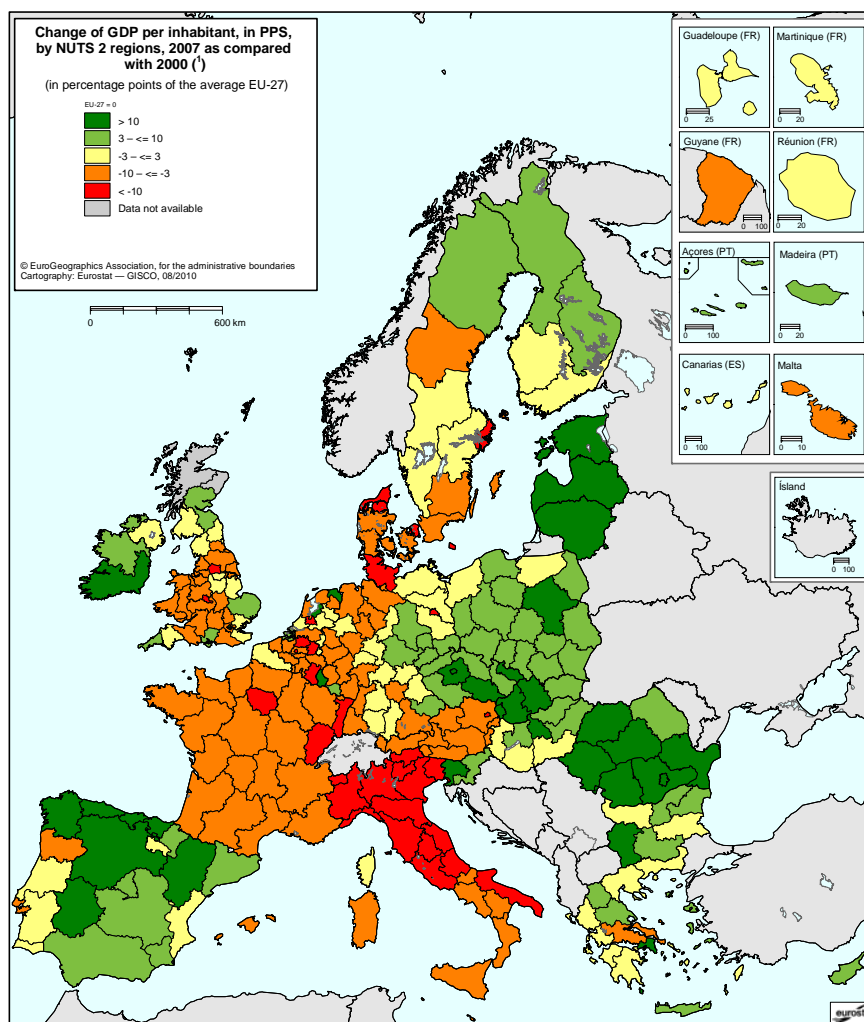


# Increasing Convergence in Regional Gross Domestic Product

Regional Gross Domestic Product (GDP) in purchasing power standards (PPS) per inhabitant has been catching up significantly in many of the less prosperous regions of the EU since the year 2000.

Early data from some Member States suggest that rural areas were less affected by the recent economic downturn than high-income regions and areas with a high dependence on exports.

**Figure 1: Change of GDP per inhabitant, in PPS, by NUTS 2 regions, 2007 as compared with 2000**



<sup>(1)</sup> Denmark, Eurostat estimate

Source: Eurostat ([nama\\_r\\_e2gdp](#))

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## Dynamic catch-up process on the periphery

Figure 1 shows the extent to which per inhabitant GDP changed between 2000 and 2007 compared with the EU-27 average (expressed in percentage points of the EU-27 average). Economically dynamic regions, whose per inhabitant GDP increased by more than three percentage points compared with the EU average, are shown in green. By contrast, less dynamic regions (i.e. those with a fall of more than three percentage points in per inhabitant GDP compared with the EU-27 average) are shown in orange and red.

The map shows that economic dynamism has been well above average in the western, eastern and northern peripheral areas of the EU. Of the new Member States, the Baltic countries, Romania, the Czech Republic, Slovakia and most regions of Poland have seen markedly above-average growth. Among the EU-15 Member States, strong growth can be seen in Spain, Ireland and parts of Greece, the United Kingdom, Finland and Sweden.

On the other hand, a trend which started a number of years ago is continuing: sustained weak growth in certain EU-15 countries. Particularly badly hit have been Italy, Belgium and Austria, where no region achieved the average growth of the EU-27 during the seven-year period 2000-2007; in France, all regions except Guadeloupe and Martinique, and

almost two thirds of those in Germany, fell back in comparison with the EU average. In Portugal, only Alentejo and the islands achieved growth above the EU average.

An analysis of the most dynamic regions shows that 36 EU regions have outperformed the EU average by more than 10 percentage points; of these, 20 are in the new Member States. The 10 fastest-growing regions are spread over 9 EU Member States.

On the other hand, a clear concentration in certain Member States is apparent at the lower end of the distribution curve: of the 31 regions which fell by more than 10 percentage points below the EU-27 average, 15 are in Italy, 4 in Belgium and 3 in France.

Closer examination of the new Member States shows that, between 2000 and 2007, only three regions fell back compared with the EU-27 average: these are Malta (-7.2 percentage points), Nyugat-Dunántúl in Hungary (-1.3 percentage points) and Zachodniopomorskie in Poland (-0.2 percentage points). This means that virtually all regions in the new Member States have benefited from the positive overall development.

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## Major regional differences between and within countries

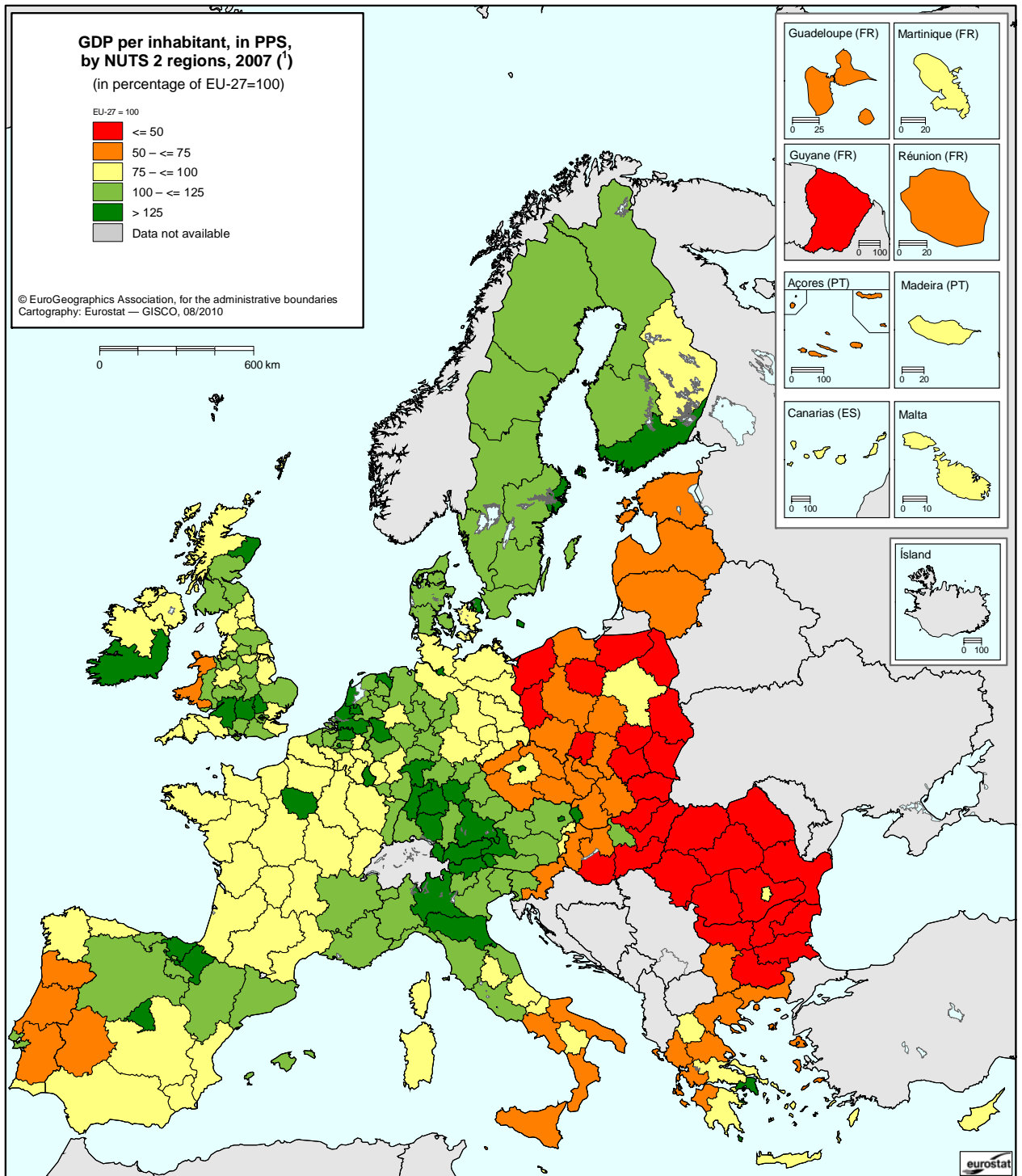
Figure 2 provides an overview of the regional distribution of per inhabitant GDP (as a percentage of the EU-27 average of 24 900 PPS) for the European Union. The regions with the highest per inhabitant GDP are in southern Germany, in the south of the UK, in northern Italy and in Belgium, Luxembourg, the Netherlands, Austria, Ireland and Scandinavia. The capital regions Madrid, Paris, Prague and Bratislava also fall into this category.

The weaker regions are concentrated at the southern, south-western and south-eastern periphery of the Union, in eastern Germany and the new Member States. Within the EU-27, per inhabitant GDP ranges from 26 % of the EU-27 average (6 400 PPS) in Severozapaden in Bulgaria to 334 % (83 200 PPS) in the capital region of Inner London in the UK. The factor between the two ends of the distribution is therefore 13.1:1. Luxembourg at 275 % (68 500 PPS) and Brussels at 221 % (55 000 PPS) are in positions 2 and 3,

followed by Hamburg at 192 % (47 800 PPS) and Prague at 172 % (42 800 PPS) in positions 4 and 5.

Prague (Czech Republic) thus remains by an increasing margin the region with the highest per inhabitant GDP in the new Member States; Bratislavský kraj (Slovakia) follows with 160 % (39 900 PPS) and ranks 12<sup>th</sup> out of the 271 NUTS level 2 regions in the EU-27. However, these two regions must be regarded as exceptions among the regions of the new Member States, since the next most prosperous regions in the new Member States are a long way behind: Zahodna Slovenija (Slovenia) at 107 % (26 600 PPS) in 94<sup>th</sup> place, Közép-Magyarország (Hungary) at 103 % (25 600 PPS) in 111<sup>th</sup> place and Cyprus at 94 % (23 300 PPS) in 146<sup>th</sup> place. With the exception of four other regions (București-Ilfov in Romania, Mazowieckie in Poland, Malta and Střední Čechy in the Czech Republic), all the other regions of the new Member States have a per inhabitant GDP in PPS of less than 75 % of the EU-27 average.

Figure 2: GDP per inhabitant, in PPS, by NUTS 2 regions, 2007



Source: Eurostat ([nama\\_r\\_e2gdp](#))

Figure 2 also classifies the 271 EU regions according to their level of per inhabitant GDP (in PPS) in relation to the EU-27 average of 24 900 PPS per inhabitant. In 2007, GDP in 67 regions was less than 75 % of the EU-27 average. 24.4% of the EU population live in these 67 regions, three quarters of them in new Member States and one quarter in EU-15 countries.

At the upper end of the spectrum, 41 regions have a per inhabitant GDP of more than 125 % of the EU-27 average; these regions are home to 20.6 % of the population. The regions with a per inhabitant GDP of between 75 % and 125 % of the EU-27 average are home to 55 %, and thus a clear majority of the EU population. 9.9 % of the EU population live in the 28 regions whose per inhabitant GDP is less than 50 % of the EU-27 average; with the exception of the French overseas department of French Guyane, all these regions are located in the new Member States.

There are also substantial regional differences even within the countries themselves. In 2007, the highest per inhabitant GDP was more than twice the lowest in 13 of the 21 countries examined here which have several NUTS 2 regions. This group includes 6 of the 7 that are new Member States but only 7 of the 14 that are EU-15 Member States.

The largest regional differences are in the United Kingdom, where there is a factor of 4.6 between the highest and lowest values, and in Slovakia with a factor of 3.5. The lowest values are in Slovenia and in Sweden with a factor of 1.5, and in the Netherlands and Finland with a factor of 1.6.

Moderate regional disparities in per inhabitant GDP (i.e. factors of less than 2 between the highest and lowest values) are found, with the exception of Slovenia, only in EU-15 Member States.

A comparison of the extreme values by country between 2000 and 2007, however, shows that trends in the EU-15 have been very different from those in the new Member States. Whilst the gap between the regional extreme values in the new Member States is clearly increasing in several cases, it is falling in one out of every two EU-15 countries.

In many Member States, a substantial proportion of economic activity is concentrated in the capital regions. Consequently, in 17 of the 21 Member States which have several NUTS 2 regions, the capital areas are also the regions with the highest per inhabitant GDP. For example, figure 2 clearly shows the prominent position of the regions of Brussels, Prague, Athens, Madrid, Paris and Lisbon as well as Budapest, Bratislava, London, Warsaw and Bucharest.

In addition, most capital regions continue to have a rate of growth which exceeds that of the EU-27 average, in particular in the new Member States: between 2000 and 2007 Bratislavský kraj (SK) outperformed the EU average by 51.6, București – Ilfov (RO) by 35.8 and Praha (CZ) by 35.2 percentage points. The non-capital region with the strongest growth in the new Member States was Vest (RO), where per inhabitant GDP (in PPS) increased by 21.4 percentage points of the EU-27 average between 2000 and 2007.

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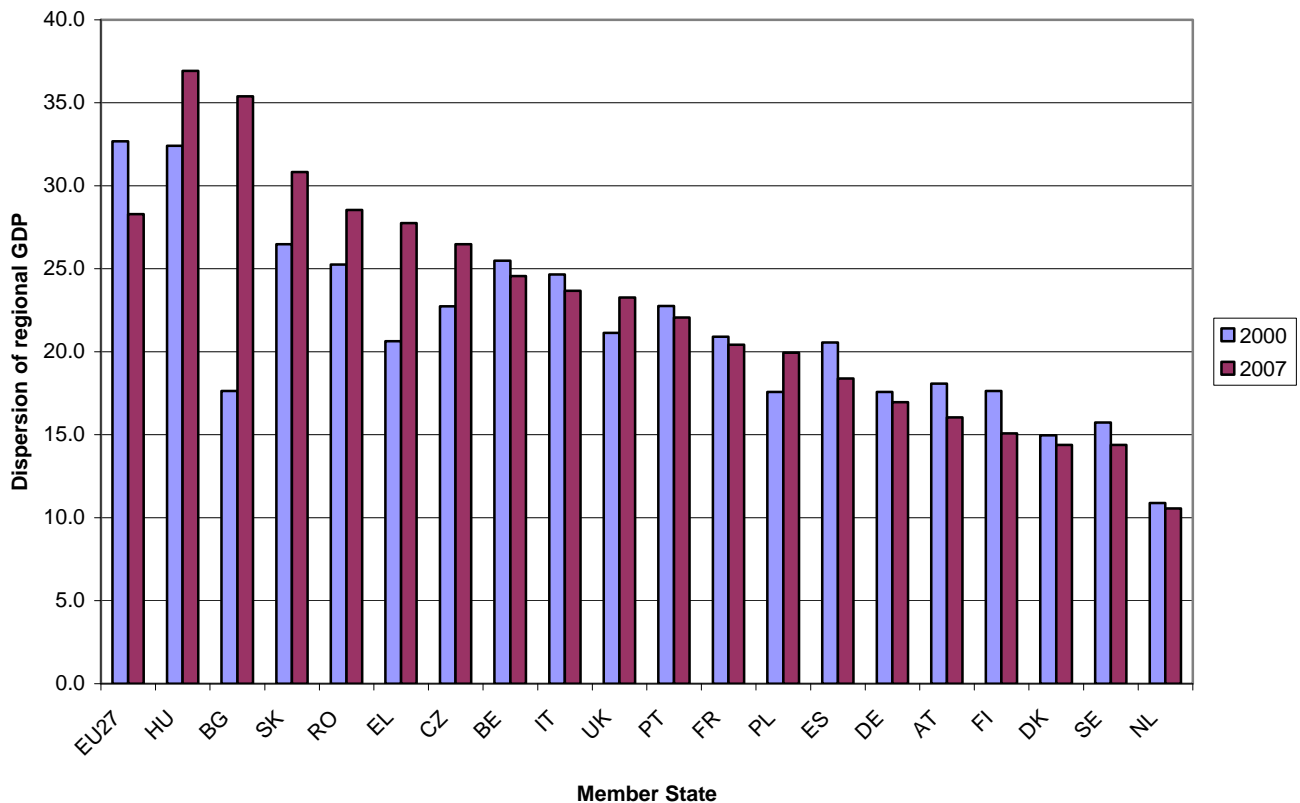
## The seven-year perspective: Increasing Convergence

This section addresses the question of whether convergence among the regions of the EU-27 has made progress over the seven-year period 2000-2007.

Regional convergence of per inhabitant GDP (in PPS) can be assessed in various ways on the basis of data supplied to Eurostat by the national statistical institutes.

The simplest approach is to measure the gap between the highest and lowest values. By this method, the gap closed from a factor of 17.7 in 2000 to 13.1 in 2007. The main reason for this improvement was the faster economic growth in Bulgaria and Romania. However, as this approach looks only at the extreme values, it is clear that the majority of shifts between regions are not taken into account.

**Figure 3: Dispersion of regional GDP (at NUTS-2)**



Source: Eurostat ([nama\\_r\\_e0digdp](#))

A much more accurate evaluation of regional convergence is afforded by the dispersion of regional GDP; this indicator is calculated by Eurostat since 2007 (for details of the method see the methodological notes at the end of the chapter). It takes account of the divergences from the national average in all NUTS 2 regions for each country in turn, weighted by the regional population.

Figure 3 compares the dispersion values for 2000 and 2007, ranked on the data for 2007. In the first instance a downward trend is apparent, i.e. a decrease in regional dispersion for the EU-27 as a whole. An examination of the trend in individual countries reveals clear differences between certain groups of Member States. Firstly, most of the EU-15 countries have lower dispersion values than the new Member States. In addition, values in the EU-15 countries are generally decreasing, whereas they are increasing considerably in some of the new Member States. It is thus evident that the economic catching-up process in the new Member States has so far gone hand-in-hand with increasing regional disparities.

The third and most often used approach to measure convergence involves classifying the regions according to their per inhabitant GDP (in PPS). In this way, the proportion of the EU-27 population living in more or less prosperous regions, and how this proportion has changed, can be ascertained.

**Table 1: Shares of resident population in economically stronger and weaker regions**

Percentage of population of EU-27 resident in regions with a per inhabitant GDP (in PPS) of	2000	2007
> 125 % of EU-27=100	24.6	20.6
> 100 % to 125 % of EU-27=100	28.4	29.0
> 75 % to 100 % of EU-27=100	19.3	26.0
< 75 % of EU-27=100	27.7	24.4
of which: < 50 % of EU-27=100	14.0	9.9

Source: Eurostat ([nama\\_r\\_e2gdp](#))

Table 1 shows clear progress in economic convergence between the regions over the seven-year period 2000-2007: the proportion of the population living in regions where per inhabitant GDP is less than 75 % of the EU-27 average fell from 27.7 % to 24.4 %, i.e. by more than 12 million inhabitants. At the same time, the proportion of the population living in regions

where this value is greater than 125 % fell from 24.6 % to 20.6 %.

These shifts at the top and bottom ends of the distribution meant that the proportion of the population in the mid-range (per inhabitant GDP of 75-125 %) increased sharply, from 47.7 % to 55.0 %. This corresponds to an increase of around 42 million inhabitants.

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## Summary

In 2007, the highest and lowest values of per inhabitant GDP (in PPS) for the 271 NUTS level 2 regions of the EU-27 ranged from 26 % of the EU-27 average (6 400 PPS) in Severozapaden in Bulgaria to 334 % (83 200 PPS) in the capital region of Inner London in the UK. This corresponds to a factor of 13.1, a figure which is still very high but decreasing over the medium term. Within individual countries, there are differences from a factor of 1.5 in Slovenia and Sweden up to 4.6 in the UK; regional differences in new Member States tend to be greater than in the EU-15.

In 2007, GDP in 67 regions was less than 75 % of the EU-27 average. 24.4 % of the population live in these 67 regions, three quarters of them in new Member States and one quarter in EU-15 countries.

Considering the trends over the seven-year period 2000-2007, dynamic growth can be seen, as regards EU-15 countries, in Greece, Spain, Ireland and certain regions of the UK, Finland and Sweden. However, this must be set against

rather disappointing growth in most regions of Belgium, Germany, France, Italy, Austria and Portugal.

In the new Member States, significantly above-average growth can be seen primarily in the Baltic countries, Romania, the Czech Republic, Slovakia and most regions of Poland.

The catch-up process in the new Member States was of the order of 1.5 percentage points per year compared to the EU average between 2000 and 2007, and therefore considerably faster than in the 1990s. Per inhabitant GDP (in PPS) in these 12 countries thus rose from 45 % of the EU-27 average in 2000 to 56 % in 2007, but it is not clear whether this trend will continue. However, early data available on certain Member States for 2008 and 2009 would suggest that the recession in rural regions and areas lagging behind in development terms was less severe than in regions with a high per inhabitant GDP or with a high level of dependence on exports.

## METHODOLOGICAL NOTES

1. Regional data collection: Based on [Regulation No 2223/1996](#) Eurostat has been collecting gross value added data from national statistical institutes as from reference year 1995. The deadline for data transmission is T + 24 months, i.e. the data for 2007 were due for transmission to Eurostat on 31 December 2009. Once per year Eurostat estimates and publishes an official set of regional GDP data for all EU Member States.

2. Data revisions: Data as from 1995 have been revised since the [Eurostat news release 23/2009](#) of 19 February 2009. The same data are used for the [Eurostat news release 25/2010](#) of 18 February 2010 and cover all regions of the EU-27. All data are available online on Eurostat's website (see page 8 for link).

3. Nomenclature of territorial units (NUTS): the Nomenclature of Territorial Units for Statistics (NUTS) has been used since 1988 in EU legislation. The data presented in this publication is based on NUTS2006 ([Regulation No 105/2007](#) of 1 February 2007, OJ L 39, 10 February 2007 and [Regulation No 176/2008](#), OJ L 61, 5 March 2008). The regions of the Member States are available on Eurostat's website.

EU-27: European Union of 27 Member States from 1 January 2007: Belgium (BE), Bulgaria (BG), the Czech Republic (CZ), Denmark (DK), Germany (DE), Estonia (EE), Ireland (IE), Greece (EL), Spain (ES), France (FR), Italy (IT), Cyprus (CY), Latvia (LV), Lithuania (LT), Luxembourg (LU), Hungary (HU), Malta (MT), the Netherlands (NL), Austria (AT), Poland (PL), Portugal (PT), Romania (RO), Slovenia (SI), Slovakia (SK), Finland (FI), Sweden (SE) and the United Kingdom (UK).

4. Harmonized estimation procedure: At NUTS level 2 there are 271 regions in EU-27. Data at NUTS levels 2 and 3 for the years 1995 to 2007 are available on Eurostat's website (for link, see page 8). National GDP data are compiled by the national statistical offices in accordance with the rules of the European System of Economic Accounts (ESA95). These national figures are then distributed across the regions on the basis of the regional structure of gross value added. Extra-Regio value added is distributed in proportion to the regions of the country in question. Gross value added is recorded at basic prices. Conversion to Purchasing Power Standards is done on the basis of national Purchasing Power Parities.

5. Interpreting the figures: GDP and, therefore, GDP per inhabitant, are indicators of a country or

region's economic activity and are thus suited to measuring and comparing the degree of economic development of countries or regions. It should be borne in mind that GDP is not equivalent to the income ultimately available to private households in a given country or region. Commuter flows make the comparison among countries, and in particular among regions, on the basis of per-inhabitant values of GDP more difficult. Well known examples are Inner London, Luxembourg, Brussels, Hamburg, Prague and Bratislava. The net daily commuter inflow of persons in such regions increases the production to a level that the resident economically active population alone could not achieve.

6. Dispersion of regional per inhabitant GDP: Since 2007, Eurostat has been calculating a new, derived indicator which records the differences between regional per inhabitant GDP and the national average and makes them comparable between countries. This dispersion indicator is available at NUTS 2 and at NUTS 3 levels. The figures used by Eurostat are based on GDP in purchasing power standards (PPS).

For a given country, the dispersion D of the regional GDP of the level 2 regions is defined as the sum of the absolute differences between regional and national GDP per inhabitant, weighted on the basis of the regional share of population and expressed as a percentage of the national GDP per inhabitant:

$$D = 100 \frac{1}{Y} \sum_{i=1}^n |(y_i - Y)| (p_i / P)$$

In the above equation:

$y_i$  is the regional GDP per inhabitant of region  $i$

$Y$  is the national average GDP per inhabitant

$p_i$  is the population of region  $i$

$P$  is the population of the country

$n$  is the number of regions in the country.

The value of the dispersion of GDP per inhabitant is zero if the values of regional GDP per inhabitant are identical in all regions of the country or economic area (such as the EU-27 or the euro area), and it will show, all other things being equal, an increase if the differences in per inhabitant GDP between the regions increase. A value of 30% therefore means that the GDP of all regions of a given country, weighted on the basis of the regional population, differs from the national value by an average of 30%.

## Further information

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

Data on "Regional statistics, regional economic accounts-ESA 95"

[http://epp.eurostat.ec.europa.eu/portal/page/portal/region\\_cities/regional\\_statistics/data/database](http://epp.eurostat.ec.europa.eu/portal/page/portal/region_cities/regional_statistics/data/database)

More information about "Regional statistics, regional economic accounts-ESA 95"

[http://epp.eurostat.ec.europa.eu/portal/page/portal/region\\_cities/introduction](http://epp.eurostat.ec.europa.eu/portal/page/portal/region_cities/introduction)

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