



## Chapter 2

# Economic Growth & Resilience

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**Abstract** This chapter looks at the overall macroeconomic and social situation of the CEEE at the onset of Russia's aggression on Ukraine and over the consecutive 18 months. Given its close proximity to the Covid-19 crisis, we interpret these shocks together as a twin crisis and draw parallels with the 2008-12 Global Financial Crisis (GFC). Unlike during the GFC, most of the CEEE seems to have recovered from the first phase (the Covid-19 shock) quickly. Under the surface, one can nevertheless discover important vulnerabilities and imbalances, in energy prices and supply security, the build-up of inflationary pressures and a decreased fiscal space. Though the status of the resilience capacities of the CEEE in early 2022 was still better than before the GFC, it was somewhat weaker than before the Covid-19 shock. Moreover, through their fossil energy imports, the CEEE had a substantial direct exposure to Russia. At the onset of the Ukraine shock, there were widespread fears of catastrophic consequences for industry, households in the winter, and further massive increases in energy prices. Such doomsday scenarios did not materialise, as European countries reacted more flexibly to both the quantity and price shock than anticipated. While in the majority of the CEEE the Ukrainian war led to either a recession or a slowdown of the recovery from Covid, the recession is fairly shallow and seems to be mostly transitory. Overall, the main consequence of the war seems to be inflation, with a heterogeneous impact on the population. This may increase social pressures further, and coupled with increased societal polarisation, it may jeopardise the green transition. Finally, the war will have important geopolitical repercussions. With stronger geoeconomic and geopolitical competition, globalisation patterns may

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change, which will surely affect the CEEE that are highly integrated into the world economy.

## 2.1 Introduction

The economic shock of the Russian aggression of Ukraine (which was in fact preceded by already creeping energy prices) hit all countries of the world as they were only recovering from the previous shock, the socio-economic consequences of the Covid-19 pandemic. Having close ties to Russia, especially in terms of energy imports, EU countries and the CEEE even more, had to face a particularly severe challenge.

At a first look, the situation may resemble the EU's double dip crisis of 2008-12 (the global financial crisis, GFC), where the originally global financial crisis evolved into an EU specific sovereign debt crisis. Looking more closely, however, one finds that the CEEE's Covid-19 economic shock was substantially smaller and less long-lasting than the onset of the 2008 GFC. As predicted already in the summer of 2021 (see Figure 1.16 of [Benczúr & Kónya, 2022](#), Chapter 1 in [Matyas, 2022](#)), most economic indicators had returned to their 2019 pre-crisis values before the second shock hit (i.e., by 2021-22). This was not the case in the GFC. It rarely happened that variables had recovered by the time the second wave hit: they may have started to recover but then the second wave caused a further decline (a double dip), or the second wave hit while conditions were still deteriorating due to the first wave.

Tables 2.1 and 2.2 show the maximum impact (drop or peak) and the speed of recovery (the number of years after which a variable has returned to its pre-crisis value) for three major economic and five important social variables, and their combined overall behaviour (Section 2.4 will present more detailed dynamics of some of these variables).

The tables show that the biggest GDP drop in the GFC was larger than in the Covid-19 shock, with the exception of Bulgaria, Czechia, Austria and Poland. The speed of recovery (the number of years after which GDP has returned to its pre-crisis value) was even more clearly slower in the GFC than after Covid-19. The same statements remain true also for household gross disposable income and employment – one can even add that most countries managed to avoid any drop of household income.

In the social domain, the impact of the GFC was quantitatively smaller than in the economic domain, but recovery was often rather slow. Income inequality and unmet health needs did not show a visible crisis impact under the GFC. The social impact of the Covid-19 shock was rather contained, though the annual figures often hide a marked within-year impact and recovery. Though it was often feared, neither inequality nor poverty have increased substantially, pointing to good crisis management and overall resilience.

Apart from the exception of some countries and variables, it seems as if the CEEE have recovered from the Covid-19 shock. Looking deeper, however, one can discover important additional vulnerabilities in the context of energy and food prices and

Table 2.1: Impact and recovery: economic and social variables

Data (in order of appearance): Eurostat (2023k), Eurostat (2023u), Eurostat (2023d), Eurostat (2023aa), Eurostat (2023n), Eurostat (2023s), authors' calculations

(1) N indicates that the variable has not yet returned to its pre-crisis level, while .. indicates a missing value

(2) Imp. indicates the maximum impact during 2008-12 and 2020-21. A worsening is indicated by a negative value for GDP, household gross disposable income, employment, and a positive value for all the social variables. Rec. is the number of years after which a variable has returned to its pre-crisis value.

(3) GDP is chain linked volumes, in national currency. HH GDI is Gross Disposable Income of households in real terms per capita. Employment is total employment from 20 to 64 years (Eurostat, 2023d for the GFC, Eurostat, 2023aa for the Covid period). Inequality is the income quintile share ratio (S80/S20). Poverty is people at risk of poverty or social exclusion.

(4) The drop for household income in Slovakia happened only in 2011-14.

|    | GDP   |      |       |      | HH GDI |      |       |      | Employment |      |       |      | Inequality |      |       |      | Poverty |      |       |      |
|----|-------|------|-------|------|--------|------|-------|------|------------|------|-------|------|------------|------|-------|------|---------|------|-------|------|
|    | GFC   |      | Covid |      | GFC    |      | Covid |      | GFC        |      | Covid |      | GFC        |      | Covid |      | GFC     |      | Covid |      |
|    | Imp.  | Rec. | Imp.  | Rec. | Imp.   | Rec. | Imp.  | Rec. | Imp.       | Rec. | Imp.  | Rec. | Imp.       | Rec. | Imp.  | Rec. | Imp.    | Rec. | Imp.  | Rec. |
| EU | -4.3  | 6    | -5.6  | 3    | -2.3   | 8    | 0.1   | 0    | -1.9       | 8    | -1.0  | 2    | 0.0        | 0    | 0.0   | 0    | 1.4     | 9    | 0.6   | N    |
| AT | -3.8  | 3    | -6.5  | 3    | -2.3   | N    | -3.1  | N    | -0.4       | 2    | -2.0  | 3    | 0.1        | 3    | -0.1  | 0    | -1.4    | 0    | 0.8   | N    |
| BG | -3.3  | 3    | -4.0  | 2    | 3.1    | 0    | ..    | ..   | -7.8       | 9    | -1.6  | 3    | 0.0        | 0    | -0.1  | 0    | 4.5     | 6    | 0.4   | 2    |
| CZ | -4.7  | 6    | -5.5  | 3    | 0.1    | 0    | -0.6  | 2    | -2.0       | 5    | -0.6  | 3    | 0.1        | 5    | 0.1   | N    | 0.1     | 5    | -0.6  | 0    |
| EE | -14.6 | 6    | -1.0  | 2    | -12.4  | 7    | 2.4   | 0    | -10.3      | 9    | -1.4  | 3    | 0.4        | N    | 0.0   | 0    | 1.6     | N    | -0.9  | 0    |
| HR | -10.5 | 10   | -8.5  | 2    | -9.4   | 9    | -0.1  | 2    | -6.8       | 10   | 0.2   | 0    | 0.0        | 4    | 0.0   | 3    | 1.5     | 5    | 0.1   | 3    |
| LV | -18.1 | 9    | -2.3  | 2    | -18.7  | 7    | 2.5   | 0    | -11.1      | 10   | -2.0  | N    | 0.1        | 2    | 0.1   | 3    | 5.9     | 6    | -0.6  | 0    |
| LT | -14.8 | 6    | 0.0   | 2    | -10.8  | 5    | 7.3   | 0    | -7.7       | 7    | -1.5  | 3    | 1.2        | 3    | -0.3  | 0    | 5.7     | 6    | -1.0  | 0    |
| HU | -6.6  | 6    | -4.5  | 2    | -4.3   | 6    | -0.4  | 2    | -1.6       | 4    | -0.1  | 2    | 0.4        | N    | -0.1  | 0    | 5.3     | 9    | -0.6  | 0    |
| PO | 2.8   | 0    | -2.0  | 2    | 4.6    | 0    | 1.0   | 0    | -0.7       | 6    | 0.4   | 0    | -0.1       | 0    | -0.3  | 0    | -2.7    | 0    | -0.9  | 0    |
| RO | -9.2  | 6    | -3.7  | 2    | -7.8   | 7    | 1.6   | 0    | -0.9       | 4    | 0.1   | 0    | -0.4       | 0    | 0.1   | 3    | -1.0    | 0    | -0.5  | 0    |
| SI | -8.0  | 9    | -4.2  | 2    | -6.3   | 9    | 3.7   | 0    | -4.7       | 9    | -1.1  | 2    | 0.1        | 12   | -0.1  | 0    | 1.1     | 7    | 0.6   | 2    |
| SK | -5.5  | 2    | -3.3  | 2    | -0.4   | 3    | 0.6   | 0    | -4.2       | 8    | -1.0  | 3    | 0.5        | 10   | -0.1  | 0    | 0.0     | 4    | 0.8   | N    |

supply security. Equally importantly, the seemingly quick and successful recovery from the previous shock did put a significant burden on policies and (fiscal) policy space and has created new imbalances.

The Russian aggression in Ukraine has also led to important geopolitical turbulences and consequences, with many EU countries reconsidering their energy supply partners and overall energy mix. This has further accelerated the already ongoing green (and other) transitions, which were also emphasised in the resilience arm of the Next Generation EU program (European Commission, 2020a), RePowerEU (European Commission, 2022b) in particular.

This chapter sets out to provide a deeper look at the pre-crisis situation in the CEEE, covering also the aftermath of the Covid-19 shock and how it phased into the

Table 2.2: Impact and recovery: economic and social variables cont.

Data (in order of appearance): Eurostat (2023bb, 2023p, 2023v), authors' calculations

(1) N indicates that the variable has not yet returned to its pre-crisis level, while .. indicates a missing value

(2) Imp. indicates the maximum impact during 2008-12 and 2020-21. A worsening is indicated by a negative value for the overall economic effect, and a positive value for all the social variables. Rec. is the number of years after which a variable has returned to its pre-crisis value.

(3) NEET is young people neither in employment nor in education and training, in the age group of 15-29 years. Long-term unemployment refers to a duration of at least 12 months, in the age group 15-74. Unmet health needs is self-reported, covering the reasons of too expensive, too far to travel or waiting list, in the population of 16 years or over. The impact of the overall measures is the unweighted average of the corresponding economic and social variables' impact, while the recovery time is the median value.

(4) The long-term unemployment series starts only in 2009, hence the corresponding GFC measures use this as the last pre-crisis year.

|    | NEET |      |       |      | Long-term unempl. |      |       |      | Unmet health needs |      |       |      | Economic: overall |      |       |      | Social: overall |      |       |      |
|----|------|------|-------|------|-------------------|------|-------|------|--------------------|------|-------|------|-------------------|------|-------|------|-----------------|------|-------|------|
|    | GFC  |      | Covid |      | GFC               |      | Covid |      | GFC                |      | Covid |      | GFC               |      | Covid |      | GFC             |      | Covid |      |
|    | Imp. | Rec. | Imp.  | Rec. | Imp.              | Rec. | Imp.  | Rec. | Imp.               | Rec. | Imp.  | Rec. | Imp.              | Rec. | Imp.  | Rec. | Imp.            | Rec. | Imp.  | Rec. |
| EU | 0.7  | 10   | 0.3   | 3    | 1.8               | 9    | 0.1   | 3    | 0.8                | 8    | 0.3   | N    | -2.8              | 8    | -2.2  | 2    | 0.9             | 9    | 0.3   | 3    |
| AT | 0.2  | 7    | 0.3   | N    | 0.1               | 10   | 0.6   | 3    | -0.1               | 0    | 0.0   | 0    | -2.1              | 3    | -3.8  | 3    | -0.2            | 3    | 0.3   | 3    |
| BG | 1.5  | 10   | 0.3   | 3    | 3.8               | 10   | -0.2  | 0    | -4.8               | 0    | 0.0   | 0    | -2.7              | 3    | -2.8  | 2.5  | 1.0             | 6    | 0.1   | 0    |
| CZ | 0.5  | 9    | 0.3   | N    | 1.0               | 7    | 0.2   | 3    | 0.4                | 8    | -0.1  | 0    | -2.2              | 5    | -2.2  | 3    | 0.4             | 7    | 0.0   | 3    |
| EE | 1.6  | 11   | 0.3   | 3    | 3.8               | 5    | 0.7   | N    | 1.0                | N    | -2.5  | 0    | -12.5             | 7    | 0.0   | 2    | 1.7             | N    | -0.5  | 0    |
| HR | 1.6  | N    | 0.2   | 3    | 5.1               | 8    | 0.4   | 3    | 0.0                | 0    | 0.3   | 3    | -8.9              | 10   | -2.8  | 2    | 1.6             | 5    | 0.2   | 3    |
| LV | 1.7  | 8    | 0.4   | N    | 4.8               | 6    | -0.3  | 0    | 6.2                | 7    | 1.0   | 2    | -16.0             | 9    | -0.6  | 2    | 3.7             | 6    | 0.1   | 2    |
| LT | 1.2  | 7    | 0.5   | N    | 4.7               | 7    | 0.7   | N    | -2.6               | 0    | 1.0   | N    | -11.1             | 6    | 1.9   | 2    | 2.1             | 6    | 0.2   | N    |
| HU | 0.7  | 7    | 0.4   | 2    | 1.3               | 5    | 0.2   | N    | -0.5               | 0    | 0.1   | N    | -4.2              | 6    | -1.7  | 2    | 1.4             | 7    | 0.0   | 2    |
| PO | 0.7  | 10   | 0.3   | 3    | 1.6               | 7    | 0.2   | N    | 3.0                | 9    | -1.5  | 0    | 2.2               | 0    | -0.2  | 0    | 0.5             | 7    | -0.4  | 0    |
| RO | 1.5  | N    | 0.8   | N    | 1.1               | 8    | 0.0   | 0    | 1.1                | 5    | -0.2  | 0    | -6.0              | 6    | -0.7  | 0    | 0.5             | 5    | 0.0   | 0    |
| SI | 1.0  | 13   | 0.1   | 2    | 2.5               | 13   | 0.0   | 0    | 0.0                | 0    | 1.9   | N    | -6.3              | 9    | -0.5  | 2    | 0.9             | 12   | 0.5   | 2    |
| SK | 0.9  | 10   | 0.2   | 2    | 3.3               | 8    | 0.0   | 0    | 0.9                | N    | 0.5   | N    | -3.3              | 3    | -1.2  | 2    | 1.1             | 10   | 0.3   | 2    |

second, more severe economic shock around early 2022. As such, it also serves as a general introduction to most of the consecutive chapters, which explore the events, developments, and policy reactions in more depth. Our analysis here intentionally proceeds in a rather parallel fashion to Benczúr and Kónya (2022) (Chapter 1 of Matyas, 2022). We first look at the status and vulnerability of these economies as they have just emerged from the pandemic shock (Section 2.2): what was their overall economic stance and did they have more or less imbalances than before the previous crisis? The section also looks at exposure to Russia and Ukraine. Section 2.3 continues with a quick look at how the resilience capacities of CEEE weathered the Covid-19

shock. Section 2.4 analyses the immediate dynamics of the 2022 shock, performing also a comparison of the 2008-12 and the combined 2020- dual crises. Section 2.5 takes an early look at the broader social consequences. Section 2.6 presents a tentative outlook, identifying inflation as the most serious negative legacy of the situation. Finally, Section 2.7 draws some lessons and conclusions for broad economic policies.

## 2.2 Economic Stance, Imbalances, and Exposure

The Covid epidemic proved to be a large but transitory shock for the CEEE. In hindsight, as documented in the previous section, the region weathered the crisis surprisingly well, considering GDP and the main labour market indicators. While inflation and public debt rose significantly (see also Chapters 4 and 5), there was hope towards the end of 2021 that these imbalances would be gradually resolved over the coming years. While not entirely unexpected, the 2022 February decision of Vladimir Putin, the president of Russia, to attack Ukraine upended these optimistic expectations. In this part we look at key indicators about the region's general economic stance at the onset of the war, focusing on continued imbalances and the remaining space for economic policy options after just reemerging from the Covid years.

Figure 2.1 presents GDP growth and inflation (measured by the HICP) in 2021Q1 and 2022Q2, relative to the same period of the previous year. The differences are striking. Between 2020Q1-2021Q1 GDP growth was low or negative in most countries, and inflation was mostly subdued. A year later, between 2021Q1 and 2022Q1, both GDP growth and inflation increased significantly. Interestingly, while in the first period there was a clear inflationary difference between countries with floating currencies (Czechia, Hungary, Poland and Romania) and countries linked to the Euro, by the second period the distinction disappears. Broad inflationary pressures were evident in the whole CEEE group already before the war broke out.

Other measures of imbalances are shown on Figure 2.2, which contain snapshots of the trade balance and budget balance in 2021Q1 and 2022Q1, as above. During the Covid period, economic contraction led to mostly positive trade balances, which by early 2021 turned to deficits, sometimes significant ones (Slovakia, Latvia and Hungary). The fiscal stance, however, improved as countries started to unwind the large stimulus packages as economies recovered. In two countries, Hungary and Romania, budget deficits were still uncomfortably large, due to idiosyncratic reasons (elections in Hungary and sustained overheating already before Covid in Romania).

Fiscal consolidation was dictated by the significant growth in public debt between 2019-2021, as shown in Figure 2.3. While not especially large compared to other European countries, the US and Japan<sup>1</sup>, public debt increased between 2019-2021 by around 10 percentage points across the CEEE. In Croatia, Slovenia and Hungary already high values – above the Maastricht criterion of 60% – grew significantly. In the Baltic countries, Czechia and Bulgaria, fiscal space remained considerable at the

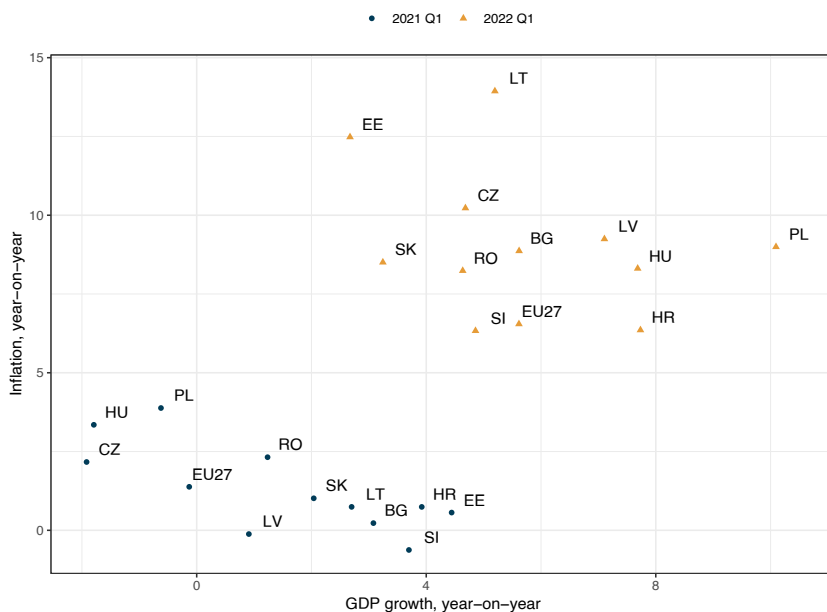
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<sup>1</sup> Public debt as a share of GDP was 117.3% in France, 144.2% in the US, and 254.5% in Japan (source: [OECD](#)).

Fig. 2.1: GDP growth and inflation

Data: Eurostat (2023j, 2023i), authors' calculations.

- (1) Growth rates (in percentages) relative to the same quarter of the previous year.
- (2) GDP: chain-linked volume. Inflation: harmonised index of consumer prices.



onset of the war, with some room for manoeuvre in case of Romania, Poland and Slovakia as well. With rising interest rates, however, economies would have to be much more cautious in taking on additional debt (see also Chapters 4 and 5).

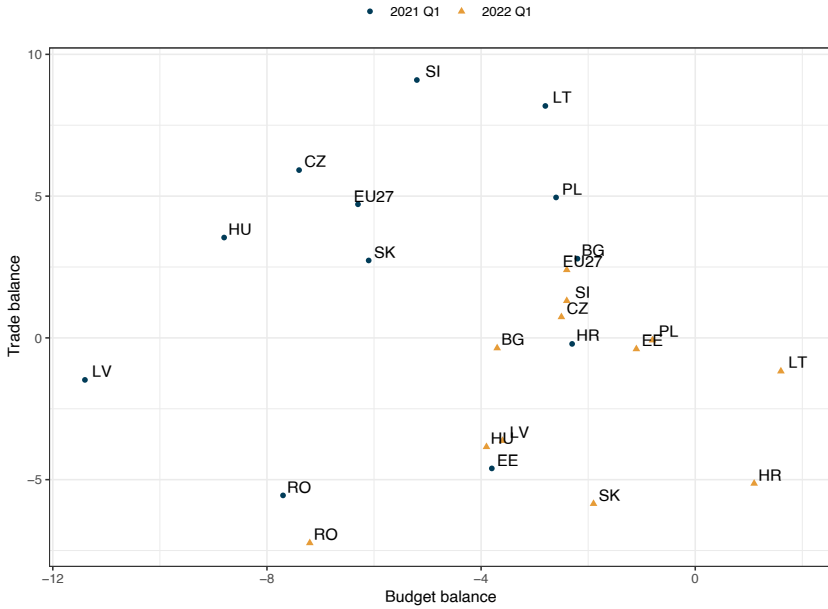
As a concise summary of the overall imbalances of the CEEE, we utilise one of the tools that were created after the GFC for identifying macroeconomic imbalances: the Macroeconomic Imbalance Procedure (MIP) Scoreboard of the European Commission's Alert Mechanism Report (AMR, [European Commission, 2023](#)). Looking at 14 core macroeconomic variables in the internal, external, and labour market domains, every annual AMR presents flags for each variable that exceeds a pre-agreed limit (in some cases, there are both upper and lower limits). Though the tool was put to work in 2013 first, one can look at earlier values of the corresponding time series and

Fig. 2.2: Trade balance and budget deficit

Data: Eurostat (2023j, 2023t), authors' calculations.

(1) Trade balance: %GDP. Budget balance: general government, %GDP.

(2) Data are seasonally adjusted.



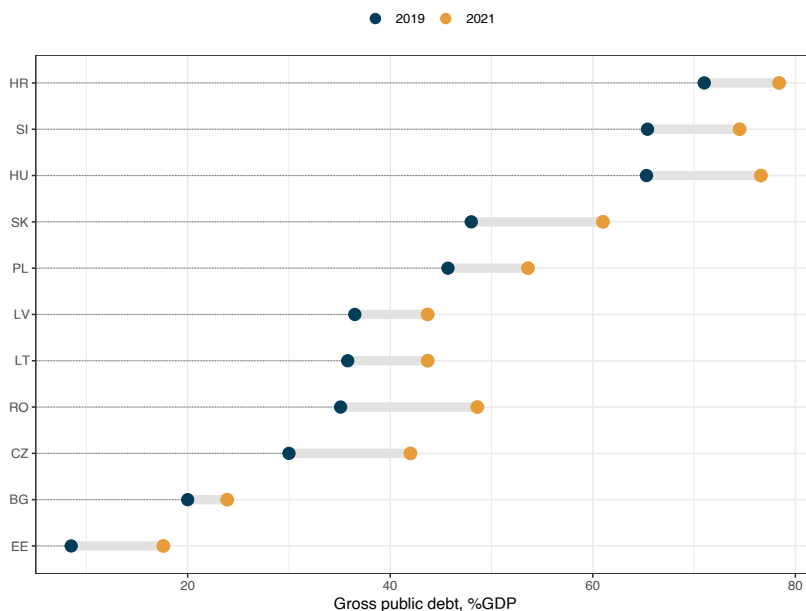
apply the same limits to them.<sup>2</sup> Figure 2.4 thus presents the number of flags for the overall EU, Austria, and all the CEEE in 2007, 2019 and 2022.

The figure reveals that EU countries typically faced much more imbalances before the GFC than before the Covid-2019 shock or at the onset of the aggression in Ukraine. This was not the case for Austria, Czechia, and the EU as a whole. Interestingly, the economic impact of the GFC and the Covid shock on these three entities (see the overall economic impact column in Figure 2.1) was rather similar, while for all other countries the Covid impact was substantially smaller.

The comparison of the EU as a whole and the per country average underlines that many problems of the GFC were due to cross-country heterogeneity, and not overall imbalances. This was no longer the case in 2019 and even less in 2022, pointing to the more common nature of these two shocks.

<sup>2</sup> For some of the variables (those in the employment domain that are based on the EU Labour Force Survey microdata), the current official series of Eurostat do not go back to 2007. This is due to the fact that there was a major revision of the corresponding methodology (see sections 3 and 4 of Eurostat, 2023g), and data were often back-casted only until 2009. In these cases we used the old and discontinued series for 2007 (Eurostat, 2023z for unemployment and youth unemployment, Eurostat, 2023m for the economic activity rate and Eurostat, 2023x for long-term unemployment) but applied the same MIP limits.

Fig. 2.3: Increase in gross public debt, 2019-2021  
 Data: Eurostat (2023b), authors' calculations.



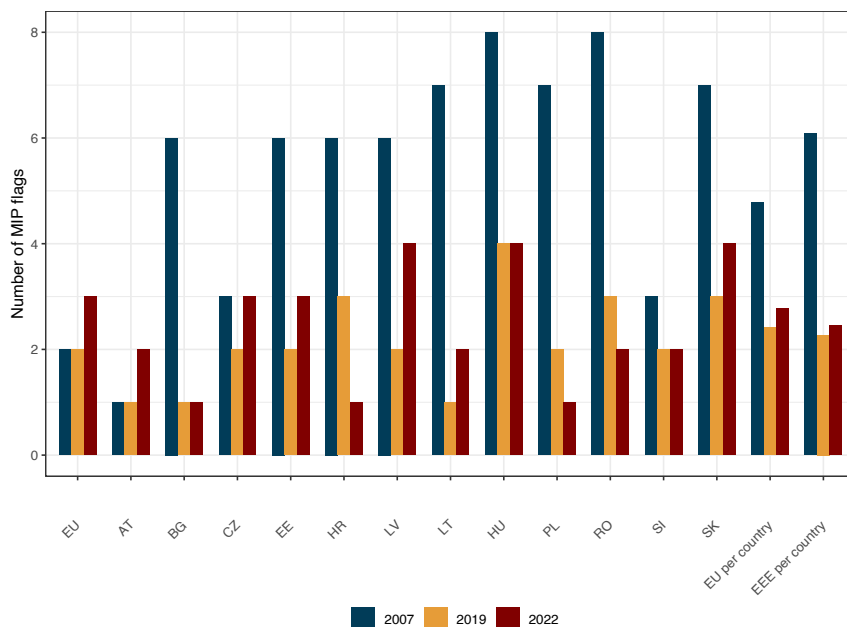
Croatia, Romania, Slovenia and Slovakia still faced three flags in 2019, and Hungary four. The situation deteriorated slightly by 2022, with Latvia, Hungary and Slovakia showing four flags. For the two latter countries, the Alert Mechanism Report<sup>3</sup> prescribed an in-depth review in 2024 to assess the causes and consequences of their macroeconomic imbalances. In terms of country averages, both EU countries and CEEE had slightly more imbalances in 2022 than in 2019; with the CEEE having slightly less imbalances than the EU in both years. Chapter 6 digs deeper into the external dimension of imbalances and their sustainability; while Chapter 9 looks into labour markets.

We now turn to the extent of direct and indirect exposure of the CEEE to the Ukraine war. Chapters 1,3 and 7 present detailed overviews and further analyses of trade patterns between the CEEE, Russia and Ukraine; here we refer to them only as potential sources of exposure and vulnerabilities. Import and export shares in the region of Belarus, Russia and Ukraine were relatively low even before the war. For exports, only Latvia and Lithuania had values above 5% (17% and 13%, respectively). For imports, exposure was somewhat larger, but with the exception of Latvia, import shares of the three countries were below or just above 10%. The reason for higher

<sup>3</sup> See: [https://economy-finance.ec.europa.eu/economic-and-fiscal-governance/macroeconomic-imbalance-procedure/alert-mechanism-report\\_en](https://economy-finance.ec.europa.eu/economic-and-fiscal-governance/macroeconomic-imbalance-procedure/alert-mechanism-report_en).



Fig. 2.4: Number of MIP flags in 2007, 2019 and 2022

Data: [European Commission \(2023\)](#); [Eurostat \(2023z, 2023m, 2023x\)](#)

import dependency is obvious: many of the CEEE relied to a significant extent on Russian oil and natural gas to power their economies.

Figure 2.5 plots the share of total and Russian imports in oil and natural gas used in 2019 (note that for Austria, Russian gas imports data are missing). There are various important lessons one can learn from the figure. First, with the exception of Romania (and partially Croatia and Poland), the rest of the CEEE relied almost completely on imported oil and gas. In case of natural gas, Russia was the exclusive or dominant source, with the exceptions of Latvia and Slovenia. In case of oil, imports are more diverse, but even here Russia was the most important source for the majority of the countries.

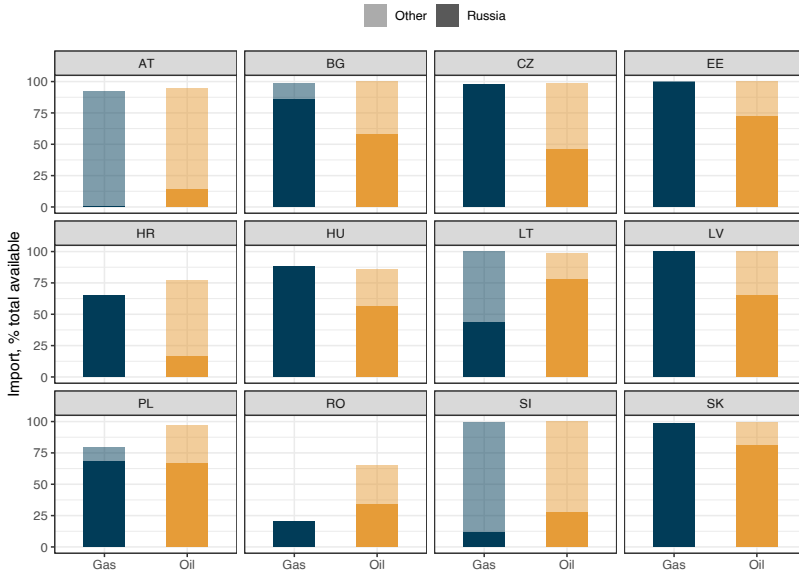
Import dependence matters mostly when (i) countries are particularly energy intensive, and (ii) their energy needs are covered by fossil fuels (mostly oil and gas). Figure 2.6 shows that the region made significant progress on only one front between 2007 (just before the start of the global financial crisis) and 2019 (just before the Covid crisis). Energy intensity of GDP declined for all countries, the most for those who were very energy intensive in 2007 (Estonia, Bulgaria and Czechia). By 2019, the CEEE were somewhat, but not dramatically more energy intensive than Austria.

The share of oil and gas used in gross available energy, however, remained roughly the same as it was in 2007. This, no doubt, was at least partly the result of low prices throughout the 2010s, and the general view that notwithstanding other frictions,

Fig. 2.5: Oil and natural gas dependency on Russia (2019)

Data: Eurostat (2023w, 2023q, 2023r), authors' calculations.

(1) Share of imported natural gas and oil in total usage, all sources and Russia.



Russia was a reliable source of fossil fuels. Overall, we conclude that the CEEE’s main direct exposure was via its import reliance on Russian oil and gas. For the former, alternatives were available, but in case of natural gas, many countries in the region relied almost completely on Russian supply. Chapter 3 offers a more in-depth discussion and analysis.

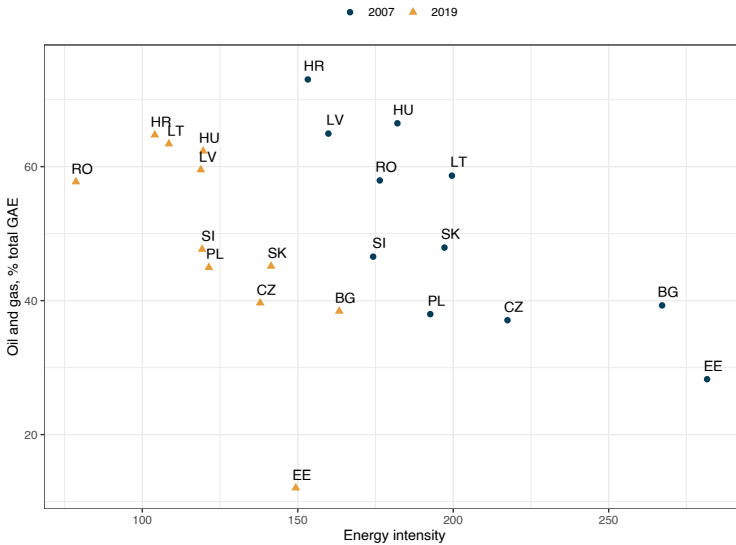
To summarise, at the onset of the Ukrainian war the CEEE had just rebounded from the Covid crisis. Recent GDP growth had been strong, but signs of overheating – mostly manifesting as increasing inflation – and some macroeconomic imbalances were present. Fiscal consolidation started in most countries, along with monetary tightening to get inflation under control. While overall trade with the three countries involved in the war was modest, much of the energy needs of the CEEE were covered by Russian imports. Two risks were associated with this exposure. First, an abrupt halt of Russian imports of natural gas (and to a lesser extent, oil) were thought to lead to catastrophic consequences for industry, and households in the winter. Second, disruptions to the oil and gas markets were expected to lead to much higher prices, exacerbating the inflation problem. We return to these risk scenarios and their eventual unfolding in Section 2.4.1.

Fig. 2.6: Energy intensity and composition

Data: Eurostat (2023w, 2023f), authors' calculations.

(1) Energy intensity of GDP in purchasing power standards (PPS). Unit: kilograms of oil equivalent (KGOE) per thousand euro.

(2) GAE: Gross Available Energy.



### 2.3 The Status of Resilience Capacities

Already since the GFC, but particularly after the Covid-19 shock, economic policies have started to emphasise the need not only to reduce vulnerabilities but to identify the necessary capacities of resilience, crucial for coping with shocks, transitions and various other challenges (Manca, Benczur & Giovannini, 2017 and European Commission, 2020c). Relative to its relatively narrow original interpretation as the capacity to absorb and recover from shocks,<sup>4</sup> the current focus includes aspects beyond recovery: to ‘bounce forward’ from shocks and to manage successfully the ongoing digital and sustainability transitions (Giovannini, Benczur, Campolongo, Cariboni & Manca, 2020). This has been more than reinforced by the Recovery and Resilience Facility (European Commission, 2020b) of the Next Generation EU program (European Commission, 2020a), which channelled funds to enhance the green and digital transitions.

<sup>4</sup> See European Central Bank (2016); International Monetary Fund (2016); OECD (2016); European Commission (2017).

As discussed in [Benczúr and Kónya \(2022\)](#) (Chapter 1 of [Matyas, 2022](#)), the CEEE were in a good overall resilience status<sup>5</sup> before the Covid-19 crisis. Indeed, we have seen in the introduction that the implied economic disturbance was relatively short lived. At the same time, the crisis did leave some longer-lasting effects of global supply chain disruptions, and its management have used up some of the buffers of governments (by accumulating debt, for example) and households (by decumulating savings).

The economic shock of the Russian aggression of Ukraine, in particular the hike in energy prices, also highlighted the need to accelerate the energy transition, to diversify energy supplies, and to manage the overall green and digital transitions in a reinforced and more strategic fashion. These again point to the importance of similar resilience characteristics.

Tables 2.3, 2.4, and 2.5 look at a similar set of resilience characteristics as in [Benczúr and Kónya \(2022\)](#) (Chapter 1 of [Matyas, 2022](#)). The employed economic and institutional variables are based on [Alessi et al. \(2020\)](#) (characteristics 1, 3-5 in Table 2.3), [World Bank \(2019\)](#) (characteristics 2 in Table 2.3 and characteristics 4 in Table 2.4, and [Jolles, Meyermans and Vasicek \(2018\)](#) (characteristics 1-4 in Table 2.4). Relative to our previous analysis, some of the variables had to be dropped or adjusted.<sup>6</sup> The variables for household finances and social cohesion (Table 2.5) also had to be adjusted slightly, as we had no post-Covid values for the liquid savings of households, the ability to go back to normal, and voluntary work. Finally, we have added two new indicators, the role of uncertainty in long-term investment decisions and societal polarisation, which reveal additional important developments around the Covid-19 shock.

Relative to the GFC, most CEEE had significantly better resilience characteristics both at the onset of the Covid-19 and the Russian aggression crises. In line with this, they weathered the economic shock of Covid-19 rather well (see Tables 2.1 and 2.2). The declines were smaller in GDP (except for Bulgaria, Czechia and Poland), household income (except for Czechia) and employment. Social consequences also stayed fairly contained. However, the resilience picture changes when we compare the pre-Covid period with 2021. From the nine characteristics considered, Hungary and Poland show only one and three improvements (government efficiency for Hungary, expenditures on social protection, active labour market policies and the net international investment position for Poland). There is a noticeable worsening for almost all of the CEEE in the growth of the unit labour cost (driven by labour shortages and the reemergence of inflation), the growth of financial sector liabilities (the only exception is Estonia), regulatory quality and the role of business regulations

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<sup>5</sup> [Benczúr and Kónya \(2022\)](#) (Chapter 1 of [Matyas, 2022](#)) offers an overview and discussion of the measurement of resilience, which the interested reader can consult. In brief, we look at various resilience characteristics, i.e., variables that are shown to be a good ex ante predictor of crisis performance ([Alessi et al., 2020](#)).

<sup>6</sup> In particular, there was no post-Covid value for the OECD's product market regulation indicator ([OECD, n.d.](#)). The World Bank's Doing Business Index ([World Bank, 2021](#)) has been discontinued, which was the source of the efficiency of resolving insolvencies. We have replaced these two with the European Investment Bank's indicator on the impact of business regulations on long-term investment decisions [European Investment Bank \(2023\)](#), which however only started in 2016.

Table 2.3: Resilience characteristics: economic variables

Data (in order of appearance): Eurostat (2023cc), European Commission (2024a), Eurostat (2023dd), Eurostat (2024a), Eurostat (2024b)

(1) Expenditures on category 2-7 LMP per person wanting to work.

(2) Improvement means a decline.

|  | EU   | AT    | BG    | EE    | CZ    | HR    | LV    | LT    | HU    | PL    | RO    | SI    | SK    |
|--|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Expenditures on social protection (% of GDP)                 |      |       |       |       |       |       |       |       |       |       |       |       |       |
| 2005-07  | 18.0 | 19.8  | 10.5  | 12.0  | 9.3   | 13.7  | 8.6   | 10.7  | 17.0  | 16.5  | 10.0  | 17.0  | 13.4  |
| 2017-19  | 19.3 | 20.3  | 11.9  | 12.4  | 12.8  | 14.0  | 11.8  | 12.9  | 13.2  | 16.4  | 11.7  | 16.7  | 14.4  |
| 2021   | 20.5 | 21.9  | 13.4  | 13.6  | 13.5  | 14.1  | 13.8  | 14.3  | 13.1  | 17.3  | 13.4  | 17.9  | 16.2  |
| Active labour market policies (ALMP, (1))                    |      |       |       |       |       |       |       |       |       |       |       |       |       |
| 2005-07  | 1787 | 1938  | 340   | 385   | 84    |       | 160   | 503   | 548   | 416   | 138   | 483   | 250   |
| 2017-19  | 1932 | 2983  | 497   | 2233  | 1351  | 1082  | 339   | 1057  | 3100  | 1230  | 141   | 857   | 830   |
| 2021   | 2534 | 3565  | 3859  | 2354  | 1832  | 2164  | 306   | 1805  | 1790  | 3463  | 225   | 1105  | 649   |
| Unit labour cost (nominal, 3-year change, (2))               |      |       |       |       |       |       |       |       |       |       |       |       |       |
| 2005-07  |      | 2.8   | 12.3  | 3.5   | 21.8  | 6.9   | 46.0  | 20.5  | 13.2  | -0.7  | 38.3  | 7.3   | 7.6   |
| 2017-19  |      | 5.0   | 18.9  | 11.1  | 14.1  | -0.4  | 14.7  | 16.4  | 11.0  | 6.2   | 23.4  | 5.8   | 11.1  |
| 2021   |      | 9.9   | 16.4  | 13.9  | 10.7  | 8.1   | 14.3  | 19.2  | 12.9  | 12.1  | 10.9  | 12.8  | 12.5  |
| Net international investment position (% of GDP)             |      |       |       |       |       |       |       |       |       |       |       |       |       |
| 2005-07  |      | -12.7 | -58.6 | -29.0 | -75.9 | -75.1 | -62.6 | -50.6 | -94.3 | -45.3 | -37.5 | -17.7 | -60.6 |
| 2017-19  |      | 8.2   | -36.7 | -23.0 | -28.4 | -55.3 | -45.4 | -30.3 | -51.6 | -54.6 | -44.9 | -19.8 | -67.7 |
| 2021   |      | 15.6  | -18.6 | -14.5 | -13.4 | -32.5 | -27.3 | -7.4  | -52.2 | -39.8 | -47.0 | -7.7  | -60.5 |
| Financial sector liabilities (annual percentage growth, (2)) |      |       |       |       |       |       |       |       |       |       |       |       |       |
| 2005-07  | 13.1 | 14.7  | 30.5  | 10.2  | 22.8  | 21.8  | 41.6  | 38.6  | 25.5  | 20.3  | 38.5  | 19.9  | 12.3  |
| 2017-19  | 3.3  | 2.3   | 6.3   | 12.1  | 10.2  | 5.2   | 2.4   | 9.4   | 6.9   | 4.0   | 7.3   | 6.4   | 10.9  |
| 2021   | 8.8  | 8.2   | 9.6   | 7.8   | 18.5  | 11.7  | 13.3  | 22.6  | 16.5  | 12.3  | 14.3  | 14.1  | 23.7  |

in long-term investment decisions. On the positive side, important policy levers have stayed strong, like social protection expenditures (except for Hungary) and active labour market policies (except for Latvia, Hungary and Slovakia). The net international investment position did not deteriorate substantially in any of the CEEE.

It is interesting to observe that uncertainty was already an important concern for investment decisions before the Covid-19 shock (last variable in Table 2.4). Its importance grew further by 2021, and even further by 2022 (except for Latvia). Given the continued war and other global and geopolitical challenges, this is likely to remain a major concern.

Table 2.4: Resilience characteristics: institutions and overall

Data (in order of appearance): [World Bank \(2023\)](#), [World Bank \(2023\)](#), [World Bank \(2023\)](#), [European Investment Bank \(2023\)](#), [European Investment Bank \(2023\)](#).

(1) A scale from -2.5 (weak) to 2.5 (strong).

(2) The share of respondents who indicated the factor as a major or minor obstacle. Improvement means a decline.

(3) The number of improvements in the five variables in Table 2.3 and the first four in this table.

|   | EU | AT   | BG    | EE   | CZ   | HR   | LV   | LT   | HU   | PL   | RO    | SI   | SK   |
|---|----|------|-------|------|------|------|------|------|------|------|-------|------|------|
| Government effectiveness (1)                                      |    |      |       |      |      |      |      |      |      |      |       |      |      |
| 2005-07   |    | 1.79 | -0.04 | 0.95 | 1.03 | 0.49 | 0.54 | 0.71 | 0.76 | 0.38 | -0.28 | 0.91 | 0.80 |
| 2017-19   |    | 1.47 | 0.13  | 0.97 | 1.12 | 0.50 | 0.98 | 0.99 | 0.46 | 0.54 | -0.16 | 1.08 | 0.60 |
| 2021  |    | 1.53 | -0.17 | 1.07 | 1.35 | 0.55 | 0.83 | 1.02 | 0.60 | 0.25 | -0.16 | 1.14 | 0.49 |
| Regulatory quality (1)  |    |      |       |      |      |      |      |      |      |      |       |      |      |
| 2005-07   |    | 1.65 | 0.64  | 1.09 | 1.29 | 0.42 | 0.92 | 0.97 | 1.15 | 0.76 | 0.40  | 0.83 | 1.06 |
| 2017-19   |    | 1.47 | 0.60  | 1.24 | 1.59 | 0.45 | 1.15 | 1.13 | 0.60 | 0.90 | 0.43  | 0.73 | 0.87 |
| 2021  |    | 1.34 | 0.43  | 1.34 | 1.55 | 0.49 | 1.22 | 1.27 | 0.49 | 0.83 | 0.29  | 0.82 | 0.87 |
| Control of corruption (1)   |    |      |       |      |      |      |      |      |      |      |       |      |      |
| 2005-07   |    | 1.94 | -0.11 | 0.38 | 0.99 | 0.08 | 0.35 | 0.19 | 0.62 | 0.26 | -0.23 | 0.98 | 0.37 |
| 2017-19   |    | 1.53 | -0.19 | 0.54 | 1.40 | 0.05 | 0.43 | 0.55 | 0.06 | 0.64 | -0.20 | 0.83 | 0.17 |
| 2021  |    | 1.24 | -0.26 | 0.62 | 1.51 | 0.04 | 0.72 | 0.82 | 0.01 | 0.55 | -0.06 | 0.69 | 0.21 |
| Factors impacting long-term investment: business regulations, (2) |    |      |       |      |      |      |      |      |      |      |       |      |      |
| 2017-19   |    | 0.63 | 0.70  | 0.59 | 0.70 | 0.42 | 0.78 | 0.56 | 0.81 | 0.32 | 0.73  | 0.65 | 0.59 |
| 2021  |    | 0.65 | 0.68  | 0.60 | 0.66 | 0.33 | 0.81 | 0.63 | 0.86 | 0.36 | 0.74  | 0.61 | 0.59 |
| Factors impacting long-term investment: uncertainty, (2)          |    |      |       |      |      |      |      |      |      |      |       |      |      |
| 2017-19   |    | 0.69 | 0.59  | 0.74 | 0.79 | 0.66 | 0.80 | 0.72 | 0.93 | 0.54 | 0.83  | 0.77 | 0.67 |
| 2021  |    | 0.73 | 0.72  | 0.77 | 0.80 | 0.66 | 0.82 | 0.83 | 0.94 | 0.68 | 0.87  | 0.80 | 0.79 |
| 2022  |    | 0.78 | 0.77  | 0.85 | 0.86 | 0.79 | 0.86 | 0.76 | 0.96 | 0.71 | 0.93  | 0.87 | 0.85 |
| Number of improvements (3)  |    |      |       |      |      |      |      |      |      |      |       |      |      |
| from GFC to Covid   |    | 4    | 5     | 6    | 8    | 7    | 8    | 8    | 4    | 5    | 7     | 4    | 3    |
| From GFC to UA  |    | 4    | 4     | 7    | 8    | 6    | 8    | 8    | 4    | 6    | 6     | 5    | 3    |
| From Covid to UA  |    | 5    | 4     | 8    | 7    | 5    | 5    | 6    | 1    | 3    | 5     | 5    | 4    |

Table 2.5: Resilience characteristics: household finances and social cohesion

Data (in order of appearance): Eurostat (2023ee), Eurostat (2023ff), European Social Survey, Eurobarometer (various issues), v2cacamps\_osp of Varieties of Democracy (2022).

(1) Self-assessment. (2) Self-reported arrears in mortgage or rent, utility bills or hire purchase. (3) European Social Survey, answers 7-10 to the question "Most people can be trusted or you can't be too careful". (4) Average of the share of people who tend to trust the national legal system, the national government, and the national parliament. (5) Is society polarised into antagonistic, political camps? On a scale from 0 (not at all) to 4 (yes, to a large extent). (6) The number of improvements in the four variables.

|   | EU   | AT   | BG   | EE   | CZ   | HR   | LV   | LT   | HU   | PL   | RO   | SI   | SK   |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Inability to face unexpected difficulties (1) |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 2005-07                                       | 35.2 | 27.3 | 77.6 | 40.6 | 28.0 |      | 67.0 | 55.1 | 58.9 | 58.0 | 46.2 | 42.6 | 50.6 |
| 2017-19                                       | 32.4 | 19.7 | 40.6 | 24.5 | 34.1 | 53.6 | 55.0 | 48.7 | 32.6 | 31.9 | 47.6 | 34.4 | 32.0 |
| 2021  | 30.2 | 18.6 | 36.4 | 18.1 | 27.1 | 46.5 | 41.7 | 36.4 | 34.8 | 24.5 | 47.3 | 24.6 | 27.0 |
| Arrears (2)                                   |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 2005-07                                       | 10.0 | 3.6  | 25.1 | 8.3  | 7.9  | 0.0  | 16.4 | 15.1 | 17.8 | 22.4 | 10.7 | 14.5 | 9.7  |
| 2017-19                                       | 8.8  | 5.0  | 31.5 | 3.0  | 7.9  | 18.7 | 12.6 | 9.1  | 13.2 | 8.5  | 16.4 | 13.7 | 9.2  |
| 2021  | 8.9  | 4.8  | 20.4 | 2.4  | 5.7  | 16.6 | 7.2  | 6.6  | 11.2 | 7.0  | 9.4  | 9.0  | 6.3  |
| Trust in people (3)                           |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 2006-08                                       | 0.25 | 0.31 | 0.14 | 0.30 | 0.34 | 0.19 | 0.21 |      | 0.18 | 0.17 |      | 0.21 | 0.19 |
| 2018  | 0.28 | 0.39 | 0.12 | 0.31 | 0.38 | 0.19 | 0.21 | 0.25 | 0.28 | 0.18 |      | 0.24 | 0.19 |
| 2020  | 0.27 |      | 0.15 | 0.37 | 0.40 | 0.24 |      | 0.30 | 0.27 |      |      | 0.27 | 0.20 |
| Trust in institutions (4)                     |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 2005-07                                       | 0.41 | 0.59 | 0.18 | 0.26 | 0.51 | 0.21 | 0.27 | 0.22 | 0.36 | 0.19 | 0.27 | 0.35 | 0.30 |
| 2017-19                                       | 0.37 | 0.59 | 0.21 | 0.31 | 0.53 | 0.18 | 0.28 | 0.33 | 0.47 | 0.32 | 0.28 | 0.24 | 0.28 |
| 2021  | 0.39 | 0.55 | 0.20 | 0.34 | 0.52 | 0.22 | 0.30 | 0.37 | 0.47 | 0.30 | 0.37 | 0.26 | 0.24 |
| 2023  | 0.37 | 0.51 | 0.16 | 0.38 | 0.43 | 0.29 | 0.33 | 0.31 | 0.44 | 0.33 | 0.30 | 0.27 | 0.24 |
| Polarisation (5)                              |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 2005-07                                       | 1.16 | 2.06 | 0.99 | 0.65 | 1.46 | 2.47 | 0.32 | 0.20 | 2.57 | 3.22 | 2.52 | 2.88 | 1.49 |
| 2017-19                                       | 1.74 | 2.19 | 1.70 | 1.06 | 1.63 | 2.65 | 0.26 | 0.42 | 3.85 | 3.93 | 2.47 | 2.93 | 1.96 |
| 2021  | 2.64 | 2.46 | 2.86 | 2.06 | 2.35 | 2.82 | 1.00 | 1.34 | 3.85 | 3.98 | 3.04 | 3.98 | 2.18 |
| 2022  | 2.35 | 2.46 | 3.05 | 1.81 | 2.01 | 2.82 | 1.20 | 1.55 | 3.88 | 3.98 | 3.23 | 3.98 | 2.44 |
| Number of improvements (6)                    |      |      |      |      |      |      |      |      |      |      |      |      |      |
| from GFC to Covid                             | 3    | 2    | 2    | 4    | 2    | 0    | 5    | 4    | 4    | 4    | 2    | 3    | 2    |
| From GFC to UA                                | 3    | 1    | 4    | 4    | 4    | 2    | 3    | 4    | 4    | 3    | 2    | 3    | 3    |
| From Covid to UA                              | 2    | 2    | 3    | 4    | 3    | 4    | 3    | 4    | 1    | 2    | 3    | 4    | 3    |

Switching to household finances and social cohesion (Table 2.5), these factors mostly confirm the overall good level of resilience capacities of the CEEE. When comparing the pre-GFC and pre-Covid periods, five of the countries had only two or less improvements (Bulgaria, Czechia, Croatia, Romania and Slovakia). The situation had improved by the end of 2021: relative to the GFC, all but Croatia and Romania had registered an improvement in more than half of the indicators. When looking at the impact of the Covid-19 crisis (last line of the table), only Hungary and Poland show a small number of improvements.

Household finances had improved (or at least had not deteriorated) overall, the only exception being a slight increase in the inability to face unexpected difficulties in Hungary. At the same time, trust and social cohesion show a more mixed picture. Trust in people and institutions had registered relatively small improvements. Polarisation, on the other hand, had increased in all of the CEEE (also in Austria and the EU overall), with two slight reversals by 2022 in Estonia and Czechia). There had been a noticeable jump by 2021 in Bulgaria, Romania, and Slovakia (in the case of the latter, from an already high level). In Hungary, polarisation was medium-high (a value of 2) in 2000. It increased substantially in 2006 and then further in 2010, in line with domestic political developments. In a somewhat parallel fashion, Poland had an even higher value (2.5) in 2000, which increased gradually until 2007, reversed in 2008-10, and increased further in 2011 and 2016.

To sum up, most CEEE had better resilience characteristics at the onset of the Covid-19 and the Russian aggression crises than before the GFC. The resilience picture of 2021 compares less favourably to the pre-Covid period. Together with inflation pressures, the buildup of some imbalances, and an uncertain economic environment, these may foreshadow a less quick recovery from the current shock than what happened after Covid-19. In terms of household finances and social cohesion factors, the CEEE situation is relatively good, though increasing levels of political polarisation may represent a major future challenge.

## 2.4 The Shock and its Aftermath

In this section we discuss the two main components of the shock that hit the CEEE in conjunction with the war: energy prices and refugees. While both are analysed in more detail in Chapters 3 and 8 respectively, we provide a first overview and discuss their macroeconomic consequences. We also show how the current twin crises – the Covid epidemic and the Ukrainian war as the first and second phases – compare to the earlier global financial crisis (followed by the European sovereign debt crisis as its second phase). We already presented some comparison points in the Introduction, and here we show additional details for the two main macroeconomic indicators, GDP and inflation.



### 2.4.1 Energy Prices, GDP, and Inflation

The main shock that hit the region (and Europe in general) was the spike in energy prices, driven by oil and natural gas imported from Russia. As we saw earlier, Figure 2.5 shows the exposure of the CEEE to imports in their overall use of oil and natural gas (measured by Gross Available Energy, GAE), and the share of Russia in total imports in 2019. Overall, the region was heavily dependent on Russian imports, especially for natural gas. Romania is the only significant producer of oil and gas, with most other countries relying overwhelmingly on imported hydrocarbons. For the landlocked economies of Czechia, Hungary and Slovakia, Russian gas remains the only feasible alternative in the short run. There is somewhat more flexibility in importing oil, but as the figure shows, Russian supply was crucial for most countries.

Fig. 2.7: Oil and natural gas prices in Europe  
 Data: FRED (2023b, 2023a), authors' calculations.

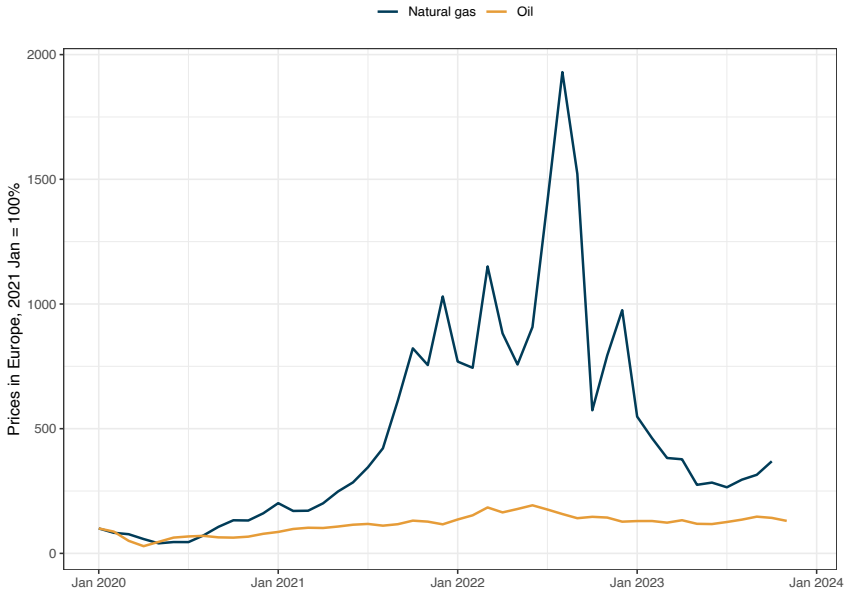


Figure 2.7 plots the evolution of oil and natural gas spot prices in Europe, normalising both to equal 100% in January 2020. Both prices started rising well before the war broke out. As Russian supply was strategically cut from the summer of 2021, natural gas prices in particular rose tenfold by early 2022. At their peak, the European spot gas price was almost 20 times above its level just before the Covid crisis broke out. While oil and gas are both significantly cheaper in 2023 than in 2022, prices are still significantly higher than in 2020. This prolonged and large

terms-of-trade shock was the most important and immediate consequence of the war for the CEEE (see also Chapter 7).

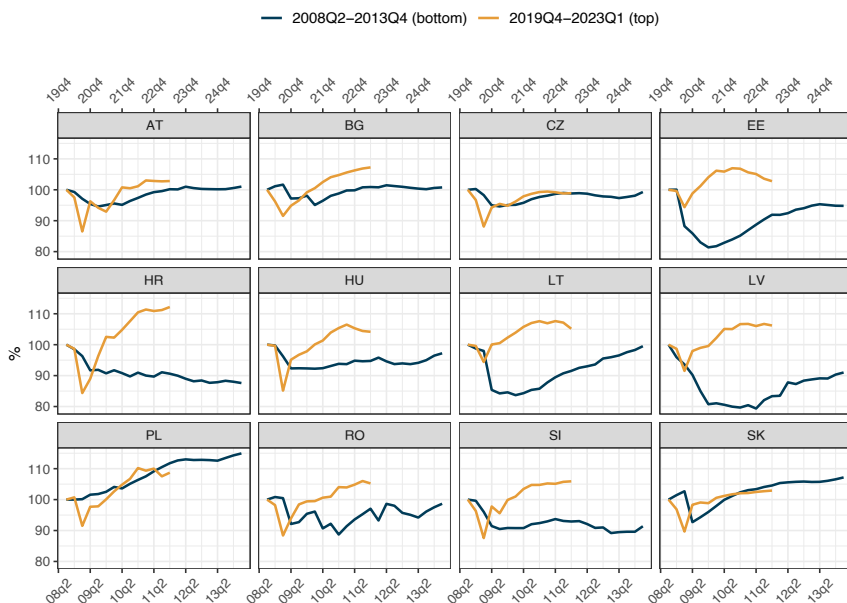
To provide some context, we first show a comparison of the two main macroeconomic indicators, real GDP and inflation, between the current dual crisis and the previous financial crisis. Figure 2.8 plots the evolution of real GDP from the end of 2019 until the first quarter of 2023 (for the current crises) and from the middle of 2008 until the end of 2013 (the financial crisis).

Skyrocketing prices reflected not only immediate shortages, but also fears that European economies would suffer catastrophic losses as oil and gas supplies dwindle. In hindsight, expectations of large-scale shutdowns of industry and freezing households proved to be exaggerated. European countries reacted more flexibly to both the quantity and price shock than anticipated (Moll, Benjamin and Schularick, Moritz and Zachmann, Georg, 2023). While in the majority of the CEEE the Ukrainian war led to either a recession or a slowdown of the recovery from Covid, the recession is fairly shallow and with the exceptions of Estonia, Hungary and Latvia it also seems to be highly transitory.

Fig. 2.8: The evolution of GDP during the two twin crises

Data: Eurostat (2023j), authors' calculations.

(1) Chain linked real GDP, 2008Q1 = 100% (bottom) and 2019Q4 = 100% (top).



The figure also vividly shows how different the two crises are. During the financial crisis and its aftermath, the recession was much more prolonged. The Covid recession

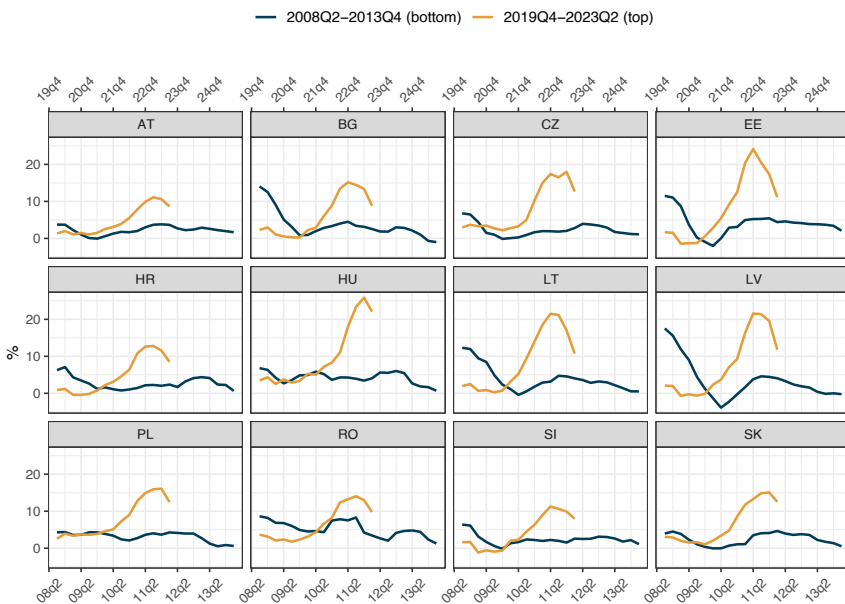
was typically deeper, but economies rebounded much faster and much stronger. There are three interesting exceptions: Czechia, Poland and Slovakia, where – except for the first wave of the Covid recession – GDP paths are remarkably similar across the two episodes. For Poland, this is explained by the fact that it was the only country to avoid a recession during the financial crisis. The behaviour of the other two countries during the Covid epidemic is less obvious, although they too weathered the financial crisis relatively well.

Differences between the two crises episodes are even more pronounced in case of inflation. As Figure 2.9 shows, since 2021 inflation has risen dramatically throughout the region, while the GFC was characterised by low and quite stable inflation. In most countries, price pressures started in the second phase of the current crisis, in 2021, after the initial shock of the Covid epidemic was over. This was due to supply bottlenecks and the effects of monetary and fiscal policy used to counter the effects of the Covid recession. There are, however, significant differences across countries in both the size of the inflation rise, and in the role of energy (and food) in the increase.

Fig. 2.9: Inflation

Data: Eurostat (2023I), authors' calculations.

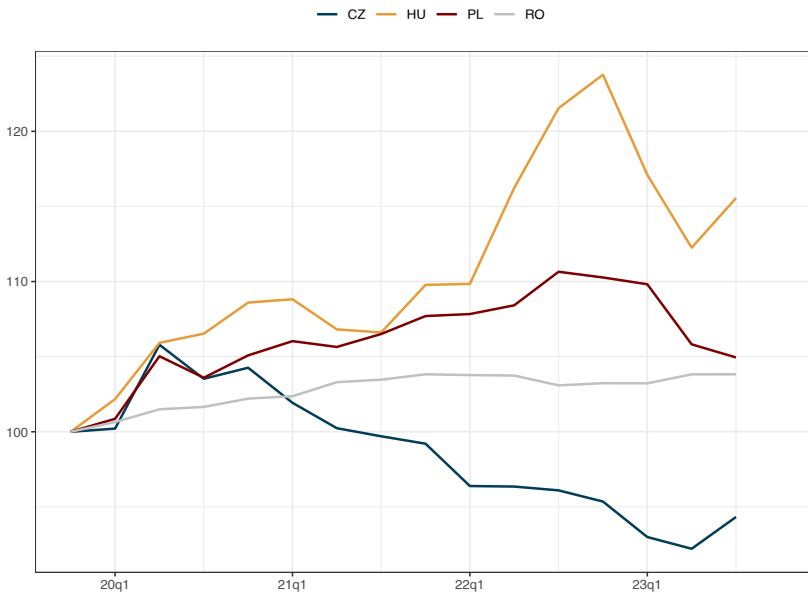
(1) Inflation rate, HICP.



Inflation rose the most in the three Baltic countries and Hungary, and the least in the countries that are either in the Eurozone or use currencies that are pegged (Bulgaria) or tightly managed (Romania). In case of the Baltics, which are the

most exposed to Russian energy and trade (see also Figure 2.5), oil and gas prices contributed significantly to the rise in consumer prices. In Hungary, which partly capped household energy prices (Sgaravatti, Tagliapietra, Trasi & Zachmann, 2023), inflation rose despite this policy to the highest and most persistent level in the CEEE. When we remove both energy and food prices from the household basket, Hungarian inflation is clearly the highest in the region. At least part of the explanation lies in the large fiscal expansion (due to parliamentary elections) in the second half of 2021 (see Figure 2.2). As Figure 2.10 shows, another reason for high Hungarian inflation is the significant depreciation of the forint, even compared to the other floating currencies in the region.

Fig. 2.10: Exchange rates in countries with floating currencies  
Data: Eurostat (2023h), authors' calculations.



Overall, the main impact of the war seems to be on inflation, with a much smaller and mostly transitory decline in economic activity. It is as yet too early to say how persistent inflation will remain. Decreasing energy prices and monetary tightening are contributing to declining inflation across the region, but the pace and magnitude varies significantly. Also, inflation may have had a heterogeneous impact on the population, as different income groups faced differential exposure to food and energy price hikes. We return to this issue in Section 2.5.

### 2.4.2 Terms-of-trade and Real Incomes

As we saw earlier, while the overall trade exposure of the CEEE to Russia (and Belarus and Ukraine) is moderate to small, the spike in oil and gas prices was still a major shock to the region. We also saw that the shock had a modest effect on GDP. In this section we take another look at the real impact of the energy price rise, utilising an alternative measure of wellbeing.<sup>7</sup> The crucial concept in this section is the terms-of-trade (TOT), the relative price of a country’s exports in terms of its imports.

Fig. 2.11: Terms-of-trade in the CEEE  
 Data: Eurostat (2023j), authors’ calculations.

(1) Terms-of-trade: export price deflator divided by the import price deflator.

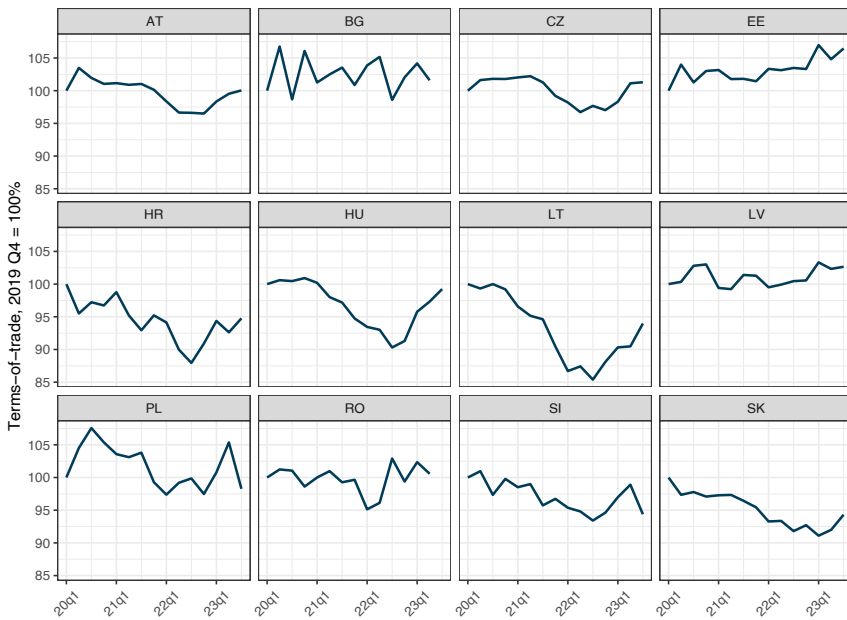


Figure 2.11 plots the evolution of this variable from the beginning of 2020. There are two interesting observations evident from the figure. First, in Austria, Czechia, Croatia, Hungary, Latvia, Poland, Slovenia and Slovakia there was a significant worsening of the TOT already in 2021. Second, the impact of the energy price rise during the early phases of the war was not particularly pronounced, and quickly reversed (with the exception of Slovakia). This means that while the terms-of-trade decline had been large and lasting, it was not strictly driven by the war itself.

<sup>7</sup> The discussion relies heavily on Oblath (2019), who did the analysis for Hungary.

To gain more insight into the effects of the TOT decline, we introduce an alternative measure of welfare to GDP, Gross Domestic Income (GDI). Much less reported, GDI is also part of the European system of national accounts, and can be fairly easily calculated from data on GDP, imports and exports, and the terms-of-trade. The main difference between real GDP and real GDI is that the latter corrects for changes in the terms-of-trade. The reason for this correction is that real GDP records only changes in the *volumes* of exports and imports, but ignores relative *price* changes. As a measure of welfare, this can be misleading. Suppose that between two periods, export volumes do not change, but imports become more expensive relative to exports. This leaves real GDP unchanged, but clearly the overall purchasing power of domestic income falls, since the same export volume is sufficient to buy fewer imported goods and services. Since this was clearly the case for the CEEE since 2021, it is instructive to look at real GDI as well, which corrects real GDP for the TOT change.<sup>8</sup>

Fig. 2.12: Real GDP and real GDI growth

Data: Eurostat (2023j), authors' calculations.

- (1) Real GDP: chained growth rate, relative to the same period of previous year.
- (2) RGDI: real GDP growth adjusted for terms-of-trade changes.

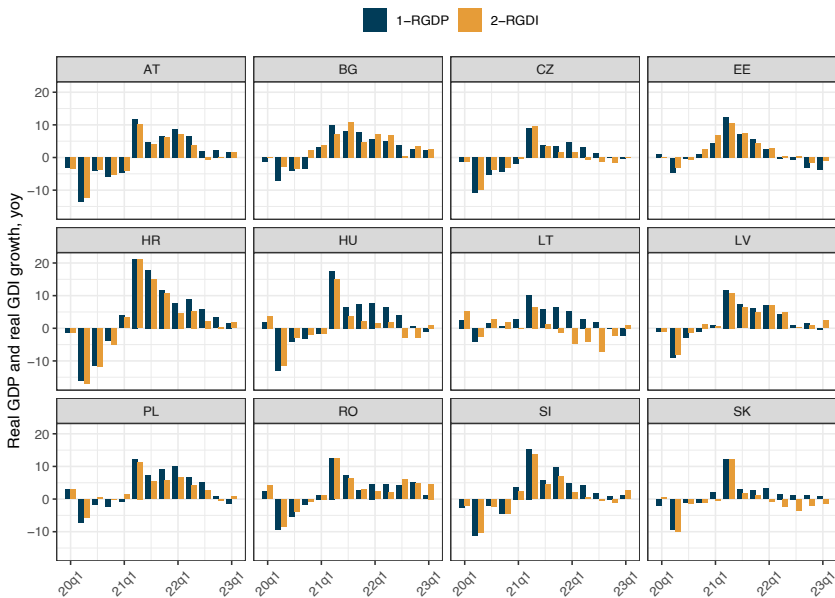


Figure 2.12 shows the quarterly changes in RGDP and RGDI for each country, relative to the same period in the previous year. Not surprisingly, in the countries where the terms-of-trade declined the most, the purchasing power of produced

<sup>8</sup> For details on the calculations, see Oblath (2019) or Reinsdorf (2010).

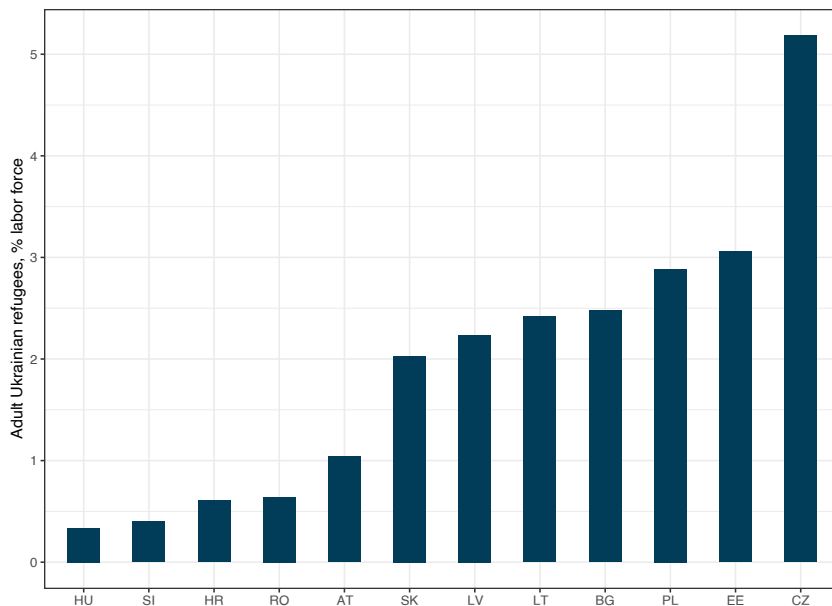
output also suffered. In Latvia, for example, RGDI growth was significantly negative throughout 2022, while RGDP growth remained positive until the second half of the year. In Hungary there is also a stark difference between volume changes (positive and high until mid 2022), and RGDI (much smaller since 2021 and negative already in mid 2022). Slovakia and Czechia show similar patterns. This is important not only because of welfare changes (of which RGDI is an improved measure), but also because RGDI paints a better picture of domestic income developments than RGDP. As [Oblath \(2019\)](#) shows, the TOT correction exposes the extent of Hungarian fiscal expansion in 2021 even more starkly. Terms-of-trade shocks do not necessarily lead to deteriorating trade balances, if the country in question cuts back on imports and/or increases exports to pay for the rising prices of the former. In Hungary, however, this adjustment mechanism was delayed by fiscal policy until 2023, due to the parliamentary elections in 2022.

### 2.4.3 The Labour Market

Fig. 2.13: Adult refugees from Ukraine at the end of 2022

Data: [Eurostat \(2023c, 2023a\)](#), authors' calculations.

(1) Refugees: quarterly means of monthly values.



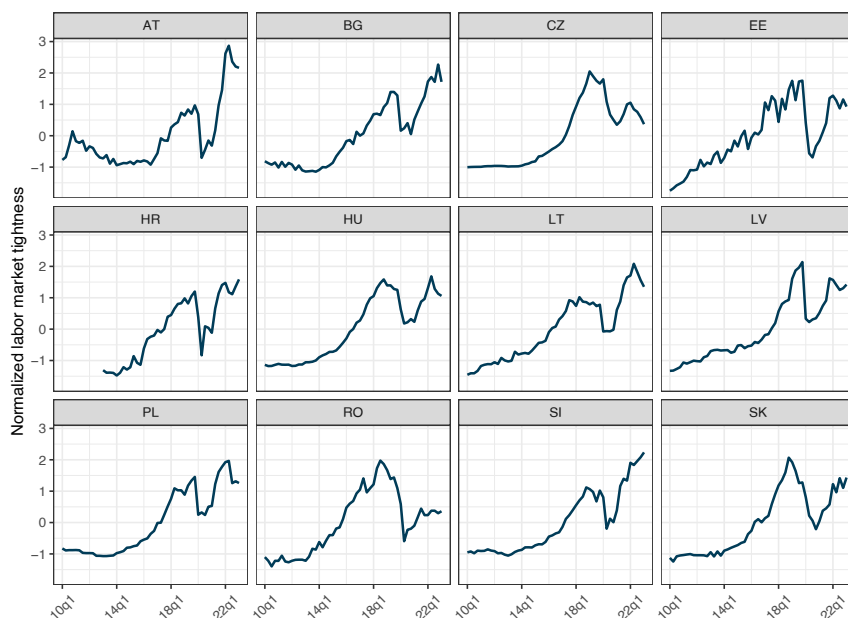
The second shock of the war in the CEEE was the large number of refugees fleeing Ukraine and arriving in the various countries of the European Union (Chapter 8 offers a deeper look and analysis). The number of refugees varies greatly across the CEEE, with some countries – notably Poland, but also some others – taking a large share. Figure 2.13 shows the stock of *adult* Ukrainian refugees at the end of 2022 (note that many who initially arrived in CEEE countries later left for Western Europe). The chart shows refugee numbers as a percentage of the labour force.

Fig. 2.14: Labour market tightness

Data: Eurostat (2023y, 2023o), authors' calculations.

(1) Unemployment rate: quarterly means of monthly values.

(2) Tightness: ratio of vacancy rate to unemployment rate.



It is clear from the figure that in the majority of the CEEE Ukrainian refugees could potentially contribute significantly to labour supply (see Chapter 9 for a more detailed analysis). In Czechia, they amount to more than 5% of the labour force, with Poland, Bulgaria, the three Baltic economies and Slovakia following (Poland has the highest absolute numbers). It is yet unclear whether the refugees will remain in these countries, or return to Ukraine once the war ends. Providing employment to such numbers depends on the current stance of the labour market, which is depicted in Figure 2.14. Labour market tightness is defined as the vacancy rate (the ratio of open job vacancies to overall jobs) divided by the unemployment rate. Since individual countries have systematically different values (reflecting country-specific institutional



and measurement issues), we normalise the indicator by subtracting the sample mean and then by dividing with the sample standard deviation.

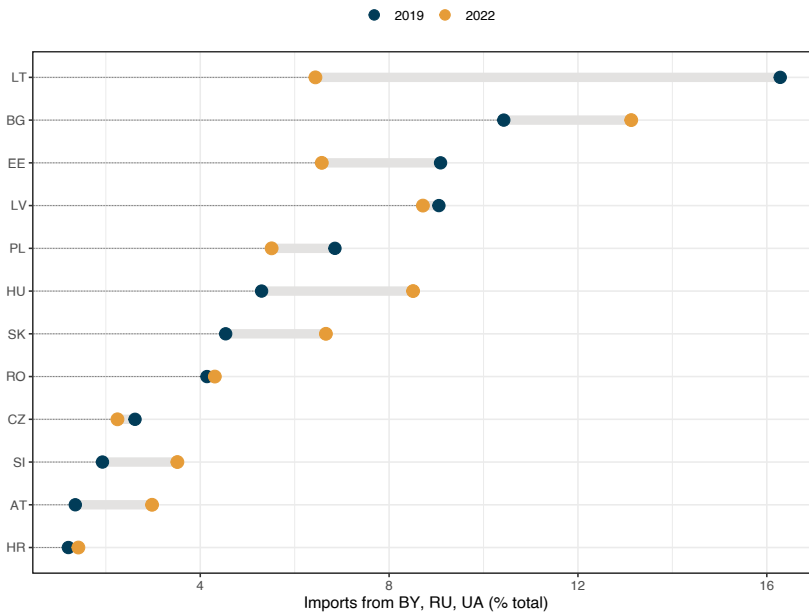
Vacancy data starts in 2010, which was just after the global financial crisis, with an accordingly weak labour market. Tightness then rose significantly across the region, reaching its peak in 2019. The Covid crisis led to a sharp drop, although the trough was in most cases still well above the 2010 value. As for GDP, the Covid crisis proved to be short-lived also on the labour market, and tightness rebounded quickly, reaching in some cases even higher levels than before the recession. The war led to small drops in about half of the countries, but overall labour markets remained very tight. We can conclude that allowing Ukrainian refugees to work would contribute significantly to an easing of labour market shortages in many countries of the region. More details are provided in Chapter 9.

### 2.4.4 Policy Response and Adjustment

Fig. 2.15: Imports from Russia, Belarus and Ukraine

Data: Eurostat (2023i), authors' calculations.

(1) Total imports from Belarus (BY), Russia (RU) and Ukraine (UA), % total imports.



After describing the main shocks leading up to and during the war, we finish this section with a discussion of how economies adjusted. We already discussed some aspects of this, but it is worth looking at additional indicators. In particular, we look at two main channels of adjustment: first, the trade exposure to Russia, Belarus and Ukraine; and second, the reaction to inflation.

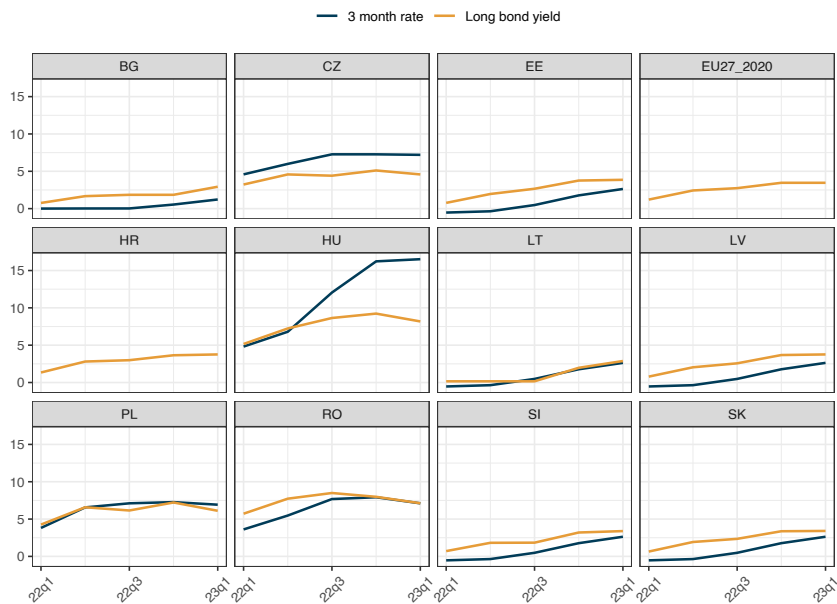
Figure 2.15 shows how import shares (measured at current prices) of Ukraine, Belarus and Russia in the total imports of the CEEE changed between 2019 (the year before Covid) and 2022. There are two broad country groups evident from the figure. Some economies, chiefly the Baltics and Czechia, successfully diversified their imports and saw a declining share, even taking the energy price spike into account. The declines are highly pronounced for Latvia and Estonia, while in the other two countries the volume decrease was almost balanced by the price rise. In the other countries the import share of the three countries rose, likely due to the price effect. For Bulgaria, Hungary and Slovakia in particular, the lack of alternatives, especially for natural gas, means that at least in the short run adjustment is difficult (see also Figure 2.5). The fall of energy prices by 2023, however, will likely show declining import shares also in these economies, once data is available.

Fig. 2.16: Interest rates

Data: [OECD \(2023b\)](#); [Eurostat \(2023e\)](#), authors' calculations.

(1) Yield: EMU convergence criteria long rates.

(2) 3-months rates: money market rates.



Apart from energy security and affordability, the other key challenge remains inflation. We showed earlier that it is high, although declining throughout the region, with some countries – Hungary in particular – facing significant challenges to again reach price stability in line with their inflation goals. We also showed that out of the four economies with floating currencies, the problems of Hungary (and to a lesser extent, Poland) are exacerbated by depreciating currencies. To briefly illustrate how monetary policy responded to inflation, and what challenges this poses to fiscal policy, Figure 2.16 plots the short-run money market rates and the long-run government bond yields in the CEEE.

In countries that are in the Eurozone the short-run rate tracks the ECB policy rate very closely, which is rising, but still remains modest in international comparison. In late 2023, its deposit rate is 4%, while the comparable rate is 5.50% in the USA and 5.25% in the UK. Long yields have tracked the short rates closely, with marginal differences across the countries. In Bulgaria, with its currency board arrangement, we see very similar developments. Considering current inflation rates, Eurozone monetary policy remains fairly loose, but inflation expectations remain mostly anchored.

Czechia, Hungary, Poland and Romania are the economies with floating currencies and independent monetary policies. Recalling Figure 2.9, we saw that their inflation performance was largely comparable to the Eurozone countries, with Hungary being a notable exception. The cost of this, however, was higher interest rates, both in the short run and in the long run. Comparing Czechia, Poland and Romania to the Eurozone countries, the short-run gap at the beginning of 2023 is about 4 percentage points. Looking at Figure 2.8, the impact of significantly higher interest rates is not yet evident in the GDP numbers, but monetary policy operates with long and varying lags. Also, in these countries long bond yields are also high, indicating that inflation expectations may not be suitably anchored. As inflation is falling, it will be an important task for central banks to strengthen and reestablish credibility.

Hungary is an outlier even in the second group of countries. As we saw earlier, its inflation performance has been the worst in the whole CEEE. Reacting partly to inflation, and partly to the depreciation of the forint, the central bank raised interest rates to levels not seen since the mid 1990s. This has managed to stabilise the currency, but at the cost of slowing down real activity. The long yield is also the highest compared to the other floaters, indicating the doubts of financial markets about a quick and credible disinflation. Moreover, while higher rates put a bigger burden on debt financing in all countries, this is particularly acute in Hungary, which faces the unenviable choice between significant fiscal consolidation on the one hand, and an implicit default via high inflation on the other.

## 2.5 Social Impact: a Preliminary Look

Unavoidable statistical lags in the collection of important social and distributional data make it difficult to provide a timely assessment of the enfolding social impact of the crisis. This is particularly true about indicators that are based on the EU-SILC

microdata:<sup>9</sup> though the outcome of the 2022 fieldwork is already released, its income variables typically refer to the previous calendar year. Nevertheless, apart from the poverty and income inequality variables, the most relevant social data are already available at least for 2022.

As a starting point, we look at the recently proposed Social Convergence Framework (SCF) of the European Union, laid out in the [European Commission \(2024b\)](#) and detailed in the [Council of the European Union \(2023\)](#). Using a set of 16 indicators, the SCF assigns flags if a given indicator of a country points to a combination of low and non-improving situation.<sup>10</sup> Table 2.6 indicates the number of new flags in the areas of equal opportunities, fair working conditions, and social protection and inclusion (see Table 2.7 for the specific variables in each group).

Table 2.6 reveals that social conditions have started to deteriorate in many of the CEEE, especially in Bulgaria and Estonia, with 6 and 4 new flags. Most of these fall into the area of social protection and inclusion (poverty), and income inequality. Using flash estimates for income inequality and monetary poverty ([Eurostat, 2023gg](#)), one finds that the poverty-related flags would apply also with estimated 2022 income, while inequality may decline. Overall, the number of new flags in social protection and inclusion is noticeably higher among the CEEE than the EU average. Not surprisingly, five out of the seven EU countries that were selected for a deeper analysis in the Social Convergence Framework are from the CEEE<sup>11</sup> (indicated by bold in the table).

Table 2.7 digs more into the specific indicators, but to save space, presents only the CEEE aggregate numbers for current and new flags. As also seen in [Benczúr and Kónya \(2022\)](#), the CEEE in general face more social issues than most other EU countries. This is particularly true about digital skills, income inequality, and social protection and inclusion in general. These preexisting problems deteriorated further in 2022, particularly for poverty and the ability of social transfers to reduce poverty. On the other hand, the CEEE performance in employment is fairly good.

The noticeable deterioration of social conditions (especially poverty) already indicates that the shock may affect groups of the population differently. This is hardly surprising, given that a major part of the shock was an increase in energy and food prices, which started already around August 2021. This potential for a social deterioration was noticed early on, and has led to important government interventions to cushion the effect. There were however visible differences in the degree of targeting these interventions to specific vulnerable groups and businesses. Such differences can have a major influence on the overall fiscal costs and social impact of such measures (see, for example, [Varga, Roeger & in 't Veld, 2022](#) for a model-based assessment).

To overcome statistical lags, policy analyses (like [European Commission, 2022a](#)) turned to studies that tried to nowcast the social impact. This typically meant to see how higher prices increase the cost of living using previous household budget data (using the EU Household Budget Survey, EU-HBS). In one of the earliest such studies, [Menyhert \(2022\)](#) used August 2022 inflation data and the 2015 wave of

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<sup>9</sup> European Union Statistics on Income and Living Conditions.

<sup>10</sup> See Annex 6 of [European Commission \(2024b\)](#).

<sup>11</sup> The other two are Italy and Spain.

Table 2.6: Social impact of the shock

Data: [European Commission \(2024b\)](#) Annex 9

(1) The cells indicate the number of new flags in the Social Convergence Framework ([European Commission, 2024b](#)) in 2024 (2022 data, though often referring to the income year of 2021).

(2) The EU number is the average across all Member States.

(3) See Table 2.7 for the variables in each of the areas.

(4) Using flash estimates for inequality and more recent data for digital skills ([Eurostat, 2023hh](#)), Bulgaria and Estonia would no longer have a new flag in the equal opportunities area, while Latvia and Romania would.

|                                 | EU   | AT | BG       | CZ       | EE       | HR | LV | LT       | HU       | PL | RO       | SI | SK |
|---------------------------------|------|----|----------|----------|----------|----|----|----------|----------|----|----------|----|----|
| Equal opportunities             | 0.37 | 0  | 1        | 1        | 1        | 0  | 0  | 0        | 0        | 0  | 0        | 0  | 0  |
| Fair working conditions         | 0.19 | 0  | 0        | 1        | 0        | 0  | 0  | 0        | 0        | 0  | 1        | 0  | 0  |
| Social protection and inclusion | 1.07 | 1  | 5        | 0        | 3        | 1  | 1  | 2        | 2        | 0  | 1        | 1  | 2  |
| Total                           | 1.63 | 1  | <b>6</b> | <b>2</b> | <b>4</b> | 1  | 1  | <b>2</b> | <b>2</b> | 0  | <b>2</b> | 1  | 2  |

the EU-HBS to assess the increase in living costs by households. The author finds that the price increases between August 2021 and 2022 led to an 11.1% increase in living costs on average across the EU. The increase was the largest among the CEEE, especially in the Baltic states (with the maximum of 27.57% in Estonia). The impact was broadly similar across the population, though the gap in the living cost increase between the top and bottom income quintiles reached 3-5% in countries like Estonia, Italy or Latvia.

The increase in the costs of living was also predicted to translate into increases in material and social deprivation, and similar measures like energy or transport poverty. [Menyhert \(2022\)](#) found that material and social deprivation may increase by 2 percentage points in the EU on average (with the largest predicted impact in Slovakia at 5.3 percentage points). In a parallel analysis, [Fulvimari, Temursho, Vaitkeviciute and Weitzel \(2023\)](#) predict a massive increase in the population share of households who spend more than 10% of their budget on energy (from 26.9% to 43.4% at the EU level) and who spend more than 6% on private transport fuel (from 37% to 47.2% at the EU level).<sup>12</sup>

<sup>12</sup> The changes refer to the time period from August 2021 to January 2023. It is important to note that there is an ongoing discussion about the measurement of energy poverty, as it is a culturally sensitive multi-dimensional phenomenon ([Thomson, Bouzarovski & Snell, 2017](#)). For a recent review, see for example [Menyhert \(2023\)](#).

Table 2.7: Main areas of social issues in the CEEE

Data: [European Commission \(2024b\)](#) Annex 9

(1) The cells indicate the number of flags and new flags in 2022 (2024 edition of the Joint Employment Report).

|  | 2022 flags | new flags in 2022 |
|--|------------|-------------------|
| <b>Equal opportunities</b>                               |            |                   |
| Early leavers from education and training                | 3          | 0                 |
| Individuals' level of digital skills                     | 6          | 0                 |
| Young NEET rate  | 3          | 1                 |
| Gender employment gap                                    | 2          | 0                 |
| Income quintile ratio                                    | 5          | 2                 |
| <b>Fair working conditions</b>                           |            |                   |
| Employment rate  | 1          | 0                 |
| Unemployment rate  | 0          | 0                 |
| Long-term unemployment rate                              | 2          | 1                 |
| GDHI per capita growth                                   | 0          | 0                 |
| <b>Social protection and inclusion</b>                   |            |                   |
| At-risk-of-poverty or social exclusion rate              | 6          | 5                 |
| At-risk-of-poverty or social exclusion rate for children | 3          | 2                 |
| Impact of social transfers on poverty reduction          | 7          | 4                 |
| Disability employment gap                                | 7          | 3                 |
| Housing cost overburden                                  | 2          | 2                 |
| Children aged less than 3 years in formal childcare      | 7          | 0                 |
| Self-reported unmet need for medical care                | 4          | 3                 |

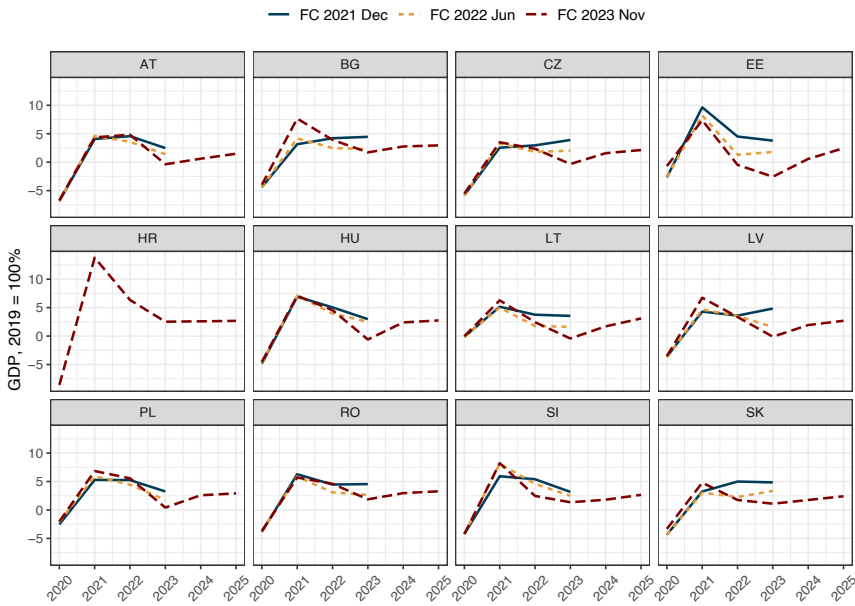
## 2.6 Outlook and Possible Paths

At the time of writing, the main legacy of the Covid aftermath and the Ukrainian war is high inflation, while GDP growth seems to be only mildly affected. The policy response to high inflation, however, will have an impact on the real economy as well. In this subsection we compare earlier and currently available forecasts from the OECD Economic Outlook to show how the region is expected to cope in the near future.

Besides the data, we present three forecasts, that were published in 2021 December, 2022 June, and 2023 June. The first is the last one made before the Ukrainian war, relying on data until mid-2021. The second, while not actually including data from 2022, was published after the war broke out, incorporating some of its effects into

Fig. 2.17: GDP forecasts

Data: OECD (2023a, 2022, 2021), authors' calculations.



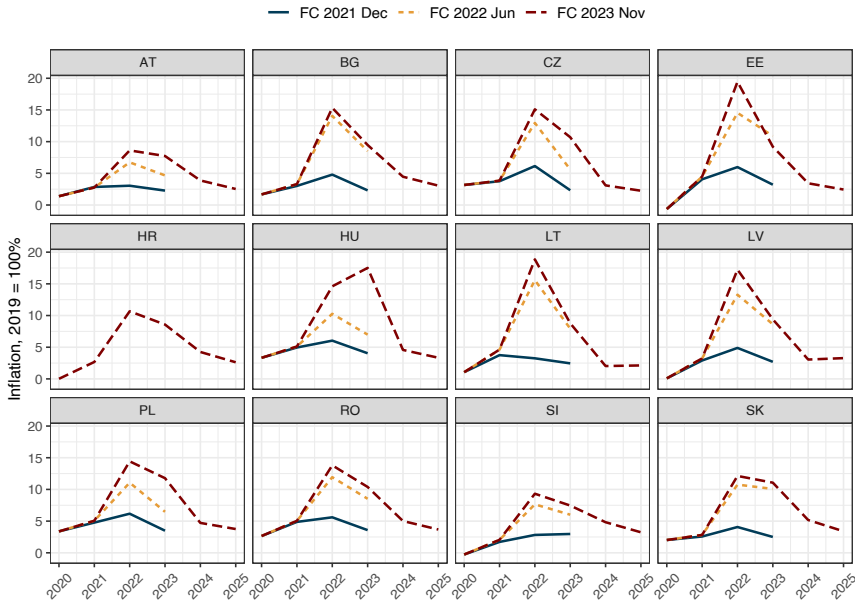
the forecast. Finally, the last and current round is based on data until 2023, with the knowledge of which immediate risks did or did not materialise during the first phase of the conflict. Data are available at the annual frequency, hence the occasionally large differences between forecast rounds.

Figure 2.17 shows the data and forecasts for GDP. Comparing the 2021 and 2022 projections, the latter shows the expected impact of the war. In most cases (except for Slovenia), we see a lower GDP path in the later forecast. In retrospect, this has held up remarkably well, with the available data and the new, 2023 forecast tracking the 2022 paths quite closely. The major exception is Bulgaria, where 2021 turned up to be a much better year than even the 2022 projection nowcasted. In Slovakia, the revision was also dramatic, but even with the faster rebound after Covid the post-2022 path seems to track well with the 2022 forecast. Overall, the OECD projects continued economic growth in 2023 and 2024 across the region. The effect of the war led to lower growth rates for the majority of the CEEE, but recessions for the most part are not expected (with the exceptions of Estonia and Hungary).

As we discussed repeatedly, inflation (Figure 2.18) has proved to be a surprise compared to the 2021 December forecast. In most countries, it has proved to be higher and more persistent than the 2022 projections (Poland and Slovakia are exceptions). This is reflected in the projected evolution of long bond yields (Figure 2.19), which

Fig. 2.18: Inflation forecasts

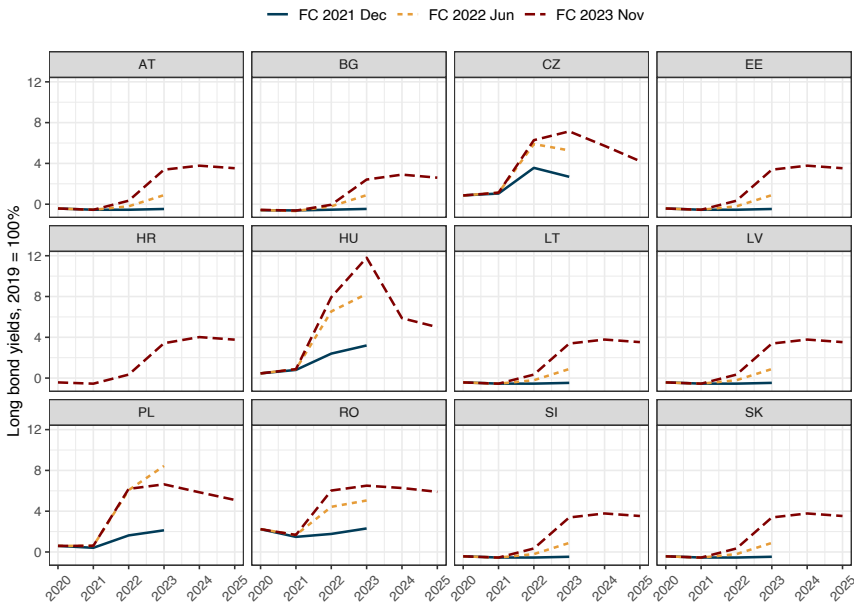
Data: OECD (2023a, 2022, 2021), authors' calculations.



are in the last forecast almost universally above the 2022 projections. Inflation is now the main economic challenge for the CEEE in the near future.



Fig. 2.19: Forecast for interest rates  
Data: OECD (2023a, 2022, 2021), authors' calculations.



## 2.7 Lessons and Recommendations

The current economic crisis, caused by Russia’s aggression on Ukraine, has followed a previous major crisis episode, the Covid-19 pandemic. As such, there is a strong parallel with the EU’s two-phase crisis in 2008-12, when the originally global financial crisis evolved into an EU specific sovereign debt crisis.

Unlike during the GFC, the CEEE seems to have recovered from the first phase of the current crisis (the Covid-19 shock) quickly, with minor exceptions of a few countries and variables. Looking deeper, however, one can discover important additional vulnerabilities in the context of energy and food prices and supply security. Equally importantly, the seemingly quick and successful recovery from the previous shock did put a significant burden on policies and (fiscal) policy space and has created new imbalances. Broad inflationary pressures were evident in the whole CEEE group already before the war broke out. While inflation and public debt rose significantly, there was hope towards the end of 2021 that these imbalances would be gradually resolved over the coming years. The attack on Ukraine upended these optimistic expectations.

The most important source of economic exposure to the war was due to fossil energy import dependency. With the exception of Romania (and partially Croatia and

Poland), the rest of the CEEE relied almost completely on imported oil and gas. In case of natural gas, Russia was the exclusive or dominant source, with the exceptions of Latvia and Slovenia. In case of oil, imports are more diverse, but even here Russia was the most important source for the majority of the countries. Though there was a significant reduction in the energy intensity of the CEEE in the decade before the war, the fossil share in their energy mix remained stubbornly high.

As a final element to understand how prepared the CEEE were to face a next economic shock, we looked at the status of their coping capacities (resilience). Relative to the GFC, most CEEE had significantly better resilience characteristics both at the onset of the Covid-19 and the Russian aggression crises. However, the resilience picture of 2021 compares less favourably to the pre-Covid period. Together with inflation pressures, the buildup of some imbalances, and an uncertain economic environment, these may foreshadow a less quick recovery from the shock of the war than after Covid-19. In terms of household finances and social cohesion factors, the CEEE situation is relatively good, though increasing levels of political polarisation may represent a major future challenge.

At the onset of the shock, two major risks were associated with fossil dependence on Russia. First, an abrupt halt of Russian imports of natural gas (and to a lesser extent, oil) were thought to lead to catastrophic consequences for industry, and households in the winter. Second, disruptions to the oil and gas markets were expected to lead to much higher prices, exacerbating the inflation problem. In hindsight, expectations of large-scale shutdowns of industry and freezing households proved to be exaggerated. European countries reacted more flexibly to both the quantity and price shock than anticipated. While in the majority of the CEEE the Ukrainian war led to either a recession or a slowdown of the recovery from Covid, the recession is fairly shallow, and with the exceptions of Estonia, Hungary and Latvia, it also seems to be highly transitory. The picture nevertheless changes noticeably when one looks at real Gross Domestic Income, which accounts better for changes in the terms of trade (like the case of an energy price shock for importers).

Overall, the main impact of the war seems to be on inflation, with a much smaller and mostly transitory decline in economic activity. It is as yet too early to say how persistent inflation will remain. Decreasing energy prices and monetary tightening are contributing to declining inflation across the region, but the pace and magnitude varies significantly. Also, inflation may have had a heterogeneous impact on the population, as different income groups faced differential exposure to food and energy price hikes.

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