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# Report

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## Note

This work is the translation of « La France dans l'Union européenne » published in the *INSEE Références* collection in April 2014.

Unless otherwise stated, the data used are taken from the website of Eurostat, the European Union's statistical office. These data are continually updated. The date of acquisition of the figures is therefore generally indicated below the tables and charts. The data mainly concern the countries of the European Union of 28 (EU of 28), as currently defined. However, for some countries (particularly those that have recently joined the EU), certain figures are not yet available. In such cases the perimeter of the EU is indicated.

On 15 May 2014, the INSEE published the national accounts in the 2010 base: these data are compiled in accordance with the new European System of Accounts (ESA 2010). France is one of the first countries to integrate this change, as most other States are not publishing national accounts data in line with ESA 2010 until September 2014. Prior to that date, only data from the 2005 base can be used to make reliable comparisons. It is this base that is therefore used here. It is likely that the change of base will have little effect on the majority of national accounting aggregates (particularly those presented here) and that it will not alter the hierarchies observed between countries.

## Symbols used

|      |  |
|------|--|
| ...  | Result unavailable                     |
| ///  | No results due to the nature of things |
| e    | Estimate                               |
| p    | Provisional result                     |
| n.s. | Non-significant result                 |
| €    | Euro                                   |
| M    | Million                                |
| Bn   | Billion                                |
| Ref. | Reference                              |

## The European Union: an economic power “united in diversity”

Grégoire Borey, Étienne Chantrel\*

Today’s European Union, considered as a whole, is an economic power with a moderate rate of growth. The process of catching up with the United States was interrupted over thirty years ago, but the EU’s macro-economic imbalances are smaller by comparison. Taken individually, the countries which make up the European Union remain highly diverse from a macroeconomic perspective. A rough classification based on a set of criteria which reflect this heterogeneity would split the member States into four groups: the “Eastern European nations” (the Baltic nations, Bulgaria and Romania) which are still in the process of catching up to the EU average; the “Central European nations” (Croatia, Hungary, Poland, Czech Republic, Slovakia and Slovenia, along with Malta), also in the process of catching up but distinguishing themselves from the first group by the lesser impact of the current economic crisis on their economies; the “peripheral nations” (Ireland, Greece, Spain, Cyprus, Portugal and the United Kingdom) for whom the crisis resulted in a slowdown in growth, an increase in the unemployment rate and an increase in public debt which were all greater than those seen in other European nations; and finally the “Western and Northern European nations” (Germany, Austria, Belgium, Denmark, Finland, France, Italy, the Netherlands and Sweden), a group bringing together countries whose recent economic performances are not necessarily homogeneous but which share the distinction of being mature economies which have demonstrated a certain resilience to the crisis.

The European Union became a group of 28 countries (EU of 28) with the official accession of Croatia on 1<sup>st</sup> July 2013, the latest step in a long process of gradual expansion which has seen the Union grow to incorporate the majority of nations in, successively, Western, Southern, Central and Eastern Europe.<sup>1</sup> Taken as a whole, the EU is an economic power with a moderate rate of growth. The process of catching up to the United States stalled over thirty years ago, but the EU’s macroeconomic imbalances are smaller by comparison. Taken individually, the countries which make up the European Union remain highly diverse from a macroeconomic perspective, not least in terms of their reaction to the financial crisis which broke out in 2008.

### The European Union, less wealthy than the United States

The 28-member European Union (EU of 28) is now an economic zone on the same scale as the United States: EU gross domestic product (GDP) stood at around €13,100 billion in 2013, slightly higher than the corresponding figure for the United States (€12,800 billion). However, the EU population is much larger (502 million citizens, compared to 314 million in the USA), making GDP per capita around 40% lower than in the US. This gap in terms of annual output per capita is of comparable size when expressed in Purchasing Power Parity (PPP), an exchange rate conversion mechanism which allows us to express the purchasing power of different currencies in a coherent common unit.<sup>2</sup>

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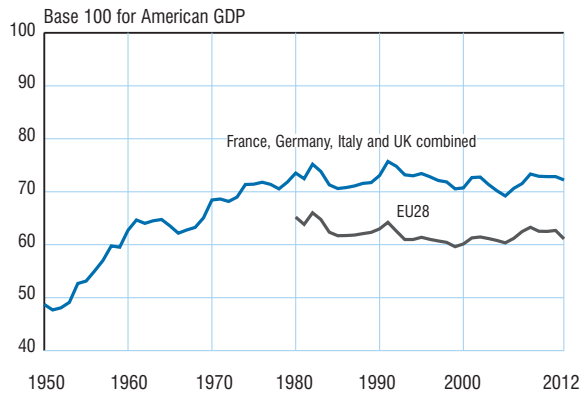
1. EU data are not always available for the full EU of 28 including Croatia (this is particularly true of certain Eurostat and OECD statistics). Out of necessity, some of our analyses cover the EU of 27 and others the full EU of 28.

2. This rate expresses the difference between the quantity of monetary units required in different countries to pay for a standard “basket” of goods and services. Looking at GDP in PPP terms thus allows us to compare the wealth created in different economies, neutralising the effects of differences in exchange rate and prices.

Between the end of the Second World War and the 1973 oil crisis, a period of almost thirty years, the Western European nations (EU of 15), along with Japan, enjoyed a rate of growth far superior to that seen in the United States. The European Union was gradually closing down the distance separating it from the USA in terms of GDP per capita at purchasing power parity, as predicted by the neoclassical economic theorists (see *Box 1*). This era of catching up with the US, immortalised as the “*Trentes Glorieuses*” (Thirty Glorious Years) in France and the *Wirtschaftswunder* in Germany, came to an end in the early 1980s, and the gap in per capita wealth creation between the 15-member EU and the United States has since fluctuated between 25 and 30% (*Figure 1*). As for the EU of 28, the per capita wealth gap shrank slightly between the turn of the millennium and 2008, boosted by the catch-up growth of the former communist economies.<sup>3</sup> This process should resume once the effects of the financial crisis have been absorbed, bringing the gap closer to that currently seen between the EU of 15 and the United States [see Blanchard, 2004 for a comparison of the respective economic performances of Europe and the United States].

How should we interpret this thirty-year interruption of the EU of 15’s previous progress towards catching up with the USA?

### 1. Long-term GDP per capita at PPP



Sources: Cepii, IMF and OECD, INSEE calculations.

#### Box 1

#### Convergence between countries, a key topic in economic theory

A longstanding debate among economic theorists concerns the issue of convergence between different countries in terms of income: are the poorer countries catching up with the rich?

For several decades the dominant model for studying growth, the neoclassical “Solow-Swan Model” first introduced in 1956, suggested that a given country would always converge towards a steady rate of growth. Positing the hypothesis that in the long term this rate would be the same in all countries, many economists concluded that per capita income in all countries would ultimately converge (the “absolute” convergence theory).

This absolute convergence has not been borne out by the data, which has cast doubt on the validity of the whole model, particularly since the introduction of endogenous growth models in the 1980s. In the context of this debate, new theories of convergence have emerged, most notably the idea of conditional convergence [Mankiw *et al.*, 1992]. Taking a broader perspective on the issue, the contemporary literature distinguishes between various dimensions of convergence – for an overview of the current state of the debate, see Islam [2003], who identifies no fewer than seven different dimensions of this problem.

3. GDP growth in the United States has been greater since 1990 (+2.7% compared to +1.9% in the European Union), but this dynamic has also been accompanied by a more favourable demographic development (both in terms of natural increase and net migration).

## The employment rate is more dynamic in Europe than in the United States, unlike labour productivity

In statistical terms the growth differential between two countries can be broken down into the respective performances of the employment rate (the proportion of people in the total population in employment) and apparent labour productivity, a measure of the wealth generated by each active employee (*Figure 2*).

### 2. Comparative development and breakdown of per capita GDP

|   |         | EU 27  |        | EU 15  |        |        | United States |        |         |
|---|---------|--------|--------|--------|--------|--------|---------------|--------|---------|
|   |         | 2002   | 2012   | 1992   | 2002   | 2012   | 1992          | 2002   | 2012    |
| Apparent labour productivity<br>(in current PPP dollars per employee) | (1)     | 57,000 | 79,502 | 44,418 | 63,914 | 86,301 | 55,188        | 80,450 | 114,022 |
| Rate of employment (%)  | (2)     | 42.1   | 43     | 41.2   | 43     | 43.3   | 46.2          | 47.5   | 45.4    |
| GDP/inhabitant (current PPP dollars)                                  | (1)x(2) | 23,986 | 34,191 | 18,281 | 27,499 | 37,366 | 25,493        | 38,175 | 51,749  |

Sources: OECD, INSEE calculations.

If we compare the EU of 15 and the United States, it becomes clear that the evolution of the employment rate was more favourable in the EU over the period 1992-2012. On the other hand, apparent labour productivity has increased more rapidly in the USA over the past twenty years, from a starting point which was already stronger than that of the EU. These two effects have cancelled one another out, causing wealth creation per capita in these two economic zones to progress in parallel.

The growth in the employment rate can itself be broken down into different forces: the changes in the working age population, the labour force participation rate and the proportion of the labour force currently in employment (*Figure 3*). Two distinct phases emerge: between 2002 and 2012, the European Union greatly reduced its employment rate deficit in comparison with the United States (+0.3 points over this period in the EU of 15, compared to a decline of -2.1 points in the United States), a clear improvement on the preceding decade (+1.8 points in the EU of 15, +1.3 points in the United States). Since 2002, the unemployment rate has certainly increased by slightly more in the EU of 15 (+2.8 points compared with +2.3 points in the USA), but changes in the labour force participation rate have more than offset this disparity in the evolution of unemployment (+3.9 points in the EU, compared with -1.7 points in the USA). Ultimately, the employment rate differential was responsible for 11 points of the wealth gap between the EU of 15 and the USA in 1992; by 2012 this figure had fallen to below 5 points.<sup>4</sup>

### 3. Comparative development and breakdown of employment rates

|  |             | EU 27 |      | EU 15 |      |      | United States |      |      |
|--|-------------|-------|------|-------|------|------|---------------|------|------|
|  |             | 2002  | 2012 | 1992  | 2002 | 2012 | 1992          | 2002 | 2012 |
| Proportion of the population of working age<br>(aged 15-64)    | (1)         | 67.2  | 66.4 | 67.1  | 66.5 | 65.4 | 65.5          | 66.6 | 66.8 |
| Employment rate of the working age population                  | (2)         | 68.8  | 72.3 | 67.7  | 70   | 73.9 | 76.3          | 75.6 | 73.9 |
| Employment rate in the active population<br>(1 - unemployment) | (3)         | 91.1  | 89.6 | 90.7  | 92.4 | 89.6 | 92.5          | 94.2 | 91.9 |
| Employment rate in the total population                        | (1)x(2)x(3) | 42.1  | 43   | 41.2  | 43   | 43.3 | 46.2          | 47.5 | 45.4 |

N.B.: as this analysis is based on OECD data, the only source of harmonised employment data for both the EU and the USA, it covers only the 27-member EU (EU27, without Croatia). The figures used are for the total active civil population and workforce, as total population figures (including military personnel) are not available for all EU members (particularly for Austria, Greece, Portugal and the Netherlands since 2010).

Sources: OECD, INSEE calculations

4. For the EU of 27, data is only available for 2000 onwards; considering the developments of the past decade or so, in 2002 the employment rate differential was responsible for 11 points of the wealth gap between the EU of 27 and the USA; by 2012 this figure had fallen to below 5 points.

The increase in apparent labour productivity<sup>5</sup> in the United States contributed to the 5-point increase in the productivity gap between the USA and the EU of 15 between 1992 and 2012.<sup>6</sup> However, the European economy is characterised by a stronger contribution of industry to value added (19.3% in 2012, compared to 15.5% in the USA), and productivity is more dynamic in industry than in other sectors. Moreover, intra-zone trade has developed substantially as the EU has expanded, which should eventually allow European businesses to benefit from effects of scale similar to those already observed in the United States.<sup>7</sup> But American productivity has benefited more from the emergence of new information and communication technologies (NICT): Cetto & Lopez [2012] estimate that the NICT capital coefficient in 2009 was 10% in the United States, compared to just 7% in the Eurozone. Spending on research and development is also considerably higher in the USA than in the European Union (2.8% of GDP in 2011, compared with 1.9%). Furthermore, over the past twenty years many EU member States have implemented “employment growth stimulus” policies aimed at increasing the employment rate of less skilled workers, resulting in a lower rate of apparent productivity growth. However, the situation becomes more nuanced if we consider hourly labour productivity instead of productivity per employee (*Box 2*).

Since the onset of the crisis in 2008, growth in productivity has been less dynamic in the EU (remaining stable in the EU OF 27, while it has grown 6% in the United States), although the overall gap in GDP growth per capita at constant prices has been reduced by 3 points. Employment has been more resistant to the crisis in the European Union (the employment rate has fallen by just 1 point, compared to 3 in the United States). This can be partly attributed to the different characteristics of the labour market, giving rise to more distinct productivity cycles, but it might also prove to be the first indication of a long-term decline in the productivity rate increase in the European Union.<sup>8</sup>

*Box 2*

### Number of hours worked

According to the available data, the number of hours worked is very different in the EU and the US. In 2012 the average was 1790 hours in the United States, compared to 1400 in Germany. This gap has widened over the past twenty years: the average number of hours worked in a year has fallen by 9.7% in Germany, 9.4% in France and 7.8% in the United Kingdom, falling by just 1.7% in the USA over the same period. Various studies have sought to identify the origin of this disparity, and a number of non-mutually exclusive explanations have been put forward [see for example Prescott (2004) and Blanchard (2004)]: higher marginal tax rates in Europe; a greater appreciation of leisure time in Europe;

stricter labour regulations in Europe. The extent of the gap is itself a subject of some debate, as international comparisons of hours worked are far from solid. The OECD issues the following disclaimer regarding its hourly labour statistics: "The data are intended for comparisons of trends over time; they are unsuitable for comparisons of the level of average annual hours of work for a given year, because of differences in their sources." (Methodological note on the OECD website).

The fragility of these statistics has prompted economists to compare the apparent productivity of labour per capita and not in terms of number of hours worked.

5. Apparent productivity is here defined as GDP in value divided by the number of people in work.

6. Calculated in GDP per capita at PPP, productivity grew by 3.4% per annum in the EU of 15 and 3.7% in the United States between 1992 and 2012.

7. The European Union is a highly integrated trading zone, with 63% of exports from EU nations destined for other countries within the Union.

8. When employment levels are slow to react to fluctuations in economic activity, the productivity of labour slows during phases of economic downturn and accelerates during phases of recovery. This phenomenon is known as the productivity cycle.

## The European Union: a more balanced and more equitable economy than the USA

The European Union is a region where macroeconomic imbalances are relatively limited. In 2012, government deficit (3.3% of GDP) and debt (85.0% of GDP) in the 28-member EU remained, in spite of a sharp increase since the onset of the crisis, lower than the corresponding levels seen in the USA (8.3% and 102.7% respectively) and Japan (10.2% and 238.0%). In 2013 the European Union recorded a trade surplus in both goods and services. This surplus was generated largely by trade with the United States and other OECD nations (apart from the USA and EU member States). While the EU's energy spending represents a serious burden on the balance of foreign trade (to the tune of around €400 billion per annum), this deficit is more than offset by exports of machinery, vehicles and chemicals. This presents a stark contrast with the USA's balance of trade, which has been in deficit for the past thirty years: the average deficit of America's current account balance was 2.7% of GDP for the period 1980-2012.

On the other hand, the relative weight of the construction sector in the economy has remained considerably higher in the European Union than in the United States, a potential indication of less efficient investment allocation in Europe: construction accounted for, respectively, 6.8% and 4.9% of economic activity in the EU and the USA at the outset of the crisis in 2008; by 2012 the figure stood at 5.4% in the EU and 3.5% in the USA. This is all the more remarkable when we bear in mind that population growth is more dynamic in the United States.

The European Union is also a more equal economy than the United States, with relatively moderate income inequality. The Gini index, which gives a figure between 0 and 1 for the degree of deviation of the current distribution of income from a hypothetical situation of strict income equality, is much lower in the EU: in 2011 the figure was 0.31 in Europe, while in 2007 it stood at 0.45 in the USA.<sup>9</sup> Wealth inequality is also less extreme in the European Union (see Davies *et al.* [2008] and the *Luxembourg Wealth Study* [2006]).

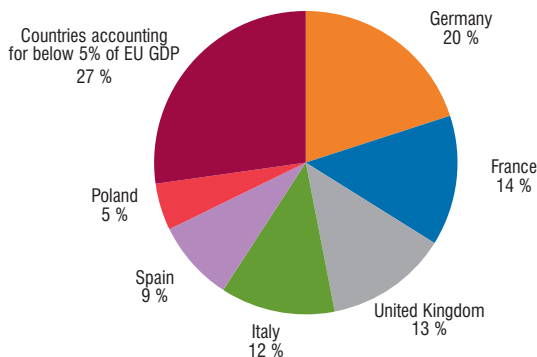
However, since the mid-1990s the EU's economic cycles have been just as volatile as those experienced by the USA, as we can see from the standard deviation of real GDP growth (standard deviation allows us to measure the average variation of a value; for the period 1995-2013 the standard deviation of GDP growth was 1.9 in both the EU and the USA).

## Inequalities within the European Union have persisted since the 2008 crisis

The EU member States vary greatly in size: the four largest nations (Germany, France, United Kingdom, Italy) account for over half of the Union's population and 59% of GDP at PPP (*Figure 4*). Meanwhile, 20 countries (listed in descending order of contribution to EU GDP at PPP: Sweden,

### 4. GDP breakdown for the EU28

as a % of total EU GDP, in current Euros at PPP in 2012



Source: Eurostat.

9. Sources: Eurostat for the EU and the World Bank for the United States.

Austria, Romania, Czech Republic, Greece, Portugal, Denmark, Hungary, Ireland, Finland, Slovakia, Bulgaria, Croatia, Lithuania, Latvia, Luxembourg, Slovenia, Estonia, Cyprus and Malta) account for just 24% of the population and slightly below 20% of the EU's GDP at PPP. The member States also vary significantly in terms of their respective wealth. In 2012, GDP per capita in Germany, calculated at purchasing power parity, was only 21% below that of the United States. The corresponding gap was 27% for the United Kingdom, 30% for France, 36% for Italy, 38% for Spain, 57% for Poland and 68% for Romania.

### Box 3

#### Methodological notes

##### Data analysis

The purpose of principal component analysis (PCA) is to condense the information contained in a large number of variables into a small set of dimensions (known as principal axes or factors), thus cutting down on redundancy. The method involves identifying potential correlations between different variables and drawing up 'axes' based on new composite variables. This method also enables us to identify anomalous cases (in this context, Luxembourg). Ascending hierarchical classification (AHC) allows us to group together countries into clusters which are as homogeneous as possible [for a more detailed explanation see *Hussonet al., 2009*].

##### The Luxembourg situation

Luxembourg stands out among EU nations, and represents a clear exception in our classification system. Statistical analysis shows the Grand Duchy to have very unusual economic characteristics: GDP per capita at PPP is 2.5x above the EU average, the foreign trade rate is 150%, compared with an EU average of 50%, and the trade surplus is equivalent to 25% of GDP, whereas the EU average is effectively zero. Including Luxembourg in our calculations would mask the disparities which exist in the rest of the EU, and necessarily lead us to overestimate the importance of variables for which Luxembourg is entirely atypical. This is why Luxembourg is not included in our analysis. If it were to be included it would most likely be in the group "Western Europe".

##### Robustness of our typology

The most broadly significant variables used to create our segmentation allow us to clearly distinguish the group of "Eastern European nations" from the three others: GDP growth

(before and after 2007), variation in market share (before and after 2007) and average level of GDP at PPP. The "peripheral nations" stand apart from the other groups primarily in terms of the variation in government debt since 2007, along with the variation in the proportion of value added (VA), the contribution of construction to the economy since 2007 and the variation in the rate of unemployment since 2007. Finally, certain variables allow us to split the remaining member States into "Western European nations" and "Central European nations": the average foreign trade ratio before 2007, the average budget deficit/surplus before 2007, the average level of government debt before 2007 and the average contribution of the industrial sector to the economy before 2007.

For the purposes of our study, this system of four broad groups seems to be relatively robust. In order to test the validity of this classification, we verified the results by removing one or more variables and repeating the calculations. Some countries changed groups depending on the variables used (Malta, for example, sometimes appears among the "Western European nations" while in other configurations it is closer to the "Central European nations"; certain configurations also place Portugal and the UK within the group of "Western European nations"). Nonetheless, with the exception of these minor variations the groups remain largely stable. There is a certain temptation to use a more detailed classification, such as that generated by ACH analysis. For example, we could use such a system to break down the "Western European nations" into a cluster based around Germany, a Scandinavian cluster and a Mediterranean cluster. Nevertheless, a classification with this level of detail is much more sensitive to the choice of variables used. It thus appears to be less objective, and hence less pertinent.



In addition to these differences, the European Union is made up of 28 independent nations which have developed differently over the course of their respective histories, and now present very varied economic profiles (*Figure 5*). In economic terms, we can divide these countries into four broad groups using techniques of statistical analysis: principal component analysis (PCA)

## 5. Macroeconomic statistics for the member States of the European Union

### 5a. 2000-2007

|                                 | Private sector debt<br>(in GDP points) | VA by construction<br>(as a % of total VA) | GDP in volume,<br>(average annual rate) | Balance of trade<br>(in GDP points) | Unemployment<br>(as a % of the active population) | Variation in market share<br>(as a %) |
|---------------------------------|--|--|---|-------------------------------------|---|---------------------------------------|
| <b>2000-2007</b>                |  |  |   |                                     |   |                                       |
| Belgium                         | 189                                    | 5.2  | 2.2                                     | 4.3                                 | 7.7   | 5                                     |
| Denmark                         | 194                                    | 5.4  | 1.9                                     | 5.0                                 | 4.6   | -8                                    |
| Germany                         | 130                                    | 4.5  | 1.6                                     | 4.2                                 | 9.4   | 10                                    |
| France                          | 130                                    | 5.5  | 2.1                                     | 0.2                                 | 8.8   | -21                                   |
| Italy                           | 100                                    | 5.8  | 1.6                                     | 0.4                                 | 8.1   | -4                                    |
| Netherlands                     | 204                                    | 5.7  | 2.2                                     | 7.0                                 | 3.9   | 9                                     |
| Austria                         | 134                                    | 7.3  | 2.5                                     | 3.9                                 | 4.4   | 11                                    |
| Finland                         | 137                                    | 6.4  | 3.5                                     | 6.9                                 | 8.6   | -10                                   |
| Sweden                          | 200                                    | 4.8  | 3.2                                     | 7.3                                 | 6.5   | -11                                   |
| <b>Western European nations</b> | <b>158</b>                             | <b>5.6</b>                                 | <b>2.3</b>                              | <b>4.3</b>                          | <b>6.9</b>  | <b>-2</b>                             |
| Croatia                         | 77                                     | 6.9  | 4.5                                     | 3.1                                 | 13.6  | 30                                    |
| Czech Rep                       | 60                                     | 6.6  | 4.7                                     | 0.4                                 | 7.6   | 94                                    |
| Hungary                         | 93                                     | 5.4  | 3.6                                     | -2.0                                | 6.4   | 56                                    |
| Malta                           | 173                                    | 5.1  | 1.9                                     | -2.2                                | 7.2   | -36                                   |
| Poland                          | 48                                     | 6.8  | 4.1                                     | -3.0                                | 16.9  | 103                                   |
| Slovenia                        | 80                                     | 6.7  | 4.4                                     | -0.9                                | 6.2   | 58                                    |
| Slovakia                        | 53                                     | 7.1  | 5.6                                     | -4.1                                | 16.8  | 127                                   |
| <b>Central European nations</b> | <b>84</b>                              | <b>6.3</b>                                 | <b>4.0</b>                              | <b>-2.0</b>                         | <b>10.2</b>                                       | <b>67</b>                             |
| Bulgaria                        | 79                                     | 5.8  | 5.8                                     | -12.1                               | 13.3  | 75                                    |
| Estonia                         | 116                                    | 7.6  | 7.9                                     | -6.8                                | 9.3   | 59                                    |
| Latvia                          | 84                                     | 7.3  | 8.5                                     | -13.9                               | 10.7  | 104                                   |
| Lithuania                       | 48                                     | 7.6  | 7.5                                     | -7.6                                | 11.0  | 121                                   |
| Romania                         | 50                                     | 7.5  | 5.7                                     | -8.9                                | 7.1   | 79                                    |
| <b>Eastern Europe</b>           | <b>75</b>                              | <b>7.2</b>                                 | <b>7.1</b>                              | <b>-9.9</b>                         | <b>10.3</b>                                       | <b>88</b>                             |
| Ireland                         | 181                                    | 8.8  | 5.8                                     | 13.4                                | 4.4   | -28                                   |
| Greece                          | 83                                     | 7.2  | 4.2                                     | -12.2                               | 9.9   | -8                                    |
| Spain                           | 167                                    | 12.4                                       | 3.6                                     | -4.1                                | 10.2  | 1                                     |
| Cyprus                          | 186                                    | 10.4                                       | 3.8                                     | -1.8                                | 4.4   | 60                                    |
| Portugal                        | 199                                    | 7.8  | 1.5                                     | -8.8                                | 6.9   | -1                                    |
| United Kingdom                  | 184                                    | 6.7  | 3.2                                     | -2.5                                | 5.1   | -29                                   |
| <b>Peripheral nations</b>       | <b>167</b>                             | <b>8.9</b>                                 | <b>3.7</b>                              | <b>-2.7</b>                         | <b>6.8</b>  | <b>-1</b>                             |
| Luxembourg                      | 157                                    | 6.7  | 4.7                                     | 24.4                                | 3.6   | 26                                    |
| <b>EU average</b>               | <b>...</b>                             | <b>6.3</b>                                 | <b>2.5</b>                              | <b>0.9</b>                          | <b>8.6</b>  | <b>...</b>                            |

Sources: Eurostat, OECD

## 5. Macroeconomic statistics for the member States of the European Union

### 5a. 2000-2007 (cont'd)

|                                 | Government debt<br>(in GDP points) | ERER <sup>1</sup><br>(annual average<br>variation) | VA by industry<br>(as a %<br>of total VA) | Inflation<br>(annual average) | GDP per capita<br>at PPP<br>(international<br>dollars) | Foreign<br>trade ratio<br>(in GDP points) | Average<br>government<br>deficit<br>(in GDP points) |
|---------------------------------|------------------------------------|--|---|-------------------------------|--|---|---|
| <b>2000-2007</b>                |                                    |  |   |                               |  |   |   |
| Belgium                         | 97                                 | 0.4  | 20.0                                      | 2.1                           | 30.8   | 78  | -0.3  |
| Denmark                         | 43                                 | 0.3  | 20.2                                      | 2.0                           | 32.0   | 48  | 2.7   |
| Germany                         | 64                                 | -0.1   | 25.2                                      | 1.7                           | 29.4   | 39  | -2.3  |
| France                          | 62                                 | 0.3  | 16.1                                      | 1.9                           | 29.2   | 27  | -2.8  |
| Italy                           | 106                                | 0.6  | 21.2                                      | 2.4                           | 27.3   | 26  | -3.0  |
| Netherlands                     | 50                                 | 0.7  | 18.6                                      | 2.5                           | 33.6   | 68  | -0.6  |
| Austria                         | 64                                 | -0.2   | 23.2                                      | 1.9                           | 32.7   | 51  | -1.6  |
| Finland                         | 42                                 | -0.3   | 26.6                                      | 1.6                           | 28.9   | 42  | 4.2   |
| Sweden                          | 50                                 | -0.4   | 23.2                                      | 1.7                           | 31.2   | 47  | 1.4   |
| <b>Western European nations</b> | <b>64</b>                          | <b>0.1</b>   | <b>21.6</b>                               | <b>2.0</b>                    | <b>30.6</b>  | <b>48</b>                                 | <b>-0.2</b>   |
| Croatia                         | 40                                 | 0.9  | 21.9                                      | -6.1                          | 13.9   | 45  | -3.7  |
| Czech Rep                       | 26                                 | 3.7  | 30.9                                      | 2.4                           | 19.5   | 63  | -4.0  |
| Hungary                         | 60                                 | 4.2  | 26.0                                      | 6.4                           | 15.3   | 70  | -6.5  |
| Malta                           | 62                                 | 1.2  | 18.8                                      | 2.3                           | 20.6   | 82  | -4.9  |
| Poland                          | 44                                 | 2.6  | 23.7                                      | 3.5                           | 12.7   | 34  | -4.3  |
| Slovenia                        | 26                                 | 0.0  | 27.7                                      | 5.4                           | 21.8   | 59  | -2.2  |
| Slovakia                        | 40                                 | 6.8  | 29.0                                      | 6.0                           | 14.8   | 77  | -5.0  |
| <b>Central European nations</b> | <b>43</b>                          | <b>2.8</b>   | <b>25.4</b>                               | <b>2.8</b>                    | <b>17.0</b>  | <b>61</b>                                 | <b>-4.4</b>   |
| Bulgaria                        | 42                                 | 3.6  | 22.8                                      | 6.6                           | 8.8  | 51  | 0.6   |
| Estonia                         | 5                                  | 1.5  | 21.6                                      | 4.1                           | 14.7   | 74  | 1.2   |
| Latvia                          | 13                                 | 0.9  | 17.1                                      | 5.0                           | 11.8   | 43  | -1.4  |
| Lithuania                       | 20                                 | 1.7  | 23.9                                      | 1.9                           | 12.6   | 52  | -1.7  |
| Romania                         | 19                                 | 5.7  | 28.3                                      | 18.8                          | 8.5  | 33  | -2.4  |
| <b>Eastern Europe</b>           | <b>20</b>                          | <b>2.7</b>   | <b>22.7</b>                               | <b>7.3</b>                    | <b>11.3</b>  | <b>51</b>                                 | <b>-0.7</b>   |
| Ireland                         | 30                                 | 2.5  | 29.0                                      | 3.5                           | 36.0   | 87  | 1.5   |
| Greece                          | 103                                | 0.3  | 13.1                                      | 3.3                           | 23.4   | 23  | -5.5  |
| Spain                           | 48                                 | 1.4  | 18.9                                      | 3.2                           | 25.9   | 27  | 0.4   |
| Cyprus                          | 65                                 | 0.6  | 11.4                                      | 2.8                           | 23.4   | 51  | -2.5  |
| Portugal                        | 61                                 | 1.2  | 18.9                                      | 3.0                           | 20.2   | 29  | -4.2  |
| United Kingdom                  | 41                                 | -0.4   | 17.8                                      | 1.6                           | 30.1   | 27  | -1.7  |
| <b>Peripheral nations</b>       | <b>58</b>                          | <b>0.9</b>   | <b>18.2</b>                               | <b>2.9</b>                    | <b>26.5</b>  | <b>41</b>                                 | <b>-2.0</b>   |
| Luxembourg                      | 6                                  | 1.0  | 11.5                                      | 2.9                           | 65.9   | 154                                       | 2.3   |
| <b>EU average</b>               | <b>61</b>                          | <b>...</b>   | <b>20.6</b>                               | <b>2.6</b>                    | <b>...</b>   | <b>37</b>                                 | <b>-1.8</b>   |

1. Effective real exchange rate.

Sources: Eurostat, OECD.

## 5. Macroeconomic statistics for the member States of the European Union

### 5b. 2007-2012

|                                 | Private sector debt<br>(variation in GDP<br>points) | VA by construction<br>(variation as a % of<br>total VA) | GDP in volume.<br>(variation between<br>2000-2007 average<br>and 2007-2012<br>average) | Balance of trade<br>(variation in GDP<br>points) | Unemployment<br>(variation in points) | Variation in market<br>share<br>(as a %) |
|---------------------------------|---|---|--|--|---------------------------------------|--|
| <b>2007-2012</b>                |   |   |  |  |                                       |  |
| Belgium                         | 18.4  | 0.1   | 0.1  | -2.6   | 0.1                                   | -20                                      |
| Denmark                         | 0.2   | -1.0  | 0.2  | 2.7  | 3.7                                   | -21                                      |
| Germany                         | 4.2   | 0.4   | 0.1  | -1.4   | -3.2                                  | -18                                      |
| France                          | 10.5  | 0.1   | 0.1  | -0.7   | 1.9                                   | -22                                      |
| Italy                           | 6.5   | -0.4  | 0.2  | 1.5  | 4.6                                   | -23                                      |
| Netherlands                     | 13.6  | -0.9  | 0.2  | 0.6  | 1.7                                   | -8                                       |
| Austria                         | 4.2   | -0.2  | 0.1  | -2.2   | -0.1                                  | -22                                      |
| Finland                         | 9.9   | -0.3  | 0.3  | -5.7   | 0.8                                   | -38                                      |
| Sweden                          | -4.5  | 0.5   | 0.1  | -1.3   | 1.9                                   | -21                                      |
| <b>Western European nations</b> | <b>7.0</b>  | <b>-0.2</b>   | <b>0.1</b>   | <b>-1.0</b>                                      | <b>1.3</b>                            | <b>-21</b>                               |
| Croatia                         | 16.9  | -2.7  | 0.4  | 7.9  | 6.3                                   | -22                                      |
| Czech Rep                       | 5.1   | -0.4  | 0.3  | 2.6  | 1.7                                   | -2                                       |
| Hungary                         | 11.6  | -1.1  | 0.3  | 6.9  | 3.5                                   | -16                                      |
| Malta                           | 9.2   | -0.9  | 0.0  | 7.2  | 0.0                                   | -11                                      |
| Poland                          | 7.5   | 0.0   | 0.1  | 3.2  | 0.5                                   | 1  |
| Slovenia                        | 10.9  | -2.6  | 0.4  | 5.7  | 4.0                                   | -18                                      |
| Slovakia                        | 6.9   | -0.4  | 0.3  | 6.1  | 2.7                                   | 7  |
| <b>Central European nations</b> | <b>9.7</b>  | <b>-1.2</b>   | <b>0.2</b>   | <b>5.7</b>                                       | <b>2.7</b>                            | <b>-2</b>                                |
| Bulgaria                        | -8.7  | -2.2  | 0.4  | 16.0   | 5.4                                   | 11                                       |
| Estonia                         | -31.3   | -3.3  | 0.6  | 9.7  | 5.5                                   | 13                                       |
| Latvia                          | -7.0  | -4.3  | 0.7  | 16.8   | 8.5                                   | 30                                       |
| Lithuania                       | -11.8   | -5.1  | 0.5  | 13.7   | 9.5                                   | 33                                       |
| Romania                         | -43.2   | -0.9  | 0.4  | 8.7  | 0.6                                   | 10                                       |
| <b>Eastern Europe</b>           | <b>-20.4</b>  | <b>-3.2</b>   | <b>0.5</b>   | <b>13.0</b>                                      | <b>5.9</b>                            | <b>19</b>                                |
| Ireland                         | 30.5  | -4.1  | 0.5  | 15.1   | 10.0                                  | -26                                      |
| Greece                          | 5.7   | -5.7  | 0.5  | 9.1  | 16.0                                  | 12                                       |
| Spain                           | -2.6  | -4.8  | 0.3  | 7.7  | 16.8                                  | -11                                      |
| Cyprus                          | 45.6  | -6.6  | 0.3  | 6.3  | 7.9                                   | -4                                       |
| Portugal                        | 9.1   | -2.4  | 0.2  | 7.4  | 7.0                                   | -14                                      |
| United Kingdom                  | -16.6   | -1.1  | 0.2  | 0.4  | 2.6                                   | -18                                      |
| <b>Peripheral nations</b>       | <b>12.0</b>   | <b>-4.1</b>   | <b>0.3</b>   | <b>7.7</b>                                       | <b>10.0</b>                           | <b>-10</b>                               |
| Luxembourg                      | 105.1   | -0.6  | 0.3  | -1.9   | 0.9                                   | -35                                      |
| <b>EU average</b>               | <b>...</b>  | <b>-0.9</b>   | <b>0.2</b>   | <b>1.4</b>                                       | <b>3.3</b>                            | <b>...</b>                               |

Sources: Eurostat, OCDE.

## 5. Macroeconomic statistics for the member States of the European Union

### 5b. 2007-2012 (cont'd)

|                                 | Government debt<br>(in GDP points) | ERER <sup>1</sup><br>(annual average<br>variation) | Structural deficit<br>(variation in<br>potential GDP<br>points) | Property prices<br>variation (%)<br>(deflated for<br>inflation) | Financial liabilities<br>(variation in GDP<br>points) | Wages in GDP<br>(variation in<br>GDP points) |
|---------------------------------|------------------------------------|--|---|---|---|--|
| <b>2007-2012</b>                |                                    |  |   |   |   |  |
| Belgium                         | 16                                 | -0.2   | 0.8   | 6   | 2   | 2.6  |
| Denmark                         | 19                                 | -0.6   | 0.1   | -23   | 34  | 0.5  |
| Germany                         | 17                                 | -1.5   | 1.1   | -3  | 9   | 2.7  |
| France                          | 26                                 | -1.2   | 2.5   | 3   | 28  | 1.6  |
| Italy                           | 24                                 | -0.7   | 2.8   | -2  | 9   | 2.0  |
| Netherlands                     | 26                                 | -0.7   | 1.4   | -7  | 40  | 2.6  |
| Austria                         | 13                                 | -0.7   | 1.2   | -8  | 18  | 2.2  |
| Finland                         | 18                                 | -0.8   | -1.4  | 5   | 113   | 4.3  |
| Sweden                          | -2                                 | 0.1  | -2.5  | 18  | 34  | 0.1  |
| <b>Western European nations</b> | <b>17</b>                          | <b>-0.7</b>  | <b>0.7</b>  | <b>-1</b>   | <b>32</b>   | <b>2.1</b>                                   |
| Croatia                         | 23                                 | -0.6   | 0.4   | 17  | 27  | 1.4  |
| Czech Rep                       | 18                                 | 2.3  | 3.7   | 16  | 34  | 1.8  |
| Hungary                         | 12                                 | -0.7   | 1.6   | -24   | 41  | -2.0   |
| Malta                           | 11                                 | -0.7   | -0.2  | 14  | 61  | -0.1   |
| Poland                          | 11                                 | -0.8   | 4.4   | 16  | 65  | 0.6  |
| Slovenia                        | 31                                 | -0.1   | 1.7   | 6   | 40  | 2.6  |
| Slovakia                        | 23                                 | 2.4  | 3.1   | 11  | 34  | 1.7  |
| <b>Central European nations</b> | <b>18</b>                          | <b>0.2</b>   | <b>2.1</b>  | <b>8</b>  | <b>43</b>   | <b>0.9</b>                                   |
| Bulgaria                        | 1                                  | 1.7  | 3.1   | -14   | 30  | 3.2  |
| Estonia                         | 6                                  | 1.1  | 1.2   | -37   | 6   | 0.3  |
| Latvia                          | 32                                 | 1.4  | 5.2   | -38   | 29  | -6.7   |
| Lithuania                       | 24                                 | 1.2  | 3.4   | -22   | 46  | -3.7   |
| Romania                         | 25                                 | -2.8   | 6.8   | -40   | 88  | -2.3   |
| <b>Eastern Europe</b>           | <b>18</b>                          | <b>0.5</b>   | <b>4.0</b>  | <b>-30</b>  | <b>40</b>   | <b>-1.8</b>                                  |
| Ireland                         | 93                                 | -2.1   | 2.4   | -37   | 27  | 0.3  |
| Greece                          | 50                                 | -0.1   | 13.8  | -9  | 48  | -2.1   |
| Spain                           | 48                                 | -0.5   | 3.1   | -17   | 29  | -1.0   |
| Cyprus                          | 27                                 | -0.3   | -0.3  | -14   | 57  | 0.0  |
| Portugal                        | 55                                 | -0.8   | 4.5   | -1  | 39  | -0.8   |
| United Kingdom                  | 46                                 | -3.3   | 2.4   | -8  | 67  | 0.7  |
| <b>Peripheral nations</b>       | <b>53</b>                          | <b>-1.2</b>  | <b>4.3</b>  | <b>-14</b>  | <b>44</b>   | <b>-0.5</b>                                  |
| Luxembourg                      | 14                                 | 0.1  | -0.9  | 3   | 35  | 5.2  |
| <b>EU average</b>               | <b>28</b>                          | <b>...</b>   | <b>2.3</b>  | <b>...</b>  | <b>...</b>  | <b>1.4</b>                                   |

1. Effective real exchange rate  
Sources: Eurostat, OECD

and ascending hierarchical classification (ACH) (see Box 3 and Figure 6). The four-group system was selected because it yields relatively homogeneous groups. Increasing the number of groups would not substantially increase the pertinence of our system, and in fact increasing the level of precision would simply serve to isolate certain countries with specific individual characteristics (Ireland, Romania, Greece, Finland). The four-group breakdown appears to be relatively stable, as adding or subtracting variables only affects the margins involved, not the fundamental structure.<sup>10</sup>

### 6. Dividing the EU member States into four broad groups



How to read it: the member States are classified in four main groups according to their economic characteristics and the variation in these characteristics since the 2008 crisis.

10. Using only 24 of the 25 potential variables, i.e. 25 potential alternative configurations, the four groups are not significantly altered. The major differences apply to Malta and the United Kingdom.

### Variables used

For this exercise we used variables which reflect the State of the economy over the past fifteen years, but also variables which reflect the impact of the 2008 crisis. This selection of variables was partly inspired by the macroeconomic imbalance procedure in place since 2012 as part of the new system of European economic governance, incorporating a dashboard with variables that measure the macroeconomic situation in EU member States. Ultimately, the variables selected are intended to reflect the principal facets of the economy (trade, output, public and private sector finances etc.):

- Average unemployment rate between 2000 and 2007, as a percentage of the labour force;
- Average rate of GDP growth in volume 2000-2007;
- Average level of GDP per capita at PPP 2000-2007, in thousands of international dollars (a fictional currency with the same purchasing power in a given country as the US dollar in the USA, for the year in question);
- Average balance of trade (in GDP points), 2000-2007;
- Average government deficit/surplus (in GDP points), 2000-2007;
- Average level of government debt (in GDP points), 2000-2007;
- Average level of private sector debt (in GDP points), 2000-2007;
- Weight of the construction sector in the economy (as a proportion of total added value), 2000-2007 average;
- Weight of the industrial sector in the economy (as a proportion of total added value), 2000-2007 average;
- Variation in market share (in %) 2000-2007;
- Average foreign trade ratio (in GDP points), 2000-2007;
- Average annual inflation 2000-2007;
- Average annual variation in the real effective exchange rate 2000-2007;
- Average annual variation in the real effective exchange rate 2007-2012;
- Variation in the unemployment rate (in points) 2007-2012;
- Variation in government debt (in GDP points), 2007-2012;
- Variation in the contribution of the construction sector to overall value added by the economy, 2007-2012;
- Variation in market share (in %) 2007-2012;
- Variation in the structural deficit (potential GDP points) 2009-2012;
- Difference between annual average GDP growth in the periods 2000-2007 and 2007-2013;
- Evolution (in %) of house prices deflated for inflation, 2007-2011;
- Evolution of private sector debt (in GDP points), 2008-2011;
- Evolution of financial sector liabilities (in GDP points), 2007-2011;
- Evolution of the balance of trade (in GDP points), 2007-2012;
- Evolution of business overheads (wage bill + charges) in GDP points, 2007-2012

The descriptive variables used in this exercise (*Box 4*) reflect the State of the economy over the past fifteen years, with a particular emphasis on the impact of the 2008 crisis on the economy. Some of the variables are not used for both periods (pre- and post-2007), as they are of little interest in terms of representing the State of the economy or the impact of the crisis.

## “Eastern Europe”: playing catch-up in the early 21<sup>st</sup> century, now badly hit by the crisis

The “**Eastern European**” nations (the three Baltic nations, plus Bulgaria and Romania) present economic profiles typical of countries catching up with their neighbours, a trend which was accelerated by their accession to the European Union: a low level of GDP at PPP but a rapid rate of growth, with GDP rising by 7% per annum in the Baltic nations. This catch-up phenomenon is

accompanied by a high level of inflation (the *Balassa-Samuelson effect*) and a pronounced trade deficit. We also see levels of government and private debt which are relatively low compared to other EU nations. Finally, the average unemployment rates in these economies have been high since the turn of the millennium, despite a steady decline before the onset of the crisis.

This group has been particularly hard hit by the economic crisis since 2007, reflected in the sharp rise in unemployment (an average rise of 6 points between 2007 and 2012), the severe slowdown in GDP growth and the flight of capital observed in the intervening years, accompanied by a decline in levels of private debt and a noticeable readjustment of the balance of trade as a result of the downturn in domestic demand and the continued increase of market share. It was not a foregone conclusion that the Baltic nations would be in the same group as the most recent additions to the European Union (Bulgaria and Romania), but these countries do share many of our chosen characteristics.

## The “peripheral nations”: rich, but unbalanced

This “**peripheral**” group includes the Southern European nations – Portugal, Spain, Greece and Cyprus – along with Ireland and the United Kingdom. These are Western European nations, relatively rich advanced economies which saw their levels of debt soar in the early 2000s, in both the public (+17 GDP points in Portugal between 2000 and 2007) and private sectors (+27 GDP points in Cyprus 2000-2007), leading to the emergence of a property bubble (as seen in Spain, Ireland and Cyprus).

As with the “Eastern European economies”, these “peripheral nations” have been particularly badly affected by the crisis. Their average rate of unemployment exploded between 2007 and 2012, hitting record highs in Greece and Spain. Government debt increased sharply over this same period, rising by an average of 50 GDP points. The bursting of the property bubble in these nations (to varying extents) is reflected in the marked decline of the contribution of the construction sector to GDP (this contribution was particularly high in the early 2000s) and a fall in property prices. Finally, government debt is higher than average in these countries, and has increased substantially since the crisis: +85 GDP points in Ireland between 2007 and 2011, +67 GDP points in Cyprus over the same period.

At first sight, the inclusion of the United Kingdom in this group of crisis-hit countries may seem surprising; nonetheless, this grouping appears to be robust based on our chosen criteria.<sup>11</sup> The UK shares a number of characteristics with the other countries in this group, albeit not always on the same scale: the bursting of a property bubble, a weakened trade balance and a strong increase in government debt in the period 2007-2012.

## “Central European nations”: industrialised nations catching up with Western Europe, but without excessive imbalances

The “**Central European**” nations (Croatia, Hungary, Poland, Czech Republic, Slovakia, Slovenia and Malta) are united by the relative significance of the industrial sector to the economy (25% on average), and a high foreign trade ratio in the 2000s.<sup>12</sup> As with the Eastern European nations, the members of the “Central European” group present characteristics typical of economies catching up to their neighbours: low levels of GDP at PPP in the 2000s, significant increases in market share over the same period and a private sector debt which remained relatively low. These

11. Of the alternative scenarios tested (removing one of the variables), the United Kingdom ended up in this same group in 22 of the 25 possible configurations, and was always in the same group as Portugal.

12. A country's foreign trade ratio is defined as the ratio between half of its total import/export balance and its GDP in value terms.

countries are distinguished from their eastern neighbours by the less dramatic economic impact of the crisis. Most notably, the increase in property prices, which has continued to outstrip inflation since 2007, is an indication that these countries did not fall prey to excessive speculation in this sector before the crisis, and thus have not suffered the consequences of a forced correction in recent years.

### **“Northern and Western European nations”: developed nations which have proved to be relatively resilient to the crisis**

This final group brings together the majority of countries in **“Western and Northern Europe”**: Germany, Austria, Belgium, Denmark, Finland, France, Italy, the Netherlands and Sweden. This group thus includes all of the original signatories of the Treaty of Rome, with the exception of Luxembourg which has been omitted from our analysis as an anomalous case. These mature economies (high GDP per capita at PPP, moderate growth, low inflation) were growing in a balanced manner before the onset of the crisis: private debt and property speculation were limited; the balance of trade was generally in surplus. Although growth has clearly slowed since the crisis, these economies have nonetheless demonstrated a certain resilience. The total wage bill as a proportion of GDP has increased since 2007; this has been largely imputed to the effects of the productivity cycle, with little increase in the rate of unemployment. Finally, the impact of the crisis on government debt has been less pronounced here than in the peripheral economies. The subsequent improvement in the public finances, reflected in the scale of the structural deficit, was nonetheless limited in the period 2009-2012 (the structural deficit actually deteriorated in some Scandinavian nations, where the budget situation was very healthy before the crisis), Italy and France stand out in this respect, with a more marked improvement of 2.8 points and 2.5 points respectively. The presence of Italy in this group may appear counter-intuitive, as the country's GDP has slowed significantly since the onset of the crisis. But, like the other economies in this group, and particularly France and Germany, Italy saw moderate growth before the crisis, with neither a property bubble nor a disproportionate increase in the weight of the financial sector, while the unemployment rate and government debt remained relatively high. ■

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### **Further Reading**

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