

# Population





## Unveiling the regional pattern of demography

Demographic trends have a strong impact on the societies of the European Union. Consistently low fertility levels, combined with extended longevity and the fact that the baby boomers are reaching retirement age, result in demographic ageing of the EU population. The number of people of working age is decreasing, while the number of older people is on the rise.

The social and economic changes associated with population ageing are likely to have profound implications for the EU, both at national and regional levels. They stretch across a wide range of policy areas, with impacts on the school-age population, healthcare, participation in the labour force, social protection, social security issues, government finances and so on.

Demographic trends vary across the EU's regions, with certain phenomena showing a stronger impact in some regions than in others. This chapter presents the regional pattern of demographic phenomena as it stands today.

### Population density

On 1 January 2008, 587 million people inhabited the 27 Member States of the European Union, the three candidate countries and the four EFTA countries.

Map 1.1 shows population density on 1 January 2008. The population density of a region is the ratio of the population of a territory to its size. Generally, regions that include the capital city of the country are among the most densely populated, as the map shows. Inner London was by far the most densely populated, but the Brussels, Wien, Berlin, Praha, İstanbul, Bucureşti – Ilfov and Attiki (Greece) regions also have densities above 1 000 inhabitants per km<sup>2</sup>. The least densely populated region was Guyane (France). Next, with fewer than 10 inhabitants per km<sup>2</sup>, were regions in Sweden, Finland, Iceland and Norway. By comparison, the European Union has, on average, a population density of 113 inhabitants per km<sup>2</sup>.

### Population change

During the last four and a half decades, the population of the 27 countries that make up today's European Union has grown from around 400 million (1960) to almost 500 million (499.7

million on 1 January 2009). Including candidate countries and EFTA countries, the total population has grown from under 450 million to 590 million over the same period.

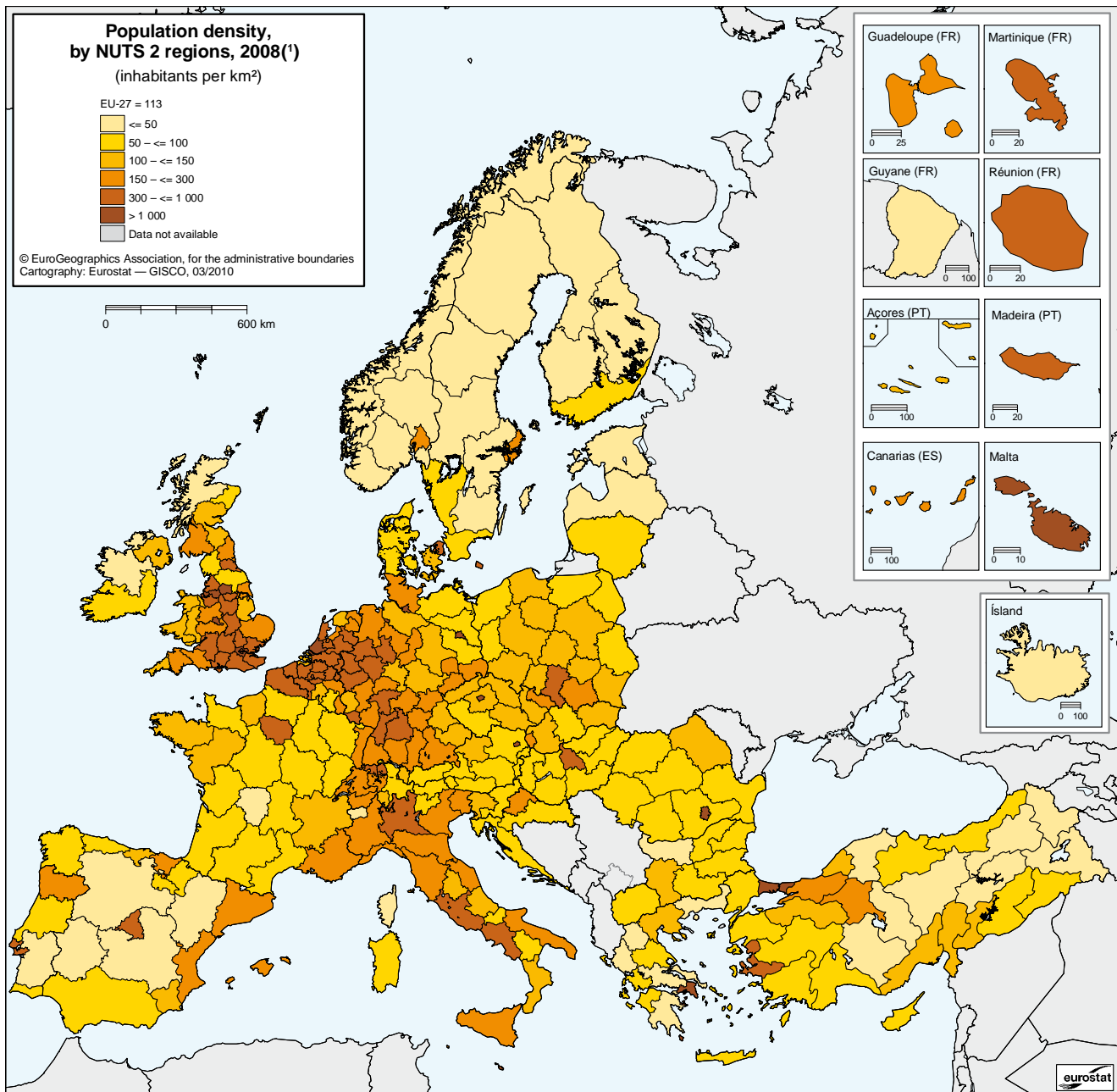
The population growth has two components: so-called 'natural growth' or 'natural change', defined as the difference between the numbers of live births and deaths, and net migration, which ideally represents the difference between inward and outward migration flows (see 'Methodological notes'). Changes in the size of a population are the result of the number of births, the number of deaths, and the number of people who migrate inwards and outwards.

Up to the end of the 1980s, natural growth was by far the major component of population growth. However, there has been a sustained decline in natural growth since the early 1960s. On the other hand, international migration has gained importance and became the driving force of population growth from the beginning of the 1990s onwards.

The analysis on the following pages is based mainly on demographic trends observed from 1 January 2004 to 1 January 2009. Five-year averages have been calculated of annual population growth and its components. Given that demographic trends are long-term developments, the five-year averages provide a stable and accurate picture. They help to identify regional clusters, which often stretch well beyond national borders. For the sake of comparability, population growth and its components are presented in relative terms, calculating the so-called crude rates, i.e. they relate to the size of the total population (see 'Methodological notes'). Maps 1.2, 1.3 and 1.4 present **population growth** and its components.

In most of the north-east, east and part of the south-east of the area made up by the European Union, the candidate and EFTA countries, the population is decreasing. Map 1.2 shows a clear division between the regions there and in the rest of the EU. The countries most affected by this trend are Germany (in particular the former East Germany), Poland, Bulgaria, Slovakia, Hungary and Romania; and to the north, the three Baltic States, the northern parts of Sweden, and the Finnish region of Itä-Suomi. Decreasing population trends are also evident in many regions of Greece. On the other hand, to the east, the population growth is positive in Cyprus and, to a lesser extent, in the former Yugoslav Republic of Macedonia, and in Turkey.

**Map 1.1: Population density, by NUTS 2 regions, 2008<sup>(1)</sup>**  
(inhabitants per km<sup>2</sup>)

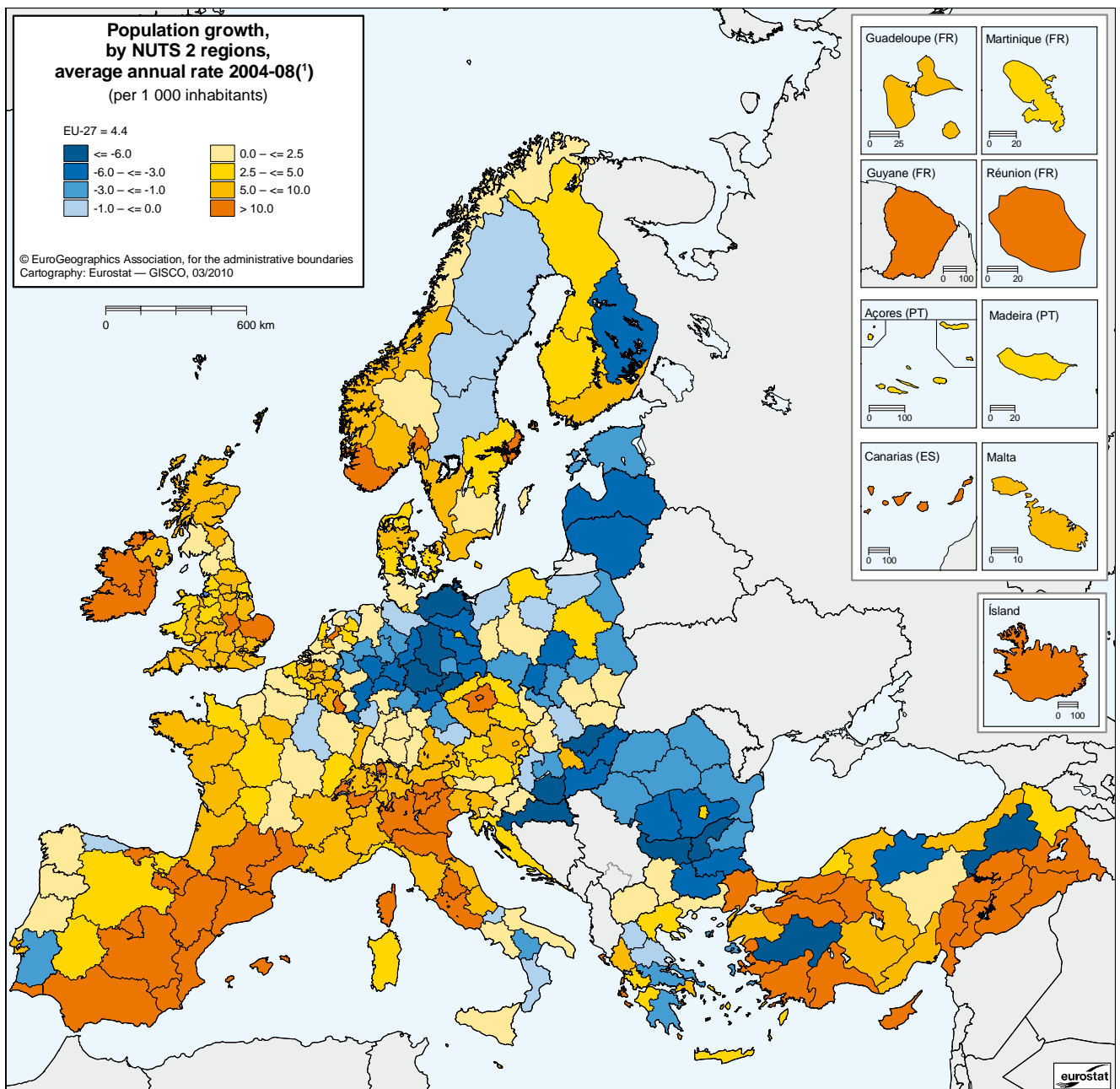


<sup>(1)</sup> Population density is based on the total area of the regions, including inland waters; Croatia and Scotland (UKM), the density is based on land surface, excluding inland waters.

Source: Eurostat ([tgs00024](https://ec.europa.eu/eurostat/tgm/table.do?tab=table)).



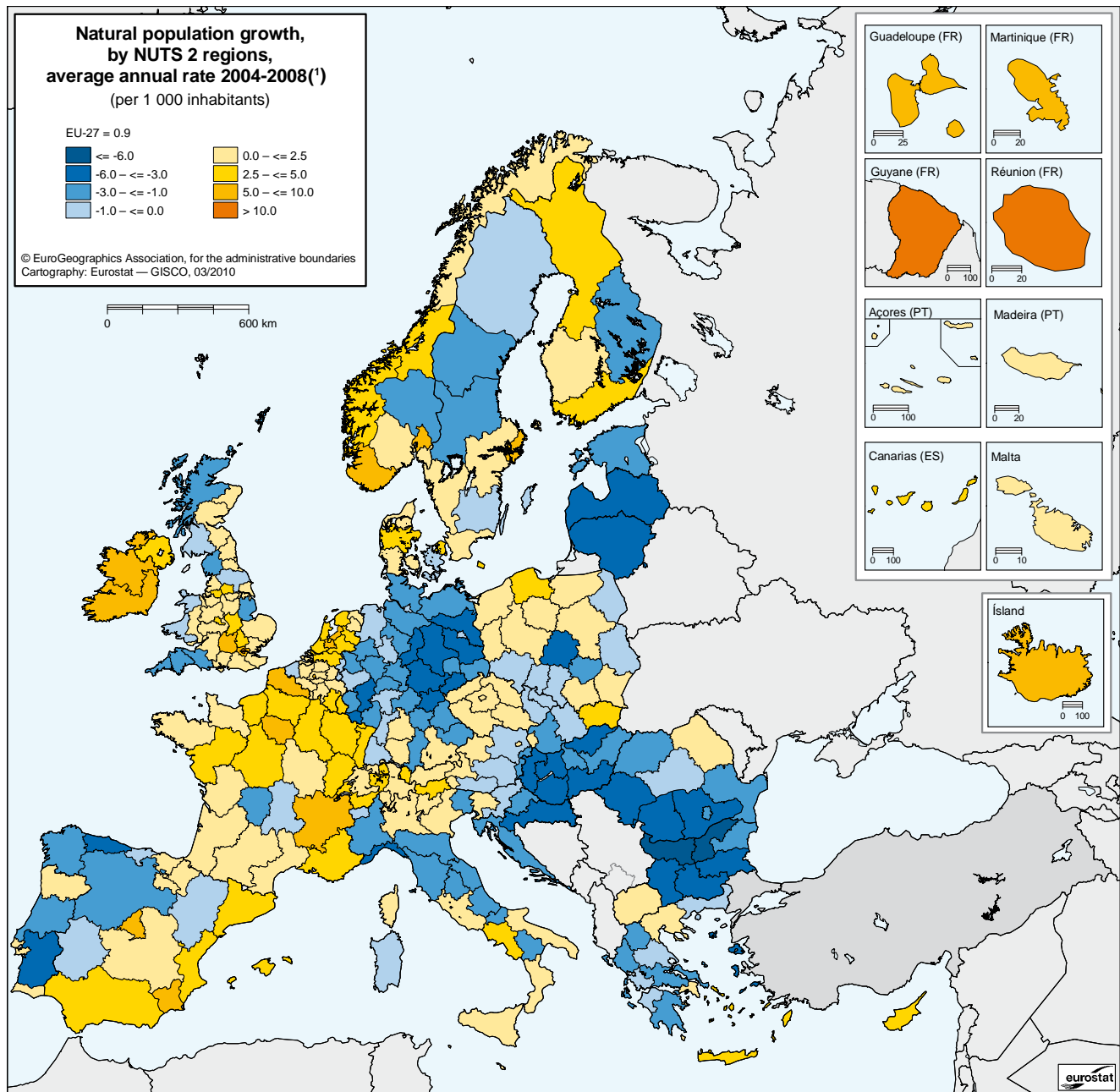
**Map 1.2: Population growth, by NUTS 2 regions, average annual rate, 2004-08<sup>(1)</sup>**  
(per 1 000 inhabitants)



<sup>(1)</sup> Belgium and United Kingdom, average 2004 to 2007; Denmark, average 2007 to 2008; Turkey, 2008.

Source: Eurostat ([reg\\_gind3](#)).

**Map 1.3:** Natural population growth, by NUTS 2 regions, average annual rate, 2004-08 (¹)  
(per 1 000 inhabitants)



(¹) Belgium and United Kingdom, average 2004 to 2007; Denmark, average 2007 to 2008.

Source: Eurostat ([reg\\_gind3](#)).



In nearly all western and south-western regions of the EU, the population increased over the period 2003–08. This is particularly evident in Ireland and in almost all regions of the United Kingdom, Italy, Spain, France, Portugal, including the French overseas departments and the Spanish and Portuguese islands in the Atlantic Ocean. Positive population growth was registered also in Austria, Switzerland, Belgium, Luxembourg and the Netherlands.

The picture provided by Map 1.2 can be refined by analysing the two components of total population growth, namely natural growth and net migration.

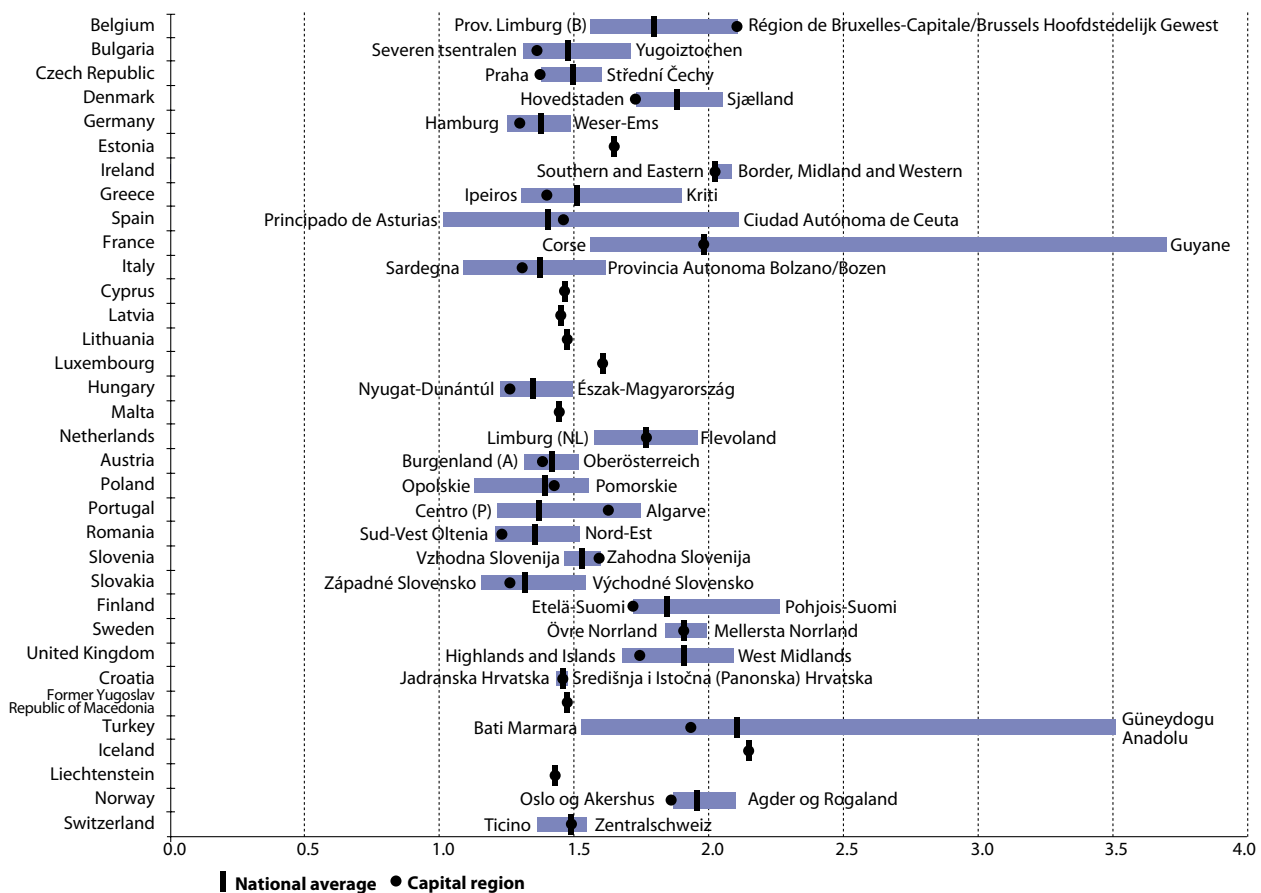
Map 1.3 shows that, in many regions of the EU, more people died than were born in the

period 2004–08. The resulting negative **natural population growth** is widespread and affects almost half the EU's regions.

A single extended cross-border region showing a positive natural change in its population can be identified, made up of Ireland, central United Kingdom, most regions in France, Belgium, Luxembourg, the Netherlands, Switzerland, Iceland, Liechtenstein, Denmark and Norway. In these regions, there were more live births than deaths in the period 2004–08.

Deaths were more numerous than births in most regions of Germany, Hungary, Croatia, Romania and Bulgaria, as well as in the Baltic States in the north, and Greece and Italy in the south. Other countries had a more balanced pattern overall.

**Figure 1.1:** Total fertility rate, by NUTS 2 regions, 2008 (1)  
(children per woman)



(1) Belgium, 2006; Ireland, Spain, France, Italy and United Kingdom, 2007; Turkey, by NUTS 1 regions.

Source: Eurostat ([reg\\_frater2](#)).



A major reason for the slowdown in the natural growth of the population is the fact that the EU's inhabitants have fewer children than they used to. At aggregated level, in the 27 countries that form the EU today, the **total fertility rate** has declined from a level of around 2.5 children per woman in the early 1960s to about 1.5 in 1993. It has remained around that level since then. (For the definition of the total fertility rate, see the 'Methodological notes'.)

At country level, in 2008, a total fertility rate lower than 1.5 children per woman was observed in 15 of the 27 Member States. In the more developed parts of the world today, a total fertility rate of around 2.1 children per woman is considered to be the replacement level, i.e. the level at which the population would remain stable in the long run if there were no inward or outward migration. At present (2008 data), practically all of the EU, candidate and EFTA countries, with the exception of Turkey and Iceland, are still well below replacement level.

Figure 1.1 shows the range of the European regions' total fertility rate for each country. Additionally, between the highest and lowest values, the bars illustrate the national level of the fertility rate, and the value registered in the region that includes the capital of the country. Among the 317 NUTS 2 regions covered in this analysis, in 2008, the total fertility rate ranges from one child per woman registered in the region Principado de Asturias in Spain to 3.7 children per woman in the French region Guyane.

**Life expectancy at birth** has risen by about 10 years over the last 50 years, due to improved socioeconomic and environmental conditions and better medical treatment and care.

Figure 1.2 is based on Eurostat's calculations on life expectancy at birth at national and regional level available for the years 2007–08. The figure shows the range of life expectancy at birth for men and women by region for each country. Between the highest and lowest values, the bars illustrate the value at national level, as well as the value registered by the region including the capital of the country.

In 2007, life expectancy at birth of women in the EU-27 was 82.0 years, and 75.8 years for men, showing a gender gap of 6.2 years. In all 27 Member States, Croatia, the former Yugoslav Republic of Macedonia, and the four EFTA countries, women live longer than men. The gender gap ranges from about four years in Cyprus, the Netherlands, the

United Kingdom and Sweden to about 11 or 12 years in the three Baltic States.

Across the 317 NUTS 2 regions covered in this analysis, considerable differences can be observed. Life expectancy at birth for men ranged from 66.3 years in Lithuania to about 81.8 years in Finland's Åland region. For women, it ranged from around 76.3 years in the Bulgarian region of Severoiztochen to 86.6 years in the Ticino region of Switzerland. In most Member States, life expectancy in the region including the capital is higher than that at national level. This is more often observed in the case of women.

The third determinant of population growth (after fertility and mortality) is **net migration**. As many countries in the EU are currently at a point in the demographic cycle where natural population change is close to being balanced or negative, net migration becomes more significant when it comes to maintaining the size of the population. Moreover, migration also contributes indirectly to natural growth, given that migrants have children. Migrants are also usually younger and have not yet reached the age at which the probability of dying is higher.

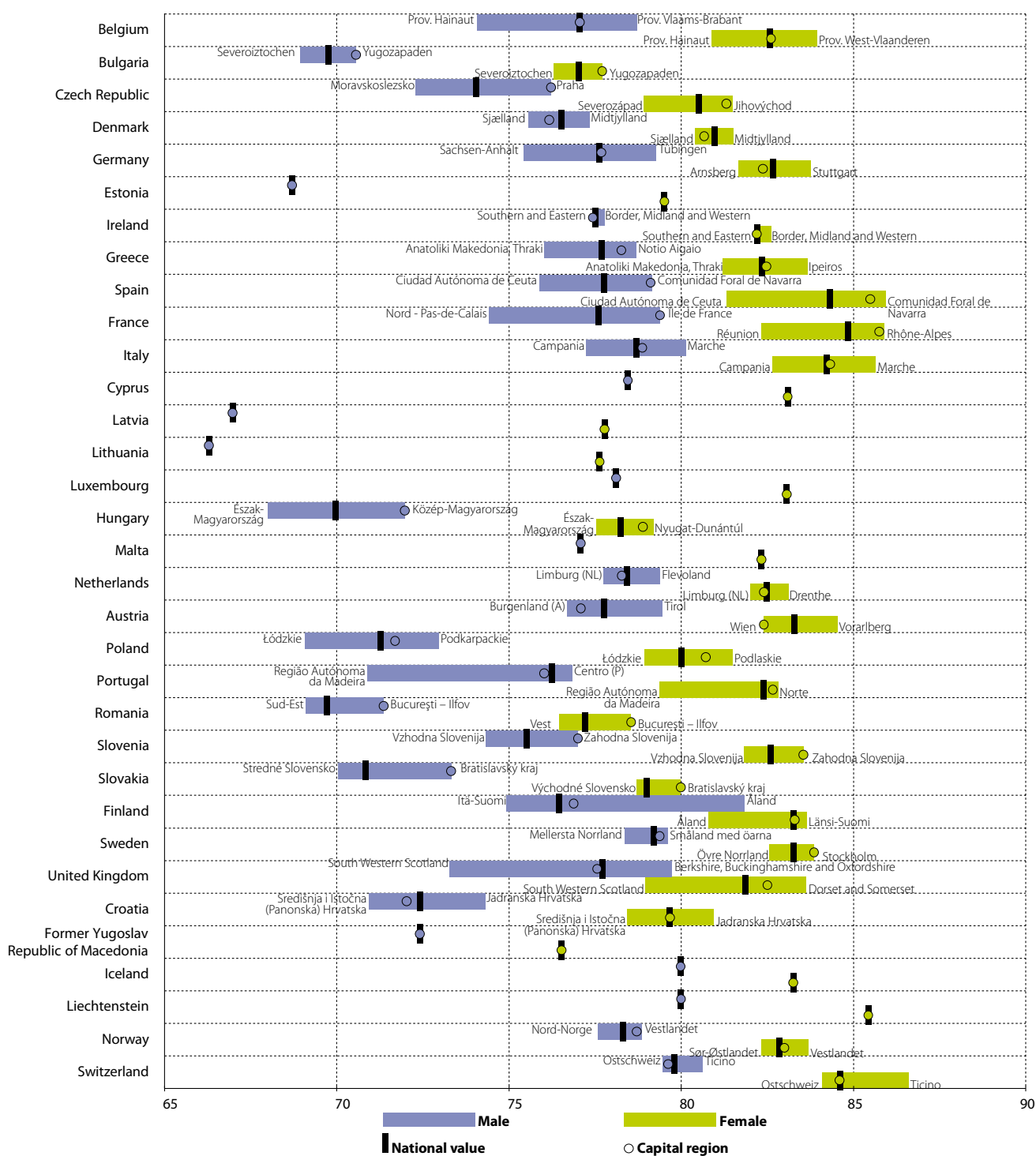
In some EU regions, negative natural change has been offset by positive net migration. This is at its most striking in Austria, the United Kingdom, Spain, the northern and central regions of Italy, and in some regions of western Germany, Slovenia, southern Sweden, Portugal and Greece, as can be seen in Map 1.4. The opposite is much rarer: in only a few regions has positive natural change been cancelled out by negative net migration. This is the case in the northern regions of Poland and of Finland.

Four cross-border regions where more people have left than arrived (negative net migration) can be identified on Map 1.4:

- the northern regions of Norway, Sweden and Finland;
- a cross-Europe area, starting in the north-west and going south-east, comprising most of the regions in the Netherlands, eastern Germany, Poland, Lithuania and Latvia, and most parts of Slovakia, Hungary, Romania and Bulgaria;
- regions in the north-east of France, as well as Guadeloupe and Martinique in the French overseas departments;
- a few regions in the south of Italy and in the United Kingdom.



Figure 1.2: Life expectancy at birth, by sex and NUTS 2 regions, 2008 <sup>(1)</sup> (years)

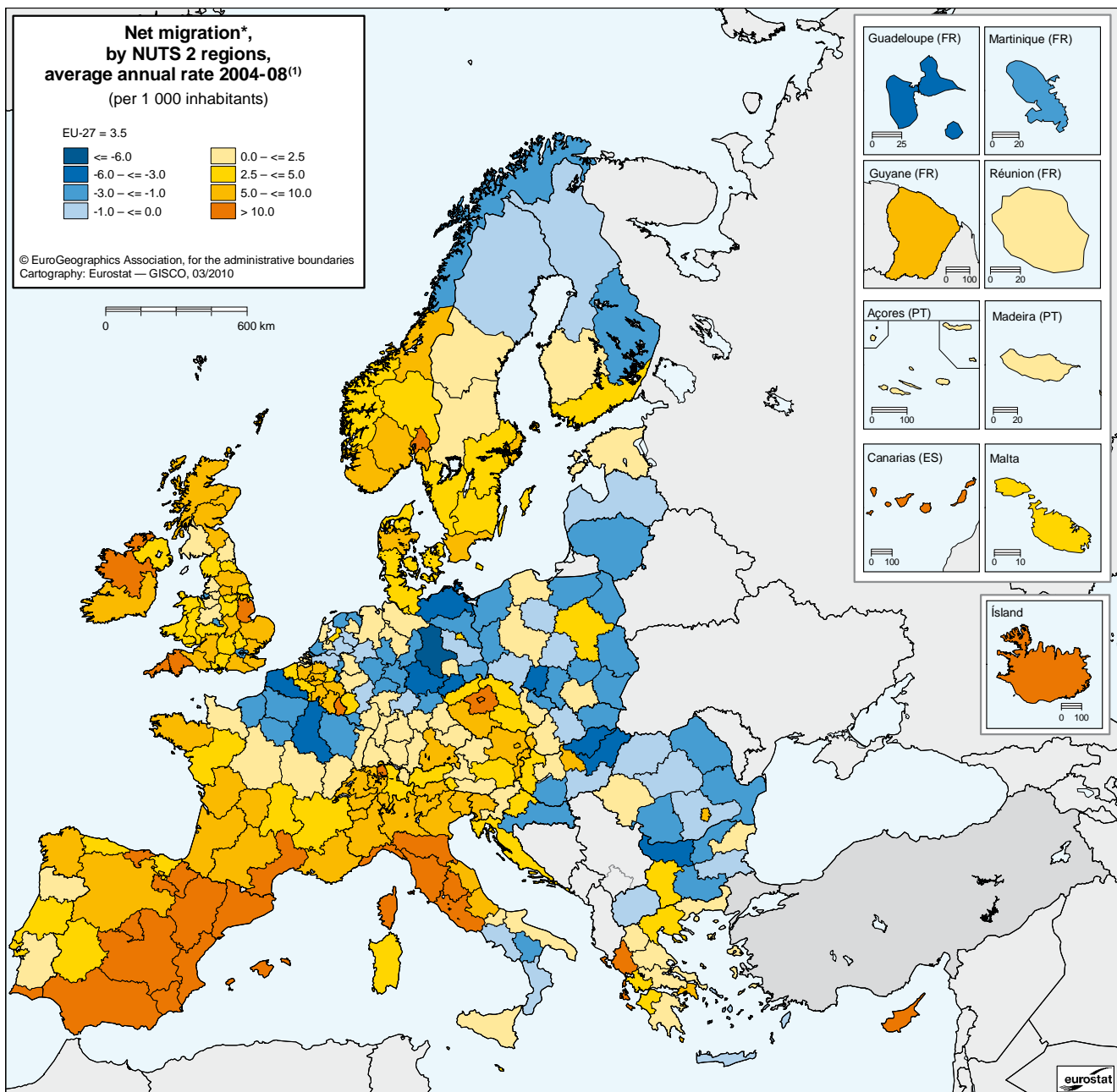


(<sup>1</sup>) Belgium, Spain, France, Italy, United Kingdom and Norway, 2007; Turkey, data not available.

Source: Eurostat ([reg\\_mlifexp](http://reg_mlifexp)).



**Map 1.4: Net migration<sup>(1)</sup>, by NUTS 2 regions, average annual rate, 2004-08 <sup>(2)</sup>  
(per 1 000 inhabitants)**



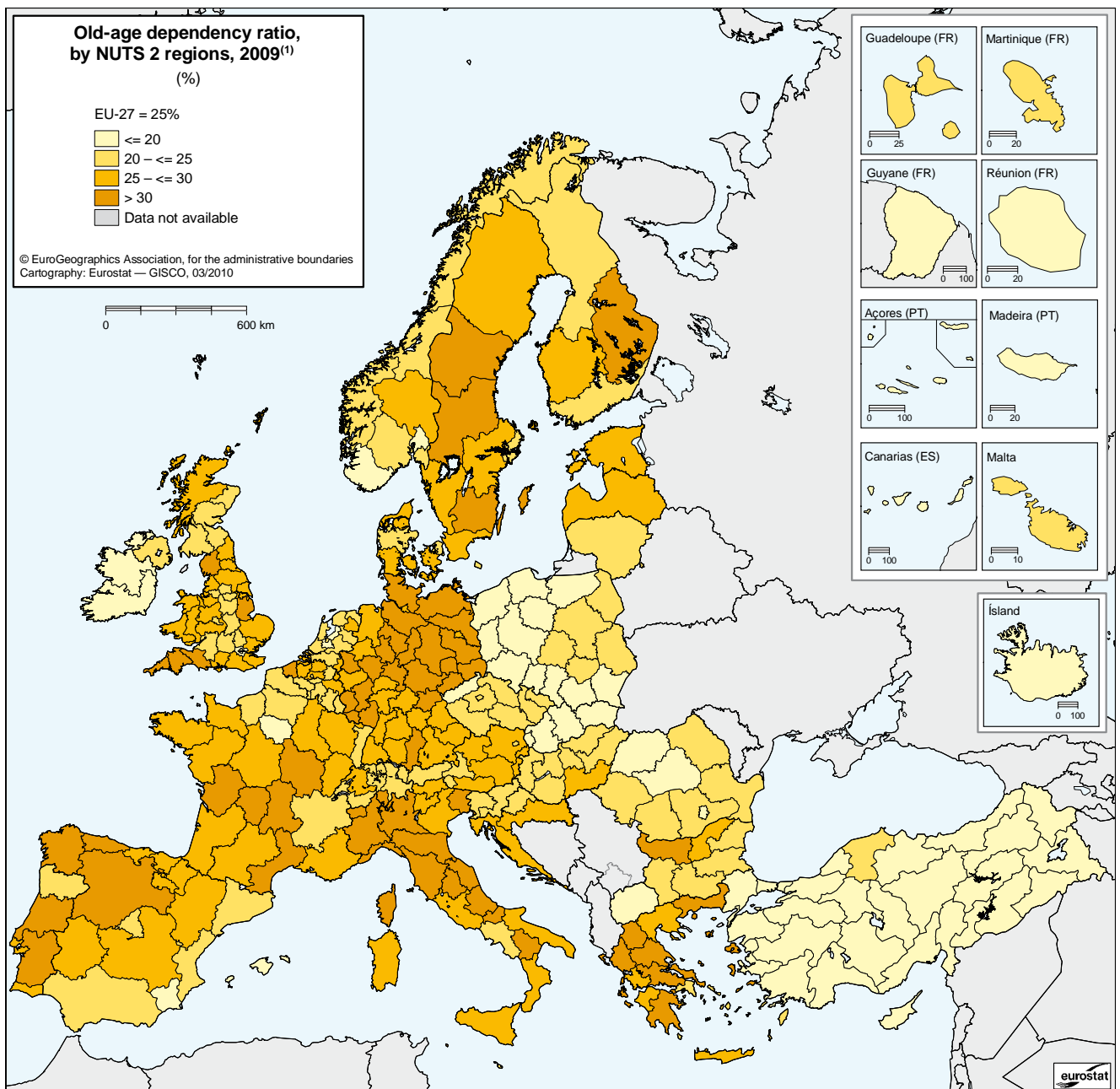
<sup>(1)</sup> Including the statistical adjustment.

<sup>(2)</sup> Belgium and United Kingdom, average 2004 to 2007; Denmark, average 2007 to 2008.

Source: Eurostat ([reg\\_gind3](#)).



**Map 1.5: Old-age dependency ratio, by NUTS 2 regions, 2009<sup>(1)</sup>**  
(%)



<sup>(1)</sup> Belgium, France and United Kingdom, 2008.

Source: Eurostat ([reg\\_d2jan](#)).

There are regions where the two components of population change (positive/negative natural change, positive/negative net migration) have both moved in the same direction.

In Ireland, Luxembourg, Belgium, Malta, Cyprus, Switzerland, Iceland, many regions in France and in Norway, and some regions in Spain, the United Kingdom and the Netherlands, a positive natural change has been accompanied by positive net migration, hence a rise in their populations.

However, in eastern Germany, Lithuania and Latvia, and in some regions in Poland, Slovakia, Hungary, Bulgaria and Romania, both components of population change have moved in a negative direction, as can be seen also from Map 1.2. This trend has led to sustained population loss.

## Regional population projections

Population projections are ‘what-if’ scenarios that aim to provide information about the likely future size and structure of the population. EUROPOP2008 regional population projections produced by Eurostat present one of several possible population change scenarios at NUTS level 2, based on assumptions for fertility, mortality and migration for the period 2008–30. The 2008-based (EUROPOP2008) population projections at national level cover all the EU Member States, Norway and Switzerland, in total 281 regions.

Two highlights of the EUROPOP2008 regional population projections are presented in this chapter:

- most of the European regions are projected to have a larger population by 2030;
- the process of population ageing is projected to occur in almost all regions.

The population of the EU as a whole is projected to rise by 5 % between 2008 and 2030, but there is considerable variation among regions in the Member States, Norway and Switzerland.

In fact, as shown in Map 1.6, the population may increase in Cyprus, Luxembourg and Malta, and in all regions in Belgium, Denmark, Ireland, the United Kingdom, Norway and Switzerland by 2030. The most densely inhabited regions of Austria, the Czech Republic, Spain, Finland, France, Greece, Italy, the Netherlands, Portugal,

Sweden and Slovenia are also likely to see rises in their populations.

Estonia, Latvia and Lithuania and most regions in Bulgaria, Romania, Germany, Hungary, Poland and Slovakia are expected to have a lower population by 2030.

The population profile is projected to become older in almost all regions. This is likely to happen due to the combined effect of three factors — the existing population structure, fertility lower than replacement levels, and the steadily rising numbers of people living longer.

In the coming decades, the high number of ageing baby boomers will swell the number of elderly people. As a result, the proportion of the population aged 65 or over is projected to increase considerably over the period 2008–30 (see Map 1.7).

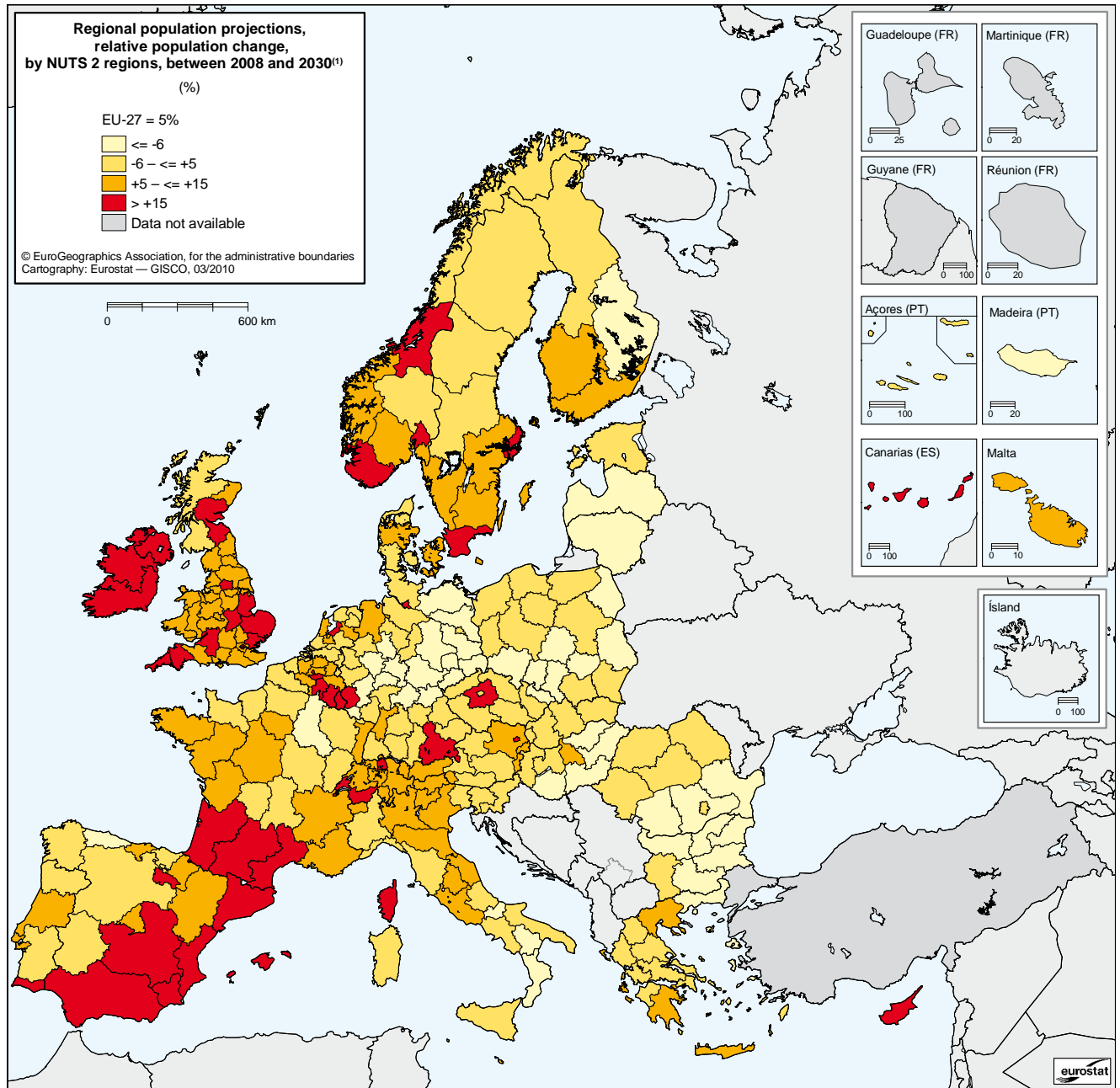
For the EU-27, the share of the total population aged 65 years or over is projected to increase to 23.5 % in 2030, from 17.1 % in 2008. In 2030, for the 281 regions, the proportion of the population aged 65 or over is projected to range between 10.4 % for Inner London in the United Kingdom, and 37.3 % in the German region of Chemnitz on the border with the Czech Republic (see Figure 1.4). For comparison, in 2008, the range was between 9.1 % in the region of Flevoland (Netherlands) and 26.8 % in the coastal region of Liguria in north-west Italy.

The old-age dependency ratio is used as an indicator of the extent to which the population aged 65 or over must be supported by people of working age, conventionally 15–64 years old. In 2030, the ratio may be pushed much higher than currently registered, due to a combination of a rise in the proportion of the projected population aged 65 or over, and a fall in the population of working age for most regions.

For the EU-27, the old-age dependency ratio in 2030 is expected to rise to 38.0 % from a registered value of 25.4 % in 2008. This means that, on average, 100 people of working age are projected to support 38 people aged 65 or over in 2030, whereas the 2008 figures were 100 per 25 (see Map 1.5). The range across all regions is projected to be between 14.8 % and 70.2 %.



**Map 1.6:** Regional population projections, relative population change, by NUTS 2 regions, between 2008 and 2030 <sup>(1)</sup>  
(%)

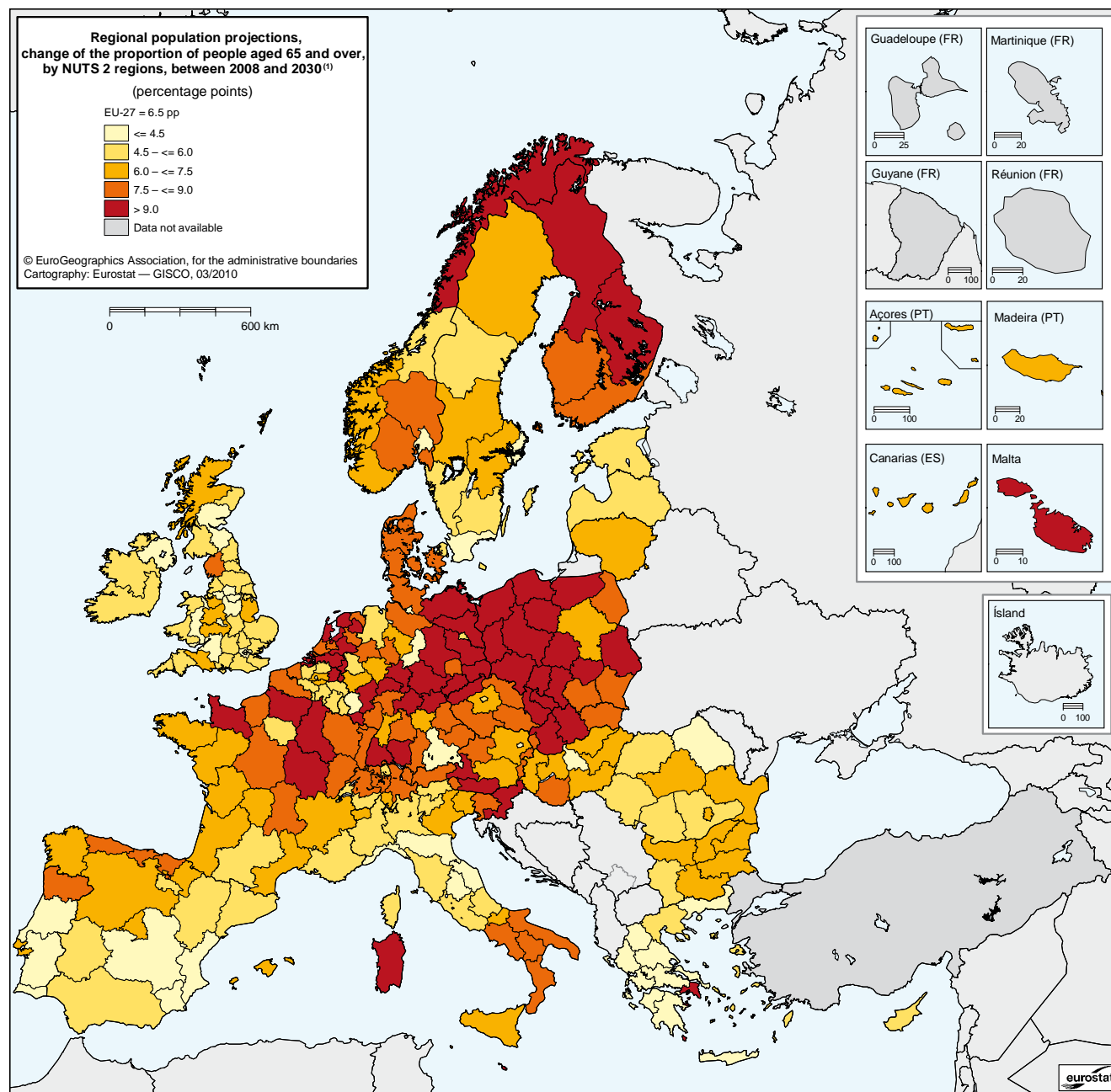


<sup>(1)</sup> France, without départements d'outre-mer (FR9).

Source: Eurostat (proj\_08c2150rp).



**Map 1.7:** Regional population projections, change of the proportion of people aged 65 and over, by NUTS 2 regions, between 2008 and 2030 (\*) (percentage points)

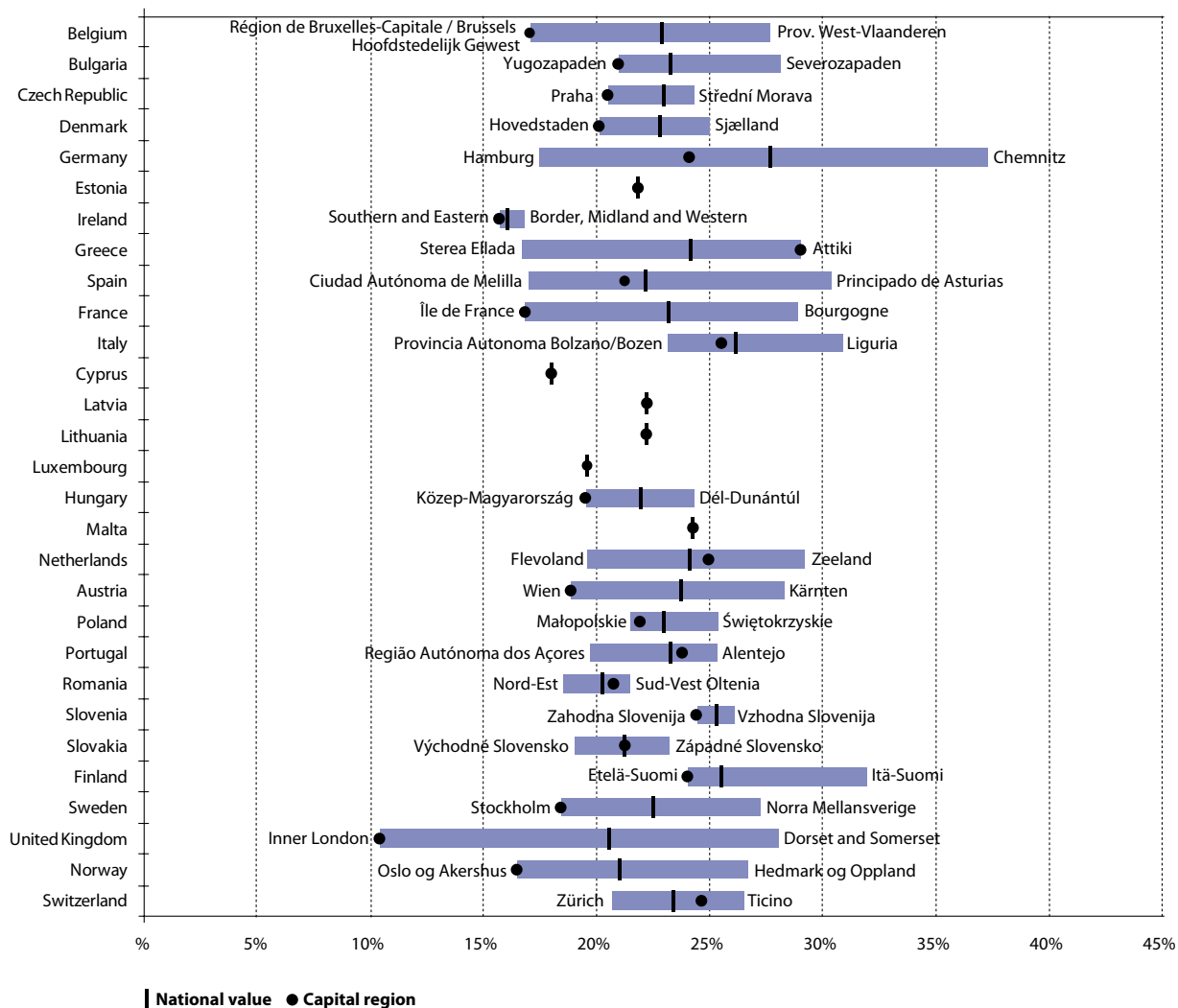


(\*) France, without départements d'outre-mer (FR9).

Source: Eurostat ([proj\\_08c2150rp](#)).



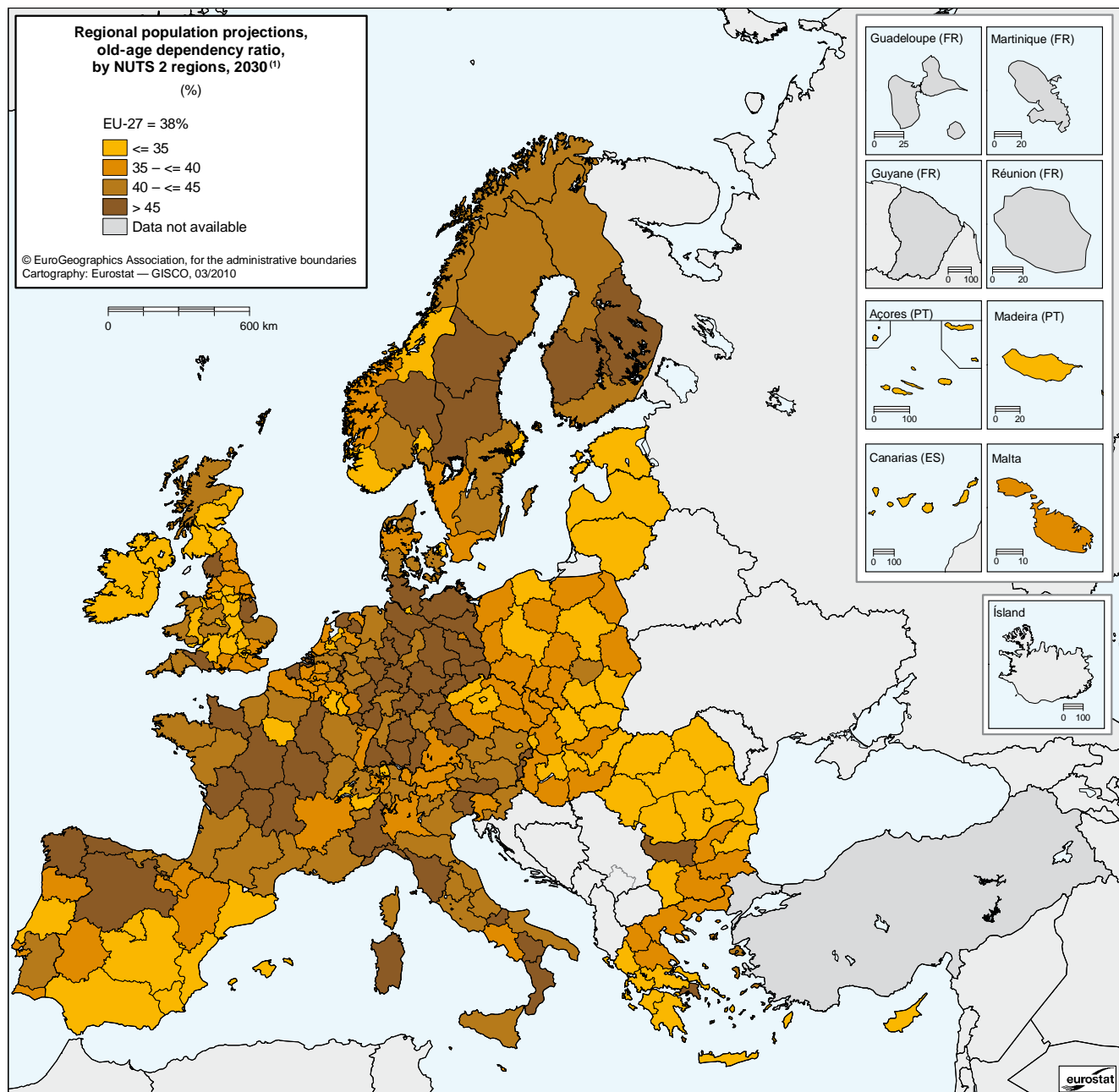
**Figure 1.3:** Regional population projections, NUTS 2 regions with the highest/lowest proportion of people aged 65 and over in the total population in 2030<sup>(1)</sup> (%)



<sup>(1)</sup> France, without départements d'outre-mer (FR9).

Source: Eurostat ([proj\\_08c2150rp](#)).

**Map 1.8:** Regional population projections, old-age dependency ratio, by NUTS 2 regions, 2030<sup>(1)</sup> (%)



<sup>(1)</sup> France, without départements d'outre-mer (FR9).

Source: Eurostat ([proj\\_08c2150rp](#)).



## Conclusion

This chapter highlights selected features of trends in regional population in the area made up by the EU-27 Member States, candidate countries and EFTA countries over the period from 1 January 2004 to 1 January 2009. As far as possible, typologies of regions with phenomena spreading across national boundaries have been identified. While population decline is evident in several regions, at aggregated level, the EU-27 population still increased by around 2 million people every year over the period examined. The main driver

of population growth is net migration, which counterbalanced the negative natural change of the population in many regions.

The current regional demographic profile is complemented by the scenario proposed by the regional demographic projections EUROPOP2008. Most European regions are projected to have a larger population in 2030. According to the population projections, elderly people would account for an increasing share of the population, due to a rise in longevity in past and future decades. The process of population ageing is widespread in most regions.



## Methodological notes

**Sources:** Eurostat — Population statistics. For more information, please consult the Eurostat website at <http://epp.eurostat.ec.europa.eu/portal/page/portal/population/introduction>

**Population growth**, or population change, is the difference between the size of the population at the end and the beginning of the period. It is equal to the algebraic sum of natural population growth and net migration (including the statistical adjustment). There is negative population growth when both of these components are negative or when one is negative and has a higher absolute value than the other.

**Natural population growth**, or natural change, is the difference between the number of live births and the number of deaths.

**Migration** can be extremely difficult to measure. A variety of different data sources and definitions are used in the Member States, meaning that direct comparisons between national statistics can be difficult or misleading. The net migration figures here are not directly calculated from immigration and emigration flow figures. Since many countries either do not have accurate, reliable and comparable figures on immigration and emigration flows or have no figures at all, **net migration** is generally estimated on the basis of the difference between total population growth and natural population growth between two dates (in Eurostat data, this is then called **net migration including statistical adjustment**). The statistics on net migration are therefore affected by all the statistical inaccuracies in the two components of this equation, especially population growth. In effect, net migration equals all changes in total population that cannot be attributed to births and deaths.

**Crude rate of population growth** is the ratio of the total population growth during the year to the average population of the area in question in that year. The value is expressed per 1 000 inhabitants.

**Crude rate of natural population growth** is the ratio of natural population growth over a period to the average population of the area in question during that period. The value is expressed per 1 000 inhabitants.

**Crude rate of net migration** is the ratio of net migration during the year to the average population in that year. The value is expressed per 1 000 inhabitants. As said above, the crude rate of net migration is equal to the difference between the **crude rate of population growth** and the **crude rate of natural population growth** (i.e. net migration is considered as the part of population growth not attributable to births and deaths).

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

**Life expectancy at birth** is the mean number of years that a newborn child can expect to live if subjected throughout his or her life to current mortality conditions.

**Population density** is the ratio of the population of a territory to the total size of the territory (including inland waters), as measured on 1 January.

**Old-age dependency ratio** is the ratio of the number of elderly persons of an age when they are generally economically inactive (age 65 and over in this publication) to the number of persons of working age (conventionally 15–64 years old).