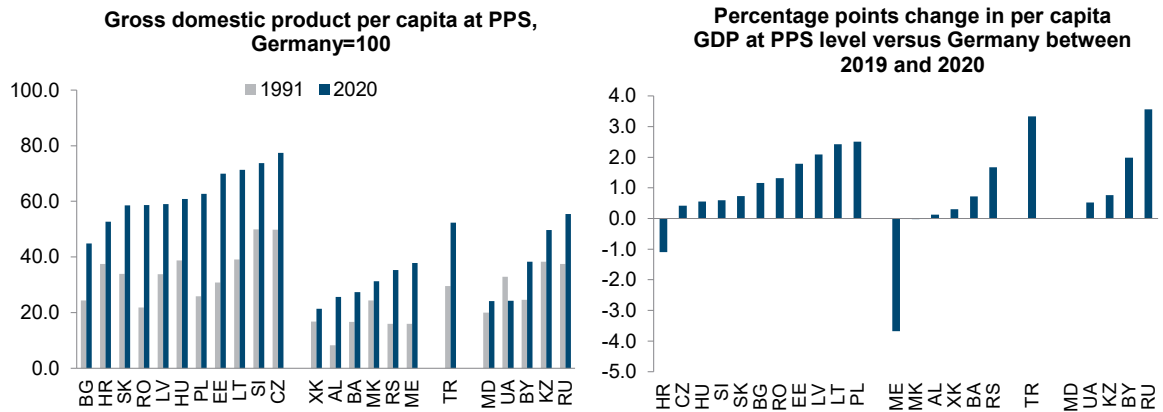


# 3. CESEE monitors

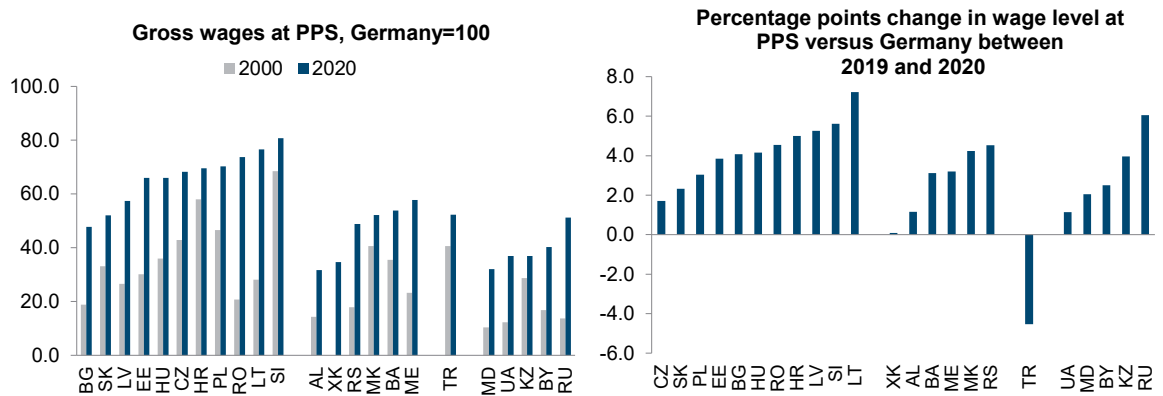
BY ALEXANDRA BYKOVA

## 3.1. CONVERGENCE MONITOR

**Figure 3.1 / GDP per capita and gross wages per employee at PPS convergence against Germany**



Note: Data 1991 for BA and XK refer to 2000, for ME and RS to 1995.  
 Source: wiiw Annual Database incorporating national statistics and Eurostat.



Note: Gross wages are based on administrative data. From 2019 Lithuanian and Romanian wages include employers' social security contributions. In 2020 Croatian wages based on FTE employees. Turkey: data 2000 refer to 2003, personnel costs.  
 Source: wiiw Annual Database incorporating national statistics and Eurostat.

**Table 3.1 / CESEE GDP per capita and gross wages per employee at PPS, 2020**

|                | BG     | CZ     | EE     | HR     | HU     | LT     | LV     | PL     | RO     | SI     | SK     | EU-<br>CEE |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------------|
| GDP per capita | 16,270 | 28,090 | 25,380 | 19,100 | 22,100 | 25,880 | 21,400 | 22,740 | 21,300 | 26,770 | 21,260 | 22,510     |
| Gross wages    | 15,823 | 22,587 | 21,838 | 23,026 | 21,862 | 25,339 | 19,020 | 23,250 | 24,394 | 26,727 | 17,240 | 22,440     |

|                | AL     | BA     | BY     | KZ     | MD     | ME     | MK     | RS     | RU     | TR     | UA     | XK     | EU<br>non- |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------------|
| GDP per capita | 9,290  | 9,920  | 13,920 | 18,020 | 8,770  | 13,720 | 11,370 | 12,810 | 20,120 | 19,000 | 8,820  | 7,760  | 17,460     |
| Gross wages    | 10,491 | 17,837 | 13,335 | 12,228 | 10,610 | 19,142 | 17,272 | 16,177 | 16,976 | 17,308 | 12,221 | 11,478 | 15,921     |

Note: Gross wages are based on administrative data. Lithuanian and Romanian wages include employers' social security contributions. Turkey wages: personnel costs.

Source: wiiw Annual Database incorporating national statistics and Eurostat.

**Table 3.2 / CESEE GDP per capita and gross wages per employee at EUR, 2020**

|                | BG    | CZ     | EE     | HR     | HU     | LT     | LV     | PL     | RO     | SI     | SK     | EU-<br>CEE |
|----------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------------|
| GDP per capita | 8,750 | 20,120 | 20,190 | 12,170 | 13,940 | 17,510 | 15,430 | 13,650 | 11,290 | 22,310 | 16,770 | 14,100     |
| Gross wages    | 8,509 | 16,176 | 17,376 | 14,670 | 13,789 | 17,143 | 13,716 | 13,957 | 12,929 | 22,274 | 13,596 | 13,954     |

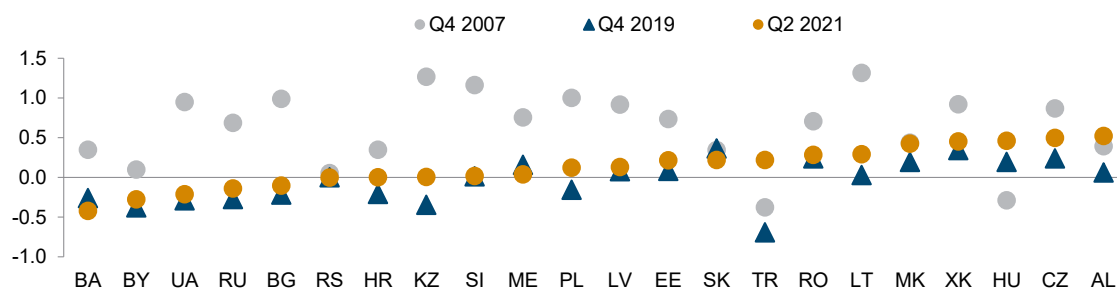
|                | AL    | BA    | BY    | KZ    | MD    | ME    | MK    | RS    | RU    | TR    | UA    | XK    | EU<br>non- |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------|
| GDP per capita | 4,610 | 5,040 | 5,620 | 7,990 | 3,990 | 6,740 | 5,190 | 6,710 | 8,860 | 7,510 | 3,260 | 3,780 | 7,400      |
| Gross wages    | 5,203 | 9,055 | 5,382 | 5,422 | 4,828 | 9,396 | 7,893 | 8,469 | 7,478 | 6,846 | 4,518 | 5,592 | 6,790      |

Note: Gross wages are based on administrative data. Lithuanian and Romanian wages include employers' social security contributions. Turkey wages: personnel costs.

Source: wiiw Annual Database incorporating national statistics and Eurostat.

### 3.2. BUSINESS CYCLE MONITOR: MOST COUNTRIES HAVE EXCEEDED THEIR PRE-PANDEMIC LEVELS

- › The average value of our headline Business Cycle Index for the whole CESEE region has risen to 0.12 (from -0.01 in our previous update in spring 2021), reflecting the ongoing recovery in the first half of 2021. The region is neither overheating (values of above 1) nor underheating (values below -1). Comparison with the pre-crisis Q4 2019 for the headline index reveals that only four countries – Bosnia and Herzegovina, Montenegro, Serbia and Slovakia – are still slightly below their pre-pandemic values. Nevertheless, economic revival is not leading to general overheating of the economies, as for most countries the overall index remains significantly below its values for Q4 2007, which for many are the highest on record (Figure 3.2).
- › Most of the visible underperformance in GDP (relative to the long-term average) identified in our previous update has vanished. On this indicator, only five CESEE economies – Bulgaria, Czechia, Poland, Montenegro and Kazakhstan – are still growing more slowly than their historical averages. On the more aggregated domestic economy sub-component (which also takes account of the unemployment rate and consumer price inflation (CPI)), two countries are outliers: Ukraine (with slow recovery) and Montenegro (which was badly hit by the pandemic last year). Despite the rise in inflation observed in many countries, no overheating relative to their historical average is visible yet (Table 3.3 and Figure 3.3).
- › Several countries are outliers on the external finance sub-component. For those countries that are positive outliers, we see potential overheating in Montenegro and Kosovo (due to rising external debt) and in Albania (due to currency appreciation). Meanwhile, for those countries that are negative outliers – Bosnia and Herzegovina, Hungary, Poland and Slovenia – we see greater sign of potential underheating, due to their high current account balances (relative to their historical averages) and/or the real exchange rate depreciation (compared to average historical performance) (Table 3.3 and Figure 3.3).
- › The picture for the domestic finance sub-component is mixed. While overheating of the fiscal balance due to anti-crisis fiscal packages is easing, and in 15 of the 22 countries covered the values of this indicator have fallen since spring, the budget deficit (relative to its historical average) has grown in Czechia and Lithuania since our previous update. This is not necessarily a warning sign, given the still extremely loose monetary policy and the low real interest rates on government debt (by any historical comparison). The private credit indicator has also fallen for most of the countries since spring 2021, with Poland already posting signs of underheating. By contrast, on the broad money and property prices indicators, most of the CESEE economies have the same (or slightly higher) values as in our previous update. Overheating of property prices is becoming visible in Czechia and is intensifying in Turkey, whereas it is easing slightly in Hungary and Poland (Table 3.3 and Figure 3.3).

**Figure 3.2 / Business Cycle Index**

Note: Number of standard deviations from historical mean, average of 11 indicators. Indicators are those in Table 3.3.  
Sources: wiiw Monthly Database incorporating national statistics and Eurostat; BIS.

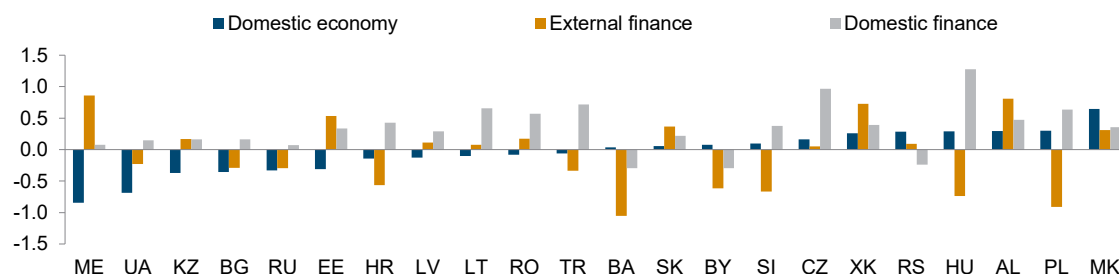
**Table 3.3 / Number of standard deviations from historical mean, Q2 2021**

|    | Domestic economy |              |       | External finance |       |               | Domestic finance |                |             |                |                 |
|----|------------------|--------------|-------|------------------|-------|---------------|------------------|----------------|-------------|----------------|-----------------|
|    | Real GDP         | Unemployment | CPI   | CA               | RER   | External debt | RIR              | Private credit | Broad money | Fiscal balance | Property prices |
| BG | -1.36            | 1.09         | -0.80 | -0.39            | 0.52  | -1.01         | -0.56            | -0.43          | -0.30       | 1.93           | 0.18            |
| CZ | -1.27            | 1.34         | 0.43  | -1.96            | 1.03  | 1.08          | 1.42             | -0.72          | 0.73        | 1.96           | 1.42            |
| EE | -0.09            | 0.42         | -1.25 | 0.33             | 1.12  | 0.14          | -0.52            | -0.40          | 0.67        | 1.96           | -0.02           |
| HR | -0.60            | 1.13         | -0.95 | -0.65            | -0.88 | -0.16         | 0.50             | -0.28          | 0.00        | 0.77           | 1.14            |
| HU | -0.12            | 1.14         | -0.15 | -0.42            | -1.24 | -0.56         | 2.01             | 0.52           | 1.72        | 1.85           | 0.29            |
| LT | -0.40            | 0.54         | -0.44 | -1.46            | 1.18  | 0.51          | 0.35             | -0.60          | 1.27        | 1.77           | 0.49            |
| LV | -0.34            | 0.80         | -0.83 | -0.62            | 0.79  | 0.16          | -0.21            | -0.47          | 0.02        | 2.11           | -0.01           |
| PL | -1.12            | 1.31         | 0.72  | -2.00            | -0.78 | 0.04          | 2.12             | -1.12          | 1.04        | -0.22          | 1.36            |
| RO | -0.61            | 0.96         | -0.59 | 0.32             | -0.05 | 0.25          | 0.98             | -0.43          | -0.29       | 2.21           | 0.37            |
| SI | 0.38             | 1.02         | -1.10 | -1.39            | -0.98 | 0.37          | -0.39            | -0.35          | 0.77        | 1.01           | 0.83            |
| SK | -0.66            | 1.41         | -0.58 | -1.58            | 0.82  | 1.86          | 0.58             | -0.82          | 0.30        | 1.05           | -0.01           |
| AL | 0.67             | 1.31         | -1.10 | -0.55            | 2.04  | 0.94          | 1.35             | -0.53          | 0.17        | 0.89           |                 |
| BA | -0.48            | 1.66         | -1.07 | -1.11            | -2.24 | 0.19          | -0.57            | -0.95          | -0.42       | 0.76           |                 |
| ME | -1.91            | 0.11         | -0.73 | -0.14            | 0.54  | 2.18          | 0.10             | -0.43          | -0.64       | 1.26           |                 |
| MK | -0.25            | 2.12         | 0.07  | -0.39            | -0.46 | 1.79          | 1.29             | -0.67          | -0.71       | 1.71           | 0.17            |
| RS | -0.04            | 1.44         | -0.54 | -0.99            | 0.94  | 0.33          | 0.04             | -0.40          | -0.35       | 0.19           | -0.68           |
| XK | -0.22            | 1.42         | -0.42 | 0.68             | 0.39  | 1.11          | 0.93             | -0.57          | -0.21       | 1.42           |                 |
| TR | 1.28             | -1.37        | -0.09 | 0.29             | -2.54 | 1.24          | 0.39             | 0.20           | 0.63        | -0.82          | 3.19            |
| BY | -0.63            | 1.43         | -0.56 | -1.28            | -1.55 | 0.98          | -0.04            | -0.94          | -1.07       | 0.87           |                 |
| KZ | -1.62            | 0.85         | -0.34 | 1.29             | -1.48 | 0.69          | -0.53            | -0.46          | -0.38       | 2.01           |                 |
| RU | -0.57            | 0.56         | -1.00 | 0.75             | -0.86 | -0.77         | 0.89             | -0.44          | -0.73       | 0.74           | -0.11           |
| UA | -0.38            | -1.04        | -0.64 | -0.13            | -0.74 | 0.18          | -0.09            | -0.87          | 0.06        | 1.50           |                 |

overheating   underheating  
> 1 SD above historical average      > 1 SD below historical average

Notes: CPI: consumer price index; CA: current account; RER: real exchange rate (EUR) CPI deflated, values more than 100 means appreciation and vice versa; RIR: real interest rate CPI deflated. Data for unemployment, current account, real interest rate, fiscal balance are inverted (as for these indicators lower values would indicate overheating). Historical mean calculated for Q4 2000 - Q2 2021. Calculations are based on four-quarter trailing averages.

Sources: wiiw Monthly Database incorporating national statistics and Eurostat; BIS.

**Figure 3.3 / Sub-components of the Business Cycle Index, Q2 2021**

Note: Number of standard deviations from historical mean, average of indicators in each sub-component. Indicators are those in Table 3.3.

Sources: wiiw Monthly Database incorporating national statistics and Eurostat; BIS.

**Table 3.4 / Over-/under-heating in relation to regional peers, Q2 2021 (4-q trailing average)**

|    | Domestic economy |                   |              | External finance |                   |                           | Domestic finance |                         |                      |                            |                          |
|----|------------------|-------------------|--------------|------------------|-------------------|---------------------------|------------------|-------------------------|----------------------|----------------------------|--------------------------|
|    | Real GDP<br>%    | Unemployment<br>% | CPI<br>% yoy | CA<br>% of GDP   | RER<br>2015 = 100 | External debt<br>% of GDP | RIR<br>%         | Private credit<br>% yoy | Broad money<br>% yoy | Fiscal balance<br>% of GDP | Property prices<br>% yoy |
| BG | -0.7             | 5.5               | 0.8          | -1.8             | 99.8              | 63.1                      | -0.8             | 4.9                     | 11.7                 | -4.7                       | 6.8                      |
| CZ | -1.2             | 3.1               | 2.8          | 3.5              | 109.5             | 72.7                      | -2.4             | 4.1                     | 10.4                 | -7.5                       | 11.0                     |
| EE | 3.2              | 7.3               | 0.2          | -5.9             | 103.3             | 89.0                      | -0.2             | 4.2                     | 18.6                 | -3.7                       | 7.9                      |
| HR | -0.5             | 8.9               | 0.6          | -0.9             | 97.8              | 81.8                      | 2.4              | 2.6                     | 9.6                  | -5.8                       | 6.1                      |
| HU | 1.9              | 4.3               | 3.8          | -0.6             | 93.5              | 79.0                      | -3.0             | 11.3                    | 18.2                 | -9.3                       | 7.3                      |
| LT | 2.1              | 8.3               | 1.3          | 5.1              | 104.3             | 74.2                      | -1.2             | -0.2                    | 23.6                 | -7.8                       | 10.3                     |
| LV | 1.4              | 8.1               | 0.3          | -0.4             | 101.9             | 120.8                     | -0.3             | -2.6                    | 14.2                 | -7.8                       | 4.8                      |
| PL | 1.3              | 3.5               | 4.0          | 2.0              | 96.1              | 57.0                      | -3.7             | -0.1                    | 13.8                 | -3.4                       | 8.8                      |
| RO | 1.4              | 5.4               | 2.4          | -6.5             | 95.4              | 54.3                      | -1.0             | 6.7                     | 15.6                 | -9.3                       | 2.2                      |
| SI | 3.4              | 5.1               | 0.0          | 6.3              | 98.2              | 100.7                     | 0.0              | 0.1                     | 11.7                 | -6.8                       | 6.4                      |
| SK | 1.3              | 7.1               | 1.6          | 1.1              | 102.0             | 117.1                     | -1.5             | 5.1                     | 8.8                  | -6.8                       | 5.6                      |
| AL | 5.6              | 11.7              | 1.4          | -7.8             | 115.4             | 63.6                      | -0.9             | 5.2                     | 9.0                  | -5.8                       |                          |
| BA | 1.6              | 17.0              | -0.7         | -3.6             | 93.5              | 63.3                      | 0.7              | -0.4                    | 8.3                  | -1.7                       |                          |
| ME | -5.6             | 19.9              | 0.3          | -19.5            | 98.5              | 76.6                      | 5.5              | 3.5                     | -0.1                 | -8.5                       |                          |
| MK | 1.8              | 16.1              | 2.1          | -2.6             | 98.7              | 84.3                      | -0.7             | 5.5                     | 7.1                  | -6.2                       | 2.7                      |
| RS | 3.3              | 10.5              | 2.0          | -2.4             | 106.6             | 64.8                      | -0.9             | 10.4                    | 17.0                 | -2.9                       | 1.5                      |
| XK | 3.7              | 25.8              | 0.5          | -9.8             | 99.4              | 35.8                      | 5.6              | 8.7                     | 14.3                 | -5.3                       |                          |
| TR | 10.4             | 12.9              | 14.5         | -4.6             | 59.3              | 54.0                      | 1.6              | 30.9                    | 32.7                 | -0.5                       | 30.4                     |
| BY | 1.6              | 4.1               | 7.5          | 0.2              | 77.4              | 63.7                      | 0.5              | 14.3                    | 2.9                  | -0.9                       |                          |
| KZ | -0.3             | 4.9               | 7.2          | -5.5             | 66.7              | 88.9                      | 1.7              | 7.2                     | 19.0                 | -4.2                       |                          |
| RU | 1.1              | 5.8               | 4.9          | 3.4              | 89.5              | 29.1                      | -0.3             | 13.4                    | 13.7                 | -1.7                       | 11.4                     |
| UA | -0.1             | 9.9               | 5.7          | 0.2              | 113.1             | 73.5                      | 0.8              | -3.8                    | 25.4                 | -4.7                       |                          |

potential overheating/instability  
relative to regional peers

underheating/stability  
relative to regional peers

Notes: CPI: consumer price index; CA: current account; RER: real exchange rate (EUR) CPI deflated, values more than 100 means appreciation and vice versa; RIR: real interest rate CPI deflated.

For all indicators higher values indicate overheating, except unemployment, current account, real interest rate, and fiscal balance.

Sources: wiiw Monthly Database incorporating national statistics and Eurostat; BIS.