Economy and finance

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Statistics in focus
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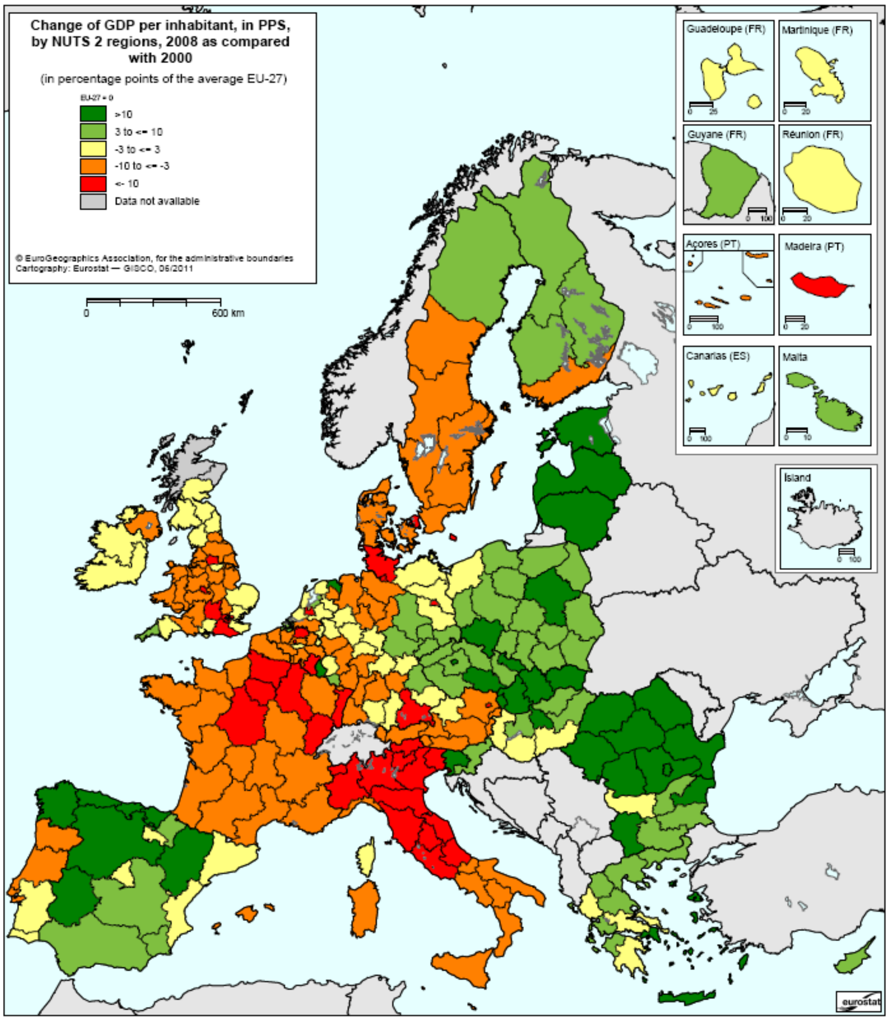
Convergence and disparities in regional Gross Domestic Product

Regional Gross Domestic Product (GDP) in purchasing power standards (PPS) per capita 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 economic downturn in 2008 and 2009 than high-income regions and areas with a high dependence on exports, financial services or tourism.

However, regional disparities are increasing inside new Member states.

Map 1: Change of GDP per inhabitant, in PPS, by NUTS 2 regions, 2008 as compared with 2000



Source: Eurostat (online data code: nama_r_e2gdp)

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Dynamic catch-up process on the periphery

Map 1 shows the extent to which per capita GDP changed between 2000 and 2008 compared with the EU-27 average (expressed in percentage points of the EU-27 average). Economically dynamic regions, whose per capita 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 capita 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 south-western, eastern and northern peripheral areas of the EU, not just in the EU-15 countries, but particularly in the new Member States.

Of the new Member States, apart from the very dynamic capital regions, it is the Baltic States, Romania, Slovakia, the Czech Republic and most regions of Poland which have seen markedly above-average growth.

Among the EU-15 Member States, strong growth is particularly evident in Spain, parts of the Netherlands and Greece, as well as the north of Finland and Sweden. On the other hand, the trend of weak relative growth that started several years ago persists in several EU-15 countries. Italy and France have been particularly badly hit. Not a single region in these two Member States achieved the EU-27 average growth rate during the eight-year period 2000–2008. Performance has also been weak in a number of regions of Germany, Portugal, Austria and the UK.

Ireland is a special case. Due to the economic and financial crisis which hit the country earlier than most other Member States, both NUTS-2 regions fell back to the levels of 2001, i.e. Border, Midland and Western by 8.9 percentage points, and Southern and Eastern by 16.3 percentage points, during the year 2008. Closer analysis of the most dynamic regions shows that 41 EU-27 regions have outperformed the EU average by more than 10 percentage points; of these, 24 are in new Member States.

The 10 fastest-growing regions are spread over nine EU Member States. Among these 10, there are five capital regions in new Member States. The three regions in EU-15 countries in this top-10 group (Luxembourg, Groningen in the Netherlands and Inner London) can all be considered special cases.

The non-capital region with the strongest growth in the new Member States was Vest (Romania), where per-capita GDP (in PPS) increased by 23.8 percentage points of the EU-27 average between 2000 and 2008.

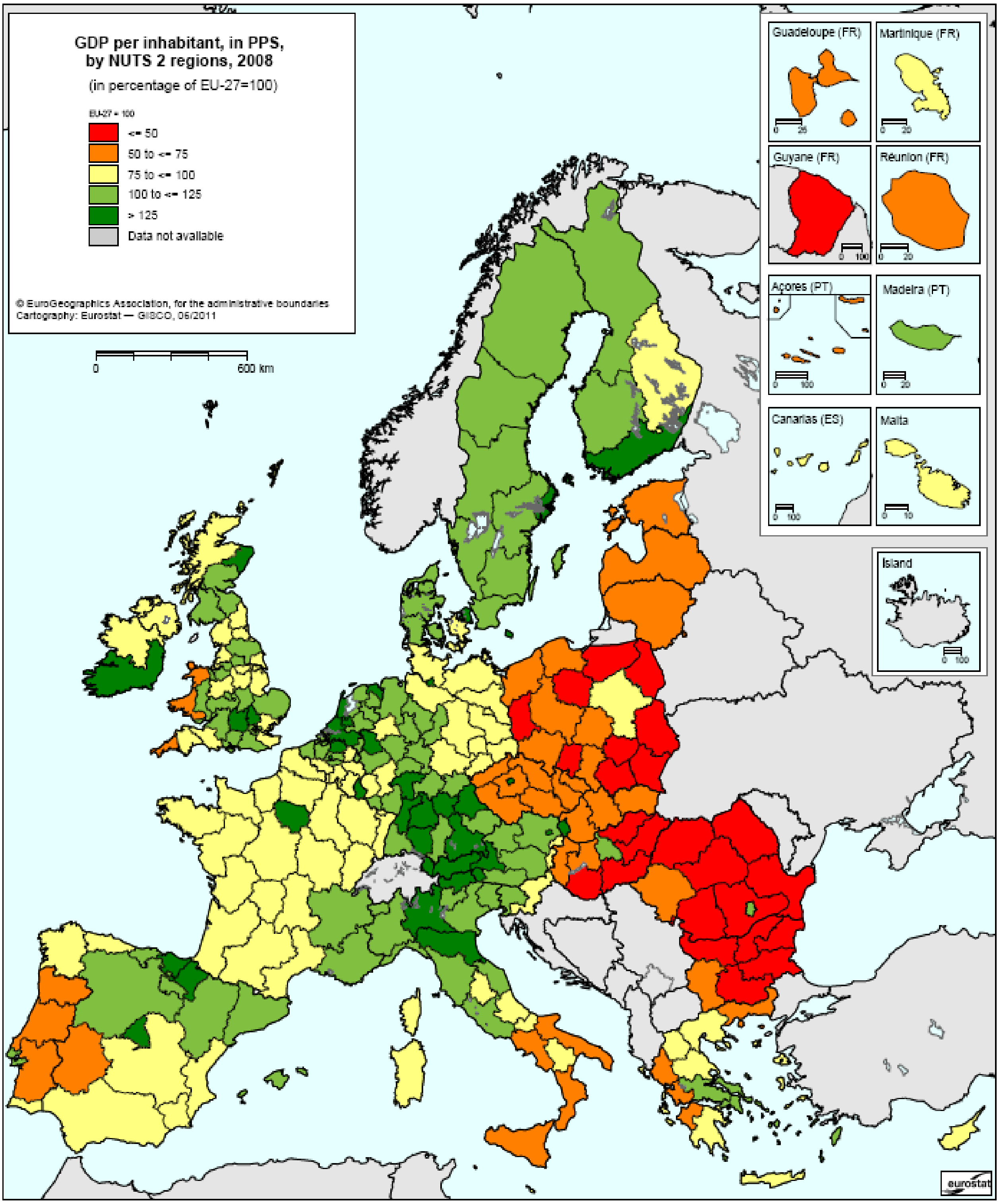
On the other hand, a clear concentration in certain Member States is apparent at the lower end of the distribution curve: of the 34 regions which fell by more than 10 percentage points below the EU-27 average, 13 are in Italy, six in France, five in the UK and four in Germany.

Closer examination of the new Member States shows that, between 2000 and 2008, only one region (Malta with -5.8 percentage points) fell back compared with the EU-27 average.

The catch-up process in new Member States was of the order of 1.7 percentage points per year between 2000 and 2008, compared to the EU average. Per-capita GDP (in PPS) in these 12 Member States thus rose from 45 % of the EU-27 average in 2000 to almost 59 % in 2008. Performance in 2008, with 2.7 percentage points, was particularly strong. This can be explained partly by the fact that the economic and financial crisis struck first in the EU-15 Member States, some of which, like Ireland, Italy and Denmark, were already in recession in 2008. On the other hand, among the new Member States, only Estonia and Latvia already had negative volume growth rates in 2008, and the full effects of the crisis did not become apparent until 2009.

The catch-up process continued at national level in 2009, but came to a halt in 2010. Early regional data available on certain Member States for 2009 and 2010 would suggest that the recession had a less severe effect on rural regions and areas lagging behind in terms of economic development than on regions with a high per-capita GDP, or with a high level of dependence on exports, financial services or tourism.

Map 2: GDP per inhabitant, in PPS, by NUTS 2 regions, 2008



Source: Eurostat (online data code: nama_r_e2gdp)

Major regional differences between and within countries

Map 2 provides an overview of the regional distribution of per capita GDP (as a percentage of the EU-27 average of 25 100 PPS) for the European Union. The regions with the highest per capita GDP are in southern Germany, the south of the UK, northern Italy and in Belgium, Luxembourg, the Netherlands, Austria, Ireland and Scandinavia. The regions around certain capitals, Madrid, Paris, Praha and Bratislava, also fall into this category. The weaker regions are concentrated in the southern, south-western and south-eastern periphery of the Union, in eastern Germany and the new Member States.

Within the EU, per capita GDP ranges from 28 % of the EU-27 average (7 100 PPS) in Severozapaden in Bulgaria to 343 % (85 800 PPS) in the capital region of Inner London in the UK. The factor between the two extremes of distribution is therefore 12.1:1.

Luxembourg at 280 % (70 000 PPS) and Brussels at 216 % (54 100 PPS) are in positions 2 and 3, followed by Groningen (Netherlands) at 198 % (49 700 PPS), Hamburg at 188 % (47 100 PPS) and Praha at 173 % (43 200 PPS) in positions 4, 5 and 6. Praha (Czech Republic) thus remains the region with the highest per capita GDP in the new Member States; Bratislavský kraj (Slovakia) follows with 167 % (41 800 PPS) in position 9 of the 271 statistical NUTS 2 regions of the EU-27. However, Praha and Bratislavský kraj must be regarded as exceptions in terms of regions in the new Member States that joined since 2004. The next most prosperous regions in the new Member States are a long way behind: București–Ilfov in Romania at 113 % (28 300 PPS) in position 74, Zahodna Slovenija (Slovenia) at 109 % (27 300 PPS) in position 87, Közép-Magyarország (Hungary) at 107 % (26 800 PPS) in position 96 and Cyprus at 97 % (24 400 PPS) in position 129.

With the exception of three other regions (Mazowieckie in Poland, Malta and Vzhodna Slovenija in Slovenia), all the other regions of the new Member States have a per capita GDP in PPS of less than 75 % of the EU-27 average.

Map 2 also classifies the 271 EU regions according to their level of per capita GDP (in PPS) in relation to the EU-27 average of 25 100 PPS per capita. In 2008, GDP in
64 regions was less than 75 % of the EU-27 average. 23.8% of the EU population live in these 64 regions, more than three quarters of them in new Member States and less than one quarter in EU-15 countries.

At the upper end of the spectrum, 40 regions have a per capita GDP of more than 125 % of the EU-27 average; these regions are home to 19.6 % of the population. The regions with a per capita GDP of between 75 % and 125 % of the EU-27 average are home to 56.6 %, and thus form a clear majority of the EU population. 8.7 % of the EU population live in the 25 regions whose per capita 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 2008, the highest per capita GDP was more than twice that of the lowest in 13 of the 21 Member States which have several NUTS 2 regions. This group includes 6 of the 7 that are new Member States, but only 6 of the 14 that are EU-15 Member States.

The largest regional differences are in the United Kingdom, where there is a factor of 4.8 between the highest and lowest values, and in Romania with a factor of 3.9. The lowest values are in Slovenia with a factor of 1.4, followed by Ireland, Sweden, Finland and Denmark with a factor of 1.6. Moderate regional disparities in per capita 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.

However, a comparison of the extreme values by country between 2000 and 2008 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 widening in several cases, it is narrowing in more than half of the EU-15 countries.

In many Member States, a substantial proportion of economic activity is concentrated in the capital regions. Consequently, in 16 of the 21 Member States which have several NUTS 2 regions, the capital areas are also the regions with the highest per capita GDP. For example, Map 2 clearly shows the prominent position of the regions of London, Brussels, Prague, Athens, Madrid, Paris and Lisbon, as well as Budapest, Bratislava, 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 2008 Bratislavský kraj (SK) outperformed the EU average by 58.1, Bucureşti – Ilfov (RO) by 56.7 and Praha (CZ) by 35.9 percentage points. The non-capital region with the strongest growth in the new Member States was Vest (RO), where per capita GDP (in PPS) increased by 23.8 percentage points of the EU-27 average between 2000 and 2008.

The eight-year perspective: Increasing Convergence, but internal disparities

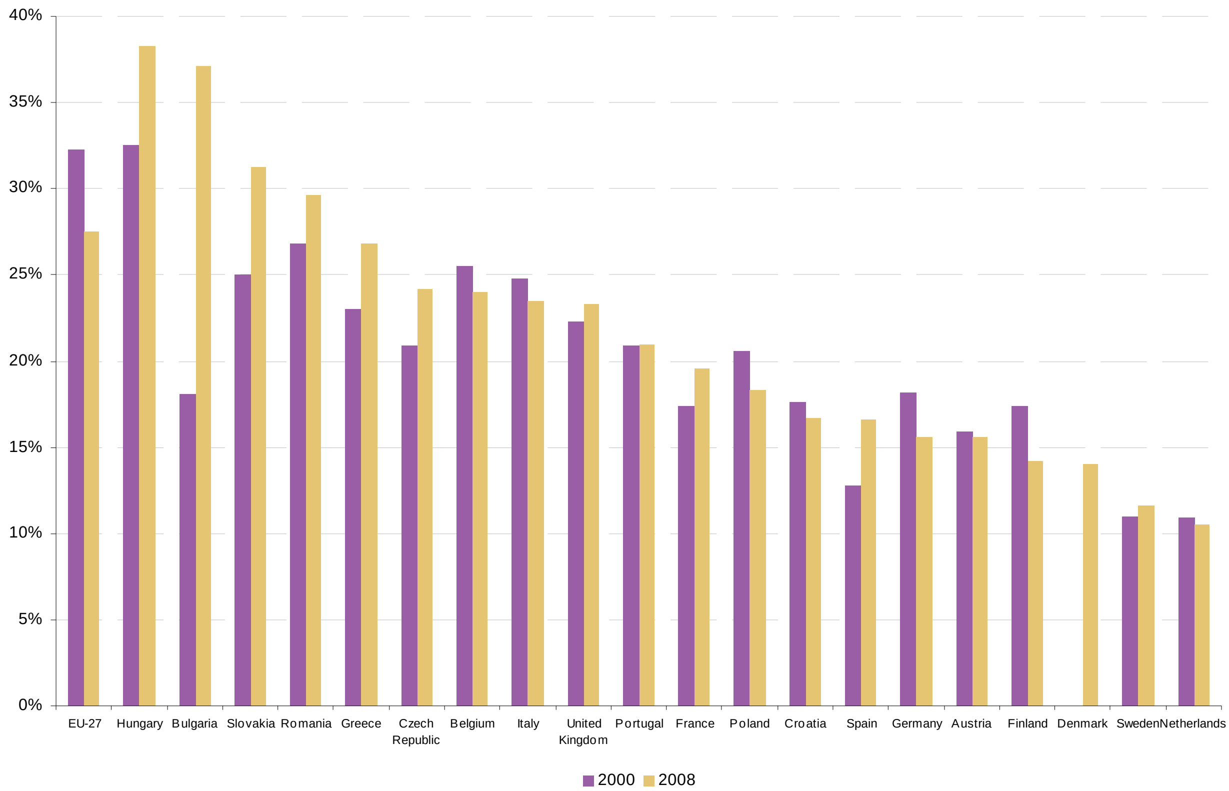
This section addresses the issue of whether convergence among the regions of the EU-27 has made progress over the eight-year period 2000-2008.

Regional convergence of per capita 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. Using this method, the gap closed from a factor of 17.2 in 2000 to 12.1 in 2008. 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.

A much more accurate evaluation of regional convergence is afforded by the dispersion of regional GDP; this indicator has been 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 1: Dispersion of regional GDP (at NUTS-2)



Source: Eurostat (online data code: nama_r_e0digdp)

Figure 1 compares the dispersion values for 2000 and 2008, ranked on the data for 2008. 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 than the new Member States. In addition, values in the EU-15 countries are generally decreasing, whereas they are showing considerable increases 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 capita GDP (in PPS). In this way, the proportion of the EU-27 population living in more or less prosperous regions, and the manner in which this proportion has changed, can be ascertained.

Table 1 shows clear progress in economic convergence between the regions over the eight-year period 2000-2008: the proportion of the population living in regions where per capita GDP is less than 75 % of the EU-27 average fell from 27.2 % to 23.8 %, 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 % was down from 24.6 % to 19.6 %.

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	2008
> 125% of EU-27=100	24.6	19.6
> 100% to 125% of EU-27=100	27.7	30.0
> 75% to 100% of EU-27=100	20.5	26.6
< 75% of EU-27=100	27.2	23.8
of which: < 50% of EU-27=100	14.0	8.7

Source: Eurostat (online data code: nama_r_e2gdp)

These shifts at the top and bottom ends of the distribution meant that the proportion of the population in the mid-range (per capita GDP of 75-125 %) increased sharply, from 48.2 % to 56.6 %. This corresponds to an increase of almost 50 million inhabitants.

Summary

In 2008, the highest and lowest values of per capita GDP (in PPS) for the 271 NUTS level 2 regions of the EU-27 ranged from 28 % of the EU-27 average (7 100 PPS) in Severozapaden in Bulgaria to 343 % (85 800 PPS) in the capital region of Inner London in the UK. This corresponds to a factor of 12.1, a figure which is still very high, but decreasing over the medium term. Within individual countries, there are differences ranging from a factor of 1.5 in Slovenia up to 4.8 in the UK; regional differences in new Member States tend to be greater than in the EU-15.

In 2008, GDP in 64 regions was less than 75 % of the EU-27 average. 23.8 % of the population live in these 64 regions, three quarters of them in new Member States and one quarter in EU-15 countries.

Considering the trends over the eight-year period 2000-2008 in the EU-15 countries, dynamic relative growth can be seen in Spain, parts of Greece and the Netherlands, as well as the north of Finland and Sweden. However, this must be set against lower 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 1.7 percentage points per year compared to the EU average between 2000 and 2008, and therefore considerably faster than in the 1990s. Per capita GDP (in PPS) in these 12 countries thus rose from 45 % of the EU-27 average in 2000 to 59 % in 2008; this trend continued at national level in 2009, but came to a halt in 2010 and came with increasing internal regional disparities. Early regional data available on certain Member States for 2009 and 2010 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 capita GDP or with a high level of dependence on exports, financial services or tourism.

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 2008 were due for transmission to Eurostat on 31 December 2010. 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 25/2010 of 18 February 2010. The same data are used for the Eurostat news release 28/2011of 24 February 2011 and cover all regions of the EU-27. All data are available online on Eurostat's website.

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, 10.2.2007 and Regulation No 176/2008, OJ L 61, 5.3.2008). The regions of the Member States are available on Eurostat's website.

EU-15: European Union of 15 Member States from 1 January 1995: Belgium (BE), Denmark (DK), Germany (DE), Ireland (IE), Greece (EL), Spain (ES), France (FR), Italy (IT), Luxembourg (LU), the Netherlands (NL), Austria (AT), Portugal (PT), Finland (FI), Sweden (SE) and the United Kingdom (UK).

EU-27: European Union of 27 Member States from 1 January 2007: EU-15 plus the new Member States: Bulgaria (BG), the Czech Republic (CZ), Estonia (EE), Cyprus (CY), Latvia (LV), Lithuania (LT), Hungary (HU), Malta (MT), Poland (PL), Romania (RO), Slovenia (SI) and Slovakia (SK).

4. Harmonized estimation procedure: At NUTS level 2 there are 271 regions in the EU-27. Data at NUTS levels 2 and 3 for the years 1995 to 2008 are available on Eurostat's website. National GDP data are compiled by the national statistical institutes 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 capita, are indicators of a country's 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 it more difficult to compare countries, and in particular regions, on the basis of per capita values of GDP. 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 which the resident economically active population alone could not achieve.

6. Dispersion of regional per capita GDP: Since 2007, Eurostat has been calculating a new, derived indicator which records the differences between regional per capita 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 capita, weighted on the basis of the regional share of population and expressed as a percentage of the national GDP per capita:

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

In the above equation:

y_i is the regional GDP per capita of region i
Y is the national average GDP per capita
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 capita is zero if the values of regional GDP per capita are identical in all regions of the country or economic area (such as the EU-27 or the euro area) and, all other things being equal, it will show an increase if the differences in per capita 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

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

Data on 'National accounts'
http://epp.eurostat.ec.europa.eu/portal/page/portal/national_accounts/data/database

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