EU REGULAR ECONOMIC REPORT 9

WORLD BANK REPORT
ON THE EUROPEAN UNION

# Energizing Europe

PART 1

## Inclusive Growth: Inflation Chipping Away Income Gains

WORLD BANK GROUP

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## Inclusive Growth: Inflation Chipping Away Income Gains

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# Abbreviations

**EA** Euro Area
**ECB** European Central Bank
**ESI** Economic Sentiment Indicator
**EU** European Union
**FDI** Foreign Direct Investment
**FDP** Forcibly Displaced Persons
**GDP** Gross Domestic Product
**GFC** Global Financial Crisis
**GVCs** Global Value Chains
**HICP** Harmonized Index of Consumer Prices
**ICT** Information and communication technologies
**IRA** Inflation Reduction Act
**OIS** Overnight Index Swap
**PMI** Purchasing Managers' Index
**REER** Real effective exchange rate
**RER** Regular Economic Report
**RFF** EU Recovery and Resilience Facility
**SOE** State Owned Enterprises
**TFP** Total Factor Productivity

# Regional Groupings

**Central and Southeast Europe (CEE):**
Bulgaria (BG), Croatia (HR), Czech Republic (CZ), Hungary (HU), Poland (PL), Romania (RO), Slovak Republic (SK), Slovenia (SI)

**Northern Europe (NE):**
Denmark (DK), Estonia (EE), Finland (FI), Latvia (LV), Lithuania (LT), Sweden (SE)

**Southern Europe (SE):**
Cyprus (CY), Greece (EL), Italy (IT), Malta (MT), Portugal (PT), Spain (ES)

**Western Europe (WE):**
Austria (AT), Belgium (BE), France (FR), Germany (DE), Ireland (IE), Luxembourg (LU), Netherlands (NL)

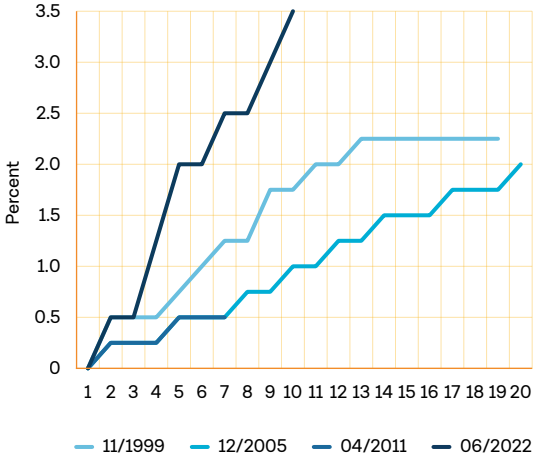
# Executive Summary

**Following a strong recovery after the onset of the COVID-19 pandemic, growth in the EU is expected to sharply decelerate in 2023 as high inflation and increasingly tight monetary policy dampen economic activity.** Although the EU economy was more resilient than expected in 2022 — owing to additional fiscal support and earlier strength in domestic demand — this momentum is expected to fade in 2023. Growth is set to slow further in 2023, as the drag from tighter monetary policy to combat inflation accumulates, external demand remains muted, and uncertainty remains high, especially after the recent banking turmoil. The outlook for the EU economy remains challenging as member states are confronted by strong headwinds from persistent inflation, weaker household disposable income, and tighter financing conditions. Despite ongoing fiscal support in many countries, the adverse impact of high inflation on real disposable income is expected to dampen private consumption.

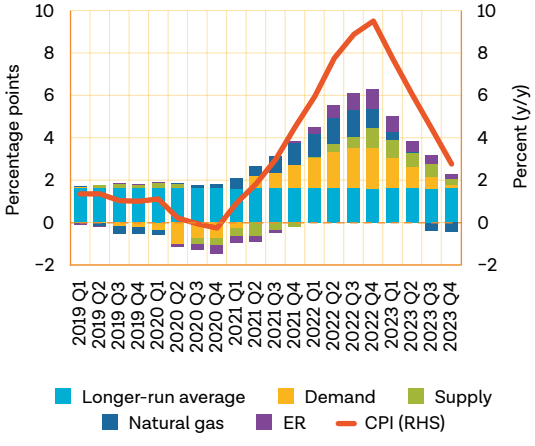
**Despite considerable resilience, the EU economy is in a weakened spot following the string of overlapping crises since 2020, which have eroded macroeconomic buffers and left the economy vulnerable to additional negative shocks.** Following the onset of the pandemic, Russia's invasion of Ukraine, and the subsequent cost-of-living crisis, the EU economy faces significant macroeconomic challenges, heightened downside risks, and a volatile geopolitical environment. The negative spillovers from Russia's invasion of Ukraine have propagated to the EU through multiple channels, including through higher food and energy prices eroding households' purchasing power, and a weaker external environment. Russia's invasion has arrived on the heels of the pandemic, which together with the cost-of-living crisis, has substantially reduced fiscal buffers in most EU member states. High inflation — driven initially by economic reopening, the release of pent-up demand, and pandemic-related supply bottlenecks and then by a surge in commodity prices and supply disruptions from Russia's invasion of Ukraine — has prompted one of the steepest and most synchronous monetary policy tightening cycles in recent history (Figure ES.1). Given the ongoing need to contain above-target inflation, the space to cut monetary policy rates is limited.

**FIGURE ES.1 The EU outlook remains challenging after a series of negative shocks spurred steep increases in the cost of living and a rapid tightening in monetary policy**

a. European Central Bank policy rate change



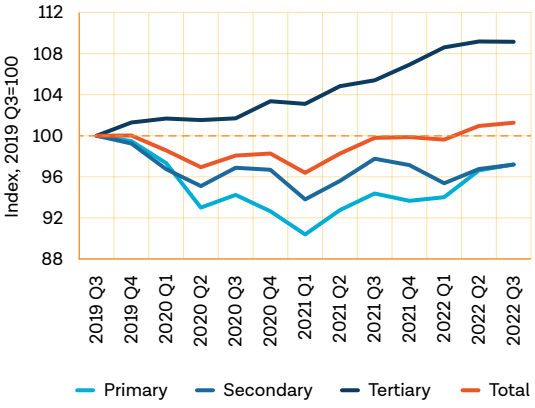

b. Decomposition of inflation in Euro area in 2022, model-based estimates of deviation from target/average




*Sources:* AMECO, Haver Analytics, Bloomberg, Eurostat, J.P. Morgan, World Bank.

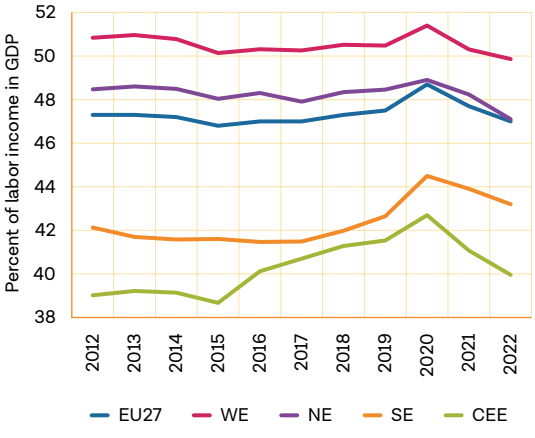
**Although the labor market remains strong, with unemployment rates near record-lows in the EU, the recovery in employment remains uneven, leaving some populations behind.** Since the beginning of 2021, the labor market experienced a rebound in employment in line with the resumption of economic activity. Nevertheless, the headline figures do not accurately depict the differences in the labor market's rebound across countries, workers or types of employment. Since much of the inequality prevalent throughout the EU is due to inequality in the labor markets, an uneven recovery there has implications for income inequality. Employment remains below pre-pandemic levels for those in more physically demanding jobs, part-time workers (particularly youth), and workers with lower education (Figure ES.2).

**FIGURE ES.2 Employment growth index by education level, EU27**




*Source:* Eurostat (lfsq_epgais), 2019Q3 – 2022Q3.

**FIGURE ES.3 Labor share of income in GDP**




*Source:* Eurostat (PC_EU27_2020_MEUR_CP), 2012-2022.

**Despite increasingly tight labor markets and partial nominal wage increases, real wages and households' purchasing power have declined significantly due to rising inflation.** While nominal hourly labor costs have been increasing in most countries in the EU since early 2021, real labor costs have been declining due to the acceleration in inflation since the third quarter of 2021. The fall in real wages has been particularly pronounced in Northern and Western Europe, where the gap between real and nominal labor costs widened in late 2022 as inflation surged. Most EU countries have increased or announced to increase their statutory minimum wages to soften the impacts of inflation on low-wage workers; nevertheless, these increases do not fully offset high inflation. Alongside an erosion of real minimum wages, the sustained fall in the labor share of GDP points to inequality challenges as the distribution of income shifts from workers to firms (Figure ES.3).

**High inflation has eroded real incomes, with the sharp rise in food prices hitting the poorest households the hardest — chipping away earlier gains in inclusion and likely leading to poverty increases.** Rising food and energy prices over the last few years have left the poorest with less disposable income for essential needs and exposed their vulnerability to further shocks. While inflation has been showing signs of tempering across the EU, headline and especially food inflation has been high in some of the poorer EU economies. Although all households are affected by rising prices, the inflation gap between wealthier and poorer households has been widening recently as poorer households spend larger shares of their incomes on food items. In part because of high food and energy inflation, poverty could increase in some EU member states, as a result of direct effects, but also indirect effects.[1]

1. Direct effect, or first-order effects, refer to the loss in purchasing power in the short term as a result of the rising price of goods the household directly consume (i.e. energy and food). Indirect effects, or second-order affects, capture when households are affected indirectly through the consumption of other products that use energy as inputs, that is when rising input prices passed on to higher prices of final consumption goods. This capture more the medium term effects and adjustments through the economy.

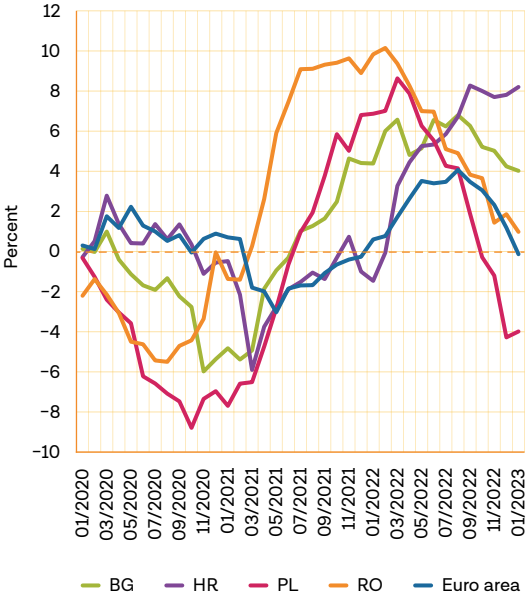
Governments have stepped in again to shield their economies and people from the cost-of-living crisis, but support measures have varied considerably, depending on the impact on the economy and policy buffers.

**Risks to the EU outlook remain firmly tilted to the downside, with most risks stemming from a worsening of the drags envisioned in the baseline projections.** The uncertainty around forecasts remains elevated amid recent banking sector strains, persistently high core inflation pressures, tightening macroeconomic policy, and energy supply concerns. Growth could be weaker than expected if underlying inflationary pressures continue to surprise on the upside, prompting additional tightening by central banks, which would further tighten credit supply conditions and dampen activity. EU output could shrink from a number of downside risks materializing, including from a rapid deterioration in confidence following banking sector turmoil, which could trigger a full-scale banking crisis and years of weak investment. An intensification in Russia's invasion of Ukraine could lead to additional cuts to Europe's energy supply and renewed commodity price volatility, as well as further fragmentation of international trade and investment.

**Coordinated policy efforts are needed to mitigate the risk of recession, rebuild fiscal buffers, and support vulnerable households.** Policy makers will need to pursue a carefully calibrated macroeconomic policy mix that continues to rein in inflation while avoiding additional financial market volatility or stress. Minimizing the probability of crisis and any potential impacts will also require a sound macroeconomic policy mix where fiscal policy does not add to inflationary pressures and prompt additional monetary policy tightening. This risk can be mitigated by ensuring that fiscal support is carefully targeted towards those most in need (firms and households). Eventually, EU member states will need to resume fiscal consolidation efforts to bring government debt levels within the levels outlined by the EU's common fiscal framework.

**Monetary policy in the EU is expected to remain tight as slowing inflation causes real policy rates to gradually rise.** After sharp rises in headline inflation, it has fallen in recent months and is expected to continue this trend over the next two years. The fall in inflation, combined with high policy rates, could shift real policy rates into positive territory absent policy rate cuts. As a result, monetary policy would assume a restrictive stance and weigh on economic activity, particularly investment, as the credit impulse tightens (Figure ES.4). A more restrictive stance, however, would help counter underlying inflationary pressures and be in line with closing positive output gaps. In some EU countries, if inflation remains too high for too long, authorities may have to continue tightening monetary policy to support macroeconomic stability and to prevent inflation expectations from becoming de-anchored.

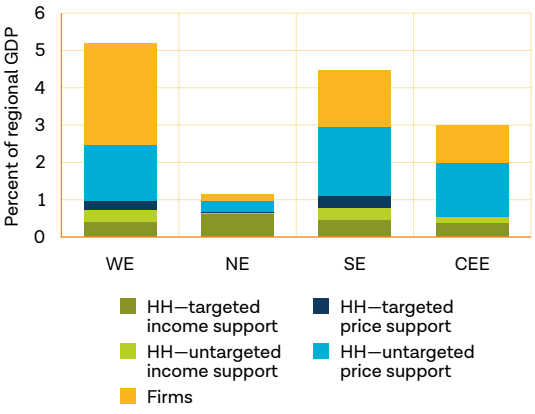
**FIGURE ES.4 Bank credit impulses**




*Source:* ECB.

**Fiscal policy support, going forward, will need to be timely, targeted, time bound, and transparent to eventually support gradual fiscal consolidation.** Governments face the challenge of balancing competing demands and limited fiscal space. To this end, it will be critical for policy makers

**FIGURE ES.5 Total fiscal support packages to confront the cost-of-living crisis, by EU region, 2021M9 – 2023M3**




*Source:* Adapted from data from Amaglobeli et al. (2023), Eurostat, and WB staff calculations.

to better target fiscal support (Figure ES.5), including by identifying and prioritizing vulnerable groups. Better targeted fiscal support can also bolster efforts to realign spending with revenues, especially as fiscal policy makers embark on much needed and delayed fiscal consolidation. The challenge, however, is to ensure that the economic slowdown is not exacerbated by fiscal consolidation efforts — as was the case following the global financial crisis. Countries can balance these priorities by reducing untargeted tax cuts, strengthening tax administration, broadening the tax base and cutting subsidies on fossil fuels, which are costly and support demand for environmentally-damaging and carbon-intensive energy sources, which erodes the incentive for energy conservation and creates tension with longer-term climate goals.

Part 1

# Inclusive Growth: Inflation Chipping Away Income Gains

**Part 1 of the European Union (EU) Regular Economic Report (RER) focuses on recent developments and the short-term outlook and risks. This part looks at inclusive growth trends in the EU as a whole and the four regions: Northern Europe (NE), Southern Europe (SE), Western Europe (WE) and Central and Southeast Europe (CEE). Depending on data availability, it also zooms in on a set of selected countries — Bulgaria, Croatia, Poland, and Romania. Part 2 of the EURER (forthcoming) will look at the macro and micro (on firms and households) impacts of the energy crisis on growth and inclusion over the medium term, especially in a constrained policy environment. It will primarily focus on the four countries — Bulgaria, Croatia, Poland, and Romania.**

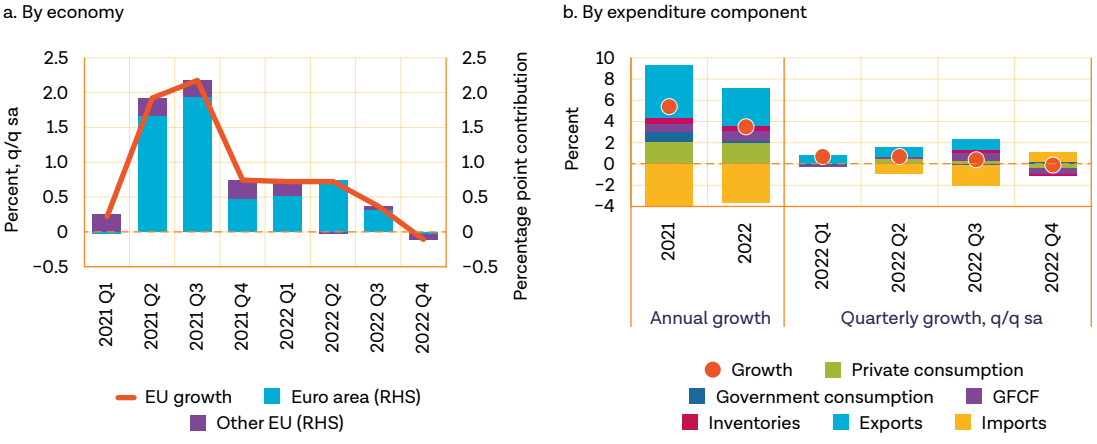
Chapter 1

# Recent Developments

# After stagnating in late 2022, the EU economy appears to be stabilizing at low levels of activity in 2023

**Growth in the EU in 2022 surprised on the upside.** Following a rebound from the pandemic-induced recession, EU growth slowed from 5.4 percent in 2021 to a relatively robust 3.5 percent in 2022. After the release of pent-up demand from the pandemic helped support growth in the first half of 2022, the EU economy stalled in late 2022. Nevertheless, it averted the deeper downturn that had been expected. The deceleration was largely concentrated in the second half of last year, with output stagnating in the euro area and modestly contracting in other EU economies in the fourth quarter of 2022 (Figure 1.1, panel a). Weak activity in the fourth quarter of 2022 reflected declines in private consumption and investment amid ongoing negative spillovers from the Russian Federation's invasion of Ukraine, subdued confidence, high inflation, tightening financing conditions, and elevated uncertainty (Figure 1.1, panel b). Survey data indicate that the slowdown was broad-based across sectors. The weakness, however, was particularly pronounced in manufacturing activity, in tandem with the fall in global goods trade volumes. Nevertheless, the EU economy was more resilient than expected in late 2022, as milder-than-usual weather and lower demand for energy imports contributed to significant import compression.

**FIGURE 1.1 Contributions to EU Growth**



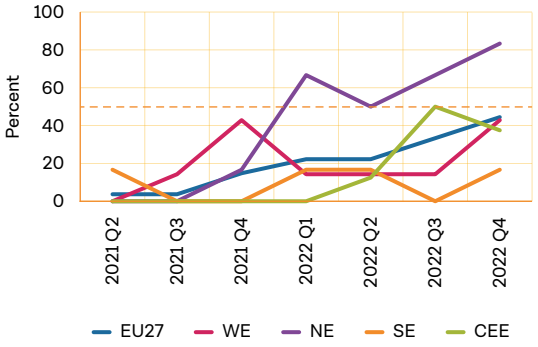

*Source:* Eurostat, Haver Analytics, World Bank.
*Note:* Growth calculated using chained 2015 euros, seasonally and working day adjusted.

**The resilience was however not broad based across the EU countries, likely owing to varying degrees of exposure to Russia.** The negative spillovers from Russia's invasion of Ukraine have propagated to the EU through multiple channels, including through higher food, energy and fertilizer prices, an erosion of households' purchasing power, heightened uncertainty, tighter financing conditions, and a weaker external environment (Guenette, Kenworthy, and Wheeler 2022; World Bank 2022a, 2022b). Governments stepped in again to shield their economies from the cost-of-living crisis, but support measures varied considerably, depending on the impact on the economy and policy buffers. Although the EU avoided the deeper downturn that had been expected in late 2022, output in about half of the EU's 27 economies contracted in the fourth quarter of 2022 (Figure 1.2, panel a). The weakness in activity was notable where dependencies on Russian energy and value chain linkages with Russia and/or Ukraine are pronounced, including in Central and Southeast Europe (CEE), Northern Europe (NE), as well as in a few large economies in Western Europe (WE) (Figure 1.2, panel b). Although the EU economy in the fourth quarter of 2022

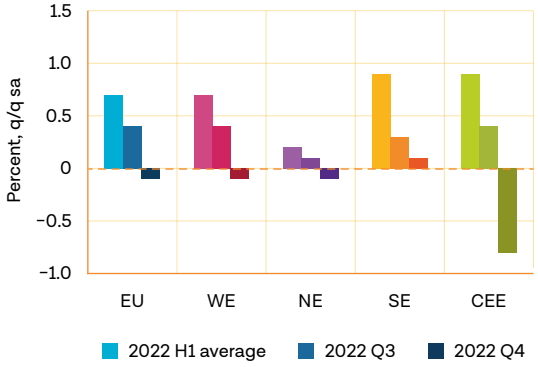
was 2.8 percent larger than in the same quarter of 2019, the combination of negative shocks has left output below or flat relative to the pre-pandemic level in three member states.

**FIGURE 1.2 Russia's invasion has negatively affected the EU economy, but the size of the shock has been heterogenous across member states**

a. Percent of economies contracting in q/q terms in EU subregions




b. Growth in EU subregions

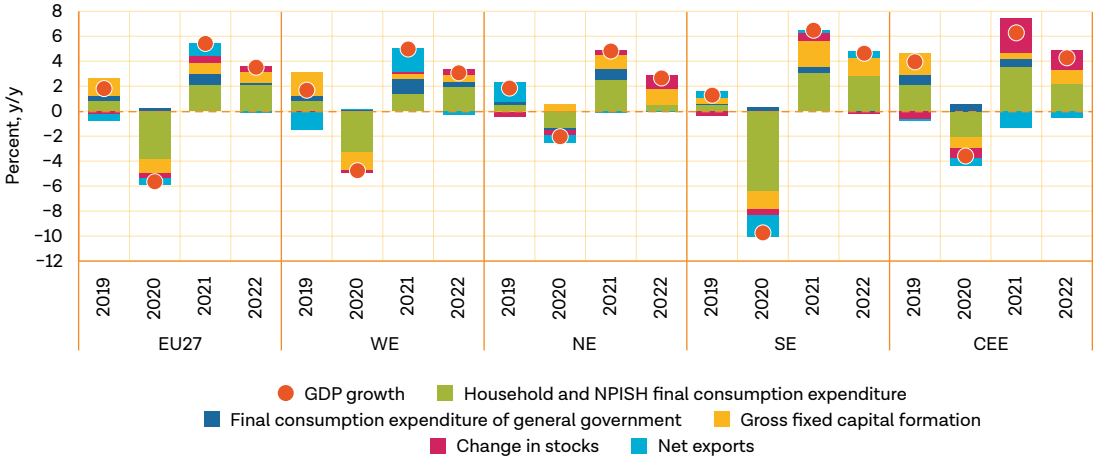



*Source:* Eurostat and WB calculations.

*Note:* Panel b shows GDP-weighted growth.

**Growth in 2022 was largely supported by resilient domestic demand.** Private consumption was aided by a strong labor market (see Chapter 2 for a more detailed analysis), removal of pandemic related restrictions, government support to shield households against higher energy prices, and available but decreasing savings. Private consumption was the main growth driver for all EU regions (except Northern Europe), reflecting strong performance in the first half of the year. However, high inflation squeezed real income across EU countries, lowering private consumption in the second half of the year, especially in countries with lower household savings. Investment also supported growth, albeit with wide heterogeneity across EU countries. Southern and Central and Eastern European countries recorded, on average, the highest investment growth, supported by increased absorption of funds from the EU Recovery and Resilience Facility (RRF). Trade volumes continue to be affected by lower global demand and higher import prices, with net exports posing a drag on growth in 2022.

**FIGURE 1.3 Contributions to Regional GDP Growth**




*Source:* Eurostat and WB calculations.

**Despite falling energy prices in early 2023, recent economic performance has been mixed.** Output likely expanded modestly in the first quarter of 2023 but retail sales remained muted as the adverse impact of high inflation on disposable income contained household spending. Industrial production meanwhile was dampened by the slump in manufacturing activity and by weakness in energy-intensive industries in early 2023. More broadly, a rapid tightening in financing conditions has hit interest-rate sensitive sectors and activity, including investment. EU goods trade growth remained tepid in the first few months of 2023, reflecting the ongoing rebalancing from goods to services demand and a weak external environment. Services trade, however, was somewhat stable amid a continued recovery in travel.

**Although firm activity continues to be negatively impacted from the earlier increase in energy prices, early evidence points to some adjustment.** Higher energy prices have increased input costs, potentially translating into lower profits, job destruction, higher market exit, loss of competitiveness and liquidity problems, especially for firms in which energy represents a significant share of total costs. Recent studies have confirmed that high energy prices have had a negative effect on firms' performance and profitability, but impacts have been far from the fear of broad de-industrialization, as firms appear to have significantly improved their efficiency. Since the beginning of the crisis, there is evidence of substantial adjustments. Ifo (2022) shows that industrial consumers in Germany reduced their use of natural gas by around 15 percent in 2022, relative to the 2018 – 2021 average, with most firms cutting their energy use without reducing output. Ferriani and Gazzani (2022) found that higher prices have negatively affected firms' financial performance depending on their energy intensity. A 1 percent increase in energy intensity is associated with a reduction in the company's returns on equity by 0.17 percent since February 2022. Since firms are heterogenous and can respond in multiple ways to an increase in energy prices, estimating the potential impact of the energy crisis and simulating alternative scenarios could contribute to more appropriate policy responses (discussed in Part 2 of the REER).

**The investment in and transition towards clean energy accelerated considerably in 2022, reflecting priorities in securing energy security and independence.** Investment in clean technologies in the EU increased by 31 percent in 2022 (over 2021), despite macroeconomic headwinds. More than 42 GW of new solar capacity was added in 2022, an increase of 47 percent compared to 2021, reflecting cost competitiveness and gradual improvements in supply chains. In addition, the electrification of heating and transport continued at a rapid pace.[2] Soaring energy prices and government subsidies led to a record increase in the sale of heat pumps while the sale of electric vehicles also picked up pace, increasing from about four to six million (European Heat Pump Association 2023). Nevertheless, given high gas prices, power production leaned towards increased use of coal and nuclear (detailed discussion in Part 2 of the REER).

## Inflation remains high in the EU while banking turmoil roils financial markets

**Inflation continues to be high across the EU, but the recent fall in energy prices is helping to lower headline inflation.**[3] After the harmonized index of consumer prices (HICP) inflation accelerated to a record-high of 11.5 percent (y/y) for the EU in October 2022, HICP inflation moderated only slightly, to 9.9 percent in February 2023 (Figure 1.4, panel a). Although inflation in the EU slowed somewhat in 2023, it continued to accelerate in at least 10 of the 27 EU economies, including some of the largest member states. In the euro

2. Fit for the Future, not Fit-for-55; 2023

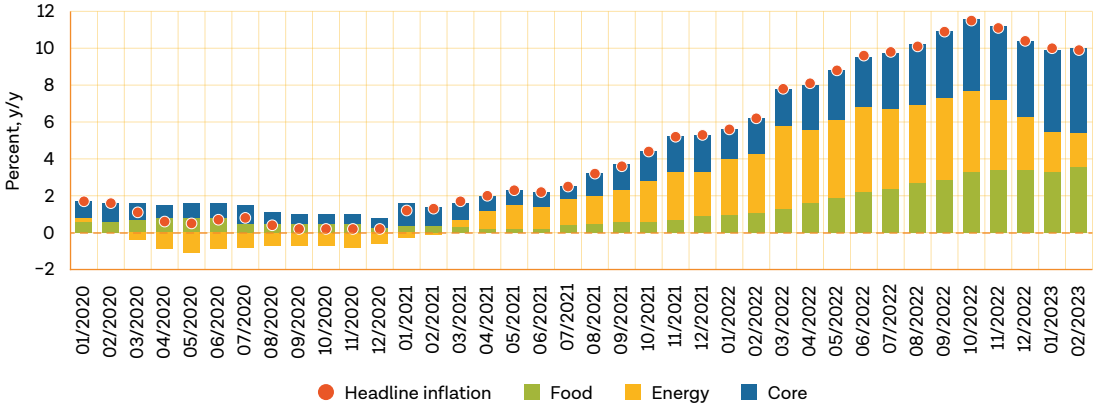
3. Inflation refers to the change in consumer prices, as measured by the harmonized index of consumer prices (HICP), unless otherwise indicated. HICP inflation and headline inflation are used interchangeably in this report. Core inflation is HICP inflation excluding volatile components, such as energy, food, alcohol, and tobacco.

area, headline consumer inflation peaked at 10.6 percent (y/y) in October 2022 — more than five times the European Central Bank's (ECB) target of close to 2 percent — and remained 8.5 percent in February 2023. The recent fall in European energy prices has been disinflationary and somewhat sharper than previously expected, resulting in a downward projection of euro area headline inflation in 2023 (ECB 2023).

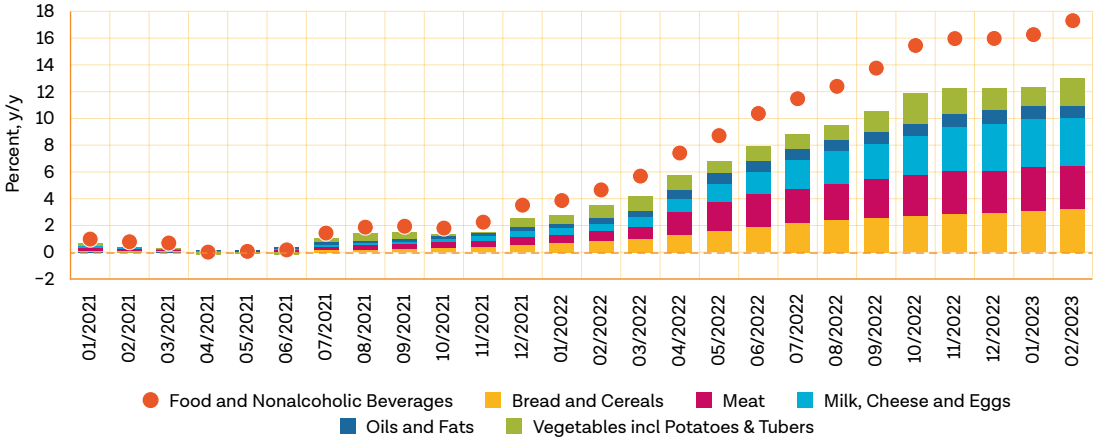
**Nevertheless, underlying inflationary pressures remain strong.** Despite a recent easing in headline inflation, underlying inflationary pressures have become increasingly broader, partly owing to second-round effects from earlier spikes in energy prices — potentially with considerable impact on households (see chapter 2). Core inflation (HICP excluding energy, food, alcohol and tobacco) accelerated to new record highs in 2023, reaching 6.6 percent (y/y) in the EU and 5.6 percent in the euro area in February. Core inflation developments have surprised on the upside, with prices being stickier than expected in early 2023 — leading to upward revisions in ECB forecasts. Within core inflation, goods and services prices resumed their upward trend in 2023, rather than stabilizing as previously expected. In addition to core inflation pressures, food inflation continued to reach new record highs in early 2023, accelerating to 19.1 percent in the EU in February 2023 (Figure 1.4, panel b). The pick-up in food inflation comes on the heels of supply cuts from the Russian Federation's invasion of Ukraine, still-high fertilizer prices, the sharp rise in natural gas prices last year (and reduced European suppliers), and elevated, albeit falling, transport costs.

**FIGURE 1.4 Contributions to EU HICP inflation**

a. Contributions to EU headline HICP inflation




b. Contributions to EU food and non-alcoholic beverage inflation

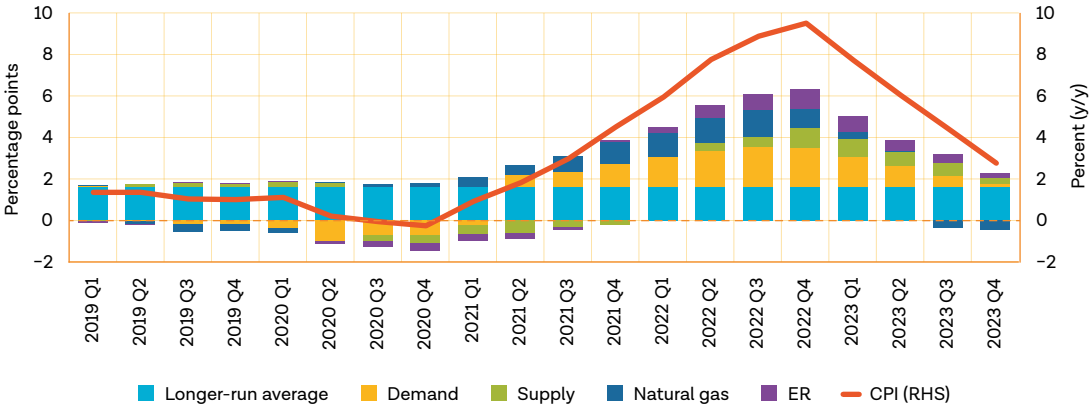



*Source:* Eurostat, World Bank.

**High inflation in the EU has been driven by earlier resilience in demand, supply disruptions, elevated energy prices, and the passthrough of exchange rate depreciation.** In 2022, record-high headline inflation reflected upward pressure from several factors — including supply, demand, energy prices, and the exchange rate — as evidenced from a model-based decomposition that estimates the deviation from the long-run inflation average between 2000Q1 to 2023Q4 (Figure 1.5; Annex A).[4] Since the start of 2021, a large share of the surge in inflation from its long-run average is explained by these factors in Bulgaria (which has a currency board tied to the euro), Croatia (adopted the euro in January 2023), Poland, and Romania (Figure 1.6). Relatively robust domestic demand — buoyed by economic reopening, fiscal support, a strong labor market, and the release of pent-up demand (including use of savings) — led to positive output gaps, which generated inflationary pressures. Lingering supply chain disruptions from the pandemic and sharp increases in energy prices, both of which were further exacerbated by Russia's invasion of Ukraine, also contributed to acceleration in inflation in 2022. Various government energy subsidy schemes, however, likely kept a lid on some of the passthrough from higher energy prices to inflation. The euro reached a record low in 2022 against the US dollar following Russia's invasion of Ukraine and the Federal Reserve's current tightening cycle. As a result, currency depreciation against the US dollar passed through to inflation in the euro area, though the overall impact is relatively muted given that most EU trade is conducted within the EU between member states.[5] Nevertheless, the exchange rate depreciation triggered inflation through higher costs of imported consumption goods, as well as through the rise in the cost of production and its passthrough to consumer prices.

**FIGURE 1.5 Inflation decomposition, model-based estimates**

Decomposition of inflation in Euro area in 2022, model-based estimates of deviation from target/average



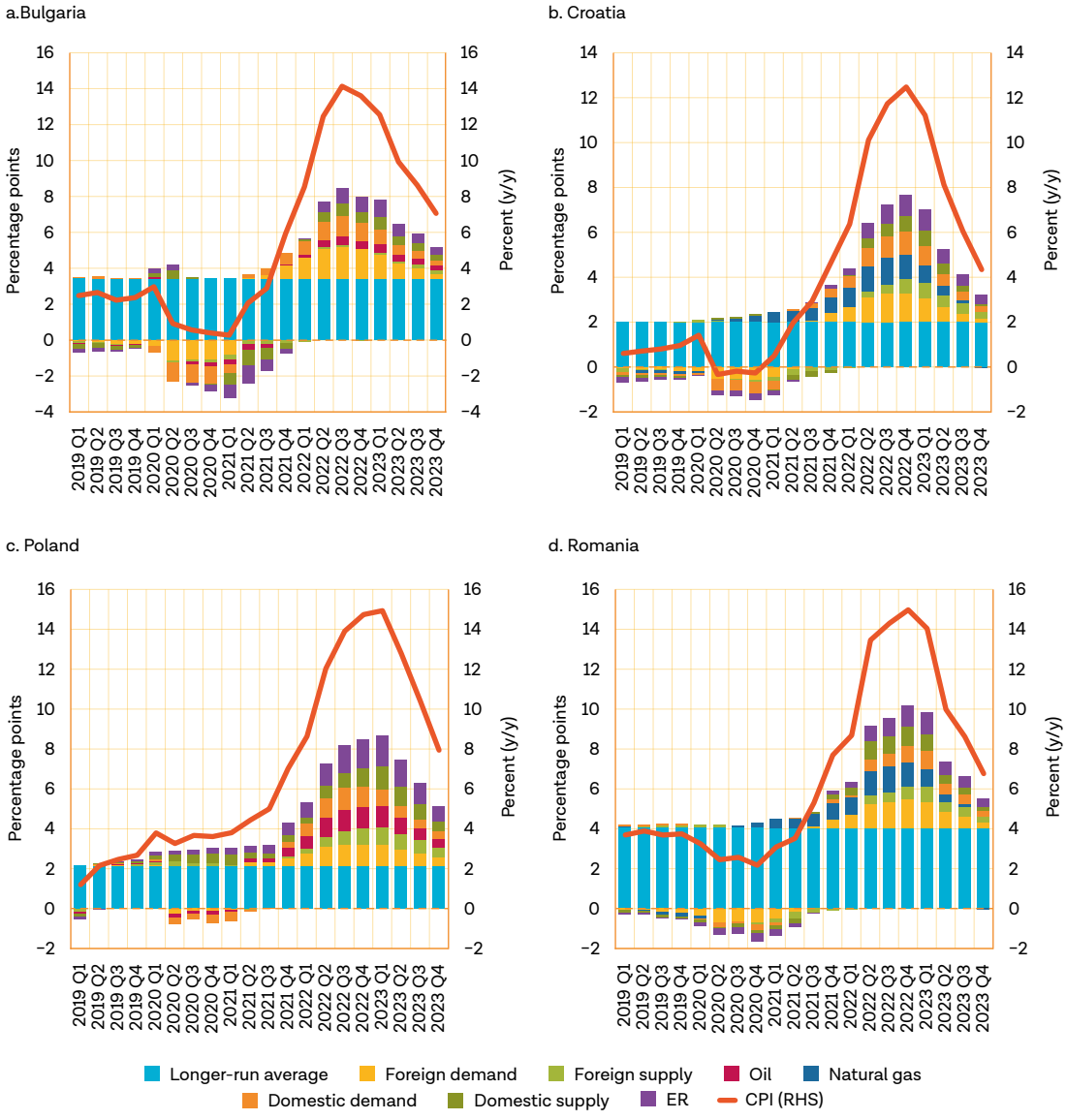

*Source:* Bloomberg, Eurostat, Haver Analytics, J.P. Morgan, World Bank.

*Note:* The figure shows the historical decomposition from a sign-restricted Bayesian vector autoregressive model. Bars reflect the percentage point contribution, as a deviation from a longer-run average, of each identified underlying driver of inflation. The model includes the following variables: euro area output, European natural gas prices, euro area consumer inflation, policy rates, and the nominal effective exchange rate. The model is estimated from 2000Q1 to 2023Q4 with four lags. Inflation forecasts computed using J.P. Morgan projections. The contributions are identified through shocks vis-à-vis a Bayesian structural autoregression; because of the modeling approach (rather than an arithmetic decomposition of actual data), the contributions will not sum to inflation. The "demand" side is identified by shocks that increase (decrease) prices and output. For example, a positive demand shock would increase growth, inflation, interest rates, and oil price growth — this could be caused by expansionary fiscal policy or a boost to domestic demand (similar to a positive output gap). The "supply" side is identified by shocks that decrease (increase) prices but increase (decrease) output. For example, a positive supply shock could result from a boost in productivity or lower input costs (except for oil price decreases which are measured exogenously in the model already) — in other words, factors that drive potential growth up would generate a positive supply side shock. The "exchange rate" shock is identified when the exchange rate depreciates (appreciates) and inflation increases (decreases).

4. The approach uses a sign-restricted Bayesian vector autoregression model with stochastic volatility, refer to Annex A for details.

5. For most EU member states, the EU accounts for most of the destination of exports, only three EU member states have intra-EU export shares lower than 50 percent (Eurostat; https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Intra-EU_trade_in_goods_-_main_features).

**FIGURE 1.6 Inflation decomposition by country, 2022, model-based estimates of deviation from target/average**




*Source:* Bloomberg, Eurostat, Haver Analytics, J.P. Morgan, World Bank.

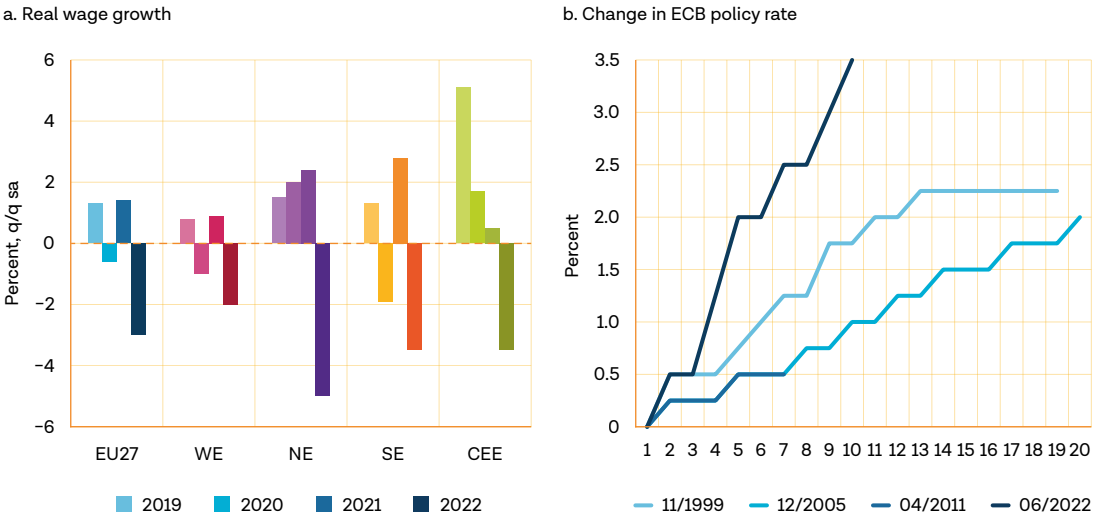
*Note:* The figure shows the historical decomposition from a sign-restricted Bayesian vector autoregressive model. Bars reflect the percentage point contribution, as a deviation from a longer-run average, of each identified underlying driver of inflation. The model includes the following variables: euro area output, oil prices (natural gas prices in panels b and d), euro area consumer inflation, and country-level output, inflation, policy rates and the nominal effective exchange rate. The domestic block is assumed to not affect the foreign block using block exogeneity zero restrictions. The model is estimated from 2000Q1 to 2023Q4 with four lags.

**Nominal wage growth has strengthened alongside tight labor markets, but high inflation has eroded real wages.** Labor markets have strengthened in the EU since the pandemic-induced slump in 2020, with recent unemployment hovering near record-low rates, and increasing tightness in the labor markets across the EU lifting nominal wages (please see Chapter 2 for more details). Nevertheless, nominal wage growth has not kept pace with inflation, leading to an erosion in real wages in the EU (Figure 1.7, panel a). In Bulgaria, Croatia, Poland, and Romania, nominal gains in wages in 2022 were largely driven by the private sector, but recent public sector wage negotiations could imply catch up over the coming months.

Nevertheless, in the EU, average real wages shrank by 3 percent in 2022.[6] In the euro area, the real value of compensation per employee in the fourth quarter of 2022 remained 5 percentage points lower than the level in the fourth quarter of 2019 (and 2021) (ECB 2023).

**In response to high and persistent inflation, central banks in the EU have increased policy rates at a rapid pace.** Above target inflation in most EU countries has prompted multiple policy rate hikes, with the ECB lifting its policy rates aggressively and more rapidly relative to previous tightening cycles (Figure 1.7, panel b). By late March 2023, the ECB increased its policy rate by a record-breaking 350 basis points since July 2022 and signaled further rate hikes to bring down inflation. The National Bank of Poland and the National Bank of Romania both started their tightening cycles earlier than the ECB, as inflationary pressures mounted quickly following robust recoveries in domestic demand. As a result, by late March 2023, Poland lifted its key policy rate by 665 basis points to 6.75 percent and Romania by 575 basis points to 7 percent since late 2021. Despite these efforts, core inflation continues to rise in some cases amid strong momentum in the goods and services categories and second-round effects from earlier energy price increases. As a result, market participants in late March 2023 expected the ECB to raise policy rates to higher levels compared to late 2022, with the key policy rate expected to reach 3.75 percent — up from about 3 percent in December 2022.[7]

**FIGURE 1.7 Real wages and ECB policy rate**




*Source:* AMECO, Haver Analytics.

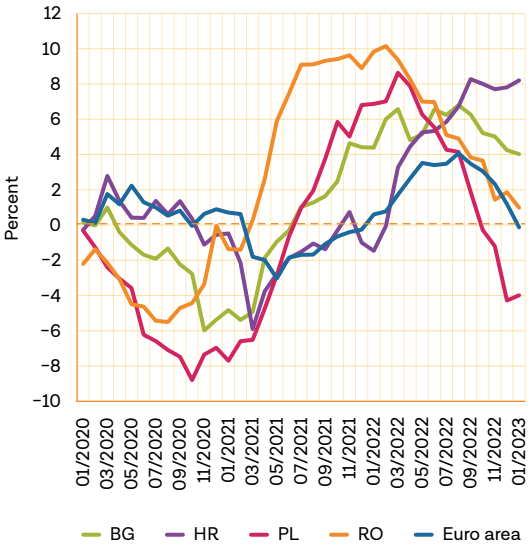
*Note:* Weighted average across countries. (Weights: private consumption t-1 current prices in EUR), real compensation per employee, deflator private consumption.

**Higher policy rates resulted in increased financing costs for both households and corporates.** Bank lending to the private sector decelerated amid higher borrowing costs (Figure 1.8), weighing on consumer spending and corporate investment. Credit standards to enterprises and households have tightened, reflecting higher risk perception and increased funding costs. Although non-performing loans continued to decrease, asset quality concerns are on the rise due to lower growth, higher prices, and tighter financing conditions. As a result, the share of loans allocated to IFRS9 stage 2 has remained elevated and higher than pre-pandemic levels at close to 10 percent of total loans in the EU. If high inflation persists to a point that interest rates remain higher for longer, it will dampen activity in both households and enterprises.

6. Calculated based on Ameco data (code name: RWCDC)

7. As implied by the overnight index swap (OIS) curve.

**FIGURE 1.8** Bank Credit Impulses




*Source:* ECB.

*Note:* Credit Impulse is measured as the annual change of the annual growth rate of bank loans to the private sector.

**The troubles in three US banks and a European bank resulted in heightened concerns surrounding the financial sector.** The repricing of securities held by Silicon Valley Bank — triggered in part by higher monetary policy rates combined with increased liquidity needs — resulted in a run on the bank. Despite the reassurance provided by the US Federal Reserve and the Treasury on the security of deposits, confidence fell sharply, leading to turmoil in the financial system and impacting two other US banks. As global confidence deteriorated, Credit Suisse faced pressures on the back of longer-term idiosyncratic concerns. This resulted in the collapse of Credit Suisse bank and its takeover, brokered by the regulators, by UBS. Markets have been rattled by these bank failures, with stock market indexes declining and credit default swap spreads increasing. Going forward, it will be critical to strengthen the monitoring of liquidity positions and funding, and supervision of banks to reinforce confidence in the banking sector (Box 1.1).

**BOX 1.1** The evolution of banking sector frameworks since the Global Financial Crisis

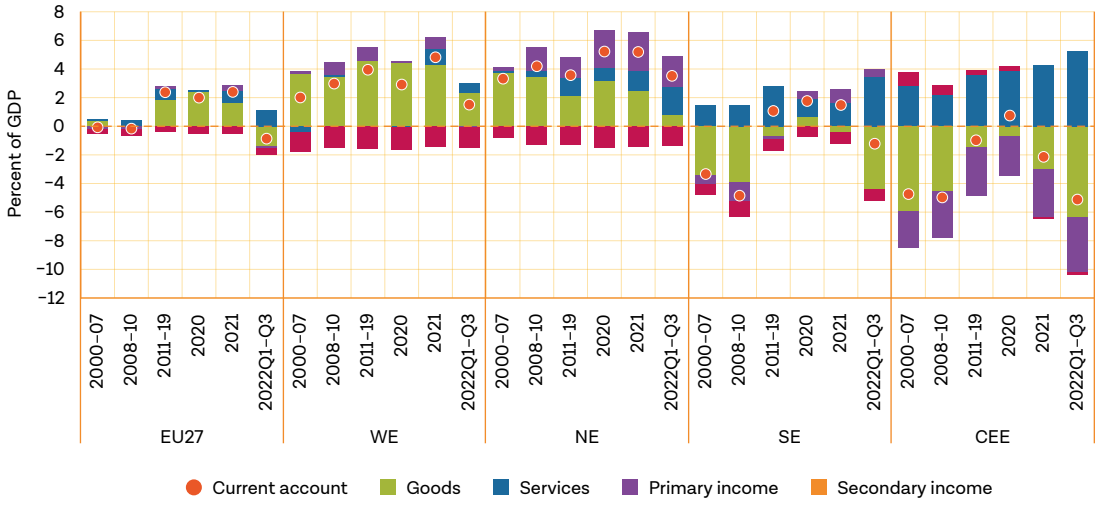
**The EU's banking sector has become much more resilient in recent years, owing to the strong crisis management framework that was put in place in response to the global financial crisis (GFC).** Today's financial framework has evolved since before the GFC. Among the most significant financial reforms are the Single Regulatory Framework, the implementation of Basel III in Europe, the establishment of the European System of Financial Supervision, and ultimately banking union with the Single Supervisory Mechanism, and the Single Resolution Board (but not a European deposit insurance scheme as of yet). This has led to an enlargement of the ECB's tasks and responsibilities, beyond monetary policy, to encompass both micro- and macroprudential supervision. As a result of these substantial changes, the European banking sector is much better capitalized today, less exposed to liquidity risks and more transparent for market participants and supervisors. In Europe, strict capital and liquidity requirements have been applied to all banks, irrespective of their size. The changes to the regulatory and supervisory framework made banks in Europe more robust, as demonstrated by their resilience through overlapping crises since 2020.

**The banking sector remains resilient due to strong capital and liquidity positions.** EU banks have so far weathered the storm caused by the pandemic, the war in Ukraine, and sharp interest rate hikes. Banks' capital and liquidity positions remained solid and well above minimum requirements, with the aggregated Common Equity Tier 1 ratio standing at 15.3 percent, and the liquidity coverage ratio and net stable funding ratio at 161 percent and 126 percent at the end of 2022, respectively. However, the failure of Credit Suisse and three US banks underlines how quickly investor confidence and creditor trust can erode, prompting regulators to intervene and governments to provide support. The availability of tools aimed at addressing financial stability risks help central banks separate monetary policy objectives from financial stability goals. The ECB's liquidity facilities, including its Open Markets Operations, provide a strong liquidity backstop.

**Despite a strong recovery in tourism, current account positions worsened across the EU in 2022.** This worsening was driven by deteriorating goods balances because of higher import prices of commodities, raw materials, energy, and energy-related products (Figure 1.9). In addition, the deceleration in global growth and trade weighed on the EU's exports, despite the easing of supply chain pressures. Higher services exports, especially tourism, helped to partly offset the decline in goods balances. Higher tourist

arrivals along with increased services trade related to manufacturing, transport, and information and communication technologies (ICT) boosted the surplus on the services account, especially in CEE, NE, and SE regions. Primary incomes have remained relatively stable, except in CEE amid large spillovers from Russia's invasion of Ukraine. Meanwhile, some countries such as Romania have seen an increase in external imbalances (Box 1.2).

**FIGURE 1.9 Current account positions**




*Sources:* Eurostat, World Bank calculations.

*Note:* Weighted by euro chain-linked volumes GDP.

## BOX 1.2 Romania's external imbalances

**Romania's external imbalances have increased in the recent past.**[a] Since 2018, the country has seen an increase in the twin deficits — fiscal and current account — coupled with expansionary fiscal policy. The two large external shocks, first the pandemic and then the war, have exacerbated these imbalances.

**Historically, Romania has run large twin deficits.** There has been a close relationship between the cyclically adjusted fiscal deficit and the current account deficit. Over the last two decades, the fiscal deficit has averaged 3.7 percent of GDP, significantly higher than the EU average of 2.8 percent. High fiscal deficits along with structural weaknesses on the external side have worsened the current account performance, with the current account deficit averaging 5.7 percent over the same period. In the backdrop of the recent external shocks, the fiscal deficit widened to 9.2 percent of GDP in 2020, the largest among Eastern European countries, as the pandemic-related measures swelled budgetary expenditures and the economic contraction reduced revenues. There has been some consolidation in 2021–22. The impact of the war on commodity and energy markets led to a significant deterioration of the current account balance to 9.4 percent in 2022 but it remained lower than its 2007 level of 13.6 percent. This time around, higher FDI and capital transfers from the EU supported the external balance.

**The external imbalance in the recent past has been driven by structural weaknesses that impede exports, fiscal expansion, real exchange rate appreciation and increased share of income accruing to households.** The real effective exchange rate (REER) in Romania has appreciated, adversely impacting exports. Increases in wages have outpaced productivity growth, raising unit labor costs and making it difficult for Romanian exporters to compete effectively in the global market. Meanwhile, imports have increased, fueled by higher consumption as a result of a rising household share of national income and expansionary fiscal policy. As a result, Romania has run large goods trade deficits. Nevertheless, the external imbalance is lower than before the Global Financial Crisis and the vulnerabilities are mitigated, in part, by higher FDI and transfers from the EU.

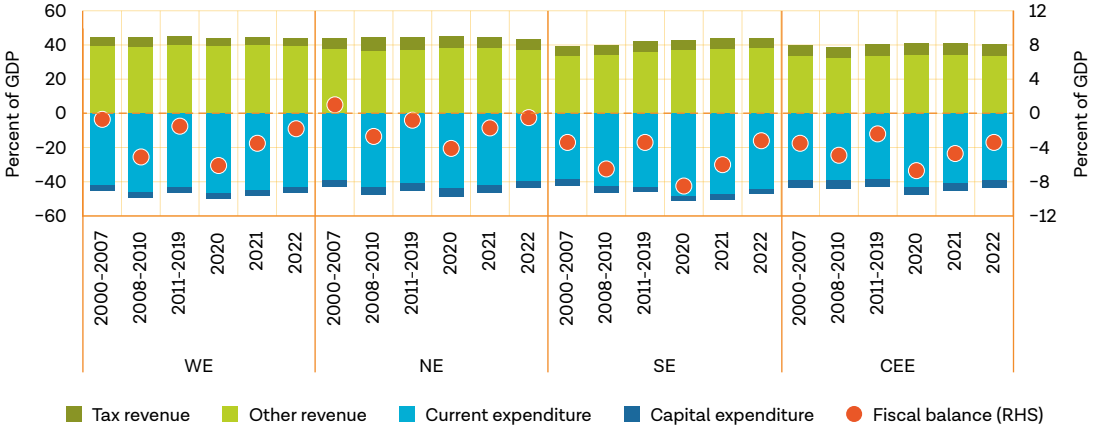
**A combination of fiscal consolidation and structural reforms is needed to address Romania's external imbalances.** Policy measures aimed at improving the fiscal stance include broadening the tax base, strengthening tax administration, advancing critical reforms on pensions and public wages and the reduction of inefficient expenditures. Strengthening public investment management would help unlock the sizeable available EU funds and improve critical lagging areas in Romania, such as the health and education system, SOEs reforms, and infrastructure. This, in turn, would support productivity increases and improve Romania's competitiveness with a positive impact on the external position.

a. Internal balance refers to output being close to potential with nonaccelerating inflation while external balance refers to a sustainable current account position.

# Fiscal space remains constrained

**Fiscal consolidation remains stalled and could be delayed further.** The economic and social impact of Russia's invasion of Ukraine added to fiscal pressures on the expenditure side, mainly through policies to cushion the impact of higher energy prices and to support to Forcibly Displaced Persons (FDPs) from Ukraine. On average, the largest increase in nominal government spending in 2022 was in Central and Eastern Europe, which was also disproportionately impacted by war in Ukraine given its geographical proximity. Government support to address the cost-of-living crisis was untargeted, primarily through price controls and subsidies. Fiscal revenues, nevertheless, increased amid higher inflation and the windfall tax on energy companies, supporting efforts to strengthen fiscal positions. Energy prices in Europe have stabilized following a milder-than-expected winter, demand reductions, and adequate levels of gas storage — which should alleviate some spending pressures.

**FIGURE 1.10 Government revenues picked up, but expenditures remained elevated**




*Source:* Eurostat, World Bank calculations.

*Note:* Unweighted average across countries.

**Policy measures to cushion the effects of rising prices contributed to elevated fiscal expenditures.** The primary focus has been on measures that are easier to roll out and have a more immediate impact, such as subsidies and price controls for fuels, food, and fertilizers, with some countries introducing supplementary social assistance measures (Gentilini et al., 2022). Allocated and earmarked funding to address the energy crisis, expressed as a percentage of GDP, varied significantly among EU countries, with the highest average allocation registered for Southern and Western European countries at around 4 percent of GDP

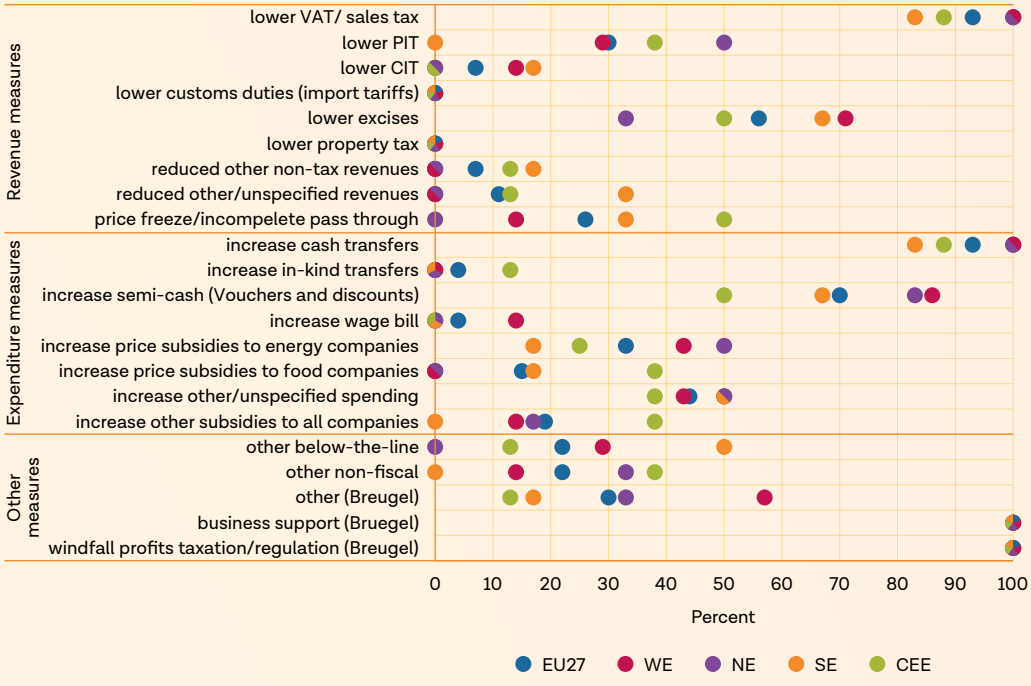
(Box 1.3).[8] EU governments favored untargeted measures, mainly measures impeding price passthrough, while targeted policies accounted for around 30 percent of total disbursed funds (Sgaravatti et al., 2023). Households in the bottom quantiles were disproportionately affected by the increase in food and energy prices and could benefit from enhancing the measures directed towards them, including targeted transfers, social support programs, energy efficiency grants, and subsidies.

### BOX 1.3 The fiscal policy response to the cost-of-living crisis

**In response to the pandemic and Russia's invasion of Ukraine, EU governments moved swiftly to deploy large fiscal support packages** to mitigate the effects of rising energy and food prices on both households and firms, allocating an estimated cumulative sum of 646 billion euros (4 percent of 2022 EU GDP) to shield consumers and producers from September 2021 to date (Sgaravatti et al., 2021). As a result, European economies have so far proven resilient and the "more-benign-than-expected" outcomes of the energy crisis reflect the significant measures that EU governments have undertaken (IMF, 2023).

**The fiscal packages deployed to shield households and firms encompassed a wide spectrum of support**, including foregone revenues (such as reductions in VAT, fuel excise, increases in tax deductions, or increases in commute expense deductions from PIT/CIT), expenditure measures (such as subsidies, grants, or compensation for energy costs), below-the line financing measures (such as loans, guarantees, liquidity support, or capital injections), and other non-fiscal measures (such as energy savings incentive programs or moratoria on bank loans). Some measures such as VAT/Sales tax reductions and cash transfers have been widely used across all regions in Europe (see Figure B1.3.1). Governments initially implemented price support measures, such as VAT reductions, but then gradually shifted to income support measures, such as direct cash transfers, reflecting

**FIGURE B1.3.1 Proportion of countries in each region adopting specific fiscal measures**



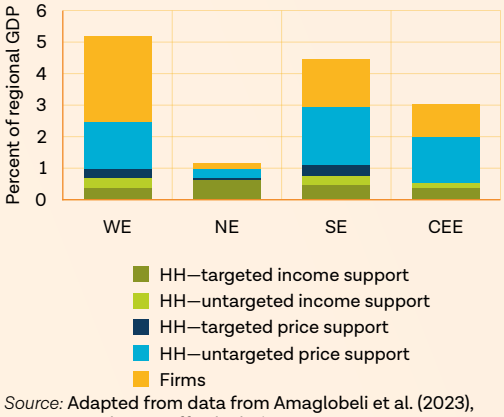

*Sources:* Adapted from data in Amaglobeli et al. (2023), Sgaravatti et al. (2021), and WB country desks.

8. World Bank calculations based on Bruegel data on allocated and earmarked funding for the energy crisis between September 2022 and January 2023

the relative ease and speed with which price support measures can be implemented relative to sophisticated income support programs that require a higher administrative capacity to implement (OECD, 2022).

**Fiscal costs related to the energy crisis are large.** Fiscal costs related to the energy crisis are expected to remain elevated at 2 to 3 percent of GDP, on average, for Europe in 2022 – 23 (IMF, 2023). The large size of the packages reflects the broad-based and untargeted nature of the selected measures (Arregui et al., 2022). Other than in Northern Europe, untargeted fiscal support has thus far been the predominant type of support in the EU, particularly in Southern Europe and Central & Eastern Europe (see Figure B1.3.2)

**FIGURE B1.3.2 Cumulative Size and Typology of Fiscal Support Measures Against Cost-of-Living Crisis by Region, 2021M9 – 2023M3**




*Source:* Adapted from data from Amaglobeli et al. (2023), Eurostat, and WB staff calculations.

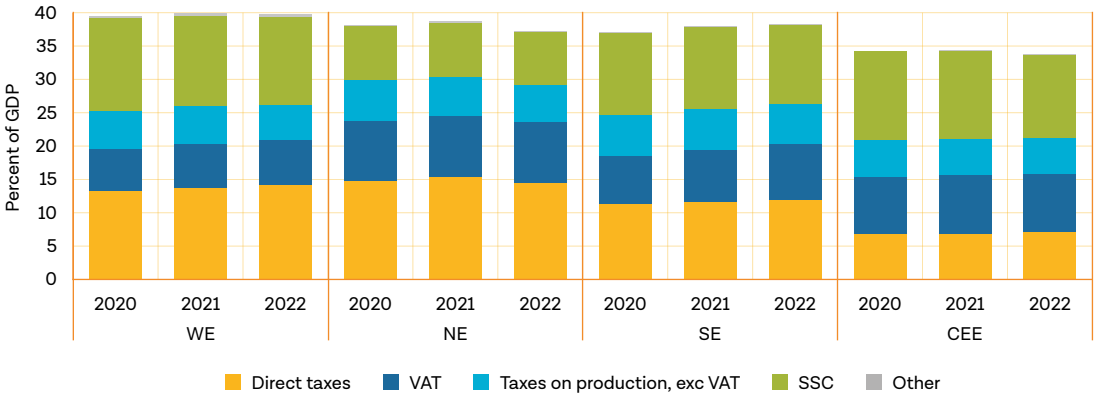
*Note:* In percent of 2021 GDP for relative size illustration.

**There is ample scope and capacity to redesign support measures to more efficiently protect vulnerable groups.** Most of the measures that have been deployed thus far were untargeted price support measures, such as price freezes and subsidies, which are suboptimal because they distort price signals for consumers and producers. Moreover, they are costly for governments since they provide blanket support to everyone, including those who do not need it, and crowd out funds that could go to other productive ends. Untargeted price support measures reduce the space for other macroeconomic policy priorities as they deplete fiscal buffers that may be needed against future shocks, could be inconsistent with other macroeconomic goals such price stability, and hamper progress towards climate-related objectives as they distort price signals (Amaglobeli et al., 2023; IMF, 2023). Targeted support in the form of cash transfers to the poor and vulnerable households is non-distortionary, cost effective for governments, and therefore more efficient than blanket support (Amaglobeli et al., 2023). In addition, ensuring that these measures are time bound is essential for rebuilding fiscal buffers so as to have the space to respond to future shocks (Amaglobeli et al., 2023). Moreover, and in the context of high global inflation, tailoring support such that it does not overstimulate aggregate demand is important to ensure consistency with central banks' overall goal of achieving price stability. Stronger fiscal positions can complement monetary policy by reining in excess aggregate demand and aligning inflation to target and reduce the need for otherwise larger policy rate hikes, reducing the risk of financial instability (IMF, 2023).

**Fiscal revenues benefited from relatively robust economic growth, and measures are being taken on the revenue side to offset the rise in expenditure.** Tax revenues to GDP were supported by the ongoing revival of direct and indirect tax revenues. On average, the best performance was registered by Southern European countries, in line with higher economic growth and strong contribution from domestic demand. The VAT to GDP ratio improved for all regional groupings except for a marginal decrease in Central and Southeast Europe in 2022, as fiscal revenues benefited from relatively resilient private consumption and higher inflation, which pushed prices and thus VAT collections higher. The European Council agreed on emergency measures to address high energy prices in September 2022, including a revenue cap on inframarginal technologies[9] and a solidarity levy for the fossil fuel sector. These measures should offset some of the fiscal impact of rising energy prices on the expenditure side.

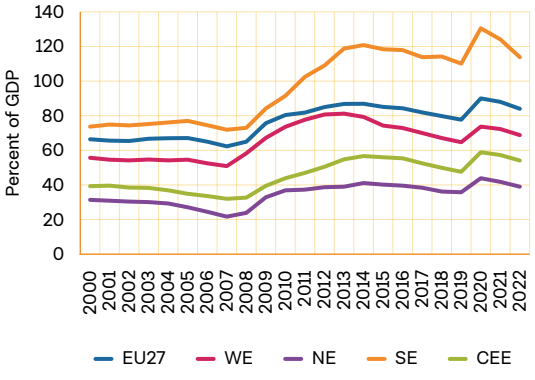
9. Refers to electricity producers generating energy that have lower marginal costs, such as from sources dervied from renewables, nuclear and lignite.

**FIGURE 1.11** Tax revenues remained robust




*Source:* Eurostat, World Bank calculations.
*Note:* Unweighted average across countries.

**FIGURE 1.12** Public debt-to-GDP ratio decreased across the board




*Note:* Unweighted average across countries
*Source:* Eurostat, World Bank calculations.

**The public debt-to-GDP ratio decreased, but debt levels remain elevated and vulnerabilities have risen.** Resilient economic activity supported higher revenues in the EU in 2022, and high nominal GDP helped curb the debt-to-GDP ratio. However, debt levels vary considerably across the EU and remain elevated relative to pre-pandemic levels. Some member states face substantially higher spreads on sovereign borrowing, increasing interest costs. With high debt levels and tighter financial conditions, fiscal space has narrowed considerably and debt servicing costs have risen. In addition, in some of the EU countries, the already high exposure of the banking sector to sovereign debt has further increased, heightening risks related to the sovereign-bank nexus.

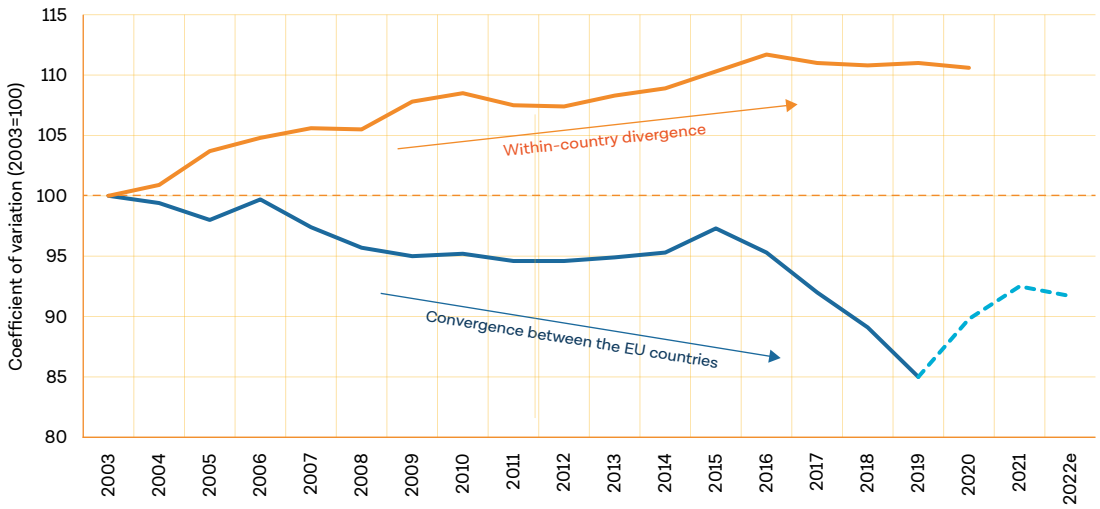
# The EU convergence momentum faces headwinds from the asymmetric impacts of the war and high inflation

**Early signs of a resumption in income convergence in the EU are at risk of fading due to the uneven impact of the war and high inflation.** Income convergence is estimated to have resumed in the EU in 2022 but faces headwinds from Russia's invasion of Ukraine and persistently high inflation. The pace of catch-up — that is, the difference in GDP per capita growth between the EU average and the 16 EU countries with income per capita levels below the EU average — has slowed following the pandemic, from 1.6 percent per year (simple average) over 2015 – 19 to 1.1 percent over 2021 – 22, implying slower catch up and convergence with the average EU income. Moreover, in five of these 16 EU member states, per capita income growth was weaker than the EU average over 2021 – 22, suggesting that these countries lost ground on catch-up progress. These countries were largely in NE and CEE, where exposures to the impact

of Russia's invasion of Ukraine are high. High inflation is also posing a drag on the speed of convergence within some economies given that increases in energy and food prices disproportionally affect poorer households. Chapter 2 provides more in-depth analysis for selected countries.

**FIGURE 1.13 Inflation threatens to stifle early signals of resuming EU income convergence**

Coefficient of variation (2003=100), EU 27 countries




*Source:* World Bank calculations using Eurostat, Ameco data

*Note:* Computations based on Real GDP per capita in PPS for the EU27 countries.

Chapter 2

# Inclusion: more targeted support could help limit the disproportionate impact of multiple crises on the vulnerable

# Employment recovery remains uneven, coupled with real income contraction

**The recovery in employment continues to be strong but uneven, including across sectors, with digital sectors reaping the benefits from the pandemic-induced change.** Nearly all major industries experienced employment gains since the onset of the pandemic, with some industries performing well above their pre-pandemic levels. For example, information, communication, and real estate activities had positive employment growth from the third quarter of 2019 to the third quarter of 2022,[10] 20 and 14.7 percent, respectively. In the digital sector, the shift to remote work as a response to the pandemic has increased the labor demand for workers. In contrast, employment in other sectors continues to suffer from the lingering impacts of the crises. Despite resilient growth in 2021 and 2022, some industries continued to suffer the effects of the pandemic, particularly the agricultural sector, which employed around 12.5 percent fewer individuals since the pandemic, followed by administrative service activities (7.5 percent) and accommodation and food activities (4 percent). Agricultural employment was already decreasing prior to the pandemic, partly due to the steady growth in the service sector, which created more job opportunities outside of rural areas. Manufacturing employment growth was also notably subdued due to critical upstream providers' insufficient supply of goods and services (European Commission 2022). As countries experienced uneven impacts of the pandemic on the employment across their regions, the recovery is also likely to be uneven regionally. [11]

**The type of jobs available has also evolved differently during COVID-19, leaving fewer part-time and informal (temporary) employment opportunities.** Full-time employment — the most stable jobs — in the EU is above pre-pandemic levels for both men and women, while part-time employment is below (Figure 2.1, panel d). At the pandemic's start, part-time relative to full-time employment increased more for men than for women, mainly due to different policies aimed at decreasing mass layoffs at the beginning of the COVID-19 shock. For that reason, firms decided to hire or retain workers in part-time schemes rather than in full-time jobs. During the recovery, the trend reversed, with full-time employment increasing more than part-time employment, particularly for women. The average working hours of full-time workers, which dropped in the first year of the pandemic across all EU countries in part thanks to employment preservation measures, have normalized, though not fully to the pre-pandemic levels and not evenly across all countries. Temporary employment — an indication of informal jobs[12] — suffered the most significant job losses in the EU during the pandemic, accounting for about 86 percent of the employment losses in the EU, and has not fully recovered. Temporary contracts tend to suffer higher job destruction rates during crises, while permanent contracts can adjust via working hours. Between the third quarter of 2020 and the third quarter of 2022, temporary employment did not recover enough to compensate for the losses, except in Western Europe, and contributed only 22 percent to the employment growth in this period. This is consistent with the findings in the annual report of the European Commission (2022).

**These changes contribute to some populations continuously being left behind: the youth, low-educated, and blue-collar workers.** The pandemic exacerbated the labor market challenges of the youth (those aged 15 – 24), who have experienced much higher employment losses than older adults (in the 55 – 64 age bracket)

10. Please note that release of micro-economic indicators lags the macro-economic indicators discussed in Chapter 1, resulting in the slight differences in data coverage.

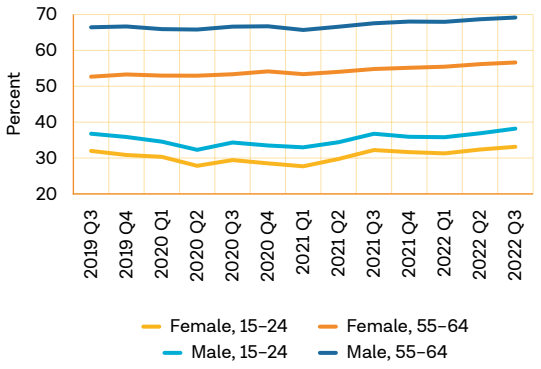
11. A more granular analysis within the selected EU countries shows that the COVID-19 crisis hit certain NUTS-2 regions disproportionately. For example, between 2019 and 2020, the employment rate in Bulgaria-Yugoiztochen region fell by 2.3 percentage points, while the national employment rate dropped only by 1.6 percentage points. In Croatia-Panonska hrvatska and Poland-Warszawski stoleczny regions, employment fell by 0.8 percentage points, higher than the respective national changes. In Romania, the national employment rate dropped by 0.5 percentage points, with the Centru region (dropping 0.6 percentage points) being the most affected one. There is no more recent data to evaluate how employment in these hard-hit regions has recovered recently.

12. Temporary, casual, seasonal, or daily-hire workers are more prone to being informal in comparison to those who have permanent employment.

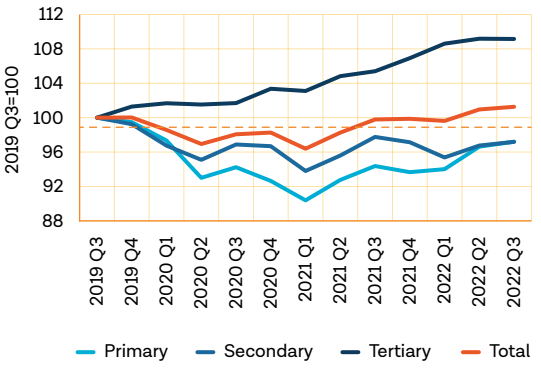
(Figure 2.1, panel a). Youth employment growth has in the past been overwhelmingly concentrated in part-time jobs, which generally come with many disadvantages vis-à-vis full-time jobs, such as lower overall hourly compensation and other benefits, while employment of older individuals (more concentrated in full-time jobs) was relatively resilient through the pandemic and experienced recent surges. As such, the lower availability of part-time jobs left the youth with even fewer opportunities. Low-educated workers faced the most significant employment contraction during the crises (10 percent during the pandemic, compared to 4 percent for an average worker), and although they recovered faster, the growth was barely enough to reach pre-pandemic levels eventually in Q3 2022 (Figure 2.1, panel b). Furthermore, the employment recovery pace for low-educated workers varies significantly across subregions, with those in Central Eastern Europe lagging far behind. In contrast, high-educated workers experienced employment gains after the pandemic, and their employment growth during the recovery was significantly higher. Employment levels of blue-collar workers, regardless of their skill level, have not returned to pre-pandemic levels; while white-collar workers have recovered fully, with solid employment growth in the recovery period (Figure 2.1, panel c).

**FIGURE 2.1 Employment continues to register strong growth with more full-time jobs, but with unequal opportunities across sectors and population groups**

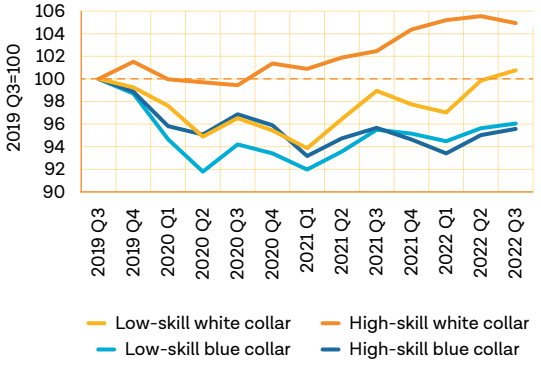
a. Employment rate by age and sex, EU 27



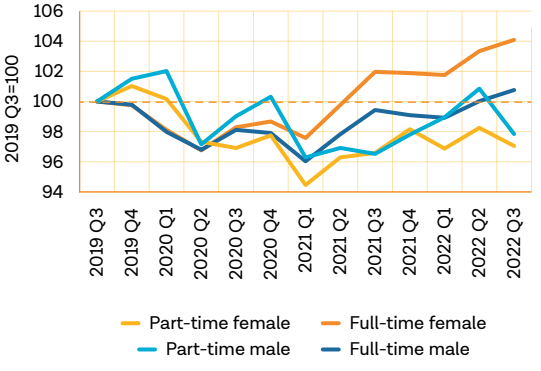

b. Employment growth index by education level, EU27




c. Employment growth index, by occupation, EU27, 2019Q3 – 2022Q3




d. Type of employment by gender index, EU 27, 2019Q3 – 2022Q3




*Source:* Eurostat (lfsq_ergaed) 2019Q3 – 2022Q3; Eurostat (lfsq_egais) 2019Q3 – 2022Q3; Eurostat (lfsq_epgais) 2019Q3 – 2022Q3.

*Note:* a) Employment rate for individuals between 15 and 24 years (young) and 55 to 64 years (older). b) Employment for individuals between 15 and 64 years. Primary refers to less than primary, primary, and lower secondary education; secondary refers to upper secondary and post-secondary non-tertiary education; and tertiary to tertiary education. c) Total employment for individuals between 20 and 64 years. Low-skill blue collars (ISCO codes 8 and 9) include plant and machine operators and assemblers and elementary occupations; High-skill blue collars (ISCO codes 6 and 7) include skilled agricultural and fishery workers and craft and related trades workers; Low-skill white collars (ISCO codes 4 and 5) include clerks and service workers and shop and market sales workers; High-skill white collars (ISCO codes 1,2 and 3) include legislators, senior officials and managers, professionals and technicians and associate professionals. It excludes employment in the armed forces and non-responses; d) Part-time and full-time employment for individuals between 15 and 64 years.

**The uneven employment recovery across different workers is strongly linked to sectoral trends, with those in more physically demanding jobs lagging behind.** Low-skilled blue-collar workers (those in more physically demanding jobs) in human health and social work, and manufacturing industries have not recovered to pre-pandemic levels, contributing to a large share of the employment losses between the third quarter of 2019 and the third quarter of 2022, while low-skilled white-collar workers in public administration and human health have fully recovered and are above pre-pandemic levels. The employment losses in highly skilled blue-collar jobs are associated mainly with sectors such as agriculture, forestry, fishing, and manufacturing. Contrarily, the sizeable positive employment growth in highly skilled white-collar jobs is mainly due to industries such as information and communication and professional, scientific, and technical activities.

**While gender gaps remain large, especially in SE and CEE, female labor force participation and employment rates grew strongly, surpassing pre-pandemic levels.** The gender-specific burdens of the pandemic led to asymmetric shocks in the labor market on women. However, the recovery has been stronger for women in the latest periods than for men in all the country groups. For example, in the SE region, female labor force participation has increased by 4.2 percentage points during the recovery period, exceeding the 3.3 percentage point increase among male counterparts. In the CEE region, the increases have been 3.5 and 1.1 percentage points, respectively, for women and men. However, even if they are growing at a higher rate, the gender gap in participation is still large for certain subregions. For example, in SE and CEE, the female labor force participation is 13.5 and 12.4 percentage points lower than men's, respectively. Full-time employment is also increasing significantly more than part-time employment, particularly among women.

**The labor market has tightened in the EU and across most European subregions, as indicated by the recent increase in job vacancies and the relatively stable unemployed population.** During the pandemic, job vacancies decreased between 18 (NE) and 34 (SE) percent of their pre-pandemic levels. However, job vacancies have recovered quickly to pre-pandemic levels for most European subregions (except for CEE), surging up to 70 percent in NE by the first quarter of 2022 (Figure 2.2, panel a). Increasing labor market tightness (as measured by an index of vacancies over the number of unemployed) in the EU, driven in large part by WE and NE regions, indicates that the recent growth in vacancies has been faster than the growth in unemployed. This hints at some tightening of the labor market and that it is becoming more challenging for employers to fill job vacancies (Figure 2.2, panel b).[13] This can put upward pressure on the wages that firms offer as workers' outside options improve, which has been particularly pronounced in WE and NE, given the significant increases in labor market tightness. More recently, in Q3 of 2022, job vacancies edged down in most regions, likely due to tightening economic conditions with increasing interest rates and prices, but nevertheless, vacancy rates and labor market tightness remain above pre-pandemic levels.

**Despite tighter labor markets, which are expected to lead to higher salaries, real wages declined significantly due to rising inflation.** While nominal hourly labor costs[14] have been increasing in most countries in the EU, real labor costs have been declining because of the rapid acceleration in inflation, especially since the second half of 2021. Bulgaria is the only country with slightly positive real wage growth between Q3 of 2021 and Q3 of 2022.[15] For the rest of the EU, real wages declined significantly, with the most

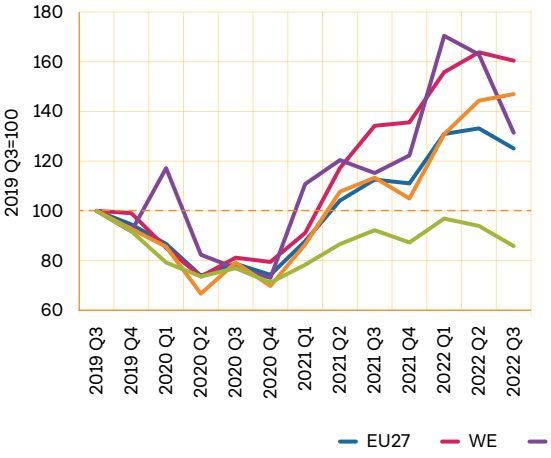
13. Including in the CEE where despite lower vacancy growth the structural challenges related to skill and worker shortages continue.

14. Includes wages and salaries only.

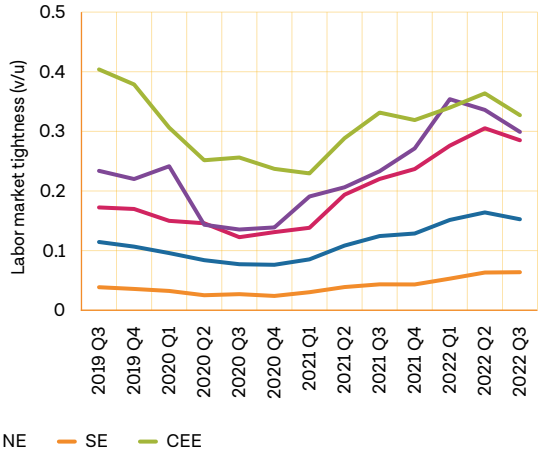
15. Numbers for Bulgaria may differ across the chapter given methodological choice. It should be noted that using the national Consumer Price Index (CPI), real wage growth in y/y terms also turns negative in Bulgaria (-2.7 percent from Q3 2021 to Q3 2022). This difference arises because of the different methodologies, particularly in composition of consumer baskets, that the HICP and CPI use.

**FIGURE 2.2 The labor markets are increasingly tight across the EU, though recent data signaling cooling in response to monetary tightening**

a. Job vacancies growth index (2019Q3=100), by subregions




b. Labor market tightness, 2019Q3 – 2022Q3, by subregions





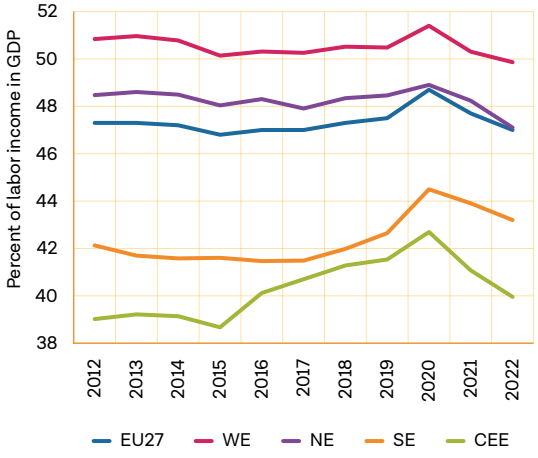
*Source:* Eurostat (jvs_q_nace2), 2019Q3 – 2022Q3; Eurostat (jvs_q_nace2 and lfsq_ugaed), 2019Q3 – 2022Q3.

*Note:* a) Total job vacancies include services, industries, and construction sectors. There is no available information for Italy, Germany, and Estonia. This excludes the primary sector and international organizations and activities of households as employers. Vacancies are not seasonally adjusted. b) Labor market tightness is constructed as job vacancies for services, industries, and construction sectors over unemployed people between 15 and 64 years. This excludes the primary sector and international organizations and activities of households as employers. The vacancies are not seasonally adjusted. There is no available information for Italy, Germany, and Estonia.

striking drop observed in NE, followed by WE. Moreover, the gap between real and nominal labor costs has been widening in recent quarters amid the surge in inflation. In general, it is customary for inflation to outpace wage growth, leading to an initial decrease in real income. This trend can be attributed to the stickiness of wages and the timing of wage negotiations, which typically occur toward the end of the year. Although periodic wage adjustments may occur in response to high prices throughout the year, larger increases tend to occur at the beginning of the year. While most EU countries have increased (or announced to increase) their statutory minimum wages to soften the impacts of inflation on low-wage workers, these increases do not fully offset high inflation. As of August 2022, most EU countries showcased a lower real minimum wage relative to last year (European Commission 2022). The prospects of layoffs and sluggish economic growth may diminish workers' expectations, weakening their bargaining power and dampening wage demands.

**The continuous decline in labor share of national income during the crisis and recovery periods raises distributional concerns, pointing to the rising risks of inequality.** The COVID-19 crisis has had significant impacts on the distribution of income, particularly on labor income. The labor share of national income, which refers to the amount of GDP paid out in wages, salaries, and benefits, has been on a downward trend across all EU subregions since 2020 (Figure 2.3). This starkly contrasts with the preceding years when the labor share steadily

**FIGURE 2.3 Labor share of income in GDP**




*Note:* The percent of the EU aggregate in PPS prices is used for the GDP weights by subregions of EU. Source: Eurostat (PC_EU27_2020_MEUR_CP), 2012 – 2022.

rose. Consistent with evidence for other non-EU regions (ILO, 2019), the higher-income regions in the EU tend to have higher labor income shares, with Northern Europe and Western Europe presenting the highest levels. Conversely, the Central and Eastern European region has the lowest levels and experienced a significant decline in labor income shares, losing two percentage points between 2019 and 2022. The decline in labor income shares could contribute to median wage stagnation and rising inequality. Even with improved macroeconomic performance, a long-term decline in the labor share may not lead to a commensurate improvement in household income (Atkinson 2009), and in many countries, low labor shares are associated with higher levels of inequality (Piketty 2013).

**Going forward, the transition to green jobs in Europe presents both opportunities and challenges for the economy and the workforce.** "Green jobs" (for instance, those related to renewable energy or electric vehicles) that are emerging across Europe and the globe as economies seek to reduce their greenhouse gas (GHG) emissions show higher skills requirements than the jobs in the "brown" industries (for instance, mining or fossil fuel powered electricity plants). Therefore, the transition to greener jobs as countries advance their green transition agenda embedded in the European Grean Deal requires significant upskilling and reskilling of the workforce, particularly in the transport, construction, and manufacturing sectors. A package of measures, including the enactment of active labor market policies, and the development of effective training and education policies, are needed to support a smooth transition from brown to green jobs (World Bank, 2023b). Despite these challenges, the green transition also presents enormous potential for job creation, powered by environmental policy, market demands, and investment (see Box 2.1).

### BOX 2.1 The Transition from Brown to Green Jobs

**Investments in renewable energy, electromobility, grid infrastructure, and energy efficiency are expected to increase the demand for green jobs.** These jobs also have a significant wage premium relative to brown jobs (mainly due to the higher use of STEM and soft skills). Thus, the green transition is likely to have positive effects overall, yet there are challenges across subgroups. For instance, in Poland, women on average tend to be occupied more in brown jobs according to a task classification (World Bank, 2022), in part due to the selection into specific occupations and industries. For many of them, the green transition stemming from the European Green Deal and the corresponding national agenda, may not be quick and easy, as most will require significant retraining and fundamentally new skills. The new green industries may also be in different regions, requiring workers and their families to move. For instance, in Romania, greener jobs are rising, but the levels are still low (about 9 percent of all job postings in the labor market (World Bank, 2023a)). Therefore, improving numeracy or problem-solving skills for workers in brown jobs while the demand for green jobs increases over time is necessary to support a smooth green transition.

**For those already working, well-designed retraining and reskilling programs can help ensure the ability to benefit from the green transition; for those yet to come to the labor markets, the education systems need to be adapted to meet the future demands of green jobs.** Schools and vocational centers need to adapt to teach more prominently foundational skills. They also need to improve the career guidance and counseling services for students to avoid career choices with poor job prospects. Apart from education policies, active labor market policies and social protection programs are also needed to respond to the labor market disruptions of the green transition (World Bank, 2023b). In addition to potential earning losses for workers who may lose jobs in the transition over the medium term, some households are expected to be adversely affected by the more short-term rise in energy prices. Thus, temporary targeted income support or cash transfer programs can be used to assist them, but broader, well thought-out policy programs will be needed to support the transition to a sustainable and carbon-neutral economy, mitigating the unintended consequences of the transition.

## In the absence of targeted government support, inflation may lead to sizeable poverty increases

**Rising food and energy prices in 2021 – 22 left the poorest with less disposable income for essential needs and exposed their vulnerability to further shocks.** For vulnerable households, their level of resilience against ongoing exogenous shocks will depend on governments' support measures and expected consumer prices in the coming months (or years). This section assesses the potential welfare impact of rising inflation — aggravated by the global supply chain disruptions stemming from Russia's invasion of Ukraine — on household income and living conditions in four EU countries, namely Bulgaria, Croatia, Poland, and Romania.

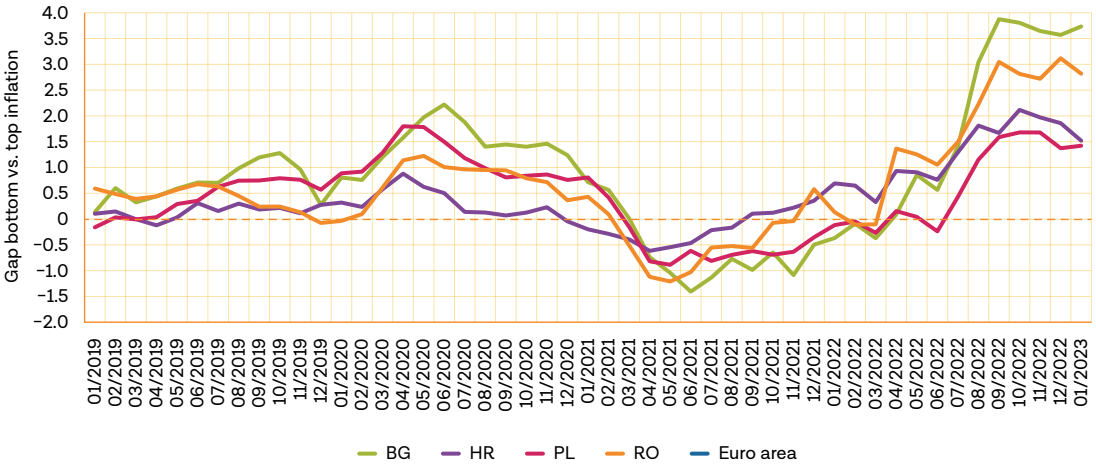
**While headline inflation has been showing signs of easing across many EU countries, headline and especially food inflation has remained high in some of the poorer EU economies.** In December 2022, consumer prices increased by 10.4 percent in the EU compared to December 2021, according to the 12-month percentage change in the Eurostat harmonized consumer price index (HICP).[16] The overall HICP is mostly driven by food and energy inflation that has been accelerating in the same period, reaching an increase of 17.8 percent and 37.2 percent, respectively. Across the four EU countries selected for this analysis, the overall HICPs were higher than the EU average, ranging from 12.7 percent in Croatia to 15.3 percent in Bulgaria. While energy inflation in these countries, especially Bulgaria and Croatia, has been lower than the EU average due to the government's energy price caps, the trend is the opposite for food inflation despite some government efforts to reduce food prices.[17] Food price inflation has been higher in Bulgaria, Romania, Poland, and Croatia than the EU average, leading to food prices that are 26 percent (Croatia) to 36 percent (Bulgaria) higher than two years ago, and with no sign of reversal.

**Although all households are affected by rising prices, the inflation gap between wealthier and poorer households has recently widened.** Due to different incomes and consumption patterns, inflation impacts are asymmetric across the income distribution. At the same time, inflationary pressures have also become much higher among poorer households, increasing the uneven losses from price increases. Poorer households spend larger shares of their income on food items, making it harder to cope with rising inflation, especially for food. Households at the lowest end of the income distribution in the four selected EU countries spend more than half their total budget on food and energy — a much larger share than their peers in higher income brackets. For example, in Bulgaria, the share of household expenditures devoted to food is twice as high in the bottom (poorest) consumption decile than in the highest (richer) decile. The bottom decile spends nearly half of its budget on food, while the upper decile spends just over 20 percent. This means any change in food inflation can potentially lead to larger welfare losses among the poor or greater vulnerability to rising food prices, as with much of income spent on necessities, they have less space to maneuver amidst the price increases. Subsequently, in December 2022, the difference in inflation between the bottom and top quintiles increased to 3.6 percentage points in Bulgaria, 3.1 percentage points in Romania, 1.9 percentage points in Croatia, and 1.4 percentage points in Poland (Figure 2.4). This implies that the recent inflationary pressures have disproportionately affected the poorest. The uneven burden of inflation across households is consistent with recent evidence (Izvorski et al. 2023).

16. The official inflation rate for goods and services.

17. For example, in Croatia, the government also introduced VAT reduction for certain food items.

**FIGURE 2.4 Difference in the inflation of bottom and top income quintiles by countries, 2020M1 – 2022M12**




*Source:* Bruegel (https://www.bruegel.org/dataset/inflation-inequality-european-union-and-its-drivers), 2020M1 – 2022M12.

**Higher energy prices are also likely to be particularly challenging for households, especially in countries where a large share of the population could not keep their homes warm even prior to the energy crisis.** About 23.5 percent of Bulgarian households cannot keep their homes adequately warm, and with this share 42.6 percent among income-poor households (those with incomes below 60 percent of the median equivalized income). Additionally, high energy costs and/or low household income often force people affected by energy poverty to fall behind on the payments of their utility bills. Already in 2020, approximately 19.2 and 7.3 percent of Bulgarian and Romanian households could not pay utility bills (heating, electricity, gas, water, etc.) on time due to financial difficulties. This share was even higher in Croatia, reaching 15.2 percent. The forthcoming second part of the RER will delve deeper into these issues.

**High inflation is expected to lead to increases in (income) poverty in 2022 in most countries in the EU.**[18] Inflation can affect households' monetary welfare through multiple channels. First, it directly reduces the purchasing power of households, which can lead to a decline in the regular consumption of goods and services — these are the direct effects of rising food and energy prices on households' income. Second, the surge in energy and food prices can increase prices of other economic goods that use energy and food as inputs, raising the overall inflation rates. With rising costs of materials, firms might also react by hiring fewer workers or stopping pay raises to cope. Finally, savings and investments can be affected, as higher interest rates can decrease the real value of assets over time.

**Inflation could lead to sizeable increases in poverty rates,[19] with the indirect impacts of inflation accounting for most of the welfare losses.** Microsimulation[20] results show that the direct welfare effects of food and energy inflation are welfare-reducing in all four countries. Higher observed prices are expected to lead to a short-term increase in poverty rates ranging from 0.2 to 1 percentage point in Poland and Bulgaria, respectively (Figure 2.5, panel a).[21] Although the increase is substantial, it is relatively tempered as the observed CPI of food and energy already reflects governments' price caps to shield consumers

18. World Bank estimates.

19. 6.85 USD per day in 2017 PPP.

20. See Annex B for Methodological Details

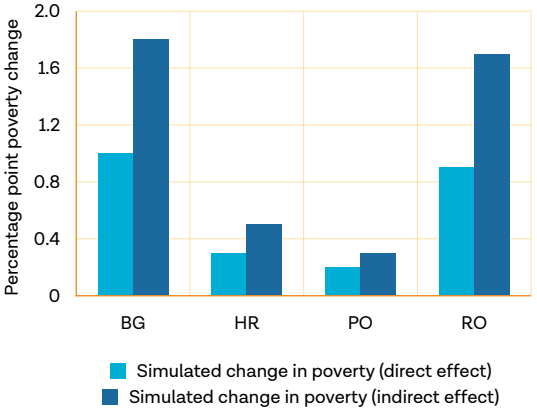
21. These estimates reflect welfare simulations of the observed price changes, which already take into account the price caps the governments are implementing. They do not take into consideration the additional income support measures given directly to households.

from higher energy prices. However, the indirect impact of energy price increases are estimated to be much more substantial than the direct effects as they ripple through core inflation (for example, when higher fuel costs lead to higher transportation costs, inducing a second-round effect), highlighting the additional negative impacts of inflation. The higher overall CPI inflation stemming from rising food and energy prices (general equilibrium impacts) is expected to increase poverty rates by 0.3, 0.5, 1.7, and 1.8 percentage points in Poland, Croatia, Bulgaria, and Romania, respectively (Figure 2.5, panel a). Both direct and indirect estimates represent an upper bound, as they do not account for potential additional income support measures (for example, social transfers, one-time payment to pensioners, etc.), which are often temporal and with limited generosity in most EU countries but could potentially mitigate some of these welfare losses, if well designed. Perhaps as a result, people expect more support from the government: in World Bank surveys conducted in Romania and Croatia after governments announced support measures, more than 60 percent of respondents reported insufficient support.

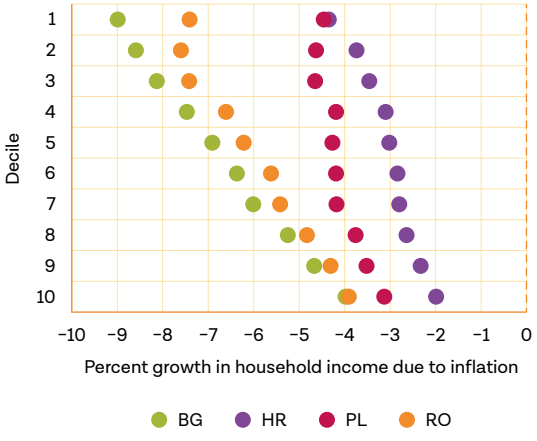
**Simulations further illustrate the asymmetric welfare impacts across the income distribution, with the poorest households experiencing the highest relative welfare losses.** While household income is expected to decrease among all income deciles from high inflation due to the loss in purchasing power, the losses are significantly larger among lower-income households (represented by lower deciles in Figure 2.5, panel b). The largest decrease is observed in Bulgarian households at the bottom of the income distribution — with the direct impacts of inflation alone potentially resulting in real income losses of nearly 10 percent, followed by Romanian households. As discussed above, these results are mostly due to their consumption patterns: poorer households spend higher budget shares on food and energy, and they have less capacity to substitute for other goods.

**FIGURE 2.5 In absence of social protection measures, high inflation could lead to sizeable increases in poverty, especially through indirect effects**

a. Simulated changes in poverty due to food and energy inflation, Direct and Indirect Impacts, USD 6.85 poverty line (2017 PPP)




b. Simulated changes in household disposable income, by income deciles (direct Effects)




*Source:* World Bank micro simulations based on Eurostat Harmonized Indices of Consumer Prices (HICP) and the latest consumption data available from the HBS and income data from the EU-SILC.

*Note:* Simulated changes in poverty represent the difference between baseline poverty rates, constructed from household income per capita in EU-SILC 2020 and 2019 for Poland, and simulated poverty, resulting from microsimulations. For the simulation of direct impacts, we use inflation changes from October 2022 relative to October 2019 and assume that the price elasticity of demand is the same for food and energy, but the price elasticity differs across the income distribution. For the simulation of indirect effect, we use the detailed price changes as a result of the energy shock in a CGE model.

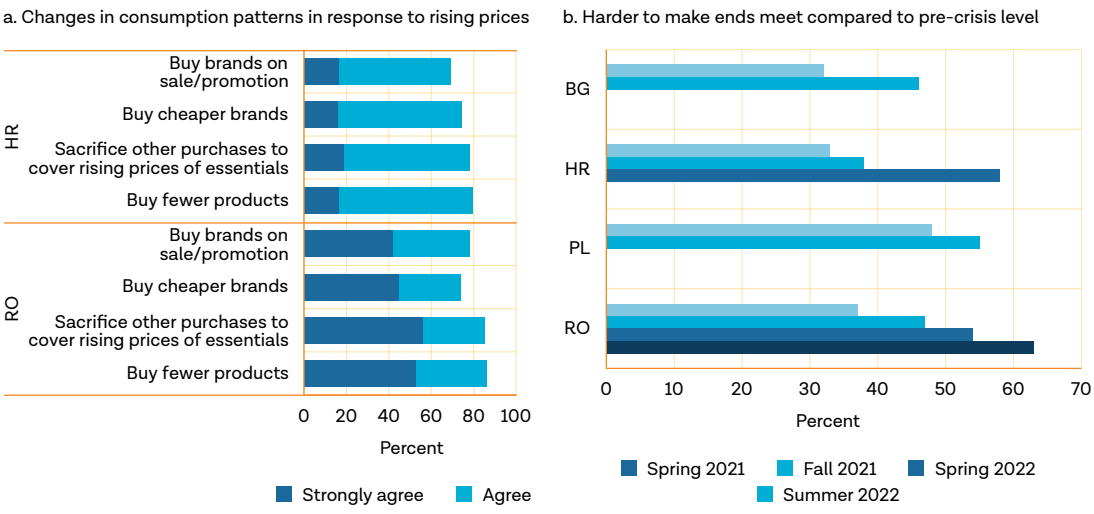
**Single-elderly households are particularly susceptible to rising energy and food prices; and rural households are also affected more in some countries compared to those in urban areas.** Single-elderly households experienced higher than average annual income losses (3.6 percent in Croatia, 4.5 percent

in Romania, 7.4 percent in Romania, and 8.7 percent in Bulgaria). Moreover, the pre-crisis poverty level among single-elderly households was between 17 and 34 percentage points higher than national poverty rates, despite their access to pension income. Their retirement income sources tend to be fixed, giving less space to adjust to price increases. In Romania and Bulgaria, these households also have a relatively high energy share in overall expenditures. In Bulgaria, losses among rural households are also higher, consistent with the energy consumption patterns. Moreover, job opportunities for individuals in rural areas or older adults without the required skills for the labor market are scarcer. Thus, policymakers need to consider tailored policies to alleviate the burden of inflation among these groups.

**Some coping mechanisms are available and used by households — including buying fewer and cheaper goods.** At least 70 percent of European consumers reported trying to reduce their bills by changing their purchasing behavior (Figure 2.6, panel a). As of June 2022, 86 percent of Romanian households bought fewer goods overall, and 85 percent of households would sacrifice other purchases to cover the rising costs of essential goods. For Croatian households, these figures are 79 percent and 78 percent, respectively. European consumers have also changed how they shop: about 75 percent of Romanian and Croatian consumers use money-saving tactics such as buying cheaper brands or products on sale.

**However, as the rising cost of living outpaces economic and labor recovery, more households — especially the poorest — face difficulties making ends meet compared to their pre-crisis level (that is, pre-pandemic level).** In all four countries, summer 2022 was marked by an increasing proportion of households reporting that it was harder to meet ends than their pre-crisis level (Figure 2.6, panel b). In Romania, nearly twice as many households reported between spring 2021 (37 percent) and summer 2022 (63 percent). A comparable increasing trend can be found in Croatia (from 33 percent to 58 percent), Bulgaria (from 33 percent to 46 percent), and Poland (from 48 percent in Spring 2021 to 55 percent in Fall 2021). The poorest households struggled even more: in spring 2022, seven in ten Croatian and Romanian households declared greater financial difficulties at the bottom 40 percent of the income distribution. This figure was the same for Romanian households in the summer of 2022. In parallel with rising living costs, the proportion of households reporting arrears in paying utility bills and phone bills rose in recent months — with about twice the rate for the bottom 40 percent as the general population — revealing the heterogeneity in households' struggles across the income distribution.

**FIGURE 2.6 Despite some coping mechanisms, households are finding it harder to make the ends meet**




*Source:* World Bank Croatia rapid surveys in April 2022, Romania rapid survey in June 2022.
*Note:* Pre-crisis level refers to the period prior to the pandemic.

**Social safety nets are vital in protecting households from various risks; yet, in most of these four countries, these programs are not sufficient to support the poorest and most vulnerable.** In Romania, spending on social benefits in 2020 was 1.16% of GDP, lower than the EU average of 1.36%. Spending in means-tested social assistance programs is less than half of the EU27 average. Moreover, the means-tested programs in Romania have limited coverage and do not offer generous benefits, and social benefits have not been adjusted for inflation since the introduction of the Social Reference Indicator in 2008. Consequently, social transfers have the lowest impact on poverty reduction in the EU. In Bulgaria, the fiscal system is characterized by limited progressivity. Direct transfer programs are progressive to varying degrees but are small. Between 21 and 77 percent of benefits accrue to the poorest quintile depending on the programs, though there is scope for reducing leakage to the wealthiest households. The current social safety net in Croatia is designed to mostly support categorical groups such as persons with disabilities and families with children. Meanwhile, poverty-targeted social assistance programs (for example, Guaranteed Minimum Benefits and child allowance) are small, suggesting that the safety net is not as progressive as it should be. Poland's social protection spending has a disproportionate focus on supporting families, with a significantly higher percentage of GDP and social protection expenditure being allocated to family benefits than the EU average (3.8 and 16.2 percent vs. 2.5 and 8.3 percent, respectively). However, there is a lack of adequate spending on social exclusion and housing, which is lower than the EU average. Despite well-targeted minimum-income programs for low-income households, these programs reached only half of those living in legal poverty in 2019. Additionally, there are gaps in social assistance coverage for the working poor who are not covered by targeted transfers.[22]

22. Source: Romania, Croatia, Bulgaria, and Poland World Bank CEO Assessments, and Romania Systemtic Country Diagnostic Update.

Chapter 3

# The EU outlook remains weak, and downside risks continue to dominate

# The economic outlook for the EU is subdued

**Global growth is expected to further weaken in 2023.** According to the January 2023 edition of *Global Economic Prospects*, global growth is projected to slow sharply in 2023, to 1.7 percent — the third weakest pace of expansion in nearly three decades after the global recession caused by the COVID-19 pandemic and the global financial crisis (World Bank 2023). The slowdown reflects synchronous monetary policy tightening to contain high inflation, fiscal adjustment, worsening financial conditions, and continued disruptions from the Russian Federation's invasion of Ukraine. Two of the world's largest economies — the United States and the euro area — are expected to face continued weakness in economic activity, with the resulting spillovers exacerbating headwinds faced by other countries (Box 3.1).

### BOX 3.1 Global outlook

Global activity appears to have stabilized at low levels in early 2023, with a sharp pickup in services offsetting a downturn in manufacturing activity. After six months of contraction, the global composite Purchasing Managers' Index (PMI) returned to expansion in February 2023, lifted by firming sentiment in the services sector. The improvement in the global services PMI has been partly underpinned by economic reopening in China. In contrast, the slowdown in global trade growth has dampened manufacturing activity, with an ongoing contraction in the global manufacturing PMI pointing to sustained weakness in the first half of 2023.

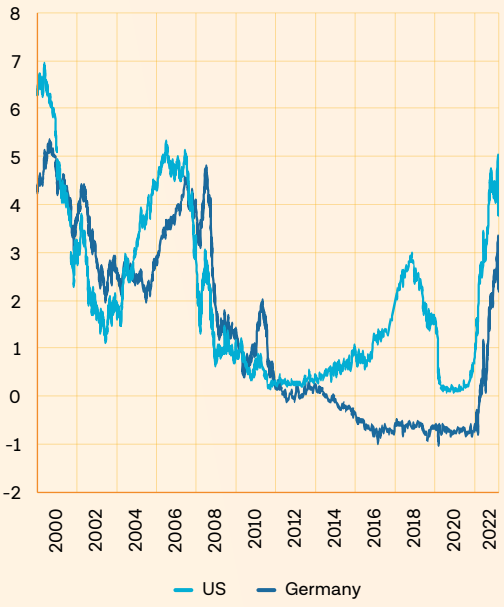
Global trade growth is likely to remain tepid amid softening demand for goods trade. Although China's economic reopening is likely to boost headline global growth, the positive spillovers to other economies and global trade could be modest given that the rebound has been less manufacturing- and trade-intensive relative to previous recoveries. More broadly, global demand for manufactured goods is likely to remain muted amid the ongoing and accumulating effects of tighter monetary policy. Nevertheless, weak goods demand and continued normalization of shipping conditions have helped ease global supply chain pressures, with suppliers' delivery times falling to pre-pandemic levels in February 2023. Global services trade continues to benefit from the ongoing recovery in tourism, with international tourist arrivals expected to reach near pre-pandemic levels in 2023 (UNWTO 2023).

Global financial conditions have tightened further following the collapse of three banks in the United States and a European bank. In response to ongoing inflation pressures, financial markets initially priced a "higher-for-longer" path for advanced economy policy rates, leading US and German 2-year yields to rise to their highest levels since 2007 and 2008, respectively (Figure B3.1.1, panel A). Shortly thereafter, liquidity concerns regarding Silicon Valley Bank in the United States escalated into a bank run. Material spillovers to confidence in the broader sector prompted the Federal Reserve to institute a new liquidity facility. Alongside, market-based expectations for interest rates edged down, with the US 2-year yield falling as low as 4 percent. In the aftermath of US banking stress emerging, credit default swap premia across other countries picked up notably. The crisis of confidence also led to the demise of Credit Suisse, the second largest bank in Switzerland.

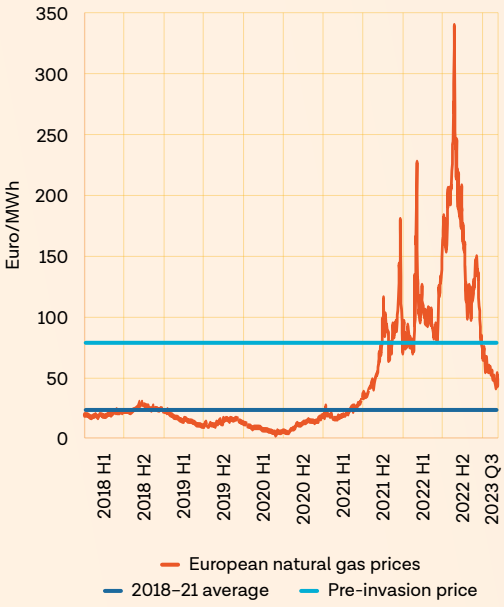
Global commodity prices have continued to fall in 2023, led by easing energy prices. The price for Brent crude oil averaged about $85/bbl in early 2023, but then slipped to $72/bbl in mid-March amid concerns about slower global growth after financial market turbulence. OPEC+ members, however, surprised markets in early April by announcing voluntary oil production cuts of more than 1 million barrels per day due to concerns about weak demand, with the price of Brent crude oil rising to $86/bbl in response. The price for European natural gas has continued to fall from its August 2022 peak of EUR 340/Mwh, averaging EUR 45/Mwh so far in 2023 — well below the price prior to Russia's invasion of Ukraine but above longer-term averages (Figure B3.1.1, panel b). The fall in Europe's natural gas price has reflected elevated inventories and a mild winter, along with demand reduction. Metal prices have remained broadly stable in the first half of 2023, supported by firming activity after economic reopening in China, which accounts for a large share of global metals demand. Agriculture prices have also been somewhat stable in 2023, including for grains, which have benefited from good harvest production so far this year.

**FIGURE B3.1.1 Bond Yields and Gas Prices**

a. US and German 2-year bond yields




b. European natural gas prices




*Source:* Haver Analytics, Inc.

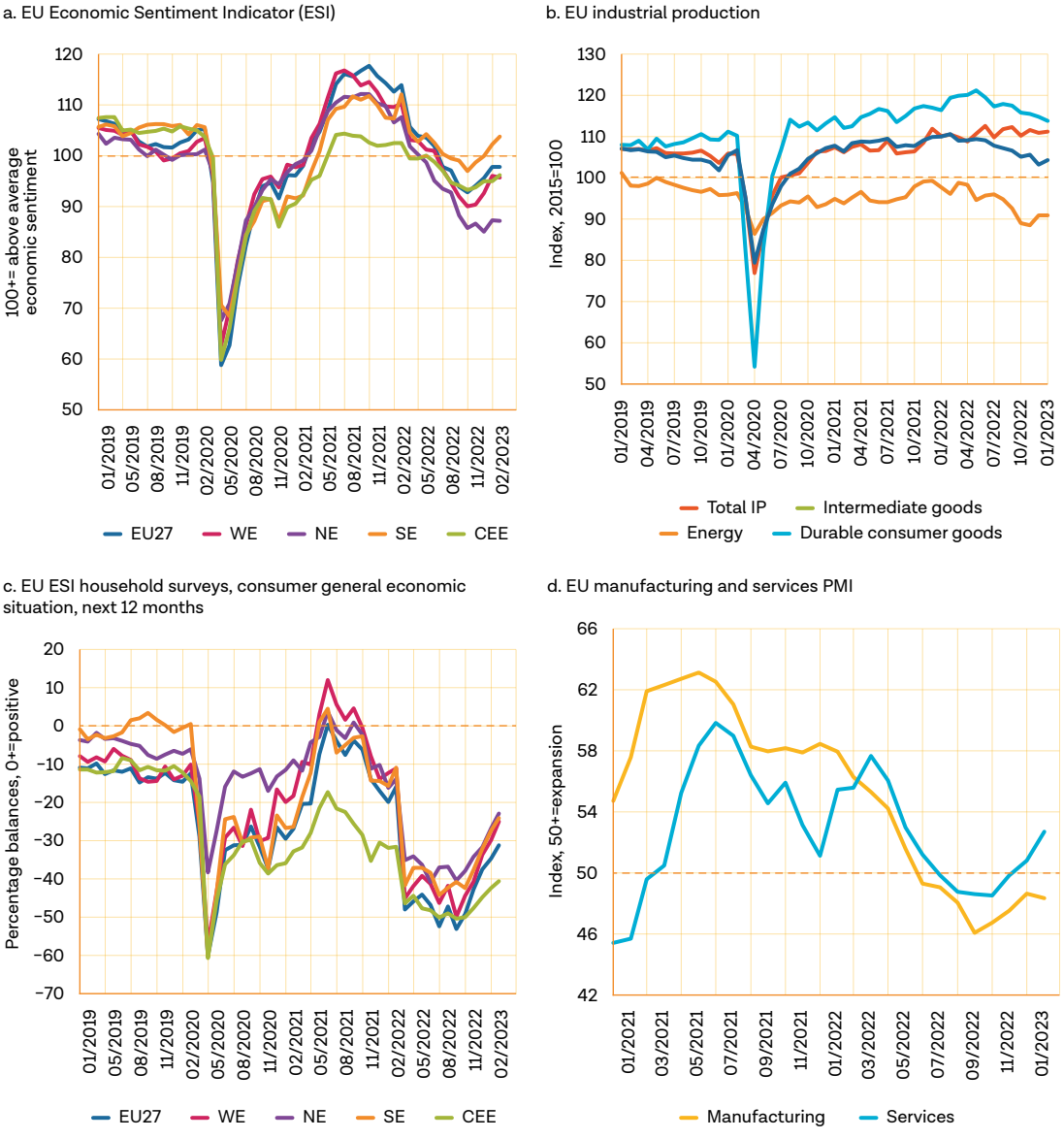
The near-term global economic outlook remains weak. Various economic indicators suggest activity, particularly in large economies, was more resilient in late 2022 than earlier expected, implying that the drag from a weak fourth quarter in 2022 will weigh less on activity going forward. Nevertheless, the recent turmoil in financial markets and continued monetary policy tightening could potentially weaken the global outlook further.

**In the EU, forward-looking indicators suggest that the EU economy is stabilizing at low levels of activity, but sectoral divergences are emerging.** After a significant dip in 2022, consumer expectations over the next 12 months are recovering, underpinned by firming expectations on the future household financial situation and the general economic performance (Figure 3.1, panel c). On the firm side, survey data point to an ongoing recovery in sentiment, particularly in the services sector, with the EU services PMI expanding since February 2023 (Figure 3.1, panel d). In contrast, the EU manufacturing PMI remained in contraction, with the decline in new export orders mirroring weakness in global demand and goods trade. Ongoing labor shortages have constrained sentiment in construction, with builders reporting insufficient demand and significant financial barriers as other constraints.

**Growth is set to slow further in 2023, as the drag from tighter monetary policy to combat inflation accumulates, external demand remains subdued, and uncertainty remains high, especially after the banking turmoil.** Growth in 2023 is projected to weaken to about 1 percent in both the EU (European Commission 2023) and in the euro area (ECB 2023), as economies are confronted by strong headwinds from persistent inflation, weaker household disposable income,[23] tighter financing conditions, and a muted external environment. Survey-based projections remain subdued, with Consensus forecasts for 2023 growth at 0.6 in both the EU and the euro area, but range between an output contraction of 0.4 percent in

23. An environment of high interest rates and high inflation has already induced large losses in households' real disposable income.

**FIGURE 3.1 Confidence has continued to recover since late 2022 but remains below its long-term average; forward-looking indicators have firmed, pointing to improving activity in the near term**



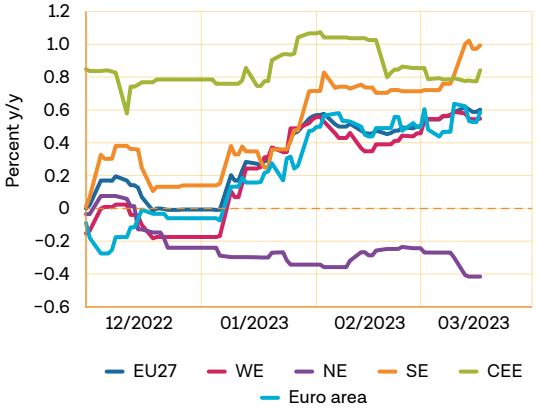

*Source:* European Commission, Eurostat, and Haver Analytics.

Northern Europe to about 1 percent growth in Southern Europe (Figure 3.2).[24] Despite ongoing fiscal support in many cases, the adverse impact of high inflation on real disposable income is expected to dampen private consumption. Moreover, the effects of monetary policy tightening are building in 2023 (given the lag in monetary policy transmission), with the credit impulse (change in the flow of bank credit to the private sector) turning negative in the euro area.

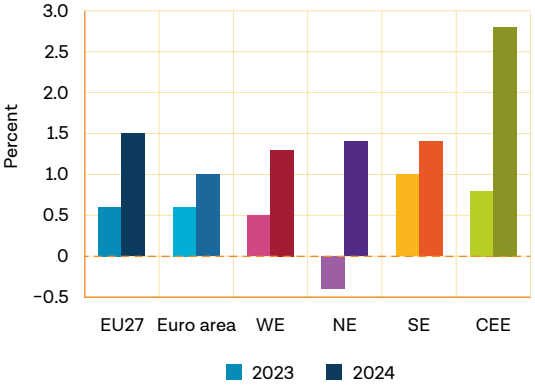
24. Still, this is an improvement from earlier projections, which had envisioned output to remain flat in the euro area in 2023 (World Bank 2023). The improvement largely reflects resilience in late 2022, which will provide additional, albeit still limited, momentum to 2023 growth. The resilience in activity was supported by a decline in imports amid warmer weather, diversification of supply sources, and lower natural gas prices. Since the upside surprise in 2022Q4 was driven by import compression, rather than stronger underlying growth, the boost from carryover in late 2022 to growth in 2023 is likely more muted.

**FIGURE 3.2 Regional Consensus Forecasts**

a. Consensus Economics: Forecast evolution for growth in 2023




b. Consensus Economics: Forecasts for growth in EU subregions




*Source:* Consensus Forecasts, As of March 20th, 2023.

*Note:* Regional growth rates are implied and are the weighted average of constituent countries' forecasted growth rates. 2022 GDP weights used. SE excludes Cyprus and Malta, for which no Consensus Forecast available. WE excludes Luxembourg, for which no Consensus Forecast available.

**Tighter financing conditions and elevated uncertainty will weigh on investment.** Investment growth, particularly for private investment, in 2023 is expected to be dampened by the ongoing tightening in financial conditions and elevated uncertainty related to the path of inflation, earlier banking sector stress, and Russia's invasion of Ukraine. Credit demand for firms and households has decelerated strongly, with rising interest rates cited as a key common driver in the January 2023 ECB's Bank Lending Survey. The rapid tightening of financial conditions has weighed on interest-rate sensitive activities. In response to rapidly rising interest rates, authorities have put in place measures to cushion the impact on households, including those related to interest rates, restructurings, regulatory forbearances, and conversion. Moreover, EU firms have been adversely affected by a mix of factors, including higher input and labor costs, rising borrowing costs, and trade fragmentation (for example, US green subsidies with local content requirements), which risk diverting some investment away from the EU. In contrast to private investment, public investment is expected to be lifted by EU-financed investments, particularly from the Recovery and Resilience Facility. As a result, EU-financed investments are anticipated to partly offset the weakness in private investment.

**After bottoming out in 2023, economic activity is expected to stabilize in the near term, assuming that financial market tensions subside and demand gradually recovers.** Growth in 2024 is anticipated to edge up to 1.6 percent in the EU (European Commission 2023) and the euro area (ECB 2023) — broadly aligned with previous forecasts for the EU but slightly weaker for the euro area amid stickier than expected core inflation, leading to tighter monetary policy. Consensus forecasts for 2024 growth are broadly aligned for the EU, at 1.5 percent, but remain slightly modest for the euro area, at 1 percent. Across the subregions, Consensus forecasts expect 2024 growth to pick up to between 1.3 percent in WE and 2.8 percent in CEE. The near-term outlook is contingent on a dissipation of banking sector turmoil and related financial market uncertainty, which should lift confidence. The outlook also depends on stable commodity prices and supplies, easing supply chain bottlenecks, and a gradual improvement in external demand (World Bank 2023). Eventually, growth is expected to be supported by firming private consumption, as inflation gradually moderates and gives way to firming real household incomes. Over the medium term, growth will also benefit from sizable EU funds and associated policy reforms, predicated on member states achieving the milestones outlined in their National Recovery and Resilience Plans. Ongoing efforts to withdraw fiscal policy support measures, however, present a drag on growth over the next few years, with fiscal positions tightening in 22 member states in 2023, 19 member states in 2024, and 18 member states in 2025.

**Projections suggest that inflation may only return to central bank targets in 2025 or later; nevertheless, inflation expectations remain anchored.** Inflation is expected to moderate over the medium term, reflecting tighter monetary policy, easing supply bottlenecks, and stabilizing commodity prices. In Croatia, World Bank forecasts suggest that inflation will return to target in 2025. Projections for Poland and Romania suggest inflation will edge close to the target over the forecast horizon. In the euro area, one-year ahead inflation expectations remain about 3 percentage points above ECB target; but consumers do not anticipate sustained pressures, with 3-year ahead expectations anchored at only 0.5 percentage point above target — about the same rate since Russia invaded Ukraine, suggesting some stability over the medium-term outlook. Moreover, market-based expectations, as measured by Consensus, also anticipate inflation to return close to target over the medium term in the euro area. This is not the case, however, for Poland and Romania, suggesting that additional monetary policy tightening may be warranted. Nevertheless, the uncertainty around inflation expectations has increased since Russia's invasion of Ukraine.

**In the four EU countries, poverty reduction is expected to slow down or even stall due to economic challenges and inflationary pressures.** In Bulgaria, poverty reduction is expected to decline slowly from 4.5 percent in 2020 to 3.6 and 3.55 percent in 2022 and 2023, respectively, while Romania is expected to see a slow decline in poverty in 2024, depending on the effectiveness of mitigation measures and the duration of elevated food and energy prices. In Croatia, poverty reduction progress is projected to stall, with the poverty rate expected to remain stagnant in 2023 before slightly declining over the next two years to 1.2 percent in 2025. In Poland, while government measures such as the Anti-inflation Shield, 14$^{th}$-month pension, and energy subsidies will help soften household impacts, the population at risk of poverty is expected to remain elevated at 1 to 2 percentage points above 2021 levels.

**Although economic forecasts suggest positive economic growth and slower inflation in 2023,[25] households continue to express bleak prospects for their financial situation, expecting persistent struggles.** In Romania, the spring and summer of 2022 marked an uptick in the share of households expecting a worsening financial situation in the next 12 months. In mid-2022, 54 percent of Romanian households reported a significant jump from 40 percent in early 2021. In fact, by mid-2022, about half of households across Bulgaria, Croatia, and Romania expressed a pessimistic view of their financial prospects. Moreover, at least half of the residents in Bulgaria, Croatia, and Romania expect to spend less on durable goods and restaurants in the coming year. Pessimism is much higher among households in the bottom 40 percent of the income distribution, signaling persistent negative effects of the crisis on poor households.

### BOX 3.2 Higher inflation for longer — but for how much longer?

**HICP inflation appears to have peaked in late 2022 in the EU and continues to trend down amid falling energy prices in 2023, but core inflation (HICP excluding energy, food, alcohol, and tobacco) remains strong.** Headline inflation is expected to remain elevated in 2023, but nonetheless decelerate due to the disinflationary effects of falling energy prices,[a] easing supply chain bottlenecks, and modest exchange rate appreciation. Nevertheless, underlying inflation pressures, as measured by core inflation, remain strong. Core inflation in the euro area has been revised up by the ECB, after stronger-than-expected dynamics in early 2023 prompted the ECB to reassess its path for core inflation (ECB 2023). As a result, market expectations for both short and long-term interest rates have risen by about 50 basis points since December 2022.[b] In addition to accelerating core inflation, food prices have also continued to rise rapidly in 2023 — a continuation of this trend could lift headline inflation. Food prices have increased amid ongoing supply cuts from Russia's invasion of Ukraine, including from grain trade disruptions and impacts on fertilizer production.

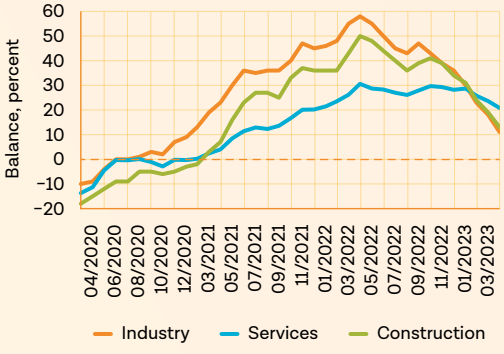
**The second-round effects from earlier energy price spikes, combined with pandemic-related supply-demand mismatches, have pushed up core inflation; but these pressures are likely to subside.** The second-round effects from

25. World Bank Macro-Poverty Outlook 2023.

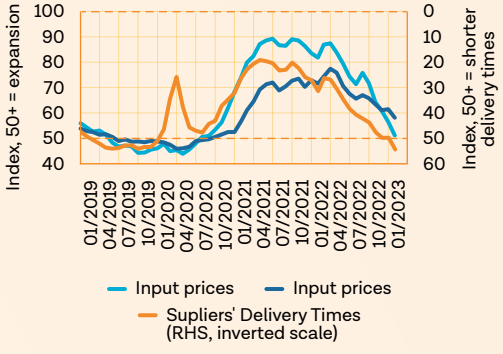
the earlier surge in energy prices have been evident in energy-sensitive industries and services, which have contributed to the increase in core inflation (ECB 2023). These pressures, however, are expected to revert somewhat as energy prices continue to stabilize.[c] Leading indicators for consumer goods inflation, including producer prices for non-food consumer goods and manufacturing PMI sub-indexes, suggest goods inflation has peaked and is set to moderate.[d] Core inflation increases have also been driven up by supply chain disruptions, as terms-of-trade pressures and higher input costs have been passed through to selling prices, and supply-demand mismatches from pandemic lockdown and reopening, which led to an increase in profit margins. These pressures are likely to unwind as supply-chain bottlenecks ease and demand normalizes—trends that may already be underway in the euro area and Poland given the moderation in supply constraints, as measured by sub-indexes of manufacturing PMI, and in retail sales growth (Figure B3.2.1).[e] Services inflation, however, could remain elevated as demand continues to rotate from the pandemic-driven surge in demand for goods toward services, especially as travel continues to recover.

**FIGURE B3.2.1 ESI Survey Expectations and EU Purchasing Managers' Index**

a. ESI firms' selling price expectations




b. EU manufacturing PMI sub-indexes

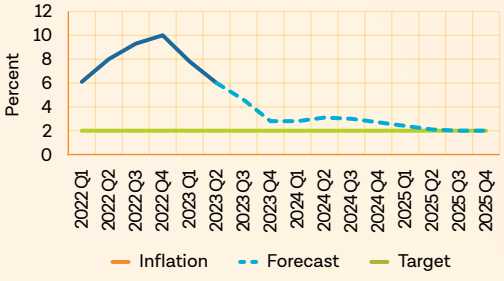



*Source:* European Commission, Haver Analytics, World Bank

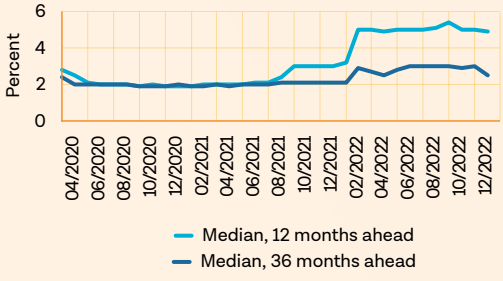
**Core inflation is likely to remain elevated in 2023, underpinned by a continued catch-up in real wages after high inflation eroded real disposable income.** Wage growth in the euro area picked up to 5.1 percent in the fourth quarter of 2022 and is likely to remain strong amid tight labor markets, increases in minimum wages, and inflation compensation as workers recoup purchasing power losses (ECB 2023). As a result, strengthening wage growth will help support a recovery in real disposable incomes and demand. At the same time, labor productivity growth is set to weaken in tandem with the economic slowdown and as employment growth remains positive, suggesting that wage growth could put upward pressure on inflation in 2023.

**FIGURE B3.2.2 Euro area inflation forecasts and inflation expectations**

a. Euro area inflation forecasts and target




b. Median inflation expectations in the euro area




*Source:* European Central Bank, European Commission, World Bank.

a. Although energy prices have fallen since 2022, European natural gas prices remain elevated compared to pre-pandemic levels.
b. Short-term interest rates are measured by the 3-month EURIBOR and long-term rates are proxied by 10-year government bond yields.
c. Nevertheless, consumer prices are unlikely to return to earlier levels given their stickiness.
d. This assumes that previous supply chain pressures have fully passed through to goods inflation.
e. Weaker consumer spending will reduce seller's pricing power. Retail sales measure the total amount of goods sold.

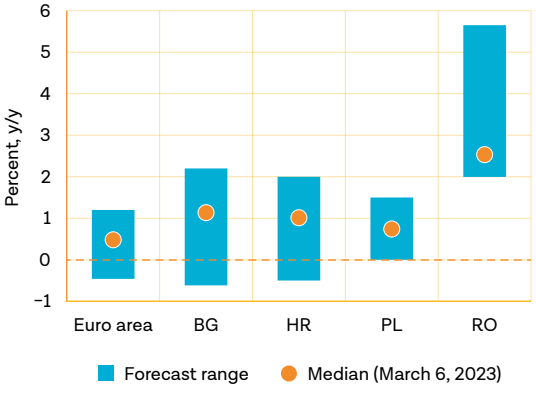
# Downside risks to the EU outlook remain elevated given the combination of weak growth, persistently high inflation, banking sector volatility, and tightening financial conditions.

**Risks to the global outlook remain tilted to the downside.** Downside risks to the global outlook largely reflect a worsening of the drags included in the baseline. Specifically, downside risks include higher-for-longer inflation and rising geopolitical tensions. The materialization of financial stress also poses a downside risk to the outlook. Moreover, weak growth in the baseline leaves the economy vulnerable to additional negative shocks. The combination of slowing growth, persistently high inflation, and tightening financial conditions amid high levels of debt increases the risk of economic downturn, financial strains, continued fiscal pressures, and weak investment in many countries. There is substantial uncertainty about the impact of central bank policy in terms of both magnitude and timing. To bring inflation under control, central banks may need to hike policy rates more than is currently expected. Financial stress among sovereigns, banks, and nonbank financial institutions may result from the combination of additional monetary tightening, softer growth, and falling confidence in an environment of elevated debt. Pandemic- and invasion-related increases in debt — combined with tightening global financing conditions — have sharply reduced fiscal space and amplified debt vulnerabilities, including from public debt rollovers and currency mismatches.

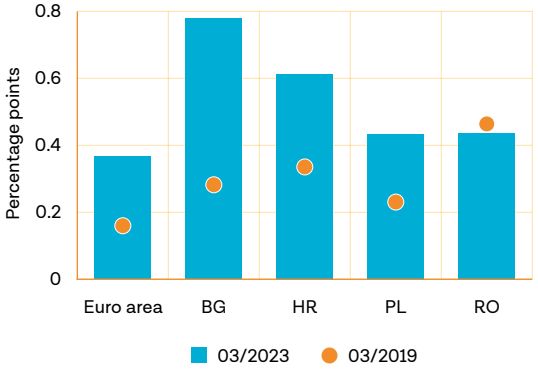
**The EU outlook is also subject to considerable downside risks — the materialization of which could adversely impact growth.** The uncertainty around forecasts is elevated amid recent banking sector strains, persistently high core inflation pressures, tightening macroeconomic policy, and energy supply concerns (Figure 3.3). Growth could be weaker than expected if underlying inflationary pressures surprise on the upside and prompt additional tightening by the ECB and other EU central banks, which would further tighten credit supply conditions and dampen activity. EU output could shrink from any number of downside risks materializing, including from a rapid deterioration in confidence following banking sector turmoil, which could trigger a full-scale banking crisis and years of weak investment (Laeven and Valencia 2020). An intensification in Russia's invasion of Ukraine could lead to additional cuts to Europe's energy supply and renewed commodity price volatility, especially given that the EU has diversified its supply of natural gas by increasing LNG imports, which are subject to spot market prices rather than longer

**FIGURE 3.3 Uncertainty in Consensus Forecasts**

a. Consensus Economics: Range around 2023 growth forecasts.




b. Consensus Economics: Standard deviation of 2023 growth forecasts

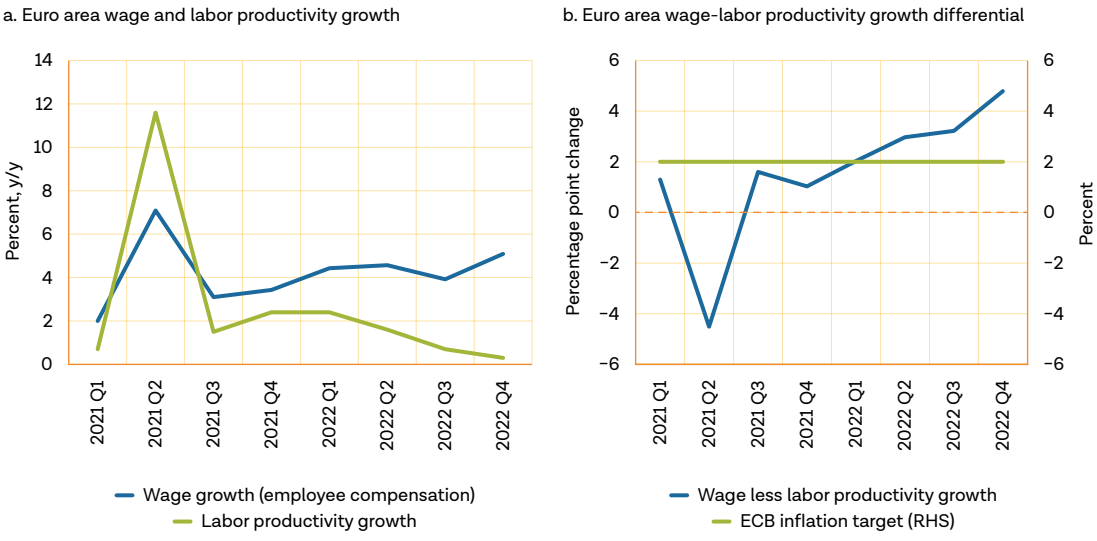



*Source:* Consensus Economics; World Bank.

term contracts as is typically the case for natural gas pipelines (EU RER Part 2 forthcoming). A worsening of Russia's invasion could also cause further fragmentation of international trade and investment.

**Core inflation could continue to surprise on the upside if the catch up in real wages is stronger than expected, especially given the ongoing resilience in labor markets, which could prompt more aggressive tightening by the ECB and other EU central banks.** Until the second quarter of 2022, the recovery in labor productivity in the euro area allowed for wages to grow at a pace aligned with delivering the ECB's two percent medium-term inflation target (Figure 3.4). Since then, however, wage growth has picked up considerably amid tight labor markets, increases in minimum wages, and workers negotiating higher wages to compensate for high inflation. Although earlier increases in labor productivity left space for some catch up in wages without putting further pressure on inflation, the space for additional catch up is likely narrower than indicated by backward-looking data given the timing of wage negotiations.[26] The combination of near record-low unemployment, rising wages, and fading headline inflation could set the stage for a recovery in real disposable income, which could lead to stronger-than-expected demand and renewed inflationary pressures.

**FIGURE 3.4 Euro area wages and productivity**




*Source:* European Central Bank, Eurostat, World Bank.

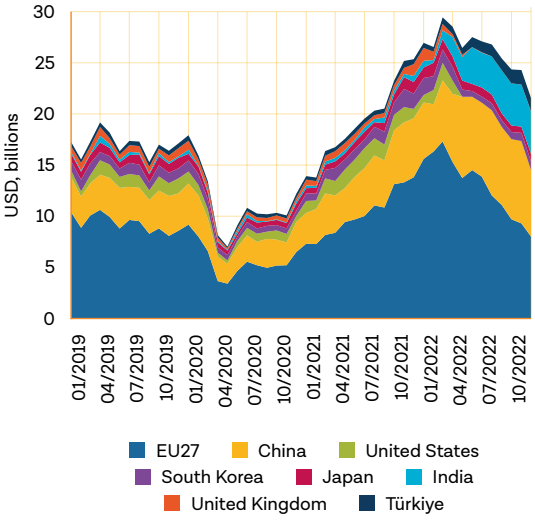
**The risk of financial sector instability has risen recently; addressing these concerns will be critical to support the recovery.** Tightened financial conditions due to the concerted impact of monetary policy normalization, lower credit availability, and a higher price of risk may discourage investment moving forward. Additionally, constrained fiscal space is limiting public investments outside of EU-supported financing. Meeting the EU's ambitious 2030 climate target will require infrastructure investment and other adaptations of over 1 trillion Euros per year (McWilliams, Tagliapietra, and Lenaerts 2021). Investment intensity has yet to recover its level prior to the global financial crisis. The EU27 average gross fixed capital formation to GDP ratio was 22.7 percent in 2022 — below the 2007 ratio of 23.4 percent, with 18 out of the 27 EU countries below their 2007 ratio. Lower investment growth also has long-term implications on development as it leads to weaker potential output, partially due to lower total factor productivity dynamics.

26. In several countries, wage negotiations are concentrated at the turn of the year.

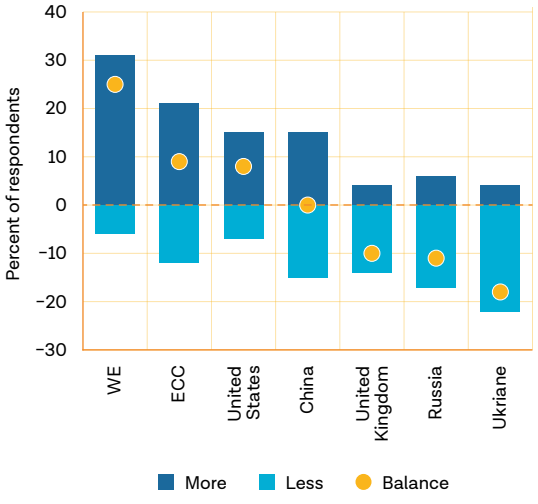
**Pandemic- and invasion-related supply chain disruptions could lead to longer-term trade and investment fragmentation; already, these disruptions have prompted many EU economies to reconsider trade and investment linkages.** The pandemic and Russia's invasion of Ukraine have triggered a retreat from global value chains (GVCs) and set the stage for longer-term trade diversion and investment fragmentation.[27] The disruption to trade has been particularly evident in the flow of energy supplies to Europe (Figure 3.5, panel a). The impact of trade diversion and investment fragmentation, however, is not likely to be uniform, as some economies will gain from the relocation of production. The reshoring of production to the EU could provide a positive boost to trade and growth in the member states where production is relocated — typically in economies where the cost of manufacturing and labor is relatively lower.[28] Survey data suggest that firms in large EU economies are already taking steps to retreat from GVCs and are considering investing in EU supply chains to reduce vulnerabilities to foreign shocks (Figure 3.5, panel b), even at the expense of increasing exposure to EU-specific shocks.

**FIGURE 3.5 Destinations of the Russian Federation's mineral fuel exports**

a. Destinations of the Russian Federation's mineral fuel exports




b. Firm Survey in Germany: Will region/country play more or less of a role in supply chains in the next 5 years?




*Source:* Panel a: Bruegel based on Eurostat, General Administration of Customs - People's Republic of China, United States Census Bureau, Korea Customs Service, Ministry of Finance — Trade Statistics of Japan, Ministry of Commerce and Industry — Government of India, Office of National Statistics (UK), Turkish Statistical Institute. Panel b: DZ Bank.

**At the same time, EU trade growth could be dampened by other forms of trade fragmentation, including the ramp-up of subsidies for domestic industries in other large trading partners.** The United States has passed the landmark Inflation Reduction Act (IRA), which aims to invest in the green transition by subsidizing green technology produced in the United States. The IRA includes local content rules, which, for some European firms, has already induced a shift in planned investment and production from Europe to the United States. The overall impact on the EU's economy from the fragmentation and diversion of trade and investment is unclear — the drag from green technology firms shifting production and investment from Europe to the United States could offset the possible boost from reshoring to the EU following the pandemic and Russia's invasion of Ukraine. In addition, geopolitical tensions also risk weakening global trade.

27. The unraveling of GVCs could lead to welfare losses, as well-functioning and diversified GVCs are a source of resilience far more than they are a source of vulnerability and (Bas Fernandes and Paunov 2022; Brenton, Ferrantino, and Maliszewska 2022; Constantinescu et al. 2022).

28. The boost could be particularly large for Poland given its highly skilled labor force and deep integration in global and regional value chains. In turn, these four member states could experience an increase in FDI and innovation, thereby lifting TFP and accelerating convergence with the average EU level of income.

**Given the downside risks to the outlook, there could be adverse implications for convergence momentum.** EU countries will see a sharp deceleration of growth in 2023 in the baseline, while risks are tilted to the downside. With varying levels of exposure to Russia, different energy structures and macroeconomic policy buffers, the impact from spillovers from Russia's invasion of Ukraine on different countries and their growth trajectories will also vary (Discussed in detail in the forthcoming Part 2 of the RER). Inflation trends have also diverged, while government support measures also differ in size and design, leading to differing impacts on firms and households. As a result, the divergence among countries could potentially increase. In addition, with varying consumption baskets, inflation pressures on households are not homogenous with a disproportionately higher impact on poorer households. Lower real incomes amongst the poor have also led to the prioritization of food expenditures and could potentially dent human capital accumulation, thereby, increasing inequalities and within country divergence.

Chapter 4

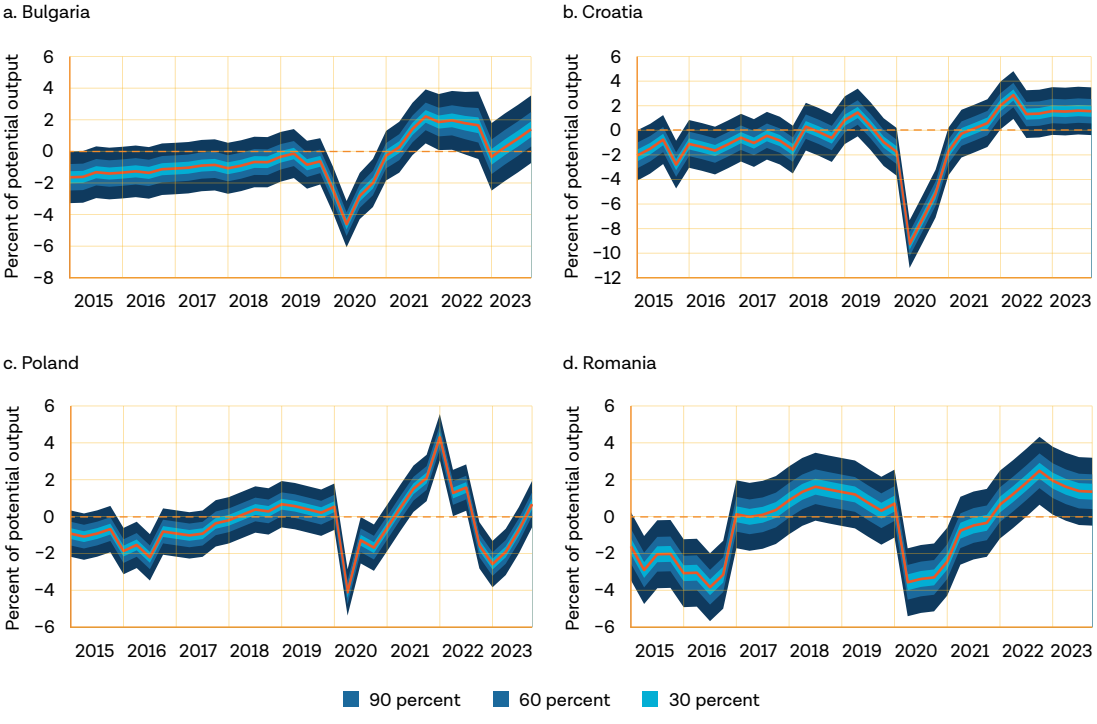
# Policy challenges

# Following supportive macroeconomic policy over the last three years, policy makers must carefully normalize policy without worsening the economic slowdown

**Following several years of sizable policy support to confront a series of negative economic shocks, policy makers face the challenge of normalizing macroeconomic policy.** Coordinated policy efforts are needed to mitigate the risk of recession and debt distress, and to support people affected by crises and hunger. Policy makers will need to pursue a carefully calibrated macroeconomic policy mix that continues to rein in inflation while avoiding additional financial market volatility or stress. Meanwhile, fiscal policy makers will need to support the most vulnerable, while also ensuring macroeconomic stabilization.

**Monetary policy in the EU is expected to remain tight as slowing inflation causes real policy rates to gradually rise.** Despite the fastest and most synchronized monetary policy tightening in decades, core inflation and near-term inflation expectations remain high, suggesting that additional policy rate hikes may be warranted. In countries where inflation remains elevated, authorities may have to continue tightening monetary policy to support macroeconomic stability and to prevent inflation expectations from becoming de-anchored. Nevertheless, headline inflation has fallen in recent months and is expected to continue this trend over the next two years. The fall in inflation, combined with high policy rates, could shift real policy rates into positive territory. As a result, monetary policy would assume a restrictive stance and weigh on economic activity, particularly investment. A more restrictive stance, however, would help counter underlying inflationary pressures and be in line with closing positive output gaps (Figure 4.1).

**FIGURE 4.1 Positive output gaps indicate that further monetary policy tightening may be warranted**




*Source:* Kilic Celik, Kose, Ohnsorge, and Ruch (2023). Based on the multivariate filter model of Kilic Celik et al. (2023). Last observation is 2022Q4, forecasts thereafter.

**Fiscal policy support, going forward, will need to be timely, targeted, time bound and transparent.** EU Member States have provided timely, but largely untargeted support to shield households and firms from the effects of the pandemic, Russia's invasion of Ukraine, and record-high inflation. With high inflation, a well-calibrated macroeconomic policy mix will require that fiscal policy not add to further inflationary pressures. This risk can be mitigated by ensuring that fiscal support is carefully targeted towards those most in need (firms and households), is time-bound and transparent. Transparency will enable careful monitoring of the support while keeping it time bound will help replenish fiscal buffers over the medium term.

**Moreover, strengthening the social protection system to deliver aid to the poorest households is critical, and even more so in an environment of rising food and energy prices.** As discussed above, rising food and energy prices can adversely impact the poorest households, mostly from indirect effects. Therefore, social transfers need to be targeted at vulnerable groups. As governments may have competing demands and limited fiscal space, identifying and prioritizing vulnerable groups is important. The overall effectiveness of social programs can also be improved by higher spending on poverty-targeted programs, better targeting and coverage, and leakage reduction. In addition, the value of several government benefits and tax credits meant to relieve struggling families is no longer adequate because they were not designed to increase with inflation. As a result, the effectiveness of these benefit programs and tax credits is undermined, increasing the household risk of falling into poverty. These shortcomings need to be addressed.

**Minimum wage adequacy is also essential, especially with respect to the ratio of the minimum wage to the cost of the basic food baskets.** Statutory minimum wages have decreased in real terms in most EU countries. To ensure minimum wage adequacy, there is a need to establish clear criteria to set and update statutory minimum wages, assess their adequacy, establish rules to update them regularly, and ensure the timely and effective involvement of social partners. The compositional and distributional effects of rising minimum wages in real terms needs to be carefully assessed.

**Countries could reduce the costs of supporting firms and improve the effectiveness of policies in the context of high energy prices by supporting the FIRST principles.** **F**oster **i**nnovation and changes that improve efficiency. **R**educe uncertainty by making measures not just time-bound but state-contingent (i.e., directly linked to observable level of prices). Make government support conditional to energy **s**avings, especially for those firms that show lower levels of energy efficiency. Improve **t**argeting and focusing on viable firms, with support targeted at easing liquidity challenges faced but also addressing solvency risks (Discussed in detail in the forthcoming Part 2 of the REER).

**Fiscal policy makers also need to embark on much needed and delayed fiscal consolidation.** After gross government debt reached an average of 91.5 percent of GDP in 2020 in the EU, it remains elevated at about 85 percent of GDP in 2023. Although average EU government debt is expected to fall slightly over the forecast horizon, it will remain higher than its pre-pandemic level. This in part reflects higher spending, especially after governments last year put in place additional measures to shield households and firms from increased food and fuel prices. In many cases, support to households over the last few years has been largely untargeted and may have added to inflationary pressures and worked against monetary policy tightening. Going forward, many governments are expected to undertake gradual fiscal consolidation, with the fiscal stance becoming a drag in 85 percent (23/27) of EU countries over 2024 – 25. The challenge, however, is to ensure that vulnerable households remain supported and that the economic slowdown is not exacerbated by fiscal consolidation efforts — as was the case following the global financial crisis. Countries can balance these priorities by reducing untargeted tax cuts, strengthening tax administration, broadening the tax base and cutting subsidies on fossil fuels, which are costly and support demand for environmentally damaging and carbon-intensive energy sources, which erodes the incentive for energy conservation and creates tension with longer-term climate goals.

**Supporting growth will require an acceleration in structural reforms, which have taken a backseat given multiple crises.** The EU needs to implement structural reforms to enhance productivity and boost potential growth (World Bank 2022b). Supporting increased labor force participation, strengthening institutions, removing constraints to private sector development, and addressing governance related issues will be critical to foster sustained economic growth. In addition, the green and digital transitions will require significant upgrades to and investment in human capital. A successful transition to a low-carbon economy will also require significant physical investments and technological advancements, requiring increased participation of the private sector. The EU countries would therefore need to strengthen their innovation policies, boost R&D spending and promote entrepreneurship. Additionally, reducing product and labor market distortions and promoting a more competitive environment would support innovation and productivity.

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ANNEX A

# Estimating the drivers of inflation

To decompose consumer inflation, a Bayesian structural vector autoregressive (VAR) model is used following Ha et al (2019). The model includes a foreign block with three variables: euro area output, European natural gas prices (or oil prices), and euro area consumer inflation. There is also a domestic block including each economy's output, inflation, policy rates and the nominal effective exchange rate. The domestic block is assumed to not affect the foreign block using block exogeneity zero restrictions.

To identify foreign and domestic supply and demand shocks sign restrictions are imposed as follows:

$$\begin{bmatrix} \mu_t^{Y,EA} \\ \mu_t^{GAS} \\ \mu_t^{\pi,EA} \\ \mu_t^{Y} \\ \mu_t^{\pi} \\ \mu_t^{i} \\ \mu_t^{ER} \end{bmatrix} = \begin{bmatrix} + & - & + & 0 & 0 & 0 & 0 \\ + & + & + & 0 & 0 & 0 & 0 \\ + & + & - & 0 & 0 & 0 & 0 \\ * & * & * & + & + & 0 & * \\ * & * & * & + & - & + & * \\ * & * & * & * & * & * & * \\ * & * & * & * & * & + & * \end{bmatrix} \begin{bmatrix} \varepsilon_t^{EADemand} \\ \varepsilon_t^{Gas} \\ \varepsilon_t^{EASupply} \\ \varepsilon_t^{DomesticDemand} \\ \varepsilon_t^{DomesticSupply} \\ \varepsilon_t^{ER} \\ \varepsilon_t^{*} \end{bmatrix}$$

where a structural supply shock ($\varepsilon$) is defined as that which moves output and inflation in opposite directions and a demand shock moves them in the same direction. In the euro area and country-level case, these positive supply and demand shocks also increase natural gas prices. A negative gas/oil supply (and speculative) shock is defined as one that raises gas/oil prices, increases euro area inflation but decreases euro area output. A positive exchange rate shock increases inflation and but has no contemporaneous impact on output. Domestic variables have no impact on euro area variables, indicated by zero restrictions.

All variables, except interest rates, are transformed to q/q saar growth rates using log transformations. The models are run from as far back as 2000Q1, or based on available data, to 2023Q4 and forecasts from 2023Q1. The model is estimated using Bayesian priors with 25000 draws and 5000 burn-in observations, and every 5$^{th}$ draw kept. The Minnesota prior is used. The model is estimated with four lags. Stochastic volatility is included in the residual term to address the changes in uncertainty generated during the global financial crisis and the COVID-19 pandemic; this is a generic version of what is suggested in Lenza and Primiceri (2022).

Output data is real GDP in local currency units and inflation data is headline consumer price inflation; both are seasonally adjusted by source or Haver Analytics. Interest rates are the main policy instrument or short-term lending rate. The nominal effective exchange rate is trade weighted.

## Multivariate filter model

The output gap is based on the multivariate filter model in Kilic Celik et al (2023). The model uses multiple indicators to identify the output gap including house prices, credit extension, commodity prices, capacity utilization, the unemployment rate, interest rates and inflation. The model uses switches to add or remove certain variables depending on country-specific availability.

To introduce transitory (level) supply shocks to the model, let output be decomposed into a trend and cyclical component such that:

$$Y_t = \overline{Y}_t + YGAP_t$$

Where $Y_t$ is the log level of real gross domestic product, $\overline{Y}_t$ is potential output, and $YGAP_t$ is the output gap. The log level of potential output is then defined as:

$$\overline{Y}_t = \overline{Y}_{t-1} + G_t + \epsilon_t^{\overline{Y}}$$

It evolves following an autoregressive function which grows by growth rate $G_t$ . However, to introduce transitory supply shocks there is also a level shock, $\epsilon_t^{\overline{Y}}$, which allows potential output to deviate from the smooth potential growth process ($G_t$). These shocks can be considered events such as droughts, labor strikes, gas and oil production disruptions, and COVID-19. The smooth potential growth series follows an autoregressive process which deviates from a longer run steady state value. For more details see Kilic Celik et al (2023) and Botha, Ruch and Steinbach (2018).

The model also includes a Phillips curve where domestic inflation is driven by inflation expectations, habit formation, and imported inflation; an Okun's law equation where the unemployment rate is explained by a its non-accelerating inflation rate of unemployment (NAIRU), as well as outcomes in the output gap; and an output gap equation where the output gap is explained by credit extension, export-weighted real commodity prices, and house prices.

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ANNEX B

# Methodology for estimating direct and indirect welfare impacts of food and energy inflation

## Direct Welfare Impacts

**To estimate the welfare impact of relative changes in food and energy prices, following Freund and Wallich (1995), we adjust the welfare aggregate to account for the loss in purchasing power (PPP loss) because households spend a larger share of the total expenditure on food and energy.** Following the methodology used by Freund and Wallich (1995) and the Balancing Act (2013), the impact of the change in prices on the share of consumer surplus as a percentage of total household expenditures can be calculated as:

$$\Delta CS/E = (S_0 (P_1 - P_0) / P_0) (\varepsilon + \varepsilon (P_1 - P_0) / P_0 + 1)$$

where $S_0$ is the initial budget share before the price change, and $\varepsilon$ is the price elasticity of demand, and $P_1$ and $P_0$ represent the initial and final relative prices.

**Notice that when ε is zero, this estimate of the direct welfare impact implicitly assumes that households do not substitute away from electricity, so it should be interpreted as either an estimate of the short-run impact (i.e.,** before households can adjust electricity consumption for other sources of energy) or as an upper bound of the long-run estimate. We analyze alternative scenarios (under different ε) to see the sensitivity of the results to this parameter. In particular, we made different assumptions on how elastic the demand for food is to price changes based on the available literature. The ability of households to substitute for other goods will be captured by different price elasticities, which will vary across the income distribution (as the poor usually have less ability to substitute).

**TABLE B.1** Assumption of price elasticities by income deciles

| Income deciles | Price elasticity of food and energy |
|---|---|
| 1 – 3 | -0.5 |
| 4 – 7 | -1 |
| 8 – 10 | -1.5 |

**We implement this approach using the available household budget surveys and EU-SILC surveys in the 4 EU countries.** First, we estimate the food and energy shares using the country's household budget surveys (HBS) by decile and impute them to each household in the EU-SILC by assuming a one-to-one relationship between consumption and income deciles. To do so, we assume the same share across households in the same decile. Then, we estimate the change in consumer surplus for each household in the EU-SILC using (1), given the estimated shares, (b) a range of price elasticities (decile dependent), and (3) the relative food and energy prices from Eurostat Harmonized Indices of Consumer Prices (HICP) over the period 2019 – 2022. Finally, we use the PPP losses to estimate one counterfactual income distribution for the observed change in food prices and another for the observed change in energy prices.

**Some caveats apply.** It is important to note that this approach would not allow one to account explicitly for the fact that households can be both producers and consumers of food. Also, it does not incorporate indirect and general equilibrium effects. For this, we use a CGE Model as detailed below.

## Indirect Welfare Effects

**The passthrough from food and energy prices to the core and overall inflation also reduces household disposable income in real terms, thus negatively affecting household welfare.**

**One way to estimate the indirect impacts of food and energy prices on overall prices is by using input-output matrices if updated and available.** This may be particularly important in the case of energy prices, which affect households not only directly but also through the household's consumption of other products that use energy as inputs. Unfortunately, this is not the case in the four EU countries. For example, the latest input-output matrix for Romania is for 2020, while for Bulgaria, the IO matrix is quite outdated (2014). Therefore, for Bulgaria, we would have to make very strong assumptions: (i) using the input-output matrices of countries with similar economic structures — this is a very strong assumption as these matrices are very idiosyncratic, and not easy to extrapolate from one country to another; (ii) assuming the different sectors' interdependencies have not changed and use the old input-output matrices. For this reason, in this analysis, we did not use this method.

**CGE Models are also used to estimate indirect impacts.** Computable General Equilibrium (CGE) models can further aid the assessment of the alternative mitigation measures that governments may put in place to mitigate the impacts of food and energy price increases, such as export bans in the case of the commodity-exporting countries or through lowering import tariffs in the case of net importers, or through subsidies.

**We use the current CGE model for the 4 EU countries to estimate the indirect effects of rising energy prices.** We abstract from the indirect effects of food inflation and concentrate on the indirect effects of energy, as higher energy inevitably translates into higher production costs, while the effects from food tend to be of smaller magnitude. An energy price shock is introduced in the CGE model, which produces detailed counterfactual inflation estimates for 56 sectors as a result of the energy shock based on the GTAP classification. Then, we map the GTAP codes to the COICOP codes in the household surveys[29], and aggregate the price changes using the corresponding household budget shares (which are decile specific) to construct a counterfactual CPI. This measure captures the change in overall inflation as a result of changes in energy prices and is different from the observed CPI inflation. Then, we simulate the indirect welfare impacts of this inflation in the microsimulation model. Finally, to test how reasonable our assumptions are, we compare the observed CPI inflation with the counterfactual inflation produced by the CGE model. Our results show that both measures fall within a reasonable range.

29. Some caveats apply, as there is no one-to-one mapping from GTAP product categories in the CGE model and the COICOP consumption categories in the household surveys. Therefore, some assumptions are made to produce a unique mapping. This is particularly the case for some services and manufacturing products.

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