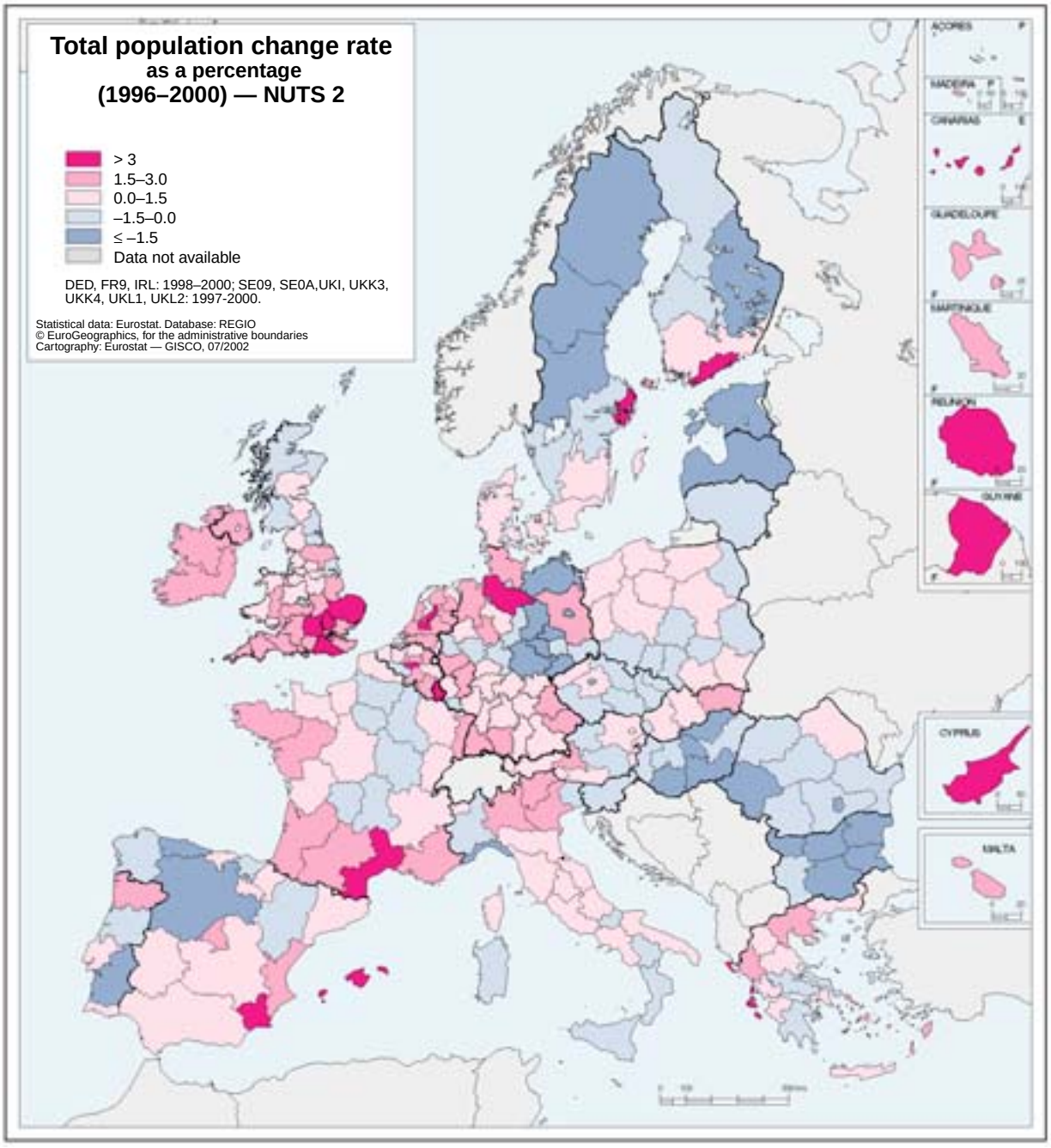
Map 1.7 shows the relative population increase (%) over the five-year period 1996–2000 (population at 1 January 2000, minus population at 1 January 1996, divided by the population at 1 January 1996 and multiplied by 100).

In the period 1996–2000, the relative total population increase was negative in more than one quarter of the regions in the European Union (59 out of 211) and nearly 70 % of the regions in the candidate countries (38 out of 55). The overall population increase for the EU was 1 %; for the CC there was an overall decrease of – 2.1 %.

The five regions with the strongest relative population increase during the this period were:

Flevoland (Netherlands) with 16.3 %, Islas Balearas and Canaries (both 6.7 %) in Spain, Luxembourg with 5.6 % and Uusimaa (Finland) with 5.3 %.

The five regions with fastest relative population decrease during this period were: Alentejo with nearly –3.5 % in Portugal, Halle (– 3.7 %), Dessau (– 3.6 %) and Magdeburg (– 2,9 %), all in Germany, and Mellersta Norrland (– 3.5 %) in Sweden.



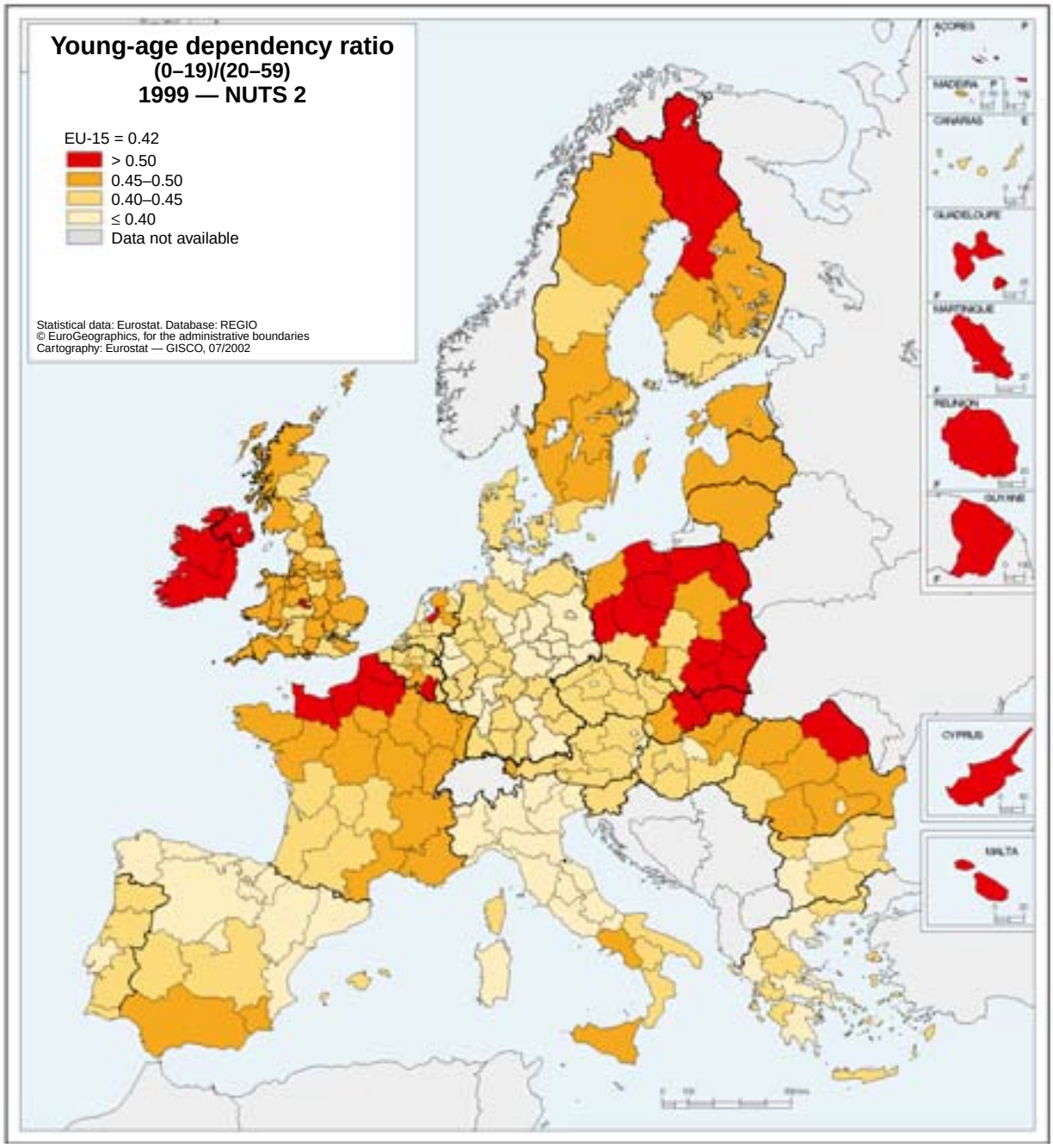
Map 1.7

Dependency ratios

Dependency ratios are measures in which the inactive population is compared to the economically active population in order to show the extent of the 'care-taking burden' imposed by the inactive population on the active one. In order to calculate the dependency ratio, one can use employment data, which give the closest picture. Indicators can also, as in the following analyses, be calculated from purely demographic age-structure data. The ratios then roughly reflect the real inactive/active ratios in the EU or candidate countries, based on mean ages for compulsory schooling and retirement, but they do permit a uniform and comparable approach across all the countries.

Map 1.8 describes the proportion of young people aged 0–19 years (mostly living at home or in education) to the population aged 20–59 (mostly economically active). This so-called young-age dependency ratio indicates the degree of economic burden the inactive young population imposes upon the population of working age.

The overall young-age dependency ratio for the EU as whole was 41.7 in 1999 while this rate for the CC was 46.9 This difference is reflected in the regions. For example, only 9 % of EU regions



Map 1.8

have a young-age dependency ratio equal to or higher than 0.50, as against 29 % of the CC regions. Another illustration of the difference between the EU and the CC in this respect is the fact that no single region in Germany has a young-age dependency ratio of 0.45 or higher. On the contrary, all regions in Poland have ratios of 0.45 or higher.

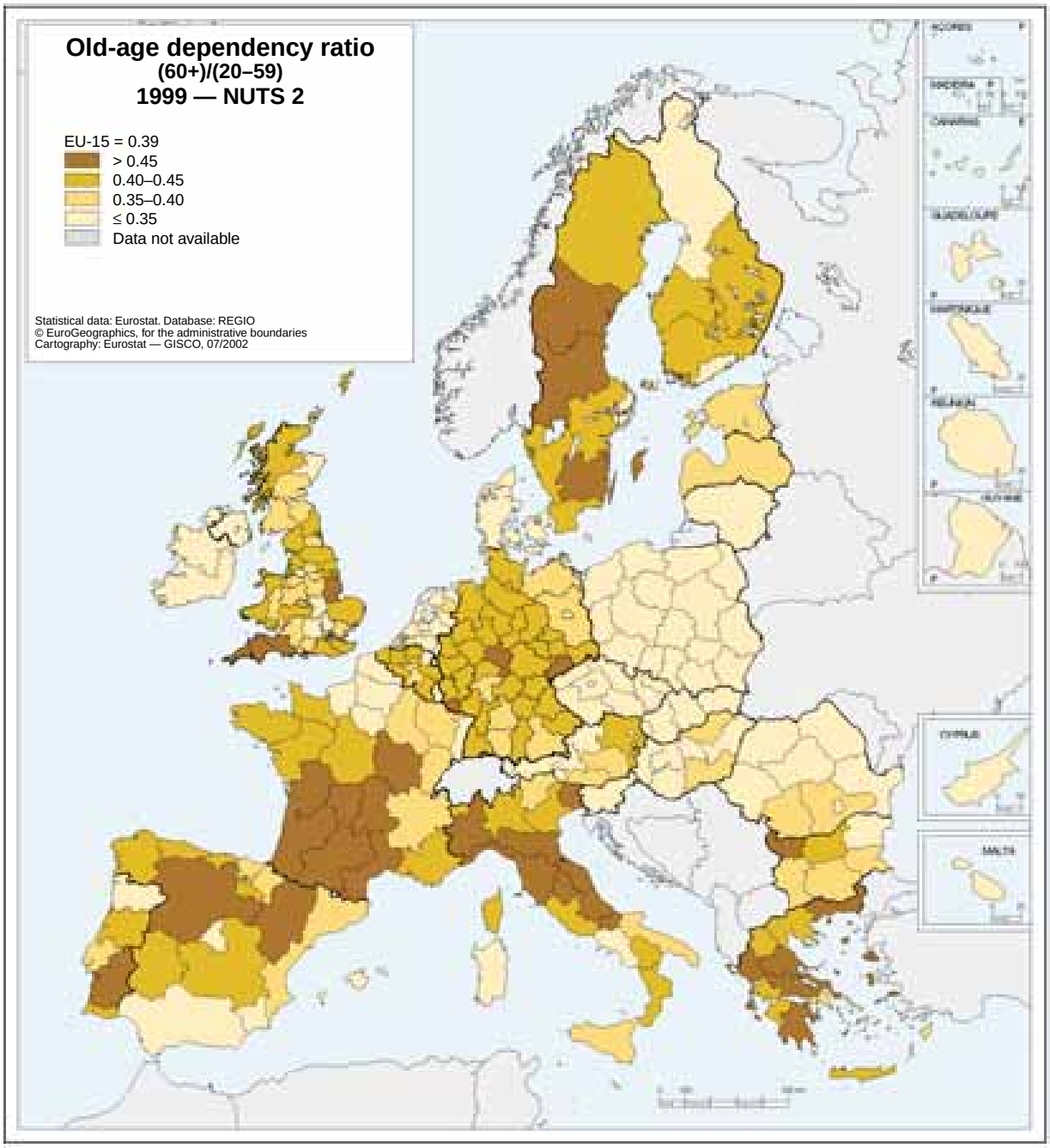
In the European Union, the young-age dependency ratio is highest in Ireland (Border, Midlands and Western, 0.62; southern and eastern, 0.55), in Portugal (Azores, 0.58; Madeira, 0.50) in France (Nord-Pas-de Calais, 0.55; Picardie, 0.52; Haute-Normandie, 0.51; Basse-Normandie, 0.51; Pays de la Loire, 0.50;), Belgium (Vlaams Brabant, 0.52), Finland (Pohjois-Suomi, 0.53), Netherlands (Flevoland, 0.53), United Kingdom (Northern Ireland, 0.58; West Midlands, 0.52), and in Spain (Ceuta y Mellilla, 0.54). Among the candidate countries, most of the regions with very high ratios can be found in Poland (Podkarpackie, 0.57; Podlaskie, 0.55; Warmińsko-Mazurskie, 0.54; Lubelskie, 0.54; Małopolskie, 0.52, Wielkopolskie, 0.51; Pomorskie, 0.51; Świętokrzyskie, 0.51; Lubuskie, 0.51; Kujawsko-Pomorskie, 0.51). Furthermore, the regions Vychodné and Stredné Slovesnko in the Slovak Republic (respectively 0.57 and 0.51) the region Nord-Est (0.56) in Romania and Lithuania (0.50) and Malta and Cyprus have to be mentioned in this context.

Six regions in the EU have a young-age dependency ratio lower than 0.30. These are all Italian (Liguria, Friuli-Venezia Giulia, Emilia-Romagna, Toscana, Piemonte and Valle d'Aosta). The lowest non-Italian regions are Pais Vasco and Principado de Asturias in Spain (both with 0.30). The lowest CC region is Prague in the Czech Republik (0.33).

The regional variation of the young-age dependency ratio roughly reflects the variation of fertility in the recent past. In areas of high fertility in the recent past, the ratio is usually high, whereas it is low in areas of low fertility.

The last map (1.9) shows the proportion of elderly people aged 60 and more (mostly retired for old-age or health reasons) in relation to the population aged 20–59 (mostly economically active). The old-age dependency ratio is an indicator that shows the degree of economic burden the inactive elderly population imposes upon the population of working age.

The old-age dependency ratio for the EU as whole was 38.6 in 1999, while this rate for the CC was much lower at 32.1. Again, this difference is clearly reflected in the regions. For example, some 20 % (41 out of 211) of EU regions have an old-age dependency ratio below 0.35, as against 75 (41 out of 55) for the CC regions. However, the lowest ratio can be observed for three French overseas *départements* (French Guyana, Guadeloupe and Réunion) and Flevoland in the Netherlands (0.21), followed by Inner London in the UK (0.24).



Map 1.9

In only two CC regions is the old-age dependency ratio higher than 0.45. These regions are both situated in Bulgaria (Severozapaden, 0.53; Severen Tsentralen, 0.45). Most of the EU regions with old-age dependency ratios of 0.45 or higher can be found in Greece, Italy, France, and Sweden.

The old-age dependency ratio is often a mirror image of the young-age dependency ratio. Low fertility tends to increase the proportion of the elderly in the total population. However, survival rates for the elderly play an important role too. Thus, the combined effect of higher fertility levels and a lower expectation of life (especially for men) in the CC regions compared to the EU regions explains the majority of the observed differences in the dependency ratios. Of course, for some regions the consequences of significant (age-specific) in- or out-migration flows should not be forgotten in this context.

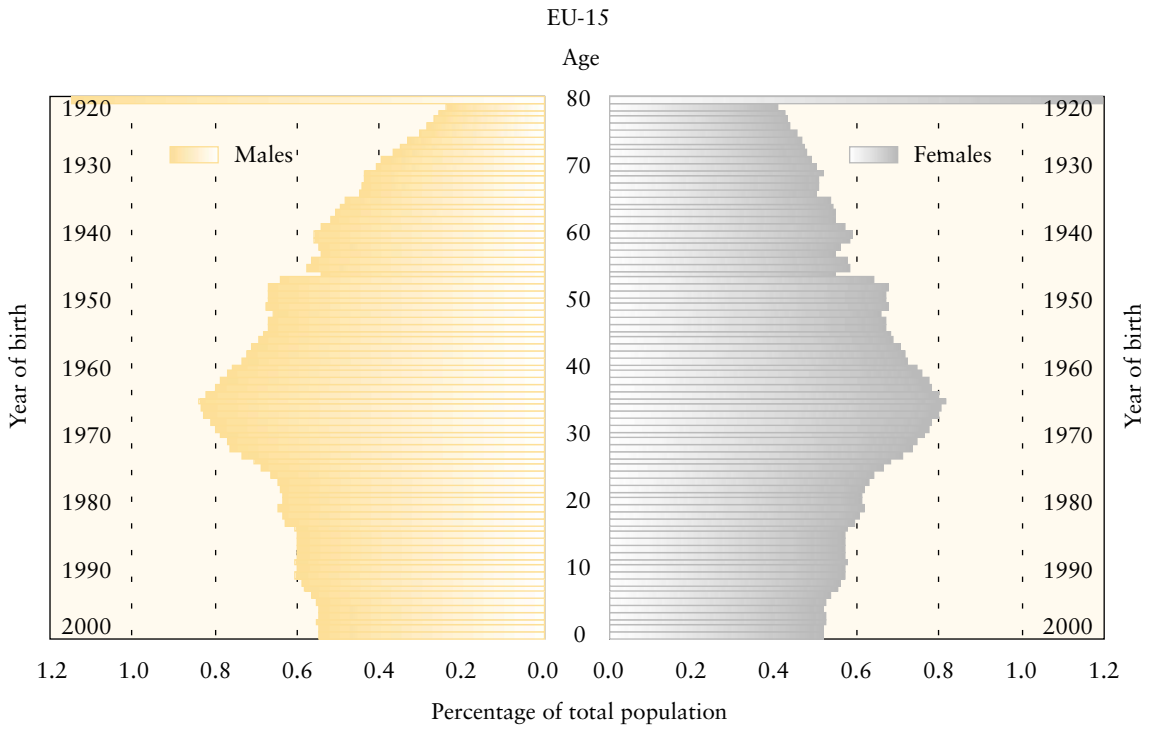
Population structure

Graphs 1.1 and 1.2 show the age pyramids for the European Union and the candidate countries respectively, as at 1 January 2002.

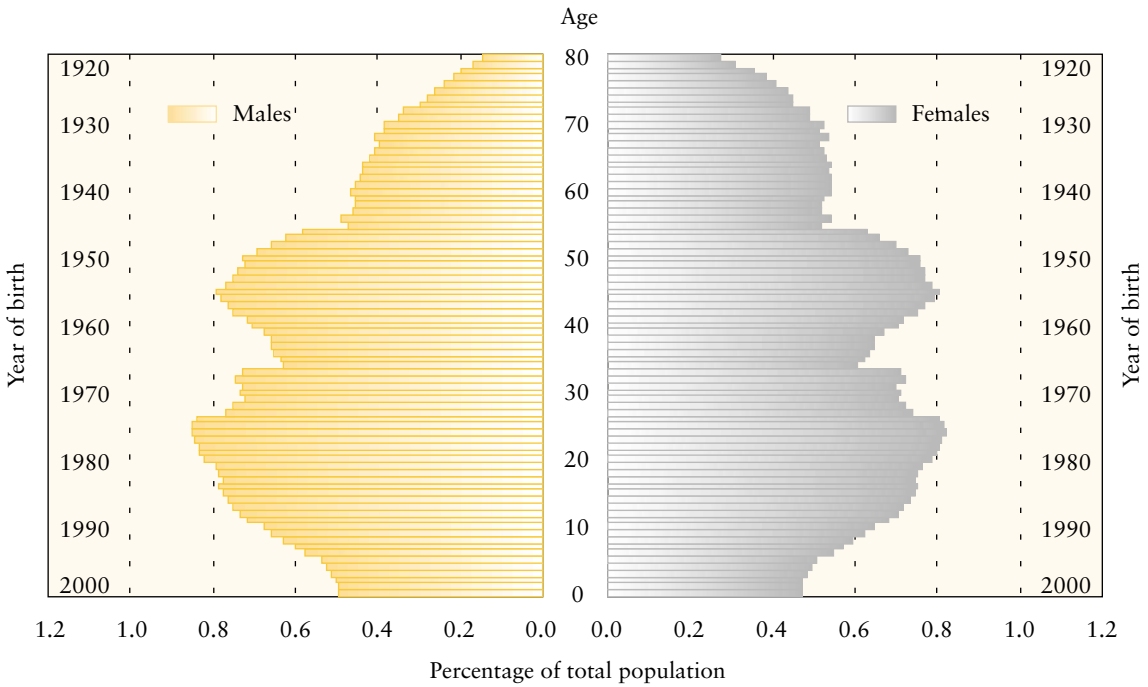
The pyramids show remarkable differences. In the first place, the EU pyramid has only one peak in the population structure, caused by the so-called baby boom in the 1960s. Due to two baby booms in some of the candidate countries (for example in Hungary and the former Republic of Czechoslovakia), the pyramid for the candidate countries has a totally different shape. Those increases in the number of births took place in the 1950s and in the second part of the 1970s.

A second interesting difference concerns the oldest age group in both pyramids, the age group 80+. In the last chapter, we saw already that the old-age dependency ratio in the CC is much lower then in the EU. Here, we can observe that especially the oldest age group is small in those countries.

Graph 1.1 — Age pyramid on 1 January 2000 for the Member States



Graph 1.2 — Age pyramid on 1 January 2000 for the candidate countries (1)



(1) Not including Turkey.

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2

AGRICULTURE

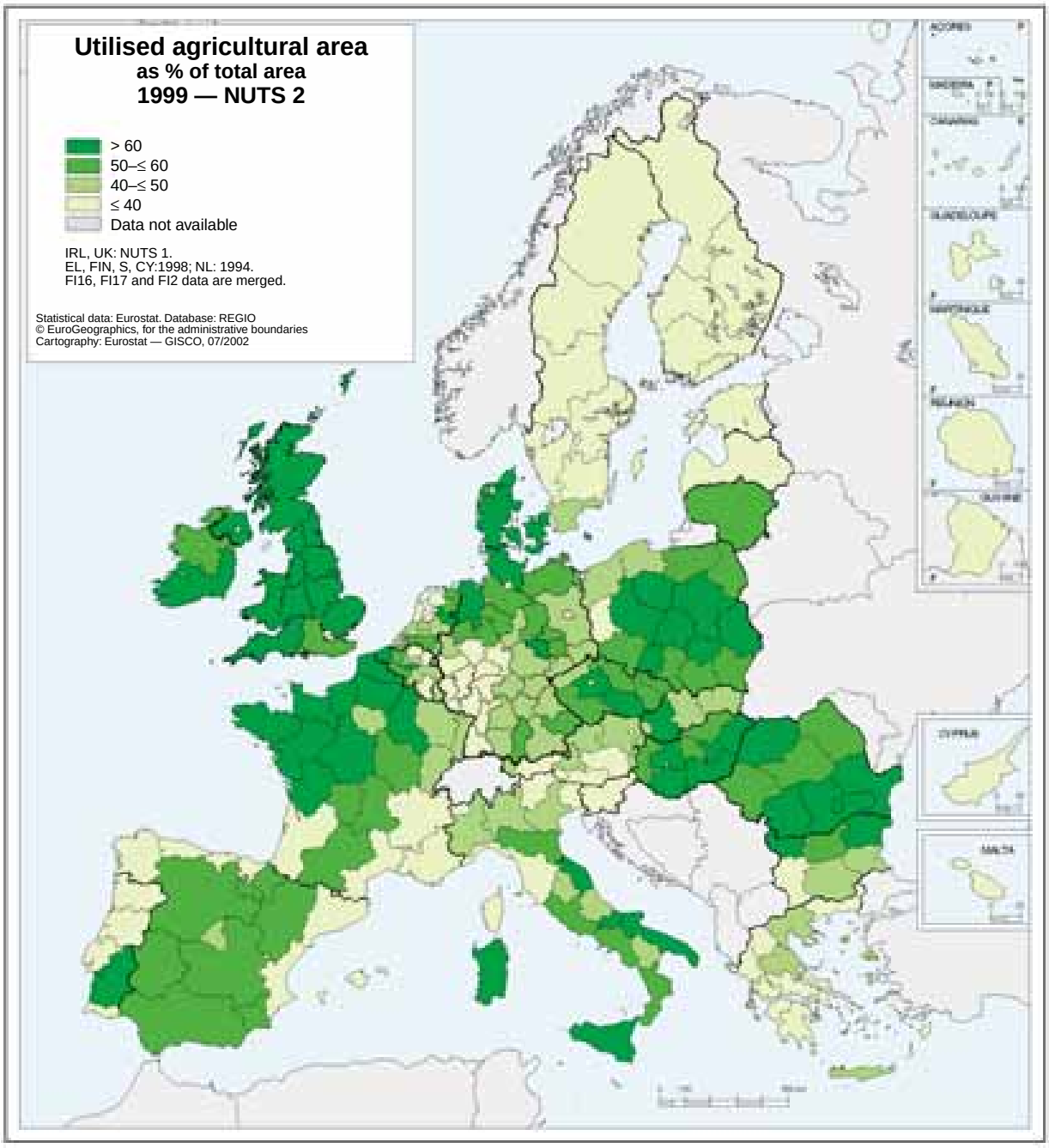
Introduction

Agriculture in the regions changes slowly. Simply updating the 2001 yearbook would have provided very little extra information. It is for this reason that this year's edition focuses on certain types of production (cereals, cows' milk, pigmeat). Background information on agricultural land use has been retained, however. In this way, we can avoid referring to an earlier edition of the 'Statistical yearbook' when mentioning regional differences in European agriculture.

It goes without saying that readers should be careful about misinterpreting regional data. These data allow regions to be compared in a European context and do not provide a detailed description of each region.

Regional diversity in agriculture

Maps 2.1 (impact of agriculture) and 2.2 (types of agricultural land use) show the importance and type of farming practised.

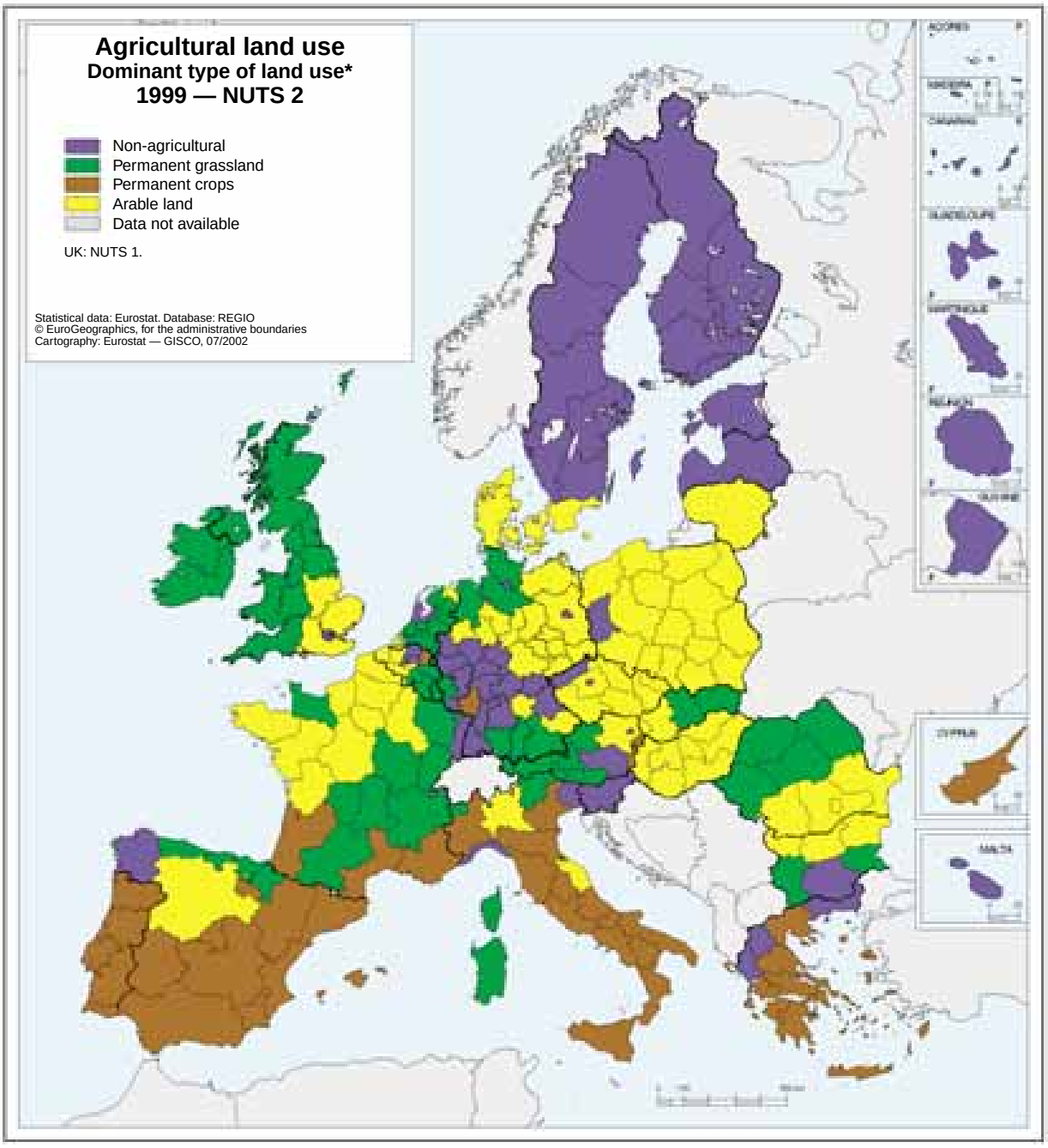


Map 2.1

Firstly, the natural environment (woodland, mountains, moorland, marshland, inland waters, rocks and other undeveloped land) restricts the impact of agriculture. Farming is limited or even impossible in such areas, given the poor agronomic potential of the land, its inaccessibility or climatic constraints. The far north of Europe (Sweden, Finland, Estonia, Latvia) and part of the Alps are obvious examples at NUTS level 2. Areas which are generally too mountainous to be farmed include Dytiki Makedonia, Ipeiros and Anatoliki Makedonia, Thraki in Greece, Friuli-Venezia Giulia in Italy and Galicia in Spain.

Secondly, agriculture competes with other land uses (urban areas, industrial or transport infrastructure, tourist amenities, etc). This is the case in central Germany or in urban micro-regions such as Berlin, Bremen, Hamburg, Praha and Wien.

As regards utilised agricultural area (UAA), grassland (shown in green) is found mainly in mountainous areas, in the British Isles and in certain other areas where arable land is rare. Where climatic conditions are favourable, permanent crops of fruit trees and vines (shown in brown) dominate the landscape. Within a broadly defined



Map 2.2

* See methodological note, p. 37

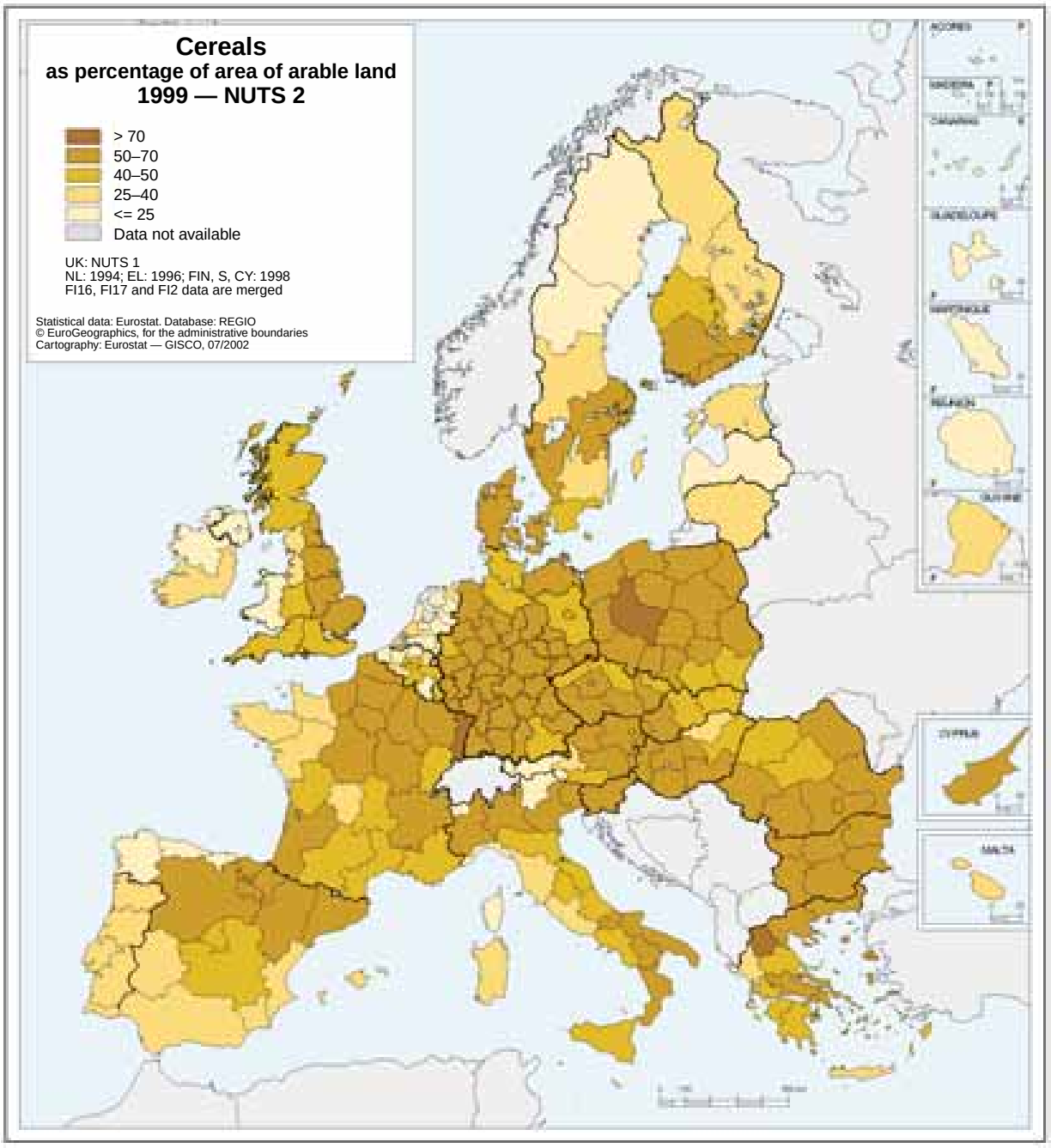
Mediterranean area, permanent crops are more profitable **overall** and more tolerant of natural conditions (dry summers, shallow soils and slopes) than most other arable crops (except maize and durum wheat). Domination by permanent crops may also be the result of a low level of agricultural land use, as in the regions of Stuttgart in Germany and Limburg in Belgium.

In contrast, the richer soils and open spaces of the northern European and Danube plains, the Paris basin and Castilla y León allow major crops to be cultivated (arable crops in open country). The regions concerned are shown in yellow.

Location and type of cereal production

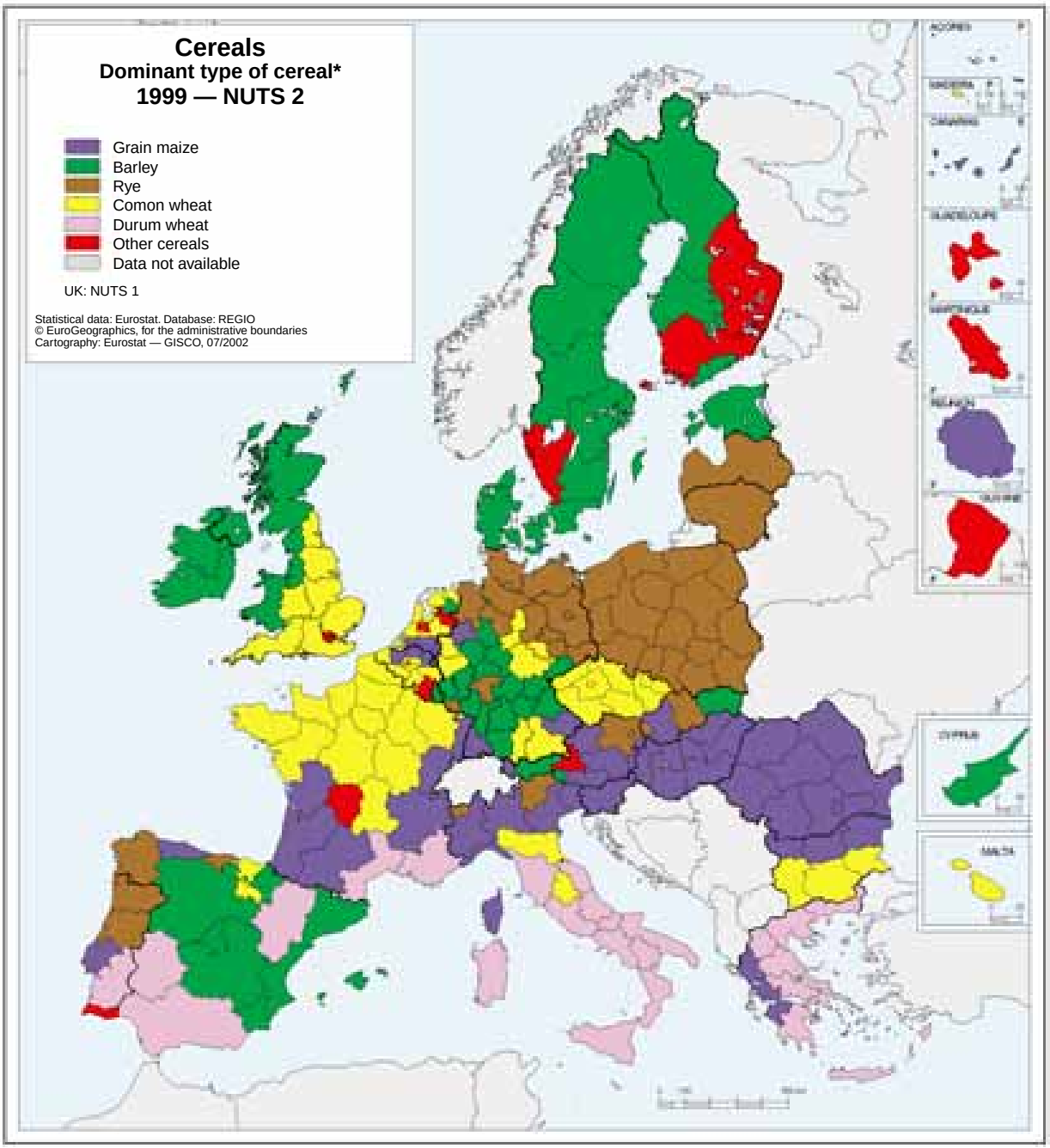
Arable land is mainly used for cereals (51 %), but it is also used for root crops (potatoes, beetroot, etc), market gardening, vegetables, horticulture, industrial uses (oilseeds and fibre plants), fodder, protein crops, etc.

Cereals are of considerable importance in regions where they account for more than 50 % of arable land (Map 2.3) and where such land is



Map 2.3

predominant (Map 2.1), as in Castilla y León, northern and central France, Germany, Poland and the Danube valley. Cereals are not so important in regions where they account for less than 25 % of arable land. Arable land is of little significance in these regions, except in Vlaams Brabant and West Vlaanderen (Belgium), where root crops are a striking feature of the agricultural landscape. As a rule, the major crop grown on arable land is wheat (common wheat and durum wheat). The regions have nevertheless been classified by type to show where the main cereal crops are grown, even if this does not show all the areas in which a particular cereal is grown. Thus, if rye is shown as a key crop in a region, it does not mean that wheat is not grown, but simply that the average figures for rye are very significant in relation to the European average.



Map 2.4

* See methodological note, p. 37

Europe is divided into three main areas.

In **southern Europe**, durum wheat (semolina, pasta, etc.) and maize can be grown. Maize dominates farther north because it needs less sun and makes better use of water resources (rainfall, irrigation). A combination of exposure to sun and water make it a significant crop in Západné Slovensko, Niederbayern, Alsace and Poitou-Charentes. Its presence in Flanders can be explained by the limited cultivation of cereals which was mentioned earlier (root crops).

In **northern continental Europe,** it is common wheat which dominates, especially in the west and in the United Kingdom. It is a primary crop in the North-East (United Kingdom) and Groningen (Netherlands) in the north, La Rioja (Spain) and non-Danubian Bulgaria in the south. It shares the land with rye, a less demanding crop, in the east and the north. It is a cereal which is particularly grown in an area stretching from Weser-Ems (Germany) to Stredné Slovensko and Latvia.

In **northern Europe**, including Ireland and the east of Great Britain, barley — especially for malting — is a major cereal crop. Barley is also significant, for malting or animal feed, in an area stretching from Luxembourg to Chemnitz and from Detmold to Tübingen.

The Iberian peninsula is marked by the cultivation of barley (Spain) and rye (Galicia in Spain, Norte and Centro in Portugal).

Rice (Algarve, Guyane) or oats (Itä- and EtalSuomi) can also be relatively important at regional level.

Methodological note:

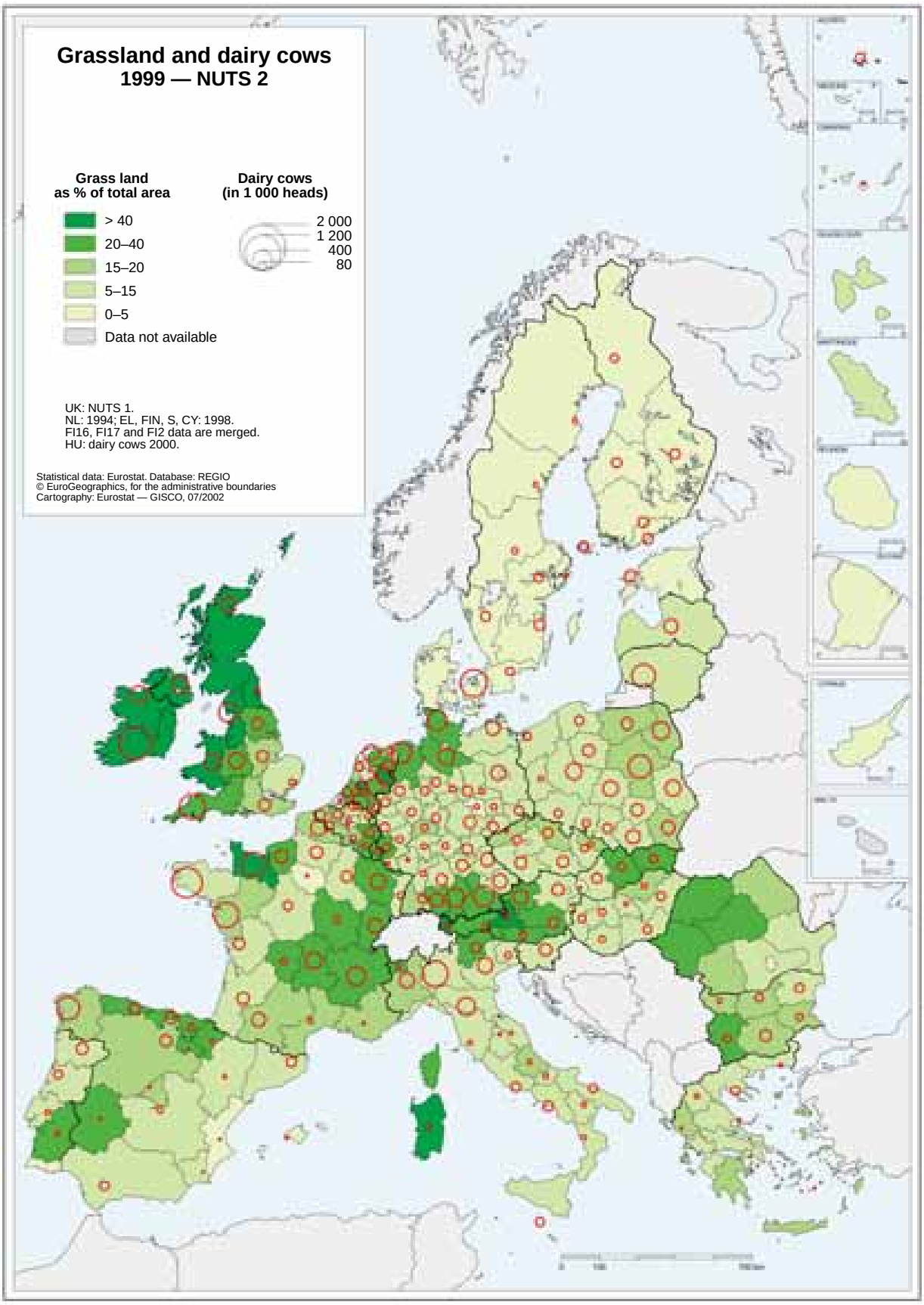
The types indicate to what extent a crop is over-represented in the area under cereals. Say, for example, that maize accounts for 30 % and durum wheat for 20 % of the area under cereals in a region. The average figure for maize in Europe is 15.3 %, and for durum wheat 6.2 %. The maize figure in this region is thus 30 / 15.3 = twice the European average, and for durum wheat it is 5 / 6.2 = 0.8 times the European average. The significance of maize is thus greater than that of durum wheat. This comparison is made for all the cereals shown in the key. The most significant cereal is regarded as typifying the region. The regions shown in blue on Map 2.4 are maize-growing regions, but this does not mean that other cereals are not grown.

Location of cows' milk production

Dairy farming uses two methods of feeding: on grazing land or in stalls. Grazing requires sufficiently productive grassland, while stall feeding needs arable land for the production of fodder (for example fodder maize) or concentrated feed (for example cereals). These feedingstuffs may be bought, but proximity plays a part. Feedingstuffs also include cake or other supplements. Dairy farming can also be conducted on farmland that is split up or restricted in size.

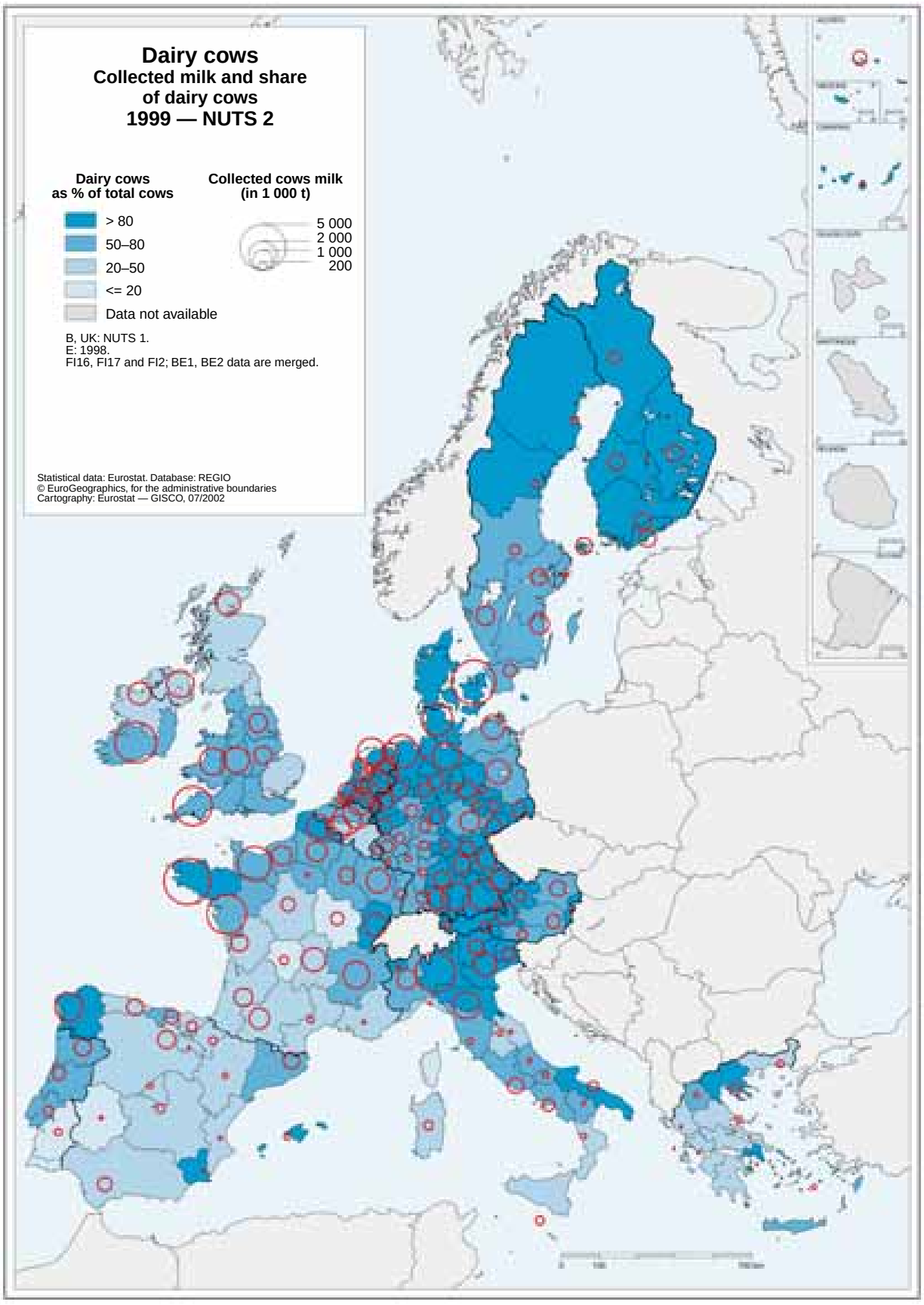
These four components (grass, arable land, feed purchases, land-ownership structure) help to explain the location of dairy cattle (Map 2.5) and milk production (Map 2.6).

Also, collection of cows' milk is profitable if dairy farmers concentrate production in the same area. This last component makes analysis possible at regional level, even if dairy areas are not always of this size.



Map 2.5

These resources also form the basis for other forms of agricultural production, with which dairy farming shares the farmland. Some more extensive types of production are better suited to open areas or lower production potential, for example on meadowland (beef cattle, sheep) or arable land (field crops). Other types of more intensive farming do not compete directly with



Map 2.6

cattle for use of the land. This is the case of off-ground production, whether of livestock (pigs and poultry) or crops (permanent crops and horticulture). Dairy farming in the European Union is thus concentrated particularly where the mix of area under grass and arable land combines with proximity to main roads or favourable land-ownership conditions. In the candidate countries,

location has not depended on profitability and competition. Geographical distribution is more even as not all large dairy production concerns have managed to cope with the change to the market economy.

This technical clarification explains why dairy herds are concentrated in the wetter areas of western Europe, especially in Denmark and in Schleswig-Holstein, Lüneburg, Weser-Ems, Drenthe, Friesland, Utrecht, Overijssel, Gelderland, Noord-Brabant, Basse-Normandie and Bretagne. Dairy farming occurs in a more random pattern in mountain areas, where it has to share grassland with other types of cattle farming, as in Principado de Asturias, Northern Ireland, Wallonie, Auvergne, Border, Midland and Western. When the size of holdings prevents extensive farming, dairy farming is nevertheless still predominant. The fact is that the production of cows' milk is marginal only in the Mediterranean area (where sheep and goat milk production to some extent make up for this absence), in areas solely used for major crops and in northern European areas (where the land is little used for any kind of agriculture).

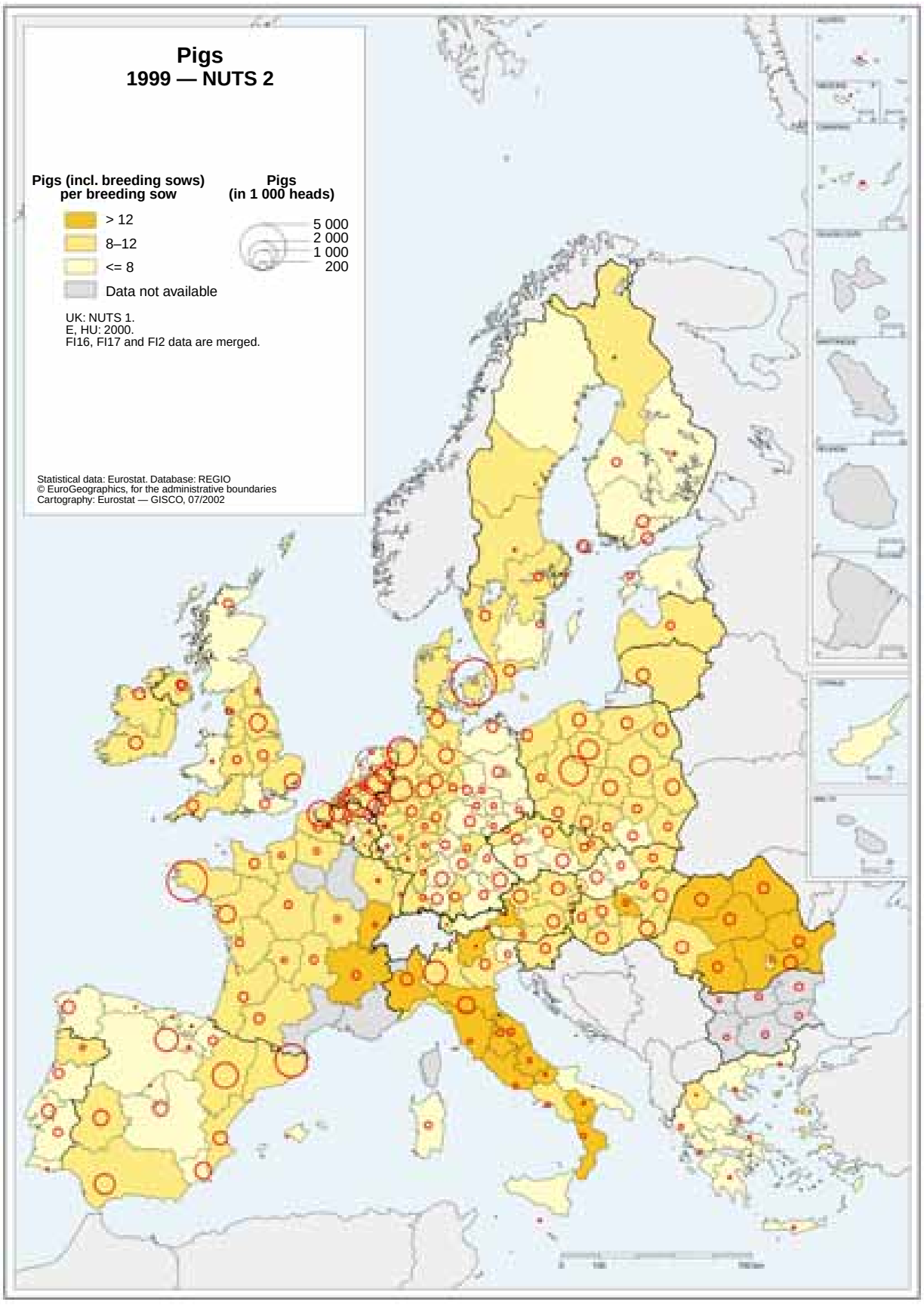
Milk production is similar in distribution, but the discrepancies are greater. Economies of scale in milk-producing areas boost productivity via factors such as know-how, land-ownership structure, advances in genetic techniques, local presence of suppliers (feed) and customers (dairy industry) for dairy farming. This applies more to rationalised dairy farming (Brittany and the Netherlands) than to mountain farming (Schwaben, Bayern).

Pig farming very localised

The location of grain-fed livestock (pigs and poultry) is bound by similar constraints. Reliance on grassland for spreading effluent has become significant only recently. A more important factor is the proximity of centres for consumption or export. For historical and cultural reasons, poultry farming tends to be located in southern Europe and pig farming in the north.

Pig herds are thus very concentrated. Half of the dairy cows in the regions with the highest density can be found on 13.2 % of the territory. The figure is 6.5 % in the case of pigs. Denmark, the Netherlands, Belgium and Brittany alone account for a third of Community pig herds (Map 2.7).

The number of pigs per sow reflects the duration of fattening rather than numeric productivity (number of piglets produced by each sow). The figure is thus higher in Romania, Italy and the Alps.


Pigs
1999 — NUTS 2
Pigs (incl. breeding sows) per breeding sow
> 12
8–12
<= 8
Data not available
Pigs (in 1 000 heads)
5 000
2 000
1 000
200
UK: NUTS 1.
E, HU: 2000.
FI16, FI17 and FI2 data are merged.
Statistical data: Eurostat. Database: REGIO
© EuroGeographics, for the administrative boundaries
Cartography: Eurostat — GISCO, 07/2002

Map 2.7

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3

REGIONAL GROSS DOMESTIC PRODUCT

Introduction

The economic development of a country or region is often expressed in terms of its gross domestic product (GDP) or gross national product (GNP) ([3]). These indicators are also frequently used as a basis for comparisons between countries and regions. What, exactly, does this mean? And how can this comparability be established for regions of different size and different currencies?

Gross national product is a comprehensive term indicating the value of the economic performance of the domestic economic entities of a region or country over a reporting period. GNP is closely related to national income, from which it differs in that it still incorporates fixed capital consumption and indirect taxes minus subsidies. It thus represents the value of all goods and services produced in a given period. Gross domestic product, on the other hand, measures the economic performance achieved within national or regional boundaries, regardless of whether this was attributable to domestic or foreign economic entities.

At regional level, the only term which is available is 'gross domestic product' even though this is linguistically imprecise, since, strictly speaking, the word 'regional' should be used instead of 'domestic' in this context. Nevertheless, because the concept of 'regional gross domestic product' has now become established, this is the term we propose to use throughout.

One aspect of regional statistics is particularly important, namely the distinction between an individual's place of residence and place of employment. This problem hardly arises at national level in view of the very small percentage of 'cross-border workers'. In the regional context, however, it is entirely normal to live in one region and work in another, that is to 'generate' domestic product in the other region also. It is therefore important to recognise that regional GDP relates to the place of employment and not to household location. This is significant for, say, comparisons with other regional variables; for example, regional unemployment can be related only to an individual's place of residence. An individual is unemployed in his place of residence, since employment is determined by the place of work.

Regions of differing size achieve different GDP levels. Since a comparison is not initially possible, a solution is generally found by indicating GDP per inhabitant of the region in question. Here, too, the distinction between place of residence and place of employment is important, since reference to GDP per inhabitant is only straightforward if all employees engaged in generating this value are also residents of the region in question. Otherwise, regional GDP per inhabitant can be extremely high, particularly in such economic centres as London or Vienna, and relatively low in the surrounding regions, even if these are characterised by high household purchasing power or disposable income. Regional GDP per inhabitant should not, therefore, be equated with regional disposable income.

As has already been pointed out, regional GDP represents a 'cash value'. Consequently, international comparability can be achieved by converting national currencies into euro or another currency. Of course, the exchange rates will not reflect all international price-level differences, a fact that can generally be observed even on holiday. Such differences often remain, even after conversion to a single currency. The following example highlights the significance of this situation for regional GDP. Two regions with the same population each produce an identical machine and exactly the same consumer goods. If the economic strength of the two regions is compared, a suitable indicator should provide an equally accurate classification of both. Since, however, regional GDP is a value indicator, existing price-level differences would produce different GDP totals. Thus, both wages and prices could be lower in one region than the other — naturally after conversion into euro. In order to correct this imbalance, GDP is converted into so-called purchasing power standards (PPS) which eliminate the price-level differences that are not reflected in exchange rates and, as a result, allow a comparison based on units of volume or goods units rather than values.

The technical details of the Eurostat estimation procedure in respect of regional GDP were outlined in the last yearbook, the REGIO reference guide and the relevant 'Statistics in focus'. A thorough description will not, therefore, be provided here.

Snapshot of regional GDP

Before examining the regional distribution of GDP, the significance of these variables requires further comment.

High GDP is commonly equated in public discussion with a high degree of prosperity, the general view being that national welfare increases in line

([3]) In the European system of accounts (ESA 95), now represented as gross national income.

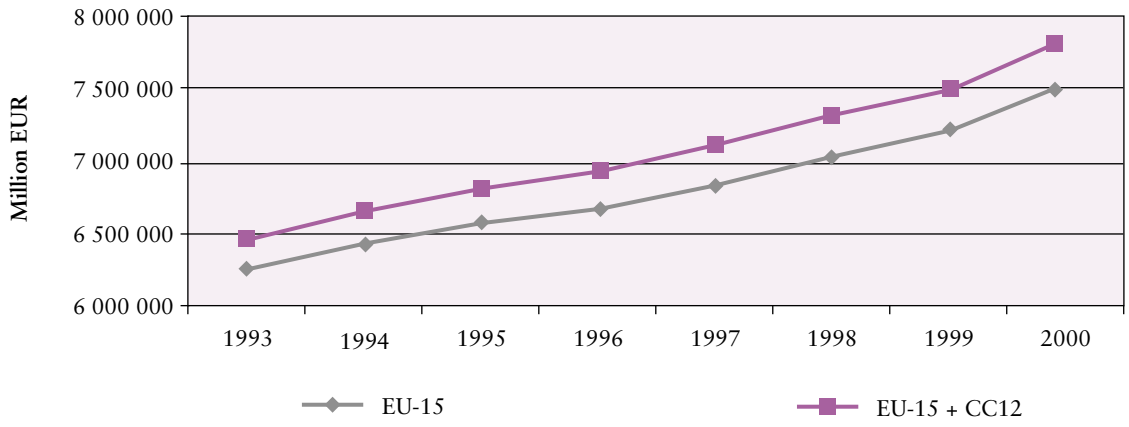
with rising GDP. In this connection, it should be noted from the outset that this measure of output provides no indication of the particular goods and services produced. Thus, it is irrelevant to GDP whether or not an article was produced by environmentally friendly means. Natural disasters will generally increase GDP, since the need, for example, to rebuild houses that have been destroyed will boost output.

To sum up, it can be said that, whilst regional GDP constitutes a relatively poor indicator of the affluence, welfare, prosperity or wellbeing of a regional population, it remains the best currently available measure.

The Eurostat regional statistic is based on the NUTS regional classification. Regional GDP data are currently available as far down as level 3, which covers a total of 1 093 EU regions and 200 candidate country regions. This publication focuses exclusively on analysis at level 2, covering 211 EU and 56 candidate country regions.

Pan-European developments will be examined briefly, prior to a more detailed consideration of the regional aspect. For this purpose, the EU will be treated as a unit in conjunction with the candidate countries. If inflation is left out of the equation, i.e. assuming constant prices, the following picture emerges. In terms of GDP, Europe is characterised by steady economic growth. At the same time, the candidate countries will account for only a small proportion of total GDP in an enlarged European Union.

Graph 3.1 — GDP in constant prices: European Union and candidate countries



Map 3.1 provides a graphic breakdown of the distribution of regional GDP — now measured in current prices — throughout Europe.

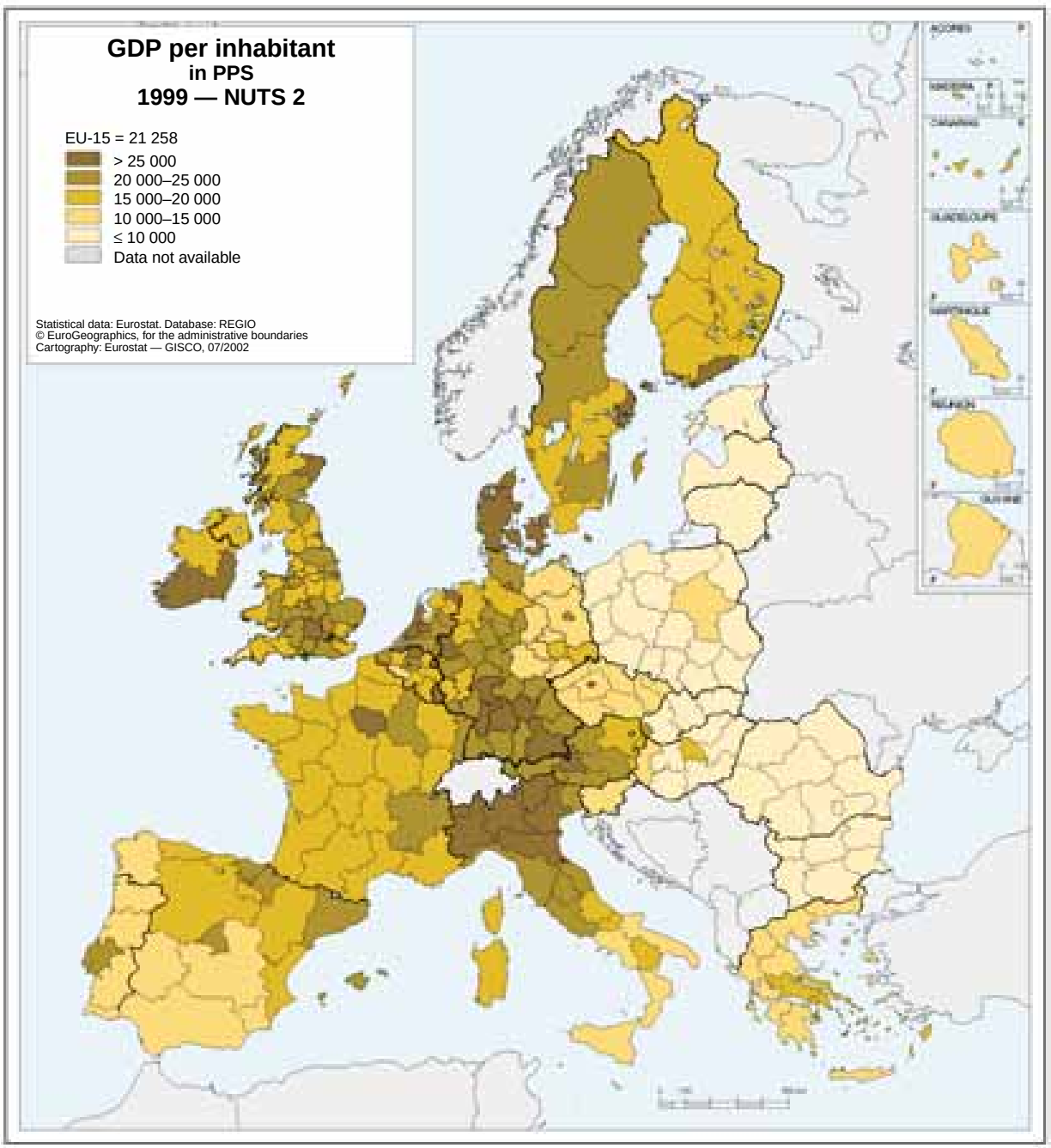
In 1999, per capita GDP in the 211 EU regions examined ranged from 10 846 PPS in the French Overseas Department of Réunion to 51 392 PPS in Inner London. This means that the value in the region with the highest per capita GDP was nearly five times greater than in the region with the lowest. The values quoted represented 51 % and 242 % respectively of the EU average of 21 258 PPS.

The second-lowest value, 10 908 PPS or 51 % of the EU average, was recorded in the Greek region of Ipeiros. Extremadura in Spain, the Portuguese Azores and French Guyana showed similar low values.

In the period under consideration, there were 46 regions with a per capita GDP in PPS of less than 75 % of the EU average. These included 10 of the 13 Greek regions and 6 of Portugal's 7 regions. The French Overseas Departments and 7 of the 18 Spanish regions also formed part of this group. The remaining regions were mainly located in Germany (8 in the new Federal *Länder*) and Italy (5). There was also one region in Austria (Burgenland) and three in the UK (Cornwall & Isles of Scilly, West Wales & The Valleys and Merseyside).

In 1999, these 46 regions had a population of approximately 66 million, representing roughly 17.5 % of the EU total.

The Inner London region had by far the highest per capita GDP in 1999. Regions such as Hamburg, Darmstadt and Oberbayern in Germany, the Grand Duchy of Luxembourg and the Belgian



Map 3.1

and Austrian capitals, Brussels and Vienna, were also significantly above the European average (with values between 147 % and 217 %). With the exception of the Darmstadt region, which includes Frankfurt am Main, commuting has a significant impact in these regions (see introduction).

In 1999, the highest per capita GDP was more than twice the lowest in seven of the 13 Member States incorporating NUTS-2 regions. Examples included Belgium (Brussels: 217 % of EU average, Hainaut: 69 %), Germany (Hamburg: 183 %, Dessau: 63 %), France (Île-de-France: 154 %, Réunion: 51 %), Italy (Trentino-Alto Adige: 136 %, Calabria: 63 %) and Austria (Vienna: 150 %, Burgenland: 71 %). The difference was smaller in Sweden (89 % in Västsverige and 133 % in Stockholm).

If Inner London were to be excluded because of its extremely high value and the region with the second highest value (131 % in Berkshire, Buckinghamshire and Oxfordshire) considered instead, there would be no difference between the UK and the majority of the other Member States. In all cases, the gap at the top of the ranking is smaller; in Germany, for example, the value of the Darmstadt region (147 %) was not far below that of Hamburg (183 %).

A comparison of the average 1997–99 values with the most up-to-date 1999 figures reveals that the three-year averages do not always reflect the

current situation. In at least 32 of the 211 regions examined, the difference between the two values was never less than two percentage points. In 20 of these 32 cases, moreover, the average value exceeded the 1999 figure, indicating relatively poor economic development by comparison with the EU as a whole. In this connection, it is noticeable that the majority of these regions are located in Belgium and the United Kingdom.

In the other 12 regions, the average three-year value was below the 1999 figure, suggesting that the average approach tends to confirm current developments. Interestingly, these regions are distributed throughout the EU. This group included the two Irish and four Spanish regions.

There were also differences in the per capita regional GDP of the candidate countries in 1999, with five regions falling outside the reference framework. In an otherwise fairly regular distribution, average GDP was 26 358 PPS in the region of the Czech capital, Prague, and 20 286 PPS in the Bratislava region of the Slovak Republic. These figures correspond to 124 % and 95 % of the EU-15 average respectively. The values for Cyprus and the region around the Hungarian capital, Budapest, are also equivalent to or above 75 % of the EU-15 average. Slovenia (68 %) is only slightly below that figure.

If the trend in per capita GDP is compared with the 1997–99 average, most capital regions are seen to be in the process of catching up. In Bulgaria, the Czech Republic, Hungary and Poland, in particular, the 1999 values are above the 1997–99 average. This suggests a strong trend towards the economic centres.

Some countries reveal considerable regional differences in GDP levels; for example, the figure for Prague is 2.5 times higher than that for Stedni Morava, the poorest Czech region. A similar discrepancy characterises the values for Bratislava and Vychodné Slovensko, the poorest part of the Slovak Republic. The Baltic countries, which are treated as a level 2 region in this publication, show the following values in relation to the average: Latvia, 29 %, Lithuania, 33 % and Estonia, 37 %.

Trends in regional GDP

The preceding chapter provided a 'snapshot' of a given year with a view to comparing economic activity levels in the regions examined.

In addition to the value of such a cross-sectional approach, regional developments over time merit attention and, in this connection, certain preliminary remarks are called for.

Firstly, the level of the variables involved, in this case regional GDP, must never be ignored in considering growth rates. Whilst a high regional GDP growth rate is generally perceived as a favourable development, some qualification is necessary if the growth proceeds from a low starting point.

Secondly, the components of this temporal development must be clearly identified, since they repeatedly give rise to misunderstandings in individual cases. The combination of effects initially produces implausible results.

The growth rate of per capita regional GDP in PPS is made up of four elements:

(a) Nominal growth which, strictly speaking, should be converted to real growth by means of regional deflators. However, since such regional deflators are not currently available, an adjustment of this sort cannot be performed.

(b) Changes in the exchange rate between national currencies and the ECU/EUR.

(c) Changes in the conversion rate between ECU/EUR and the PPS.

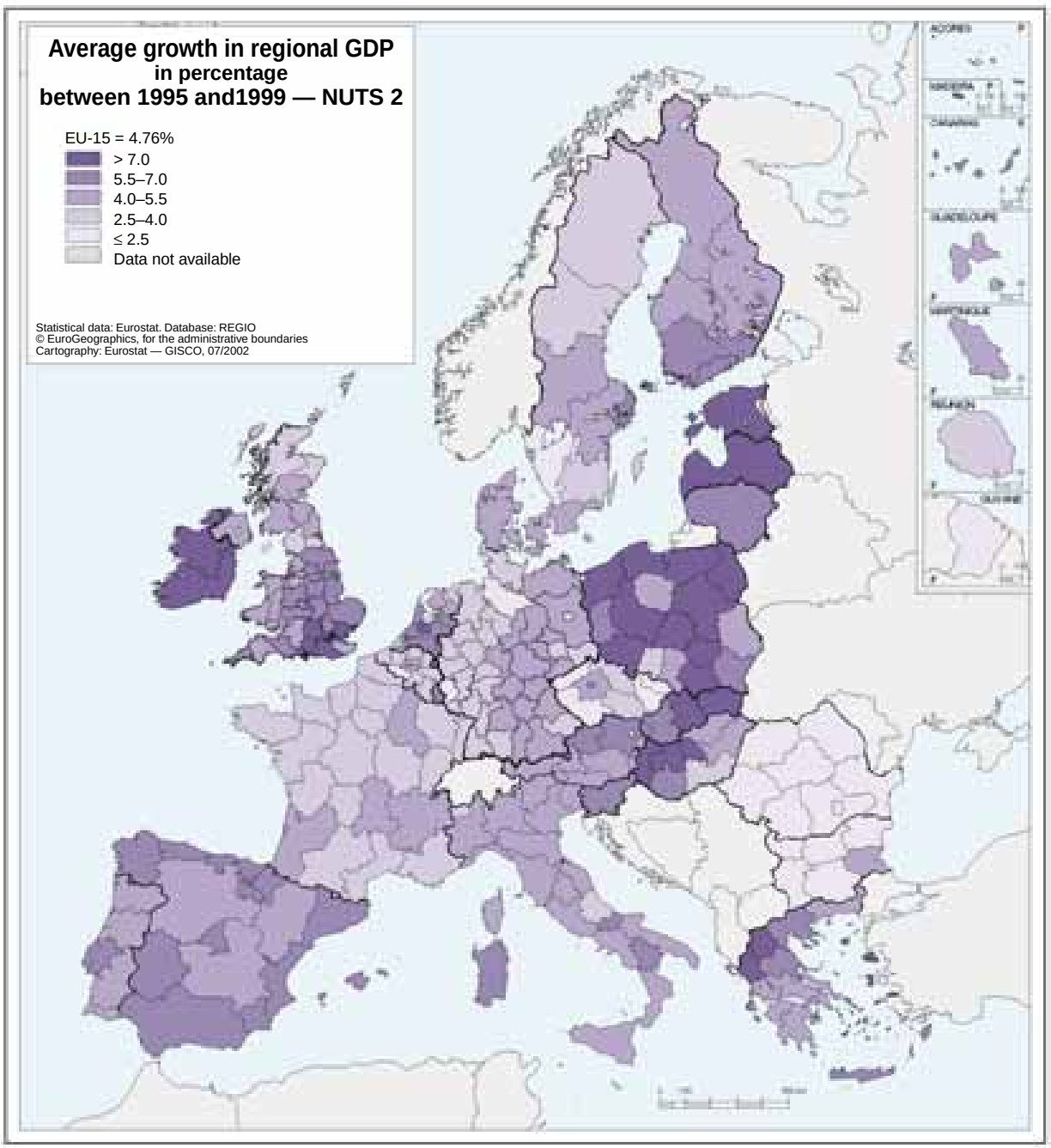
(d) Changes in population structure.

With all these reservations, the following picture of regional GDP trends emerges:

There are unmistakable signs of high growth in certain peripheral areas, such as Ireland and southern regions of the UK in the west. Whilst the Iberian Peninsula cannot quite match these levels, its growth is also satisfactory. The most prominent eastern regions include parts of Poland, Hungary, Estonia and Latvia, with annual growth of more than 7 %. A similar situation obtains in parts of Finland in the north and Greece in the south.

By contrast, growth is weak in Bulgaria and Romania. In the centre, also, growth tends to be below average in Germany and France, although their high GDP levels should not be ignored. In the central EU, the Netherlands and Luxembourg have clearly achieved quite successful growth rates.

To sum up, Europe can be said to be characterised by increasing economic balance. With the exception of Bulgaria and Romania, this is also true of the candidate countries. Of course, this trend also bears out the economic theory of diminishing marginal returns. It is generally more difficult to maintain high growth rates once high levels have been achieved.



Map 3.2

A measure of regional disparity

Method

An initial superficial analysis of GDP trends appears to indicate a reduction in regional disparity. This section presents another method of measuring such disparity in which analysis is based on the 'coefficient of variation'. Since this is a rather specialised concept, a brief description of the method will first be provided.

The coefficient of variation is defined as the quotient of the standard deviation and the average value. It is, therefore, a dimensionless measure of dispersion which is frequently used in statistics.

All the available NUTS-3 data are used to calculate these variables in the present case. The coefficient of variation is determined separately for each country.

Since this is the coefficient of variation of a quotient — per capita GDP — the standard formula must be modified to take account of regional size. The formula for regional GDP variance is as follows (y_i represents regional GDP in PPS and x_i represents the regional population):

$$Var\left(\frac{y_i}{x_i}\right) = \sum_i \left(\left[\frac{y_i}{x_i} - \frac{\bar{y}}{\bar{x}}\right]^2 * \frac{x_i}{\sum x_i}\right)$$

where $\bar{y}$ and $\bar{x}$ indicate the averages of y_i and x_i. y_i and x_i relate to region *i*.

The coefficient of variation is now calculated from the quotient of the roots of the variance, which is also known as the standard deviation, and the average regional GDP: $\sum y_i / \sum x_i$

Table 3.1 — Coefficient of variation of regional GDP, based on NUTS-3 regions

	1995	1996	1997	1998	1999
B	38.4	39.4	39.2	39.6	39.5
DK	27.8	26.4	26.7	27.7	27.6
D	42.3	42.5	42.9	43.6	44.0
EL	23.3	25.0	22.6	22.2	22.0
E	22.2	22.4	23.0	23.5	23.7
F	41.2	41.7	42.0	41.3	41.3
IRL	20.7	21.5	23.8	23.6	23.7
I	29.7	29.7	29.3	29.5	29.2
NL	20.4	21.5	22.0	22.5	22.4
A	29.3	28.9	28.2	27.5	27.4
P	36.6	36.8	35.9	37.1	37.3
FIN	21.6	23.3	22.1	25.0	25.7
S	13.0	14.1	16.1	17.0	16.5
UK	49.3	48.6	49.3	51.0	50.1
BG	33.2	33.0	25.4	26.6	33.3
CZ	31.0	29.5	33.0	38.2	40.7
EE	39.3	39.8	43.4	46.1	45.2
HU	40.5	42.7	43.8	43.9	46.0
LT	13.0	13.1	15.0	19.7	23.8
LV	29.0	29.2	34.8	42.5	53.5
PL	39.3	42.1	42.9	45.8	50.9
RO	20.5	22.3	23.8	24.7	24.7
SI	19.4	19.2	19.4	19.4	20.4
SK	37.9	37.9	40.5	39.1	37.3

Graph 3.2 — Coefficient of variation: based on NUTS-3 regions, 1995–2000

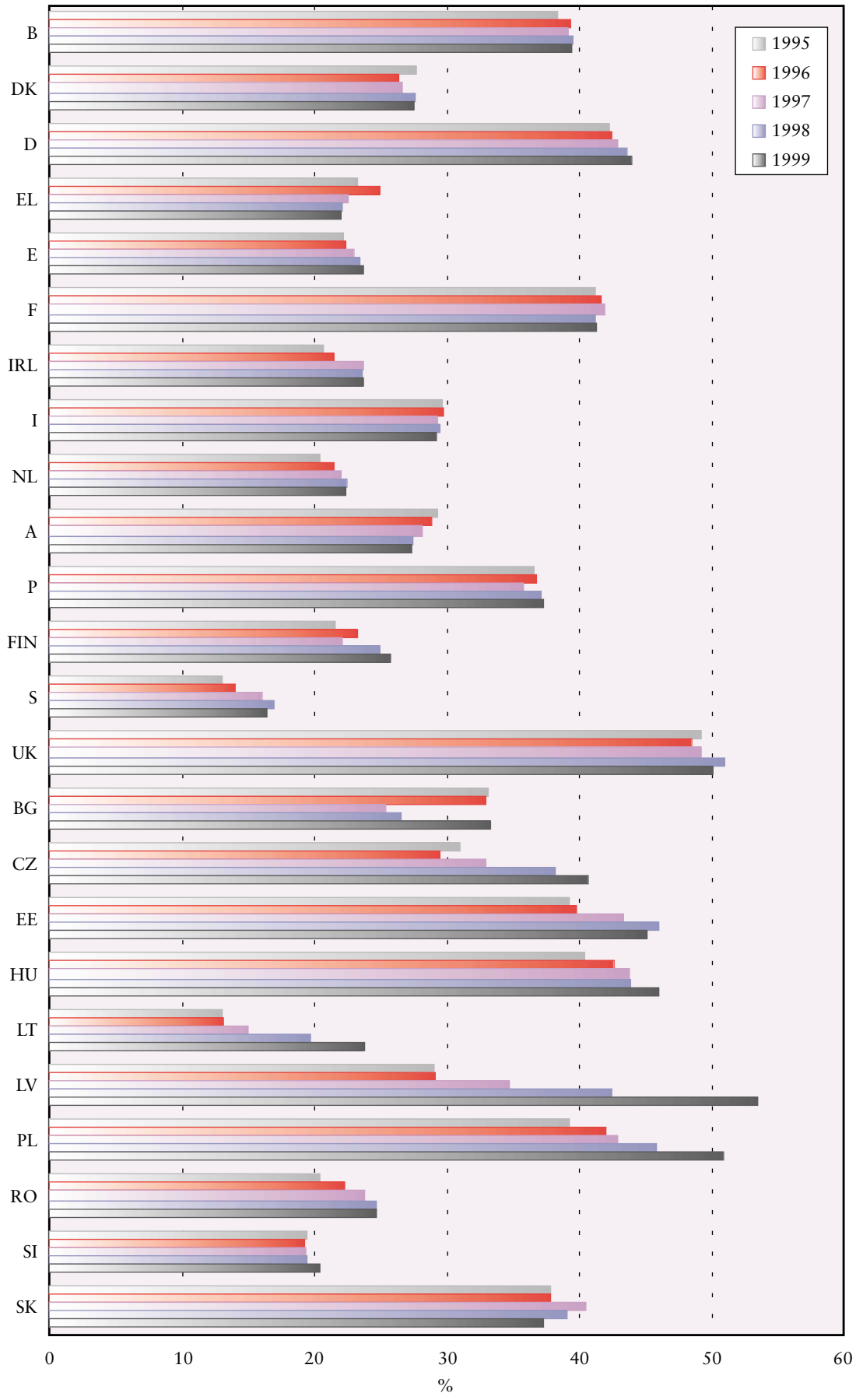


Table 3.1 and Graph 3.2 lead to the following general conclusion. Regional disparity as measured by the coefficient of variation has decreased in only a few cases since 1995, having generally remained constant or even increased. Since the coefficient of variation is dimensionless, i.e. independent of the average, any increase cannot be explained by a rising average.

If this time series is considered to be subject to certain statistical variations, neither a significant increase nor a significant decrease can be said to have occurred in recent years. The coefficient of variation is seen to remain extremely steady. This is true even if NUTS-3 are replaced by NUTS-2 regions. To this extent, there is no evidence of any alteration in regional disparity.

Unicentralism versus multicentralism

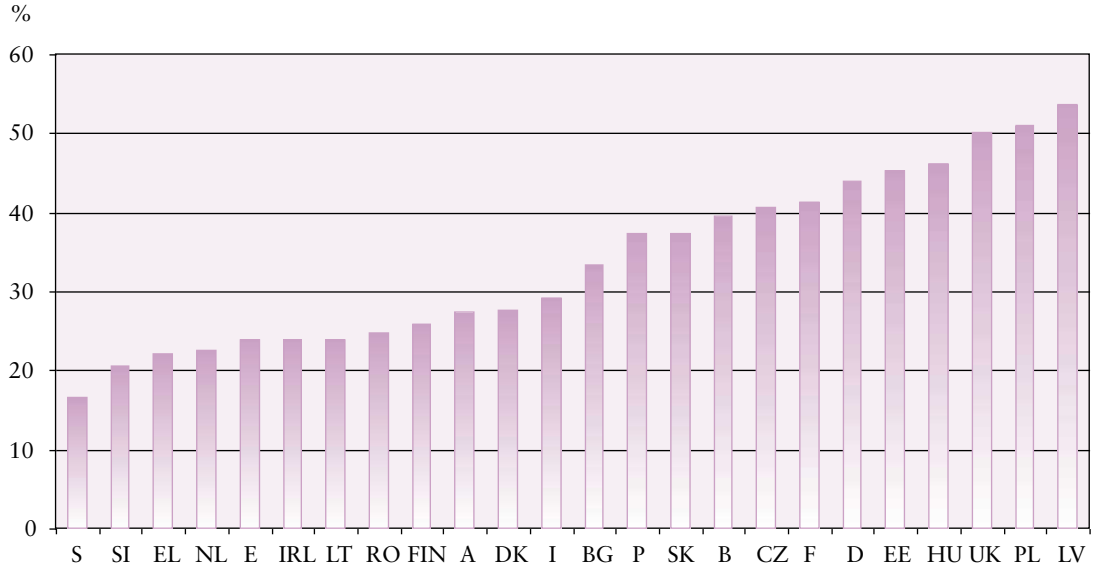
It could be argued that two effects are operating simultaneously in this situation, on the one hand, the increased economic approximation between regions and, on the other, the movement towards the economic centres.

The coefficient of variation makes it possible to examine to what extent it is dependent on the economic centre of a country by eliminating the region with the highest per capita GDP in a second analysis.

If this produces a marked reduction in the coefficient of variation, a single economic centre can be assumed to exist. If there is no, or only a slight, decline after the exclusion of several regions, the country in question has several economic centres and analysis becomes more difficult, requiring a step-by-step approach.

Graph 3.3 lists countries by the value of their coefficient of variation in 1999.

Graph 3.3 — Coefficient of variation, 1999, ranked



Sweden is the only country with a coefficient of variation of less than 20 %. Slovenia, Greece and the Netherlands are also characterised by a relatively uniform regional distribution. The Czech Republic, France, Germany, Estonia, Hungary, the UK, Poland and Latvia show figures in excess of 40 %.

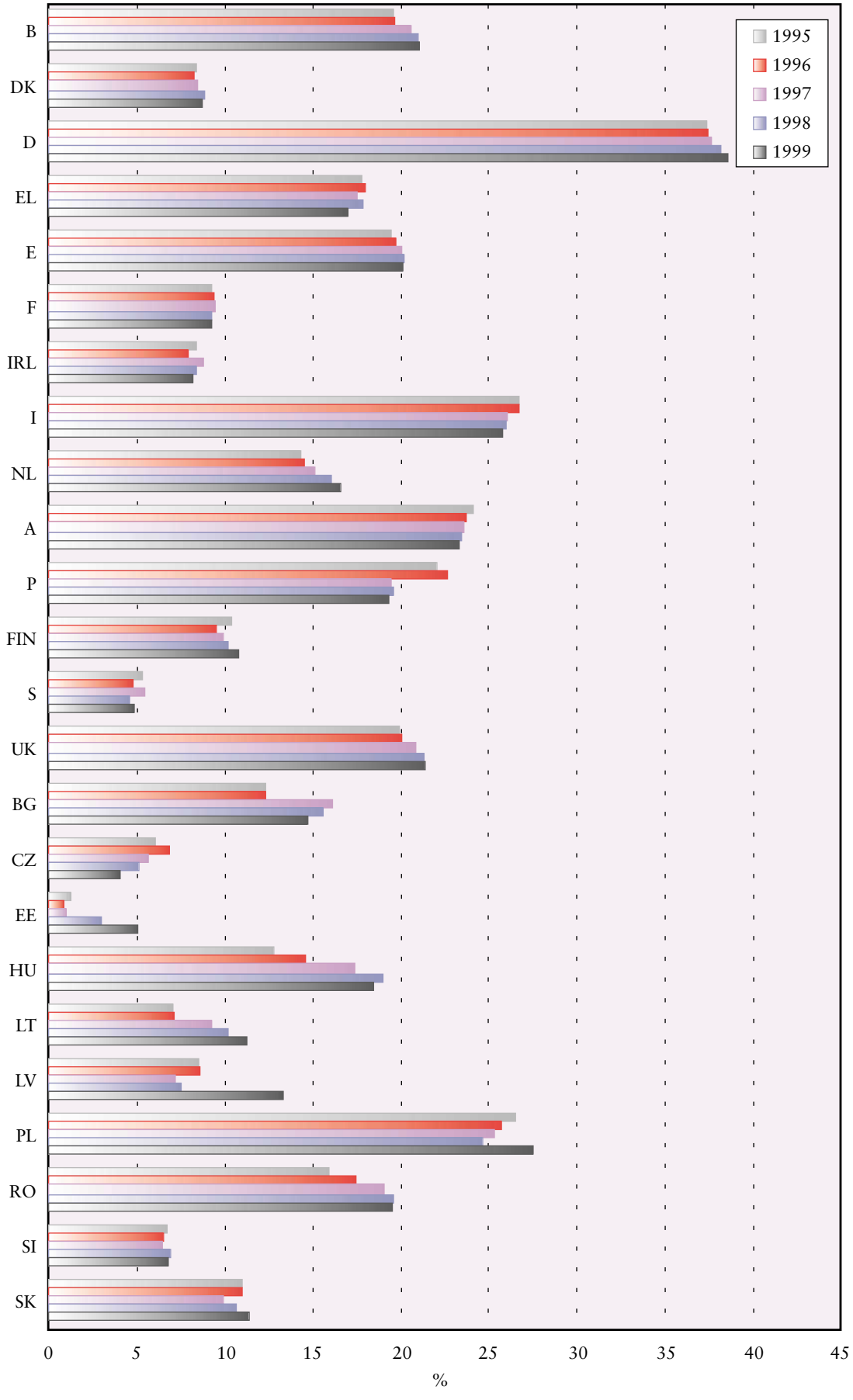
Subsequent elimination from the calculation of the region of each country with the highest GDP, followed by the region with the next-highest GDP, produced the following marked changes.

Graph 3.4 — The effect of the economic centres

With a decrease of more than 50 %, the Czech Republic, Estonia, Sweden, Slovakia, the UK, Finland, Latvia and Hungary head the list of countries in which the coefficient of variation is reduced. The pre-eminent position of the capital is clearly visible. This is also clear looking at these countries in Map 3.1. Like Bratislava and Budapest, Prague occupies a prominent position, Stockholm and Helsinki stand out clearly in their respective national contexts, Tallinn and Riga are important centres in Estonia and Latvia respectively and the role of Inner London has already been described in detail.

At the bottom of the scale come Germany, Spain, Austria and Italy. There, the reduction in the coefficient of variation is less than 10 %, which means that the region with the highest per capita GDP accounts for little of the variance or regional

Graph 3.5 — Coefficient of variation: without economic centres, 1995–2000



disparity. These countries remained at the foot of the table even when another region was also excluded from the calculation in a second stage. Further analysis showed that even splitting Germany into eastern and western confirmed the results, although the regional disparity was lower in the former. Nor did the exclusion of more regions alter the picture, which means that these countries definitely belong to the group of multicentric States.

A reconsideration of temporal trends, disregarding the economic centres, reveals the pure disparity effect over time. This classification is less clear in the case of countries with several economic centres; accordingly, the results should be viewed with caution.

Graph 3.5 was drawn up without reference to the three regions with the highest per capita GDP in each country. Astonishingly, the graph approximates closely to its previous form.

The overall situation can be summarised as follows: in some countries, regional disparity essentially derives from the effect of the economic centre. If this is disregarded, the remainder is characterised by a stable coefficient of variation, at least since 1995, so that the regional disparity remains unchanged. The second group of countries is distinguished by a greater number of economic centres, i.e. the coefficient of variation is hardly affected by the exclusion of economically powerful regions. Nevertheless, constant regional disparity can be observed even here, if this is measured with reference to the coefficient of variation of the NUTS-3 regions.

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REGIONAL UNEMPLOYMENT

4

Introduction

The unemployment rate is defined as the percentage of unemployed persons in the total economically active population. It relates in our case to persons who are at least 15 years old at a certain point in time, and may be broken down further by, for example, gender and age. The youth unemployment rate relates to persons under 25 years of age.

This definition of unemployment is in line with the recommendations of the International Labour Organisation and may therefore differ from the respective national definitions. According to the international recommendations, a person is unemployed if he or she fulfils all of the following three conditions:

— he/she is without a job during the reference week of the survey;

— he/she is available to take up work within two weeks;

— he/she has taken active steps to find work over the past four weeks.

The economically active population is defined as comprising persons in employment and the unemployed. Persons in employment are all persons with jobs during the reference period.

Estimates of harmonised regional unemployment rates are based on the estimates of employed and unemployed persons taken from the Community labour-force survey at national level, in each case for a specific reference date in April. In a second step, the estimated jobless figures are broken down over the individual regions, applying the regional structure of registered unemployed persons or regionally representative results of labour-force surveys. A similar procedure is followed in respect of employed persons, with the regional results of labour-force surveys or the regional structure of the most recent population censuses being used for regionalisation.

Initially, separate estimates are made for the sub-populations comprising women under 25 years of age, women aged 25 and above, men under 25 years and men aged 25 and above. The estimates for employed and unemployed persons in the individual sub-populations are subsequently added together to obtain an estimate of the overall unemployment rate.

Unemployment rates reflect developments on the labour market. Labour-market-related political decisions and general political trends may therefore influence unemployment rates. The smaller the respective sub-population, the more marked these effects will be. One example is the youth unemployment rate: if low demand for labour means that more young people remain at school, the youth unemployment rate will be lower than it would be if these young people were seeking a job. Such effects should always be taken into account when interpreting unemployment rates.

Regional unemployment rate in 2000

In April 2000, the unemployment rate — i.e. the percentage of unemployed persons in the total economically active population — stood at 8.4 % in the European Union. Some national and, above all, regional figures differed significantly from this average.

If we look only at the NUTS-2 regions, the unemployment rate in the regions of the European Union ranges from 1.7 % in the Åland island region of Finland to 33.1 % in the French overseas department of Réunion. For every 100 economically active people, therefore, roughly 19 times as many were out of work in Réunion as in Åland.

Of the 211 regions considered, 50 had an unemployment rate of 4.2 % or less — i.e. less than half the EU average — in April 2000. These 50 NUTS-2 regions were spread across 11 Member States. Only Greece, Spain and France had no NUTS-2 regions with an unemployment rate of or under 4.2 %. This also applies to Denmark. At the other extreme, 17 regions (in Italy, Spain, France and Germany) had unemployment rates of over 16.8 %, at least double the rate for the European Union as a whole.

Particularly striking here are the large differentials between the regions with the lowest and highest unemployment rates in some Member States such as France (5.3 % in Alsace compared with 33.1 % in Réunion), Spain (4.8 % in the Islas Baleares compared with 25.5 % in Ceuta y Melilla) and Italy (3.1 % in Trentino-Alto Adige compared with 27.7 % in Calabria).

The most pronounced changes in the unemployment rate from April 1999 to April 2000 were in four Greek regions. The Anatoliki Makedonia, Thraki region recorded a fall of 4.2 percentage points, and the Voreio Aigaio region a fall of 3.9 percentage points. The two regions with the steepest increases were Notio Aigaio (+ 3.1 percentage points) and Peloponnisos (+ 1.8 percentage points).

In all, approximately 95 % of the NUTS-2 regions experienced a drop in unemployment between 1999 and 2000.

Regional differences in the youth unemployment rate, i.e. the unemployment rate amongst economically active people aged under 25, are appreciably greater than for the general unemployment rate. In April 2000, they ranged from 2.9 % in the Flevoland region of the Netherlands to 64.7 % in the Italian region of Calabria.

Female unemployment rates in the regions of the European Union in April 2000 ranged from 1.7 % to 40.7 %. The lowest value, of 1.7 %, was recorded by Berkshire, Buckinghamshire & Oxfordshire (United Kingdom) and Åland (Finland). The highest figures were recorded by the Italian region of Calabria (40.7 %) and the Spanish regions of Extremadura (37.0 %), Ceuta y Melilla (36.6 %) and Andalucia (35.6 %).

With the harmonisation process not yet complete, the figures available for the EU candidate countries relate to the whole of the second quarter, not just April. The unemployment rate in the second quarter of 2000 in the candidate countries was 12.5 %. The regional figures differed significantly from this average.

Looking again only at the NUTS-2 regions in these countries, the unemployment rate ranges from 3.4 % in the region containing capital of the Czech Republic, Prague, to 31.0 % in the Severozapaden region of Bulgaria. Interestingly, the corresponding figures for the NUTS-2 regions in the European Union are roughly the same, ranging from 1.7 % to 33.1 %.

Clearly, the trends in unemployment in the EU Member States and in the candidate countries ran in opposite directions from 1998 to 2000. Whereas the unemployment rate in the EU countries fell from 10.4 % in 1998 to 9.4 % in 1999 and stood at 8.5 % in 2000, it rose in the candidate countries from 9.1 % in 1998 to 10.4 % in 1999, before climbing to 12.5 % in 2000.

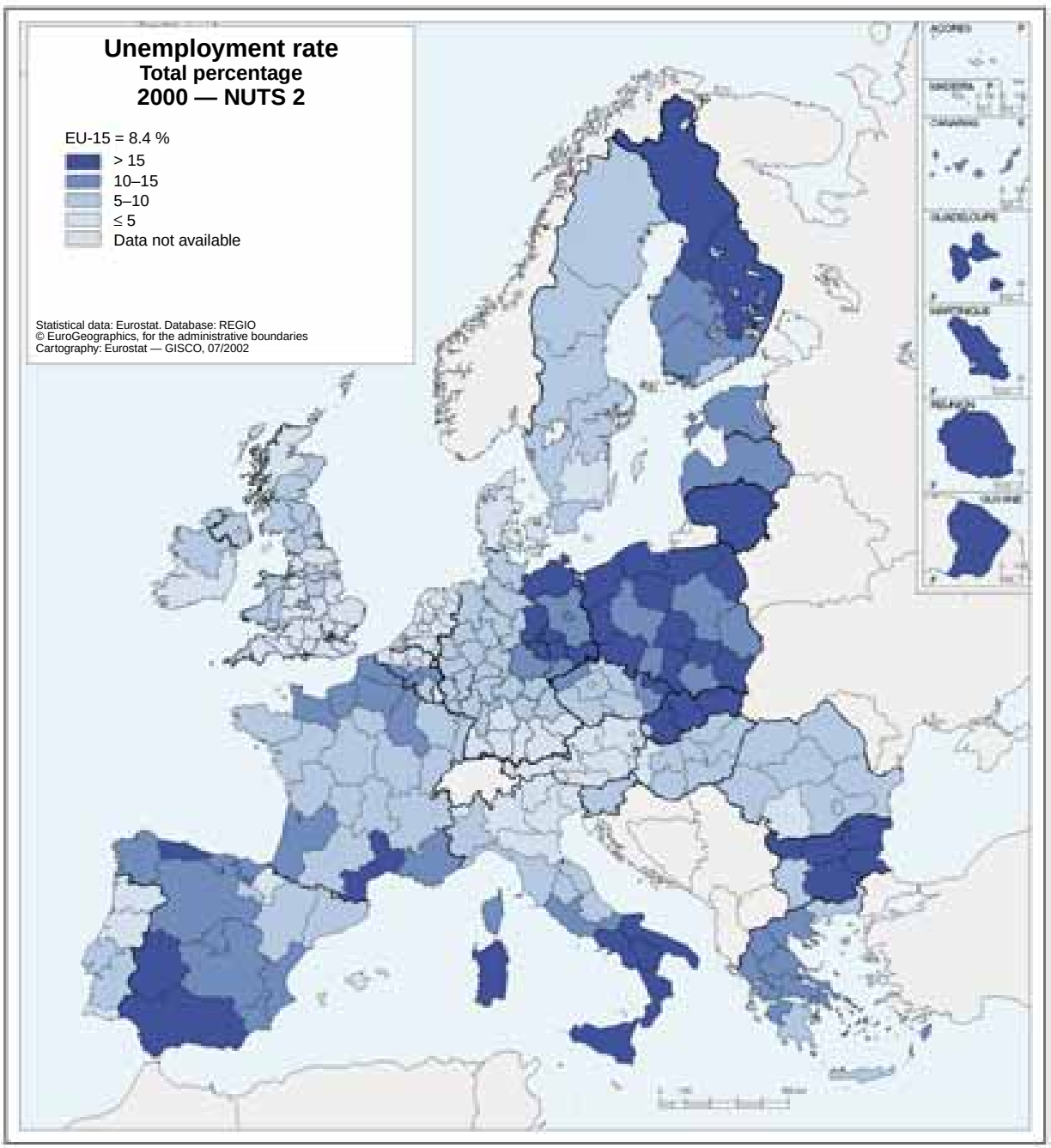
Of the 53 regions examined, two had an unemployment rate of less than 5 %. A further 21 regions posted rates below 10 %. These regions are all in Hungary, the Czech Republic, Romania and Slovenia. The capital regions of Slovakia and Bulgaria also have rates of below 10 %. At the other end of the scale, 10 regions, in Bulgaria, Slovakia and Poland, had unemployment rates in excess of 20 %. This is a substantial increase on the previous year when only four regions posted rates of over 20 %.

Slovakia and Bulgaria show the largest differences between regions. The regional differences are similar to those of the European Union Member States.

The trend at regional level is also to be observed at national level. The overall unemployment rate for these countries rose between 1999 and 2000 from 10.4 to 12.5 %. The change for Latvia, Slovenia, Romania and the Czech Republic was on the small side, and Hungary even recorded a decrease. Estonia, Poland, Slovakia, Bulgaria and Lithuania, on the other hand, experienced an increase, which was most marked in Poland and Lithuania.

The breakdown of unemployment by gender shows that the female unemployment rate is just as high as that for men. Over the same period, female unemployment rates in the NUTS-2 regions of the European Union ranged from 1.7 to 40.7 %, and thus covered a wider span than in the candidate countries. It can be concluded from these figures that the participation of men and women in the labour markets in the candidate countries is more balanced than in the European Union, a situation which may be due to historical factors.

Regional differences in the youth unemployment rate are appreciably greater than for the general and female unemployment rates, as they range from 7.9 % in Hungary's Közép-Dunántúl region to 73.1 % in the Severozapaden region of Bulgaria. This trend is also the opposite of that for youth unemployment within the European Union. Whereas no region in the candidate countries posted a rate of more than 50 % the previous year and the rate was higher than 40 % in only six regions (in Poland, Bulgaria and Slovakia), there are now 12 regions with youth unemployment of over 40 % and two have even topped 50 %. Poland, in particular, has recorded a sharp increase in youth unemployment.



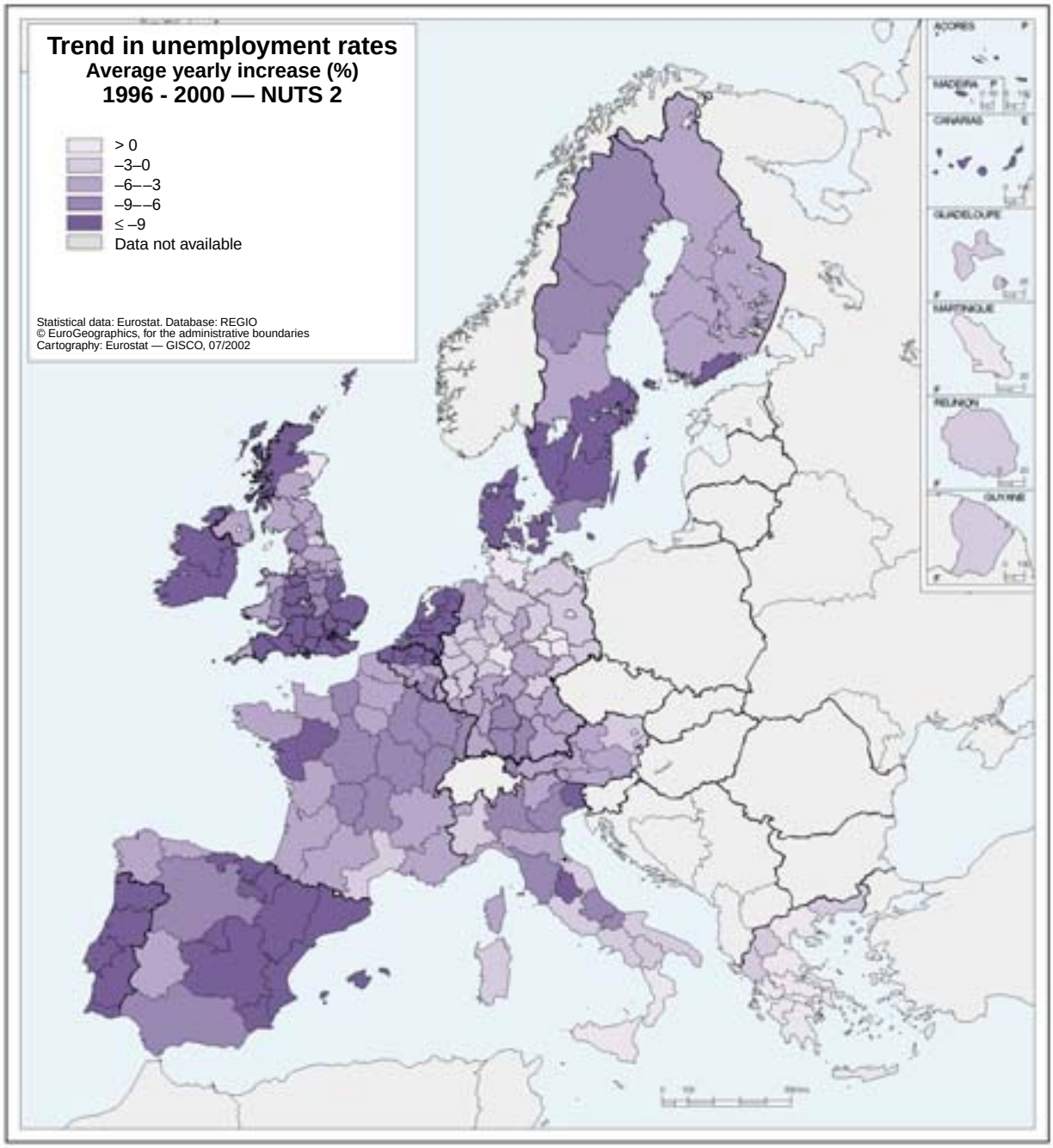
Map 4.1

Regional unemployment rate: trend from 1996 to 2000

Unfortunately, comparable regional data on the labour market in the candidate countries have only existed since 1998 — and for Bulgaria only since 2000 — so an analysis of the time series would not be very informative. This chapter therefore focuses on the regions of the European Union.

On the other hand, there are circumstances in which it is also not very meaningful to conduct an economic analysis of too long a time series, as economic conditions also change dramatically over time. When one also then takes into consideration changes in the regional structure, an analysis spanning a five-year period seems the most appropriate. The average annual growth rate in unemployment was calculated for this period, and in the vast majority of cases — i.e. in 191 out of 211 regions — it can be seen that the unemployment rate has fallen in the last five years.

Map 4.2 shows the average annual growth rate for unemployment.



Map 4.2

Six regions, which are all in different countries, recorded an annual reduction in the unemployment rate of over 20 %. These regions lie in Ireland, Spain, Portugal, the Netherlands, Finland and the United Kingdom. The leader in this field is the Irish region of Southern and Eastern, providing proof once again of Ireland's remarkable economic development in recent years.

It can also be seen clearly on the map that there is a certain concentration of regions which have been successful in combating unemployment. This also applies on a cross-border basis, as shown by the examples of southern Sweden and Denmark and, particularly, the Netherlands and northern Belgium.

Around a quarter of all Europe's regions have still recorded an average fall of over 10 %. in all, 135 regions occupy the middle ground with an average fall in the unemployment rate of between 0 and 10 %.

The average has risen since 1996 in just 20 regions, nine of which are in Greece, seven in Germany, two in Italy, and one each in France and the United Kingdom.

The number of unemployed: trend from 1996 to 2000

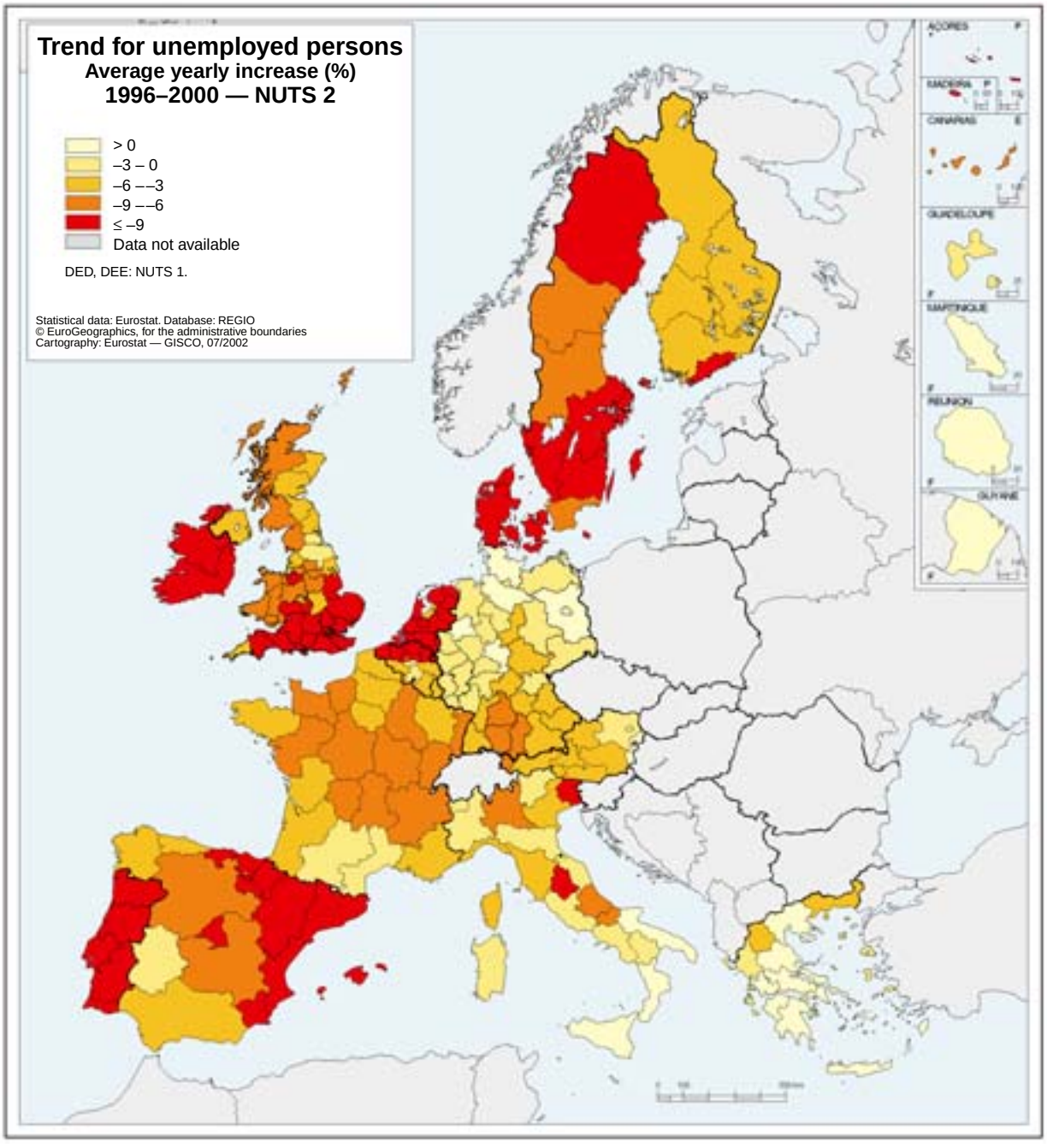
The unemployment rate is made up of the quotients of the number of unemployed persons and the economically active population. It is now of course of interest to look at the two effects in isolation. Was the general fall in unemployment rates caused by a fall in the number of unemployed persons, or has the economically active population risen so sharply? Here too, the issue of regional differences comes into play.

Map 4.3 shows the average annual growth rates for the number of unemployed persons.

Map 4.3 displays a remarkable similarity to Map 4.2. The six regions which topped the table for falling rates also head the list of those where the number of unemployed persons has fallen.

From this perspective, there are no spectacular results to report, as the fall or rise in unemployment can basically be explained by a fall or increase in the number of unemployed persons. The regional model is strikingly similar.

The following map should highlight those regions where there has been a major change in the economically active population.



Map 4.3

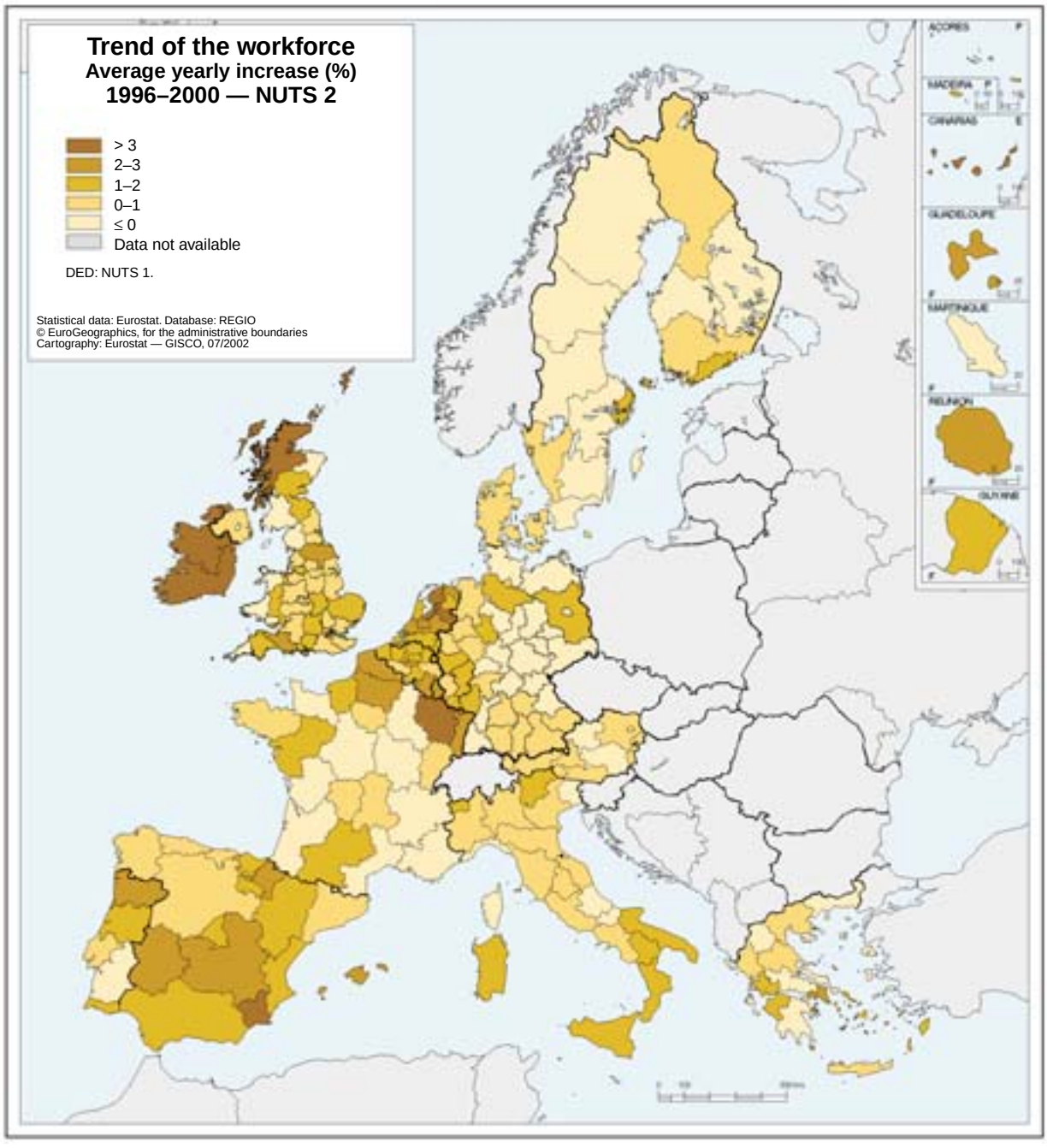
The economically active population: trend from 1996 to 2000

Map 4.4 shows the average annual growth rates in the economically active population.

It can be seen from this map that some regions show a sharp increase in the economically active population, leading to a further reduction in the unemployment rate. This is again especially the case with the two Irish regions, but the leading group also includes seven regions in both Spain and the Netherlands.

Surprisingly, six French regions also feature amongst those which show an increase in the economically active population. The reduction in the number of unemployed persons is not, however, so pronounced, which indicates that there are parts of France where the fall in the unemployment rate is largely explained by the increase in the economically active population.

The top two regions in terms of growth in the economically active population are, on the other hand, the Scottish Highlands and Islands region and Flevoland in the Netherlands.



Map 4.4

Social cohesion

Methodology

This section considers a possible method for measuring regional cohesion. As is the case with regional GDP, the analysis will be conducted using the coefficient of variation.

The coefficient of variation is defined as the standard deviation divided by the arithmetic mean. It is a dimensionless measure of dispersion, which is often used in statistics.

In our case, all the available NUTS level 3 data are used to calculate these variables. The coefficient of variation is calculated separately for each country.

Since this coefficient of variation deals with a quotient — the unemployment rate — the standard formula has to be modified to take account of the size of the regions. The formula for the variance in the regional unemployment rate (where y_i stands for the number of unemployed per region and x_i stands for the regional economically active population) is thus:

$$Var\left(\frac{y_i}{x_i}\right) = \sum_i \left(\left[\frac{y_i}{x_i} - \frac{\bar{y}}{\bar{x}}\right]^2 * \frac{x_i}{\sum x_i}\right)$$

whereby $\bar{y}$ and $\bar{x}$ are the averages of y_i and x_i. y_i and x_i refer to region *i*.

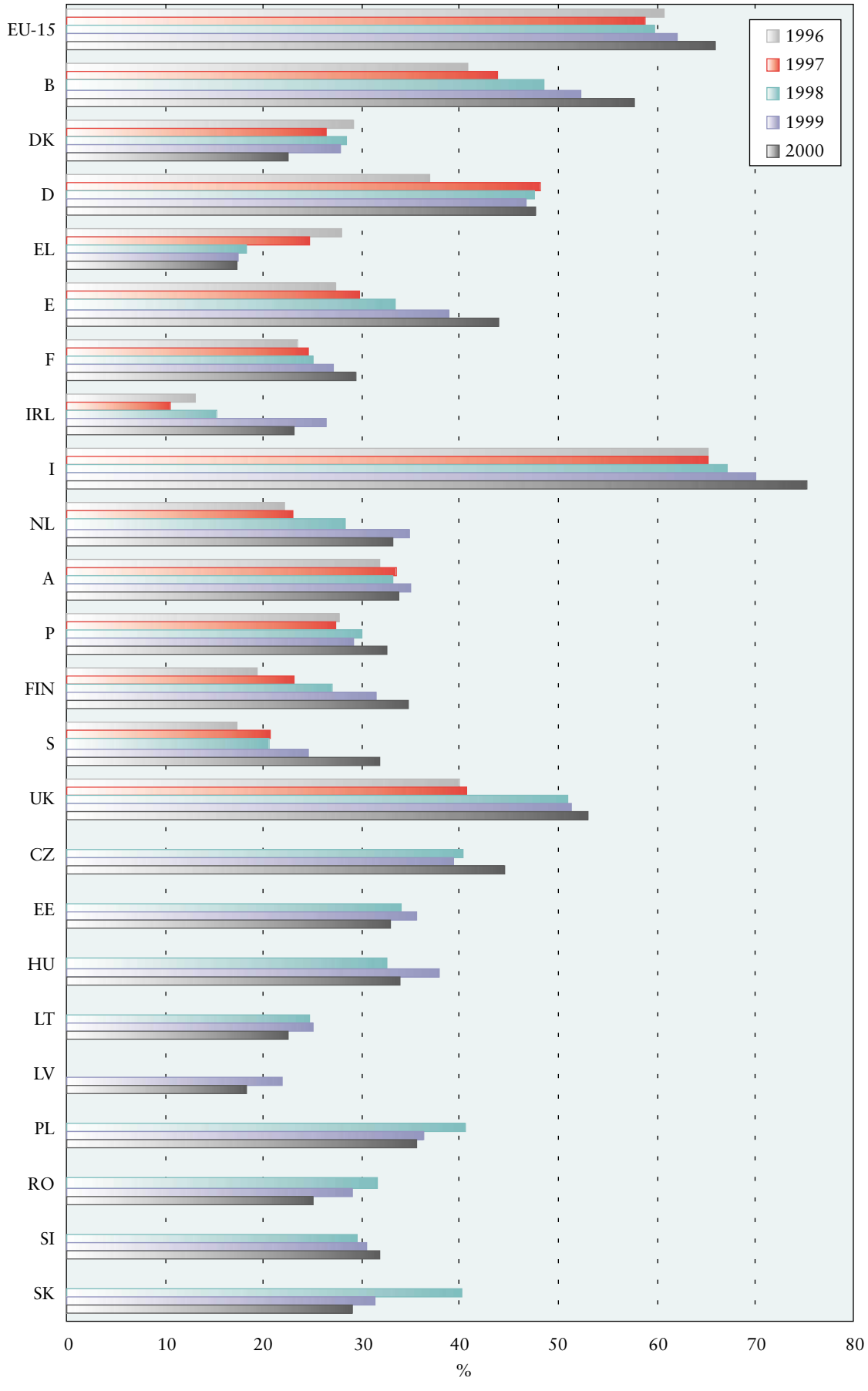
The coefficient of variation is now calculated from the quotient of the square root of the variance, which is also known as the standard deviation, and the average regional unemployment: $\sum y_i / \sum x_i$

Table 4.1 — Coefficient of variation of regional unemployment, based on NUTS-3 regions

	1996	1997	1998	1999	2000
EU-15	60.7	58.8	59.8	62.1	65.9
B	40.8	43.8	48.5	52.3	57.8
DK	29.1	26.4	28.4	27.8	22.5
D	36.9	48.2	47.6	46.7	47.7
EL	28.0	24.7	18.3	17.4	17.3
E	27.4	29.7	33.4	38.9	44.0
F	23.5	24.6	25.1	27.1	29.4
IRL	13.1	10.6	15.3	26.4	23.2
I	65.3	65.2	67.1	70.1	75.3
NL	22.1	23.0	28.4	34.9	33.2
A	31.9	33.5	33.2	34.9	33.8
P	27.7	27.4	30.0	29.2	32.5
FIN	19.4	23.1	27.0	31.5	34.7
S	17.3	20.7	20.6	24.6	31.8
UK	39.9	40.7	50.9	51.3	53.0
CZ	:	:	40.3	39.4	44.5
EE	:	:	34.1	35.6	33.0
HU	:	:	32.6	37.8	33.9
LT	:	:	24.6	25.0	22.5
LV	:	:	:	21.9	18.3
PL	:	:	40.6	36.3	35.5
RO	:	:	31.5	29.1	25.1
SI	:	:	29.6	30.5	31.8
SK	:	:	40.2	31.3	29.1

: = Data not available.

Graph 4.1 — Coefficient of variation: based on NUTS-3 regions, 1996–2000



The following can, in short, be deduced from Table 4.1 and Graph 4.2.

The picture regarding the trend over time is very uneven. Slovakia, Latvia, Romania and Greece display a fall in the coefficient of variation, whilst the trend for a large number of countries is not significant. In contrast, there has been a sharp increase in Belgium, Spain, Finland, Sweden, the United Kingdom and the Netherlands.

This development could indicate that during periods of falling unemployment, success is seen first in certain economically 'stronger' regions.

It would, however, be very difficult to conduct a thorough analysis of this relationship, as these effects extend across borders, in which case the analysis becomes more speculative. Returning to Map 4.1, there is a particularly steep decline in Portugal as a whole and in western Spain. The fall in unemployment seems to be concentrated in northern and central Italy. Unemployment has fallen further in the region around Helsinki than in the rest of Finland, more in the south of England than in the Midlands, and more in the north of Belgium than in the south of the country. All these examples provide empirical evidence that the increase in the coefficient of variation in some countries during periods of an average fall in unemployment rates is linked to regional pockets of success in combating unemployment. Success in this context does not therefore automatically signify stronger regional cohesion.

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LABOUR-FORCE SURVEY

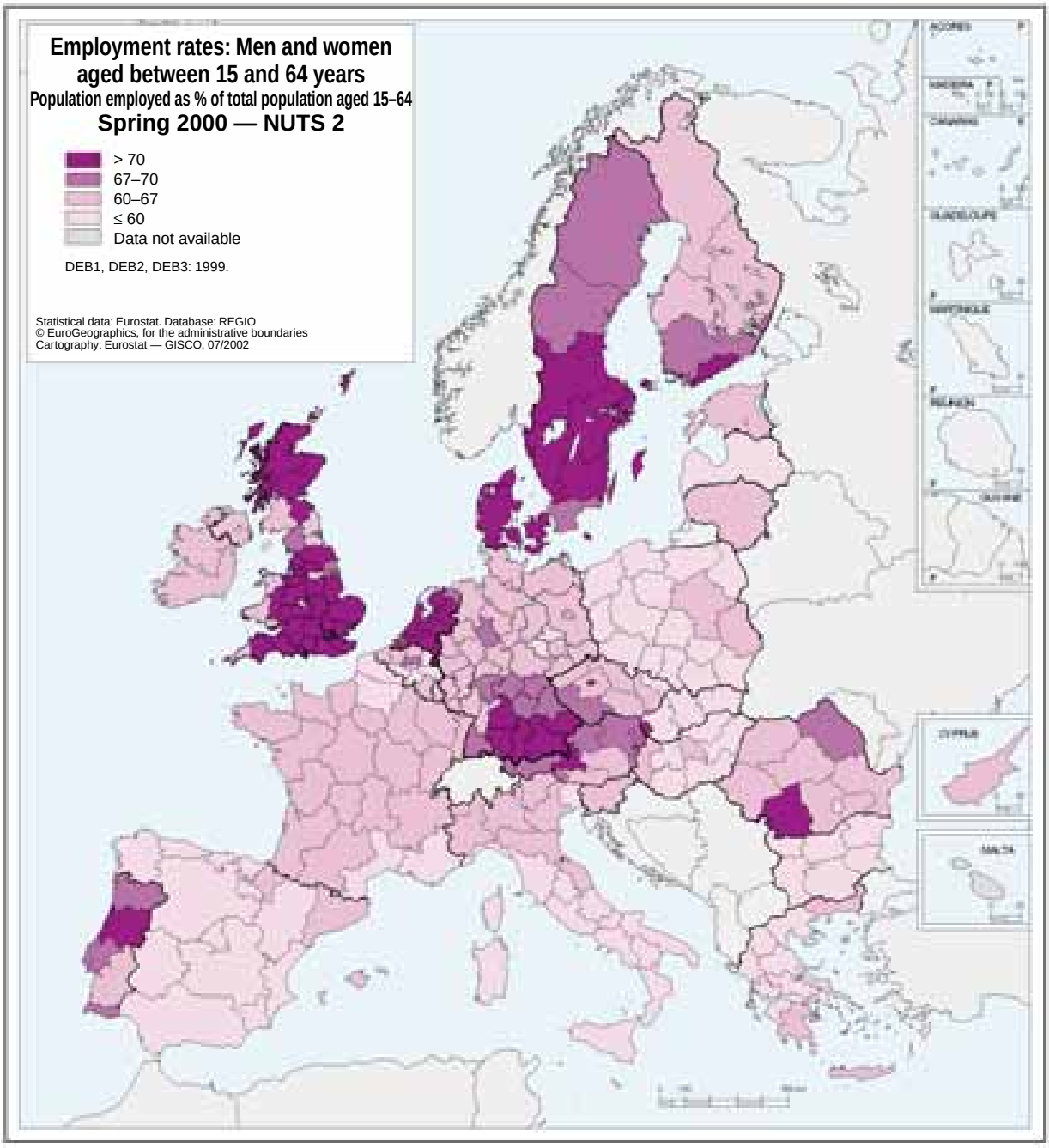
5

The overall employment rate

At the Lisbon Summit in spring 2000, the objective was set to bring the employment rate up to around 70 % by 2010 for all persons aged between 15 and 64. For women in this same age group, the objective was set at 60 %.

The Stockholm European Council in March 2001 confirmed that the EU and its Member States were committed to achieving the objective of full employment and set interim objectives for 2005 of 67 % for the population as a whole and 57 % for women, along with a target of a 50 % employment rate for the oldest section of the working population (aged 55–64) to be achieved by 2010.

In 2001, six countries had achieved the interim goal for the total employment rate (67 %). Sweden can also be added to this number, since although the only data available are for 2000, this objective had already been comfortably achieved. Map 5.1 shows that this was the case for Denmark, most of the regions of Austria, Portugal, Finland and the United Kingdom and all the regions in the Netherlands, Sweden and



Map 5.1

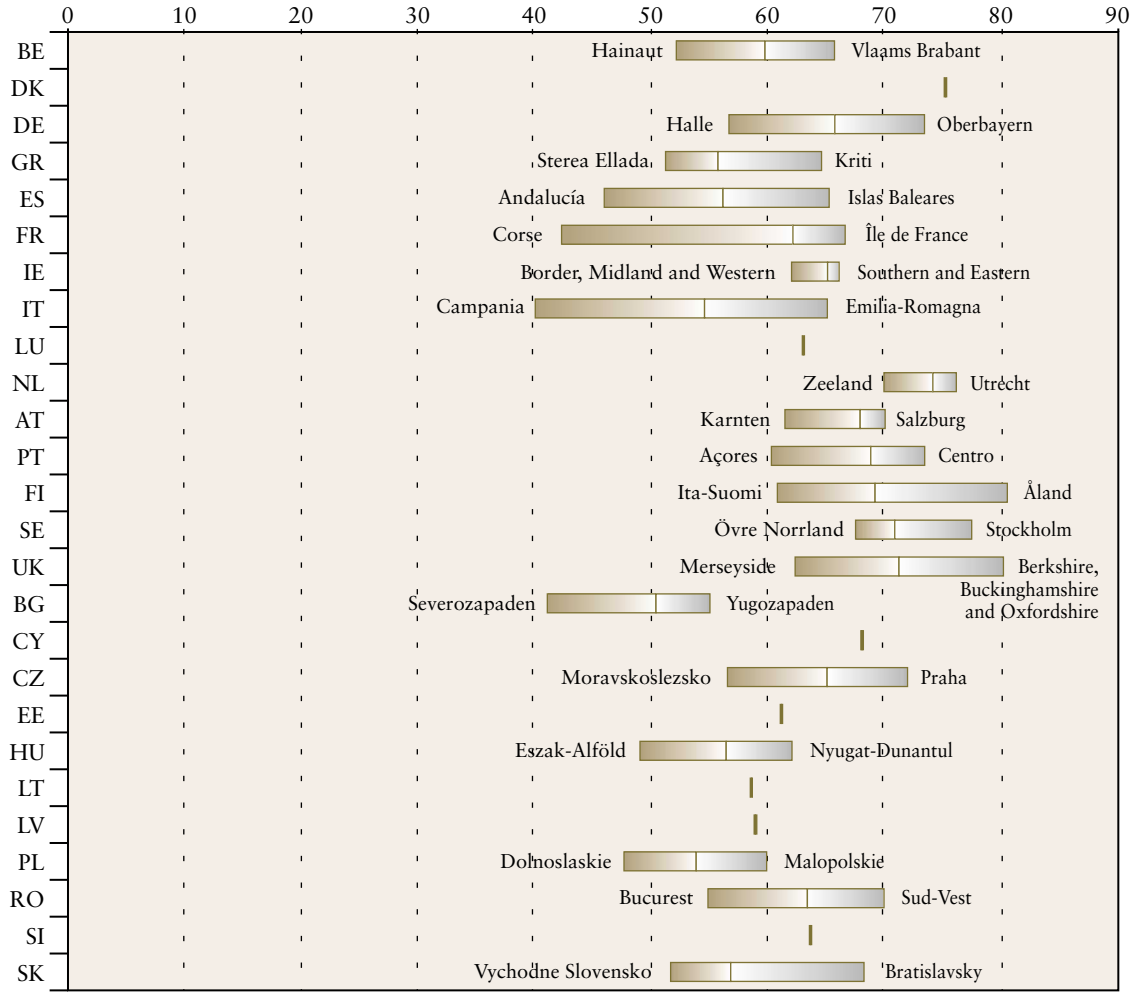
the south of Germany (Baden-Württemberg and Bayern).

The situation was worse in the candidate countries and only the regions of Cyprus, Prague, the south-west of the Czech Republic, the south-west of Romania and Bratislava in Slovakia had achieved a rate of over 67 %.

At the other end of the scale, employment rates of under 60 % have been recorded in most of the regions of Belgium, Spain and Greece, as well as in Nord-Pas-de-Calais and the southern regions of France, the southern regions of Italy and Sachsen-Anhalt in Germany.

The differences between national employment rates have tended to diminish in recent years as a result of strong economic performance by the Member States and the positive results of employment policies. There are, however, still significant variations in the regional structures of employment within the Member States. Graph 5.1 indicates the scale of the regional variation in employment rates for each country. These differences are relatively small in Austria or the Netherlands but rise to over 20 percentage points in France and Italy.

Graph 5.1 — Employment rates persons aged 15–64, national averages and regional extremes, NUTS-2, 2001



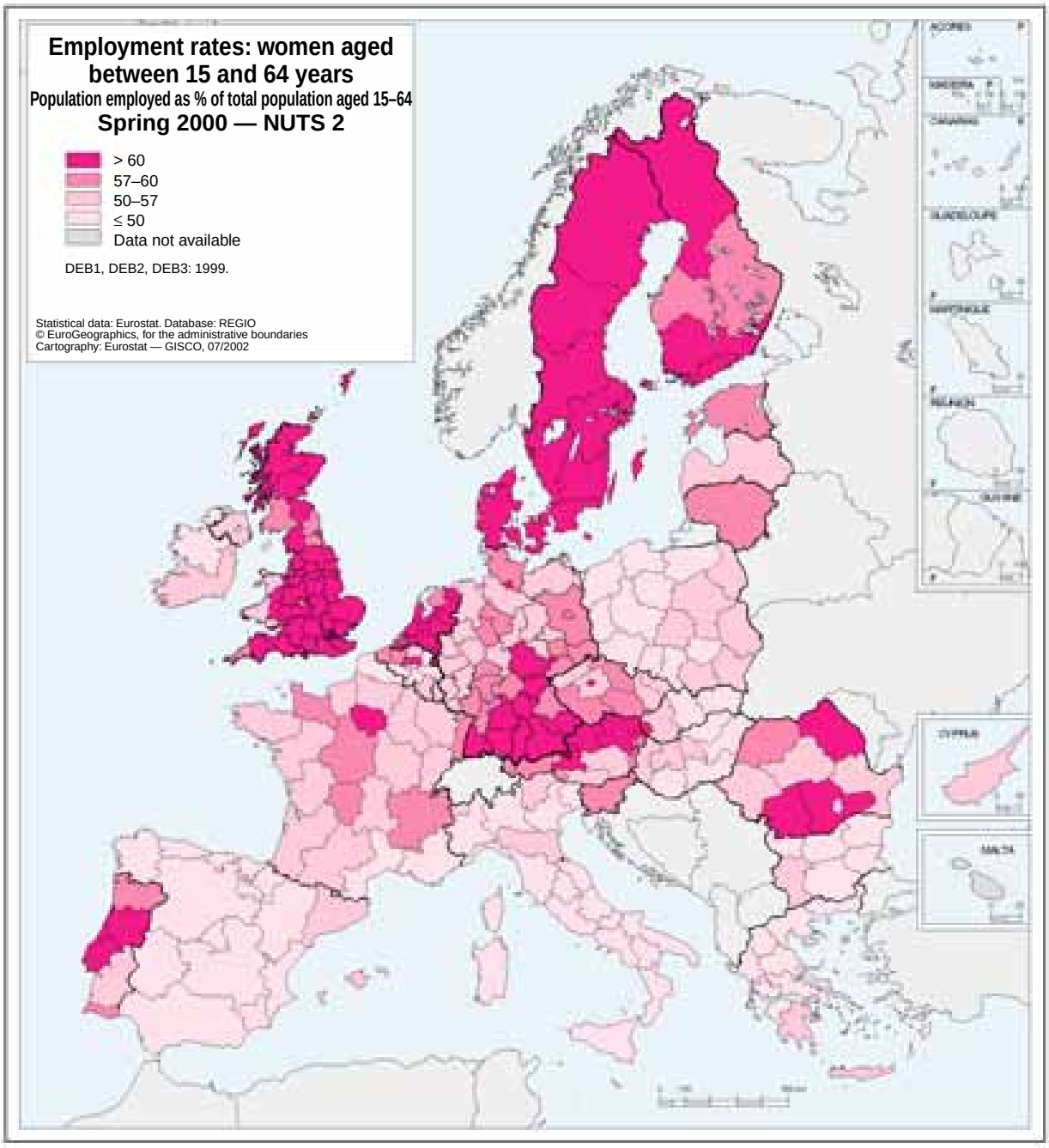
The employment rate for women

The objectives set in Lisbon and Stockholm for women in employment are 57 % by 2005 and 60 % by 2010.

A comparison between Maps 5.1 and 5.2 shows that the 2005 employment target for women was achieved in 2001 in more regions than was the case for the overall employment objective. This applies above all to certain regions in France, Germany, Finland and the United Kingdom. In the candidate countries, Estonia, Latvia, Slovenia and parts of Romania and the Czech Republic also have female employment rates of over 57 %.

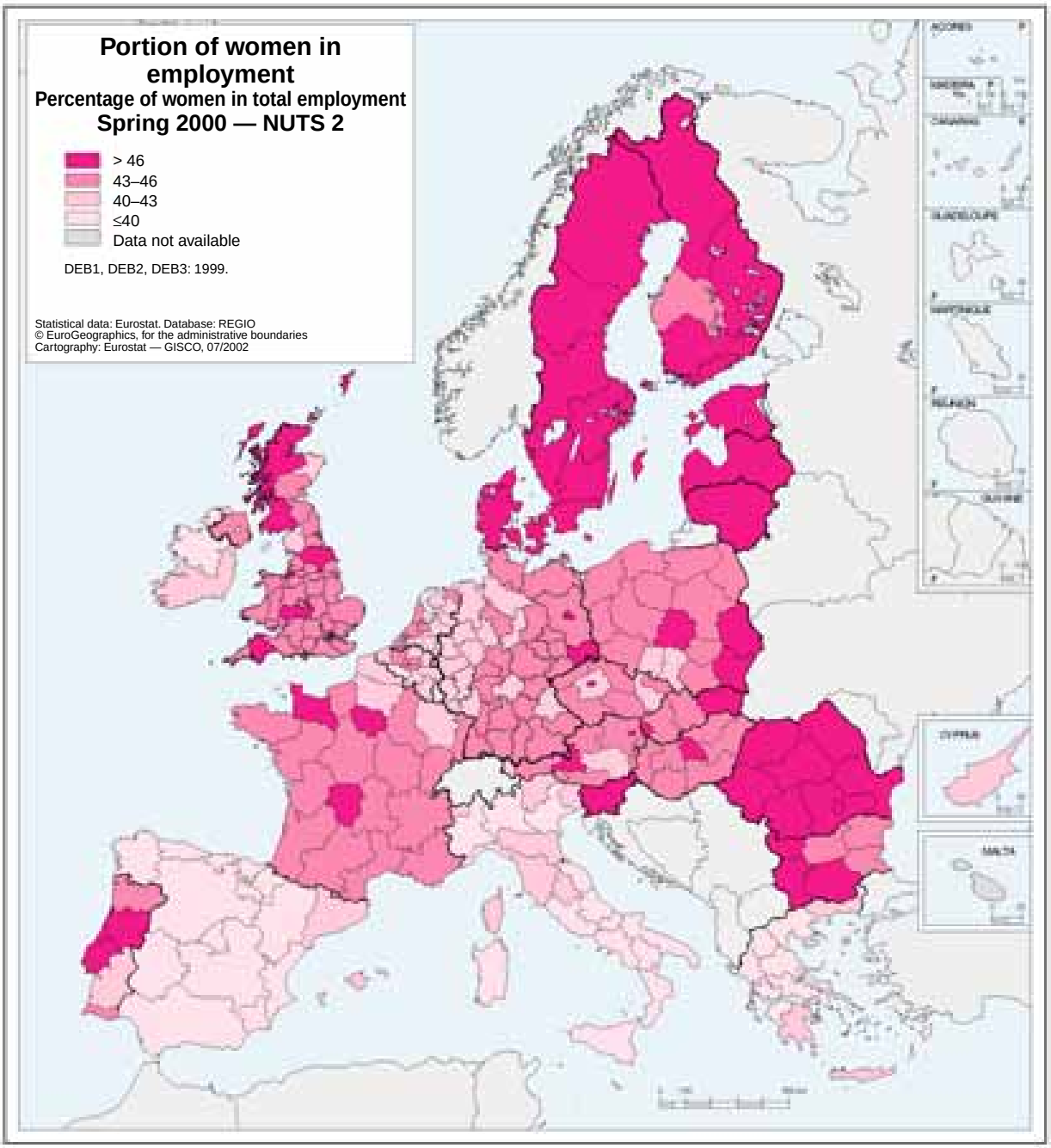
This high rate of participation by women is very often associated with high percentages of women working part-time in order to reconcile employment and family obligations. This is not the case in Portugal and in Finland where less than one woman in five works part-time. Nor is part-time work very common in the candidate countries.

Most of the regions of Spain, Italy and Greece as well as the south of France and the border, Midland and Western region in Ireland have rates of below 50 %.



Map 5.2

Whilst the employment rate for women has risen faster than that for men in recent years, differences between these two rates still remain. This difference exceeds 25 percentage points in almost all the regions of Spain, Greece and the south of Italy. Differences of under 10 percentage points are mainly recorded in the northern and eastern European countries. It is the case in Denmark, certain regions of the United Kingdom, almost all the regions of Finland and Sweden (where the female employment rate is sometimes even higher than the rate for men), as well as in Sachsen, Sachsen-Anhalt and Thüringen (regions of the former GDR) and most of the regions in the candidate countries with the exception of Cyprus, Hungary and the Czech Republic (Map 5.3).

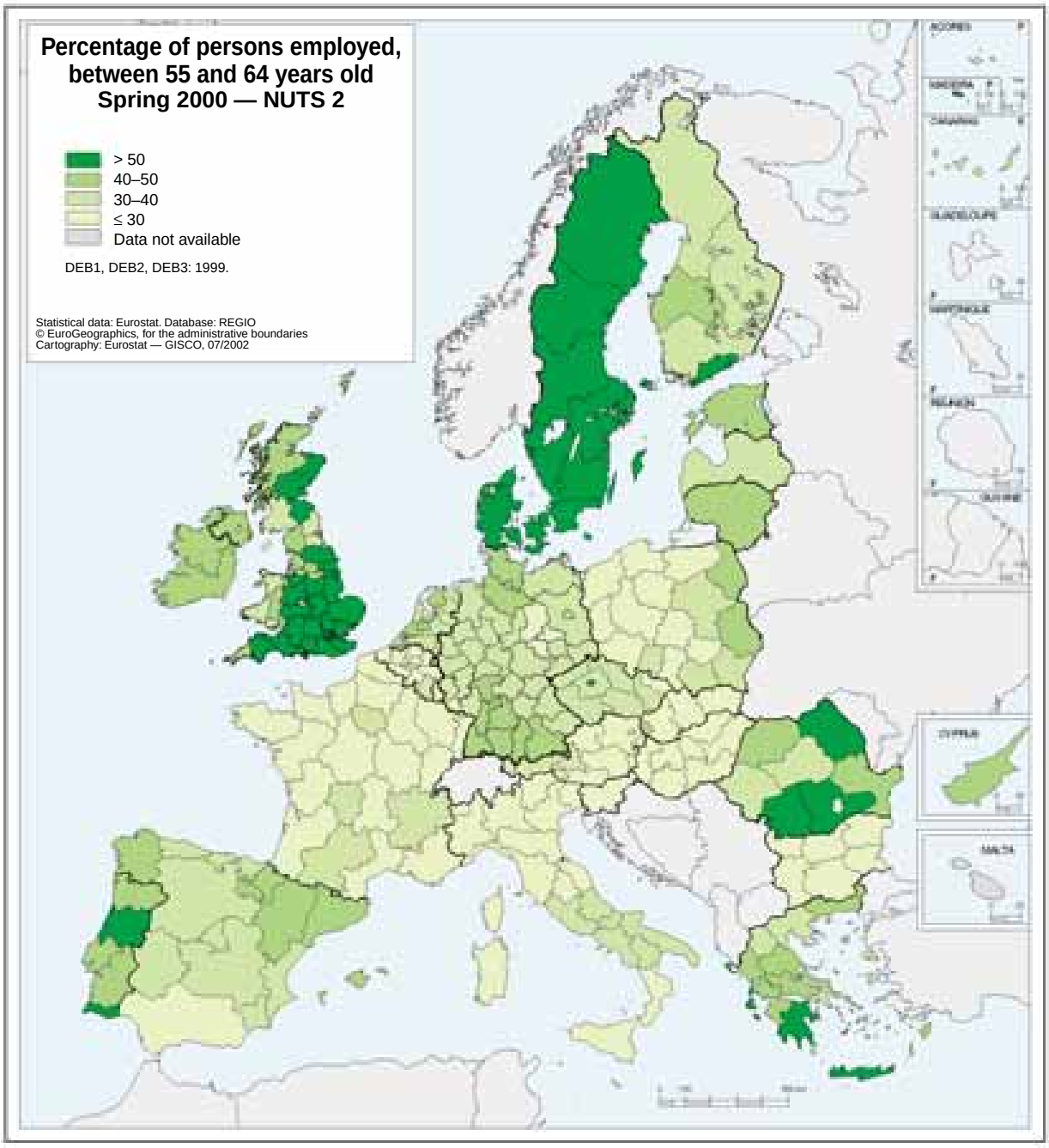


Map 5.3

Employment rate for persons aged between 55 and 64

Giving people the opportunity to work longer has been placed at the top of the political agenda. The Stockholm European Council set the EU the target of raising the employment rate among older workers to 50 % by 2010.

This objective remained a distant prospect in 2001, as shown in Map 5.4. The 2005 objective had only been achieved by Denmark, all the regions of Sweden, some regions in Finland and the United Kingdom and some in Portugal, Greece and Romania (where persons of this age group are mainly employed in agriculture).



Map 5.4

The current rates in the European Union range from 19.3 % in Corsica (France) to 71.7 % in Stockholm (Sweden) and almost one quarter of the regions record rates of under 30 %. The regional variation is also considerable in the candidate countries: from 16.1 % in Eszak-Magyarorszag (Hungary) to 72.1 % in Sud-Vest (Romania).

However, given the current shift in policy to promote employment among older workers, which is dictated by demographic trends, the strong demand for labour and the emergence of regional labour shortages for some skills or professions, it is more than likely that today's high employment rates for 45–54 year-olds will lead to a substantial increase over the next 10 years in the employment rate for 55–64 year-olds. This development would, however, necessitate a reversal of the increasing tendency to take early retirement which can be seen in some countries.

Fixed-term contracts

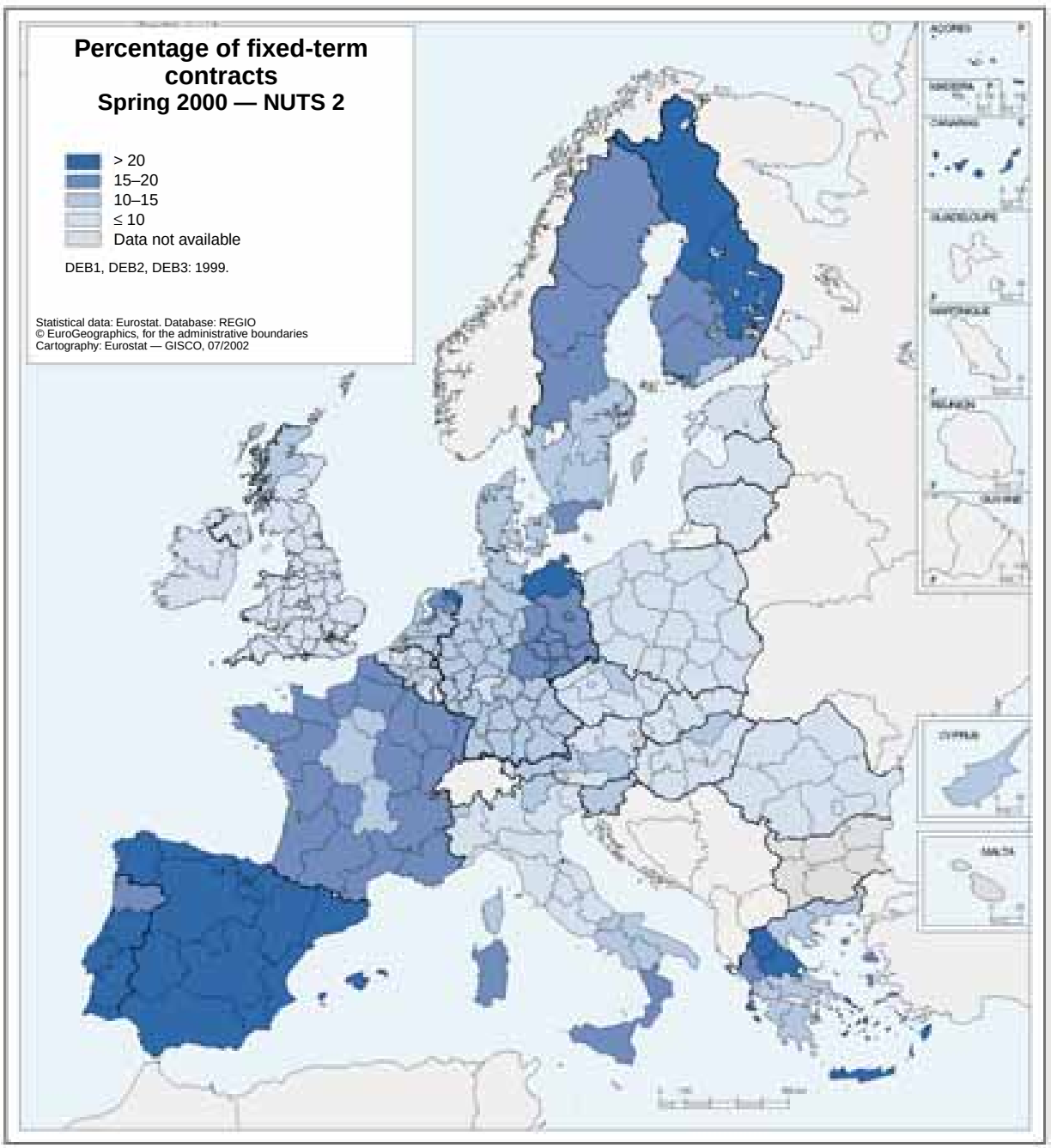
Fixed-term contracts are particularly prevalent in the Iberian peninsula, the north of Finland and of Greece, the south of Italy, and in the regions of the former GDR. In Andalucia (Spain), 46 % of employees have fixed-term contracts.

At the other extreme, this form of contract is very rare in Ireland, Luxembourg and Estonia (less than 5 %) and relatively infrequent in most of the candidate countries, the United Kingdom, the north of Italy and central France.

Fixed-term contracts are particularly widespread amongst young people aged under 25, mainly on account of the large number of apprenticeship contracts or contracts for a probationary period, which are often offered at the start of an employee's career. The figure for this age group exceeds 40 % in all the regions of Spain, Germany (where the transitional period between school and working life often takes the form of an apprenticeship) and France, as well as in most regions in Sweden, Finland and Portugal (Map 5.5).

The percentage of female employees on fixed-term contracts is higher than that for men in most regions of the European Union. The difference exceeds 10 percentage points in the Antwerpen region (Belgium), Pais Vasco (Spain), Notio Aigaio and Kriti (Greece) and Salzburg (Austria).

The percentage of persons on fixed-term contracts with an educational level of or below that attained at the end of compulsory education was considerably higher than for those on permanent contracts. The majority of the regions in the United Kingdom form the one exception to this rule.



Map 5.5

Employment in the services sector

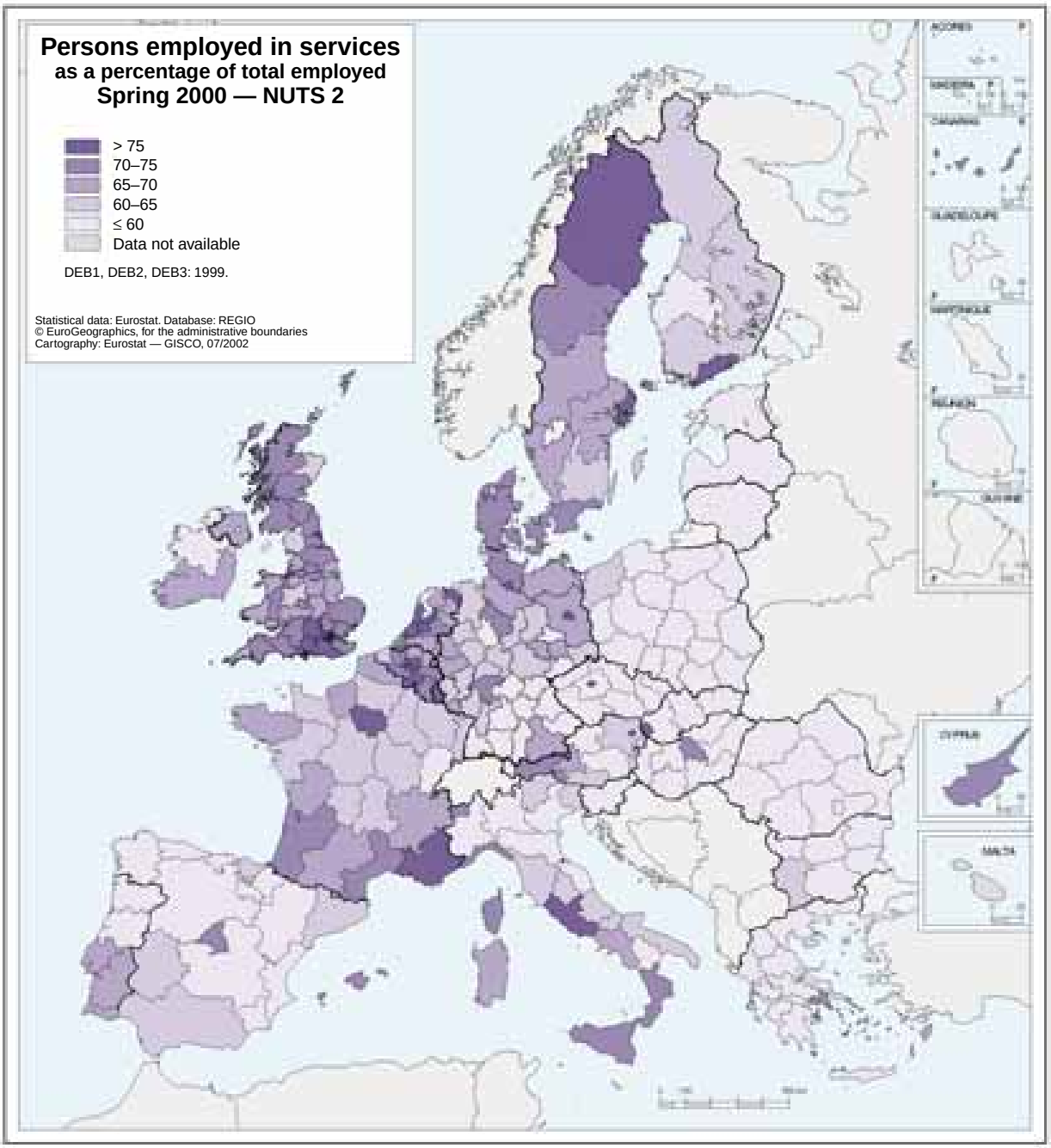
The services sector has made a robust contribution to employment growth in almost all regions of the EU, whilst employment in agriculture is further declining.

Employment in the services sector is especially prevalent in regions which include large cities, such as Brussels or Paris (Île-de-France) and in those welcoming large numbers of tourists. This sector also accounts for over three-quarters of all jobs in most of the regions of the Benelux countries and the United Kingdom.

In the north of Portugal, almost all of Greece, the north and centre of Spain, the Border, Midlands and Western region of Ireland and almost all of Romania, Bulgaria, Poland, Latvia and Lithuania, less than 60 % of the working population is employed in the services sector on account of the continuing importance of employment in agriculture.

Employment in the services sector is also relatively low in the north of Italy, the south of Germany, Estonia, the Czech Republic, Hungary, Slovenia and Slovakia, where there is a significant percentage of jobs in industry.

Jobs in the services sector tend to be done by women, as 82 % of women in the EU work in this sector, but only 58 % of men. In most of the regions of Spain, Finland, Ireland and the United Kingdom, the difference between the figures for male and female employment in this sector exceeds 30 percentage points. This difference shrinks, however, to less than 15 percentage points in most of the Greek regions.



Map 5.6

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SCIENCE AND TECHNOLOGY

6

Introduction

One of the strategies identified by the Lisbon Summit of March 2000 in order to make the European Union the most competitive economy, capable of a rapid response to the changing requirements of the global marketplace, is greater emphasis on 'research and innovation'. It is evident that economic growth is increasingly related to the capacity of an economy to change and to innovate. Accordingly, considerable effort should be put into creating an environment that encourages research, thus facilitating the transition to the knowledge-based economy. Such a policy needs statistical information on science and technology, a wide field that includes data on such different aspects as research, patents, high-technology manufacturing sectors and knowledge-intensive services.

The best performing economic sectors from the point of view of research and innovation are those known as high technology. Such sectors have been defined for both manufacturing and service activities (more information may be found in the methodological paragraph). It is for this reason that this year's edition of the 'Regional yearbook' focuses on this sector.

Innovation is a process that requires investment. The most important kind of investment is that by the whole society in education, but other forms of investment are relevant and can measured, for example by R & D expenditure, government R & D appropriations, etc. The number of patents can be considered as an intermediate factor of this process. Finally, several indicators can be used in order to measure the performance of the innovation process, such as employment in high-technology industries and services, or exports of high-technology products.

This chapter examines the dynamism of regions, as measured by the region's capacity to innovate: indicators of the regional innovative potentials therefore include the percentage of educated inhabitants, data on patent applications and the development of the high-technology sectors.

If indeed these indicators are linked, the maps presented in this chapter should be similar. Regions showing a high percentage of educated inhabitants would also feature a high number of patents and high employment, especially in the high-technology sector. Where the maps do show discrepancies, the explanation may be sought in a given region's specialisation in either manufacturing or the service sectors.

Science and technology statistics are available at the regional level in the REGIO database. Analysis of these regional data highlights the existence of great differences between European regions.

The reference year for science and technology data is 2000 for data on education and patents; it is 1999 for data on employment.

Methodological notes

The population with third-level education comprises persons who have either obtained a second-level diploma or qualified to attend a university course.

A patent is a public title of industrial property conferring on its owner the exclusive right to exploit the invention for a limited area and time. Patents are the most widely used source of data for measuring innovative activity and technological development, as well as for comparisons of technology growth. The patent data reported here include the patent applications filed at the European Patent Office (EPO) during the reference year, classified according to the inventor's region of residence and to the international patent classification for fields of application.

High-technology patents are counted in accordance with the 'Trilateral statistical report' definition, where the following technical fields are included: computer and automated business equipment; micro-organism and genetic engineering; aviation; communication technology; semiconductors; lasers.

The high-technology economic sectors are defined in terms of the R & D intensity of the sector, following the definition applied by the OECD (1997). R & D intensity is calculated as the ratio of the sector's R & D expenditure to its value added. To this is added the indirect R & D intensity, which expresses the R & D ratio of the input to the sector, relating both to intermediary products and to capital investments. Applying this approach to the manufacturing sectors of the European economic activity classification NACE Rev 1, 10 main high and medium-high technology sectors are identified: aerospace, computers and office machinery, electronics/communications, pharmaceuticals, scientific instruments, motor vehicles, electrical machinery, chemicals, other transport equipment, non-electrical machinery.

Three NACE service sectors have been identified as being 'high-tech', these being post and telecommunications, computer and related activities, and research and development.

As R & D intensity does not serve as a suitable indicator with regard to services, a broader defini-

tion of knowledge-intensive services (KIS) has been proposed, based on the concept of knowledge intensity, which includes the proportion of employees with at least third-level education. Knowledge-intensive services include: water transport, air and space transport, post and telecommunications; financial intermediation; computer and related activities; research and development; real estate, renting and business activities; education; health and social work; recreational, cultural and sporting activities, radio and television activities; libraries, archives, museums, etc.

Education

Map 6.1 presents the percentage of population aged between 25 and 64 years with third level education.

A number of countries show a concentration of highly educated inhabitants in the capital regions, such as Uusimaa in Finland, Stockholm in Sweden, Berlin in Germany, London in the United Kingdom, Île-de-France in France (containing Paris) and Vale do Tejo in Portugal (which includes Lisbon). In some cases, the region containing or comprising the capital forms an 'island' of higher values quite distinct from its hinterland; in others, the neighbouring regions show high levels of educated inhabitants as well. In the UK, for example, this is the case for Berkshire, Buckinghamshire and Oxfordshire, perhaps reflecting the residence there of many executives and other professional people commuting daily into London. In Germany, high educational levels are observed not only in Dresden and Leipzig but also in Brandenburg, which entirely surrounds Berlin.

Other countries show distinct patterns:

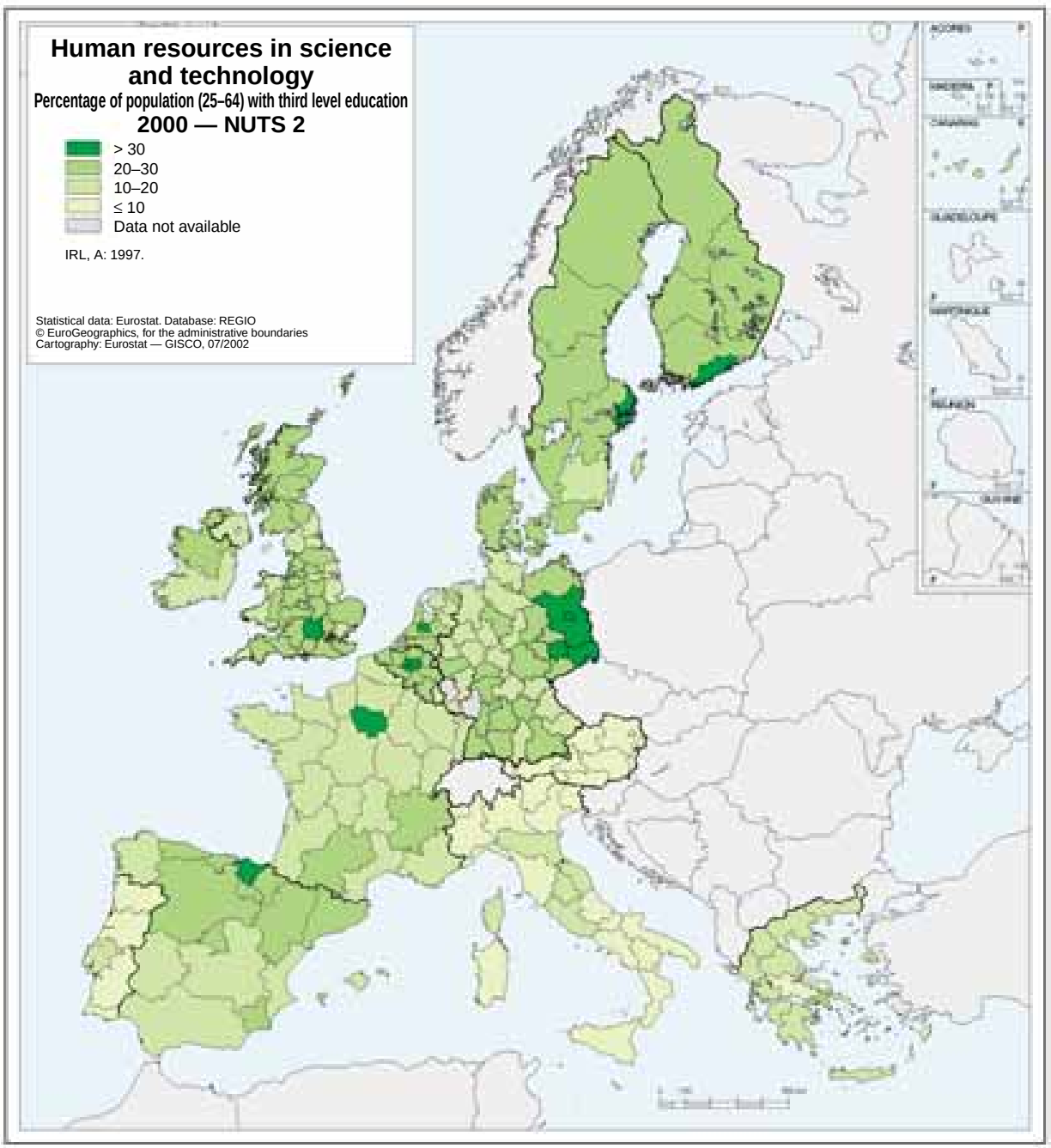
— In the Netherlands, the highest values are recorded in Utrecht province, while in Belgium this position is held by the two Brabant provinces, one French-speaking, the other Dutch-speaking, that surround Brussels. Interestingly, Brussels itself scores lower.

— Austria is notable for the uniformity of its educational attainment in regional terms.

— The striking feature of the Italian map is the lower values recorded at the geographical extremes. In the north, this may reflect a large, and generally less-well educated industrial work force; in the south, low educational attainment has long been an element of a less prosperous economy.

— In Spain, the north of the country, and particularly Pais Vasco region, dominates.

— In Greece, Attiki region, which includes Athens, seems to have drained away trained people from the region immediately north of it — Sterea Ellada.



Map 6.1

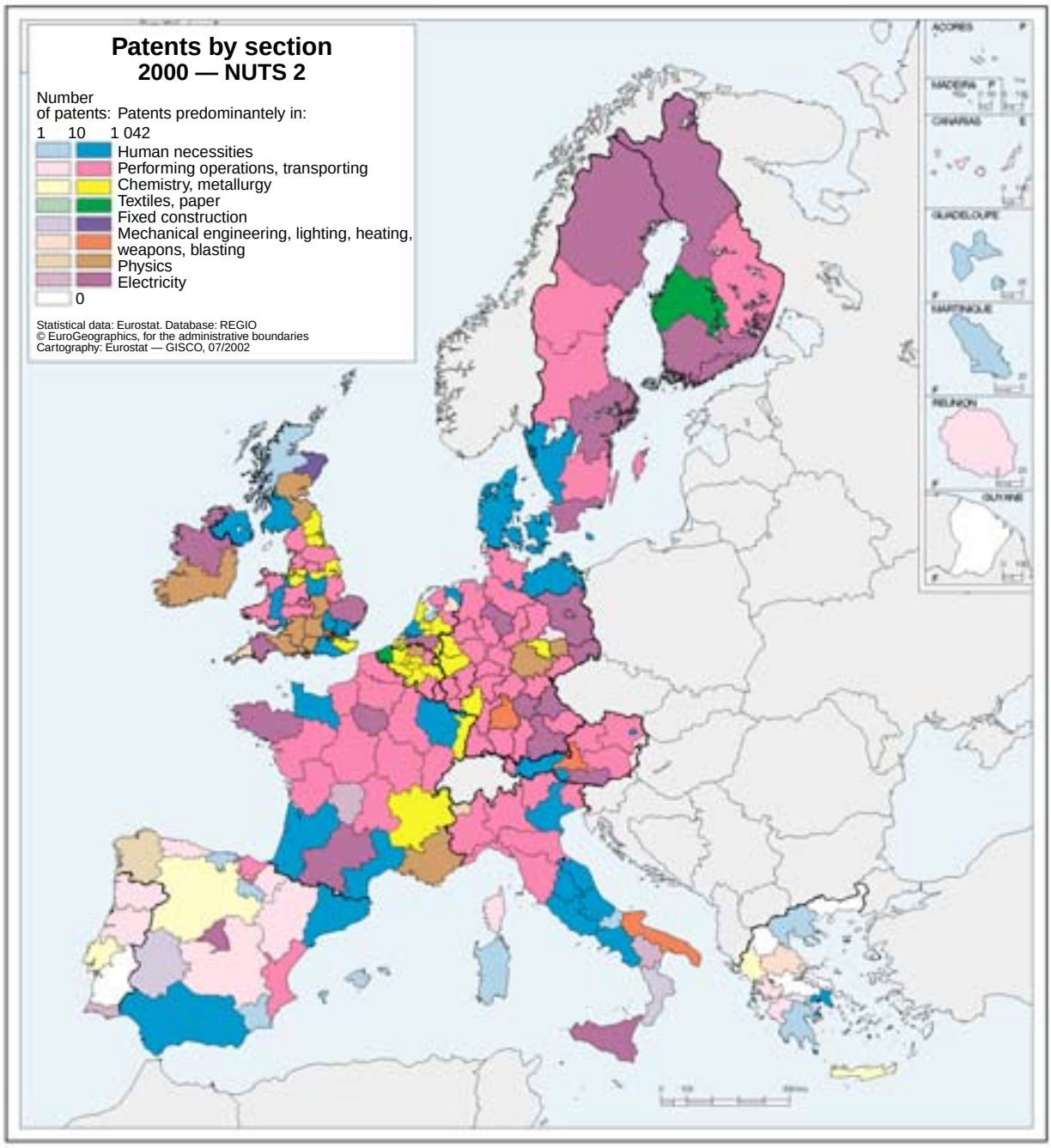
Patent applications

Data on applications for European patents are also held in the REGIO database. Map 6.2 shows the predominant technological sector for each region, according to the international patent classification (IPC). The variety of colours within each country demonstrates the very different specialisations of Europe's regions. The dark pink colour that predominates across the EU as a whole ('performing operations and transporting', which relates to automated activities formerly performed by human beings, such as the hulling of peas or the husking of grains) is interrupted by many blue regions ('human necessities'). These predominantly concern such day-to-day activities as agriculture, fishing and the making of furniture and hand tools and are especially evident in France, Italy and Greece. There are also a number of regions where the yellow of 'chemistry and metallurgy' dominates. In addition to traditionally fairly localised heavy-industry regions such as Halle in the former East Germany and Cheshire, Greater Manchester and Merseyside in the United Kingdom, there are two cross-national zones. One comprises the French region of Alsace and the German one of Rheinhessen-Pfalz. The second such zone is a horseshoe-shaped belt that runs

through three countries from Oost-Vlaanderen in Belgium via Köln and Düsseldorf in Germany (including the famous Ruhr industrial region) to Noord-Holland in the Netherlands.

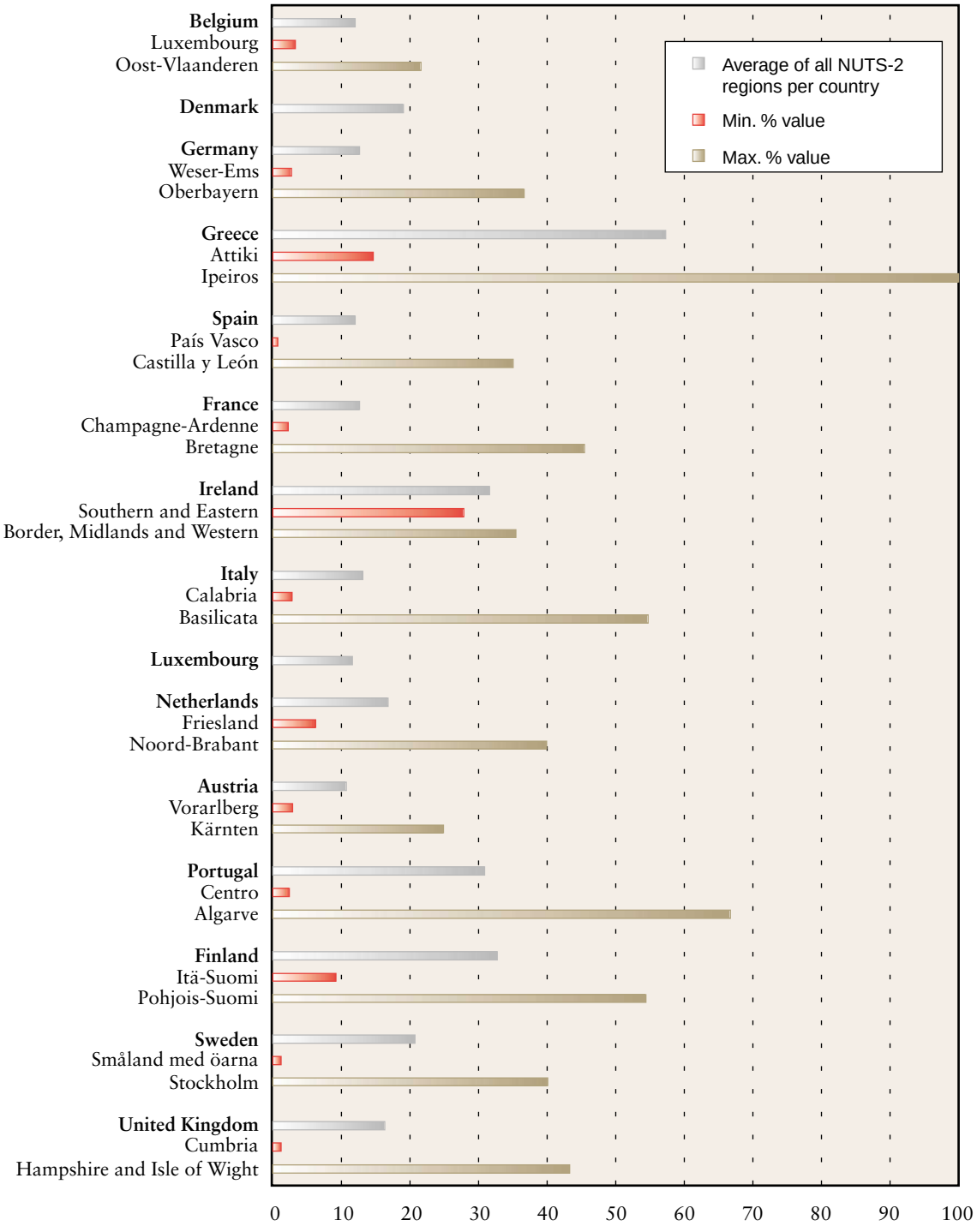
Strikingly distant geographically on the other hand are the dark green regions with high performance in patent activities concerning textiles and paper — Väli-Suomi in Finland and West-Vlaanderen in Belgium. Väli-Suomi has three pulp/paper mills including one with a papermaking capacity of 670 000 metric tons per year; West-Vlaanderen hosts six pulp/paper mills including two large ones (over 400 000 metric tons per year).

A high degree of specialisation is observed in the leading European regions. For example, the German region of Oberbayern applied for more than one third of its patents in the 'electricity' field, which also accounted for almost half of the patents lodged by the Dutch region of Noord-Brabant and Uusimaa region in Finland. By contrast, Belgium's Brabant Wallon region and Germany's Rheinhessen-Pfalz requested nearly half of their patents in the 'chemistry and metallurgy' section.



Map 6.2

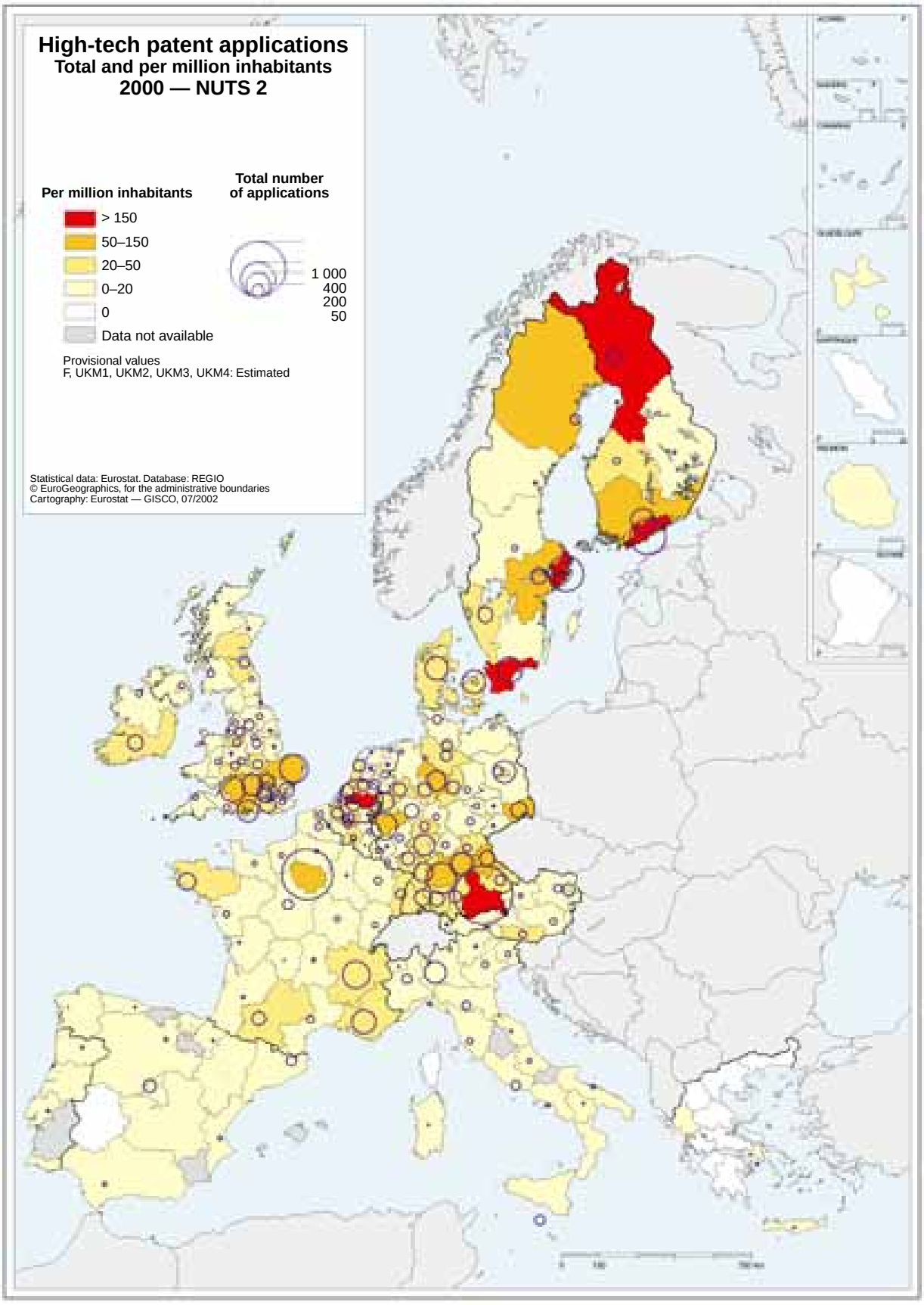
Graph 6.1 — Relative percentage of high-tech patents out of total number of patents, NUTS-2, 2000



Map 6.3 shows the patent applications in high-technology sectors, both in absolute terms and as a ratio, per million inhabitants. This map should be analysed in conjunction with Graph 6.1, which shows for each country the minimum, the maximum and the average percentage that high-tech patents comprise of the total number of patents.

The geographical pattern that emerges is a complex one. Although the overall picture is one of an overwhelming domination by the north as against the south of Europe, there are considerable regional variations. The low populations of Pohjois-Suomi in Finland and Övre Norrland in Sweden give them a high score as a ratio despite registering a relatively small number of high-tech patent applications. At the other extreme are regions where a very large number of patents mean a high ratio despite a dense population within the region. Examples include Île-de-France (with 78 patents per million inhabitants), Oberbayern in Germany

(281) with its concentration of automobile, aerospace and electronics manufacturers, and Noord-Brabant in the Netherlands (with 269 patent per million inhabitants, and which includes Eindhoven where the Philips multinational is based). While in the majority of Member States the region

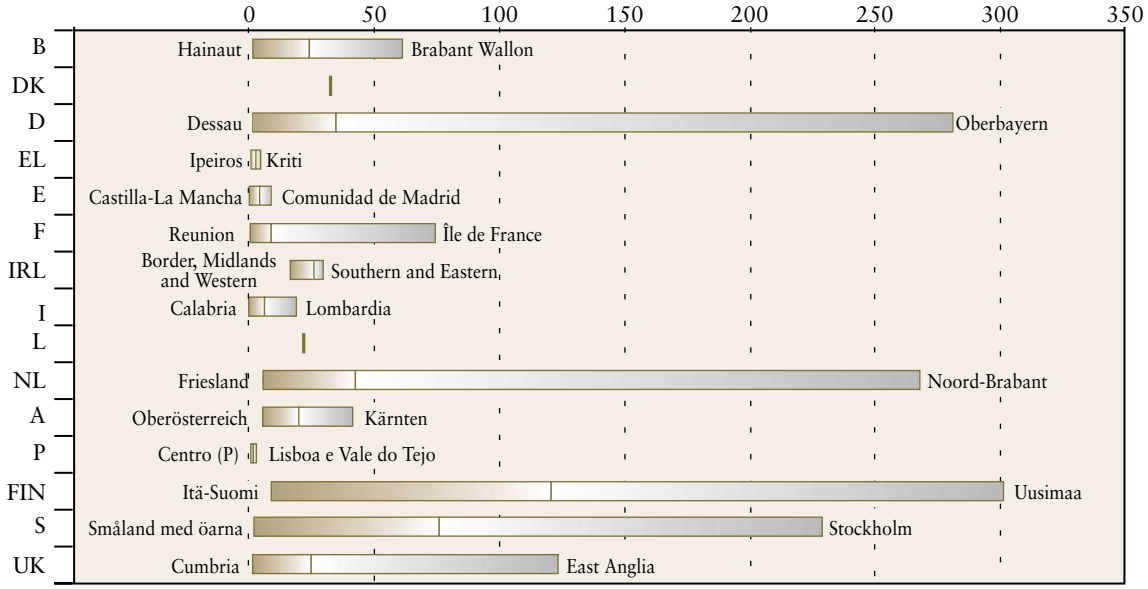


Map 6.3

containing the capital has the largest number of high-tech patents, this is not true of either Italy, where the industrial strength of Lombardia makes itself felt, or the United Kingdom, where the figures for East Anglia are probably boosted by the presence of Cambridge University.

In terms of the proportion of high-tech patents applied for in 2000, the graph shows that 10 EU countries had at least one region above the EU average (28).

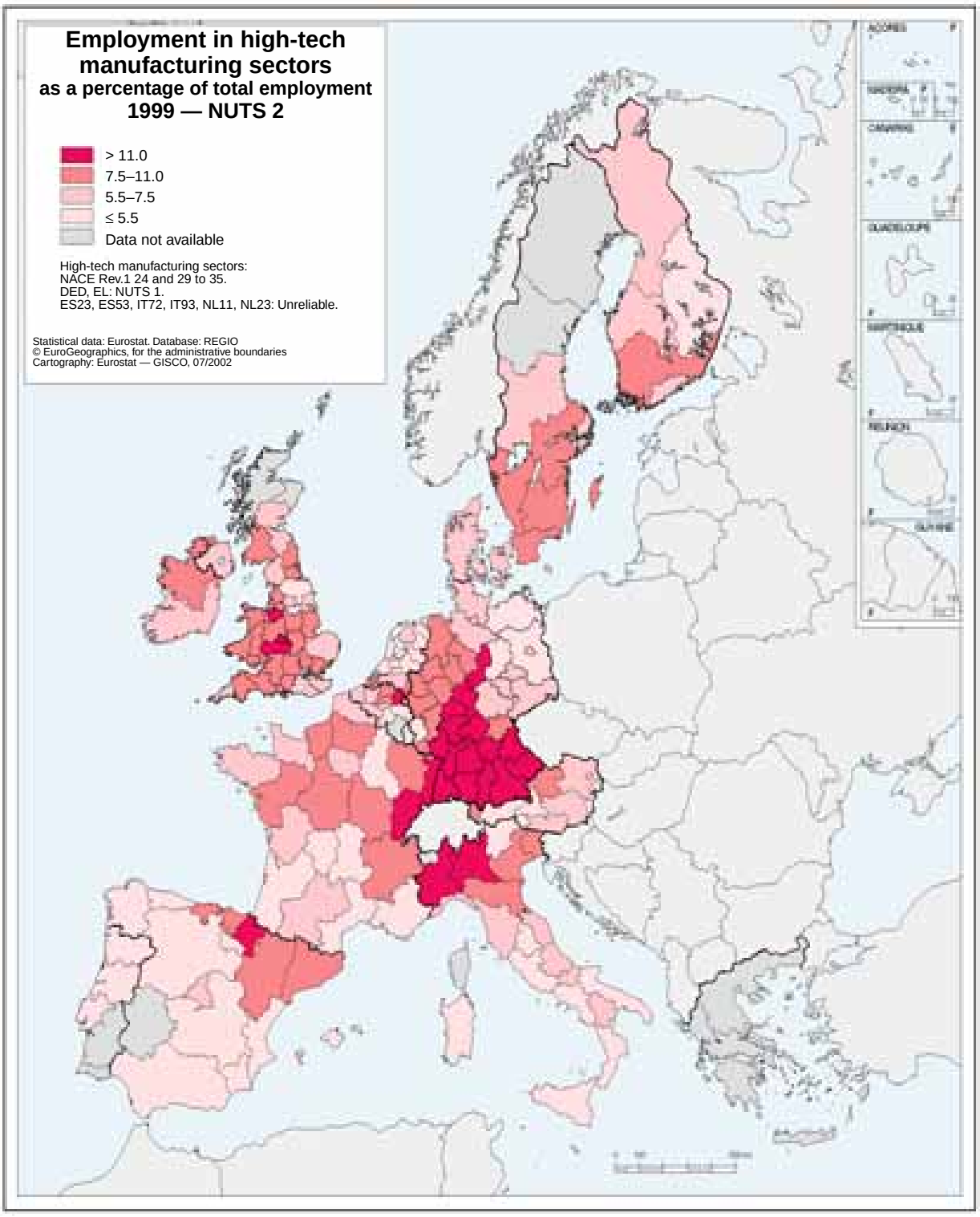
Graph 6.2 — Number of high-tech patents per million inhabitants at national level and regional extremes, NUTS 2, 2000



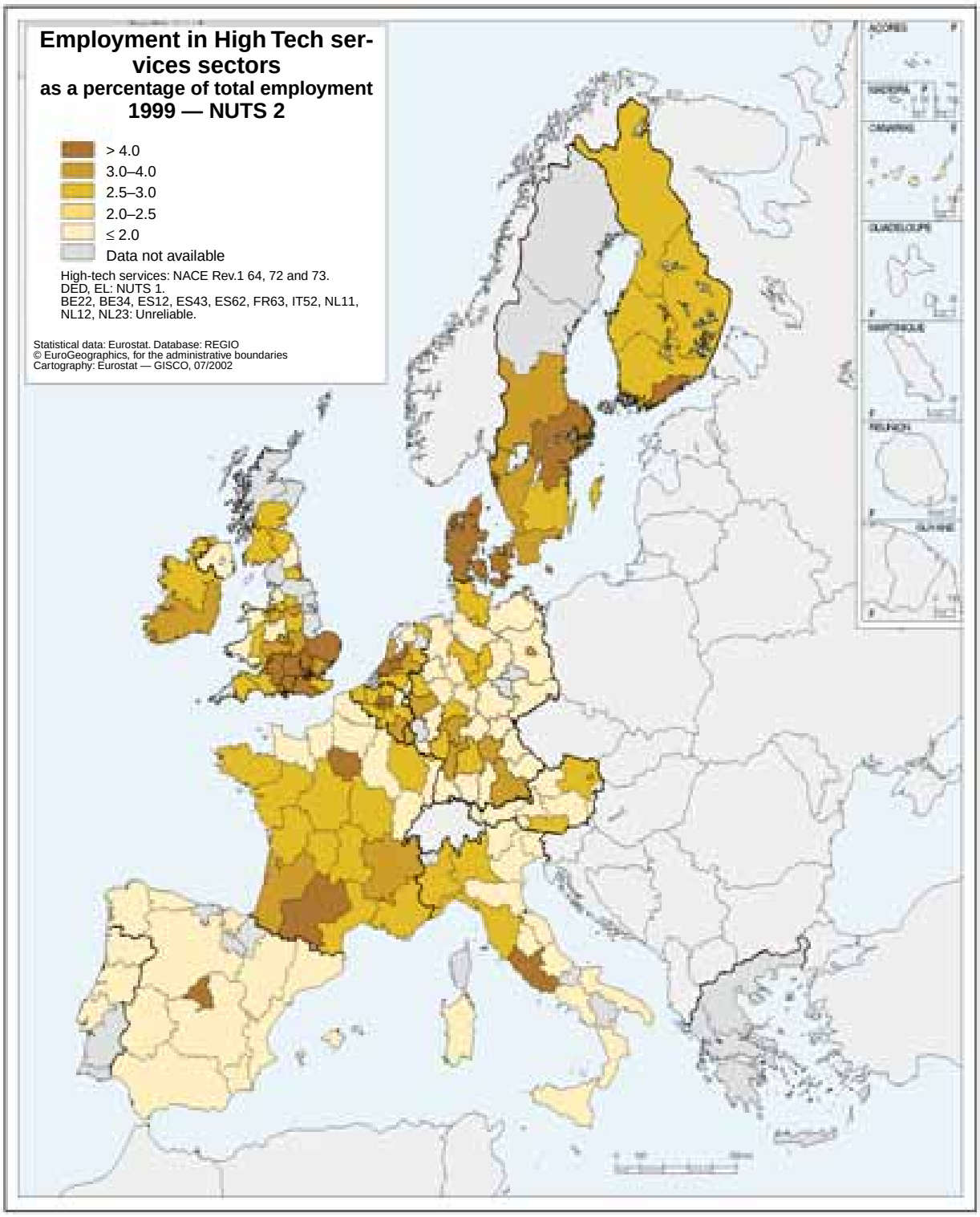
Employment in high and medium-high technology sectors

This section attempts to identify innovative regions, both in the industrial and in the service sectors, using data on employment.

Map 6.4 maps European regions according to the level of employment in high and medium-high technology industries as a percentage of total employment. At the EU level, in 2000, there were 12 million people employed in the these manufacturing sectors, 7.6 % of total employment. Taking all the regions into consideration, the rate of employment in high and medium-high technology industries ranges from close to 0 % to just over 20 % for Stuttgart (Germany). The group of leading industrial high and medium-high technology areas comprises a total of 27 regions, accounting for about 39 % of total industrial employment in the EU in these branches. No fewer than 16 of them are German, while four each are in the UK and Italy. Västsverige (Sweden), Catalunia (Spain) and Alsace (France) also show a high rate of employment in these types of industry. The southern regions (mainly in Greece, Spain and Italy) demonstrate the unbalanced distribution of high and medium-high technology industries in Europe.

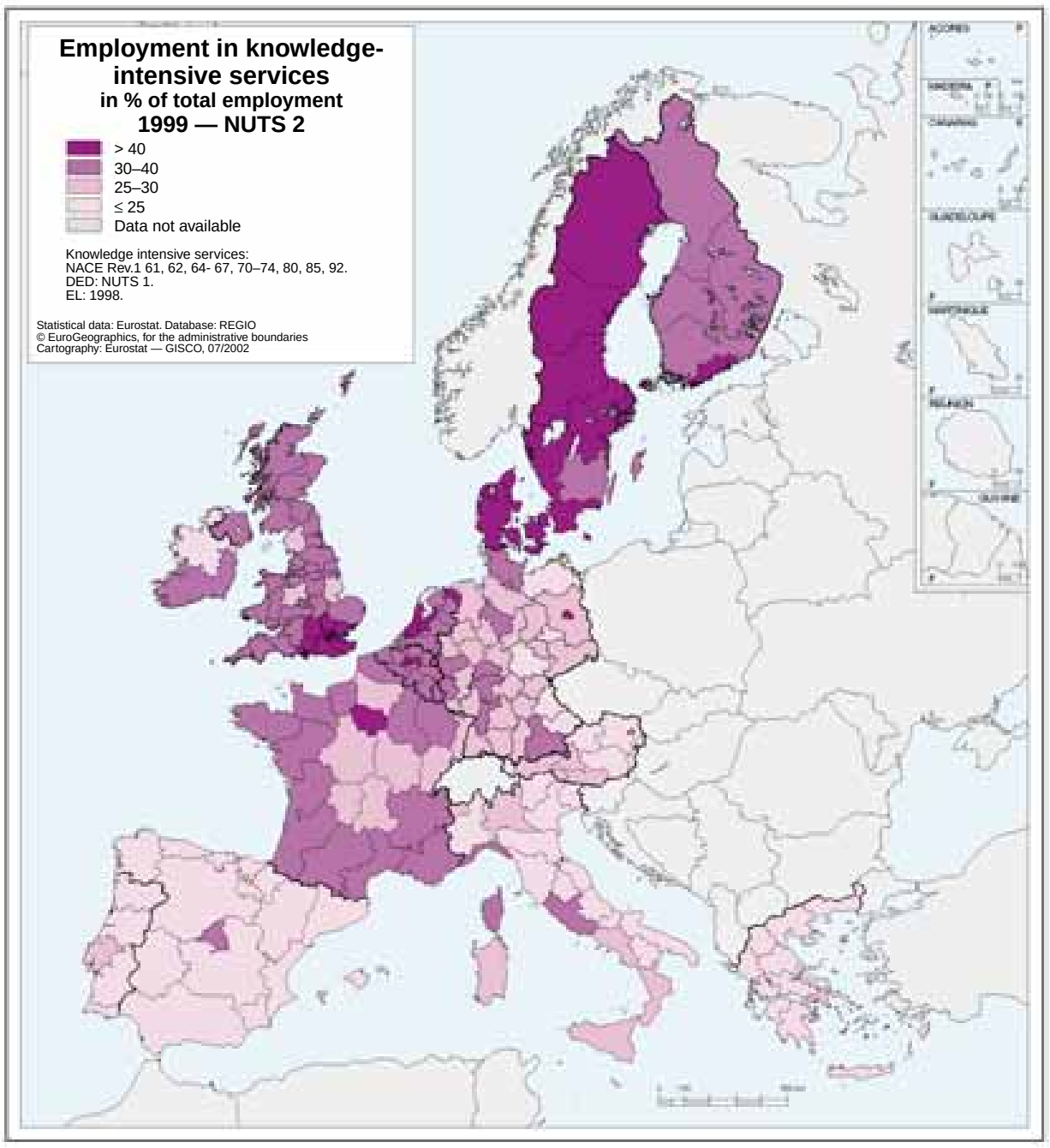

Employment in high-tech manufacturing sectors
as a percentage of total employment
1999 — NUTS 2
> 11.0
7.5–11.0
5.5–7.5
≤ 5.5
Data not available
High-tech manufacturing sectors:
NACE Rev.1 24 and 29 to 35.
DED, EL: NUTS 1.
ES23, ES53, IT72, IT93, NL11, NL23: Unreliable.
Statistical data: Eurostat. Database: REGIO
© EuroGeographics, for the administrative boundaries
Cartography: Eurostat — GISCO, 07/2002

Map 6.4



Map 6.5

Map 6.5 portrays European regions in terms of the level of employment in KIS, knowledge-intensive service sectors. Several clusters can be identified, mainly located in Scandinavia, the Benelux, the United Kingdom, and western and southern France. In Germany, Oberbayern again scores highly, along with a small number of other regions such as Darmstadt (which includes Frankfurt). As with Map 6.1, regions comprising or containing the capital city are particularly evident.



Map 6.6

Map 6.6 presents the distribution of employment in high-tech service sectors as a percentage of total employment. The higher ranking regions are quite widespread all over Europe, though again with a preponderance in Scandinavia, the Benelux, southern UK (probably related to the presence of universities), Ireland and southern France. Again, regions containing the capital, such as Lazio in Italy, tend to have higher rates.

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7

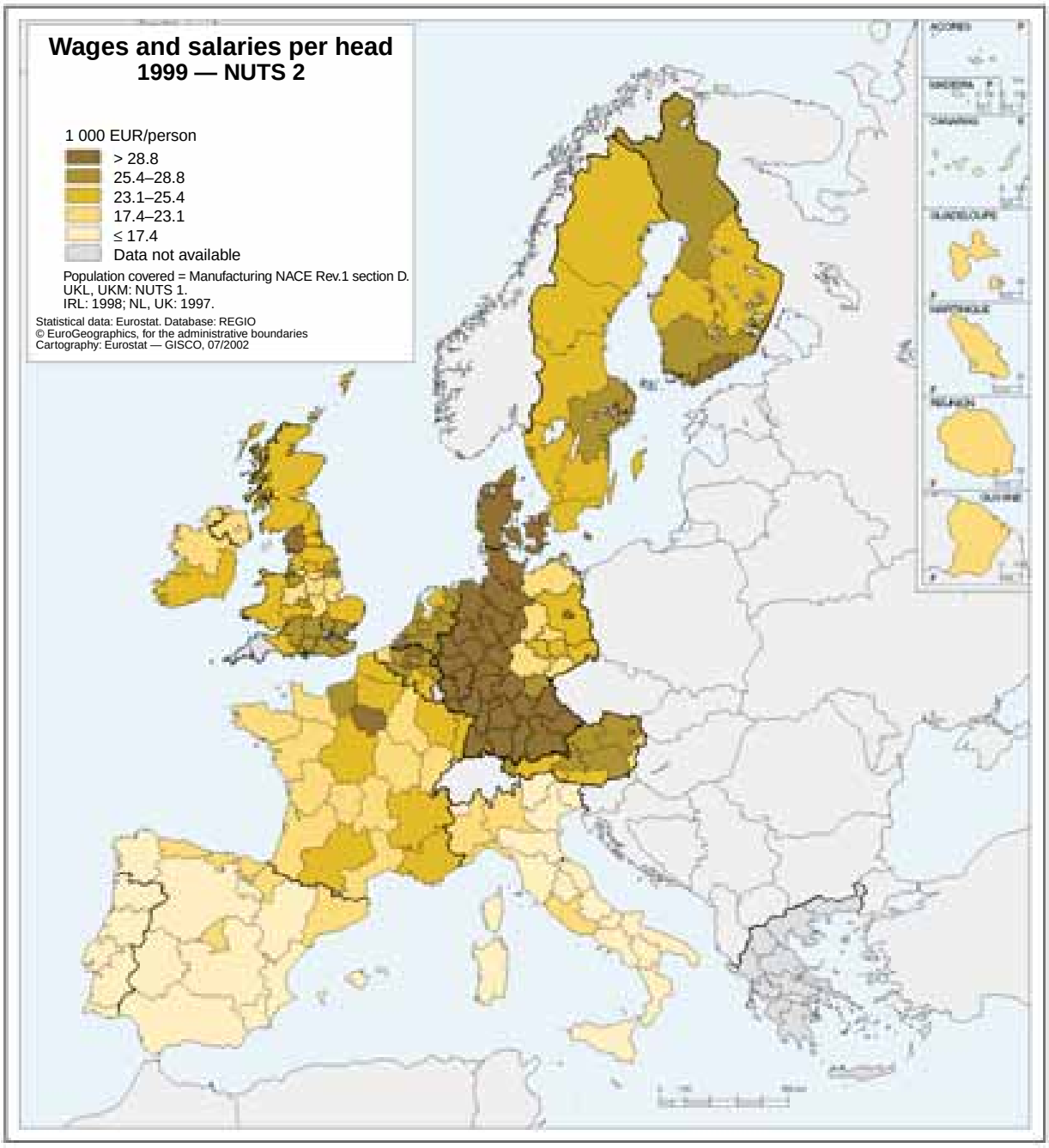
STRUCTURAL BUSINESS STATISTICS

Introduction

The maps in this chapter are compiled from the regional structural business statistics available in NewCronos in the SBS domain: theme4/sbs/region. The regional data collected pursuant to the SBS regulation are the number of local units, employment, wages and salaries and material investment.

The statistics are mainly available from reference year 1995. However, 1995–98 was a transition period in implementation of the regulation, during which the national statistical institutes adapted to a system which complies with Council Regulation (EC) No 58/97. Availability is better from 1999, the first reference year after the transitional period. The quality is better, too. For example, for the first time, the Belgian data for 1999 cover all enterprises' local units. Previously, the population covered by Belgian regional statistics was limited to the local units of enterprises with more than 20 employees.

Regional statistics also comprise the third of the four sections of the SBS collection. The first two are the national and size-class series (the results of small and medium-sized enterprises in particular), and the last consists of the other structural series (such as the statistics on environmental protection expenditure).



Map 7.1

Value added, on the other hand, is not recorded at local level. It is calculated at enterprise rather than local-unit level. Business statistics differ from national accounts (which calculate a regional gross domestic product) in that the statistics are drawn directly from the data observed and have not undergone any economic integration.

The regional structural statistics are broken down by region (NUTS-2 level) and activity (NACE Rev.1 to two or three digits, depending on the sector concerned). The collection unit is the local unit. In most cases, the local unit's principal activity is calculated at local level. In certain countries, it is that of the enterprise of which the local unit forms a part, given that an industrial enterprise may consist of several local units. As the statistical unit is not the same in both collections, the results broken down by size class (available in NewCronos in domain sizclass: theme4/sbs/sizclass) and by region may diverge to some extent, even if the scale is the same. This divergence does not reflect on the quality of either collection.

Wages and salaries in industry in Europe

Map 7.1 represents per capita wages and salaries for the entire manufacturing industry, NACE Rev.1 Section D. These include all sums in cash and benefits in kind paid to persons counted as employees, including home workers, in return for their work during the accounting year, whether they are paid by the hour, by output or for piecework, and whether or not they are paid regularly.

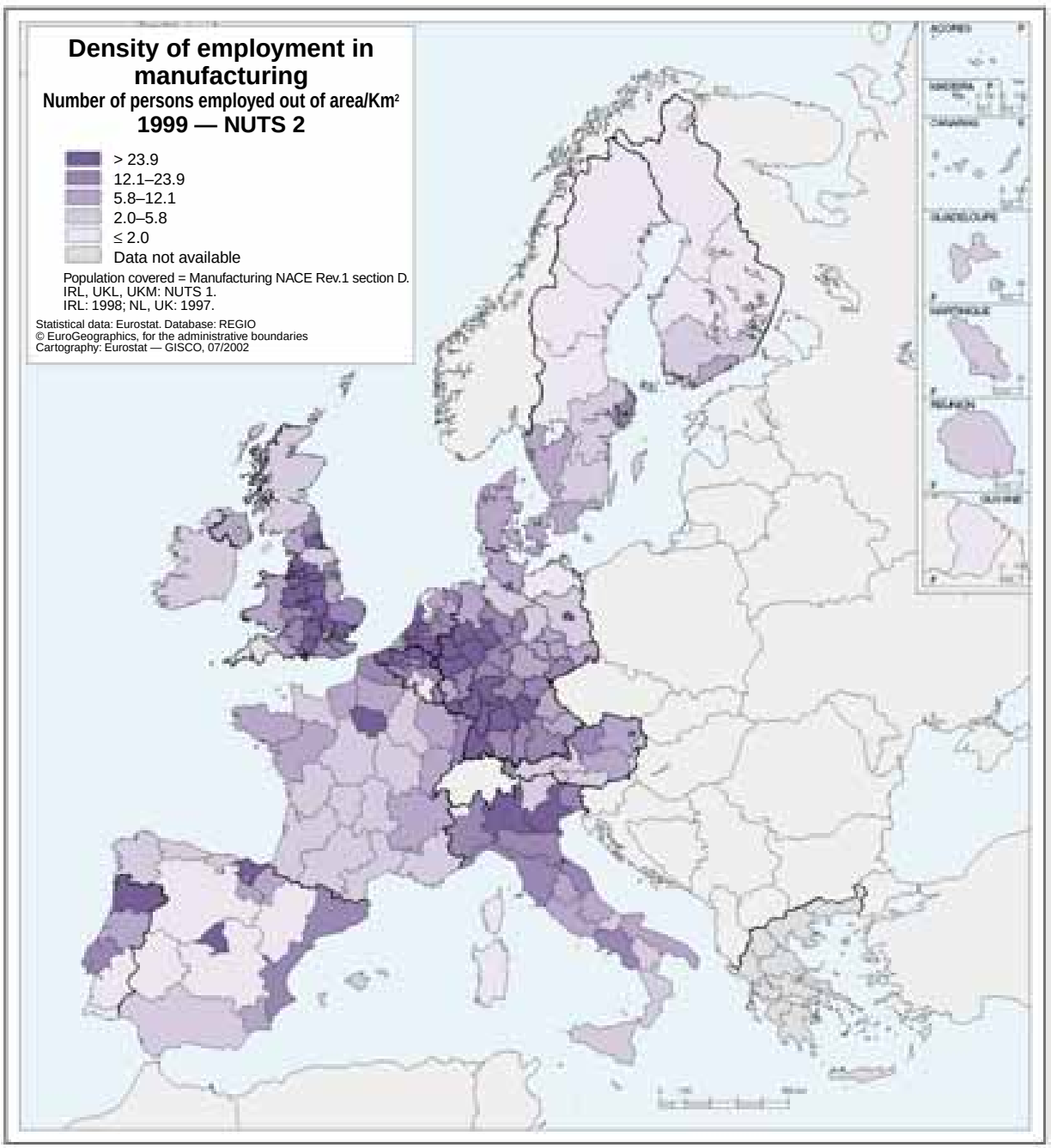
Employment represents people in jobs, including people working in the unit under consideration and people working outside the unit although they are part of it and are paid by it. The map presents the results for the entire manufacturing industry, but these figures can be broken down for each sector of economic activity using the New-Cronos REGIO base.

Per capita wages and salaries are a good proxy for the qualification of the labour force in industry in the region under consideration, i.e. the average wage or salary received by a person working in that sector of activity. According to how they are assessed by an observer, high average wages and salaries in a region or a country may, as has been suggested, denote a qualified work force, but they may also hinder a region's competitiveness. The business statistics do not, however, provide any indicators of differences in income within enterprises.

In Italy, Spain and Portugal, in particular, average per capita wages and salaries in industry are less than EUR 17 400, and no region stands out by virtue of really high pay. Nevertheless, average wages and salaries may show marked imbalances between regions within a single country; thus, wages are lower in the former East Germany than elsewhere in Germany. Similarly, wages and salaries are higher in Île-de-France than elsewhere in France and are higher in the Uusimaa Region than elsewhere in Finland.

What was West Germany differs from the former East Germany but also from the rest of Europe in that wages and salaries are fairly high in every region. These levels are largely due to the way pay is negotiated in Germany, in which the trade unions play a significant role which is typical of 'Rhineland capitalism'. Pay is negotiated within collective agreements rather than at branch or business level. In this respect, it differs from Anglo-Saxon capitalism.

Germany's high pay levels are also partly explained by the fact that the establishments considered all have more than 20 employees, which imparts a slight methodological bias. Average wages and salaries are in fact higher in medium and large businesses (with more than 20 employees) than in small enterprises with fewer than 20.



Map 7.2

Density of industrial employment in Europe

Map 7.2 represents the density of industrial employment in Europe, i.e. the number of industrial jobs per km². It illustrates the distribution of industrial employment in Europe (the definition of employment is given for Map 7.1). Another way to illustrate this distribution of employment would be to show the share that employment in industry comprises of total employment in the commercial sector in the regions. Nevertheless, the availability of regional data, even after the transitional period for the implementation of the regulation, is still better for industry than for the distributive trades and services, although this situation should improve soon.

Northern Italy, western Germany, Belgium and the Netherlands are heavily industrialised regions where employment density more often than not exceeds 12 industrial jobs per km². In Spain, the eastern coast, the Madrid region and the Basque Country are more industrial than the rest of the

country. It is also true that these regions are generally also particularly heavily populated.

Regions around capitals (for example Paris, Madrid and Helsinki) generally show pronounced density of employment in industry at the same time as the higher salaries which are synonymous with skilled jobs. Head offices and senior management tend to be located in capitals.

Employment density and high salaries do not systematically go hand in hand, however. Thus, salaries are fairly low in certain regions in central England, although these have marked industrial employment density. In the East Midlands in Great Britain or in central Portugal, the predominant industries are labour intensive and, as a result, the average wages and salaries there are relatively low in spite of high industrial density.

Conclusion

The REGIO database (theme1/sbs-r) offers users who are interested in regional sectoral data a detailed, harmonised view of economic activity in the regions by sector. Users wishing to know more can use the complete database, of which the two maps presented here provide only a taste. In particular, users can compare per capita wage costs from one region of Europe to another, or observe regions' relative specialisation in different sectors of the economy.

Let us take an example: which are the main European regions specialising in chemistry? Users can establish how employment in chemistry is distributed within the different regions of Europe. They can compare chemistry's share in total industrial employment within the different regions. They can look at investment in regions in a given year and at investment in the past, because it does have a substantial cyclical component. Finally, they can correlate employment in the regions with the number of local units, which provides a good proxy value for the concentration of the sector with the average size of the local units in the sector in a region.

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TRANSPORT

8

Introduction

The Community's transport statistics play a crucial role in implementing EU transport policies as well as being of vital importance for regional policies. The economies of the European countries are increasingly interlinked and dependent on an efficient transport infrastructure. With greater mobility and an active and free internal market, passengers and goods are being transported within the European Union in ever-increasing numbers. However, the necessary infrastructure is not available to the same extent throughout the European Union, but reflects differences in supply and demand (which in turn depend on population density and the degree of urbanisation and industrialisation) and infrastructure capacity. Eurostat's regional transport statistics shed light on various infrastructure aspects, along with specific flows of goods and passengers.

Methodological notes

Within the REGIO database, there are 19 tables for transport, covering infrastructure, the vehicle fleet, journeys by trucks, sea and air transport (with, in each case, separate tables for freight and passengers) and road safety (as reflected in numbers of deaths and injuries in road accidents). In seven tables, the same variables are shown by Member State and candidate country. Journeys by goods vehicles at present cover only the regions of the current Member States. As from this year, REGIO includes four new tables for sea and air transport, showing both goods and passengers transported. These have been produced in accordance with a revised methodology.

All the tables contain annual data. With the exception of those added this year on regional sea and air transport and the table on road safety, all the time series for the Member States begin with 1978. Transport flows between the regions of a single country no longer feature in REGIO but are available in simplified form in Theme 7 (Transport) in the 'Road', 'Rail' and 'Inland ww' collections. In addition, the 'Aviation' collection has data on flows between airports and the 'Maritime' collection has data on flows between sea ports.

With the help of the maps, graphs and tables in this yearbook, regional transport statistics can be compared with other data in REGIO, so that readers can investigate the interactions which may help explain the differences noted between the regions.

As from this year, the same regional transport statistics are available in NewCronos under both Theme 1 (General statistics) and Theme 7 (Transport).

Transport infrastructure

The REGIO database has data on road, rail and inland waterway networks in the table on transport networks at NUTS-2 level. In all tables, the unit is kilometres of route length.

Roads are grouped by category, with a distinction between 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 patchy, because many Member States have no significant network. The data sent by the Member States make no distinction, either, between high-capacity broad canals and lower-capacity narrow ones.

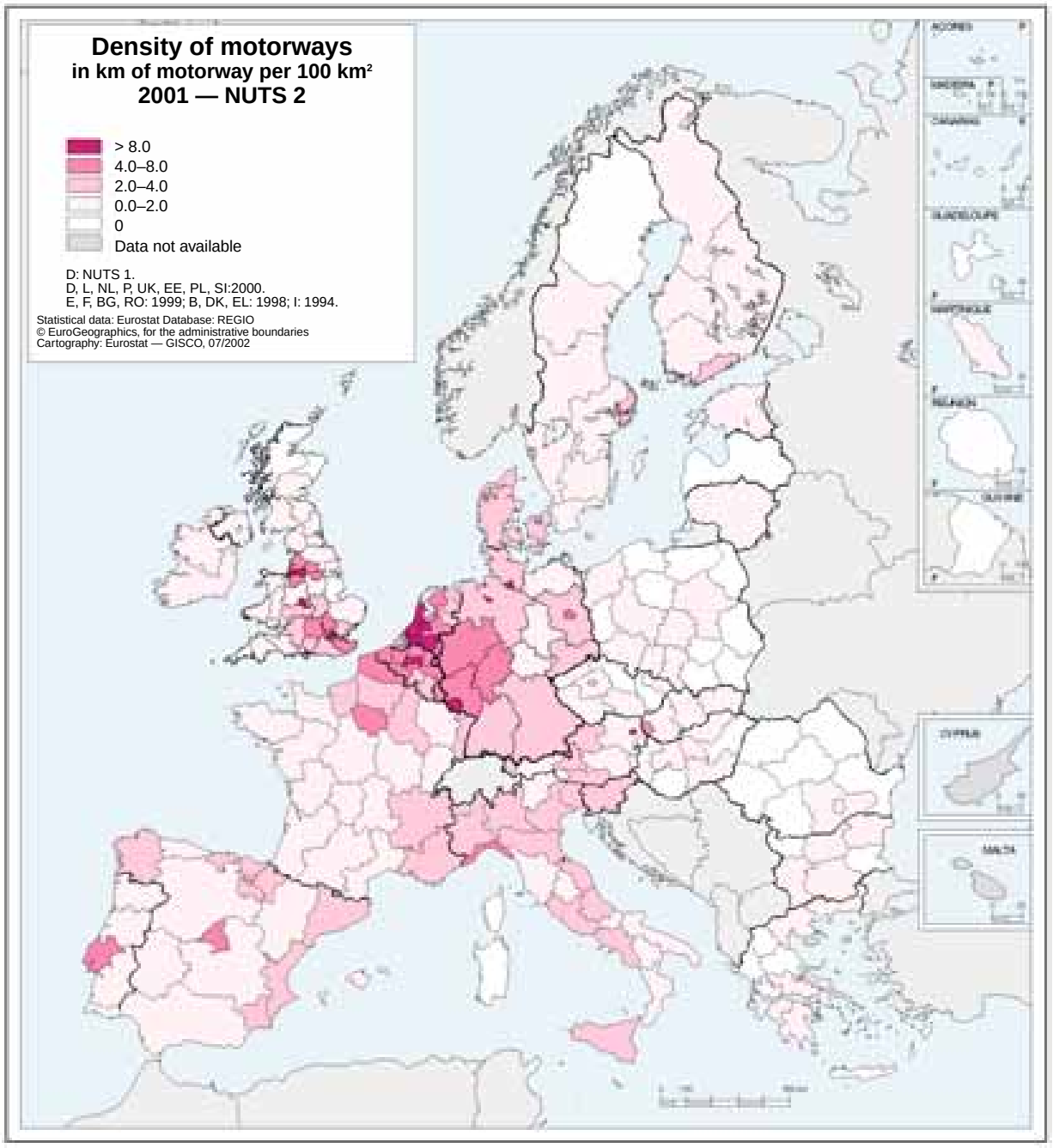
The vehicle data at NUTS-2 level are broken down by vehicle category: passenger cars, buses, goods road vehicles (trucks), road tractors, special purpose vehicles, trailers, semi-trailers and motorcycles.

Road network

An extensive network of major roads and motorways generally gives regions a competitive and developmental advantage. Map 8.1 shows the length of the motorway network in the NUTS-2 regions in 2001, expressed as kilometres of motorway per 100 km². Certain white areas such as the north of the United Kingdom have some dual carriageway roads, but these do not qualify as motorways.

— Motorway density is an indicator of the degree of urbanisation, as can be seen in the Netherlands and in the Vlaams Brabant region around Brussels.

— Regions which include major conurbations generally have high motorway densities. Examples include Vienna in Austria, Berlin in Germany, Lisboa e Vale do Tejo in Portugal, Greater Manchester and the West Midlands in the United Kingdom and Comunidad de Madrid in Spain. However, the motorway density is very high in many NUTS-1 regions in Germany (Saarland, Rheinland-Pfalz, Nordrhein-Westfalen and Hessen). In the candidate countries, density is high in Prague in the Czech Republic and in Bratislava in Slovakia.



Map 8.1

— Sweeping around the Mediterranean coast from Communidad Valencia in Spain through Provence–Alpes–Côte d'Azur to Sicily, an arc of regions with relatively high motorway densities reflects the importance to tourist areas of having a modern transport infrastructure.

— Peripheral regions in Greece, the United Kingdom, Sweden, Poland and Romania have low motorway densities, as do island regions such as Corsica (France), Sardegna (Italy) and Kriti (Greece).

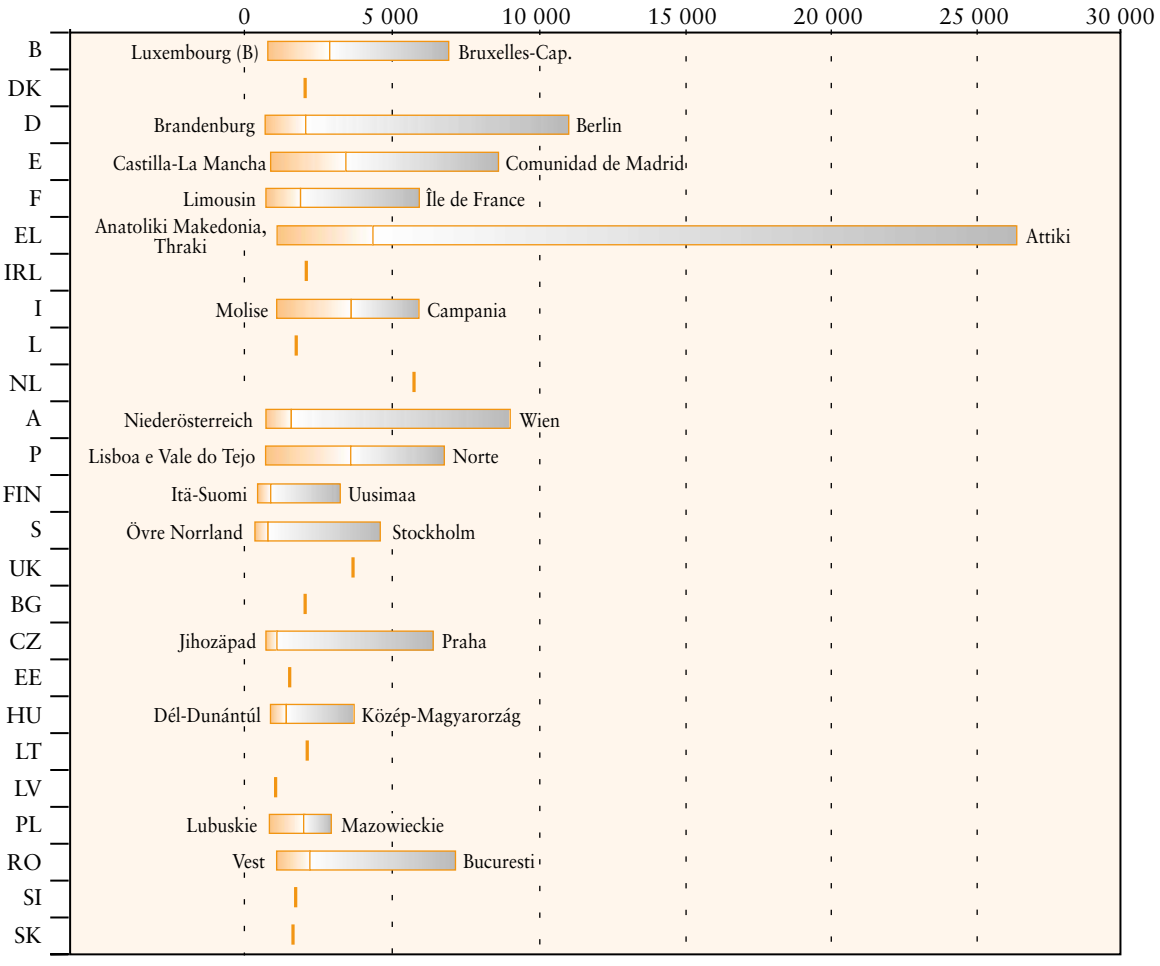
— Many regions in the candidate countries have low motorway density, comparable with those regions of the Member States which are less urbanised (most regions in Ireland, France, Spain and Portugal).

Railway network

The density of the railway network is a measure of its accessibility as a means of transport. However, the length of the network per unit of area in a given region may be misleading if it ignores differences in population density. Graph 8.1 expresses accessibility to rail transport in terms of the number of inhabitants per kilometre of track in NUTS-2 regions. For each Member State, the regions with the highest and lowest values have been graphed, along with the national average (the broken orange vertical line). The EU average is 2 600; that of the candidate countries 1 567.

— The greatest extremes appear in Greece. The relatively thinly populated peripheral northern regions contrast with the densely populated region of Attiki, which includes Athens.

Graph 8.1 — Regional variation in per capita access to railways, NUTS–2, 1999 (inhabitants per km of railway)



NB: B, D: 1994; EL, S, UK: 1996; I, A: 1997; F, IRL, FIN: 1998; DK: 2000; UK: population (1998).

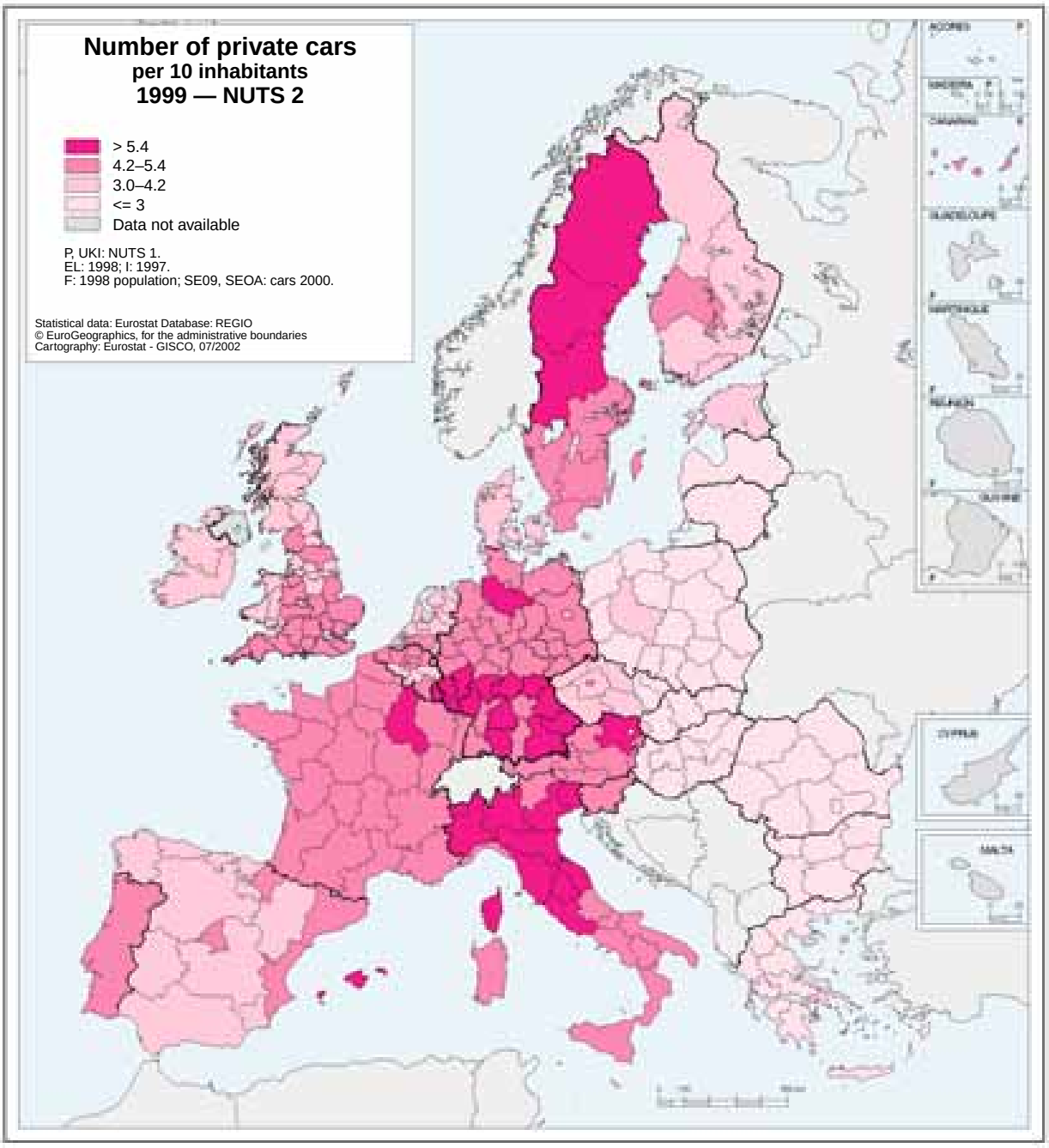
— The highest densities tend to be around capital cities. In some of these, the lowest-value regions have figures close to the national average (Berlin, Île-de-France, Vienna, Stockholm and Prague).

— Since there are no NUTS-2 regions for Denmark and Luxembourg, only the national averages have been given.

Transport equipment

Vehicle data at NUTS-2 level are divided into cars, buses, goods road motor vehicles (trucks), tractors, special road motor vehicles, trailers, semi-trailers and motorcycles. The fleet of cars, measured in terms of the number of private cars per 10 inhabitants, generally correlates closely with per capita GDP. Most of the German regions have a high level of GDP and of car ownership, whilst most of the Greek regions have low scores for both indicators. In a few regions, however, there are marked deviations from this trend.

— Regions which include major conurbations — for example Vienna in Austria, Berlin in Germany and Brussels in Belgium — often have an extensive public transport network, and thus relatively low car ownership. Parking problems or the concentration of students, immigrants



Map 8.2

and other low-income groups could further explain this phenomenon.

— In some countries, the core urban region is surrounded by a region with high car density, possibly indicating that many commuters depend on their cars to get to work in the city. Examples include the Belgian region of Vlaams Brabant and the German regions of Brandenburg and Lüneburg. In contrast, a low level of car ownership around the core region may indicate the widespread use of public transport for commuting, as in Outer London. In NUTS-2 regions drawn more widely around the core city, such as Communidad de Madrid and Île-de-France, these factors tend to balance out.

— Since in many cases car ownership is an indicator of relative personal prosperity, regions with higher average incomes would be expected to have a higher level of car ownership. Examples include the Grand Duchy of Luxembourg and the region of Oberbayern in Germany, which includes the city of Munich. A clear economic divide is also apparent between the southern Italian regions of Abruzzo, Campania, Molise, Apulia, Basilicata, Calabria, and the rest of the country.

— In a few sparsely populated regions, a car may be a necessity for travel to and from work. Such regions include Champagne-Ardenne in France, Väli-Suomi in Finland and Norra Mellansverige, Mellersta Norrland and Övre Norrland in Sweden.

Transport of goods and passengers

In the past, Eurostat collected data on interregional road freight transport movements at national level, without taking account of cross-border transport. Under present legislation on road transport statistics, it is now possible to collect data on interregional cross-border flows of goods, but so far data quality and availability have not been sufficiently good to allow figures to be compiled.

Eurostat has therefore used a computer model to derive interregional flows across the whole of the EU, using existing statistics on interregional flows within Member States and data on international road freight transport. The model estimates freight traffic flows on the main road network, measured in trucks per day. The complete results from the model, as well as the description of methodology, are available from Eurostat on request. REGIO contains some of the indicators derived from the model. The present model, however, takes account only of vehicles registered in the EU Member States and does not include the candidate countries.

Previous editions of the regional yearbook gave details from this source on the density of goods transport, concentrating on an analysis of the Nordrhein Westfalen region based on flows of road freight and transit traffic. In this edition, we concentrate on a region which has been in the news a great deal in recent times owing to transport problems, and is also in general an interesting transport region, namely the Alps.

For the detailed investigation of transport flows through one of the most important mountainous regions of the EU — the Alps —, an 'analysis of selected links' was carried out. A specific number of important segments was selected in the regions (selected links) and transport flows were modelled for these links only. The model provides a new source-target matrix restricted to the area in question. The data can be used to calculate the amount of traffic generated by and attracted to the road network. The transport flows for each are calculated in both directions.

The study concentrates on the Alps in southern France, northern Italy, Austria and Switzerland only, excluding the Alpine area of Slovenia.

The results of the analysis can be seen in maps and tables. Tables give data on traffic generated by and attracted to these selected road segments. Table 8.1 shows the 10 main regions for transport flows through the Alps, with traffic on the selected links showing generation/attraction in trucks per day.

The maps show how the traffic model allocates goods transport to the road network. Flows of goods transport over the selected links are shown. The maps show the spatial distribution of traffic through the selected areas.

Alps — towards north-western Europe

For the analysis of the Alps, goods transport by road is analysed using a specific number of links.

Initial information is obtained by sorting the data on traffic generated by and attracted to all regions and choosing the 10 highest values. This shows where the greatest volume of traffic comes from (generation) and where it goes to (attraction).

— The 10 regions producing the greatest volume of goods traffic over the Alps towards the north are nine Italian regions and one in Austria, Kärnten.

— The regions generating most traffic are Lombardia (IT2), Veneto (IT32) and Piemonte (IT11) in the north of Italy.

— Points of attraction are regions in Germany (Bayern, Baden-Württemberg, Nordrhein-Westfalen, Sachsen), France (Rhône-Alpes, Alsace), Italy (Friuli-Venezia Giulia, Trentino-Alto Adige) and Austria (Tirol, Oberösterreich).

Most of these regions lie near the Alps, indicating that flows of goods traffic decline the greater the distance from the Alps.

Table 8.1 — Traffic generation and attraction over the Alps towards north-western Europe

	Generation		Attraction	
Rank	Region	Trucks/day	Region	Trucks/day
1	Lombardia	6 831	Bayern	4 723
2	Veneto	4 468	Rhône-Alpes	2 724
3	Piemonte	3 630	Baden-Württemberg	2 373
4	Emilia-Romagna	2 450	Friuli-Venezia Giulia	2 110
5	Trentino-Alto Adige	1 726	Trentino-Alto Adige	1 724
6	Friuli-Venezia Giulia	1 202	Nordrhein-Westfalen	1 068
7	Lazio	993	Sachsen	987
8	Toscana	963	Tirol	767
9	Kärnten	902	Oberösterreich	539
10	Liguria	675	Alsace	506

Next, there is a map analysing all selected links (see Map 8.3).

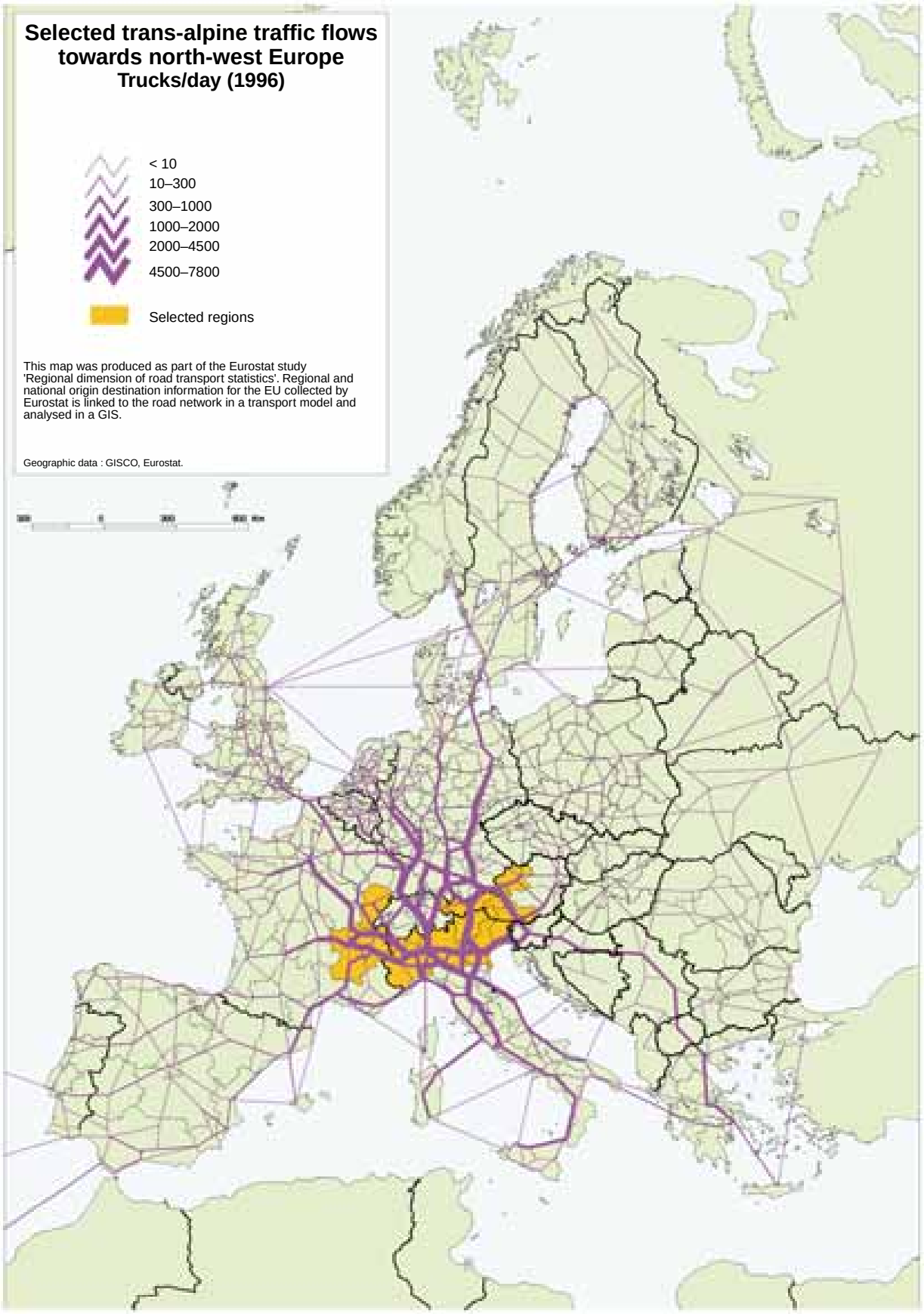
— This map shows that flows of goods traffic through the Alps come from very different directions, starting off in countries such as Finland, Sweden, the United Kingdom (Scotland), Ireland and Portugal.

— The main destination is Italy, but Greece (for example Crete) is also important. Greece is accessible via two main routes, through either Italy or the former Yugoslavia and Albania.

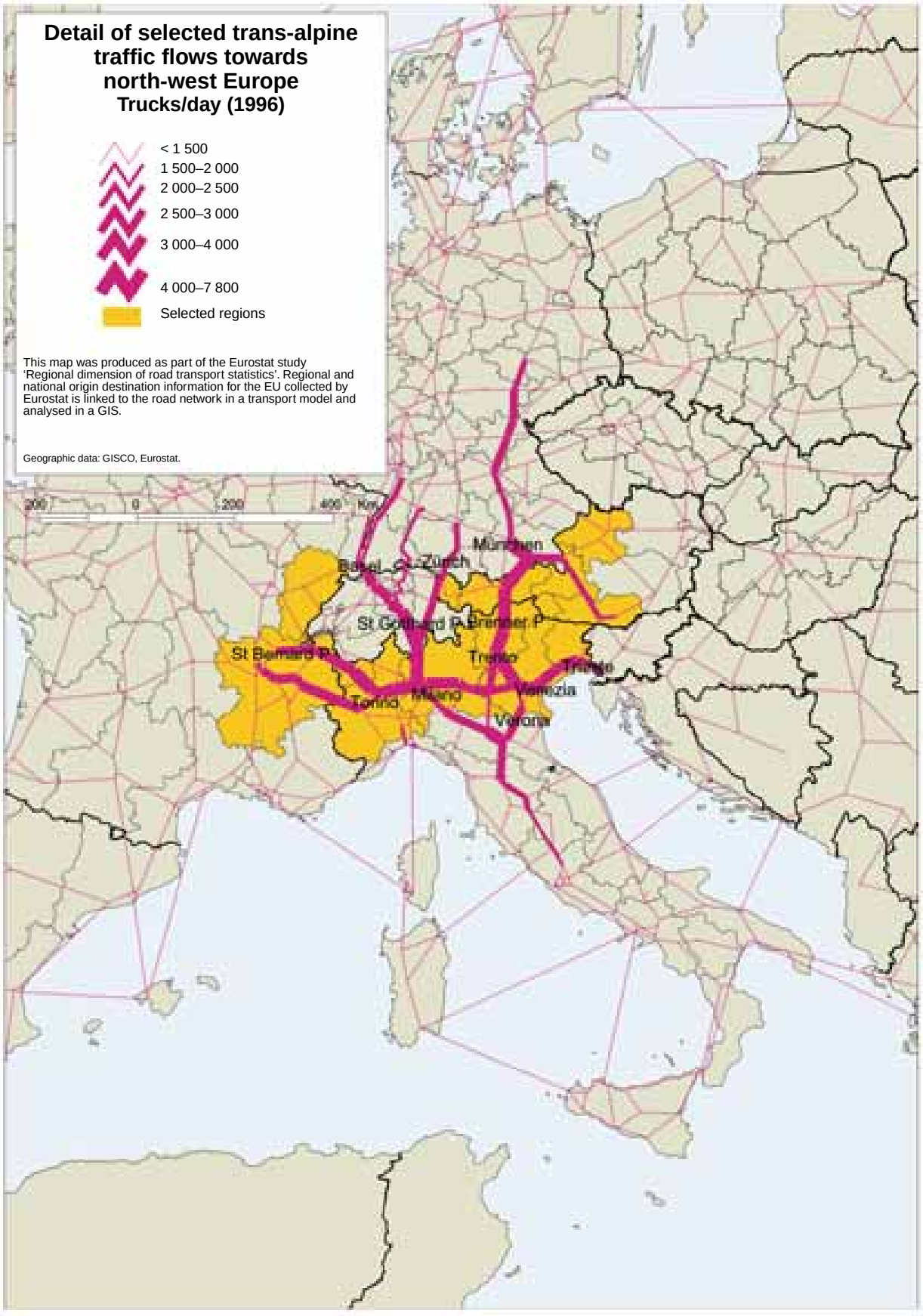
— There is generally a balance between the traffic in a given direction and the traffic in exactly the opposite direction. With flows of goods transport across borders, part of the reason is that truck operators try to avoid empty journeys on the way home.

Finally, the selected road segments are investigated in detail (by geographical magnification). The largest classes of goods transport are examined in detail, the smallest classes are deleted and the remaining major classes divided up and redefined. In this way, additional transport models are defined in these larger areas (Map 8.4).

— This method shows that most goods transport over the Alps travels through the St Gotthard Pass (Basel-Milan), the Brenner Pass (Munich–Verona) and the St Bernard Pass — the most important destinations being Bologna and Florence — to Italy. The flow of goods transport over the Alps towards Germany (Munich, Nuremberg) is noticeably larger than the flow from Germany over the Alps towards Italy and Greece.


Selected trans-alpine traffic flows towards north-west Europe
Trucks/day (1996)
< 10
10–300
300–1000
1000–2000
2000–4500
4500–7800
Selected regions
This map was produced as part of the Eurostat study 'Regional dimension of road transport statistics'. Regional and national origin destination information for the EU collected by Eurostat is linked to the road network in a transport model and analysed in a GIS.
Geographic data : GISCO, Eurostat.

Map 8.3


Detail of selected trans-alpine traffic flows towards north-west Europe
Trucks/day (1996)
< 1 500
1 500–2 000
2 000–2 500
2 500–3 000
3 000–4 000
4 000–7 800
Selected regions
This map was produced as part of the Eurostat study 'Regional dimension of road transport statistics'. Regional and national origin destination information for the EU collected by Eurostat is linked to the road network in a transport model and analysed in a GIS.
Geographic data: GISCO, Eurostat.
200 0 200 400 Km
München
Basel
Zürich
St Gotthard P.
Brenner P.
St Bernard P.
Trento
Torino
Milano
Venezia
Verona

Map 8.4

Sea transport

Sea transport statistics exist at the NUTS-2 level for both passengers and freight. They show movements through regions, expressed in thousands of passengers and in thousands of tonnes. The time series included in REGIO up to now go back to 1978. As already mentioned, the methodology for estimating regional statistics was revised this year, with the result that in REGIO new times series are included (with data from 1998) which are not directly comparable with the previous data on these variables.

The regional data on passengers and goods transported come directly from data collected on seaports. This method of collection is based on existing legislation (Council Directive 95/64/EC), which ensures that the national and regional statistics that Eurostat publishes tally.

The data based on the new methodology are not comparable with the previous data in REGIO, since traffic within a given NUTS region between ports in the same NUTS region is taken into account once only. Data up to now thus include double counting, and values are too high.

The data collected on the basis of Council Directive 95/64/EC are obtained only for ports handling passengers and freight in excess of a certain threshold. This means that aggregate traffic per NUTS level is not identical with the actual traffic at national level. Traffic at small ports is not taken into account. However, the regional distribution of the volume of traffic can be represented fairly accurately.

Finally, in the data collected hitherto, ports were in some cases allocated to the NUTS region which was economically stronger and not necessarily to the correct geographical region. In the new methodology, this has been corrected, and thus the allocation of ports to NUTS regions depends solely on geography.

The passenger data are divided into passengers boarding and passengers disembarking and freight data are divided into tonnes of freight loaded and unloaded.

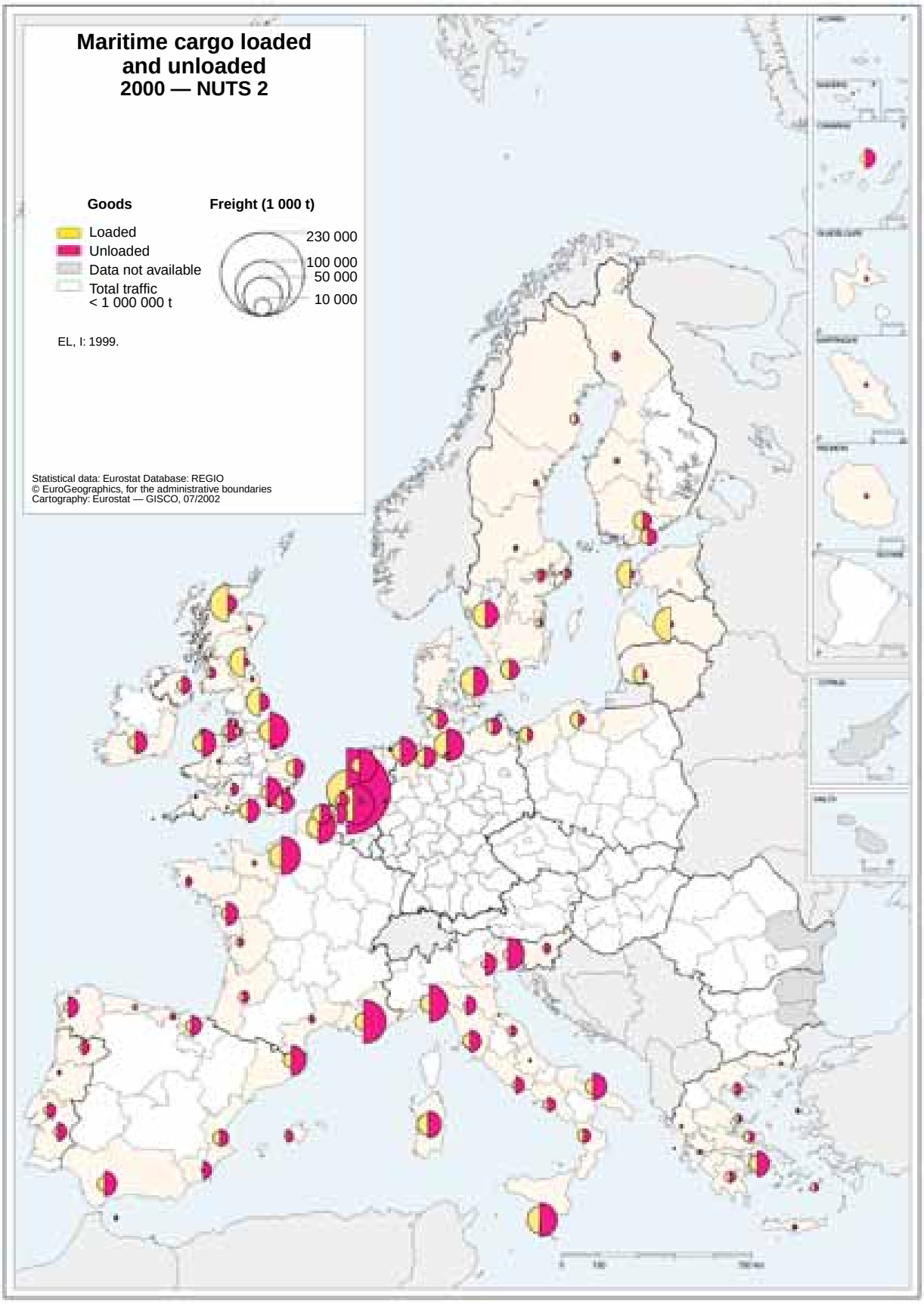
— Regions in the interior and coastal regions with no freight ports are not shown on Map 8.5.

— The volume of marine freight passing through the southern Dutch region of Zuid-Holland, which includes the port of Rotterdam, is by far the largest. Volumes of goods unloaded are over twice as high as in any other EU region. This has important consequences for freight traffic by road through a large part of the European Union.

— With a few exceptions in the northern regions of the United Kingdom and Etelä-Suomi in Finland, more goods are unloaded than are loaded. This presumably reflects the overall dependency of the EU's economy on imports of bulk commodities. But, a further point is that part of intra-EU freight transport is 'short-sea shipping' traffic, and this may help to reduce the environmental impact of road transport.

— The imbalance noted for many islands between goods unloaded and loaded (for example Kriti in Greece and Islas Baleares in Spain) may reflect the landing of supplies and materials for the tourist industry. No equivalent local freight is generated.

— Övre Norrland in Northern Sweden has similarly high figures for the loading of freight, even though it is very thinly populated. This is probably due to the production of large volumes of raw materials. There are similar reasons for the high volumes loaded in the United Kingdom regions of Highlands and Islands, eastern Scotland and Tees Valley and Durham, also reflecting the shipment of bulk goods produced in the region.


Maritime cargo loaded and unloaded
2000 — NUTS 2
Goods
Loaded
Unloaded
Data not available
Total traffic
< 1 000 000 t
Freight (1 000 t)
230 000
100 000
50 000
10 000
EL, I: 1999.
Statistical data: Eurostat Database: REGIO
© EuroGeographics, for the administrative boundaries
Cartography: Eurostat — GISCO, 07/2002

Map 8.5

Air transport

REGIO contains tables of air transport statistics at NUTS-2 level for passengers and freight. The present series go back to 1978. This year, for air transport, as for sea transport, the former survey method was revised, and thus the statistics shown here are no longer directly comparable with those in previous editions of the statistical yearbook for the regions.

The present methodology obtains regional statistics on passengers and goods transported by air directly from data collections relating to airports for which there is a legal basis (proposal for a Council Regulation 95/C 325/08). This type of data collection ensures that the figures tally with the national and regional data published by Eurostat, which was not always the case hitherto.

The data collected using the new methodology are not comparable with the previous data in REGIO, since traffic within a single NUTS region between airports belonging to the same NUTS region has been deleted. Owing to double counting, the values in the previous data were too high.

The data based on the proposal for a Council regulation (95/C 325/08) refer only to airports which exceed a specific threshold value for passengers and freight. This means that the aggregate traffic per NUTS level is not always identical with actual traffic at national level. Traffic at small airports is not taken into account. However, the regional distribution of the volume of traffic can be represented fairly accurately.

Finally, in the data collected hitherto, airports were in some cases allocated to the NUTS region which was economically stronger and not necessarily to the correct geographical region. This has also been corrected in the new methodology, with the result that the allocation of airports (using geographical coordinates) to NUTS regions depends solely on geography.

The data on passengers are divided into passengers boarding and passengers disembarking.

The data included in REGIO hitherto on transit passengers cannot be estimated at present owing to a lack of available data using the new methodology.

Although statistics are collected at airport level, and then assigned to the appropriate NUTS-2 region, the catchment area for a major airport (i.e. the area from which it draws its customers) will in most cases be much larger than this regional level. For Map 8.6, therefore, NUTS-1 regions have been chosen. The area of the circle represents the total number of passengers using the airports in the NUTS-1 region concerned.

London's five international airports are divided up over three NUTS-1 regions (eastern, London and the South East).

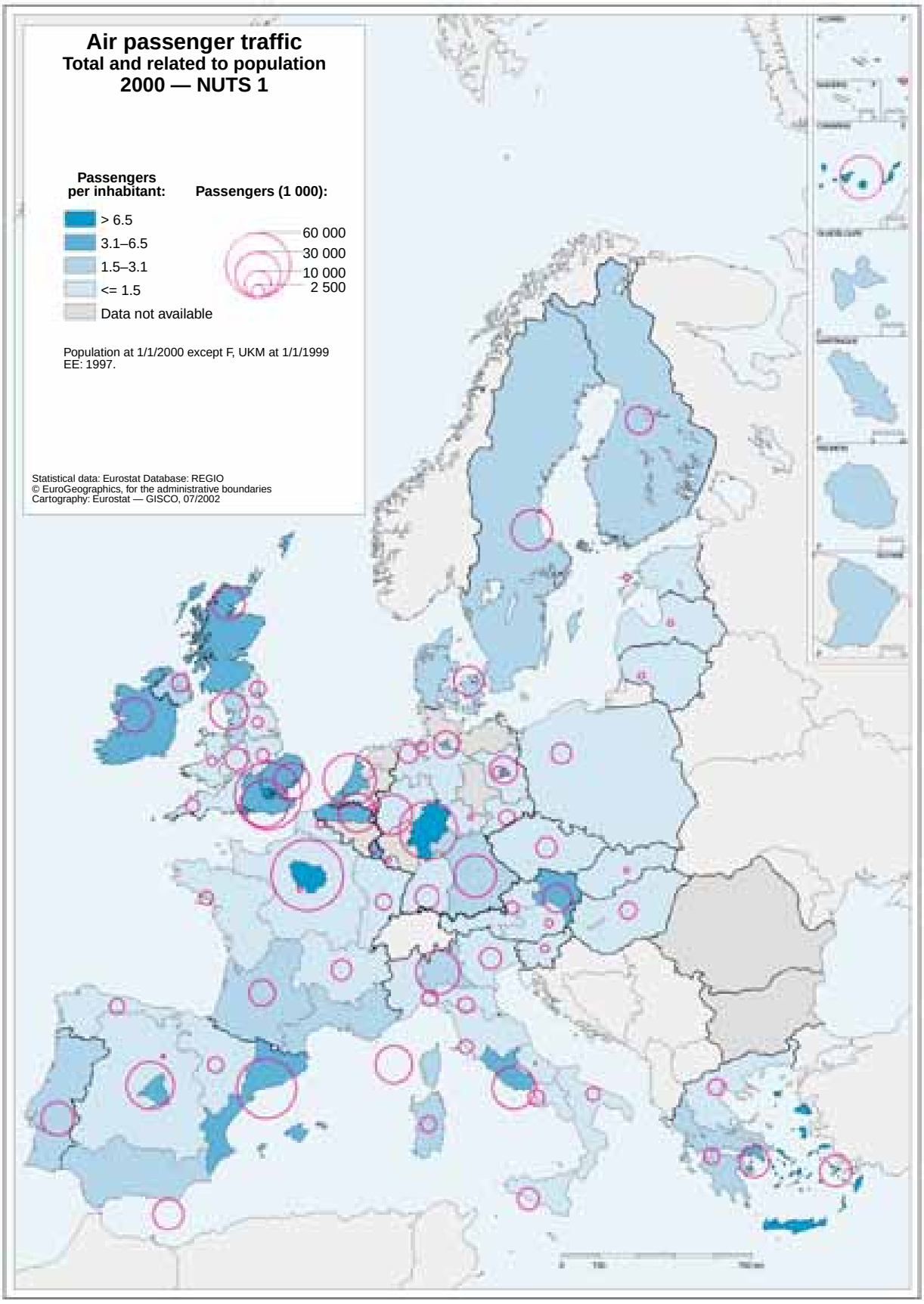
For Luxembourg, Ireland, Denmark and Sweden, the NUTS-1 level is the national level.

For the French Overseas Departments (*Départements d'outre mer*), there is only a total value available for the NUTS-1 region, and the total figures for passengers are therefore not shown here by region.

— The 'Bassin parisien' is a good example of how airports can attract customers. Although this catchment area is much larger than the Île-de-France region, which it entirely surrounds, its own air transport needs are almost entirely met by Paris airports within Île-de-France.

— The region which includes the capital city is not always a country's busiest air transport region. In Spain, the busiest region is the tourist region of Este, and in Germany it is Hessen, which has a highly developed economy and where Frankfurt is responsible for extensive business traffic, as well as acting as a hub for long-distance flights. Business traffic is without doubt the reason for the higher volume of traffic in the Italian region of Lombardia, in which Milan is situated, and in the Netherlands regions of Utrecht, Nord Holland and Zuid Holland.

— Tourism is a further factor which may lead to a higher volume of traffic in certain regions such as Nisia Aigaiou/Kriti in Greece and Canaries in Spain, where the figures for air passengers per inhabitant are particularly high.


Air passenger traffic
Total and related to population
2000 — NUTS 1
Passengers per inhabitant:
> 6.5
3.1–6.5
1.5–3.1
<= 1.5
Data not available
Passengers (1 000):
60 000
30 000
10 000
2 500
Population at 1/1/2000 except F, UKM at 1/1/1999
EE: 1997.
Statistical data: Eurostat Database: REGIO
© EuroGeographics, for the administrative boundaries
Cartography: Eurostat — GISCO, 07/2002

Map 8.6

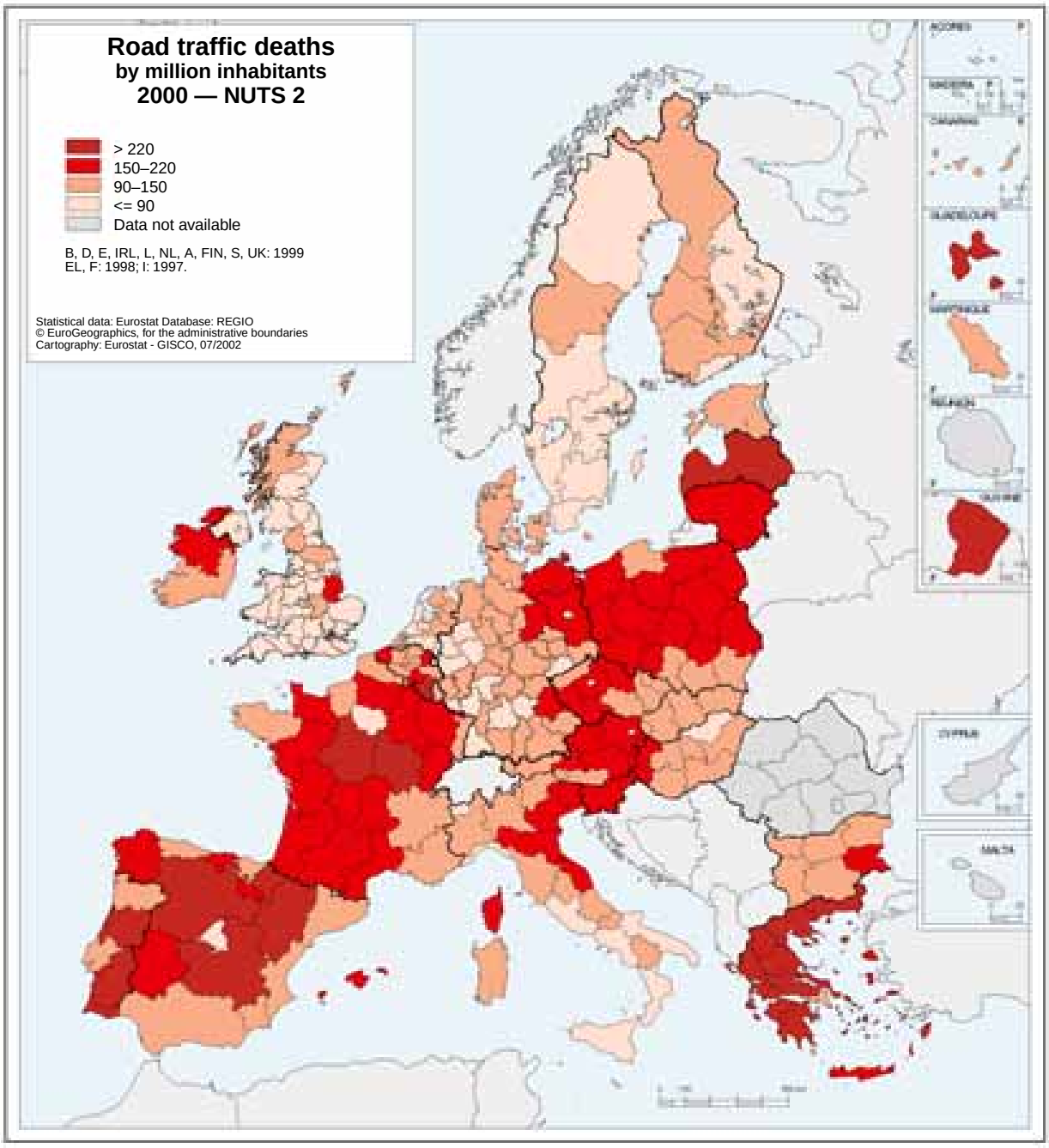
Safety

REGIO contains data on deaths and injuries in road accidents at NUTS-2 level. The time series go back to 1988.

Map 8.7 shows the indicator 'Number of road accident deaths in 2000', expressed in terms of deaths per one million inhabitants. Relating the figures to the population is intended to remove the regional variations arising from the fact that some areas have greater populations than others. However, other relevant factors such as the number of vehicles or distances travelled are not taken into account (see also Map 8.2 on car ownership).

The standard definition of a road accident death covers all deaths within 30 days of the accident. However, this definition is not applied in all Member States, and so some countries, which apply a shorter time span, have comparatively low indicators. Corrective coefficients for use in these cases are available in the REGIO reference guide, but the data used here have not been adjusted using these coefficients.

The number of accidental deaths on the road varies considerably from one region of Europe to another, from 22 deaths in accidents per one million inhabitants in Ceuta y Mellila in Spain to 369 deaths per one million inhabitants in Alentejo, Portugal.



Map 8.7

Most regions in the Netherlands, the United Kingdom and Sweden have fewer than 90 road traffic deaths per one million inhabitants.

The figures are very high (between 220 and 369) in Greece, eastern Germany, Portugal, the Centre and Bourgogne regions in France and in Castilla y Léon, Castilla-la Mancha, Aragon and Communidad Foral de Navarra in Spain. In some of these cases, there is no doubt a link between increasing car ownership and an inadequately modernised road network. It is, however, futile to reduce the causes of deaths on the road to a few factors only, since there is no doubt that factors such as driver training, keeping to speed limits and restrictions on drivers' alcohol consumption must be taken into account.

Regions which include major conurbations (Comunidad de Madrid in Spain, Berlin in Germany or Vienna in Austria) generally have fewer traffic deaths, perhaps reflecting greater use of public transport and lower average speeds, or the fact that there are more motorways.

On the other hand, island regions where tourism is important, such as Corsica and Guadeloupe in France, Sardinia in Italy and many Greek islands, have higher figures for traffic deaths. The seasonal influx of tourists and the resulting increase in traffic no doubt play an important part, but these are not taken into account in the population figure used for the indicator.

Road traffic deaths are also very high in Latvia, Lithuania, Poland, the western part of the Czech Republic, the western part of Hungary and south eastern Bulgaria.

Conclusion

In many cases, the regional transport statistics shown here highlight the same differences between the regions which are evident in indicators of economic activity. This is particularly apparent in a comparison of the maps in this chapter with those showing regional gross domestic product (GDP). This correlation tends to support the theory that increasing traffic and economic growth are often closely connected.

The distribution patterns shown also suggest that regional economic development is in general supported by an adequate transport infrastructure. A lack of appropriate infrastructure may be a limiting factor in regional economic development. It has also become clear that, owing to their disproportionately high volumes of traffic, certain regions are much more seriously affected by environmental problems than fringe regions which have a smaller volume of traffic.

In general, the pattern is similar in the candidate countries to that in the EU Member States.

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eurostat

9

H E A L T H

Introduction

The regional health indicators for the European Union, developed by Eurostat to help set objectives in the field of health, comply with standardised definitions and methods, and comparisons are therefore possible. If they are to yield high-quality, comparable information on the general health of the population, the data will have to be comparable from one region to another and reflect changes over time. The main non-medical factors governing the health of the population at regional level will also have to be taken into account.

Regional-level health statistics cover two separate aspects. On the one hand, there are data on mortality, where the illnesses or diseases in question are defined according to an international classification. The first part of this chapter deals with these statistics. Eurostat also collects health-sector data on infrastructure, in the broad meaning of the term, and on staffing in the health sector. The second part of this chapter will analyse these figures.

Comments on methodology

(a) Socio-health regions

The difficulty with health statistics on a regional scale stems from the fact that regional, provincial or local governments define their socio-health regions very differently from one Member State to another. Indeed, the regional breakdown which is of interest to health authorities in the Member States is not necessarily exactly the same as in the NUTS II classification. With regional governments becoming more important, the regions are also increasingly important as units for the political and administrative management of health issues. In Spain, for example, the autonomous communities have acquired a great deal of autonomy, one practical effect of which is that they manage the whole of the health budget. The situation is very similar in Belgium. Since 1996, France's healthcare reform, introduced to put healthcare planning on a regional footing, has allowed hospitals to be responsible for allocating the budget. Healthcare management is also being drastically reorganised in the United Kingdom. In other Member States — the Netherlands and Sweden, for example — it is municipalities which are responsible for healthcare. Yet again, there are differences in the level of responsibility of the healthcare authorities in the United Kingdom (NHS Trusts), Ireland (regional public-health administrations) and Portugal (healthcare regions). Most of these management levels manage hospital and out-patient care as well as social services and related policies.

(b) Mortality indicators

Eurostat collects data on the absolute number of deaths (at national level and at NUTS-1 and NUTS-2 regional levels). Coding is based on the primary cause of death (Section B) on the death certificate. The causes of death are defined on the basis of the WHO's international classification of diseases (ICD), with all the Member States using the ninth or 10th revision. The standardised death rate (SDR) is a weighted mean of age-specific death rates. The weighting factor is the age distribution of the population whose death rate is being observed. Comparing the SDRs of two or more populations (at the NUTS-2 level in the present publication) means comparing a combination of different age-specific death rates and different demographic structures which reflect both the 'real' differences in mortality and the effects of demographic structure on the total number of deaths and on crude death rates.

(c) Resource indicators

For the indicators of available health resources used in this publication, Eurostat collects regional-level statistics on healthcare workers (numbers of doctors and of other professions) and numbers of hospital beds.

The Member States compile figures on numbers of doctors in each region on the basis of different concepts and registers. In eight countries (Belgium, Denmark, Germany, Greece, France, Austria, Sweden and the United Kingdom), the number of doctors is the number actually practising (i.e. both doctors who have a medical practice and those working in industry, research or administration). In Ireland and Luxembourg, the definition covers only doctors with a medical practice. In five other Member States (Spain, Italy, Netherlands, Portugal and Finland), the definition covers doctors 'authorised to practise', including those who are unemployed, retired or working without directly practising medicine, as well as those who actually have a medical practice. The United Kingdom and Ireland include the public sector only.

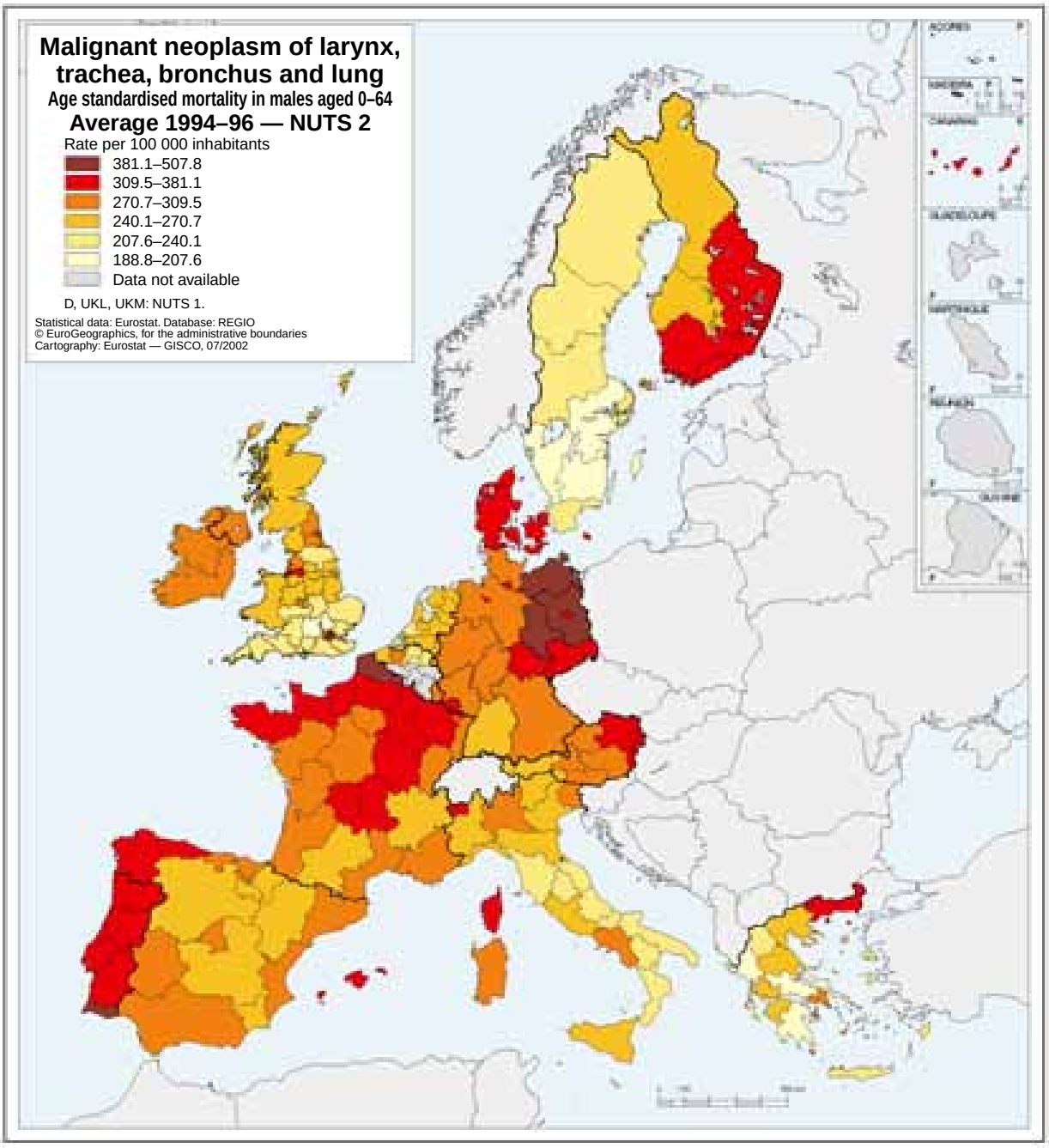
The data Eurostat collects on numbers of beds are normally presented in the form of annual averages. The figures are not readily comparable and should be interpreted with care, since the definition of 'hospital' and 'hospital bed' varies from one Member State to another. In general, however, changes in numbers of beds are recorded *pro rata temporis*. Only beds intended for patients who are hospitalised are counted. The 'total

number of hospital beds' covers all beds (with the exception of those for children in good health) in general, university and specialised hospitals, psychiatric hospitals and other establishments treating those with mental disorders, nursing homes, etc. Hospital beds available for nursing care during the day in medical centres for children, crèches under medical supervision and establishments for those with sensory deficiencies are not necessarily included.

Mortality in the EU regions

Premature mortality

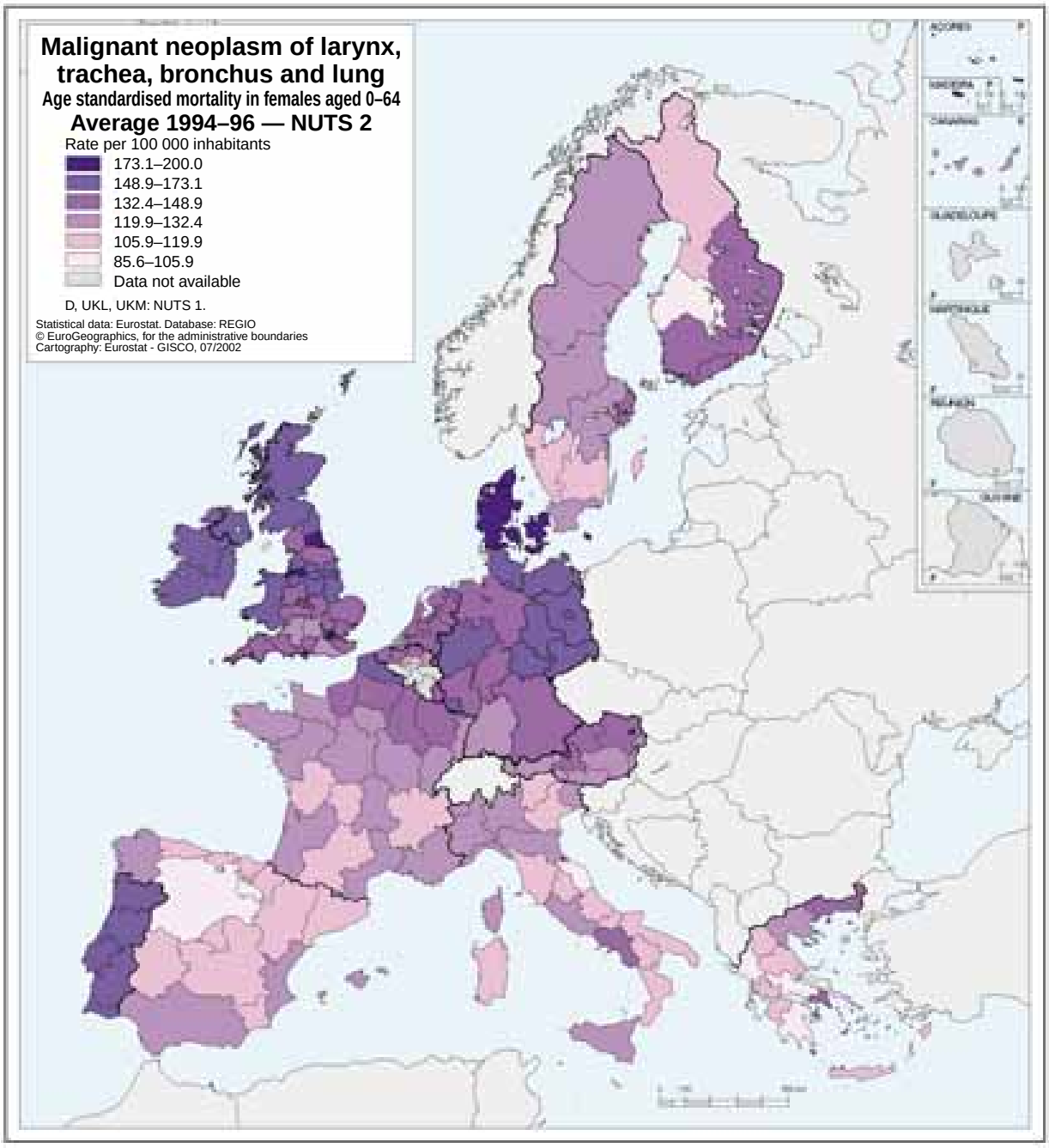
This term covers all deaths recorded before the age of 65 (the age limit used in the bulk of international work). In the EU as a whole, these early deaths account for one third of general mortality, with death rates which are twice as high for men as for women. Spatial analysis of premature mortality shows substantial differences in the EU, and different patterns for men and for women.



Map 9.1

For men, major disparities within national borders

Early mortality does not strike the male population with equal force throughout Europe. Between Sweden, which has the lowest rate, and Portugal, which has the highest rate, the figures vary in a ratio of 1 to 2.5. France and Germany also have excess male mortality overall. There are major differences even within countries. Some countries have very marked regional structures. The similarities between cross-border regions are also noticeable. In Finland, the figures are clearly higher in the south than in the northern regions, where rates are closer to the Swedish ones. In Germany as a whole, there is a serious risk of dying early, but the former eastern *Länder* and those of Bremen and Hamburg have clear excess mortality. In France, the maps show a 'T' of excess mortality in the north fitting into a 'U' of excess longevity. In Austria, there is an east/west slope with the Danube area at the bottom. The lower death rates in the Alpine *Länder* are the same as those in the neighbouring Italian Alpine regions (Trentino-Alto Aldige). In Spain, the coastal provinces whose rates are close to those of the coastal regions in the south of France and the Comunidad de Madrid have higher rates than the inland provinces. The rates in Galicia and Principado de Asturias are the same as those recorded in the neighbouring Portuguese provinces. These



Map 9.2

spatial patterns indicate that premature mortality is due basically to regional factors. However, some of the European regions with the worst rates, particularly large urban and old industrial regions (Nord-Pas-de-Calais, Lorraine, Saarland, Greater Manchester), or economically disadvantaged regions such as the *Länder* of eastern Germany, Anatoliki Makedonia Thraki in Greece and Portugal as a whole, have some socioeconomic characteristics in common.

Less noticeable differences in female rates in Europe

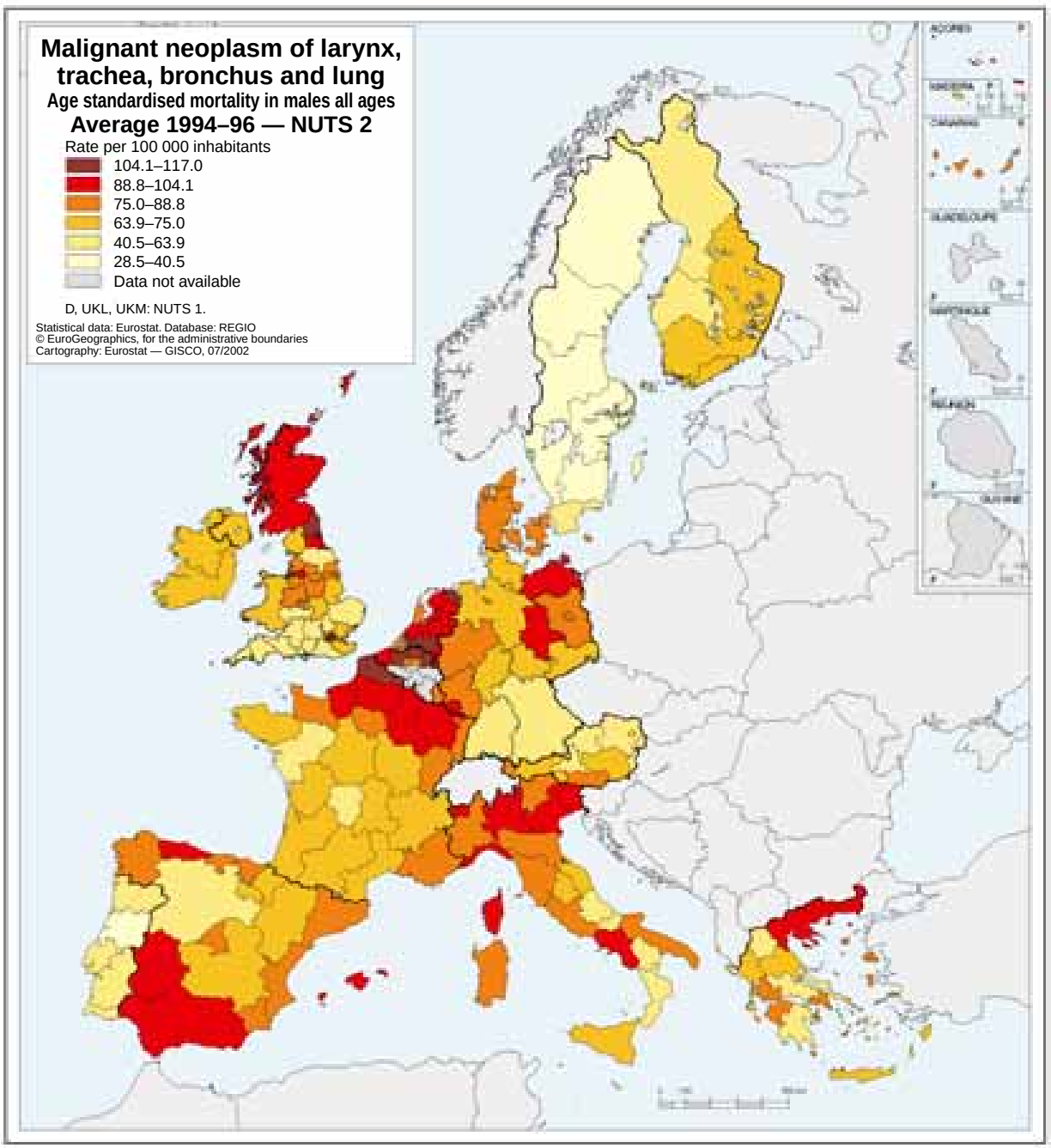
The female mortality patterns are different from the male. Denmark has the highest rates here, twice as high as Spain's. Denmark belongs to an almost unbroken belt of regions with excess mortality that includes the British Isles, the Benelux, the north east of France, Germany and the north of Austria. In the rest of the EU, Portugal as a whole, the south of Finland, Anatoliki Makedonia, Thraki, the region of Attiki in Greece and Campania in Italy also have high rates. Everywhere else, women run less of a risk of dying prematurely.

Mortality linked in particular to behavioural risks

In general, violence, alcoholism and smoking (broncho-pulmonary cancers, diseases of the respiratory apparatus, alcoholic cirrhosis, etc.) are the main causes of early death among the male population, accounting for over 30 % of male premature mortality. The importance of these causes linked to habits which put people's health at risk shows that premature mortality is one of the most useful indicators for assessing preventive policies in various European countries.

Cancers of the respiratory tract

Cancers of the respiratory tract (lungs, bronchi, trachea and larynx) are responsible for 5 % of all deaths in the EU. Most of these cancers are attributable to smoking.

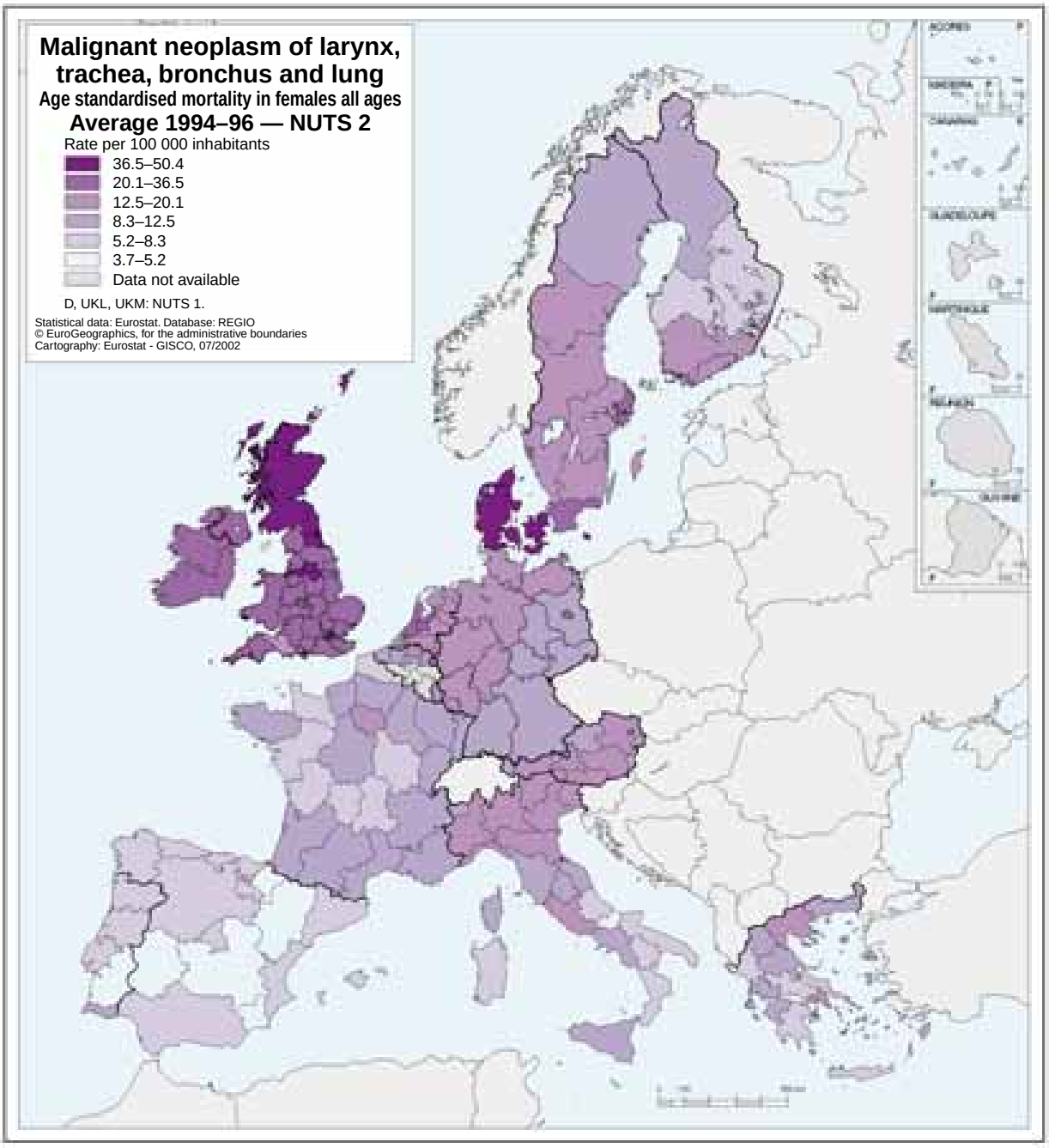


Map 9.3

A marked correlation for men between urban and industrial regions and death rates

Death rates for the male population vary by a ratio of 1 to 4 from one region to another. In France, Germany, the United Kingdom and the Mediterranean countries, regions which have certain socioeconomic characteristics in common — industrial and urban regions — have the highest mortality levels, those such as old industrial regions in the north of France (Nord-Pas-de-Calais and Lorraine), in the west of Germany (the Saarland, whose death rate is closer to that of the neighbouring French regions which share its industrial past), the north of England (Greater Manchester), the north of Italy and the Spanish coastal provinces. All the major urban regions in these countries, along with the Greek province of Attiki (which includes Athens) have excess mortality. The Netherlands and Belgium, which are highly urbanised, also have high rates, along with regions which have economic problems, such as the former East German *Länder*, which are currently being restructured, Campania in Italy, Scotland, Kentriki Makedonia and Anatoliki

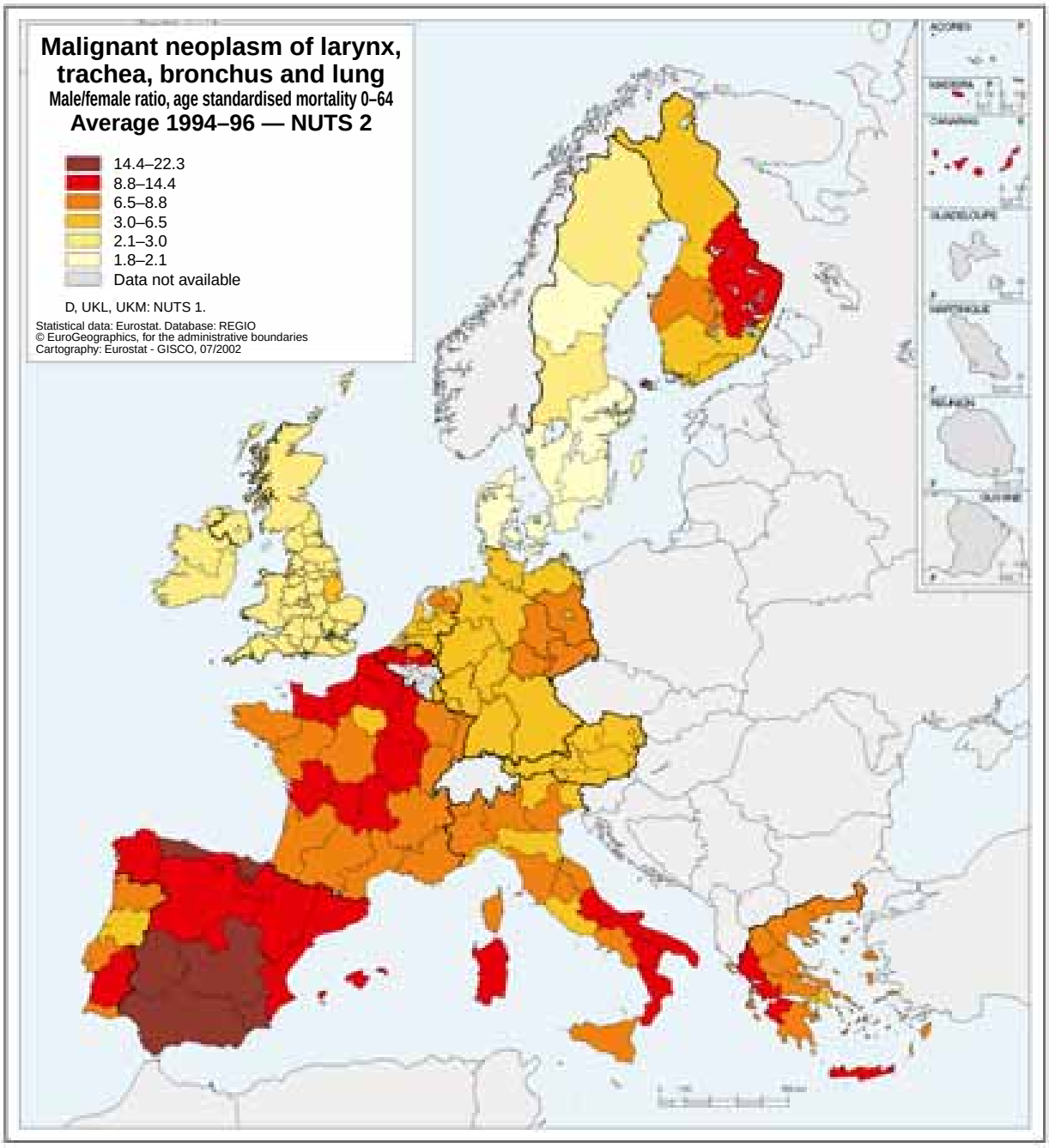
Makedonia, Thraki. Regions with excess mortality are geographical areas where tobacco consumption is or has been higher than elsewhere. Studies on male tobacco consumption by socio-professional category show that smoking is more widespread among manual workers. In the industrial regions, rates of death due to respiratory tract cancers are likely to indicate mortality affecting a male population of heavy smokers which is at the same time more often exposed to environmental pollution at work.



Map 9.4

Specific geography for female mortality

A map plotting female death rates does not look the same as the map of male rates. There is a vast area of excess mortality from the British Isles to the southern regions of Sweden and from Finland to western Germany. With the exception of northern Italy, women escape relatively unscathed in the Mediterranean countries. In the Iberian peninsula as a whole, rates are very low, up to 12 times lower than in Denmark. This geographical split is due to the different behaviour of women as regards smoking in the north and the south of the EU. In the north, it has long been common for women to smoke, whereas in the southern countries women smoking is a recent phenomenon, albeit one which is on the increase. The urban regions, with the exception of Vale do Tejo (including Lisbon) and the Comunidad de Madrid, now have mortality levels close to those of the Nordic countries: the main examples would be Lazio, Attiki and Kentriki Makedonia, which include the cities of Rome, Athens and Thessaloniki.



Map 9.5

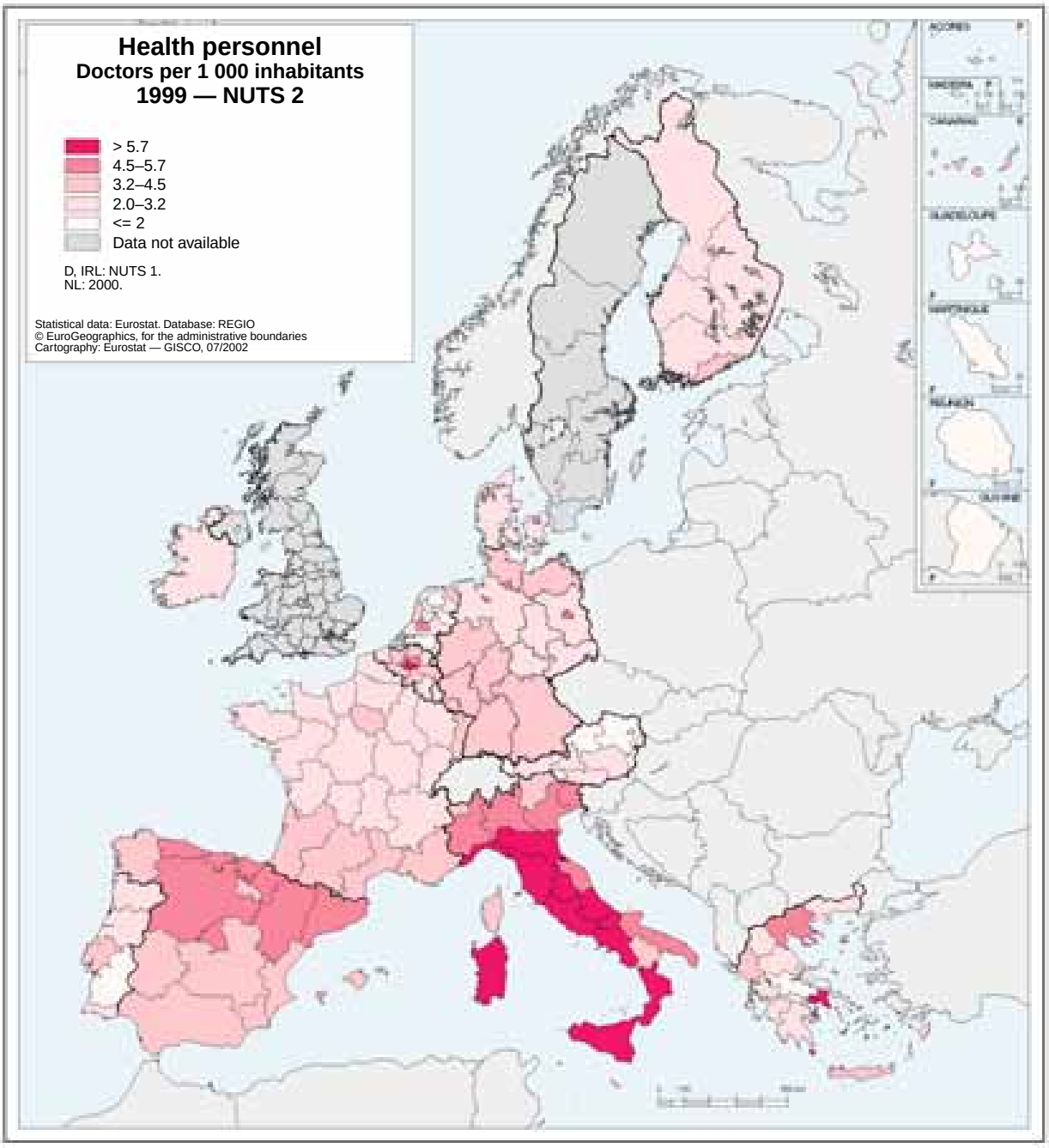
Widespread male excess mortality, but differences between the sexes varying from region to region

Despite the fact that more and more women are smoking in the EU, men are still more prone to cancers of the respiratory tract than women are. However, male excess mortality ratios vary considerably from one European region to another. There is a marked contrast between the northern and the southern countries. In the north, where the female death rate is high, the ratios are lower, whereas in the Mediterranean countries, excess male mortality is still very noticeable, although less evident in the regions which contain capital cities (Île-de-France, Lazio and Attiki). It is likely that these tendencies will change in the future in countries such as France and Spain, where smoking is on the increase among women.

Health resources in the EU regions

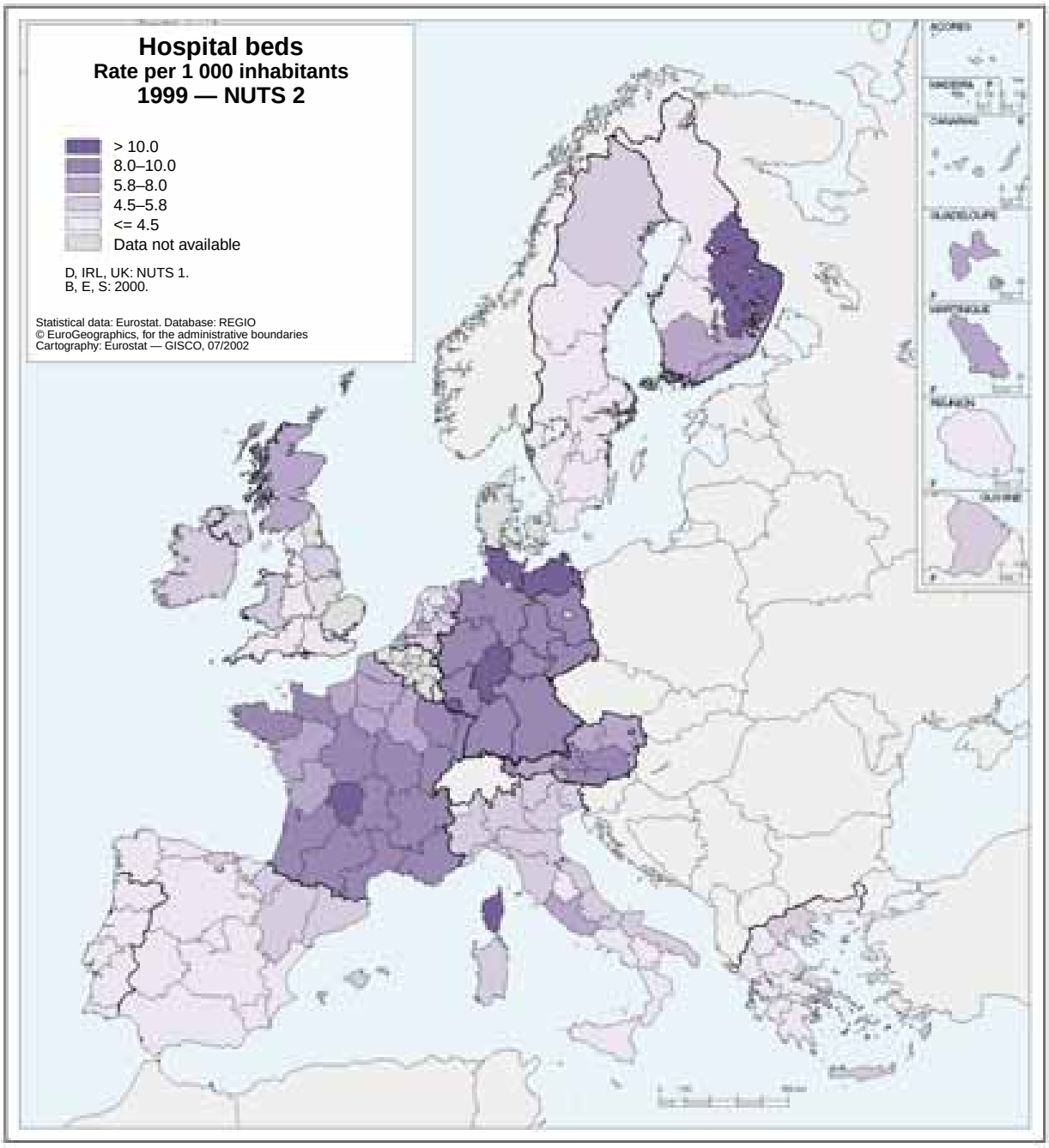
Changes in numbers of doctors

Between 1986 and 1999, numbers of doctors increased in all the EU Member States, from 2.7 to



Map 9.6

3.6 per 1 000 inhabitants. However, the density of manpower in the healthcare sector varies considerably from one Member State to another. In 1999, there were 1.9 doctors per 1 000 inhabitants in the United Kingdom and 5.9 in Italy. Compared with 1986, the figures have been rising in virtually all regions of the Member States. A breakdown by age and sex for eight Member States shows that 60 % of doctors are under 45 years and that in each age group there are more men than women. In the majority of Italian and northern Spanish regions, there is a high density of medical staff and these regions are net 'exporters' of doctors to other regions, particularly to the United Kingdom. This phenomenon is even more apparent with nurses. The high density of doctors in the Greek regions of Attiki and Kentriki Makedonia (including the cities of Athens and Thessaloniki respectively) may be explained by less strict legislation on recognition of the qualifications of doctors from the candidate countries. Judged by international standards, all regions of the EU have a sufficiently high density of doctors, with the exception of a few parts of Greece and Portugal.



Map 9.7

Changes in numbers of hospital beds

Numbers of hospital beds per capita show a quite different trend. Over the period 1986–99, the number of beds declined sharply in the EU as a whole, from 8.3 beds per 1 000 inhabitants to 6.3. This fall may be due to changes in medical technology, which have cut the average stay in hospital for any given disorder. A further reason is the financial constraints which arose during the 1990s and which have led to a rationalisation of healthcare services everywhere. The increased demand for healthcare for elderly people, many of whom are suffering from chronic disability and diseases, has in most cases been met by transferring beds for acute or psychiatric care to long-term care, while total numbers are still declining. Resources available, expressed as the number of hospital beds per capita, vary substantially from one Member State to another. The supply of hospital services at national and regional levels is, however, very closely linked to total healthcare expenditure.

The share of gross domestic product (GDP) which the Member States spent on healthcare in 1998/99 varied from 6.7 % to 10.4 %. There is a certain north–south (plus Ireland) divide, but the difference is not great. Healthcare expenditure accounted for a higher share of GDP in Germany (7.8 %), France (7.3 %) and Denmark (6.9 %) than in Portugal (5.2 %), Ireland (5.1 %) or Greece (4.7 %). Between 1980 and 1999, healthcare increased its share of GDP in most Member States. The level of expenditure depends partly on the prices of goods and services and partly on quantities supplied. In this sector, the problem generally arises because the output of 'health' cannot be directly measured. Whereas figures for goods and prices are readily available in most sectors of the economy, it is impossible to record items such as outpatient or hospital services directly.

However, it should be stressed yet again that differences in the way in which healthcare is organised and delimited at national or regional levels (for example: where should the dividing line be drawn between health services and social services?) make it difficult to interpret comparisons between countries, whether these are of figures on given dates or of trends.

The north–south divide applies to hospital beds, but with certain provisos. The German, French, Austrian and Finnish regions (headed by Mecklenburg-Vorpommern, Itä-Suomi and Limousin) have a high density of beds, in marked contrast to the Spanish, Portuguese and Greek regions (Algarve and Sicilia in particular), the United Kingdom and Ireland. Certain regions which border on candidate countries or Russia also have a density higher than other regions owing, possibly, to inflows of patients from these neighbouring countries.

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10

ENVIRONMENT

Introduction

This is the first time that regional environment statistics have been presented in this yearbook, as Eurostat has just finished collecting its first set of regional data on the environment from the Member States of the European Union and the candidate countries.

This work is primarily in response to a request made by the European Commission's Directorate-General for Regional Policy which, through the Structural and Cohesion Funds, finances the development of a large number of EU regions. Article 6 of the Treaty establishing the European Community states that environmental protection must be integrated into the definition and implementation of Community policies. Sustainable development has been one of the Union's tasks since the Treaty of Amsterdam, and one of the priorities is to ensure 'a high level of environmental protection'. Regional development and environmental protection therefore form complementary objectives and statistical data are required in order to evaluate existing and future efforts aimed at ensuring that a better quality of life goes hand in hand with environmental protection.

The statistical data have been collected by means of the regional environment questionnaire compiled by Eurostat. Countries take part in this new exercise on a voluntary basis (with, for some, financial support from the Regional Policy DG). Regional environment statistics are at the development stage: more data are being made available and harmonisation of the concepts will make it possible to upgrade the analyses. In fact, whilst country-to-country comparisons of environmental situations are regularly conducted at national level, these have not yet been produced on a regular and systematic basis at regional level on a European scale.

The topics presented in this chapter have been chosen first of all for their relevance to current environmental policies, with the management of natural resources, for example, being a priority in the context of the policy on sustainable development. The second criterion was the availability of data and the harmonisation of reference years, as environmental data are updated at different times depending on the country. Water-related surveys, for example, are often carried out only every three years in a number of countries. The data presented below relate to the most recent available years for each country. Finally, the comparability of the data between countries and between regions is also taken into account. The data and analyses which have been produced and presented in this yearbook should always be viewed with caution.

This yearbook will look first of all at the public water supply network and then at the collection of municipal waste and waste management by means of landfill. These indicators feature among the 59 sustainable development indicators drawn up by Eurostat (*Measuring progress towards a more sustainable Europe*, European Communities, 2001. ISBN92-894-1101-5). Additional data are also available in the environment domain of the NewCronos database.

Public water supply network

Many human activities have an impact on water availability and quality especially in areas of high population density, concentrated industrial activity and intensive agriculture. The targets of the sixth environmental action programme ('Environment 2010: our future, our choice'), as proposed by the Commission to the Council and to the Parliament, will be as follows for 2010:

— to achieve levels of water quality that do not give rise to unacceptable effects on, or risks to, human health;

— to ensure the long-term sustainability of rates of extraction from water resources;

— to prevent the pollution of ground water from all sources.

Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000, establishes a framework for Community action in the field of water policy and aims to establish a Community framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater in order to prevent and reduce pollution, promote sustainable water use, protect the aquatic environment, improve the status of aquatic ecosystems and mitigate the effects of floods and droughts.

The water supply analysed in this section is water supplied by specialised economic units engaged in the collection, purification and distribution of water — i.e. the public water supply. This type of water supply should be distinguished from self-supply, which is the abstraction of water by the user for his/her own final use. This is the form of supply used particularly for the domestic sector (households) and economic sectors which correspond to division 41 (NACE/ISIC) — i.e. industry, the agricultural sector, etc.

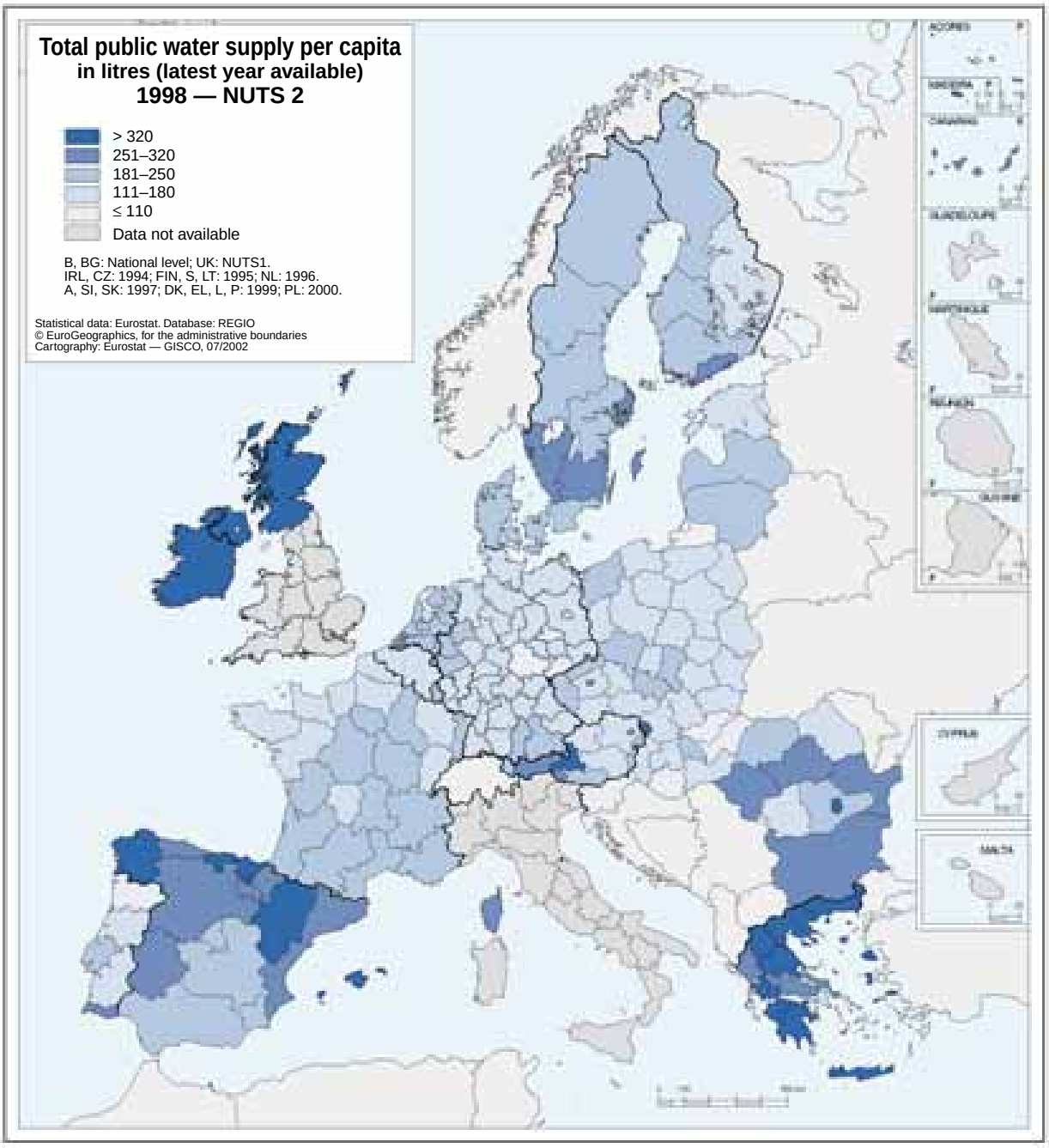
It was decided to present the data calculated per capita and not the total values reported by each country, in order to allow comparisons to be

drawn between regions. This calculation uses the total resident population of the regions and not the population actually covered by the public supply, on account of a lack of data for some countries. As a result, the quantity of water delivered per capita may be underestimated for some regions when a significant fraction of the population is not connected to the distribution network and supplies itself with water.

Map 10.1 shows the amount of water actually distributed by the public network, per capita in litres per day (not including losses). The quantities distributed vary widely from country to country but also between regions within the same country, thus highlighting significant regional disparities.

In Europe, water distribution ranges at regional level from 103 litres (Dessau, DE) to 805 litres (Dytiki Makedonia, GR). On average, it stands at 216 litres per capita per day (calculated using the most recent values) and varies at national level from 79 litres (Slovenia) to 348 litres (Ireland), closely followed by Greece on 337 litres. In general, the candidate countries make less use of the public network for water distribution at 184 litres per capita per day, as against 236 litres for the EU countries.

The considerable volume of water distributed in Ireland can be explained by water losses during distribution, which are not excluded from the figures and thus lead to an overestimate of the



Map 10.1

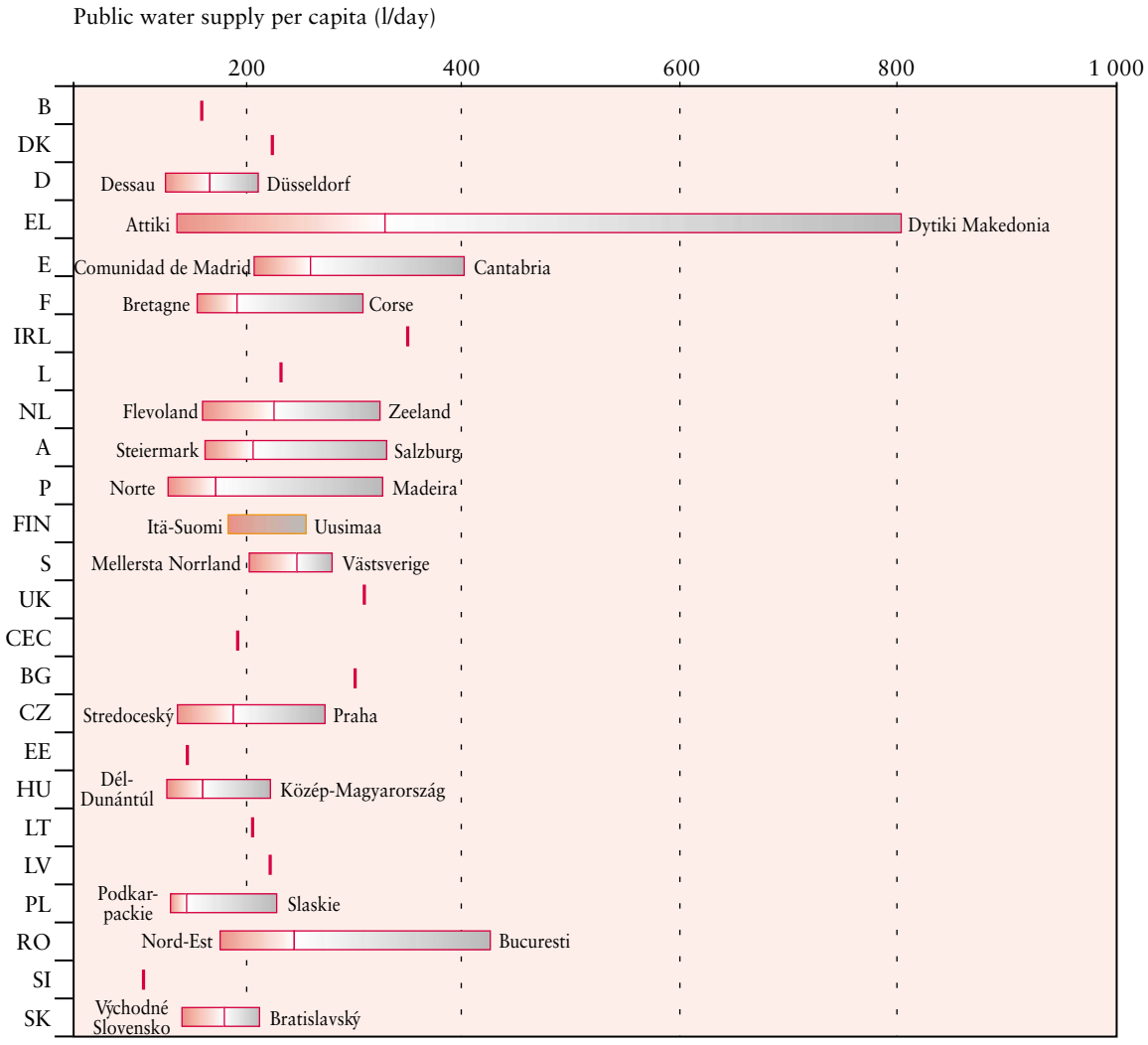
quantities actually distributed. In Greece, unlike most of the countries studied, the majority of public network supplies do not go to the domestic sector but to other economic sectors which are heavier consumers of water. Thus, in the case of Dytiki Makedonia, only 32 % of the water distributed is destined for the domestic sector, which perhaps explains the extreme level of consumption in comparison to other regions.

Some regions stand out on account of the low volume of water distributed by the public sector: these are found in some of the new German *Länder* (Dessau, Chemnitz, Thüringen), Norte in Portugal and Slovenia. In Portugal, self-supplies are undoubtedly one of the reasons for this situation as only 77 % of the population is connected to the public network in the Norte region, the lowest figure in a country where the average is 90 %. In Germany, on the other hand, virtually 100 % of the population is connected in all regions, including the new *Länder*.

The explanation for the situation in Spain is complicated by the fact that in addition to tourist activity and the nature of the public water-distribution system (imports/exports of water between regions), desalinated sea water is also used for the water supply or self-supplies.

In France, the price of the distributed water is a significant factor for some regions. In the regions of the west and north of France, for example, where the prices are highest, the quantities delivered by the public sector are the lowest per capita.

Graph 10.1 — Public water supply per capita at national level as well as regional extremes, 1998



NB: CZ, IRL: 1994; FIN, LT, S: 1995; NL: 1996; A, SI, SK: 1997; DK, EL, L, P: 1999; PL: 2000; CZ: old version of statistical regions (1997).

Graph 10.1 shows that significant variations can also be observed within the same country. In Romania, the Bucharest region makes 2.5 times more use of the public sector than the North-East region. In Austria, the national average is 211 litres per capita per day, but at a regional level the public network distributes between 151 litres (Steiermark) and 321 litres (Salzburg). The minimum distribution is underestimated by around 30 litres as only three-quarters of the population is connected to the public network in some regions. Nevertheless, distribution can vary by over 100 litres between regions. Tourism partly explains these variations for the Tirol and Salzburg regions, as the increase in the population (and thus the demand for water) as a result of tourism is not taken into account when per capita water distribution is calculated.

In the north of Europe, the regions of Finland, Sweden, Denmark, Lithuania and Latvia have relatively uniform levels of water distribution, at around 200 litres per capita. The only country which stands out is Estonia with a figure of 136 litres.

For a number of countries, the capital regions prove to be the largest consumers of water, particularly in the candidate countries — the Czech Republic, Romania or Slovakia — but also in Finland. A number of explanations can be put forward, such as the fact that in these regions of high population density there is little self-supply, as borne out by the high rate of connection to the network, or that the standard of living is sometimes higher in these areas with the result that households in particular use more water.

Municipal waste collected by or on behalf of municipalities

For some decades now, trends in consumption patterns have led to an increase in the quantity of waste produced.

This waste poses various threats to the environment:

— pollution of groundwater and surface water;

— soil contamination and degradation of the natural environment;

— the impact on health of emissions of hazardous gases (for example dioxins) and dusts;

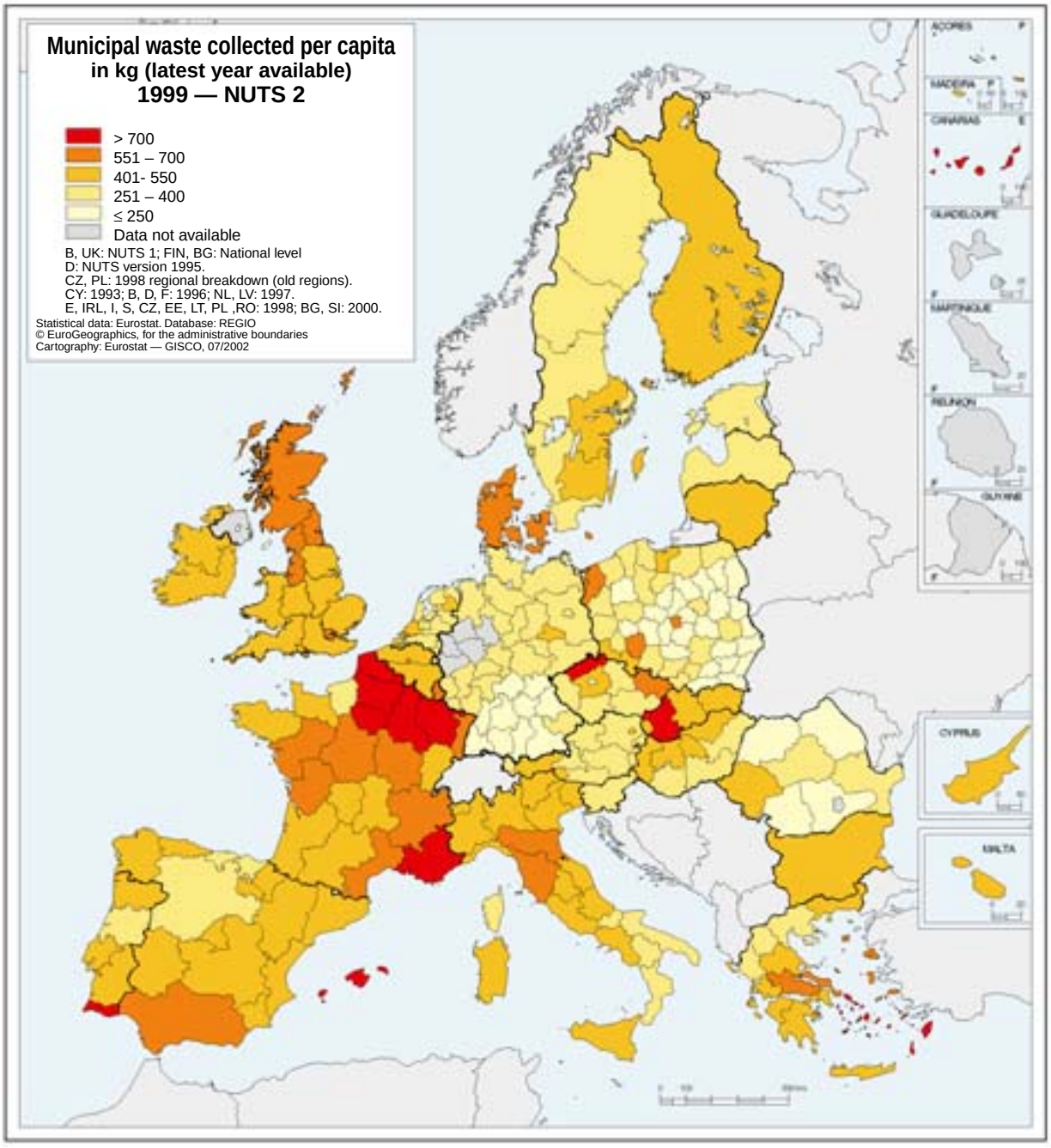
— global warming, through emissions of greenhouse gases from landfill sites (methane) and waste-incineration plants;

— odour nuisances and the degradation of landscapes.

In March 2001, the Commission adopted an (amended) proposal for a regulation of the European Parliament and of the Council on waste statistics. The objective of this regulation is to establish a framework for the production of Community statistics on the generation and treatment of waste, thus underlining the need for harmonised statistics in helping to understand, assess and manage the production and management of waste in Europe.

This section presents information on the quantities of waste collected by, or on behalf of, municipalities. Municipal waste only makes up a fraction of total waste production, but its collection and management is a very important and delicate issue. Not only does the concentration of such waste in areas of high population density sometimes make it difficult to treat and dispose of, but it is also made up of mixed waste which ought to be reclaimed or recovered.

The statistical data set out here should be viewed with caution as the definition of municipal waste is different from one country to another and the quantities of waste can vary depending on whether they are counted at the place of collection or the place of treatment. Secondly, the movement of waste between regions can sometimes complicate the analyses. The data presented are calculated per capita so that comparisons can be drawn between regions.



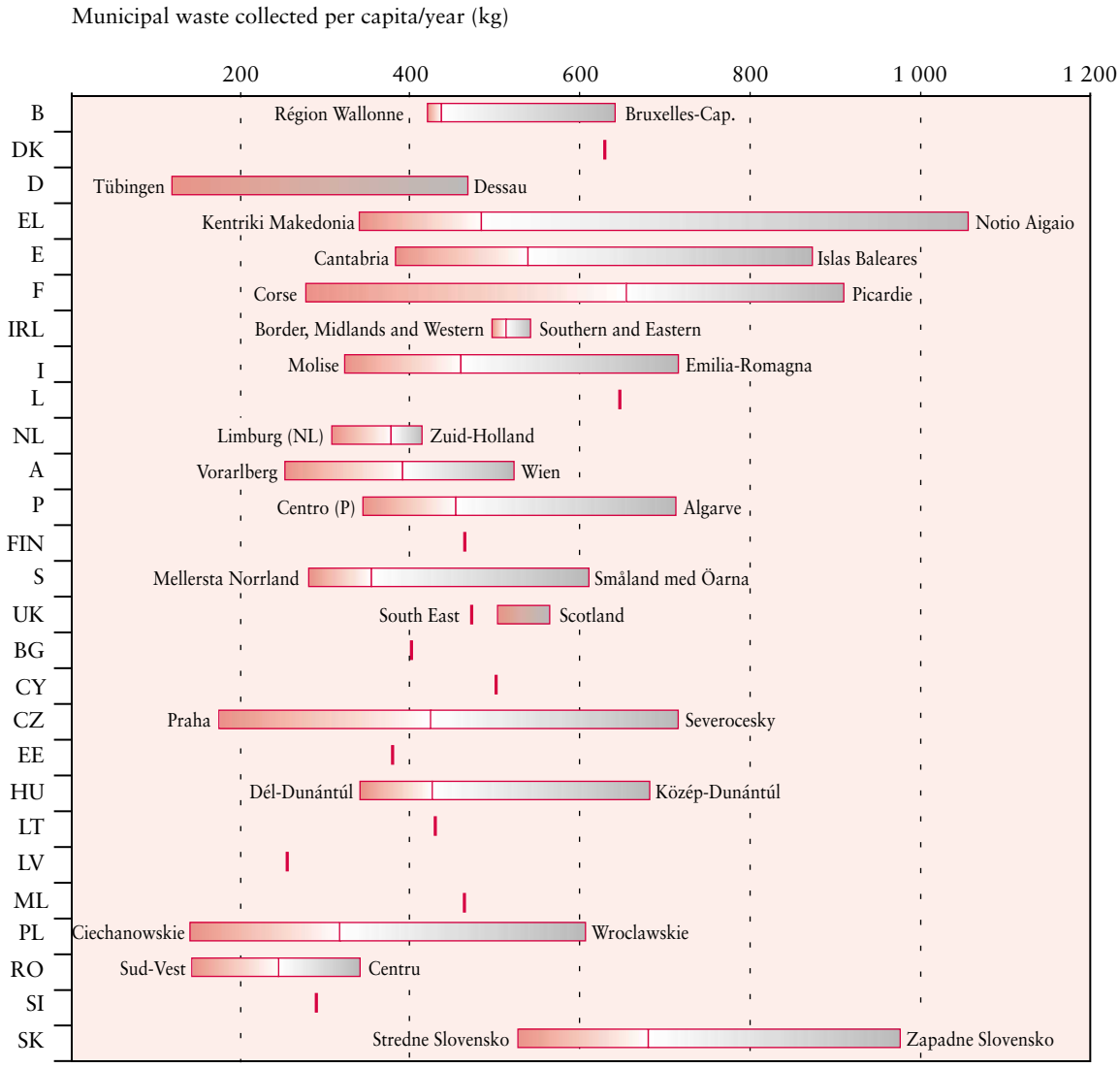
Map 10.2

In Europe, an average of 440 kilograms of waste are collected per capita per year. Approximately 482 kg of waste are collected per capita in the European Union Member States and 383 kg in the candidate countries. With regard to the latter, Romania, Latvia and Slovenia generate the lowest quantities of waste at less than 300 kg on average. In Poland, the average figure is 317 kg, but the quantities vary from region to region, ranging from 137 kg (Ciechanowskie) to 606 kg (Wroclawskie), as shown on Graph 10.2.

In France, Denmark, Luxembourg or the Slovak Republic, the national figure is well in excess of 600 kg of waste collected per capita. The north-east of France and the Provence–Alpes–Côte–d'Azur region even top the 700 kg per capita mark. In the case of the latter, the high level of tourism is undoubtedly an explanatory factor. It should be noted that quantities of municipal waste are only counted at treatment plants which receive over 3 000 tonnes per year. Some, predominantly rural, regions in France will underestimate the amounts treated. In Slovakia, the Západné Slovensko region reaches almost one tonne (970 kg) of waste collected per capita.

The United Kingdom is almost the exception to the rule, as its production of municipal waste is fairly homogeneous within a range of 500 to 566 kg per capita in the main regions (NUTS-1 level) but relatively high. Generally speaking, there are

Graph 10.2 — Municipal waste collected per capita at national level as well as regional extremes



NB: CY: 1993; B, D, F: 1996; LV, NL, SK: 1997; CZ, EE, E, IRL, I, LT, PL, RO, S: 1998; A, DK, FIN, EL, HU, L, P, UK, ML: 1999; BG, SI: 2000. B: Nuts 1. CZ, PL: old version of statistical regions (1997)

few countries with uniform figures for the production of waste: in the Czech Republic, Germany, France, Greece, Spain or Slovakia the quantities collected can vary by around 400 kg per capita depending on the region. It is not always easy to find an explanation for these huge variations, although the fact that waste collection or counting methods by municipalities can differ even within the same country may often be responsible, as are economic factors such as tourism. For example, island regions which are very popular tourist destinations such as the Islas Baleares (833 kg) and Canarias (713 kg) in Spain or the Notio Aigaio (1 053 kg) in Greece generate vast quantities of waste in proportion to their resident population.

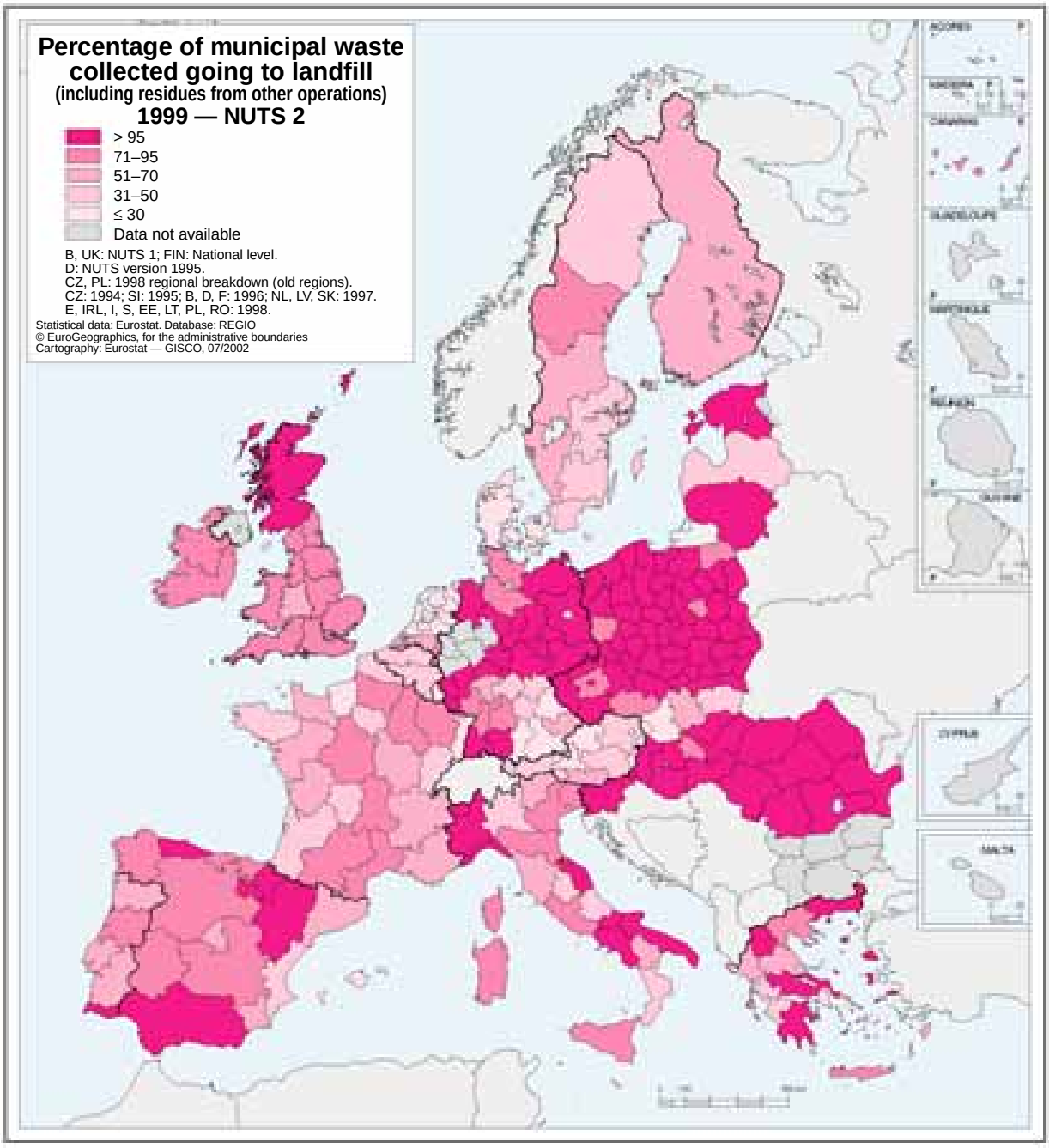
The landfill of municipal waste

Council Directive 99/31/EC of 26 April 1999 deals with the landfill of waste. It seeks to prevent or reduce damage to the environment caused by the landfilling of waste, and deals in particular with surface water, groundwater, soil, air and human health. In some regions of Europe, particularly those which are densely populated, there is no room for further landfill. In addition, the danger it poses in terms of water and soil pollution and protests by the local population should make it a less and less viable option, but the economic aspect often takes priority and landfilling very often remains the least costly procedure for the disposal of waste.

In the context of the directive, this option may only be chosen when well-located and well-designed sites exist and certain types of waste are pre-processed before being landfilled. It will only be possible to landfill final waste. The alternatives to landfill are, first of all, to reduce the production of waste by limiting the use of packaging materials and turning to recycling and the composting of organic waste. The fact that municipal waste is of mixed composition means makes these methods of management particularly relevant. Waste is often incinerated: this offers the advantage of producing energy, but does require costly investment to prevent toxic emissions and strict rules governing the design and operation of incineration plants.

Map 10.3 shows that in Europe landfill is still by far the most common method of managing municipal waste.

The countries of eastern Europe appear to make the most use of landfill (Poland, Estonia, Lithuania, Romania, Slovenia, Hungary, the Czech Republic), the figure being almost 100 % of the municipal waste concerned in almost all regions. It should, however, be borne in mind that the candidate countries produce the lowest amount of municipal waste per capita in Europe. Slovakia is the



Map 10.3

only candidate country to use landfill for less than half its municipal waste.

In the European Union countries, most of the new *Länder* in Germany use landfill almost exclusively and some even import waste from other regions, thus increasing the quantities they manage (in Brandenburg, which encircles the city of Berlin, almost one million tonnes of waste were collected in 1996, but almost three million tonnes were landfilled). Some of the old *Länder* therefore have a low percentage of landfilled waste. In France, the regions of Normandie and Alsace form the exception to the rule with less than one quarter of their waste being landfilled. In Austria, the only region which makes over 50 % use of landfill is Kärnten, as the others make greater use of incineration, recycling and/or composting.

In the south of Europe, Spain landfills around 76 % of its municipal waste. The Madrid and Comunidad Valenciana regions have reduced their landfill rates to 55 % and 43 % respectively by giving priority to incineration in the case of Madrid and recycling in the case of Comunidad Valenciana. In the Islas Baleares region, 95 % of municipal waste is incinerated. In Italy and Greece, landfill accounts for 66 % and 77 % of municipal waste respectively with significant differences between regions. In Italy, four regions (Lombardia, Umbria, Abruzzo and Calabria) landfill only around one third of their municipal waste. They incinerate and compost their waste and also, probably, export some to other regions. In Greece, waste is exported to be landfilled in the Anatoliki Makedonia, Thraki, Sterea Ellada and Voreio Aigaio regions.

Further to the north, in the United Kingdom, landfill is common practice as very few regions incinerate their waste, and the same is true of Ireland where over 90 % of municipal waste is disposed of in this way. At the other end of the scale, Luxembourg, Belgium, the Netherlands and Denmark make very little use of landfill (around 20 % of municipal waste), as they have developed methods of incineration, recycling and composting.

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URBAN STATISTICS

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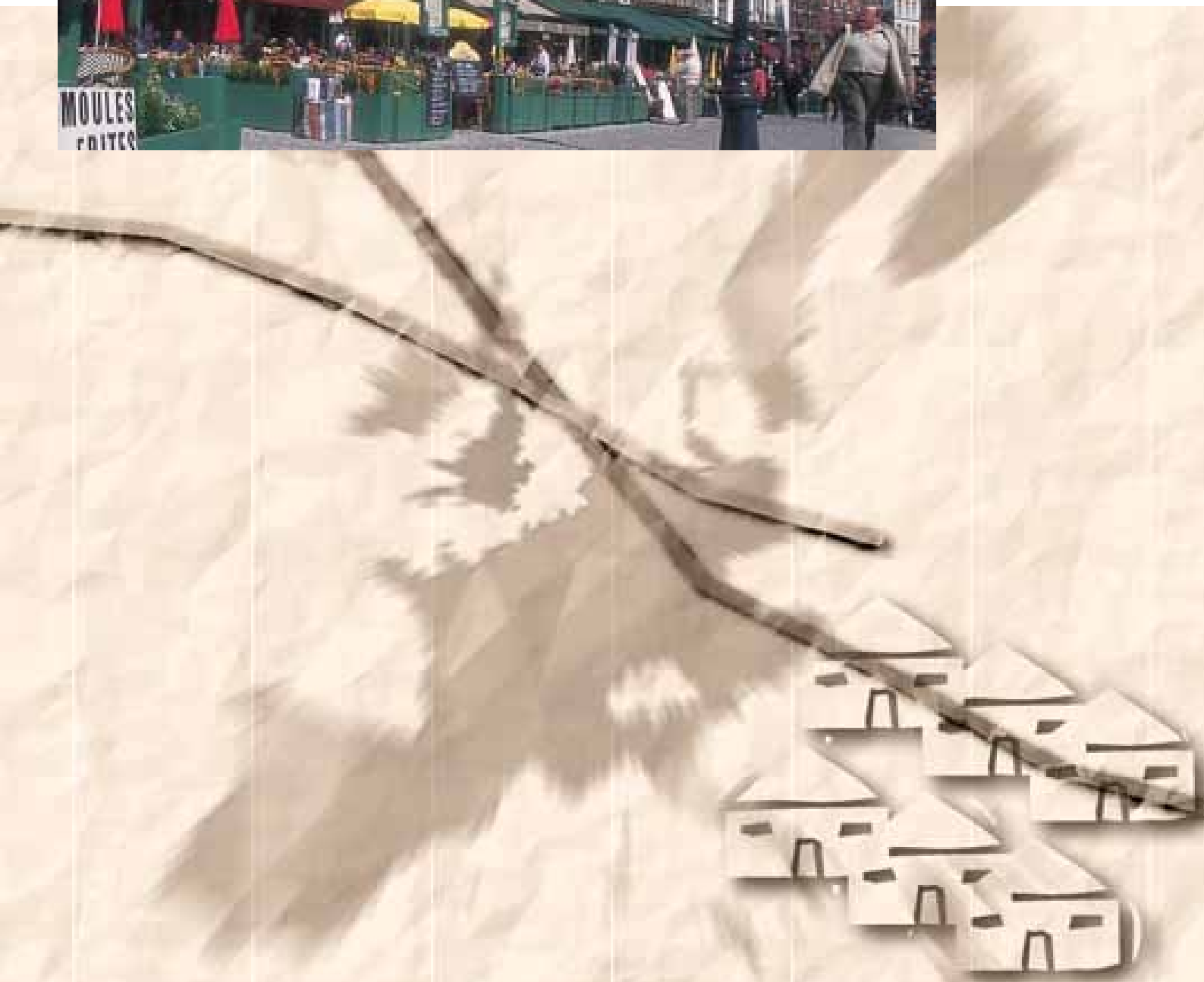


The need for urban statistics

Various social and economic trends are substantially changing European society and, at the same time, Europe's large urban centres. The ongoing transition from an industrial to an information society, the process of European integration, the globalisation of the economy and shifts in tastes and habits have major consequences for the way cities function.

In fact, these changes offer on the one hand huge development opportunities, especially for the large cities. On the other hand, competition among cities has intensified. Cities are competing for firms, inhabitants, tourists and international institutions. Both the quality of life and the business climate have become important ingredients of the urban product.

However, the opportunities that present themselves can only be fully used if the city is managed adequately. In a dynamic environment, the quality of management depends heavily on the policy-maker's knowledge of the above trends and the city's strengths and weaknesses. Urban statistics thus help policy-makers in formulating those decisions that truly anticipate the opportunities for social and economic development. Hence, we face an increasing demand for comparative international city statistics.

Simultaneously, with the challenge of internationalisation, cities have to tackle a couple of new problems in their own backyard, as it were. Alongside severe environmental problems in some cities, unemployment, segregation, and even poverty are generating concern in a growing number of them.

Over the last decade, the European Commission has been developing an urban approach to regional policy, as well as to its other policies. As the birthplace of democracy, cities are central to the European identity.

With the experience of over 20 years of regional policy, it may be noted that cities play a leading role in the regions and in the countries where they are situated. Cities provide a focal point for both opportunities and problems. Most European policies have a considerable impact on urban areas.

As we can see, the request for urban statistics in its various modes is evident. New urban developments and new political programmes for improving the quality of life in urban centres mean new information needs.

— Cities and urban regions require good basic statistics on various phenomena. The characteristic feature of the basic statistics is that they describe the phenomena comprehensively and regularly.

— In addition, there is a demand for strategic statistics, i.e. statistics that relate to urban policy and thereby support the city's development strategies and long-term investment.

— Furthermore, the international comparability of statistics is of vital importance for decision-makers at all levels: urban, national and European.

Developing urban statistics has at least two main meanings. Firstly, it is a question of providing comparative statistics on existing phenomena on a regular basis, for example comparative statistics on population and demographic issues, housing, labour force, employment and unemployment, etc. Secondly, there is a common challenge of developing frameworks, definitions, and classifications for new phenomena, and thus making it possible to provide statistics responsive to changes and the new forces facing cities and urban areas worldwide.

Statistical information is used in everyday urban and regional planning, in decision-making on a daily basis. This implies a demand for statistics on short-term issues. On the other hand, cities and regions have to deal with competition — competition in attracting investments, new jobs, new citizens, etc. This means that there is a demand for strategic information, a demand for statistics on long-term issues. In this context, comparative statistics are needed, too.

The urban audit

In June 1997, the Commission published a call for tender, and chose a contractor in order to conduct an experiment in collecting comparable indicators for about 60 European cities.

This 'urban audit' was designed as a **pilot project**, which means that no final and perfect results were expected from the exercise. Its purpose was rather to test the feasibility of the approach and to learn in the future from possible errors in the design.

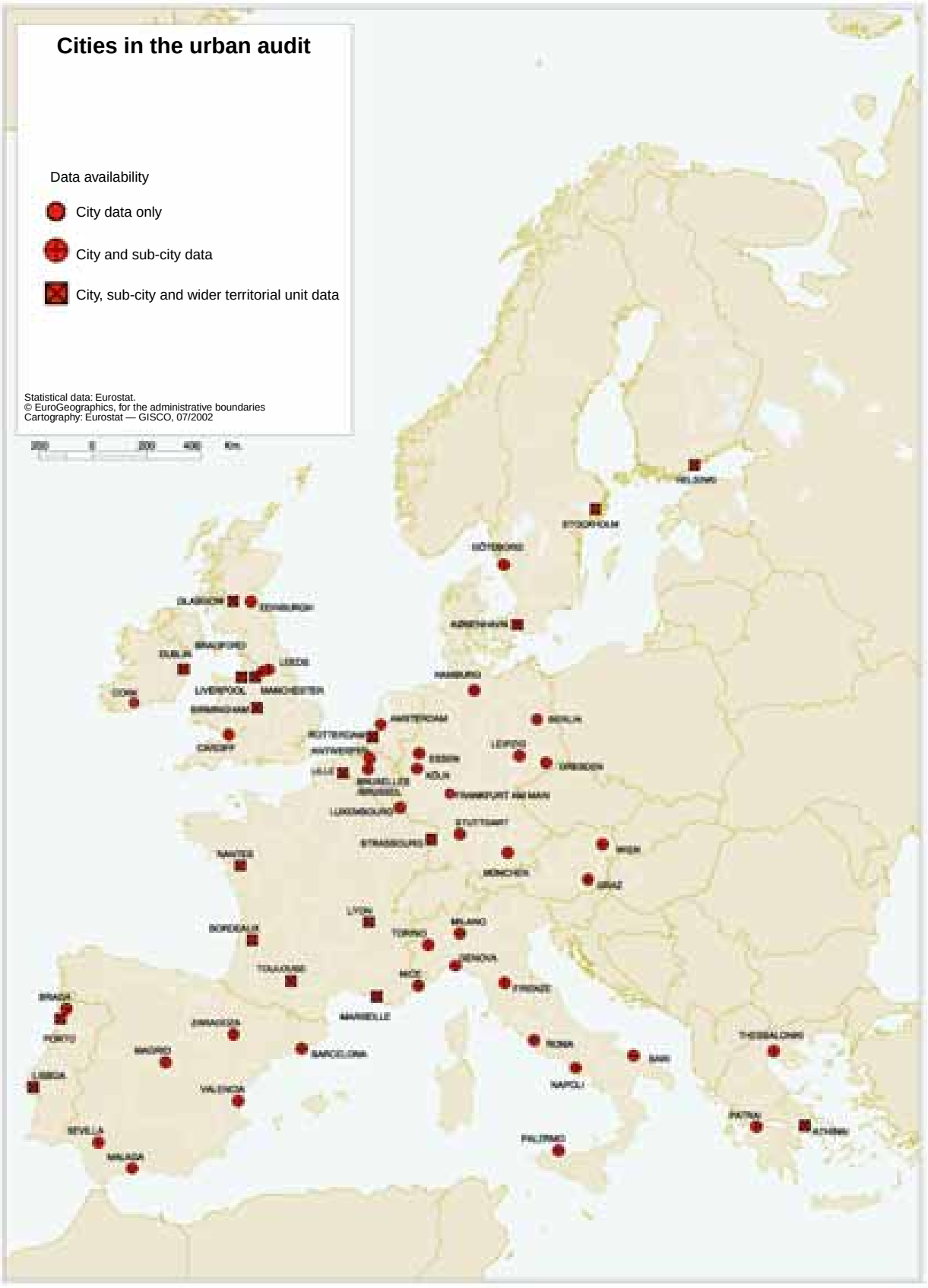
The indicators were selected on the basis of availability and comparability criteria.

Information was requested from the data sources at the most local level possible.

The 58 cities selected consisted of the largest cities in each Member State, accounting on average for

approximately 15 % of the total population of the country (see Map 11.1). Paris and London were omitted at this pilot stage, since they were considered too difficult to cope with.

The **administrative boundary** of the city was used, with some adaptations in countries where the concept does not as such exist (United Kingdom, Portugal). In some cases, a **wider area** was cov-



Map 11.1

ered additionally, if its population was considerably larger than that of the administrative city. This zone was referred to as the wider territorial unit (WTU).

With some indicators, an attempt was made to descend to the **district level** in order to identify statistical variation inside the cities. This is an important aspect of the urban audit in order to measure social and economic disparities.

Information was collected at three points in time (1996, 1991 and 1981,or nearest available date) for all indicators.

More information about the urban audit is available on the following web site: *http://europa.eu.int/comm/regional_policy/urban2/urban/audit/index.html*.

Some results

The pilot phase of the urban audit provides a basis for some very interesting analysis and comments, some of which are presented here. It should be made clear that this is not yet a thorough analysis of the data. It should just give an idea what possible conclusions could be drawn from the statistical material. Only some of the possible assumptions are presented in graphs or maps. The information gained from further analysis will undoubtedly modify the picture presented in future issues of the yearbook.

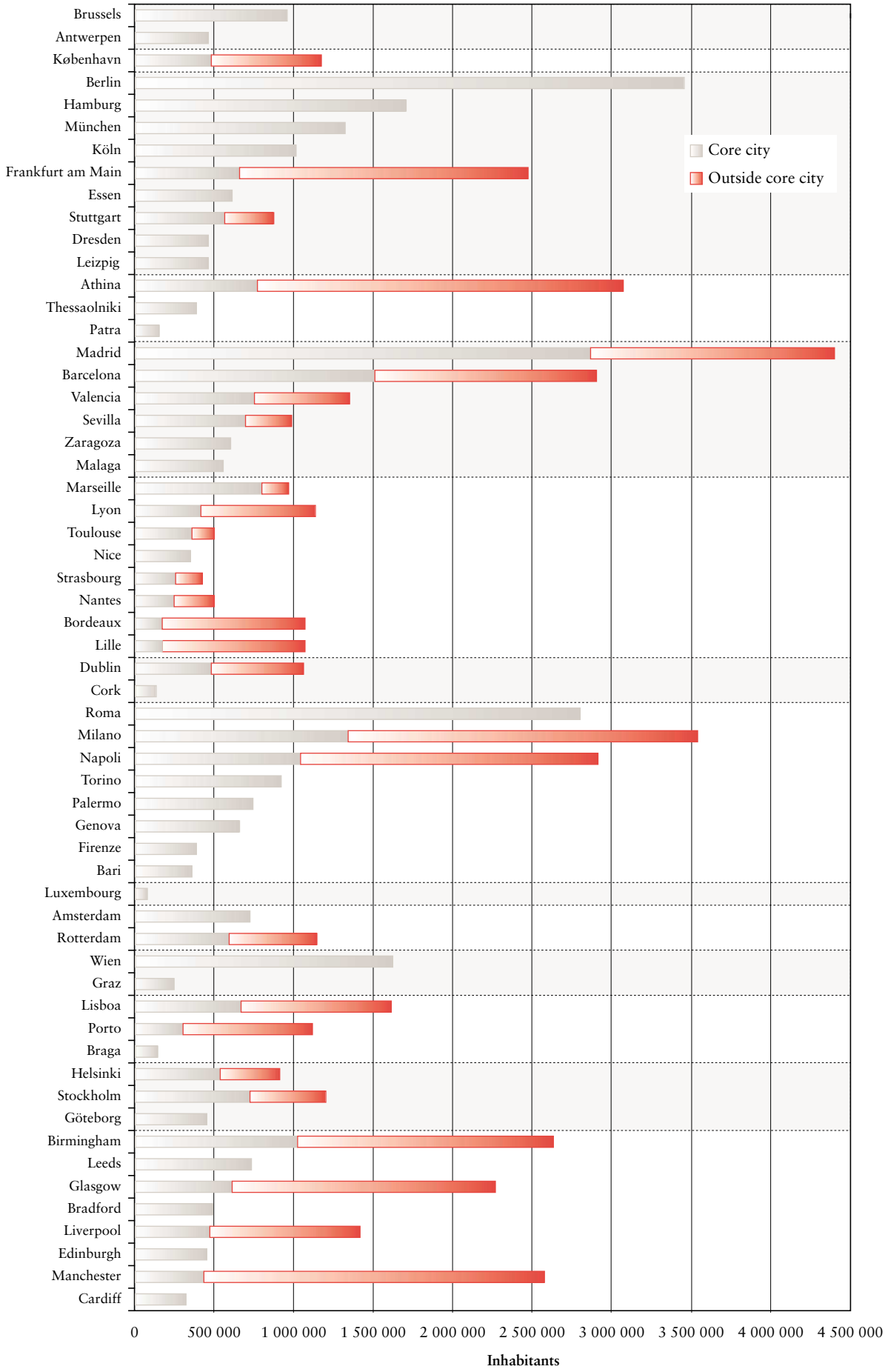
Size compared to the largest cities in the world

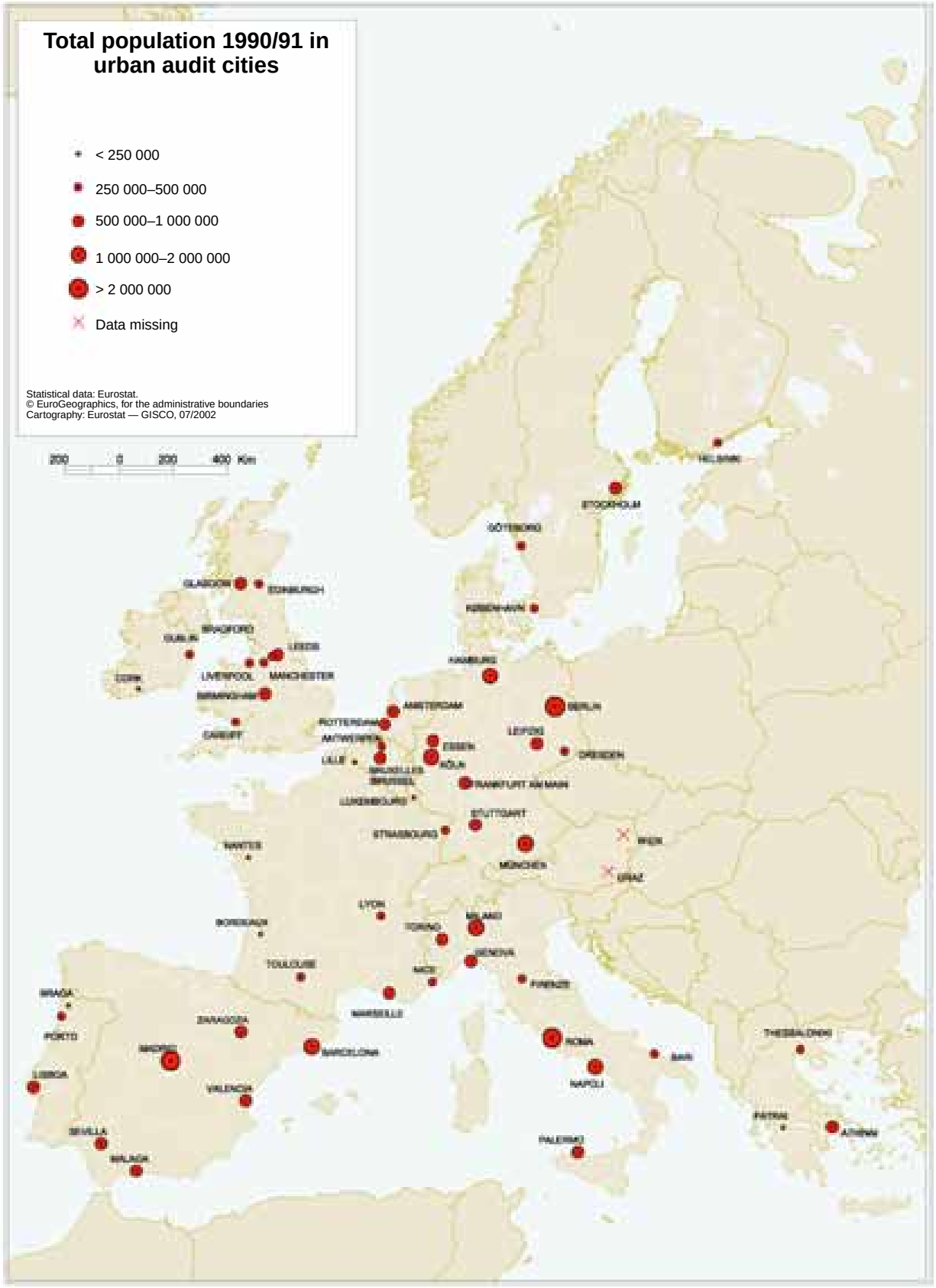
The urban structure of Europe, primarily based on small to medium-sized cities, may be an advantage for achieving sustainable development. There are marked contrasts between the urban structure in Europe and the highly concentrated urban structure in other continents. European cities are relatively small.

Population in urban audit cities and WTU conurbations

The rate of change of the overall population of the urban audit cities is slow. The most notable population shift over the last 20 years has been from the city core to the suburbs. In addition, trend data show the urban audit city populations are relatively young. However, the number of elderly is increasing.

Graph 11.1 — Population of the core city and of the remainder of the wider territorial unit (WTU)




Total population 1990/91 in urban audit cities
< 250 000
250 000–500 000
500 000–1 000 000
1 000 000–2 000 000
> 2 000 000
Data missing
Statistical data: Eurostat.
© EuroGeographics, for the administrative boundaries
Cartography: Eurostat — GISCO, 07/2002
200 0 200 400 Km
HELSINKI
STOCKHOLM
GÖTEBORG
KØBENHAVN
GLASGOW
EDINBURGH
BRADFORD
LEEDS
LIVERPOOL
MANCHESTER
CORK
CARDIFF
HAMBURG
AMSTERDAM
ROTTERDAM
ANTWERPEN
LILLE
BRUXELLES
BRUSSEL
ESSEN
KÖLN
BERLIN
LEIPZIG
DRESDEN
FRANKFURT AM MAIN
LUXEMBOURG
STUTTGART
STRASBOURG
NANTES
MÜNCHEN
WIEN
GRAZ
LYON
BORDEAUX
TORINO
MILANO
GENOVA
NICE
TOULOUSE
FIRENZE
MARSEILLE
BRAGA
PORTO
ZARAGOZA
MADRID
BARCELONA
ROMA
BARI
NAPOLI
THESSALONIKI
LISBOA
VALENCIA
PATRAS
ATHINAI
SEVILLA
MÁLAGA
PALERMO

Map 11.2

Nationality

The proportion of non-nationals is higher for urban audit cities than for countries as a whole, and there are more third-country nationals than 'other' EU nationals in most cities. The results of the urban audit demonstrate the increasingly cosmopolitan and international character of large urban areas, especially in northern Europe.

Average size of households

The urban audit cities have relatively small households and they are getting smaller. On average, there are 2.3 persons per household.

Proportion of one-person households

There are wide variations in household size. One-person households make up more than 50 % of all households in Copenhagen, Stockholm, Amsterdam, Munich, and Frankfurt. If the breakdown of the overall EU population (current average household size 2.4) were to reflect that of the citizens of Copenhagen (average household size 1.8), the EU would need an additional 50 million dwellings, many more than there are in all the urban audit cities combined.

Proportion of lone-parent household

Another typically urban phenomenon is lone-parent households, with especially high rates in Naples, Luxembourg, Turin, Leipzig, Cork, Dublin, and Graz. Within some nations there are wide discrepancies, for instance in the UK, with rates of 5.5 % in Leeds and 11.2 % in Cardiff. Cities have lagged behind national standards in providing social facilities such as nurseries.

Proportion of population of working age in employment

There are large differences in the proportion of the population of working age in employment. The average for the cities in the study is 56.4 %, with the lowest rate in Valencia (36.6 %) and the highest in Leeds (77.7 %). The urban audit cities are key sources of employment in their regions, especially for the young. The proportion of the unemployed less than 25 years old is lower at the city level than the national one in 80 % of cases.

Activity rates female and total

To some extent, differences in the proportion of working age in employment reflect variation in female activity rates, which range from 32.6 % in Sevilla to 82.7 % in Leeds. In nearly all urban audit cities, the female activity rate has increased considerably since 1981. Were the EU as a whole to achieve the overall employment levels in Leeds, the EU would require an additional 80 million jobs, primarily for women.

GDP per capita

There are major disparities in GDP per capita between cities overall and within some countries. This more or less confirms the regional picture, which is the basis for European cohesion policy. There are marked northern/southern and central/peripheral variations between urban audit cities in economic activity. Moreover, GDP per capita is higher at city level than at national level in the majority of cases. Other indicators for economic activity were largely positive. The number of company headquarters has increased in two thirds of the cities; and net business registrations in all cities were positive. Nearly all urban audit cities experienced a growth in tourism and air travel.

Unemployment rates

However, cities as a whole are functioning as engines of growth in disadvantaged regions. Out of 15 cities in objective one regions, 11 had unemployment rates less than regional (NUTS II) rates. In population terms, nine out of the 15 cities were growing at the same rate or more quickly than their respective regions.

Participation in municipal elections and municipal expenditures

Participation in city elections is higher than in European elections but lower than for national elections. Urban voter participation is lower than local (i.e. urban and rural) participation in general. City level voter participation is very low in the UK and, in some countries, varies a great deal between cities (for example in Italy: 56 % Genoa, 82 % Florence). This suggests a crisis in local democracy in some countries, for example the UK and Ireland.

There is only a poor correspondence between the municipal budget per capita and the tendency of the electorate to vote. There are huge variations in revenues raised and spent by urban authorities reflecting different competencies.

However, the urban audit does not capture other aspects of participation and the 'single issue' involvement of citizens and NGOs, which may compensate for low levels of civic involvement in formal elections.

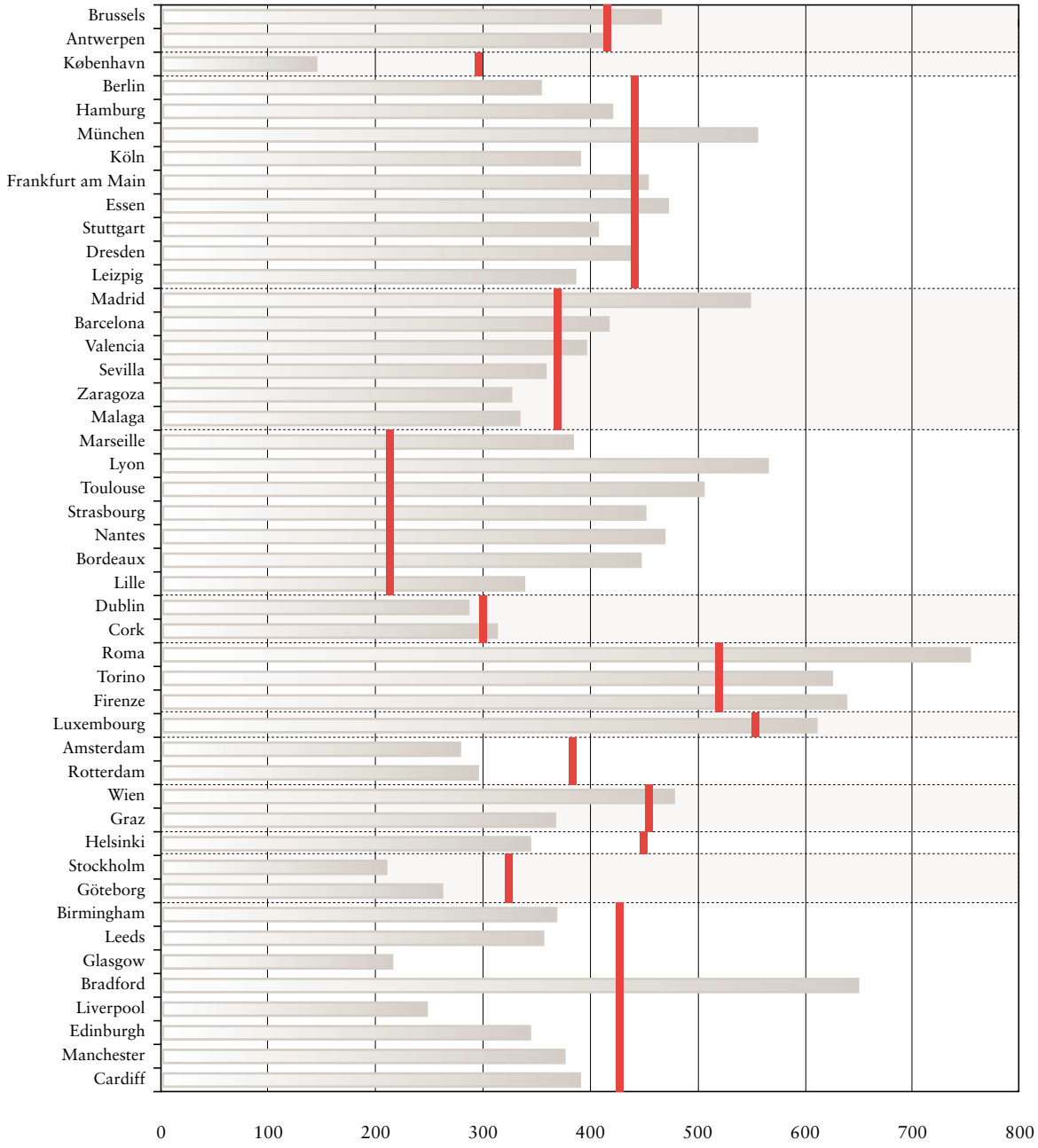
Vehicle density at city and national level

Demand for travel is increasing, especially for non-work-related journeys such as daily leisure activities and tourism. There is also extremely high growth in air travel. The use of public transport for travel to work is low and declining.

The figure for cars registered per 1 000 population is higher in small cities and increasing, although it is usually lower than national levels. Rates of ownership are no longer a function of income, as demonstrated by the differences between Sweden and Italy. Cars generate both traffic and hazards: the likelihood of an accident resulting in serious injury is more than 50 times higher in Milan than in Stockholm.

If car ownership across the EU (currently averaging 407 per thousand people in the urban audit cities) reached the level it is in Rome (743 per thousand people), the EU would require 117 million more cars. While this may present scope for wishful thinking by the car industry, it raises severe environmental concerns for urban areas.

Graph 11.2 — Car registrations per 1 000 inhabitants (city and national data)



No data: Athina, Thessaloniki, Patra, Nice, Milano, Napoli, Palermo, Genova, Bari, Lisboa, Porto, Braga.

Crime

On average, citizens of urban audit cities have a one in 10 risk of being a victim of a crime in any particular year. It is however five times safer than the average in Zaragoza in Spain. Even in the worst cases, the likelihood does not exceed one in five. Other features identified include:

— urban crime rates are higher than national averages;

— crimes against people are slightly declining, while crime against property is rising;

— people perceive crime as a more severe problem than it actually is.

Urban environment

Cities are not necessarily the villains of the environment: water consumption is declining, waste is processed more thoroughly, and car ownership is lower. Whilst the size of urban audit cities is likely to remain stable, profound socioeconomic and mobility changes will have environmental implications. Therefore, governance at the urban level will be crucial for achieving environmental aims.

Positive trends in urban environment are:

– winter smog (SO_2) levels are declining;

– water consumption in cities is declining, and remains lower than national consumption in most cases;

– waste generation in cities has been reduced and processing is becoming more efficient.

Negative developments in the urban environment are:

— smaller households have generated an increased demand for travel by road and air;

— summer smog (O_3 and NO_2) has been increasing;

— a decline in household size has created pressure to take over more land for housing.

Housing and health

There are marked variations in housing type and tenure. Health standards are improving and are generally similar to national averages. Some of the key findings are that:

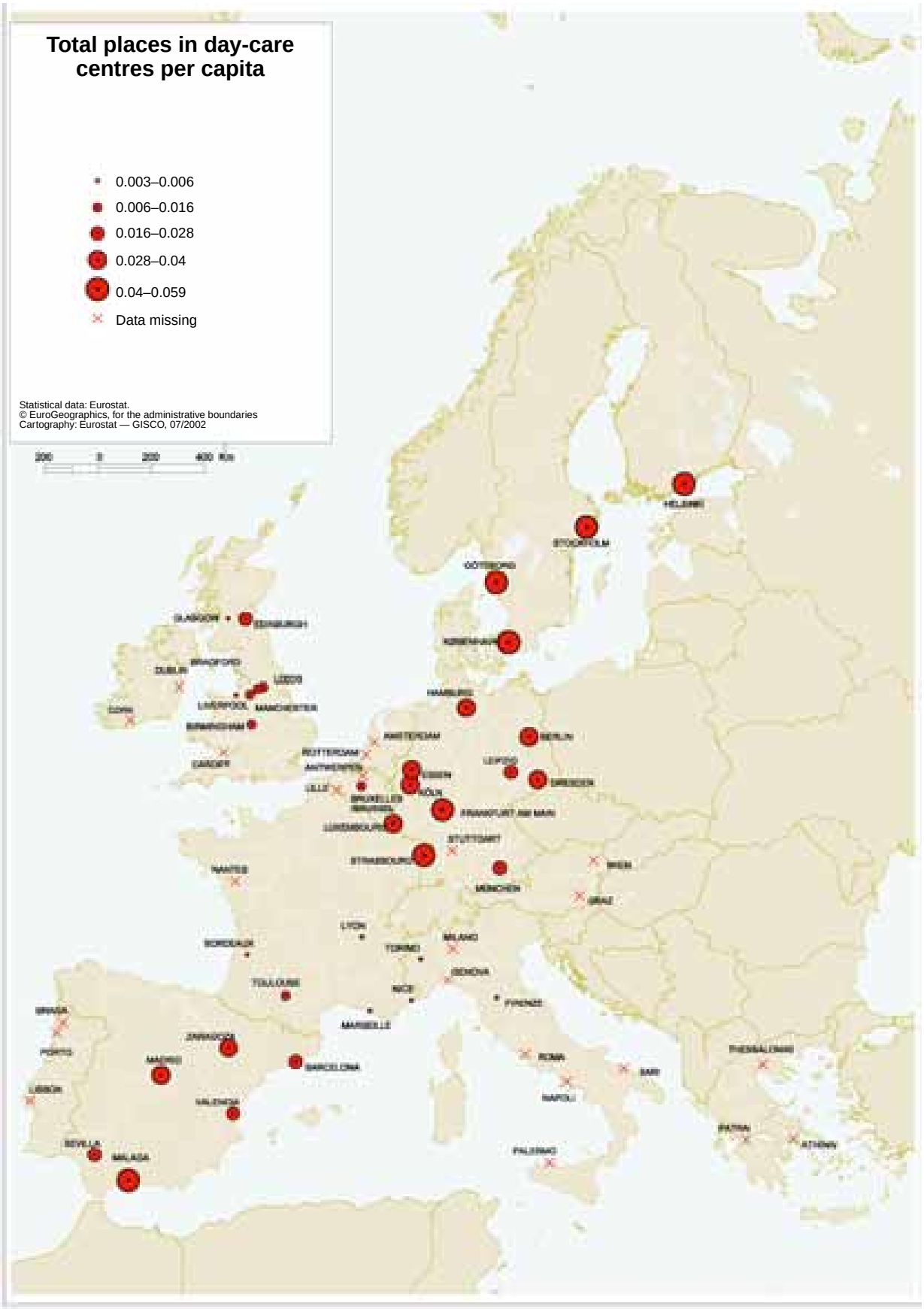
— two thirds of urban audit city residents live in apartments;

— home ownership is increasing, but houses typically cost nearly six times the annual household income;

— urban audit cities are generally improving on all health indicators except low birth weight.

Day-care centres for children

The availability of day-care centres for children in pre-school age is an important precondition for greater participation by women in professional life. Urban audit cities, especially in the south, lag behind in their provision of nurseries. Northern cities generally have more places in day-care centres than cities in southern Europe.


Total places in day-care centres per capita
0.003–0.006
0.006–0.016
0.016–0.028
0.028–0.04
0.04–0.059
Data missing
Statistical data: Eurostat.
© EuroGeographics, for the administrative boundaries
Cartography: Eurostat — GISCO, 07/2002
200
0
200
400 Km
HELSINKI
STOCKHOLM
GÖTEBORG
GLASGOW
EDINBURGH
BRADFORD
DUBLIN
LEEDS
LIVERPOOL
MANCHESTER
CORK
BIRMINGHAM
HAMBURG
AMSTERDAM
BERLIN
ROTTERDAM
ANTWERPEN
CARDIFF
LEIPZIG
DRESDEN
LILLE
ESSEN
BRUXELLES
BRUSSEL
KÖLN
FRANKFURT AM MAIN
LUXEMBOURG
STUTTGART
STRASBOURG
NANTES
WIEN
MÜNCHEN
BRAZ
LYON
MILANO
BORDEAUX
TORINO
GENOVA
TOULOUSE
NICE
FIRENZE
BRAGA
MARSEILLE
PORTO
ZARAGOZA
ROMA
THESSALONIKI
MADRID
BARCELONA
BARI
LISBOA
NAPOLI
VALENCIA
PATRA
ATHINAI
SEVILLA
PALERMO
MÁLAGA

Map 11.3

Culture and recreation

Although large cities have notably more extensive cultural and sporting facilities, the urban audit suggests that citizens do not make much use of these. The total user numbers are low and some of this use is likely to be by visitors to the cities. It is apparent that:

— culture and sporting facilities contribute to the attractiveness of cities;

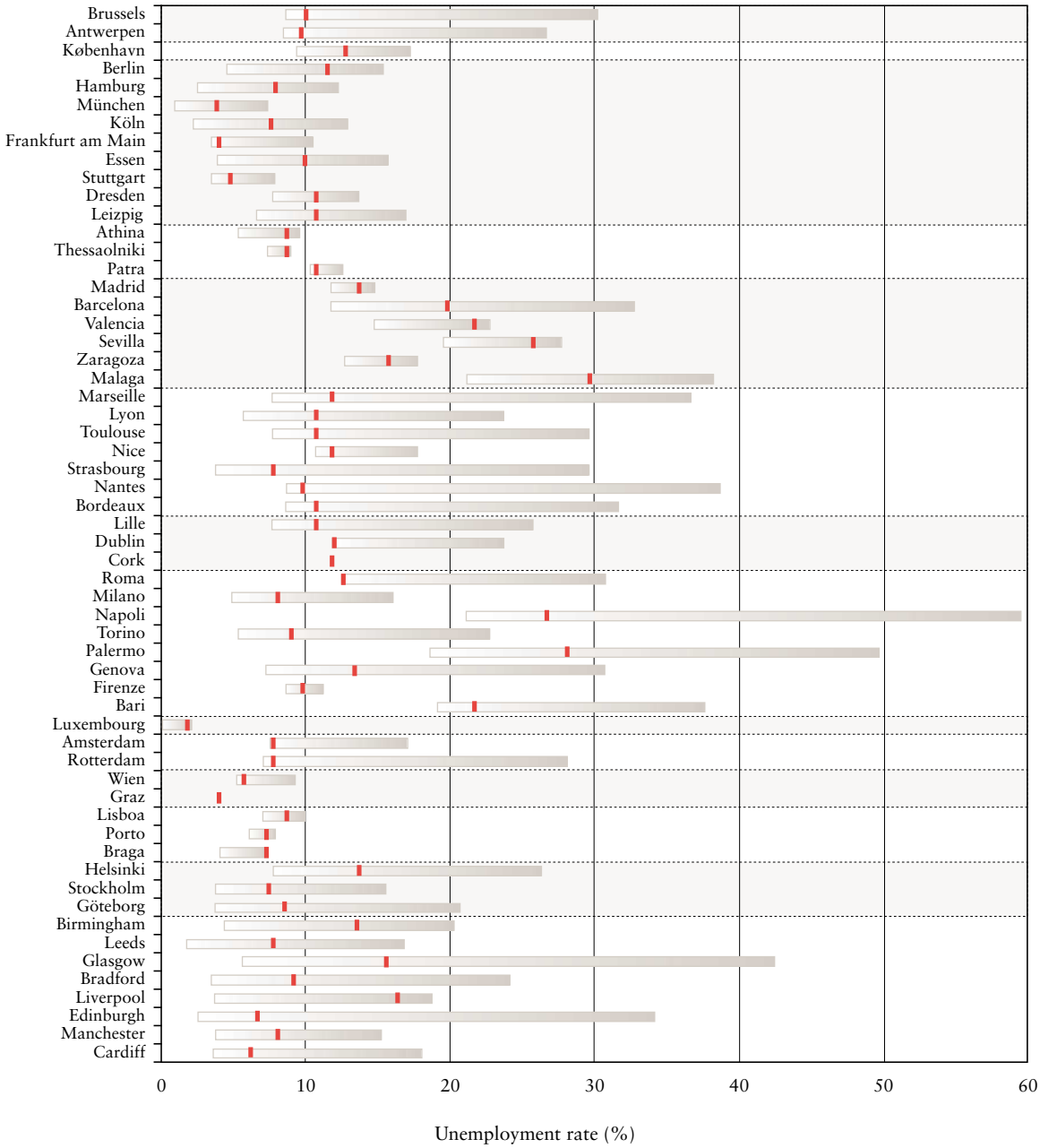
— attendance at concerts and museums is increasing and the cinema is popular;

— facilities attract tourists, but often show low rates of use by citizens.

Disparities within cities

There are striking disparities between the neighbourhoods of a given city. The data in the urban audit pilot show that unemployment deviates considerably from city averages, reaching critical levels of more than 30 % in many neighbourhoods (for example areas in Naples, Liverpool, Marseilles, Brussels, etc.). This underlines the persistence of pockets of poverty over long periods, with the second or third generation in unemployment in many of these distressed areas.

Graph 11.3 — Unemployment rate — lowest, highest and average values



Outlook

The 1998/99 pilot phase of the urban audit demonstrated, for the first time, the feasibility of obtaining and presenting information on a consistent pan-European basis for a wide range of indicators at the administrative urban level, as well as at the levels of the larger urban zone and the sub-city areas.

There is an ongoing need to widen our quantitative knowledge of European urban areas, so that we can improve our approach to urban development. It is a major priority of European regional policy to improve the social and economic cohesion in the EU, by seeking to reduce disparities between European regions. As cities play a specific and important role in the search for a better equilibrium in the EU, Commission policy increasingly focuses on urban areas. In order to monitor and assess the programmes, indicators are an essential prerequisite.

After the completion of the urban audit in spring 2000, the Commission decided to continue the project. First the results of the urban audit pilot phase were evaluated thoroughly, involving statistical experts from city organisations and Eurostat experts for a number of specific fields. This evaluation led to several conclusions concerning the list of variables collected, the list of participating cities, and the spatial dimension of the future urban audit.

In the pilot phase, around 480 variables were collected. The response varied between 0 and full coverage. Based on the analysis, around 300 variables were discontinued for Urban Audit II, while 150 variables were added. Hence, in the next data-collection process, only around 330 variables will be gathered.

In the urban audit pilot phase, it was decided to cover the largest urban agglomerations of the European Union. However, London and Paris were excluded, as they were considered too difficult for a pilot project. These two cities will, though, be part of Urban Audit II.

In addition, there will be a specific focus on medium-sized cities (50 000 to 250 000 inhabitants), which were not well covered in the pilot phase, although a large proportion of the EU population lives in such medium-sized cities. Detailed information on the various aspects of the quality of life in these cities would be of great interest to the users.

As in the pilot phase, there will be three levels of spatial unit for which observations will be collected. The first of these is the core, the administrative unit (the 'town' or 'city'), for which there is generally a rich data set available. Secondly, the larger urban agglomeration will be studied, so that information is put together which includes the 'hinterland'. Finally, the intra-urban discrepancies will be catered for by gathering data for city districts.

The whole data-collection process of the Urban Audit II exercise can only succeed if there is close cooperation with national statistical offices and the cities concerned.

At the same time, it is important to mention that the urban audit should not remain a one-off exercise. This would be a waste of resources. Instead, the Urban Audit II should lay the foundations for a regular data collection of urban statistics, which should become a permanent part of the European statistical system (ESS).

Some of the data that need to be put together exists already somewhere in the existing databases. Other variables can be estimated, since similar information is at hand and advanced estimation techniques could be used. For a third group of variables, fresh data will need to be collected in a new survey.

Despite all possible obstacles, the Commission hopes that in spring 2003 new data will be available in the framework of Urban Audit II.

EUROPEAN UNION: NUTS 2 Regions

BE Belgique-België
BE1 Région de Bruxelles-Capitale / Brussels Hfdst. Gew.
BE2 Vlaams Gewest
BE21 Antwerpen
BE22 Limburg (B)
BE23 Oost-Vlaanderen
BE24 Vlaams Brabant
BE25 West-Vlaanderen
BE3 Région wallonne
BE31 Brabant wallon
BE32 Hainaut
BE33 Liège
BE34 Luxembourg (B)
BE35 Namur
DK Danmark
DE Deutschland
DE1 Baden-Württemberg
DE11 Stuttgart
DE12 Karlsruhe
DE13 Freiburg
DE14 Tübingen
DE2 Bayern
DE21 Oberbayern
DE22 Niederbayern
DE23 Oberpfalz
DE24 Oberfranken
DE25 Mittelfranken
DE26 Unterfranken
DE27 Schwaben
DE3 Berlin
DE4 Brandenburg
DE5 Bremen
DE6 Hamburg
DE7 Hessen
DE71 Darmstadt
DE72 Gießen
DE73 Kassel
DE8 Mecklenburg-Vorpommern
DE9 Niedersachsen
DE91 Braunschweig
DE92 Hannover
DE93 Lüneburg
DE94 Weser-Ems
DEA Nordrhein-Westfalen
DEA1 Düsseldorf
DEA2 Köln
DEA3 Münster
DEA4 Detmold
DEA5 Arnsberg
DEB Rheinland-Pfalz
DEB1 Koblenz
DEB2 Trier
DEB3 Rheinhessen-Pfalz
DEC Saarland
DED Sachsen
DED1 Chemnitz
DED2 Dresden
DED3 Leipzig
DEE Sachsen-Anhalt
DEE1 Dessau
DEE2 Halle
DEE3 Magdeburg
DEF Schleswig-Holstein
DEG Thüringen
GR Ellada
GR1 Voreia Ellada
GR11 Anatoliki Makedonia, Thraki
GR12 Kentriki Makedonia
GR13 Dytiki Makedonia
GR14 Thessalia
GR2 Kentriki Ellada
GR21 Ipeiros
GR22 Ionia Nissia
GR23 Dytiki Ellada
GR24 Sterea Ellada
GR25 Peloponnissos
GR3 Attiki
GR4 Nissia Aigaiou, Kriti
GR41 Voreio Aigaio
GR42 Notio Aigaio
GR43 Kriti
ES España
ES1 Noroeste
ES11 Galicia
ES12 Principado de Asturias
ES13 Cantabria
ES2 Noreste
ES21 País Vasco
ES22 Comunidad Foral de Navarra
ES23 La Rioja
ES24 Aragón
ES3 Comunidad de Madrid
ES4 Centro (E)
ES41 Castilla y León
ES42 Castilla-La Mancha
ES43 Extremadura
ES5 Este
ES51 Cataluña
ES52 Comunidad Valenciana
ES53 Islas Baleares
ES6 Sur
ES61 Andalucía
ES62 Región de Murcia
ES63 Ceuta y Melilla
ES7 Canarias
FR France
FR1 Île-de-France
FR2 Bassin parisien
FR21 Champagne-Ardenne
FR22 Picardie
FR23 Haute-Normandie
FR24 Centre
FR25 Basse-Normandie
FR26 Bourgogne
FR3 Nord-Pas-de-Calais
FR4 Est
FR41 Lorraine
FR42 Alsace
FR43 Franche-Comté
FR5 Ouest
FR51 Pays de la Loire
FR52 Bretagne
FR53 Poitou-Charentes
FR6 Sud-Ouest
FR61 Aquitaine
FR62 Midi-Pyrénées
FR63 Limousin
FR7 Centre-Est
FR71 Rhône-Alpes
FR72 Auvergne
FR8 Méditerranée
FR81 Languedoc-Roussillon
FR82 Provence-Alpes-Côte d'Azur
FR83 Corse
FR9 Départements d'outre-mer
FR91 Guadeloupe
FR92 Martinique
FR93 Guyane
FR94 Réunion
IE Ireland
IE01 Border, Midland and Western
IE02 Southern and Eastern
IT Italia
IT1 Nord-Ovest
IT11 Piemonte
IT12 Valle d'Aosta
IT13 Liguria
IT2 Lombardia
IT3 Nord-Est
IT31 Trentino-Alto Adige
IT32 Veneto
IT33 Friuli-Venezia Giulia
IT4 Emilia-Romagna
IT5 Centro (I)
IT51 Toscana
IT52 Umbria
IT53 Marche
IT6 Lazio

Regions in the candidate countries

NOTE: The following list of regions in the candidate countries is intended to assist the reader to locate on the maps regions that are mentioned in the text. It is not an official list.

The current state of the nomenclature of statistical regions in the candidate countries may be consulted on the Eurostat site at: http://europa.eu.int/comm/eurostat/ramon/nuts/splash_regions.html

Code	Country	Level 2 regions
	Bulgaria	
BG	BULGARIA	
BG01		Severozapaden (North-West)
BG02		Severen tsentralen (North Central)
BG03		Severoiztochen (North-East)
BG04		Yugozapaden (South-West)
BG05		Yuzhen tsentralen (South Central)
BG06		Yugoiztochen (South-East)
	Cyprus	
CY	CYPRUS	
	Czech Republic	
CZ	ESKÁ REPUBLIKA	
CZ01		Praha
CZ02		Střední Čechy
CZ03		Jihozápad
CZ04		Severozápad
CZ05		Severovýchod
CZ06		Jihovýchod
CZ07		Střední Morava
CZ08		Ostravsko
	Estonia	
EE	EESTI	
	Hungary	
HU	MAGYARORSZÁG	
HU01		Közép-Magyarország
HU02		Közép-Dunántúl
HU03		Nyugat-Dunántúl
HU04		Dél-Dunántúl
HU05		Észak-Magyarország
HU06		Észak-Alföld
HU07		Dél-Alföld
	Lithuania	
LT	LIETUVA	
	Latvia	
LV	LATVIJA	

Code	Country	Level 2 regions
	Malta	
MT	MALTA	
	Poland	
PL	POLSKA	
PL01		Dolnośląskie
PL02		Kujawsko-Pomorskie
PL03		Lubelskie
PL04		Lubuskie
PL05		Łódzkie
PL06		Małopolskie
PL07		Mazowieckie
PL08		Opolskie
PL09		Podkarpackie
PL0A		Podlaskie
PL0B		Pomorskie
PL0C		Sląskie
PL0D		Świętokrzyskie
PL0E		Warmińsko-Mazurskie
PL0F		Wielkopolskie
PL0G		Zachodniopomorskie
	Romania	
RO	ROMÂNIA	
RO01		Nord-Est
RO02		Sud-Est
RO03		Sud
RO04		Sud-Vest
RO05		Vest
RO06		Nord-Vest
RO07		Centru
RO08		Bucureşti
	Slovenia	
SI	SLOVENIJA	
	Slovakia	
SK	SLOVENSKÁ REPUBLIKA	
SK01		Bratislavský
SK02		Západné Slovensko
SK03		Stredné Slovensko
SK04		Východné Slovensko