INTERNATIONAL MONETARY FUND

REGIONAL ECONOMIC OUTLOOK

EUROPE

The Fog of War Clouds the European Outlook

2022
OCT

World Economic and Financial Surveys

Regional Economic Outlook

Europe

The Fog of War Clouds the European Outlook

OCT 22

INTERNATIONAL MONETARY FUND

Cataloging-in-Publication Data

Names: International Monetary Fund, publisher.
Title: Regional economic outlook. Europe : the fog of war clouds the European outlook.
Other titles: Europe : the fog of war clouds the European outlook. | The fog of war clouds the European outlook. | World economic and financial surveys. | Regional economic outlook : Europe.
Description: Washington, DC : International Monetary Fund, 2022. | World economic and financial surveys. | Oct. 2022. | Includes bibliographical references.
Identifiers: 9798400220586 (paper)
9798400221156 (ePub)
9798400221170 (Web PDF)
Subjects: LCSH: Economic forecasting--Europe. | Economic development--Europe. | Europe--Economic conditions.
Classification: LCC HC240.A1.R445 2022

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Contents

Executive Summary vii

1. The Fog of War Clouds the European Outlook 1

The European Outlook Has Darkened and Become More Uncertain under a Confluence of Adverse Forces 1

Economic Activity Began Cooling in the Summer 2

The Fallout of Russia's War in Ukraine Continues to Unfold 3

Climate-Related and Other Bottlenecks Have Added to Price Pressures 4

Inflation Has Increased Further, and Become Broader and More Entrenched 4

Despite Tight Labor Markets, Wage Growth Has Lagged Inflation 5

Fiscal Consolidation Slowed with Measures to Ease the Inflation's Impact on Incomes 6

Financial Conditions Have Tightened across Europe, Especialliy in Emerging Market Economies 6

Higher Inflation and Tighter Financial Conditions Are Weakening Private Balance Sheets and Demand 7

Europe's Outlook Will Continue to See Weak Growth and High Inflation 7

The War in Ukraine Will Keep Uncertainty High and Risks to the Downside 9

Navigating Severe Policy Trade-Offs 10

Monetary Policy: Keep Raising Policy Rates, Remain Nimble 11

Fiscal Policy: Managing the Extraordinary Energy Price Shock while Rebuliding Fiscal Space 13

Financial Policies: Preserving the Flow of Credit while Containing Vulnerabilities 15

Structural Policies: Supporting Europe's Immediate Agenda by Addressing Long-Standing Reform Policies 16

References 17

2. Inflation in Europe: Assessment, Risks, and Policy Implications 31

Recent Developments 32

Inflation Drivers 34

Future Path and Risks 38

Policies 42

References 45

Boxes

1.1 Economic Considerations of the Ukrainian Refugee Crisis 18

1.2 Europe's Tightening Financial Conditions 20

1.3 How Vulnerable Is Europe's Private Sector to the Weakening Macroeconomic Outlook? 22
1.4 Recent Economic Developments in Russia and Ukraine 26
2.1 Inflation Dynamics in the Western Balkans 46

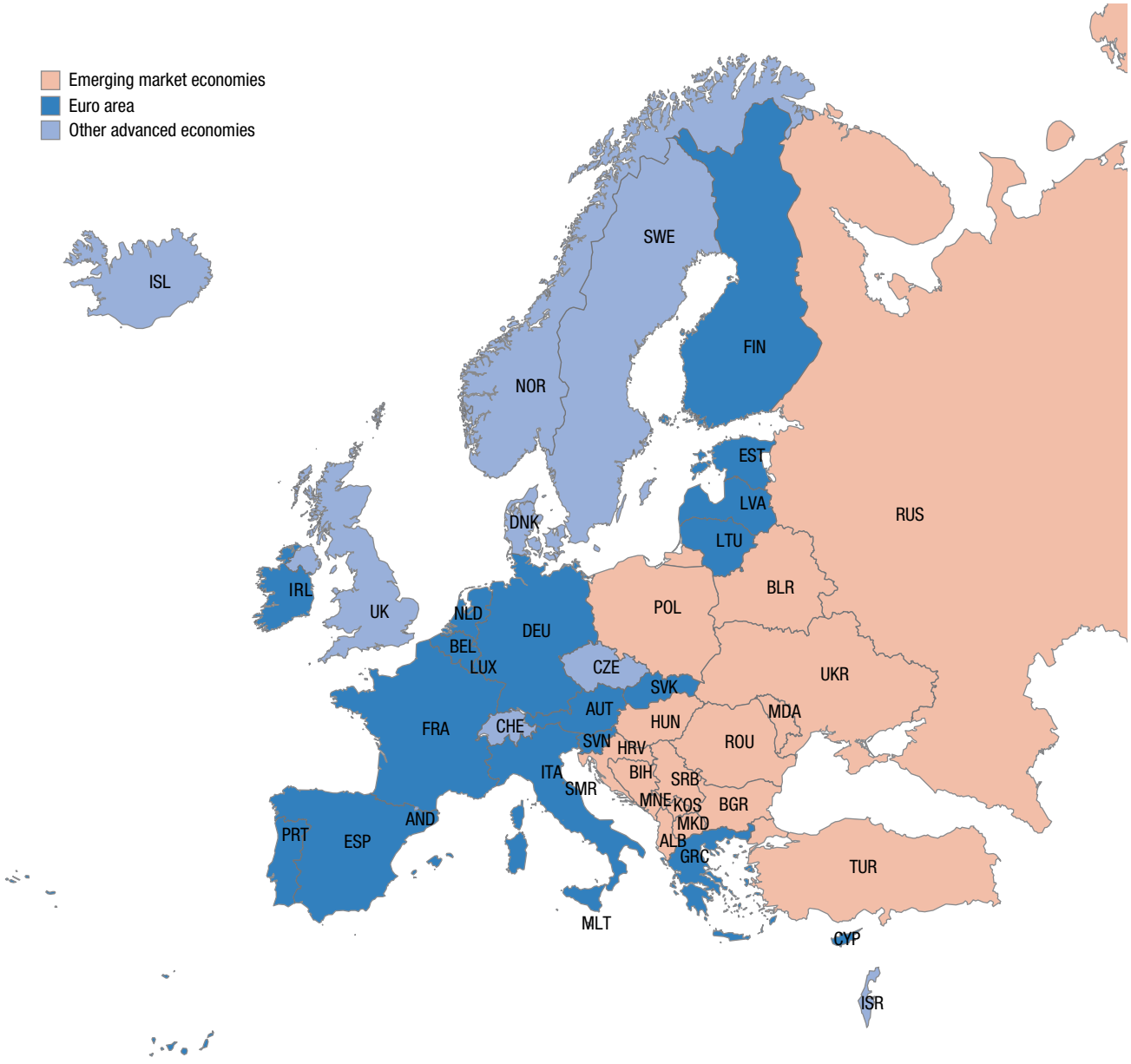
Figures

1.1 Factors Shaping the European Outlook 1
1.2 Europe: Economic Activity 2
1.3 Europe: The Fallout of the War in Ukraine 3
1.4 Europe: Inflation Developments 4
1.5 Europe: Labor Market Developments 5
1.6 Europe: Financial Conditions and Consumption 6
1.7 Europe: The Outlook 9
1.8 Monetary Policy 12
1.9 Europe: Fiscal Policy 14
1.10 Europe: Financial Policies 16
2.1 Inflation Developments 33
2.2 Labor Market Pressures and Inflation Expectations 34
2.3 Inflation and Policy Measures 34
2.4 Phillips Curve Coefficients for Core Inflation 35
2.5 Implied Contributions of Domestic and Global Factors to Inflation Dynamics 36
2.6 Phillips Curve Residuals for Core Inflation and Nonconventional Drivers 37
2.7 Phillips Curve–Based Inflation Forecasts 39
2.8 Phillips Curve Simulations: Core Inflation 40
2.9 Wage Price Spiral Risks 41
2.10 Model Simulation Results under Alternative Illustrative Scenarios 43

Tables

1.1 Real GDP Growth 28
1.2 Headline Inflation 29
2.1 Illustrative Inflation Risk Scenarios 39

October 2022 Regional Economic Outlook: Europe



Note: The boundaries, colors, denominations, and any other information shown on the maps do not imply, on the part of the International Monetary Fund, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries. In this report, country abbreviations are International Organization for Standardization country codes. UK = United Kingdom.

Executive Summary

Russia's war in Ukraine is taking a growing toll on Europe's economies. The worsening energy crisis has depressed households' purchasing power and raised firms' costs, only partly offset by new government support. Central banks have acted more forcefully to bring high and persistent inflation down to targets, and financial conditions have tightened. Abroad, growth has softened in China and the United States, and multidecade-high inflation has led to broad-based global monetary policy tightening.

Against this backdrop, the European outlook has darkened considerably, with growth set to slow sharply and inflation to remain elevated. Output growth in advanced and emerging European economies (excluding conflict countries and Türkiye) is forecast to fall from 3.2 and 4.3 percent in 2022, respectively, to 0.6 and 1.7 percent in 2023—0.7 and 1.1 percentage points lower than the July 2022 *World Economic Outlook Update* projections. Output losses will be very large in the conflict countries. While projected to decline in 2023, headline inflation will stay significantly above central bank objectives, at 6.2 and 11.8 percent in advanced and emerging European economies, respectively.

Risks to growth are on the downside, while those to inflation—especially core inflation—are on the upside. The technical recessions—at least two quarters of negative GDP growth—projected in parts of Europe could turn into even deeper recessions across the continent. A key near-term risk is further disruption to energy supplies, which, combined with a cold winter, could lead to gas shortages, rationing, and deeper economic pain. Inflation, which exceeds predictions from conventional empirical tools, could stay higher for longer, particularly if medium-term inflation expectations begin to de-anchor or too-high wage compensation for recent price increases were to trigger a wage-price feedback loop. Importantly, social tensions may intensify in response to the cost-of-living crisis, resulting in a more expansionary fiscal stance that could force central banks to further tighten monetary policy.

Having to deal with a combination of weak growth and high inflation that could get worse, European policymakers are facing severe trade-offs and tough policy choices. A tightening macroeconomic policy stance is needed to bring down inflation, while helping vulnerable households and viable firms weather the energy crisis. But policies also need to stay nimble and agile and be able to adjust should additional shocks materialize.

On the monetary policy front, with real rates still generally accommodative, broadly resilient labor markets, above-target inflation forecasts, and predominant upside risks to (core) inflation, central banks should continue raising policy rates. Faster hikes are called for in advanced economies, and a tight monetary policy stance will likely be needed in 2023 unless growth and labor market prospects weaken sufficiently below their current baseline to materially reduce medium-term inflation. An even tighter stance is generally warranted in most emerging European economies, where inflation expectations are not as strongly anchored, cyclical positions are more robust, and nominal wage growth is higher.

The difficult task of fiscal policy is to rebuild fiscal space and help monetary policy in its fight against inflation while managing the extraordinary energy price shock. Consolidation should proceed in 2023, at a faster pace in countries with less fiscal space, greater vulnerability to tighter financial conditions, and/or stronger cyclical positions—including most emerging European economies. Slowing the pace

of consolidation for a few months may be appropriate to allow governments to support households and viable firms through the energy crisis. Such support should be temporary and preserve strong price signals that foster energy savings.

Macro-prudential policy settings can be kept broadly unchanged to avoid amplifying the downturn, but supervisors should closely monitor and stress-test banks' risk exposures to vulnerable households and firms hit by deteriorating growth prospects, higher energy prices, and tighter financial conditions.

Finally, steady implementation of reforms that enhance productivity, relieve supply constraints in energy and labor markets, and expand economic capacity—including by accelerating the implementation of Next Generation EU programs—remain essential to raising growth and easing price pressures over the medium term, while also ensuring energy security, accelerating the green transition, and countering adverse demographic trends.

1. The Fog of War Clouds the European Outlook

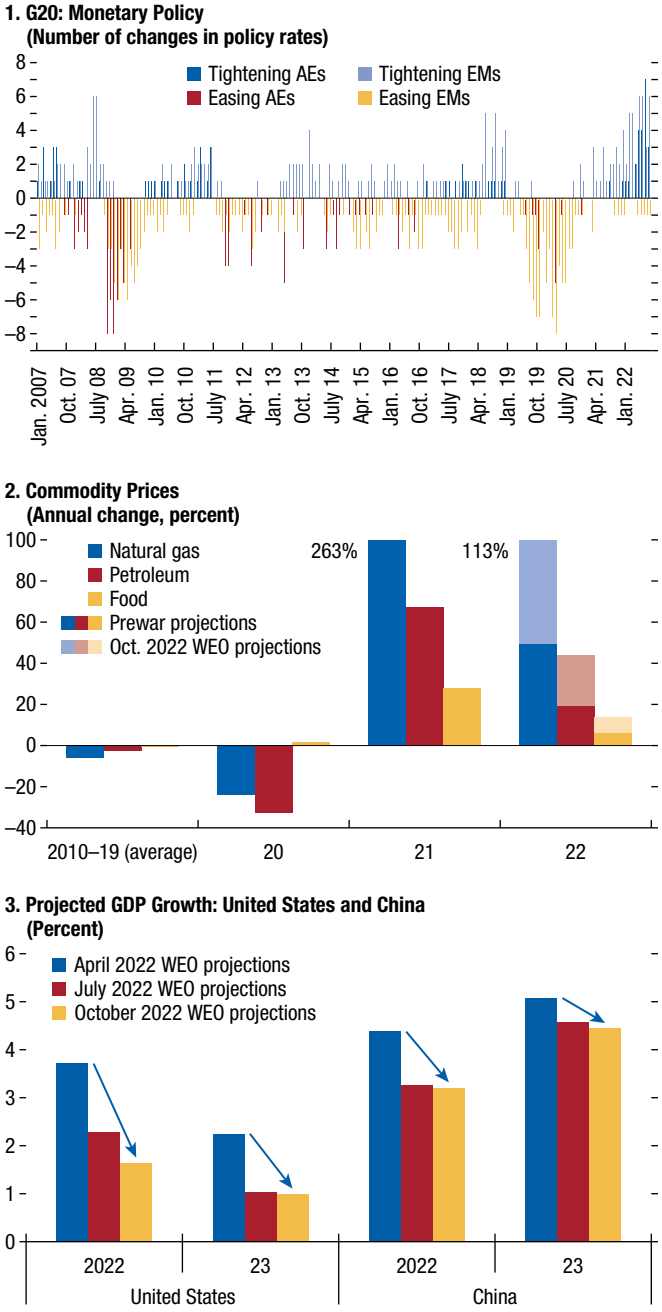
Europe was on its way to exit the pandemic at the end of 2021, with a broadly appropriate policy mix that supported a handover from public to private sector–led growth, while rising inflation was expected to subside as commodity prices and supply chain disruptions would ease. Russia's war in Ukraine and its fallout changed this picture completely. Europe has been hit by a massive terms-of-trade shock that has weakened the growth outlook, further raised the level and persistence of inflation, and led to a cost-of-living crisis that threatens social cohesion. Furthermore, risks of medium-term output scarring, which was successfully avoided in the pandemic, are resurfacing. Risks to growth are on the downside, while those to inflation are on the upside, as epitomized by the energy crisis, which is fostering unusually high uncertainty and steep policy trade-offs. Policymakers will need to walk a fine line between tightening policy stances to bring down inflation and supporting vulnerable households and viable firms through the energy crisis, while standing ready to adjust the policy mix should additional shocks materialize.

The European Outlook Has Darkened and Become More Uncertain under a Confluence of Adverse Forces

Factors that supported activity in the first half of 2022, such as mobility normalization, are now waning. Moreover, while the war in Ukraine has seen its tragic humanitarian impact continue to unfold, it has also been taking a growing toll on Europe's economies through a worsening energy crisis (Figure 1.1, panel 2; see also Figure 1.3,

This chapter was prepared by Gabriel Di Bella with contributions from Ruo Chen, Shakill Hassan, Claire Li, Grace Li, Vina Nguyen, Neree Noumon, Ben Park, Agustin Roitman, Miguel Segoviano, Petia Topalova, Laura Valderrama, and Dennis Zhao, under the supervision of Jörg Decressin and Romain Duval. Agnesa Zalezakova provided administrative support. It reflects data and developments as of September 26, 2022.

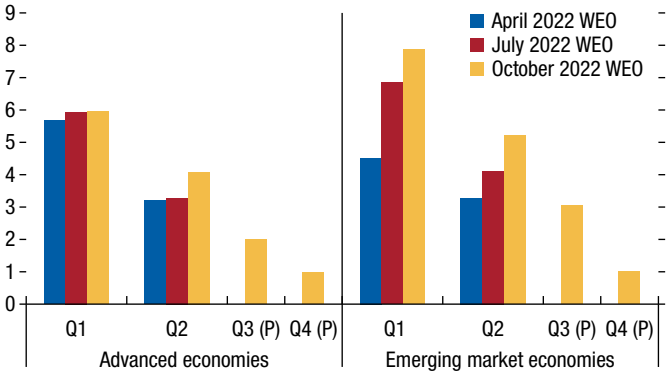
Figure 1.1. Factors Shaping the European Outlook



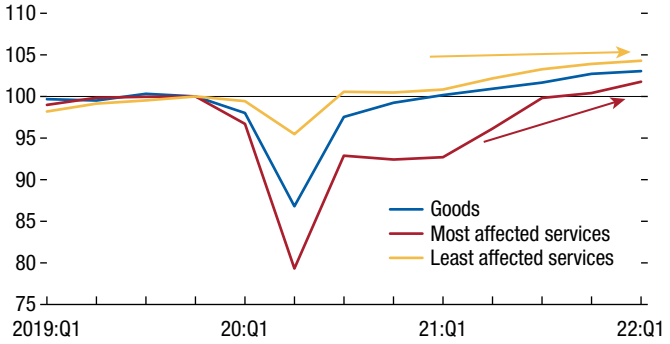
Sources: Bloomberg Finance L.P.; Haver Analytics; IMF, World Economic Outlook database; and IMF staff calculations.
Note: In panel 1, for the periods prior to January 2008, May 2010, January 2016, and February 2016, Argentina, Japan, Mexico, and Türkiye are not included, respectively. AE = advanced economy; EM = emerging market; G20 = Group of Twenty; WEO = *World Economic Outlook*.

Figure 1.2. Europe: Economic Activity

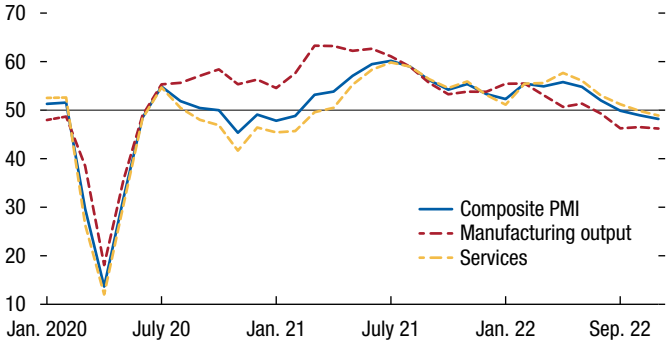
1. Europe: Real GDP Growth
(Percent, year-over-year)



2. Europe: Real Gross Value Added
(Indices, 2019:Q4 = 100)



3. Euro Area: PMI Indices
(Diffusion index, seasonally adjusted, 50+ = expansion)



Sources: Bloomberg Finance L.P; Bruegel, Haver Analytics; IMF, World Economic Outlook database; and IMF staff calculations.
Note: In panel 1, emerging European economies exclude Belarus, Russia, Türkiye and Ukraine. In panel 2, goods include agriculture and industry excluding construction; most affected services include construction, wholesale and retail, professional, science and technology, arts and others; least affected services include information communication technology, finance, real estate, public administration, etc. PMI = purchasing managers' index. WEO = *World Economic Outlook*.

panel 3). This pushed headline inflation up further, and so did the extreme European summer weather, which affected electricity generation and raised inland transportation costs. Higher, more persistent, and broad-based inflation has been weighing on real incomes and consumer confidence and has induced central banks in Europe and beyond to act more forcefully to bring down inflation to targets (Figure 1.1, panel 1).

As a result, financial markets are now expecting monetary policy normalization to proceed at a faster pace than anticipated in early 2022, especially in the euro area. The ensuing tightening of financial conditions has started to affect domestic demand, with some housing markets cooling. Finally, external demand has weakened further as growth in China and the United States continued softening (Figure 1.1, panel 3). All these adverse forces are affecting Europe's regions differently and with different intensity.

Economic Activity Began Cooling in the Summer

Overall, economic activity across Europe held up well in the first half of 2022, performing better than expected in the July *World Economic Outlook Update* (Figure 1.2, panel 1). Mobility normalization supported a rebound of contact-intensive services, including tourism-related sectors, whose recovery in Europe had lagged that of goods-producing activities and non-contact-intensive services throughout most of 2021 (Figure 1.2, panel 2). This contributed to stronger-than-forecasted activity in economies with large hospitality sectors such as Albania, Andorra, Croatia, Greece, Italy, and Spain. In addition, in a few emerging European economies (including Hungary, Poland, and Romania), an overall supportive policy stance extended 2021's growth momentum into the first half of 2022.

Accordingly, real GDP growth in the second quarter of 2022 in advanced European economies reached 4.1 percent (year over year), while in emerging European economies (excluding conflict

countries—Belarus, Russia, and Ukraine—and Türkiye) posted 5.2 percent. However, activity slowed sharply throughout the summer as the effect of the multilayered shocks began to sink in, with the euro area composite Purchasing Managers' Index falling into contractionary territory (Figure 1.2, panel 3).

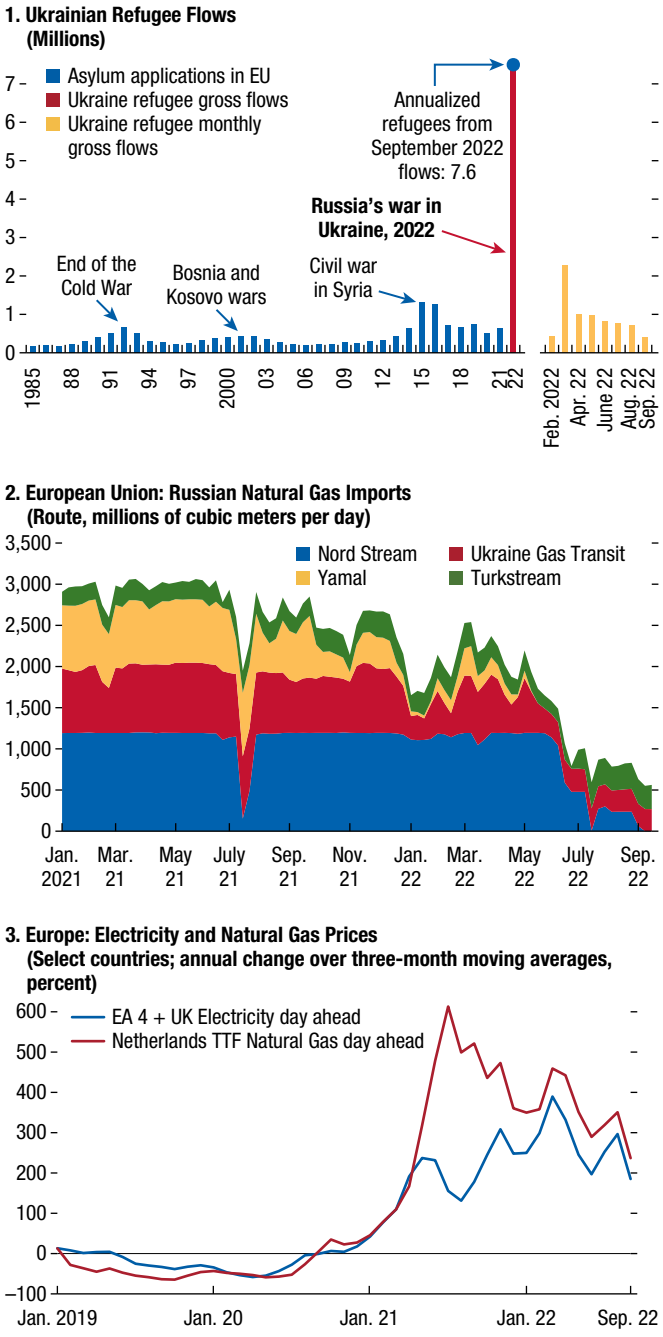
The Fallout of Russia's War in Ukraine Continues to Unfold

March and April saw the largest number of Ukrainian refugees, but inflows have continued steadily throughout the year, mostly to the Czech Republic, Germany, and Poland in the European Union (EU) and to Russia. Looking through two-way flows, the number of refugees reached 7.5 million (of which 4.2 million are in the EU) as of end-September (Figure 1.3, panel 1). Moreover, about 7 million internally displaced persons remain within Ukraine (Box 1.1).

Meanwhile, natural gas imports from Russia, until recently the EU's largest energy supplier, have almost dried up, pushing the continent into an energy crisis. Russian pipeline gas exports, which had begun to decline in mid-2021, have fallen by 80 percent (year over year) through mid-September 2022, including total supply cuts to several individual countries (Bulgaria, Denmark, Finland, Germany, Lithuania, The Netherlands, Poland) (Figure 1.3, panel 2). As a result, natural gas and electricity prices skyrocketed (Figure 1.1, panel 2; and Figure 1.3, panel 3). Coal prices more than tripled on a yearly basis through September, as Europe scrambled to find substitutes for natural gas–based electricity generation.[1]

[1]During the summer, the EU also imposed a partial embargo on Russian oil and derivatives and a ban on shipping insurance for Russian oil exports. An embargo on Russian coal exports entered in effect in August. In early September, the Group of Seven imposed a price cap on Russian oil imports, segmenting energy markets further. Damages discovered in both Nord Stream 1 and 2 at end-September will likely prevent any Russian gas deliveries through these pipelines in the next several months.

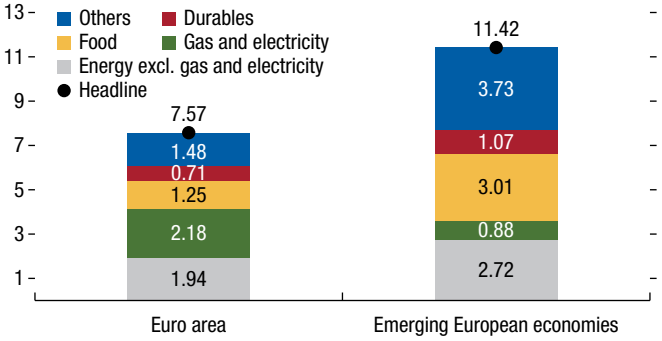
Figure 1.3. Europe: The Fallout of the War in Ukraine



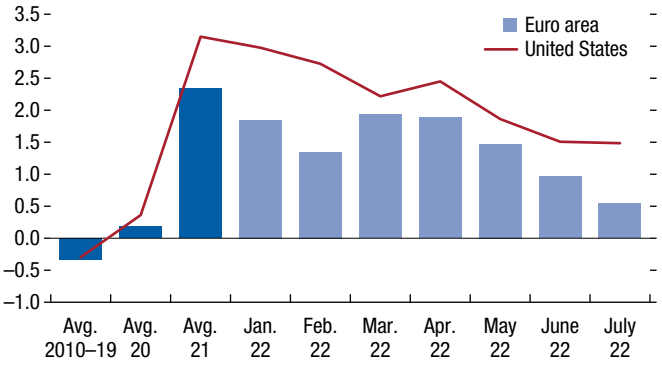
Sources: Bloomberg Finance L.P; Bruegel; Haver Analytics; IMF, *World Economic Outlook*; UN High Commissioner for Refugees; and IMF staff calculations.
Note: In panel 3, the latest data point is September 27, 2022; EA 4 includes France, Germany, Italy, and Spain.

Figure 1.4. Europe: Inflation Developments

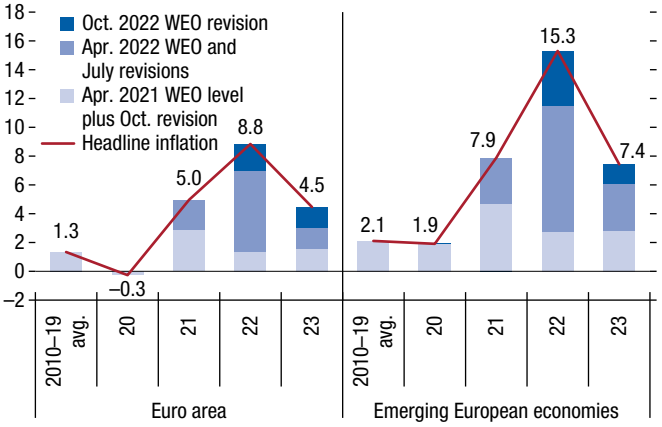
1. Europe: Inflation Decomposition, 2022:M1–M8
(Percent change, year-over-year, period average)



2. Euro Area: Suppliers' Delivery Times
(Normalized; positive denotes increase)



3. Europe: Inflation Projection
(Percent change, end of period)



Sources: Bloomberg Finance L.P; Haver Analytics; IMF, *World Economic Outlook*; and IMF staff calculations.
Note: In panel 1, Emerging European economies include Bulgaria, Croatia, Hungary, North Macedonia, Poland, Romania, Serbia, and Türkiye. In panel 3, emerging European economies exclude Belarus, Russia, Türkiye, and Ukraine. WEO = *World Economic Outlook*.

Climate-Related and Other Bottlenecks Have Added to Price Pressures

Europe's extreme summer weather amplified the energy crisis and price increases. High temperatures and scant rainfall led to exceptionally low river levels (including for the Rhine), which increased the cost of inland deliveries, including coal, oil, and other materials in July and August. Low river levels also impaired hydroelectric generation and the normal functioning of nuclear power plants, including in France, where other factors were also at play.

Inflation Has Increased Further, and Become Broader and More Entrenched

Higher and more volatile commodity prices have driven Europe's inflation further upward and could keep it elevated and volatile through the winter. Energy and food prices explained about 60 percent of cumulated inflation through August in emerging European economies (excluding conflict countries and Türkiye) and 70 percent in the euro area (Figure 1.4, panel 1). The continued depreciation of most European currencies vis-à-vis the US dollar has also contributed to increased inflation. Some easing of supply bottlenecks (such as a declining share of suppliers in the euro area expecting increases in delivery times) provided only a small offset (Figure 1.4, panel 2). Domestic services inflation has continued to rise, also pointing to broadening inflation pressures. Overall, yearly inflation through August in advanced European economies reached 9.3 percent, while it posted 14.9 percent in emerging European economies (excluding conflict countries and Türkiye). Inflation has been particularly high in Estonia, Latvia, and Lithuania, posting more than 20 percent (year over year) on average through August. Moreover, core inflation has risen significantly above central bank targets in advanced and emerging European economies alike,

while its dispersion has also increased, reflecting in part cross-country differences in the consumption basket weights and degrees of pass-through to consumers of energy and food price increases (Chapter 2 of this *Regional Economic Outlook*).

Despite Tight Labor Markets, Wage Growth Has Lagged Inflation

European labor markets continued to strengthen until recently. In most countries, mobility normalization led to a full recovery in employment rates, while hours worked broadly returned to prepandemic levels (Figure 1.5, panel 2).

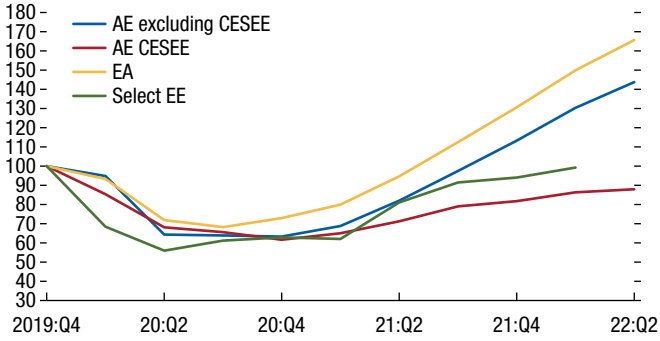
Other indicators such as job vacancy ratios suggest that by the summer of 2022, labor markets were significantly tighter than before the pandemic, including in the euro area and the United Kingdom (Figure 1.5, panel 1). This may reflect a shift in workers' job preferences (away from contact-intensive, non-teleworkable jobs) or in their ability to work.[2]

However, the positive impact of the employment recovery on labor incomes has so far been more than offset by the drag from real wage declines (Figure 1.5, panel 3). Although wage growth is gradually picking up and ongoing collective bargaining negotiations point to further gains ahead, negotiated wage growth has remained relatively contained, with real wages decreasing in the euro area. Nominal wage growth has been closer to inflation in countries with stronger cyclical positions, such as the Czech Republic, Hungary, Lithuania, Poland, and Romania.

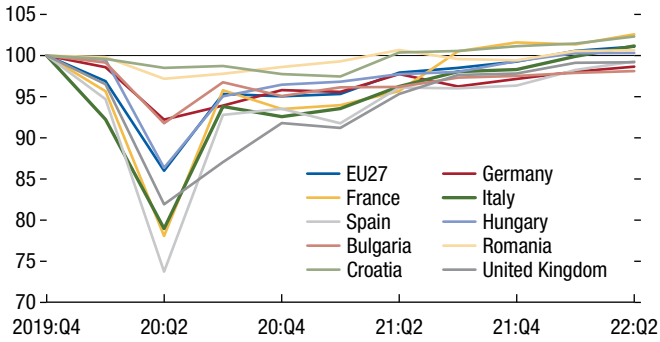
[2]Staff estimates suggest that long COVID-19 alone may have reduced the effective workforce by half a percent on average across the EU-27 because of excess sick leave, even leaving aside the possible hit to labor force participation. It may also have pushed firms to post more vacancies and reduced individuals' ability to fill them, all else equal.

Figure 1.5. Europe: Labor Market Developments

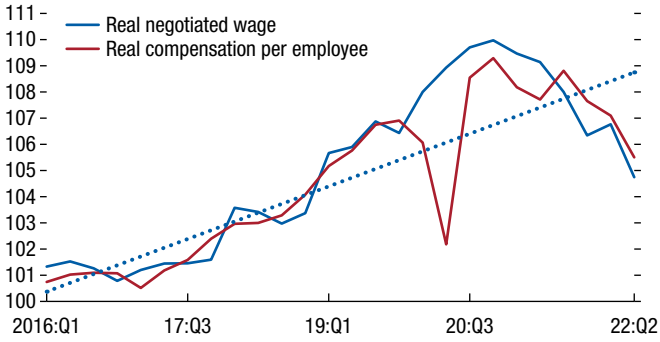
1. Europe: Labor Market Tightness Indicators
(Vacancy-to-unemployment ratio, index 2019:Q4 = 100; NSA)



2. Europe: Hours Worked
(Indices, 2019:Q4 = 100)

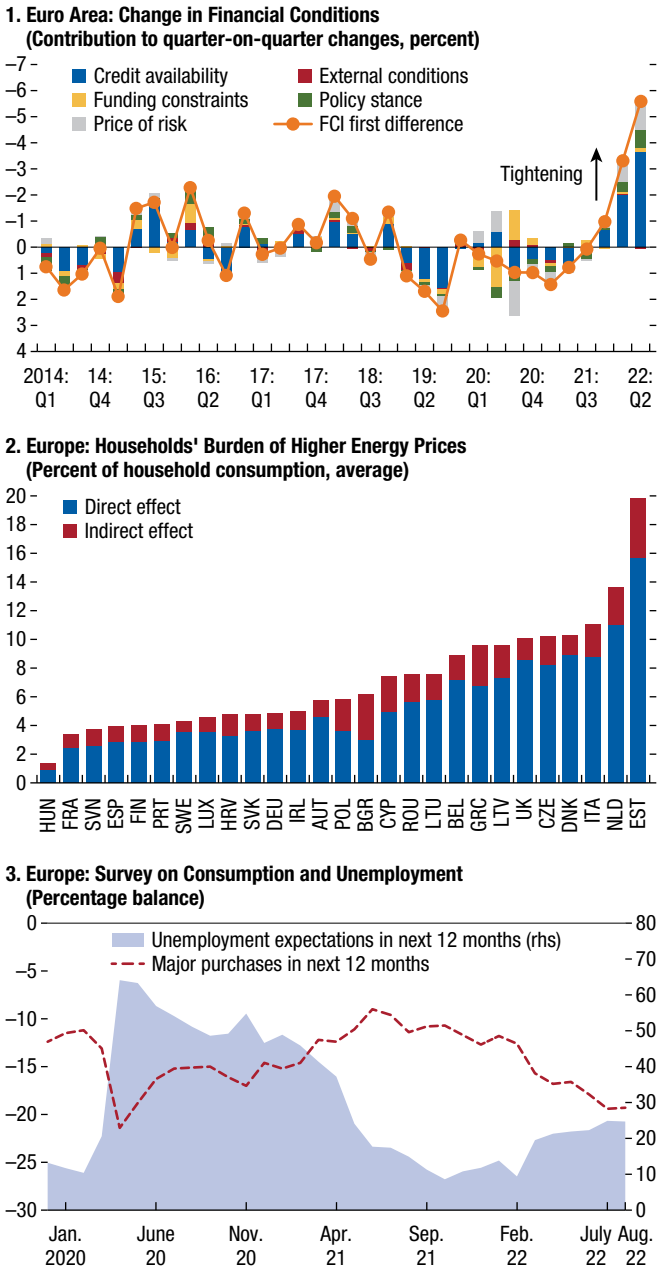


3. Euro Area: Negotiated Wages and Compensation per Employee
(Indices, 2015 = 100)



Sources: European Central Bank; Eurostat; Haver Analytics; and IMF staff calculations.
Note: In panel 1, labor tightness is measured by the ratio of vacancies over the number of unemployed; select EE includes Bulgaria, Croatia, Hungary, North Macedonia, Poland, and Romania. In panel 3, real values are calculated by deflating nominal values using the Harmonized Index of Consumer Prices. AE = advanced European economies; CESEE = central, eastern, and southeastern Europe; EA = euro area; EE = emerging European economies; NSA = not seasonally adjusted.

Figure 1.6. Europe: Financial Conditions and Consumption



Sources: Bloomberg Finance L.P.; Eurostat; Haver Analytics; and IMF staff calculations.
Note: In panel 2, the direct effect is the increase in household cost of living due to increases in energy prices themselves, and the indirect effect is the increase in the cost of living due to the increase in prices of other goods. In panel 3, percent balance equals percent of respondents reporting an increase minus the percent of respondents reporting a decrease; estimates correspond for 2022. Country abbreviations are International Organization for Standardization country codes. FCI = Financial Conditions Index; UK = United Kingdom.

Fiscal Consolidation Slowed with Measures to Ease the Inflation's Impact on Incomes

The economic and social fallout from the war in Ukraine has also increased pressure on public budgets, but its impact on the overall fiscal stance for 2022 has so far varied across Europe.

In emerging European economies (excluding conflict countries and Türkiye), higher energy subsidies and refugee support are expected to add 0.8 percentage point of GDP to the 2022 fiscal deficits compared to projections before the start of the war in Ukraine. In advanced European economies, lower pandemic-related spending and revenue increases have provided offsets and kept fiscal policy broadly neutral. Policy responses to the energy price shock have typically featured price-suppressing measures, in some cases with a significant fiscal cost (for example, in Greece and Romania). In the United Kingdom, a fiscal package including energy bill caps and tax cuts proposed in late September triggered an adverse market reaction. In some countries, such as the Czech Republic, Estonia, or Poland, the fiscal cost of support to refugees has also been sizable at about 1 percent of GDP in 2022 (Box 1.1). The war has also led to plans to increase military spending, including in Germany, Hungary, and Poland.

Financial Conditions Have Tightened across Europe, Especially in Emerging Market Economies

Monetary policy normalization, lower credit availability, and a higher price of risk have all tightened financial conditions, which are now more restrictive than before the pandemic in the euro area and emerging European economies (Box 1.2; and Figure 1.6, panel 1). Higher corporate bond spreads and sovereign bond yields, feeding into higher mortgage and other consumer lending rates, should deteriorate funding conditions

for firms and households, slowing down credit growth.

Tighter financial conditions have been accompanied by a significant deterioration in market conditions in some emerging European economies. Even though the sharp contraction in portfolio inflows at the onset of the war in Ukraine has subsided, nonresidents have been net sellers of securities, especially of bonds. Accordingly, sovereign bond spreads over German bunds have risen across the board, while credit default swaps have also increased, especially in Romania and Serbia.

Moreover, a few national currencies depreciated vis-à-vis the euro amid increased volatility (Hungary, Poland), while others held up but at the cost of international reserve losses (including in Montenegro, North Macedonia, and Serbia, among others). Deteriorated market conditions led to more difficult access to the Eurobond market for several sovereigns.

Higher Inflation and Tighter Financial Conditions Are Weakening Private Balance Sheets and Demand

Record high electricity and natural gas prices represent a large negative shock for the vast majority of households, even in countries that do not rely much on imported gas and oil. For European households, higher energy prices will increase the cost of living by 7 percent in 2022 and 9 percent in 2023, both with respect to 2021 (Figure 1.6, panel 2).

In addition, tighter financial conditions have increased debt-servicing costs. Simulations suggest that these trends will likely intensify in the months ahead, given the expected persistently high inflation and further monetary policy tightening (Box 1.3).

Moreover, the buffering role of household savings may remain limited, given the broad normalization of saving rates during 2021 and the fact that excess savings tend to be concentrated in the upper-income quintile.[3] Private consumption contracted sequentially already in the first quarter of 2022 in France, Italy, and Spain, and despite some recovery during the summer, it is expected to remain subdued in the second half of 2022 and in 2023. This is in line with survey data suggesting that weak consumer confidence is prompting a larger share of households in the EU-27 to revise their planned major purchases downward in the next 12 months (Figure 1.6, panel 3).

High energy prices also represent a major supply shock for firms, especially energy-intensive ones. Many European firms have already curtailed or plan to cut production in sectors such as fertilizers, glass, steel, and aluminum manufacturing, which will likely result in additional price increases across value chains. Firms' interest coverage ratios are decreasing because of deteriorated earnings and tightening credit conditions, all of which should weigh on corporate investment.

Europe's Outlook Will Continue to See Weak Growth and High Inflation

The mutually interacting factors described so far, including higher energy prices, tighter financial conditions, and softer global growth, are expected to result in a combination of weak growth and high inflation across Europe.

In this regard, this *Regional Economic Outlook: Europe* assumes that (1) sanctions remain in place and natural gas flows from Russia remain very low in 2022–23, averaging 15 percent of normal levels; therefore, energy and other commodity prices stay elevated and volatile in the months ahead; (2) the war in Ukraine continues; (3) disruptions to the supply of critical inputs gradually ease as demand softens, with possible additional COVID-

[3]See Attinasi, Bobasu, and Manu (2021).

19-related lockdowns in China representing a downside risk; in Europe, weather-related bottlenecks also gradually ease; (4) the pandemic's health and economic impact on Europe fades; (5) monetary policy normalization proceeds steadily in advanced European economies, with the policy rate in the euro area, for example, reaching a neutral stance by early 2023; in emerging European economies, the pace of rate hikes eases after significant rate increases throughout 2021–22; and (6) fiscal policy consolidates in 2023 in advanced and emerging European economies, but less than envisioned in the July 2022 *World Economic Outlook Update*, because of recent measures to ease the impact of energy and food price increases.

Under these baseline assumptions, output growth in advanced European economies is forecast to decline to 3.2 percent in 2022 and to decrease further to 0.6 percent in 2023, the latter representing a downward revision of 0.7 percentage point with respect to July projections. A few countries will experience technical recessions, defined as two consecutive quarters of negative GDP growth, including Germany and Italy (which are projected to see three consecutive quarters of negative growth starting from the third quarter of 2022). Growth in emerging European economies (excluding conflict countries and Türkiye) is also projected to decelerate from 4.3 percent in 2022 to 1.7 percent in 2023, which for next year represents a downward revision of around 1 percentage point with respect to expectations last July; for example, Croatia, Poland, and Romania are all expected to experience technical recessions in the second half of 2022 (Figure 1.7, panel 1).[4]

Slower consumption will be the main drag on growth, as weaker consumer confidence, higher inflation, and tighter financial conditions weigh on household spending (Figure 1.7, panel 2). Firms are also likely to hold back investment, given the record high uncertainty, more expensive input and borrowing costs, and lower demand from external trading partners. For instance, the downward revision to China's growth relative to April 2022 projections (of about 1.2 percentage points in 2022 and 0.6 percentage point in 2023) is expected to reduce the EU's GDP level by about 0.2 percent. The moderate fiscal consolidation projected for 2023 will further contribute to cooling down demand.

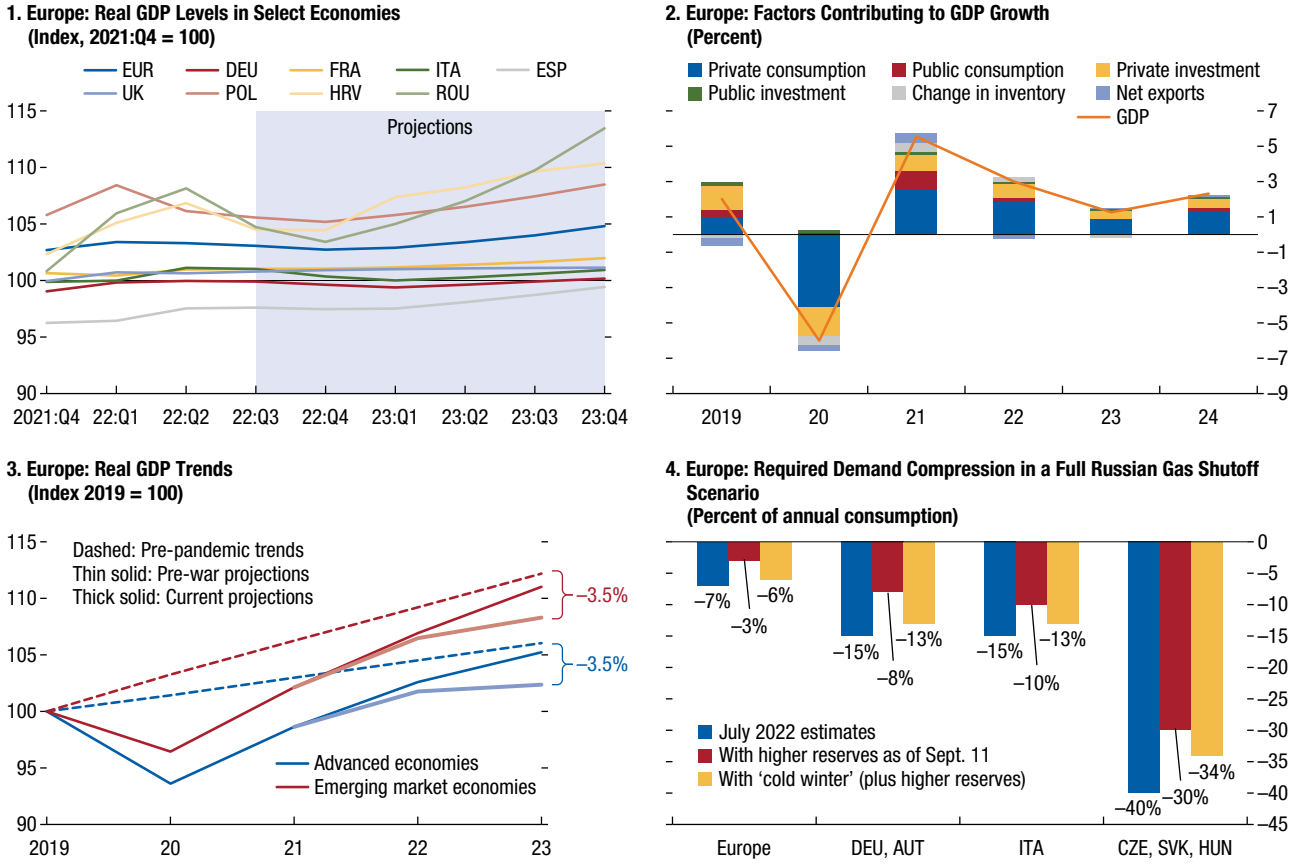
Countries affected directly by the war are forecast to see a sharp contraction. After the initial hit from sanctions, Russia's economy stabilized in the second quarter of 2022, allowing the central bank to bring policy rates back to prewar levels. That said, decreases in private demand will lead to a GDP contraction of 3.4 and 2.3 percent in 2022 and 2023, respectively. Ukraine, affected by widespread destruction in infrastructure and massive refugee outflows, will see its GDP contract by over a third in 2022 (Box 1.4).

Most of the energy price surge is expected to be temporary, but Europe will still end up facing higher energy prices than before the war in the medium term. This will slow potential growth, add to output loss ("scarring") with respect to prepandemic trends, and, all else equal, further reduce already limited economic slack. Accordingly, output scarring by the end of 2023 is projected at 3.5 percent in both advanced and emerging European economies (excluding conflict countries and Türkiye), which result from adding war-related output losses to the relative small losses expected from the pandemic (Figure 1.7, panel 3).

The fallout from the war will also push inflation above the already high levels projected in the summer, by about 1–3 percentage points in 2022–23. Headline inflation in advanced European economies is projected to increase to 8.3 percent in 2022 before declining to 6.2 percent in 2023 as the impact of the high energy prices runs its course, and weakening demand dampens wage and price pressures. In emerging European economies (excluding conflict countries and Türkiye), inflation will reach 13.3 percent in 2022 and remain persistently elevated in 2023 at 11.8 percent. The more persistent inflation in emerging European economies reflects, among other things, stronger nominal wage growth amid more robust cyclical positions. This is also

[4]Still-high annual growth in 2022 in many economies reflects a sizable carryover at the end of 2021.

Figure 1.7. Europe: Outlook and Risks



Sources: IMF, *World Economic Outlook*; and IMF staff calculations.
Note: In panel 2, Belarus, Russia, Türkiye, and Ukraine are excluded. In panel 3, prepandemic trends refer to the January 2020 forecasts. Prewar trends refer to the January 2022 forecasts; emerging market economies exclude Belarus, Russia, Türkiye and Ukraine. In panel 4, natural gas compression measures the decrease in gas demand needed to clear the market under alternative weather assumptions. Country abbreviations are International Organization for Standardization country codes. UK = United Kingdom.

consistent with empirical evidence, suggesting that inflation tends to be more persistent in emerging European economies than in their advanced counterparts. Inflation is then projected to gradually return to central bank targets—to about 2 percent by 2025 in advanced European economies and to below 3 percent by 2026 in emerging European economies (excluding conflict countries and Türkiye).

The War in Ukraine Will Keep Uncertainty High and Risks to the Downside

The war in Ukraine will keep uncertainty high, with the balance of risks to the downside for growth and to the upside for inflation.

Risks will be exceptionally high in the winter of 2022–23 because a complete shutoff of remaining Russian gas flows could create further economic pain, especially if a cold winter results in gas shortages and rationing. More broadly, an escalation of the war or an intensification of geopolitical tensions in Asia could amplify commodity market disruptions and supply bottlenecks, with adverse real income and confidence effects. Other war-related risks, including those associated with Ukraine's nuclear plants, could have devastating effects. In addition, because projected commodity price disinflation and easing supply bottlenecks are expected to rapidly result in a decline of inflation, current projections are considering a degree of core inflation persistence that is at the lower end of the range predicted by simple empirical models,

suggesting upside risks. Inflation could also stay higher than expected for longer if medium-term inflation expectations began to de-anchor, or wage increases adjusted by GDP deflator growth exceeded trend growth in labor productivity, triggering a wage-price spiral (see Chapter 2 of this *Regional Economic Outlook*). Importantly, social tensions can intensify as a response to the higher cost of living. Other downside risks are associated with new and more dangerous virus mutations and a more abrupt and sharper slowdown in key trading partners, including China and the United States.[5] On the upside, the growth outlook could improve with a faster-than-expected unwinding of supply bottlenecks, and greater resilience of private consumption.

Among downside risks, the impact of a full Russian gas shutoff would be particularly severe. Because of a very quick policy response, including replenishing gas inventories and securing alternative gas imports, European natural gas markets have been able to adjust so far, though at the cost of large gas price increases that are weighing on the outlook. Although no shortages are expected under the baseline projection, the combination of a full and extended shut-off of Russian gas to Europe and a harsh winter could lead to additional stress, including a physical shortfall of about 6 percent of typical winter consumption.[6] Due to infrastructure bottlenecks, the shortages would be distributed unequally, with landlocked countries in central and eastern Europe being most vulnerable (Figure 1.7, panel 4). The most exposed countries could see a GDP loss of some 3 percent with respect to the baseline projection, but other countries (such as Italy) could also see sizable output losses. But even if replenished natural gas stocks allow Europe to manage during the winter of 2022–23, the spring will find the region trying to refill inventories but with very modest (or totally absent) Russian supply, which may result in the market retesting in 2023 the record high natural gas and electricity prices of 2022.

A sharper-than-projected tightening of financial conditions in response to more persistent inflation also represents an important downside risk. Higher interest rates in reserve currency countries could lead to financial outflows in emerging European economies. Lending rate increases, along with lower real incomes for households and lower profits for firms in industries already hit hard by elevated energy prices, would raise the number of vulnerable households and firms, suppress consumption and investment, and trigger defaults. In principle, the implied hit to bank balance sheets could lead to a stronger-than-anticipated tightening in lending standards, fueling a vicious cycle of weaker activity, higher defaults, and tighter credit. In practice, simulations suggest that barring a severe tightening of financial conditions, strong European bank balance sheets should keep such risk in check. Indeed, banks' capital positions are considerably stronger than they were before Europe's sovereign debt crisis of the early 2010s, with median Tier 1 ratios of 19 percent across advanced European economies and 21 percent across emerging European economies (Box 1.3; and Figure 1.10, panel 1).

Navigating Severe Policy Trade-Offs

The war in Ukraine has steepened the trade-offs facing European policymakers, with policy choices expected to be especially hard during the upcoming winter.

Although inflation is projected to fall, it will remain above central bank targets by the end of 2023 and beyond, and risks are high and predominantly on the upside. Furthermore, labor markets are tight, and the war and associated energy crisis are reducing potential output, which suggests that looking through the wide uncertainty, economic slack in most countries is likely limited. Monetary policies remain accommodative in many economies, even after recent policy rate hikes, and planned

[5]For instance, the simultaneous materialization of softer growth in China, a full Russian gas shutoff, increases in oil prices, and more persistent inflation with tighter financial conditions could lead to a decline in the EU's GDP level of about 1.4 percent in 2023 with respect to the baseline.

[6]See Di Bella and others (2022).

fiscal consolidation is modest at most, with fiscal balances below the levels needed to stabilize public debt in most countries. At the same time, households and firms across Europe are being battered by a massive, yet largely temporary, energy price shock that could get worse if Russia shuts the gas off completely, possibly causing irreversible economic damage and threatening social cohesion.

These considerations call for monetary policy rate increases and fiscal consolidation, with the latter temporarily slowed as governments roll out measures to weather the energy crisis. A tighter macroeconomic policy stance is particularly required in most emerging European economies. In any case, the policy mix will need to be recalibrated if downside risks materialize: policy normalization could generally be slowed amid a stronger demand slowdown, while further supply-side shocks would create far more acute policy trade-offs.

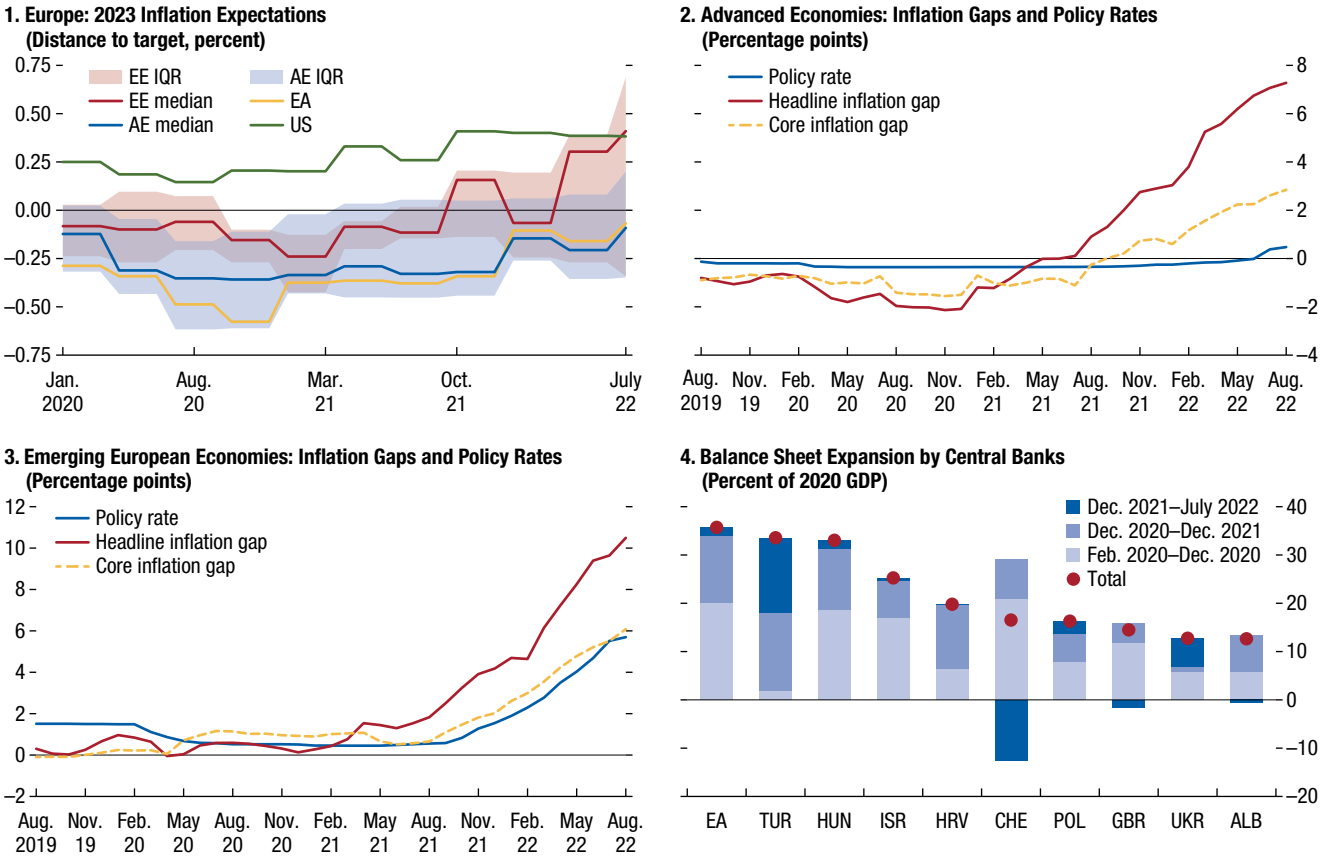
Monetary Policy: Keep Raising Policy Rates, Remain Nimble

Central banks throughout Europe have continued normalizing monetary policy, with generally earlier and stronger policy rate hikes in countries where the gap between realized and target inflation rates was widest. Many emerging European economies (including Hungary, Poland, and Romania) and advanced European economies (the Czech Republic, Iceland, the United Kingdom) have increased the frequency and magnitude of rate hikes in the last 6–12 months (Figure 1.8, panels 2 and 3). Moreover, a few central banks have begun to reduce the size of their balance sheets, moving closer toward normalization of policy, while inflation has also contributed to reducing the real value of central banks' financial assets (Figure 1.8, panel 4). In September, the European Central Bank (ECB) appropriately front-loaded a large portion of the needed policy normalization in a particularly challenging environment, as euro area members face different inflation, activity, and funding prospects. In this context, the announcement of the Transmission Protection Instrument last July is a welcome step to address fragmentation risks, and ensure that the monetary policy stance is transmitted across all euro area economies while countering disorderly market dynamics.

Given a still broadly accommodative policy stance, central banks should continue to raise policy rates under most scenarios in the next few months. Past experience suggests that moving too slowly may entail costlier subsequent policy tightening, including if price- and wage-setting behaviors were to change in fundamental ways after too long a period of high inflation. Although monetary policy can generally look through transitory supply-driven inflation shocks (including the ongoing Russian gas shutoff and other supply bottlenecks), it should respond to keep inflation expectations well-anchored and to the more persistent component of the energy price shock, which will reduce potential output. Furthermore, the key immediate recession risk, namely a full Russian gas shutoff, would push inflation even higher and likely trigger further fiscal policy support to households and firms, reducing the ex ante risk that monetary policy might need to reverse course in the months ahead. At the same time, core inflation risks are predominantly on the upside, and their materialization would warrant higher policy rates than assumed under the baseline. Therefore, the overall ex ante balance of risks also calls for continued policy normalization.

Additional increases in policy rates are required for central banks in both advanced European economies (including the euro area and the United Kingdom) and in some emerging European economies. Policy rate increases should be faster in advanced economies, which started their normalization cycles more recently. But, comparatively, tighter monetary policy is needed in most emerging European economies, where inflation is higher, expectations are not strongly anchored, cyclical positions are more robust, and nominal wage growth is higher, carrying risks of more protracted wage-price feedback loops. In these economies, maintaining full central bank independence and transparency is key to keeping risks of unmoored inflation expectations and wage-price feedback loops off the table.

Figure 1.8. Monetary Policy



Sources: Consensus Forecasts; European Central Bank; IMF, World Economic Outlook database; and IMF staff calculations.
Note: In panels 2 and 3, policy rates and inflation gaps are aggregated by taking the PPP-GDP weighted average; inflation gap refers to the difference between the inflation target (or its midpoint) and the headline and core inflation. Data in both charts is through end-August, 2022. In panel 3, emerging European economies exclude Bosnia and Herzegovina, Belarus, Kosovo, Moldova, Russia, Türkiye, and Ukraine. In panel 4, expansion is calculated as difference between Central Banks' assets value. Country abbreviations are International Organization for Standardization country codes. AE = advanced European economies; EA = euro area; EE = emerging European economies; IQR = Interquartile range; UK = United Kingdom; US = United States.

In the euro area, monetary policy normalization should continue with a view to reaching a neutral stance by early 2023.[7] With inflation projected to remain persistently above target, the euro area expected to avoid a fully fledged recession, and inflation risks to the upside, the ECB will need to continue raising policy rates in the coming months. A tight monetary policy stance will likely be needed in 2023 unless growth and labor market prospects weaken sufficiently below their current baseline to materially reduce medium-term inflation. At the same time, it will need to manage market fragmentation risks, including (if needed) through clearly communicating actions taken within the recently announced Transmission Protection Instrument to avoid market volatility.

Transparency and clear communication of policy objectives will also be essential to foster credibility as Europe adjusts to the ongoing supply shock. Regarding quantitative tightening, the ECB may consider discontinuing some or all of Asset Purchase Program (APP) reinvestments, with flexible Pandemic Emergency Purchase Program (PEPP) reinvestments serving as the first line of defense to address fragmentation risks.[8]

[7]In the euro area, longer-term expectations have remained broadly anchored (Figure 1.8, panel 1). But views about inflation prospects are mixed, with a significant share of economic agents believing inflation will exceed the ECB's target in the next 12 months.

[8]Targeted longer-term refinancing operations (TLTRO) net repayments are also expected to contribute to decrease the size of the ECB's balance sheet, whose real value will be further reduced by (GDP deflator) inflation.

That said, exceptional uncertainty calls for a flexible risk management approach to monetary policy. The specific interest rate and quantitative tightening baseline paths should remain data-dependent and respond to emerging risks in both directions. If a further global demand slowdown (for instance, because of negative growth surprises in China or the United States) threatened to move Europe into recession, policy normalization should generally be slowed as long as wage increases are contained and inflation expectations are anchored. If additional supply shocks occur, central banks should focus on avoiding wage-price spirals and a de-anchoring of inflation expectations, while standing ready to slow or pause monetary policy normalization if demand and the medium-term inflation outlook weaken substantially.

Fiscal Policy: Managing the Extraordinary Energy Price Shock while Rebuilding Fiscal Space

Fiscal consolidation should proceed during 2023, with its pace temporarily slowed in the coming months to allow governments to support vulnerable households and viable firms through the energy crisis.[9] Fiscal consolidation will support monetary policy normalization, helping central banks achieve their objectives with smaller policy rate increases—which, in turn, will also help reduce public debt (Figure 1.9, panel 1).

Fiscal deficits should decrease faster in high-debt countries, in those with limited fiscal space, and, more generally, in those more vulnerable to tighter financial conditions, including many emerging European economies. Likewise, efforts should be greater in countries facing stronger aggregate demand, such as Hungary and Poland. On current trends, debt ratios would decline mainly in low-debt advanced European economies in the medium term, while in several high-debt economies they would remain stable or even increase further. In the EU, a reformed fiscal framework that prevents debt distress while allowing for sufficient macroeconomic stabilization should ideally be in place before the expiration of the general escape clause at the end of 2023.[10]

At the same time, spending needs to be reprioritized toward assisting vulnerable households and viable firms affected by the surge of energy prices. Domestic prices should reflect inasmuch as possible the signals provided by energy markets; to this end, targeted and temporary fiscal transfers to low-income households should be given priority. However, the extraordinary magnitude of electricity and natural gas price increases, and its partly temporary nature, caution against a full immediate pass-through to all end users, which could have dramatic effects on households' living costs and push viable firms into bankruptcy, with irreversible damage to medium-term income levels. This suggests that temporary energy subsidies might be considered, the size of which should depend on the gap of current to medium-term energy prices and available fiscal space. In any event, such subsidies should be limited in size so as to maintain fiscal consolidation, and price signals should be preserved to encourage needed adjustment by households and firms (Figure 1.9, panels 2 and 3).

In this regard, while not fully targeted, increasing the progressivity of tariffs for upper consumption levels and for peak demand hours would encourage better-off households to reduce demand and create room for critical consumption of vulnerable households and energy-intensive firms.

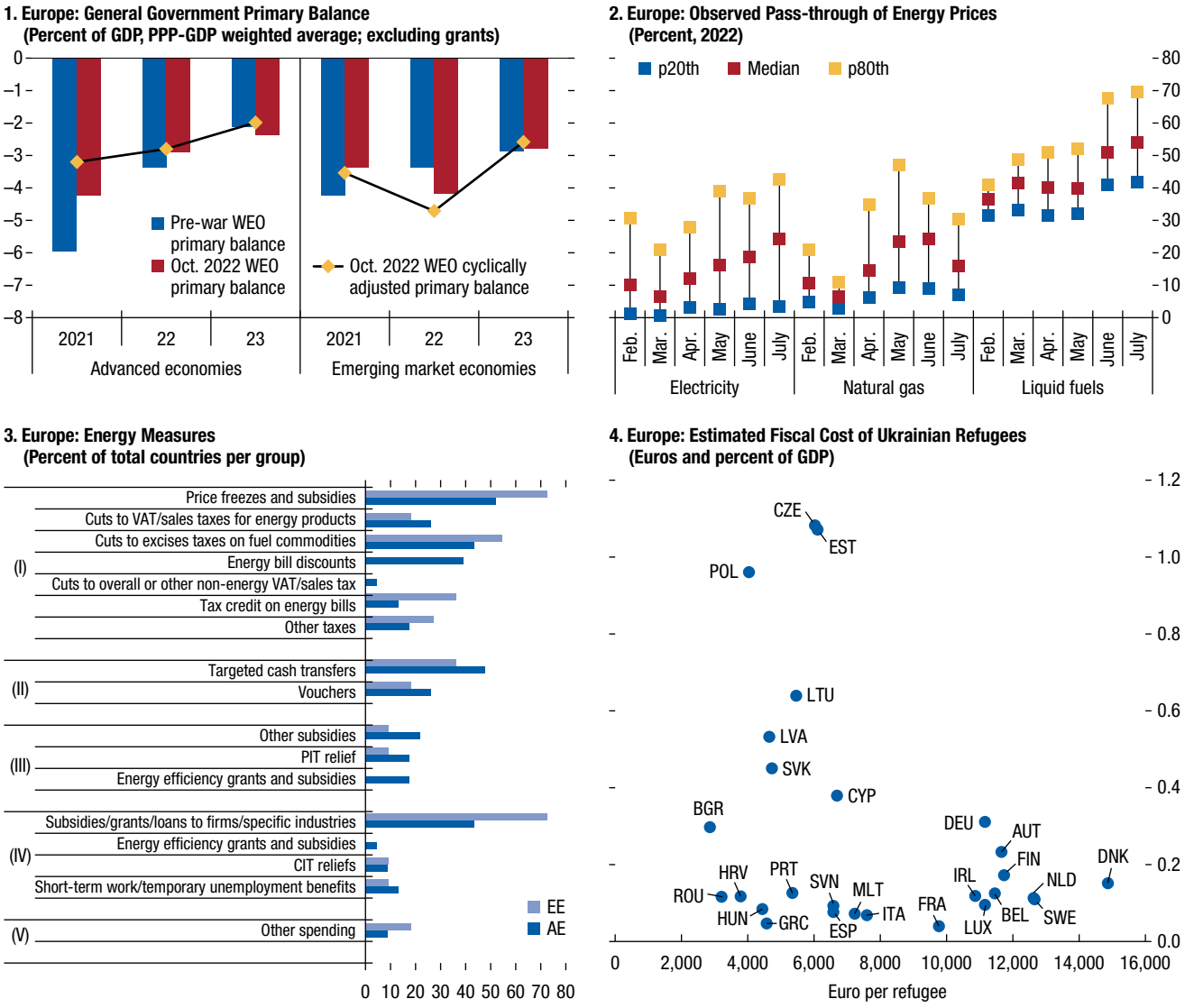
The proposal by the European Commission last September to tax all revenues above a certain electricity price level (the so-called cap) will bring new fiscal revenues to tackle the energy crisis.[11]

[9]Vulnerable households are understood in a broad sense to include lower-income and lower-middle-income households most affected by the energy shock.

[10]This is in line with the IMF staff's reform proposal, which is consistent with current EU treaties and includes three pillars: (1) reformed numerical rules with expenditure ceiling paths as the operational target, with EU rules impinging on national fiscal policy decisions depending on the country's fiscal sustainability risk; (2) stronger fiscal institutions with a focus on national fiscal councils; and (3) a European central fiscal capacity, including a common climate investment fund. See Arnold and others (2022).

[11]See European Commission (2022a).

Figure 1.9. Europe: Fiscal Policy



Sources: Eurostat; Haver Analytics; IMF, *World Economic Outlook*; Organization for Economic Co-operation and Development (OECD); UN High Commissioner for Refugees; and IMF staff calculations.
Note: Panel 1 is consistent with current policies and does not include fiscal measures adopted after the WEO cutoff date of September 26, 2022; emerging European economies exclude Belarus, Russia, Türkiye and Ukraine; the cyclically-adjusted primary balance is expressed in percent of potential GDP. In panel 2, the pass-through is computed as the ratio (in percentage) of retail to wholesale year over year inflation; wholesale inflation is measured by the TTF Index for natural gas, and by the Brent Crude Oil Index for liquid fuels; p20th and p80th refer to the 20th and 80th percentile, respectively; all underlying variables are in Euros. In panel 3, EE includes Belarus, Bulgaria, Hungary, Kosovo, Moldova, North Macedonia, Montenegro, Poland, Romania, Serbia, and Türkiye. The policy groups include: (I) measures that impede price pass-through; (II) targeted support for households; (III) less/untargeted support for households; (IV) support for firms; (V) others. In panel 4, estimates are based on 2017 OECD figure of EUR 10,000 per refugee in main European destination countries updated to May 2022 prices (EUR 11,578). Cross-country values are obtained by indexing country nominal GDP per capita to value for Germany, with Luxembourg indexed to Germany, and Ireland to the United Kingdom. Estimates are preliminary. Country abbreviations are International Organization for Standardization country codes. AE = advanced European economies; CIT = Corporate Income Tax; EE = emerging European economies; PPP = purchasing power parity; VAT = valued added tax; WEO = *World Economic Outlook*.

The cap should be temporary and well-calibrated to avoid affecting electricity supply.

However, given uneven generation by inframarginal producers and operational difficulties to share revenues, the impact of this measure will likely differ across countries. To the extent possible, national policies need to be

coordinated to avoid unwarranted asymmetries and international competitiveness effects.

Managing unprecedented refugee inflows will also remain a challenge for as long as the war continues, requiring increased budgetary allocations for social services, education, and health, estimated at about 0.2 percent of the EU's GDP for 2022. Countries hosting large numbers of refugees will also need to reallocate investment for social infrastructure in schools, hospitals, and housing (Box 1.1; and Figure 1.9, panel 4).

If additional shocks materialize, countries with available fiscal space would need to reconsider fiscal consolidation plans. If a sharper-than-forecast demand slowdown weakens employment and creates economic slack, countries with fiscal space could ease fiscal policy temporarily. In turn, those with limited fiscal space could let automatic stabilizers work but offset any additional support to the vulnerable with tax increases or other spending cuts, with the exception of harmful reductions in health and education spending as well as in public investment, which should be avoided. If further temporary supply shocks hit (such as if gas supplies from Russia cease completely), additional temporary support measures would be needed, which would have to involve further reprioritization of spending in countries with limited fiscal space. If the gas supply is insufficient, nonfiscal policy tools like well-designed rationing programs could also contain output losses.[12] Preparing for this scenario requires implementing regional gas-sharing agreements in earnest to mitigate any forthcoming burden on the most affected countries by distributing gas shortfalls more evenly.

Financial Policies: Preserving the Flow of Credit while Containing Vulnerabilities

In the context of a weaker growth outlook, tighter financial conditions, and higher energy prices, households' and firms' debt-service capacity are expected to deteriorate, pushing banks to tighten their credit standards.

Such tightening has already begun, although healthy bank balance sheets will help contain it under most scenarios (Figure 1.10, panel 1).[13] Policymakers need to monitor and contain pockets of vulnerabilities, which will remain key to keep credit flowing and mitigate liquidity risks that may unduly amplify the impact of the ongoing policy tightening. Supervisors should also ensure that bank asset classifications and loan loss provisions swiftly and accurately reflect credit risk and losses.

Macroprudential policy settings can be kept broadly unchanged under the baseline, with supervisors ensuring that cyclical buffers have been rebuilt. Bank supervisors should also closely monitor banks' risk exposures to vulnerable households and firms, including by stress-testing bank balance sheets for the impact of higher interest rates on these exposures (Figure 1.10, panels 2 and 3). Housing market developments deserve particular attention, including through stress tests to estimate the impact of a sharp fall in house prices on households' balance sheets and banks. This is important to assess vulnerabilities linked to over-indebted households, especially in countries where adjustable-rate mortgages are predominant (such as in Poland, for example). Supervisors should also have access to timely and reliable data and ensure that banks have sound risk management systems, including the capacity to implement adequate stress tests.

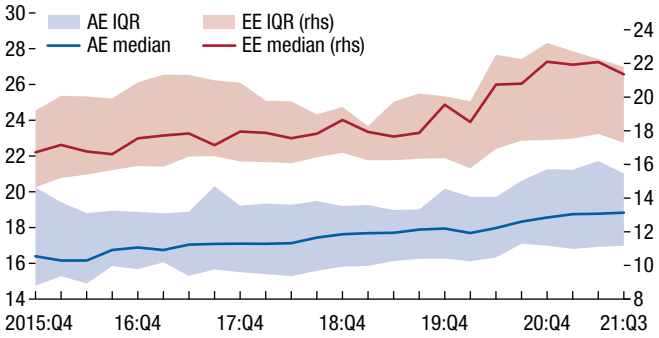
Macroprudential policies should avoid turning procyclical, however. Therefore, if downside risks to the outlook materialize, some macroprudential policy tools may have to be eased to dampen asset price declines (including of housing) and support lending, drawing from the experience accumulated in the pandemic.

[12]Because rationing decisions go beyond economics, they must also reflect social, legal, and technical considerations.

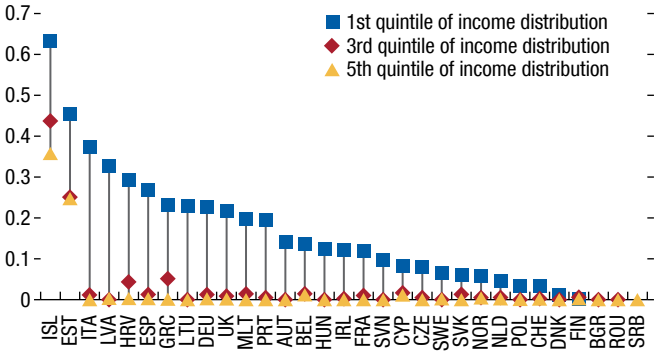
[13]Recent bank lending officer surveys point to a substantial expected tightening of bank credit standards in the euro area.

Figure 1.10. Europe: Financial Policies

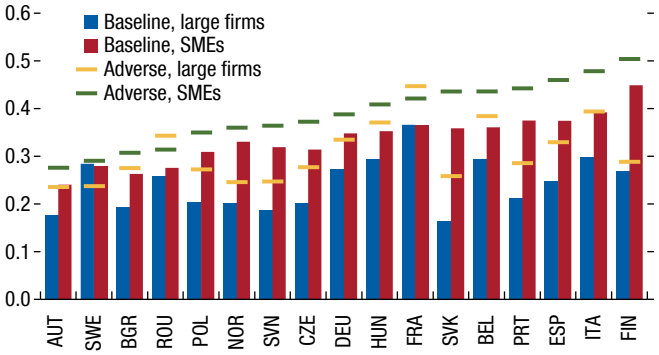
1. Europe: Banks' Capital Adequacy Ratio
(Regulatory Tier 1 capital to risk-weighted assets, percent)



2. Europe: Vulnerable Mortgage Owners
(Share of households in the first, third, and fifth income quintile with debt service-to-income greater than 40 percent; 1 denotes 100 percent)



3. Europe: Nonfinancial Firms with Interest Coverage Ratios Lower than One
(Share of total per select country; 1 denotes 100 percent)



Sources: EU-SILC; Eurostat; German Institute for Economic Research (DIW Berlin); Haver Analytics; IMF, *World Economic Outlook*; Orbis; and IMF staff calculations.
Note: In panel 2, the source of the data for Germany is: German Institute for Economic Research (DIW Berlin); the latest available data for Germany is in 2010. Country abbreviations are International Organization for Standardization country codes. IQR = interquartile range; AE = advanced European economies; EE = emerging European economies; RHS = right-hand scale; SME = small and medium sized enterprises; UK = United Kingdom.

Structural Policies: Supporting Europe's Immediate Agenda by Addressing Long-Standing Reform Priorities

Steady implementation of structural reforms remains essential to mitigate energy security risks, accelerate the green transition, ease labor market tensions, and boost productivity and potential growth, all of which will ease supply constraints and lead to lower inflation down the road. Preparing to rebuild Ukraine will also stay on the agenda for as long as the war continues. Concretely:

- Ensuring energy security will remain a top priority in the years ahead. To address near-term needs, countries have secured alternative supply sources, substituted gas with other fuels where possible (though at the cost of increased greenhouse gas emissions), updated contingency plans, and built storage ahead of the heating season as planned. Several countries (for example, Germany and Italy) and the EU have launched campaigns to encourage energy savings during the 2022–23 winter. While there may be short-term trade-offs in investing in the green transition versus energy security, there are clear synergies between them in the medium term. In line with REPowerEU's strategy, overcoming infrastructure bottlenecks while reducing greenhouse gas emissions requires accelerating the rollout of renewables, reducing fossil fuel consumption in industry and transport, and ramping up smart investment, including in gas connectivity.[14]
- Reconstructing Ukraine's economy after the war will require massive financing flows, primarily in the form of grants. It will also require policies to promote the return of refugees. Meanwhile, the IMF established a new administered account to facilitate the channeling of bilateral contributions (loans or grants); Canada and Germany have already

[14]REPowerEU is the European Commission's plan to make Europe independent from Russian fossil fuels before 2030. See European Commission (2022b).

disbursed more than $2 billion through this account.

- While the main objective should be to rebuild Ukraine, a fraction of refugees is likely to stay in host countries. Even though most European governments responded early in the crisis, integrating long-term refugees will require more emphasis on targeted active labor market policies, such as temporary wage subsidies. The resulting labor force expansion could be a boon for host countries in the context of Europe's demographic pressures (Box 1.1).
- Long-standing structural reform priorities aimed at boosting productivity, accelerating the digital transition, relieving supply constraints, and easing factor reallocation through more flexible labor and product markets remain crucial. Many of these priorities are reflected in the ambitious goals of recovery and resilience plans within the Next Generation EU program, which is encouraging. Looking ahead, a timely and efficient implementation of these programs will help reap their full benefits.

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Box 1.1. Economic Considerations of the Ukrainian Refugee Crisis

Russia Russia's war in Ukraine has led to the largest wave of refugees in Europe since World War II. As of end-September, looking through large pendular cross-border movements, the number of Ukrainian refugees in Europe reached 7.5 million (4.2 million in the European Union [EU]). These figures could rise further depending on the war's duration and severity (UNHCR 2022). To provide context, the Syrian refugee crisis resulted in cumulated inflows to Europe since 2014 of about 5.4 million people. Moreover, 7 million internally displaced persons remain within Ukraine (IOM 2022). The profile of Ukrainian refugees differs from that of past refugee waves, with surveys in Germany, Moldova, and Poland showing a majority of children and women under age 40. Indeed, refugee data suggests that about 30 percent of all Ukrainian children, 17 percent of adult Ukrainian women, and about 6 percent of adult Ukrainian men have fled the country so far in 2022.

Europe has reacted swiftly and decisively to support Ukrainian refugees. As of late September, 4.2 million people have registered under the EU's Temporary Protection Directive (EU-TPD) or similar non-EU programs. The EU-TPD removes many of the barriers that refugees typically face by establishing residency rights; granting access to labor markets and social security programs; and providing access to medical care, schooling, housing, banking services, and social welfare (European Commission 2022c).[1] Specific labor market integration support includes job search services, job training, and language courses, although the intake of these measures has been low in eastern Europe (OECD 2022a). The EU is also providing financing to member countries bordering Ukraine and to the Czech Republic and, outside the EU, to Moldova.

Ukrainian refugees can also move more freely within Europe than other asylum seekers. Ukrainians entering the EU can move freely within the Schengen area for 90 days within a 180-day period, with the EU-TPD also allowing free movement before and after residence has been established. At the same time, a large fraction of refugees (about one-third to one-half) have expressed their intention to return to Ukraine soon (INFO GmbH 2022; Panchenko 2022).

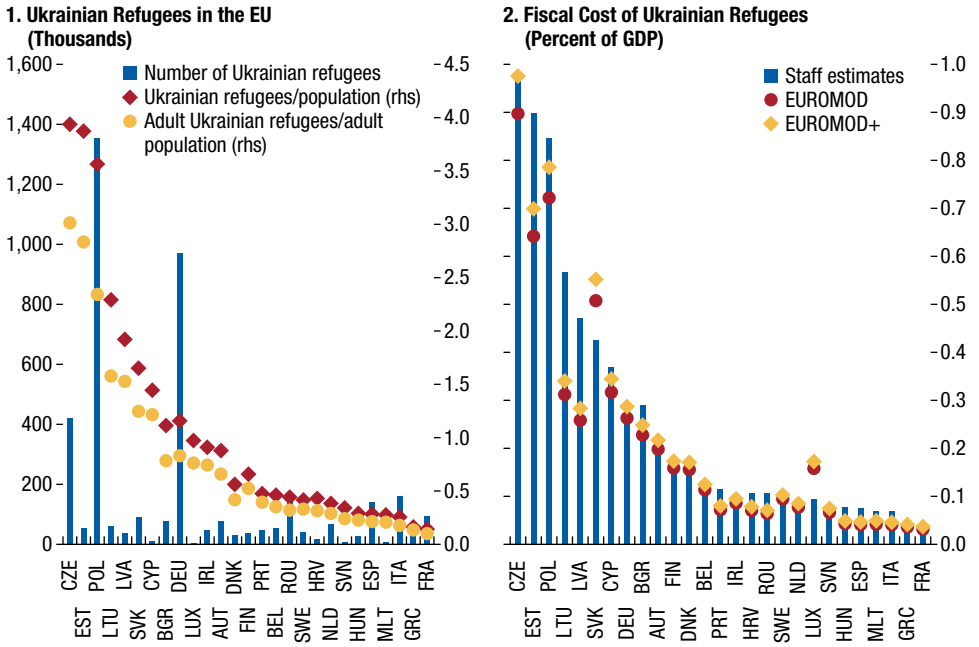
Refugees could help ease current labor market tightness in some parts of eastern Europe while boosting potential growth over the medium term (Box Figure 1.1.1, panel 1). Ukrainian refugees represent about 0.5 percent of Europe's labor force—about twice the size of the 2015–17 refugee wave, with this figure climbing in the Czech Republic (2.2 percent), Poland (2.1 percent), and Estonia (1.9 percent), where labor markets are tight and refugees could fill some of the existing vacancies (OECD 2022b). The medium-term impact of refugees on growth will depend primarily on the speed and quality of their labor market integration, particularly on whether their skills are downgraded and, relatedly, whether their skills complement or instead substitute those of natives (IMF 2016). Skill mismatches may be more pronounced in advanced European economies, where a shortage of low-skilled workers may lead to skill downgrading. In general, however, cultural proximity, higher educational attainment, and weaker language barriers (especially in Ukraine's neighboring countries) enhance the chances of successful labor market integration, compared with past refugee waves (EWL Group 2022).

The fiscal cost of integrating Ukrainian refugees could differ from that of previous waves, being higher in the near term but lower down the road (Box Figure 1.1.1, panel 2). The larger share of women and children will result in immediate budget pressures in the form of childcare, education, and health care services. However, compared with the 2015–17 refugee wave, better labor market integration prospects should bring in more tax revenues, reduce reliance on social welfare, and improve medium-term fiscal outcomes. Fewer administrative procedures under the EU-TPD than for typical asylum practices, along with lower spending on rescue operations and border protection, should also help (EC 2016; OECD 2017). Staff estimates suggest that the short-term fiscal cost of refugees in the EU could be €30–€37 billion in 2022 (about 0.2 percent of EU GDP), in line with estimates from the EU's

Prepared by Neree Noumon and Nicolo Bird, with assistance from Dennis Zhao. Hugo Cruces and Edlira Narazani from the European Commission Joint Research Centre provided EUROMOD estimates.

Box 1.1. Economic Considerations of the Ukrainian Refugee Crisis *(continued)*

Box Figure 1.1.1.



Sources: European Commission; Eurostat; UN High Commissioner for Refugees; Organization for co-operation and development; IMF World Economic Outlook database; and IMF staff calculations.
Note: Country abbreviations are International Organization for Standardization country codes.

EUROMOD (a tax-benefit microsimulation model for member countries) of €26–€34 billion.[2] EU and non-EU countries with the largest population shares of refugees would incur fiscal costs of about 1 percent of GDP, including the Czech Republic, Estonia, Moldova, and Poland.

Policies should strike the right balance between supporting a return of refugees to Ukraine, which remains the key priority, but recognizing that many may not be able to do so for a considerable time. The initial response has been effective to provide relief, but policies should continue providing language training, job search support, and access to health and childcare services while removing regulatory barriers preventing effective labor market integration (for example, skill recognition). Should integration prove too slow, temporary exceptions from minimum wage laws (where minimum-to-median wage ratios are particularly high) or temporary wage subsidies to employers may be considered (IMF 2016). Central governments will need to fund subgovernments adequately and reward successful integration, given their responsibility in education, health care, social welfare, housing, and active labor market policies. At the transnational level, additional mechanisms beyond EU transfers and free transportation could also be considered to help distribute the burden of hosting refugees more fairly. Most important, policies should facilitate refugees keeping ties to Ukraine to pave the way to their return and reintegration once the war ends (Bird and Amaglobeli 2022).

[1]Poland granted Ukrainian refugees access to healthcare, education and the labor market even earlier than envisaged by the EU-TPD.

[2]IMF staff's methodology for assessing fiscal costs updates the costs of processing and accommodating asylum seekers of Organisation for Economic Co-operation and Development (2017), while EUROMOD estimates use microsimulations based on survey data and cover education, health, housing, and social protection costs. See Barrios, Cruces, and Narazani (forthcoming).

Box 1.2. Europe's Tightening Financial Conditions

Financial conditions in Europe have tightened significantly in 2022 after loosening during the pandemic. This box showcases a new financial conditions index (FCI) characterizing credit availability and financing ease in relation to both prices and quantities. The FCI shows a significant tightening in the euro area and select emerging European economies starting in early 2022. Although the decline in lending growth is not as severe as during the global financial crisis or the European debt crisis, the FCI tightening is approaching similar levels. Other FCIs also point to tightening financial conditions amid higher market volatility (Box Figure 1.2.1, panels 1 and 2).[1]

The FCI tightening is happening simultaneously across countries and sectors within the euro area. Across countries, the dispersion of the FCI tightening in 2022 is smaller than during previous contraction episodes, suggesting a euro area–wide phenomenon. Moreover, FCIs across governments, households, and nonfinancial corporates exhibit some degree of tightening in most countries. This differs from the past, when increased government borrowing acted as an offsetting force during tightening cycles.

Lower credit availability and a higher price of risk are major contributing factors to the ongoing FCI tightening, reflecting the impact of market uncertainty (Box Figure 1.2.1, panel 3).

- *Credit availability*, which summarizes financing cost indicators, tightened in the first and second quarters of 2022. Higher corporate bond spreads and sovereign bond yields—feeding into higher mortgage and other consumer lending rates—suggest that firms' and households' ability to secure financing will be more limited, especially in countries with a larger share of market-based financing.
- *The price of risk*, which reflects market volatility and market and credit risk across assets, points to substantial volatility in European bond and equity markets, also contributing to the FCI tightening.
- *Funding constraints*, mainly reflecting banks' ability to lend, matter more in countries with larger shares of bank-based financing. Though recent bank surveys suggest further tightening in the coming quarters because of higher risk perceptions and a deteriorating outlook, their impact on the FCI tightening has been limited so far.
- *The policy stance*, which reflects central bank rates and other policy indicators, is expected to tighten this year in response to increased inflation, contributing to additional FCI tightening. By contrast, during the pandemic, the policy response contributed to offset the tightening of other FCI components.

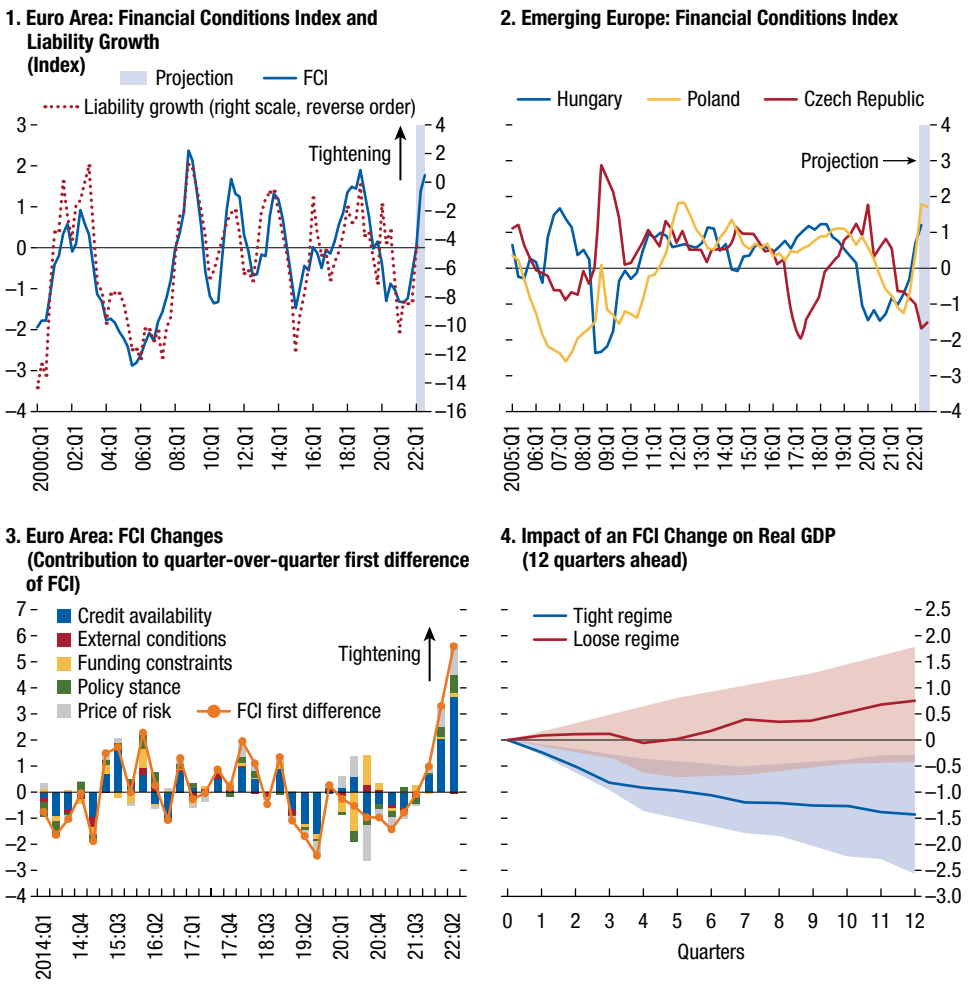
The ongoing FCI tightening is projected to lower output and raise unemployment over the forecast horizon (Box Figure 1.2.1, panel 4). Since early 2022, 10 of the 19 euro area countries and several emerging European economies have entered a tight FCI regime. Based on the empirical estimates of the causal effect of such shifts across all 19 euro area countries during the first quarter of 2000 through the second quarter of 2022, the current FCI tightening could lower output by up to 2.5 percent and raise the unemployment rate by up to 0.8 percentage point over the next three years. The potential impact on core inflation is difficult to quantify, likely because of the lack of variability in historical core inflation rates in the euro area.

Prepared by Vincenzo Guzzo, Vina Nguyen, and Miguel Segoviano, with assistance from Giovanni Borraccia, Fuda Jiang, and Max Yarmolinsky. A more detailed analysis of the material in this box is forthcoming as an IMF Departmental Paper.

[1]For example, the FCI presented in the April 2022 *Global Financial Stability Report* (that emphasizes the role of market volatility), the Banque de France's FCI, and the European Central Bank's composite indicator of system stress.

Box 1.2. Europe's Tightening Financial Conditions *(continued)*

Box Figure 1.2.1.



Sources: Bloomberg Finance LP; Eurostat; Haver Analytics; IMF, *World Economic Outlook*; and IMF staff calculations.
Note: To identify the causal effect of FCI changes on the economy, the continuous FCI series is "discretized" in panel 4 into three separate regimes (neutral, loose, and tight), defined as 40, 40, and 20 percent of the distribution, respectively. The analysis then compares the macroeconomic outcome of moving from a neutral to either a tight or loose financial condition regime using historical data for all 19 Euro area countries from 2000:Q1 to 2022:Q2. FCI = Financial Conditions Index.

Box 1.3. How Vulnerable Is Europe's Private Sector to the Weakening Macroeconomic Outlook?

Tighter financial conditions, a weaker growth outlook, and rising commodity prices will stress Europe's private sector. Households will find it harder to make their mortgage payments as interest rates increase, and rising inflation and slowing economic activity erode real incomes. Similarly, firms' ability to meet debt obligations will weaken as new funding and input costs increase and earnings prospects dim. Low-income households, small firms, and sectors that were hit hard during the pandemic will be especially vulnerable. All this may lead to an increase in defaults, negatively affecting banks' profitability and capital positions—whose recent strength should contain any further fallout, however.

European households seem on aggregate relatively well positioned to withstand the tightening of financial conditions, but low-income households appear overburdened:

- *Leverage decreased as net financial worth improved, even though household indebtedness has remained elevated in the last decade* (Box Figure 1.3.1, panel 1). The median household debt-to-GDP ratio in advanced European economies peaked at 60 percent of GDP in 2021, about twice the median in emerging European economies.

However, the rise in debt was outstripped by the rise in household financial assets, with median household leverage (debt-to-asset ratio) gradually declining from its European debt crisis peak in both advanced and emerging European economies. As a result, median financial net worth increased, reaching 147 percent of GDP in advanced European economies and 96 percent in emerging European economies in 2021, compared with 107 and 66 percent in 2007, respectively. And despite the rapid increase in house prices in many European economies, debt-servicing costs declined as a share of income because of record-low interest rates. The average share of households overburdened by financing costs (that is, those with mortgage debt-service-to-income ratios above 40 percent) fell from the 7.5 percent peak reached during the European debt crisis in 2011 to under 3 percent in 2020 (Box Figure 1.3.1, panel 3).[1]

- *Mortgages at risk are concentrated among low-income households*. Household balance sheets are strong overall, but many low-income mortgage holders appear to be overburdened by the cost of their debt. The contrast between lower- and higher-income households is stark in Bulgaria, Croatia, Italy, and Lithuania, where more than 40 percent of mortgage owners in the bottom quintile of the income distribution are overburdened. Rising food and energy prices will constrain low-income households' debt-servicing capacity further because they typically spend a large share of their income on these items.

Nonfinancial corporations have also strengthened their balance sheets, but small firms and service sectors remain vulnerable:

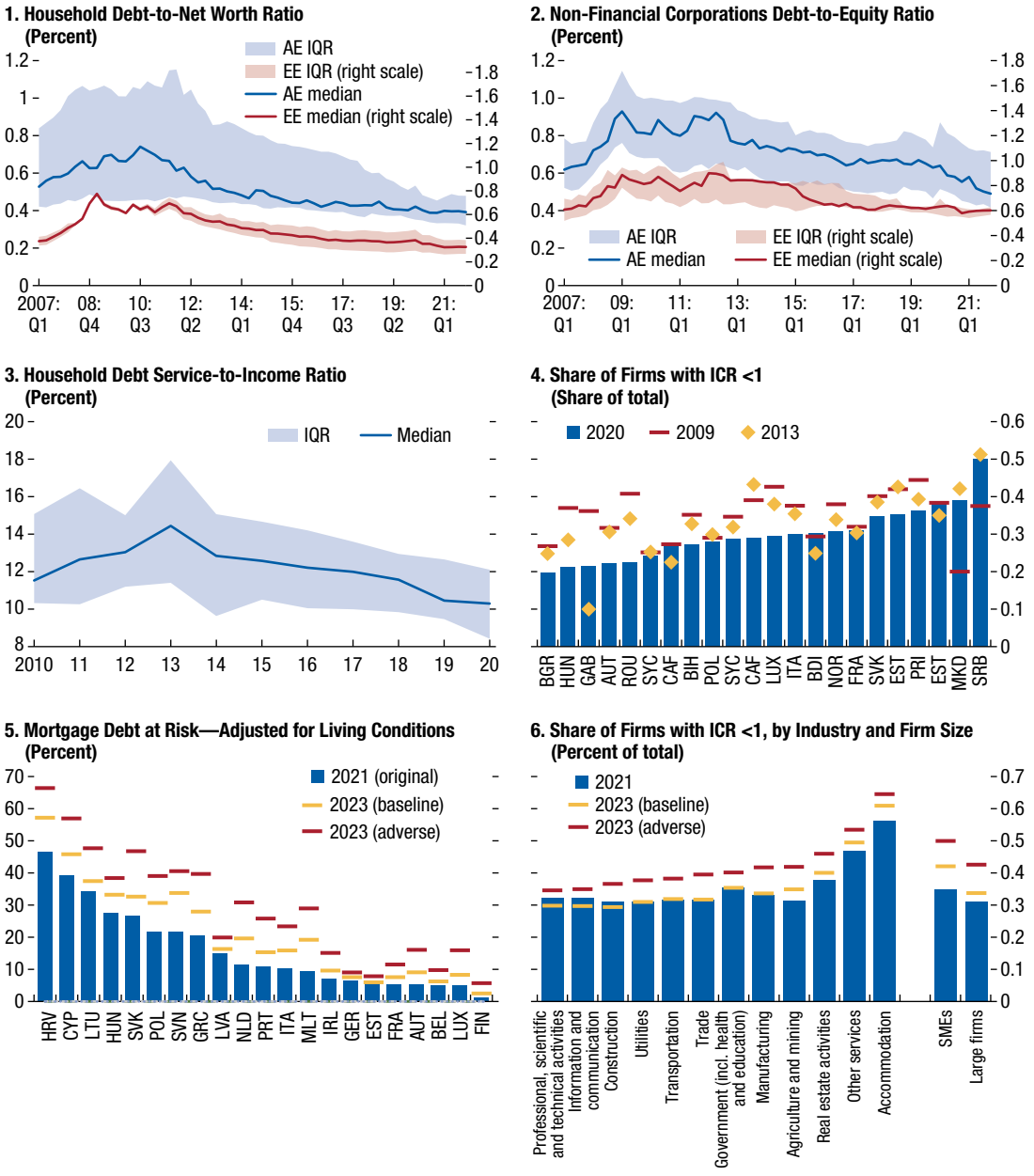
- *Aggregate nonfinancial corporations' liquidity and solvency positions in most European economies have remained resilient since the start of the pandemic* (Box Figure 1.3.1, panel 2). Partly because of strong pandemic-related support, firms' liquidity (current-assets-to-current-liabilities) ratios have improved on average in both advanced and emerging European economies since 2019, while nonfinancial corporations' leverage (debt-to-equity) ratios decreased, especially in advanced economies. Nonfinancial

Prepared by Ruo Chen, Shakill Hassan, and Laura Valderrama, with inputs from Patrik Gorse and assistance from Yi Li and Wei Zhao.

[1]Existing research suggests that households with mortgage-debt-service-to-income ratios above 40 percent are more likely to experience repayment difficulties. Staff analysis suggests that default risk increases significantly for households exceeding the 40 percent threshold. The analysis uses household-level data from the EU Statistics on Income and Living Conditions. Countries include Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Malta, The Netherlands, Norway, Poland, Portugal, Romania, Serbia, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom.

Box 1.3. How Vulnerable Is Europe's Private Sector *(continued)*

Box Figure 1.3.1.



Sources: ECB Household Finance and Consumption Survey 2017 vintage; European Central Bank; Eurostat, EU-SILC; IMF, *World Economic Outlook*; Orbis; and IMF staff calculations.

Note: Panel 3 shows the distribution of median debt service-to-income ratio of household mortgages for the purchase of main dwelling, including principal and interest repayments. Panel 5 shows the share of households' debt with outstanding mortgage on their main residence (including collateralized consumer loans) for which the share of gross income spent on debt servicing costs (principal and interest) and essential consumption (food and utilities), exceeds 70 percent (mortgage debt-at-risk). The share of mortgage debt-at-risk is shown for 2020, under the October 2022 *World Economic Outlook* baseline forecast for interest rates, income growth, food, and energy prices, and under adverse conditions (an additional 2 percentage points interest rate shock on adjustable mortgages, and a 10 percent reduction in household income). Shocks are cumulative over 2022–23 . The baseline and adverse scenarios in panel 6 are the same as those in panel 5. IQR = interquartile range; AE = advanced European economies; EE = emerging European economies. ICR = Interest Coverage Ratio.

Box 1.3. How Vulnerable Is Europe's Private Sector *(continued)*

corporations' debt-servicing capacity (measured by the interest coverage ratio [ICR]) remained stronger than it did during the global financial or European debt crises (Box Figure 1.3.1, panel 4).[2]

- *Firms in sectors most affected by the pandemic and small and medium-sized enterprises (SMEs) remain vulnerable*. Aggregate strength notwithstanding, debt-servicing capacity varies significantly across sectors and firm type. The hardest hit sectors in the pandemic, such as hospitality, have a significantly higher share of firms with low ICRs, compared with less affected sectors such as information and communications technology. Likewise, the debt-servicing capacity of SMEs is weaker than that of large firms; the share of SMEs with ICR lower than one is about 50 percent higher on average than that of large firms and even higher in some countries (for example, Poland and the Slovak Republic).

The debt-servicing capacity of households and corporates appears to be relatively strong, but in aggregate, pockets of stress would build up if the economic outlook deteriorated or interest costs rose more than expected or both (Box Figure 1.3, panels 5 and 6). To that end, disaggregate data are used to simulate the evolution of households' and firms' ability to service their debt in 2022–23 under the October 2022 World Economic Outlook baseline and an adverse scenario, which assumes (1) a 200 basis point interest rate shock relative to the baseline assumptions; and (2) a 10 percent negative shock to household income or corporate earnings relative to the baseline forecast.[3] Given the surge in commodity prices, household simulations also account for the projected rise in the cost of food and utilities.

- *Households*. Simulations suggest that under the baseline projections, the share of overburdened mortgage holders could rise from 14 to 19 percent, accounting for more than 20 percent of mortgage debt held by households. In an illustrative downside scenario combining adverse shocks to both interest rates and nominal incomes, the share of overburdened mortgage holders would rise to 26 percent. About 30 percent of mortgage debt would then be considered at risk, up from 16 percent in the original survey. The increase in overburdened households in the baseline and downside scenarios tends to be significantly more pronounced in countries with higher household indebtedness before the shock and a larger share of variable-rate mortgages, such as Croatia.
- *Firms*. In that same illustrative combined scenario, the analysis shows a 5 percentage points average increase in the share of firms with ICRs less than one, ranging from 1 percentage point in Sweden to 9 percentage points in Italy and Spain. Although contact-intensive sectors would remain the most vulnerable (showing the highest share of distressed firms), the deterioration of debt-servicing capacity would be largest in the manufacturing and wholesale and retail trade sectors, reflecting their generally higher shares of short-term liabilities. Likewise, the share of distressed SMEs would continue to exceed that of large firms, but the latter would be more affected by the combined shocks. This may reflect in part the high maturity of pandemic-related support, which benefited primarily contact-intensive sectors and SMEs.

While rising defaults will reduce banks' earnings, they are well capitalized to absorb losses.[4] The median ratio

[2]This exercise uses firm-level data from Orbis. The analysis includes Austria, Belgium, Bulgaria, the Czech Republic, Finland, France, Germany, Hungary, Italy, Luxembourg, The Netherlands, Norway, Poland, Portugal, Romania, Russia, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom. Each country sample, after data cleaning, includes at least 1,000 observations.

[3]For households, the analysis relies on the 2017 Household Finance and Consumption Survey microdata as a proxy for the debt-service-to-income distribution at the end of 2021. For firms, financial positions in 2020 are used as the starting point. Only adjustable-rate mortgages and short-term corporate debt are assumed to be subject to the interest rate shock. Following Bank of England (2022), a household is considered overburdened (and its debt at risk) if debt servicing and essential consumption (food and utilities) exceed 70 percent of gross income. The analysis limits the sample to at least 100 observations per country in 2020. It includes Austria, Belgium, Bulgaria, the Czech Republic, Germany, Finland, France, Hungary, Italy, Norway, Poland, Portugal, Romania, the Slovak Republic, Slovenia, Spain, and Sweden.

[4]For a similar conclusion under slightly different illustrative stress scenarios, see the October 2022 *Global Financial Stability Report*.

Box 1.3. How Vulnerable Is Europe's Private Sector *(continued)*

of regulatory Tier 1 capital to risk-weighted assets at the end of 2021 is 19 percent in advanced economies (ranging from 13–16 percent in Greece, Portugal, and Spain, to 23 percent in the Baltics and Ireland) and 21 percent in emerging market economies (ranging from 16 percent in Hungary and Poland, to 25 percent in Croatia). With few exceptions (for instance, Greece), capital adequacy improved between 2019 and 2021 and is considerably higher than it was by mid-2009 and ahead of Europe's sovereign debt crisis. Moreover, higher interest rates, particularly when accompanied by steeper yield curves, could help support banks' earnings, although interest rate risk from maturity transformation could weigh on profitability in the event of large upward interest rate shocks. These gains would help offset losses from credit deterioration. On the corporate sector side, bankruptcies in 2020 were lower than in any year since 2007, but the median expected default frequency for European firms started to rise in 2022.

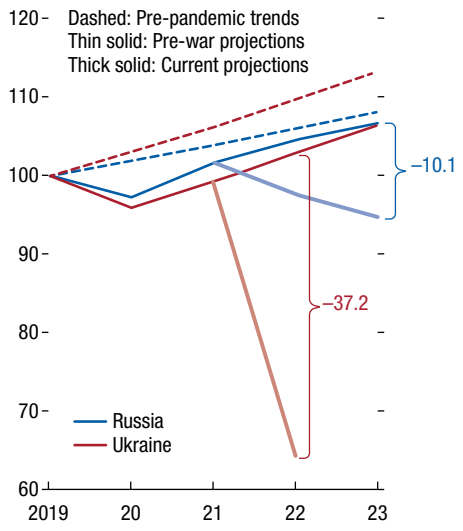
Box 1.4. Recent Economic Developments in Russia and Ukraine

Ukraine

The war has led to loss of life, massive migration, and destruction of Ukraine's physical capital of unprecedented magnitude. There has been widespread loss of life, and more than 7.5 million Ukrainians have left the country, and a similar number is internally displaced (see Box 1.1 of this Regional Economic Outlook). In its recent Rapid Damage and Needs Assessment, the World Bank estimates that the war has caused physical damage of $97 billion (more than 50 percent of Ukraine's prewar GDP) through June 2022.

The impact on economic activity has been staggering. Flash estimates suggest that the GDP level declined by 15.1 and 37.2 percent (year over year) in the first and second quarters of 2022, respectively. As active combat shifted to the east and south, economic activity in noncombat zones has stabilized as workers and firms adjust to function in war mode. For the year, GDP is projected to collapse by about 35 percent (Box Figure 1.4.1). Meanwhile, war-related supply disruptions, high global energy prices, and the devaluation of the hryvnia pushed headline inflation to 23.8 percent (year over year) in August 2022 from 10 percent (year over year) in January. The current account remains in surplus as significant external transfers more than offset the large and widening trade balance. As of the end of August, preliminary estimates suggest that exports declined by 31 percent (year over year), led by decreases in external sales of metals and agricultural products, which have been constrained by capacity and logistical issues. Imports have fallen more slowly, by 20 percent through August (year over year).

Box Figure 1.4.1. Russia and Ukraine: Real GDP Trends
(Index; 2019 = 100)



Sources: Eurostat; and IMF staff calculations.
Note: Pre-pandemic trends refer to the January 2020 forecasts. Pre-war trends refer to the January 2022 forecasts.

Ukraine continues to face severe financing challenges. Amid increases in military spending and weak revenues, the fiscal deficit through August (excluding foreign grants) reached 13.9 percent of GDP. Without domestic public debt demand, the deficit is being financed through a mix of external and (increasingly) central bank treasury financing. Public spending explains a large share of Ukraine's balance of payments needs, as fuel, medicines, and parts and equipment are largely imported. International reserves have fallen by about $6 billion to $24.9 billion as of early September.

Russia

Sanctions are having a severe short-term economic impact, but the decline in activity will be lower than originally envisioned. Russia's GDP is now projected to decline by 3.4 percent in 2022, which is about one-half the size of the contraction that was anticipated initially. The smaller loss is attributable to several reasons. First, crude oil exports were largely redirected from sanctioning to nonsanctioning countries. Second, the large government footprint in the economy helped to preserve employment, which has remained at prewar levels. Third, ruble appreciation led to lower-than-projected inflation and thus a lower decline in real incomes and domestic demand than anticipated. Finally, substantial policy support has put a floor on the contraction; the authorities have abandoned the fiscal rule, thereby allowing for a fiscal stimulus of about 4 percent of GDP, while monetary policy rates have returned to prewar levels.

Prepared by Russia and Ukraine IMF teams.

Box 1.4. Recent Economic Developments in Russia and Ukraine *(continued)*

The impact of sanctions and trade fragmentation will cumulate over time and result in significant medium-term output scarring. IMF staff projects that output will be about 10 percent lower than prewar forecasts by 2023 (Box Figure 1.4.1). A large exodus of multinationals, loss in human capital, isolation from global financial markets, and impaired access to advanced technology and know-how will all hamper the Russian economy in the medium term. That said, the magnitude of medium-term scarring remains highly uncertain. For example, it is difficult to say to what extent export restrictions will complicate the exploration and development of new oil fields. Similarly, it is difficult to predict how long it will take for Russia to redirect gas exports from Europe to other destinations, which will require substantial investment in liquid natural gas and pipeline capacity. Finally, the G7 price cap on Russian oil aims at reducing oil revenue exports. To prevent the rerouting of oil flows, maritime services such as insurance would only be available to shippers and destination countries which agree to comply with the cap; however, there is uncertainty regarding which countries will agree to the price cap, and the extent to which the ban on insurance services will limit Russia's ability to redirect oil flows.

Table 1.1. Real GDP Growth

(Year-over-year percent change; aggregation based on GDP in purchasing power parity terms)

		October 2022 WEO			April 2022 WEO			Difference		
	2021	2022	2023	2024	2022	2023	2024	2022	2023	2024
Europe	6.0	2.6	0.6	2.0	1.6	1.9	2.2	1.0	−1.3	−0.2
Advanced European Economies	5.6	3.2	0.6	1.7	3.0	2.2	1.9	0.2	−1.6	−0.2
Euro Area	5.2	3.1	0.5	1.8	2.8	2.3	1.8	0.3	−1.8	0.0
Austria	4.6	4.7	1.0	1.9	2.6	3.0	2.3	2.1	−2.0	−0.4
Belgium	6.2	2.4	0.4	1.4	2.1	1.4	1.4	0.3	−1.0	0.0
Cyprus	5.6	3.5	2.5	2.6	2.1	3.5	3.0	1.4	−1.0	−0.4
Estonia	8.0	1.0	1.8	3.8	0.2	2.2	3.8	0.8	−0.4	0.0
Finland	3.0	2.1	0.5	1.1	1.6	1.7	1.4	0.5	−1.2	−0.3
France	6.8	2.5	0.7	1.6	2.9	1.4	1.5	−0.4	−0.7	0.1
Germany	2.6	1.5	−0.3	1.5	2.1	2.7	1.5	−0.6	−3.0	0.0
Greece	8.3	5.2	1.8	2.2	3.5	2.6	2.0	1.7	−0.8	0.2
Ireland	13.6	9.0	4.0	4.0	5.2	5.0	4.0	3.8	−1.0	0.0
Italy	6.7	3.2	−0.2	1.3	2.3	1.7	1.3	0.9	−1.9	0.0
Latvia	4.5	2.5	1.6	3.4	1.0	2.4	3.9	1.5	−0.8	−0.5
Lithuania	5.0	1.8	1.1	2.8	1.8	2.6	3.1	0.0	−1.5	−0.3
Luxembourg	6.9	1.6	1.1	2.5	1.8	2.1	2.9	−0.2	−1.0	−0.4
Malta	10.3	6.2	3.3	3.6	4.8	4.5	3.9	1.4	−1.2	−0.3
The Netherlands	4.9	4.5	0.8	1.7	3.0	2.0	1.8	1.5	−1.2	−0.1
Portugal	4.9	6.2	0.7	2.4	4.0	2.1	2.4	2.2	−1.4	0.0
Slovak Republic	3.0	1.8	1.5	3.4	2.6	5.0	3.8	−0.8	−3.5	−0.4
Slovenia	8.2	5.7	1.7	3.0	3.7	3.0	2.9	2.0	−1.3	0.1
Spain	5.1	4.3	1.2	2.6	4.8	3.3	3.1	−0.5	−2.1	−0.5
Nordic Economies	4.7	2.9	0.9	2.1	3.1	2.4	2.1	−0.2	−1.5	0.0
Denmark	4.9	2.6	0.6	1.9	2.3	1.7	1.8	0.3	−1.1	0.1
Iceland	4.4	5.1	2.9	2.6	3.3	2.3	2.3	1.8	0.6	0.3
Norway	3.9	3.6	2.6	2.2	4.0	2.6	2.2	−0.4	0.0	0.0
Sweden	5.1	2.6	−0.1	2.1	2.9	2.7	2.3	−0.3	−2.8	−0.2
Other European Advanced Economies	6.7	3.5	0.7	1.3	3.5	1.7	1.9	0.0	−1.0	−0.6
Andorra	8.9	6.6	2.0	2.4	4.5	2.7	2.2	2.1	−0.7	0.2
Czech Republic	3.5	1.9	1.5	3.9	2.3	4.2	3.6	−0.4	−2.7	0.3
Israel	8.6	6.1	3.0	3.0	5.0	3.5	3.5	1.1	−0.5	−0.5
San Marino	5.4	3.1	0.8	1.1	1.3	1.1	1.3	1.8	−0.3	−0.2
Switzerland	4.2	2.2	0.8	1.8	2.2	1.4	1.8	0.0	−0.6	0.0
United Kingdom	7.4	3.6	0.3	0.6	3.7	1.2	1.4	−0.1	−0.9	−0.8
Emerging European Economies	6.8	1.2	0.5	2.5	−1.7	1.0	2.8	2.9	−0.5	−0.3
Central Europe	6.1	4.2	0.8	3.1	3.7	3.0	3.3	0.5	−2.2	−0.2
Hungary	7.1	5.7	1.8	2.8	3.7	3.6	3.6	2.0	−1.8	−0.8
Poland	5.9	3.8	0.5	3.1	3.7	2.9	3.2	0.1	−2.4	−0.1
Eastern Europe	4.6	−3.5	−2.1	1.5	−8.3	−2.1	1.6	4.8	0.0	−0.1
Belarus	2.3	−7.0	0.2	1.0	−6.4	0.4	2.2	−0.6	−0.2	−1.2
Moldova	13.9	0.0	2.3	5.8	0.3	2.0	5.8	−0.3	0.3	0.0
Russia	4.7	−3.4	−2.3	1.5	−8.5	−2.3	1.5	5.1	0.0	0.0
Ukraine	3.4	−35.0	.	.	−35.0	.	.	0.0	.	.
Southeastern European EU Member States	6.2	4.8	3.1	3.7	2.5	3.7	3.7	2.3	−0.6	0.0
Bulgaria	4.2	3.9	3.0	4.1	3.2	4.5	4.2	0.7	−1.5	−0.1
Croatia	10.2	5.9	3.5	3.0	2.7	4.0	3.0	3.2	−0.5	0.0
Romania	5.9	4.8	3.1	3.8	2.2	3.4	3.8	2.6	−0.3	0.0
Southeastern European Non-EU Member States	7.6	3.4	2.6	3.4	3.1	3.4	3.7	0.3	−0.8	−0.3
Albania	8.5	4.0	2.5	3.2	2.0	2.8	3.4	2.0	−0.3	−0.2
Bosnia and Herzegovina	7.5	2.4	2.0	3.0	2.4	2.3	3.0	0.0	−0.3	0.0
Kosovo	9.5	2.7	3.5	3.9	2.8	3.9	4.1	−0.1	−0.4	−0.2
North Macedonia	4.0	2.7	3.0	3.9	3.2	2.7	3.7	−0.5	0.3	0.2
Montenegro	13.0	7.2	2.5	3.0	3.8	4.2	2.8	3.4	−1.7	0.2
Serbia	7.4	3.5	2.7	3.5	3.5	4.0	4.0	0.0	−1.3	−0.5
Türkiye	11.4	5.0	3.0	3.0	2.7	3.0	3.7	2.3	0.0	−0.7
Memorandum										
World	6.0	3.2	2.7	3.2	3.6	3.6	3.4	−0.4	−0.9	−0.2
Advanced economies	5.2	2.4	1.1	1.6	3.3	2.4	1.7	−0.9	−1.3	−0.1
Emerging market and developing economies	6.6	3.7	3.7	4.3	3.8	4.4	4.6	−0.1	−0.7	−0.3
Emerging Europe excl. Russia and Türkiye	5.7	3.6	1.6	3.2	2.7	3.1	3.4	0.9	−1.5	−0.2
European Union	5.4	3.2	0.7	2.1	2.9	2.5	2.1	0.3	−1.8	0.0
United States	5.7	1.6	1.0	1.2	3.7	2.3	1.4	−2.1	−1.3	−0.2
China	8.1	3.2	4.4	4.5	4.4	5.1	5.1	−1.2	−0.7	−0.6
Japan	1.7	1.7	1.6	1.3	2.4	2.3	0.8	−0.7	−0.7	0.5

Sources: IMF, *World Economic Outlook (WEO);* and IMF staff calculations.

Table 1.2. Headline Inflation

(Year-over-year percent change; aggregation based on GDP in purchasing power parity terms)

		October 2022 WEO			April 2022 WEO			Difference		
	2021	2022	2023	2024	2022	2023	2024	2022	2023	2024
Europe	4.8	15.1	10.6	5.1	12.4	7.5	4.5	2.7	3.1	0.6
Advanced European Economies	2.5	8.3	6.2	2.9	5.5	2.7	1.9	2.8	3.5	1.0
Euro Area	2.6	8.3	5.7	2.7	5.3	2.3	1.8	3.0	3.4	0.9
Austria	2.8	7.7	5.1	2.5	5.6	2.2	2.0	2.1	2.9	0.5
Belgium	3.2	9.5	4.9	1.8	8.0	1.3	1.6	1.5	3.6	0.2
Cyprus	2.2	8.0	3.8	2.1	5.3	2.3	2.0	2.7	1.5	0.1
Estonia	4.5	21.0	9.5	2.5	11.9	4.6	2.5	9.1	4.9	0.0
Finland	2.1	6.5	3.5	1.8	3.8	2.7	1.8	2.7	0.8	0.0
France	2.1	5.8	4.6	2.4	4.1	1.8	1.7	1.7	2.8	0.7
Germany	3.2	8.5	7.2	3.5	5.5	2.9	1.8	3.0	4.3	1.7
Greece	0.6	9.2	3.2	1.6	4.5	1.3	1.6	4.7	1.9	0.0
Ireland	2.4	8.4	6.5	3.0	5.7	2.7	2.0	2.7	3.8	1.0
Italy	1.9	8.7	5.2	1.7	5.3	2.5	2.1	3.4	2.7	−0.4
Latvia	3.2	16.5	8.0	2.9	10.0	3.9	3.1	6.5	4.1	−0.2
Lithuania	4.6	17.6	8.4	3.2	13.3	4.3	2.9	4.3	4.1	0.3
Luxembourg	3.5	8.4	3.7	2.3	5.6	2.0	2.0	2.8	1.7	0.3
Malta	0.7	5.9	4.6	2.6	4.7	2.8	2.1	1.2	1.8	0.5
The Netherlands	2.8	12.0	8.0	2.7	5.2	2.3	1.9	6.6	5.7	0.8
Portugal	0.9	7.9	4.7	2.6	4.0	1.5	1.3	3.9	3.2	1.3
Slovak Republic	2.8	11.9	10.1	4.4	8.4	4.1	2.0	3.5	6.0	2.4
Slovenia	1.9	8.9	5.1	3.3	6.7	5.1	3.9	2.2	0.0	−0.6
Spain	3.1	8.8	5.9	3.5	5.3	1.3	1.4	3.5	3.6	2.1
Nordic Economies	2.7	6.5	5.8	1.9	4.2	2.1	1.9	2.3	3.7	1.1
Denmark	1.9	7.2	3.8	2.4	3.8	2.1	2.0	3.4	1.7	0.4
Iceland	4.5	8.4	6.7	4.1	6.9	5.5	3.7	1.5	1.2	0.4
Norway	3.5	4.7	3.8	2.7	3.5	1.8	2.1	1.2	2.0	0.6
Sweden	2.7	7.2	8.4	3.5	4.8	2.2	1.7	2.4	6.2	1.8
Other European Advanced Economies	2.3	8.6	7.6	3.2	6.6	4.2	2.3	2.0	3.4	0.9
Andorra	1.7	5.3	2.8	1.9	2.9	1.3	1.4	2.4	1.5	0.5
Czech Republic	3.8	16.3	8.6	2.5	9.0	2.3	2.0	7.3	6.3	0.5
Israel	1.5	4.5	3.6	2.5	3.5	2.0	2.0	1.0	1.6	0.5
San Marino	2.1	6.9	4.5	1.5	4.9	2.0	1.7	2.0	2.5	−0.2
Switzerland	0.6	3.1	2.4	1.5	2.5	1.6	1.2	0.6	0.8	0.3
United Kingdom	2.6	9.1	9.0	3.7	7.4	5.3	2.6	1.7	3.7	1.1
Emerging European Economies	9.7	30.6	20.7	10.1	28.7	18.7	10.7	1.9	2.0	−0.6
Central Europe	5.1	13.8	14.1	4.5	9.2	9.5	4.0	4.6	4.6	0.5
Hungary	5.1	13.9	13.3	5.6	10.3	6.4	4.0	3.6	6.9	1.6
Poland	5.1	13.8	14.3	4.3	8.9	10.3	3.9	4.9	4.0	0.4
Eastern Europe	7.1	14.0	5.5	4.3	20.9	14.2	9.1	−6.9	−8.7	−4.8
Belarus	9.5	16.5	13.1	11.7	12.6	14.1	11.7	3.9	−1.0	0.0
Moldova	5.1	28.5	13.8	5.0	21.9	6.5	5.0	6.6	7.3	0.0
Russia	6.7	13.8	5.0	4.0	21.3	14.3	9.0	−7.5	−9.3	−5.0
Ukraine	9.4	20.6	.	.	.	.	.	.	.	.
Southeastern European EU Member States	4.3	12.7	9.2	3.4	9.1	3.7	2.5	3.6	5.5	0.9
Bulgaria	2.8	12.4	5.2	2.2	11.1	3.3	1.3	1.4	1.9	0.9
Croatia	2.6	9.8	5.5	3.9	5.9	2.7	2.0	3.9	2.8	1.9
Romania	5.0	13.3	11.0	3.6	9.3	4.0	3.0	4.0	7.0	0.6
Southeastern European Non-EU Member States	3.2	10.6	6.5	3.6	7.2	4.0	3.0	3.4	2.5	0.6
Albania	2.0	6.2	4.3	3.0	5.5	3.7	3.0	0.7	0.6	0.0
Bosnia and Herzegovina	2.0	10.5	4.5	3.5	6.5	3.0	2.3	4.0	1.5	1.2
Kosovo	3.3	12.0	5.0	2.6	9.5	3.3	2.3	2.5	1.7	0.3
North Macedonia	3.2	10.6	4.5	2.4	6.9	3.6	1.9	3.7	0.9	0.5
Montenegro	2.4	12.8	9.2	4.5	6.8	3.8	2.3	6.0	5.4	2.2
Serbia	4.1	11.5	8.3	4.2	7.7	4.7	3.7	3.8	3.6	0.5
Türkiye	19.6	73.1	51.2	24.2	60.5	37.2	20.4	12.6	14.0	3.8
Memorandum										
World	4.7	8.8	6.5	4.1	7.4	4.8	3.8	1.4	1.7	0.3
Advanced economies	3.1	7.2	4.4	2.4	5.7	2.5	2.0	1.5	1.9	0.4
Emerging market and developing economies	5.9	9.9	8.1	5.3	8.7	6.5	5.0	1.2	1.6	0.3
Emerging Europe excl. Russia and Türkiye	5.6	13.5	11.8	4.5	9.3	7.5	3.9	4.2	4.3.	0.6
European Union	2.9	9.2	6.8	3.0	5.9	2.9	2.0	3.4	3.9	1.0
United States	4.7	8.1	3.5	2.2	7.7	2.9	2.3	0.4	0.6	−0.1
China	0.9	2.2	2.2	1.9	2.1	1.8	2.0	0.1	0.4	−0.1
Japan	−0.3	2.0	1.4	1.0	1.0	0.8	0.9	1.0	0.6	0.1

Sources: IMF, *World Economic Outlook* (WEO); and IMF staff calculations.

2. Inflation in Europe: Assessment, Risks, and Policy Implications

Inflation in Europe has soared to multidecade highs. This chapter examines the drivers of inflation and the prospects and risks around its likely path. While soaring commodity prices account for much of the surge in inflation, empirical analysis finds that a sizable share of the recent uptick cannot be explained by conventional inflation drivers and points to the role of pandemic- and war-related forces, such as rising shortages in input markets. The prospective stabilization of commodity prices and the projected slowdown in growth should gradually bring inflation down, but the process will likely be slower than previously expected and highly uncertain. Inflation risks are on the upside. Central banks should thus keep raising policy rates in most European countries while remaining nimble and data-dependent, with fiscal policies focused on weathering the energy price shock without adding to inflation pressures.

The marked and persistent rise in inflation has defied forecasts and taken center stage in policy discussions in Europe and beyond. With inflation soaring to multidecade highs and price pressures broadening beyond select commodities and durable goods affected by the pandemic- and war-related supply shocks, policymakers are confronted with several challenges: diagnosing the drivers of the surge in inflation, forecasting its likely path and risks around it, and calibrating macroeconomic policies accordingly. An incorrect diagnosis and course of action could be particularly costly at this time. A failure to bring inflation back to target soon risks unmooring inflation expectations, undermining central banks' credibility, and requiring an even larger tightening down the road, with damaging effects on growth and employment. However, a sharper-than-needed tightening could plunge European economies—already battered by the ongoing war in Ukraine, lingering pandemic, and slowing global growth—into recession. The downturn such tightening might trigger could be particularly severe if inflation is largely driven by negative supply shocks, and a very restrictive policy stance is needed to align demand with supply, given the subdued responsiveness of inflation to economic activity observed in the prepandemic period.[1] In this context, the chapter provides an in-depth overview of recent inflation dynamics in Europe, explores its drivers (including their contribution to wide cross-country differences in inflation), analyzes inflation prospects and risks, and discusses their implications for monetary policy and the broader macroeconomic policy mix.

The following takeaways are revealed by the analysis in this chapter. First, some of the recent surge in inflation in Europe cannot be explained by conventional inflation drivers. Soaring commodity prices, along with other traditional factors, can account for just up to two-thirds of the 2022 inflation surge according to the chapter's empirical analysis. Second, some of the unexplained inflation correlates with indicators of tightness, triggered by the pandemic and intensified by the war, such as rising shortages in input markets; thus, there might be less slack across Europe than suggested by traditional measures, such as output and unemployment gaps. Third, under the October 2022 *World Economic Outlook* projections for commodity prices and economic growth, inflation is expected to fall steadily, but the decline could be slower than previously expected and highly uncertain. Inflation risks are very high and primarily on the upside. If some of these risks materialize, model simulations suggest that central banks may need to

This chapter was prepared by Chikako Baba (co-lead), Philipp Engler, Ting Lan, Svitlana Maslova (co-lead), Jorge Salas, and Magnus Saxegaard under the supervision of Jörg Decressin, Romain Duval, and Petia Topalova. Chun Jin, Claire Li, Sabiha Mohona, and Ben Park provided outstanding research assistance. Agnesa Zalezakova provided administrative support.

[1]See, for example, Celasun and others (2022) for the effect of supply bottlenecks on inflation, and Chapter 1 of this *Regional Economic Outlook* for the war's effect on commodity prices.

tighten monetary policies substantially more than currently projected.

Taken together, the evidence presented in this chapter reinforces the case for continued policy tightening, with central banks standing ready to respond to emerging risks in both directions.

Recent Developments

Inflation has surged across Europe during the past 18 months.[2] Inflation exceeded 5 percent in almost all European economies by late summer 2022, but the size and timing of the acceleration in prices varied widely: headline inflation reached between 20–25 percent in the Baltic countries, triple or quadruple the rate in the lowest-inflation countries in the euro area (Figure 2.1). Much of the rise in inflation can be traced back to soaring energy and food prices and, to a lesser extent, supply bottlenecks. On average, commodity prices contributed about two-thirds of the rise in headline inflation.

The considerable cross-country heterogeneity reflects differences in both food and fuels' weights in consumer price indexes and consumers' exposure to global fuel prices because of cross-country differences in the energy mix, price regulations and policy measures, and exchange rate developments. For instance, the steeper rise in food and energy inflation in emerging Europe and advanced central, eastern, and southeastern Europe economies reflects the larger weight of food in these economies' consumer price index baskets, heavier reliance on oil and gas, and fewer recent measures to suppress energy prices' pass-through to domestic inflation (Box 2.1 discusses inflation drivers in the Western Balkans). Durable goods inflation has also contributed significantly, reflecting supply-demand imbalances, as households channeled much of the pandemic-era demand stimulus toward consumer durables, while supply-side disruptions were exacerbated during the pandemic.

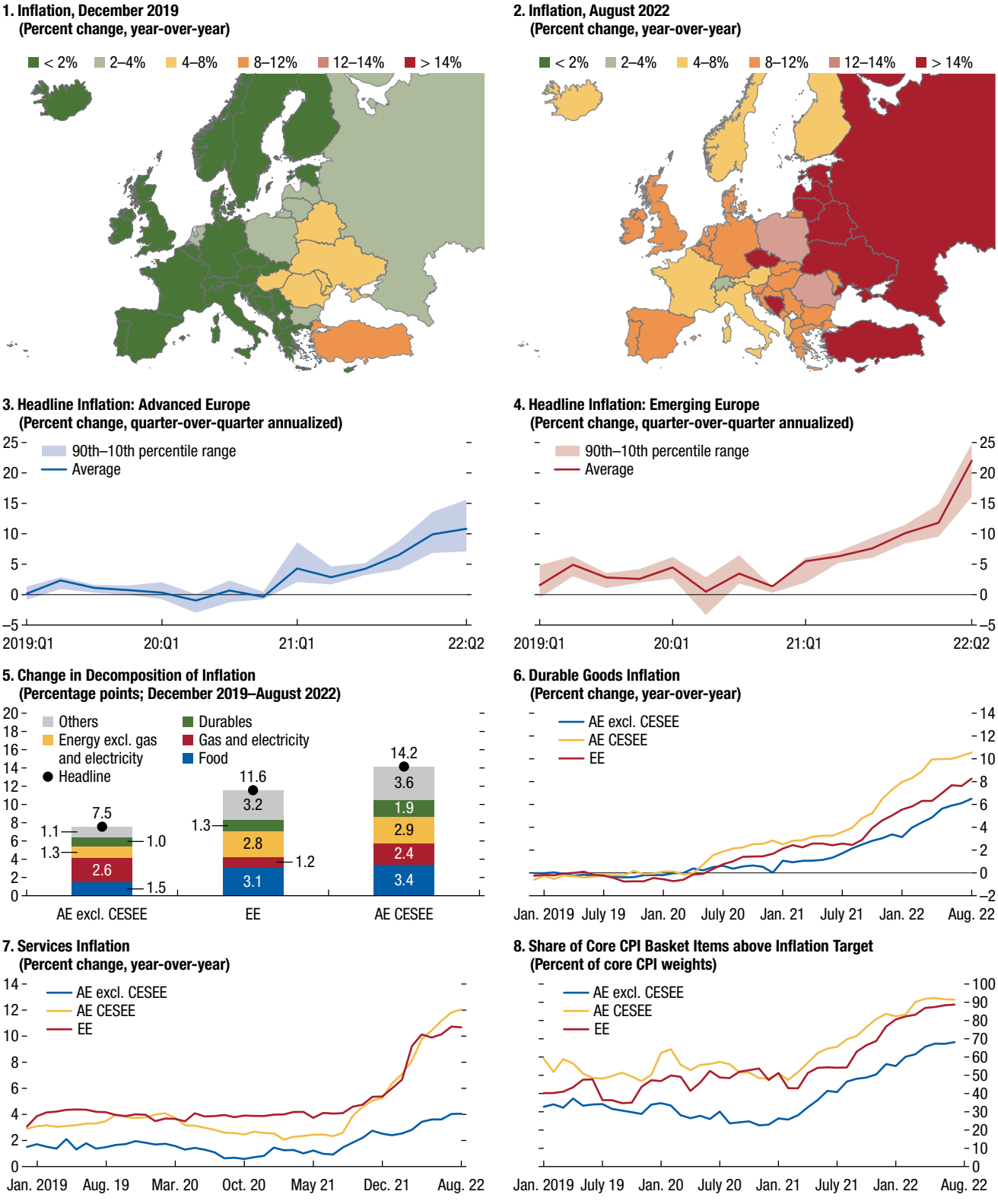
Commodity prices have played an outsize role in the inflation surge in Europe, but inflation pressures have become more broad-based. Domestic services inflation, which is less directly exposed to global commodity prices or exchange rate changes, has also soared. The number of items with price increases exceeding central banks' inflation targets has grown precipitously, accounting for 70–90 percent of the core consumer price index basket across broad country groups by late summer 2022.

Is the increasingly broad-based nature of inflation indicative of rapidly diminishing slack, growing wage pressures, and rising inflation expectations? In other words, is inflation becoming increasingly entrenched? Recent developments do not provide clear-cut evidence, but risks are mounting. First, domestic slack has decreased rapidly from the pandemic-induced highs, though signals are somewhat mixed across countries. Output-based measures indicate closing gaps across much of Europe, although residual slack persists in some large advanced economies.[3] Likewise, labor markets have become tight in many countries, with unemployment rates below prepandemic lows in two-thirds of economies, job vacancies per unemployed exceeding prepandemic highs in three-quarters of economies, and hours worked almost back to pre-COVID-19 levels by mid-2022. Second and relatedly, wage growth has started to pick up in a number of countries (see also Chapter 2 of the October 2022 *World Economic Outlook*). Negotiated wage increases in the euro area—an indicator based on collectively agreed wages—have generally remained contained but are starting to inch up (Figure 2.2). Finally, medium-term inflation expectations have risen to or above inflation targets, especially among emerging European economies and among households.

[2]The emerging Europe aggregates presented in this chapter typically exclude Russia, Türkiye, and Ukraine, reflecting the much higher inflation rates and more idiosyncratic developments in these economies. The chapter sometimes distinguishes between advanced economies in central, eastern, and southeastern Europe (these include the Czech Republic, Estonia, Latvia, Lithuania, the Slovak Republic, and Slovenia) and the remaining advanced economies to better capture the disparate inflation developments in these two sets of countries.

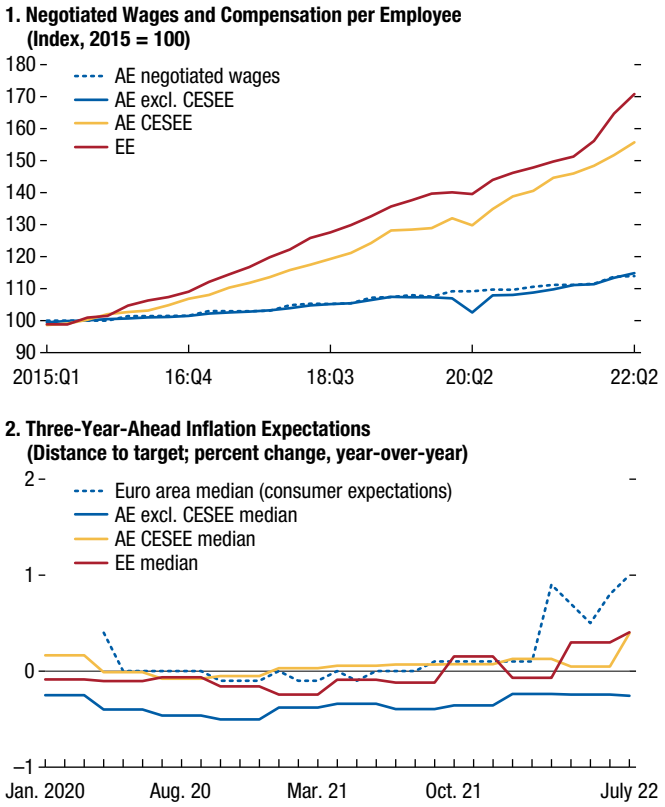
[3]Based on the October 2022 *World Economic Outlook*, two-thirds of advanced and four-fifths of emerging European economies are projected to have positive output gaps in 2022.

Figure 2.1. Inflation Developments



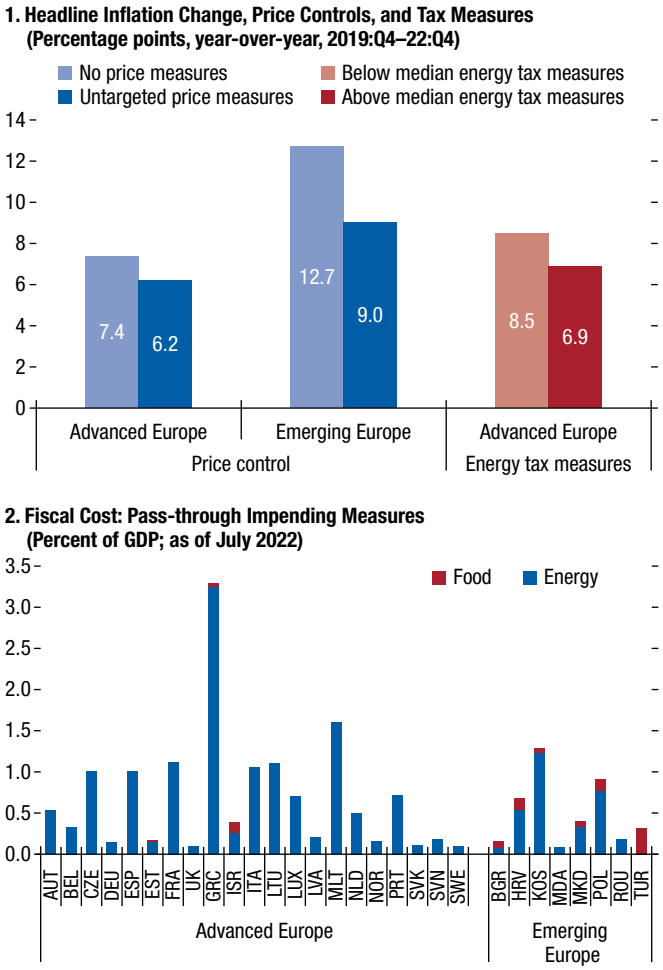
Sources: Eurostat; Haver Analytics; and IMF staff calculations.
Note: Data are weighted by purchasing-power-parity GDP to aggregate across country groups. In panel 8, core CPI baskets exclude all food items and fuels under housing and transport from total CPI baskets. AE = advanced Europe; CESEE = central, eastern, and southeastern Europe; CPI = consumer price index; EE = emerging Europe.

Figure 2.2. Labor Market Pressures and Inflation Expectations



Sources: Consensus Economics; European Central Bank; Haver Analytics; and IMF staff calculations.
Note: AE = advanced Europe; CESEE = central, eastern, and southeastern Europe; EE = emerging Europe.

Figure 2.3. Inflation and Policy Measures



Sources: Haver Analytics; IMF, European Department Desk Survey; and IMF staff calculations.
Note: In panel 1, countries are classified based on whether they have implemented pass-through-suppressing price measures for both households and firms. The impact of energy tax measures is computed following European Central Bank (2021a); countries are classified depending on whether the computed impact in the second quarter of 2022 is above or below the sample median. Country abbreviations are International Organization for Standardization country codes. UK = United Kingdom.

Regulatory, fiscal, and monetary policies also influenced inflation developments. In general, countries where more prices are administered may experience slower changes in inflation if dynamics in administered prices are more muted than the rest of the basket.[4] Furthermore, this time around, specific tax and regulatory measures (such as price caps or freezes) adopted to mitigate rising commodity prices limited the rise in inflation in some countries (such as, for example, France, Malta, and Spain), compared with others where pass-through was larger and quicker, though at sizable fiscal cost (Figure 2.3).

In addition to the factors described above, monetary policy and exchange rate developments also contributed to inflation in several emerging European economies. In Türkiye, for example, the depreciation of the lira amplified the inflationary impact of higher commodity prices and boosted other imported goods and services' inflation.

Inflation Drivers

Looking beyond simple decompositions, a more in-depth understanding of the drivers of the recent inflation surge can be achieved by

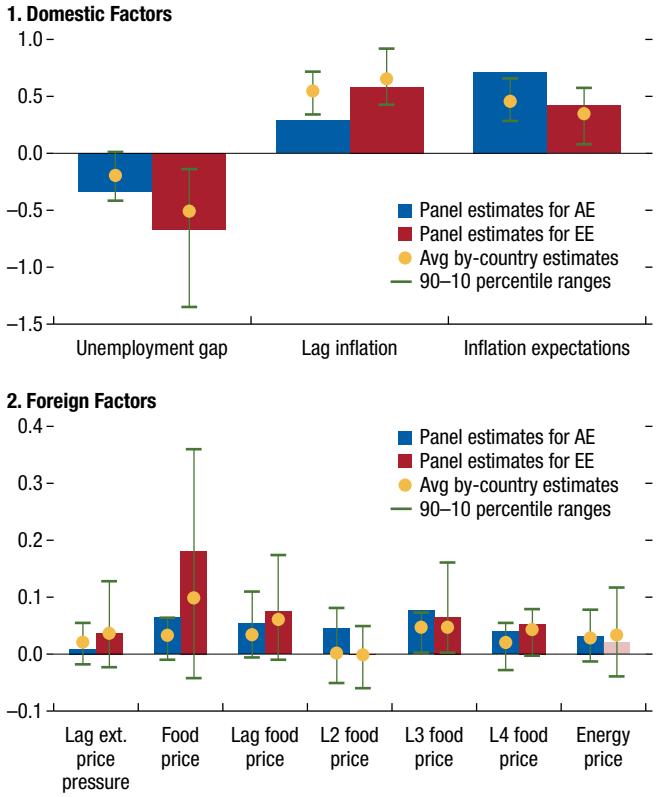
[4]Switzerland is an example of where the large share of administered energy prices has contributed to maintaining one of the lowest inflation rates in 2022.

analyzing the Phillips curve—the workhorse inflation model in the literature, which relates inflation to its past and expected future values, economic slack, and foreign price developments.[5] A Phillips curve is estimated for each of the 24 advanced and 7 emerging European economies with comprehensive available data over 2000:Q1–22:Q2. The resulting estimates are then used to establish (1) how the recent surge in inflation compares with model-predicted values and (2) the contribution of various drivers of the surge—both conventional ones featured in Phillips curves and others that might be more specific to the current inflation episode.

The analysis confirms that both headline and core inflation rates are strongly associated with lower economic slack and higher past and expected future price developments, with noteworthy differences between advanced and emerging European economies (Figure 2.4). In the latter, inflation increases more sharply when labor markets tighten (when unemployment declines), and price setting appears to be less forward looking—consistent with weaker anchoring of inflation expectations historically. Inflation also responds more strongly to foreign price developments (especially global food prices) in emerging European economies than in advanced European economies.[6]

The standard model of inflation, however, can at most account for 60 percent of the recent surge in inflation (Figure 2.5). Using dynamic simulations of the estimated country-specific Phillips curves to compute the contribution of each driver to inflation,[7] the analysis confirms the key role played by foreign (especially commodity) price developments in Europe's inflation surge since 2021. However, the model cannot explain 40 to 50 percent of the rise in inflation in advanced and emerging European economies, as evidenced by the sizable positive residuals—inflation exceeding its model-predicted value—in the second quarter of 2022 (see McGregor and Toscani, forthcoming, for a similar finding for the euro area).[8]

Figure 2.4. Phillips Curve Coefficients for Core Inflation



Sources: Consensus Economics; Haver Analytics; IMF, World Economic Outlook database; and IMF staff calculations.
Note: The bars in the panels display panel regression coefficient estimates. The green line denotes the 90–10 percentile, and the yellow dot is the average of country-level estimates. Panel coefficient estimates, statistically significant at the 10 percent level, are in solid color. AE = advanced Europe; EE = emerging Europe.

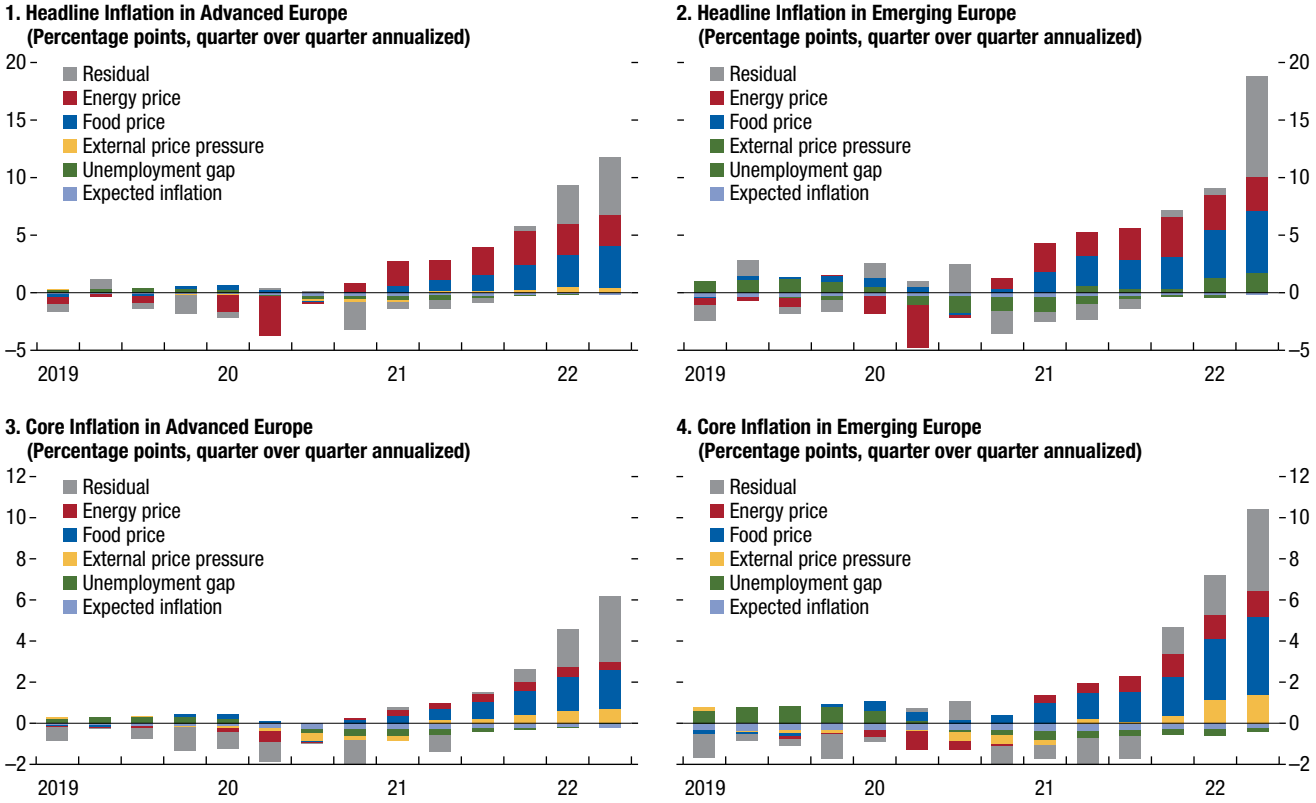
[5]In line with past studies (see, among others, Chapter 2 of the October 2021 *World Economic Outlook*), the model specification includes unemployment gap as measure of economic slack, lagged inflation, three-year-ahead inflation expectations of professional forecasters, a lagged proxy of external price pressures embedding foreign producer price indices and exchange rates, and global energy and food prices (in domestic currency) interacted with the shares of these items in domestic consumer price index baskets. For further details, see the Online Annex.

[6]While producer prices embedded in external price pressures are likely affected by commodity prices, food and energy prices by themselves are also found to be statistically significant drivers of inflation. This may reflect indirect impacts of commodity prices on core inflation through higher domestic production costs.

[7]For the few countries without inflation targets, the analysis assumes a 3 percent target. The findings are robust to alternative assumptions, such as using moving averages of 10-year-ahead inflation expectations.

[8]The unexplained residuals in 2022 are also larger when using Phillips curves estimated only on pre-COVID-19 data, rather than on the full available sample period. This is suggestive of changes in the relationship between inflation and some of its drivers during the post-COVID-19 period.

Figure 2.5. Implied Contributions of Domestic and Global Factors to Inflation Dynamics



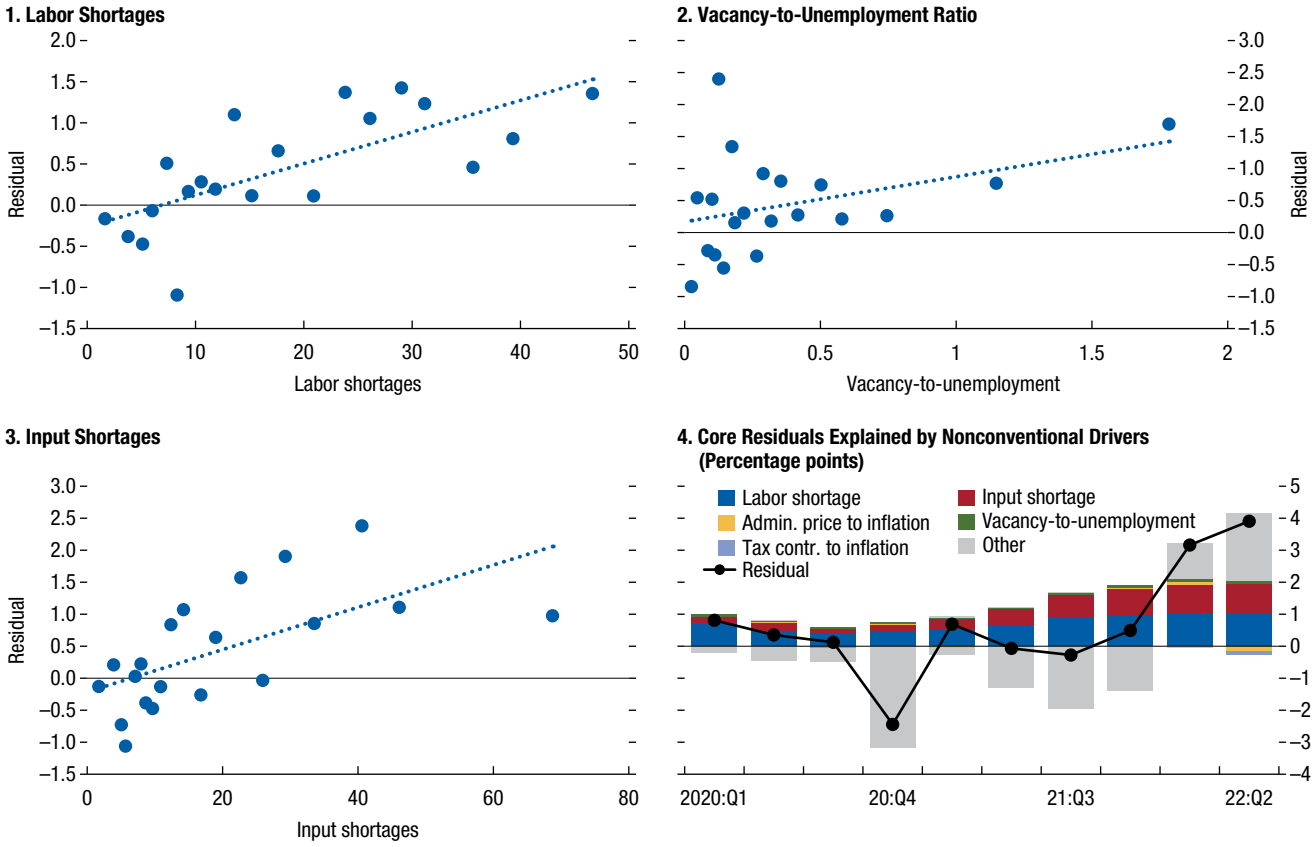
Sources: Consensus Economics; Haver Analytics; IMF, World Economic Outlook database; and IMF staff calculations.
Note: The bars in the panels represent the simple average contribution of each factor across advanced and emerging market economies in Europe. Contributions are calculated based on the dynamic simulations of country-by-country Phillips curve regressions.

Several factors may account for the rise in unexplained inflation. First, Europe has been hit by two tail-risk events: the pandemic and Russia's war in Ukraine. These shocks may have altered the structural relationships underpinning the inflation process, which the analysis estimates using historical data (Gopinath 2022).

For example, there is suggestive evidence from this chapter's analysis that core inflation has become more backward-looking, and the pass-through of global commodity prices to domestic inflation has increased postpandemic (see the Online Annex; Amiti and others 2022; Bank for International Settlements 2022).[9] Second, even without structural shifts, commonly used indicators may fail to capture inflation's drivers properly. Unemployment gaps may be poor proxies for economic slack since the pandemic because of the widespread use of short-term work programs in Europe and structural labor market changes (for example, shifts in workers' preferences and declines in labor supply because of the pandemic, and demographic headwinds; Duval and others 2022; McGregor and Toscani, forthcoming). High vacancy-to-unemployment ratios—that partly reflect large numbers of unfilled job vacancies—suggest that European labor markets may be tighter than unemployment alone suggests. Beyond labor shortages, unprecedented supply bottlenecks that are also captured poorly in the conventional Phillips curve model—and reflect a host of factors, including the reallocation of demand away from services toward goods during COVID-19 and the speed of the global recovery driven in part by the exceptional policy support—have contributed greatly to recent price pressures (Celasun and others 2022; Gopinath 2022).

[9]The increased pass-through from commodity prices to domestic inflation could reflect the very large and persistent energy price shocks, which firms may be unable to absorb through lower profits.

Figure 2.6. Phillips Curve Residuals for Core Inflation and Nonconventional Drivers



Sources: Eurostat; Haver Analytics; and IMF staff calculations.
Note: Panels 1–3 display the binned scatter plots between the Phillips curve residuals for core inflation and nonconventional factors. Input and labor shortages are measured as the shares of firms reporting shortages of intermediate inputs and labor, respectively, as a factor limiting production. The bars in panel 4 decompose the Phillips curve residuals into contributions of nonconventional factors, based on the correlation between the latter and the residuals.

Other relevant factors for which the estimated model does not account include discretionary policies, such as temporary tax changes (for instance, Germany's value-added tax cut that reduced inflation in the second half of 2020) and price-suppressing measures in response to higher global food and energy prices (Ari and others 2022), although these have tended to contain the inflation rise instead of amplifying it. All countries in Europe were affected by these factors in some way, as reflected in the consistently positive Phillips curve residuals in the last few quarters, but the extent varied across countries, accounting for some of the cross-country heterogeneity in unexplained inflation.

Suggestive analysis indicates that rising input shortages explain in part the large Phillips curve residuals, indicating that there may be less economic slack across Europe than thought previously.[10] Regressing the residuals on variables outside of the Phillips curve model uncovers strong correlations with (1) alternative measures of labor market tightness, such as the vacancy-to-unemployment ratio or the share of firms reporting labor shortages as a factor limiting production[11]; and (2) supply bottlenecks, measured by the share of firms reporting shortages of intermediate inputs as a factor limiting production (Figure 2.6).

[10]These variables could not be included in the regressions because of lack of comprehensive cross-country time series coverage.

[11]See also Duval and others (2022) for the United Kingdom and the United States. Ball, Leigh, and Mishra (2022) present evidence on the role of unemployment-to-vacancy ratios in explaining post-pandemic inflation in the United States.

Input shortages appear to account for a sizable portion of the unexplained inflation in 2022. As a purely illustrative exercise, the estimated correlations are used to decompose the Phillips curve residuals in recent quarters into the contributions of each factor. This analysis suggests that input and, to a smaller extent, labor shortages have exerted significant upward pressure on prices in the post-COVID-19 period.

Specifically, the widespread reported input and labor shortages and high vacancy-to-unemployment ratios in the first half of 2022 might have raised core inflation by about 1.5 percent on average in Europe, or about three-fourths of the 2 percent estimated residual.

These suggestive findings imply that beyond the predominant role of commodity prices, the recent surge in inflation in Europe is also at least partly driven by labor market tightness, while supply shortages have played an even larger role than captured by foreign price and commodity price variables included in the Phillips curves.

Future Path and Risks

How is inflation likely to evolve over the coming year, and what are the key risks around its likely path? Under the October 2022 *World Economic Outlook* forecasts for global commodity prices, growth, and unemployment, and assuming stable inflation expectations, the empirical model would predict average inflation to decline gradually to 3–6 percent (headline) and 3–7 percent (core) in both advanced and emerging European economies by the end of 2023 (Figure 2.7).

In emerging European economies, despite starting from higher levels and being generally more persistent, inflation would fall more rapidly than in advanced economies because commodity price stabilization would entail larger disinflation gains. Such gains will be more muted, all else equal, in countries where measures that dampened commodity pass-through are gradually phased out. These Phillips curve–based forecasts assume that the model's large underestimation of recent inflation vanishes quickly.

A more conservative approach, which assumes a slower reduction in recent inflation forecast errors, predicts a slower return to lower inflation rates.[12] Overall, this analysis suggests that risks around IMF *World Economic Outlook* inflation forecasts—which embed a lower degree of persistence of inflation than implied by the Phillips curves of this chapter—are tilted to the upside.

Uncertainty around inflation forecasts is unusually large. Recent supply shocks could persist if bottlenecks and commodity prices ease more slowly than projected, especially as the war in Ukraine drags on. Alternatively, commodity prices could slide if the global economy slows further. Another source of uncertainty relates to domestic slack—tight labor markets suggest that it may have been overestimated, but a sharper growth slowdown and, in some (central, eastern, and southeastern European) economies, the successful labor market integration of Ukrainian refugees would increase it. Finally, continued inflation surprises may de-anchor inflation expectations or prompt workers to demand and obtain compensation for high inflation in the form of higher wages (or both), potentially triggering wage-price feedback loops and thereby making the overall inflation process more backward-looking.

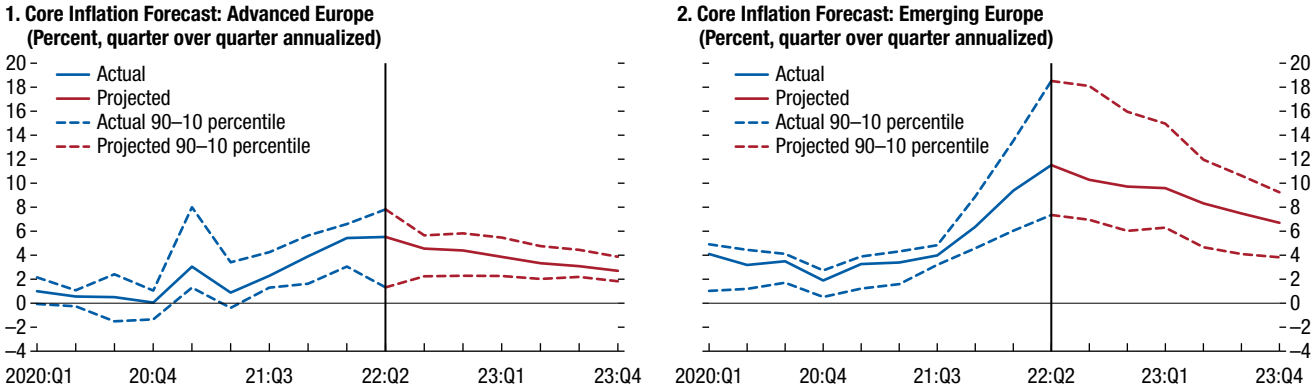
Several simple scenarios are simulated to illustrate these risks (Table 2.1),[13] confirming the wide range of possible inflation paths and the predominance of upside risks (Figure 2.8). Renewed commodity price shocks and smaller-than-estimated slack could easily delay the return of inflation to target—more so in emerging European economies, reflecting higher spending on commodities, greater pass-through of global price shocks to domestic inflation, and steeper Phillips curves than in advanced economies. A de-anchoring of inflation expectations would also feed into higher inflation.

[12]The conservative approach assumes that the average of the estimated 2022 residuals declines gradually using a first-order autoregressive process with autocorrelation coefficient of 0.6.

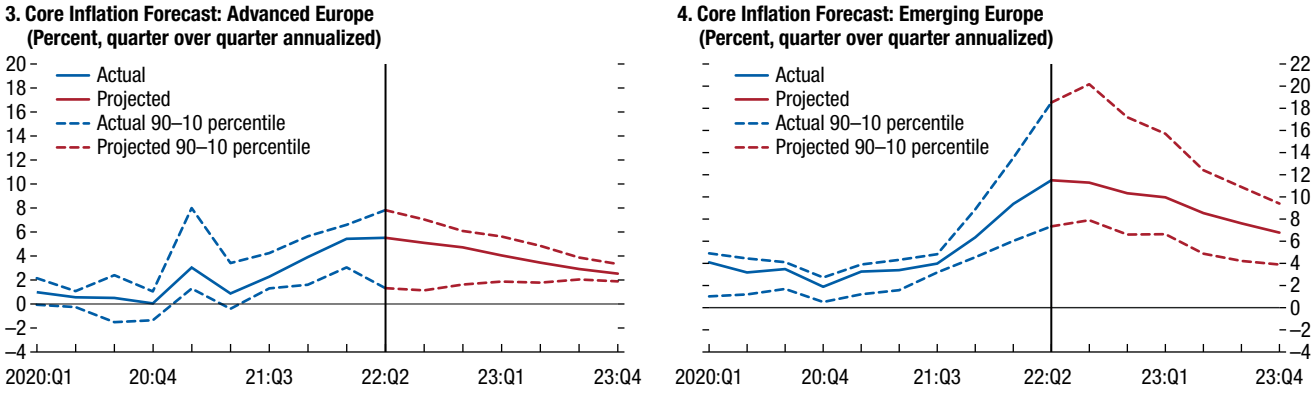
[13]The shocks discussed in the scenarios should be viewed as purely illustrative. Quantifying the probability distribution of these shocks and therefore their relative importance for the inflation outlook and risks is beyond the scope of the chapter.

Figure 2.7. Phillips Curve–Based Inflation Forecasts

Optimistic Forecast: Assume No Forecast Errors Starting in 2022:Q3



Conservative Forecast: Gradually Decaying Residuals Starting in 2022:Q3



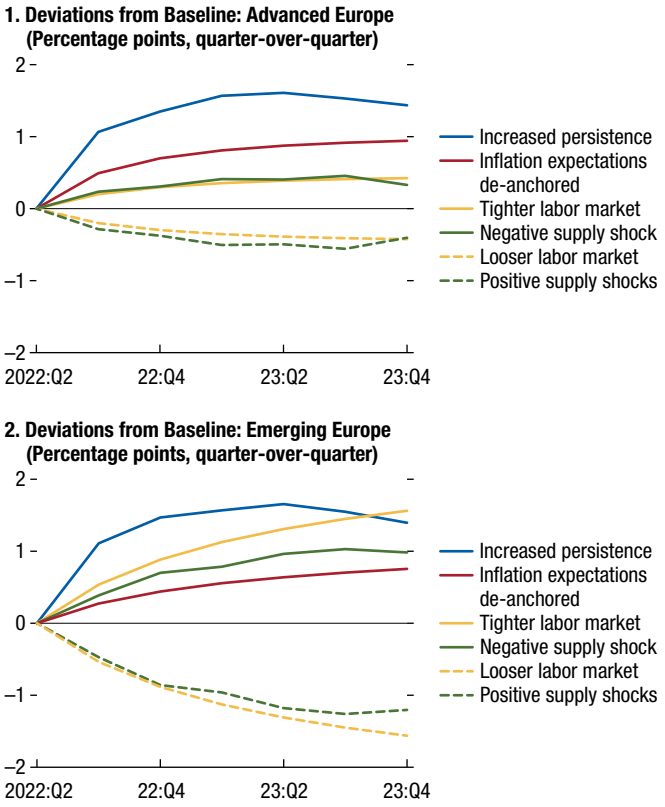
Sources: IMF, World Economic Outlook database; and IMF staff calculations.
Note: The solid blue (red) lines denote the purchasing-power-parity GDP-weighted average of observed (forecast) core inflation across 21 advanced and 5 emerging market economies in Europe. The dashed lines denote the observed (forecast) of the 10th and 90th percentiles of core inflation in each country income group. Emerging market economies include Bulgaria, Croatia, Hungary, Poland, and Romania.

Table 2.1. Illustrative Inflation Risk Scenarios

	Shocks	Phillips Curve Simulations	DSGE Model Simulations
0	Baseline (*World Economic Outlook*)	October *World Economic Outlook* assumptions (energy inflation 79.6 percent in 2022, 2.9 percent in 2023; food inflation 14.2 percent in 2022, –5.8 percent in 2023)	Cost shock raises inflation to *World Economic Outlook* baseline in the second quarter of 2022
1	Negative Supply Shocks	20 percent rise in energy and food prices	Additional inflationary cost shock matching initial shock in Phillips curve simulation
2	Positive Supply Shocks	20 percent fall in energy and food prices	Additional deflationary cost shock matching initial shock in Phillips curve simulation
3	Less Slack than Estimated	2 percentage points lower unemployment gap	2 percentage points lower output gap than assumed by the central bank in its monetary policy rule
4	More Slack than Estimated	2 percentage points higher unemployment gap	2 percentage points higher output gap than assumed by the central bank in its monetary policy rule
5	De-anchoring	1 percentage point higher expected inflation	Sudden rise in expectations increases inflation in the first period by 1 percentage point
6	More Backward-Looking Price Formation Process	Rise in the coefficient on lagged inflation to 0.8 (about its pre-1990s value)	Rise in the coefficient on lagged inflation to 0.8

Sources: IMF World Economic Outlook database; and IMF staff.
Note: DSGE = dynamic stochastic general equilibrium. All shocks persist throughout the simulation periods of six quarters in the Phillips curve simulation exercise.

Figure 2.8. Phillips Curve Simulations: Core Inflation



Sources: Consensus Economics; IMF, World Economic Outlook database; and IMF staff calculations.
Note: The lines show the purchasing-power-parity GDP-weighted average of core inflation paths (in deviation from baseline) under alternative scenarios as described in Table 2.1.

Finally, core inflation could be significantly higher than the baseline forecast if price setting becomes as backward-looking as it was before the 1990s, as may happen, for example, if workers bargain over wages considering recent rather than expected future inflation, and firms pass on higher input costs (including wage bills) to their prices.

The simulations suggest that the most challenging scenario, especially in advanced economies, would be a more backward-looking price formation process, which could be triggered by a wage-price spiral. Some pick-up in wage growth is to be expected; to keep the labor income share stable, for example, wages should grow in line with the sum of the GDP deflator and trend labor productivity growth rates. However, a much steeper acceleration in wages could trigger adverse wage-price feedback loops that would lead to monetary policy tightening and higher unemployment. Such risk could materialize if commodity-driven changes in prices seep into wages, and higher wages then feed back into inflation. Two complementary empirical exercises shed light on factors that have affected the likelihood of this risk in the past. First, the chapter examines the transmission of exogenous price changes onto wages, and then it examines the propagation of wages to prices (Figure 2.9).

The first exercise, based on Baba and Lee (2022), analyzes the response of wages to inflation triggered by oil prices shocks.[14] Two main factors are found to increase the pass-through from price shocks to wages: high prevailing inflation and weak central bank independence, which is linked to weak monetary policy credibility more broadly. When prevailing inflation is already high—as it is right now—an oil-induced increase in prices leads to a larger and more long-lasting increase in wages. Likewise, the wage response to price shocks is much larger and more persistent when monetary policy lacks credibility and thereby the ability to keep inflation expectations anchored.

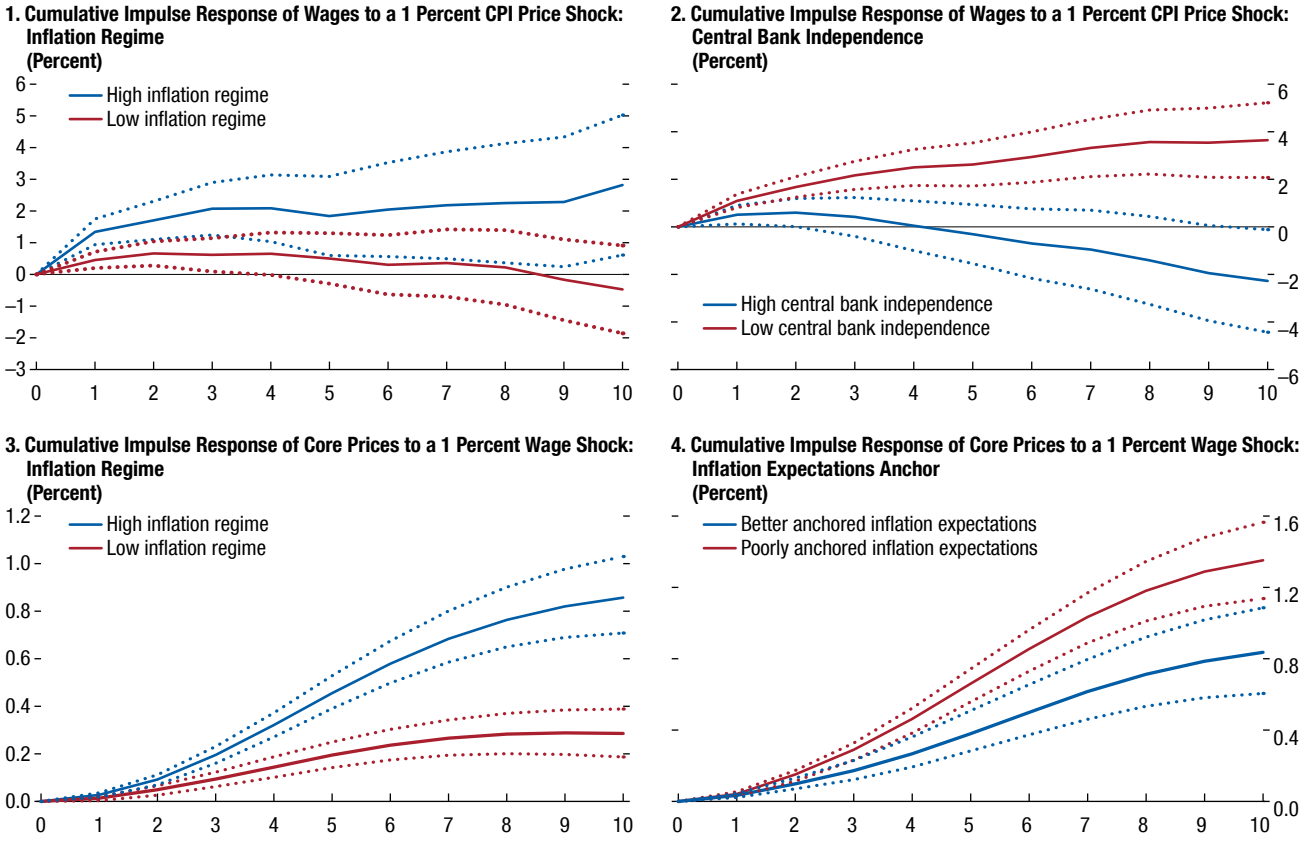
The second exercise, based on IMF estimates in the November 2019 *Regional Economic Outlook: Europe*, examines the response of prices to wages.[15] That pass-through is also found to be larger when prevailing inflation is high—it is three times larger in a high-inflation environment than in a low-inflation one. The pass-through from wages to prices is also stronger when inflation expectations are not well anchored, again underscoring that monetary policy credibility has a role to play in containing wage-price spiral risks.

Together, these findings suggest that the risks of a wage-price spiral are more pronounced when inflation is already high and where monetary policy is not deemed credible. High inflation

[14]The pass-through of price shocks to wages is estimated using the local projection method, with global oil price changes as an instrument for consumer price changes in a sample of European economies over the first quarter of 2000 through the fourth quarter of 2019. See Baba and Lee (2022) for details.

[15]The pass-through of wages to prices is estimated using an interacted panel vector autoregression model in a sample of European economies over the period from the first quarter of 1995 through the first quarter of 2019. See Boranova and others (2021) for details.

Figure 2.9. Wage Price Spiral Risks
(Percent)



Sources: Baba and Lee 2022; Boranova and others 2021; and IMF staff estimates.
Note: Panels 1 and 2 reflect estimates for a sample of 39 European countries over 2000:Q1–19:Q4, obtained from the approach in Baba and Lee (2022). Panels 3 and 4 reflect estimates for a sample of 27 European countries over 1995:Q1–2019:Q1, obtained from the approach in Boranova and others (2021). CPI = consumer price index.

could be conducive to second-round effects on wages, which subsequently would increase inflation persistence and reduce the role of medium-term inflation expectations in price formation.

What do these findings mean for the inflation outlook? The evidence presented indicates that the multidecade high levels of inflation recorded in much of Europe in the past 18 months clearly increase the risk of inflation becoming entrenched. Moreover, there are tentative signs that inflation has become more backward-looking in the post-COVID-19 period.

However, the prevalence of formal wage indexation to past inflation has fallen across Europe in recent decades, lowering risks of wage-price spirals. Wage growth has been relatively contained in most advanced European economies so far, and there was limited evidence of acceleration in negotiated wages until late summer.[16]

According to recent European Central Bank analyses, more than half of private sector employees in the euro area do not take inflation into account when setting wages and, where inflation plays a formal role in wage negotiations,

[16]Notwithstanding, close monitoring of wage developments is warranted given early signs of building pressures from ongoing wage negotiations, minimum and public sector wage increases, and the reintroduction of inflation-indexation clauses in some wage agreements (such as in Spain). In some emerging European countries, the large recent increases in public sector wages might spill over to private wage negotiations.

forward-looking inflation measures are used predominantly (European Central Bank 2021b, p. 63, Box 7). Likewise, in the public sector, only about one-fifth of the euro area public wage bill has full or partial price indexation (European Central Bank 2022, p. 68, Box 8). Overall, while risks of wage-price spirals have increased and would rise further if high inflation were to persist, they remain contained so far, at least in advanced European economies, as also discussed in Chapter 2 of the October 2022 *World Economic Outlook*.

Policies

Given these inflation prospects and risks, how should policies be set, and what would be their implications for inflation and growth? This section uses a small dynamic stochastic general equilibrium model to examine monetary policy responses and implied inflation and GDP growth paths under the risk scenarios discussed, distinguishing between advanced and emerging European economies. It then discusses the role that fiscal and other policies may also play in containing inflation pressures.

Monetary Policy

A dynamic stochastic general equilibrium model, calibrated to an average advanced and an emerging European economy, respectively (including average Phillips curve characteristics within each country income group), illustrates the wide range of possible policy rate paths over the coming quarters, given very high uncertainty. The baseline scenario replicates inflation and output dynamics observed in the first half of 2022 using a "cost-push shock" related to commodity price inflation.[17] Risk scenarios that are analogous to those considered in the previous section (Table 2.1) are then simulated over and above the baseline cost-push shock.

Simulations suggest that if some of the upside inflation risks materialized, monetary policies could easily need to be tightened by more than 200 basis points more than under the baseline, reducing GDP growth in the year ahead by up to 2 percentage points in some cases (Figure 2.10). These broad conclusions would apply differently across advanced and emerging European economies, depending on the nature of the shock. They would also differ across individual countries within each income group, depending on cyclical and structural specifics not captured in simulations run for an average country, such as the starting level of inflation, its persistence, its responsiveness to slack, and the degree of anchoring of inflation expectations, among others.

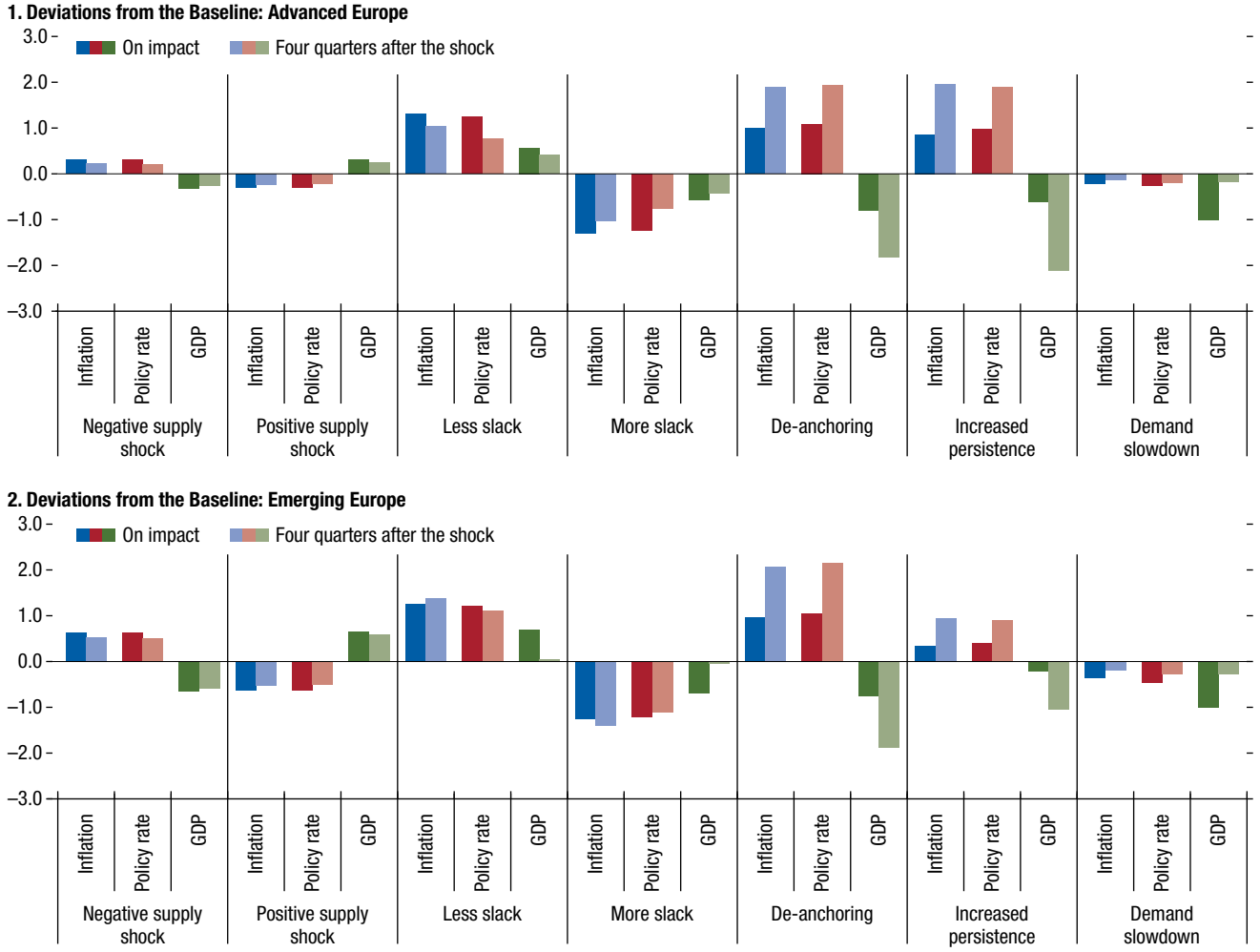
A further commodity-driven cost shock would lead to another round of higher inflation, tighter monetary policy, and lower output everywhere but particularly in emerging Europe because of its larger share of food and energy in consumption baskets and the larger role of past inflation in inflation expectation formation. The deeper economic downturn in emerging European economies would reflect the sharper required monetary policy tightening, despite steeper Phillips curves than in advanced economies.

A de-anchoring of inflation expectations would have even larger effects because it is typically difficult to reverse, exerting upward inflation pressure for a long time. Emerging European economies would be hit particularly hard because the persistent shock to forward-looking inflation expectations would be continuously reinforced by the stronger backward-looking component of price setting, causing a larger and more persistent increase in inflation than in advanced economies.[18] Such a scenario would be more likely to materialize if inflation rates exceeded targets for a prolonged period, as this could erode central

[17]The framework is based on Galí and Monacelli's (2005) model of small open economies. See the Online Annex for the baseline calibration and more details of the simulations. The calibration reflects the parameters estimated in the previous sections: a steeper Phillips curve, more backward-looking inflation, and a bigger cost-push (because of the larger share of commodities in consumer price index baskets and larger pass-through) in emerging Europe compared with advanced Europe.

[18]The stronger persistence of a de-anchoring scenario in emerging European economies becomes pronounced in later periods that are not shown in Figure 2.10.

Figure 2.10. Model Simulation Results under Alternative Illustrative Scenarios
(Percentage points)



Sources: IMF, World Economic Outlook database; and IMF staff calculations.
Note: The dark blue bars display deviations from baseline of core inflation right after the shocks, and light blue bars display deviations four quarters after the shocks for a typical advanced economy (panel 1) and emerging economy (panel 2). The dark and light red (green) bars show deviations from baseline of the policy rate (GDP) right after the shocks and four quarters after the shock, respectively.

banks' credibility and raise inflation expectations and inflation toward persistently elevated levels. Central banks would then be forced to tighten their stance and depress economic activity for as long as inflation expectations remain elevated.

The realization by central banks that there is less (or more) economic slack than previously anticipated would also require adjusting policy rates (upward or downward) compared to their expected paths.[19] Until central banks correct their stance, monetary policy would be undesirably expansionary (contractionary) causing considerably more (less) inflation than desirable from their perspective. This holds especially for emerging European economies, as steeper Phillips curves and more backward-looking price setting exacerbate the inflationary impact of monetary policy mistakes.

An increase in the extent to which price formation is backward-looking—as a result of a wage-price

[19]In this scenario, central banks overestimate (underestimate) the size of the output gap for six quarters by 2 percentage points, reflecting a misjudgment of aggregate demand.

spiral, for example—would drive up inflation similar to a cost shock but much more strongly and in a more long-lasting manner because of its broad-based nature. Persistently elevated inflation would depress real wages and could trigger higher wage demands. Rising real wages would subsequently increase firms' costs and could induce higher inflation. Inflation expectations that turn more backward-looking allow past inflation hikes to exert continuing inflation pressure, even after the original shock has faded. Advanced economies may be at greater risk of such an increase in the "backward-lookingness" of price formation because their inflation expectations are currently more forward-looking than those in emerging European economies, leaving more scope for deterioration—in other words, their central banks have more hard-won credibility to lose.[20] Similar to the cost-push shock scenario, central banks would need to tighten monetary policy to contain inflation, but more and more persistent tightening would be needed to cope with a more persistent rise in inflation.

Finally, a contraction in aggregate demand would exacerbate the decline in output but ease inflation pressures. Emerging European economies would see inflation drop by more than advanced economies because of their steeper Phillips curves.[21]

These illustrative scenarios suggest that central banks should keep raising policy rates under most scenarios while remaining nimble and ready to respond to emerging risks in both directions, with greater chances that policy rate paths may ultimately need to be steeper instead of flatter than expected. In any case, maintaining central bank independence, effective communication, and transparency will be key to preserving hard-won credibility and prevent the unmooring of inflation expectations. The scenarios also show that the desirable strength and persistence of the monetary policy reaction depend on the risk and vary across economies. For example, emerging European economies would need to react more strongly to a de-anchoring of inflation expectations.

Fiscal and Other Policies

Although monetary policy is the main tool to lower inflation, fiscal policy should not complicate its action. As discussed in Chapter 1 of this *Regional Economic Outlook*, fiscal consolidation should proceed under the baseline IMF projections—even if its pace may be temporarily slowed—to avoid boosting aggregate demand and making it harder for monetary policy to tame inflation.

The more temporary and targeted the relief measures for energy (and food) price shocks are, the less they will conflict with the monetary policy stance. So far, Europe's policymakers have responded to the commodity crisis with a wide range of mostly broad-based, price-suppressing measures, including subsidies (for example, the Czech Republic, France, Greece, Lithuania, Poland, and Romania), tax cuts (most countries), and price controls.[22] Some of these measures are intended to contain current inflationary pressures, with the hope of moderating wage claims and preventing price-wage feedback loops. The fiscal cost of these measures, however, especially those targeting energy prices, has been sizable. It is estimated to reach about 0.6 and 0.5 percent of GDP on average in advanced and emerging European economies, respectively, by mid-2022, exceeding 1.5 percent of GDP in countries such as Greece and Malta. The extraordinary magnitude and partly temporary nature of the energy price increase caution against a full immediate pass-

[20]The simulation assumes that advanced and emerging European economies converge to the same level of backward-looking inflation expectations.

[21]For the demand slowdown scenario, the inflation reaction is shown for the quarter after the shock rather than on impact. With flexible exchange rates, a contractionary demand shock triggers a depreciation of the exchange rate on impact, which offsets its direct deflationary effect. The following appreciation allows consumer prices to decline.

[22]When it comes to food, emerging European economies have been much more likely than advanced ones to resort to such measures, given the larger weight of food in their consumption baskets. About 70 percent of emerging European economies used such measures for food, including tax cuts for food items (for example, Bulgaria, Croatia, North Macedonia, Poland, and Türkiye) and subsidies to farmers (for example, Kosovo and North Macedonia), compared with 12 percent of advanced economies.

through to end users. However, support measures should remain as temporary and targeted as possible and be designed in the most efficient way possible, with the goal of preserving price signals and encouraging energy savings.

Other policies could also be useful. Where collective bargaining agreements have a wage indexation clause, the authorities could intervene to moderate negotiated wages in the medium term in exchange for one-time wage bonuses rather than outright wage increases. Structural reforms that enhance productivity and investments that expand economic capacity and relieve supply constraints, notably in energy and labor markets, could also support monetary policy in the fight against inflation.

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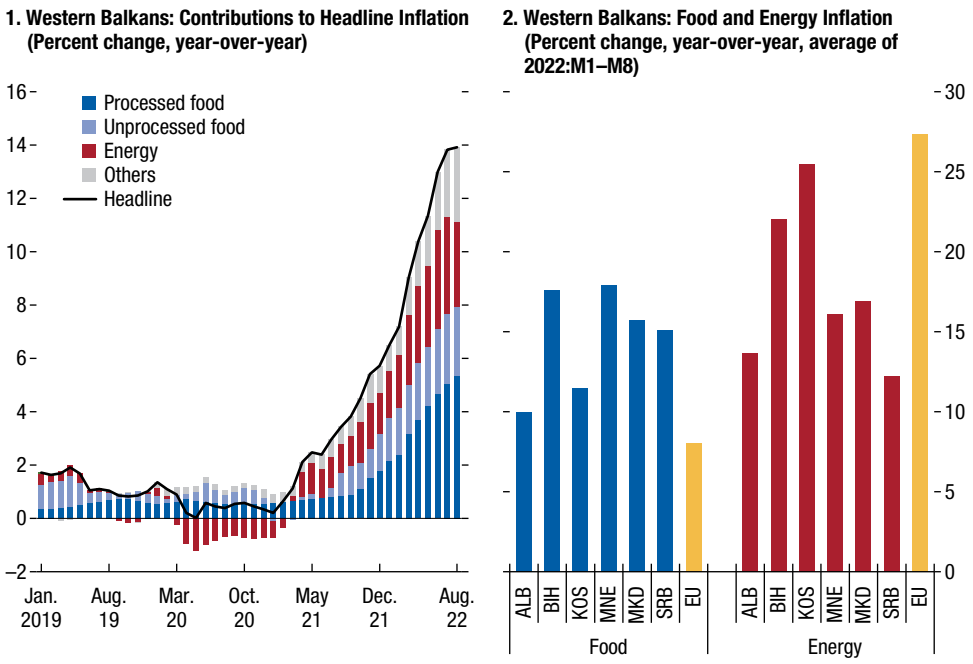
Box 2.1. Inflation Dynamics in the Western Balkans

Inflation was in double digits in the summer of 2022 in all Western Balkan countries except for Albania, where it was at a two-decade high. Food has been the dominant driver for two reasons (Box Figure 2.1.1): Domestic food prices have increased more in the Western Balkans than in the European Union (EU) because of a high pass-through from global food prices, and food makes about 40 percent of the average consumption basket in the Western Balkans—twice the EU average. By contrast, energy price inflation has been below the EU average, helped by domestic electricity generation (Albania, Bosnia and Herzegovina, Montenegro) and policies that dampened energy price increases at the consumer level. More recently, inflation has become more broad-based, with a rapid rise in core inflation, a build-up of wage pressures (triggered in some cases by minimum wage increases), and growing inflation expectations in some countries.

Box Figure 2.1.1.



Sources: Eurostat; Haver Analytics; national authorities; and IMF staff calculations.
Note: Country abbreviations in panel 2 use International Organization for Standardization (ISO) country codes.

Adapting the Phillips curve model detailed in the chapter to the data availability and country specificities of the Western Balkans uncovers the importance of international factors in domestic price determination (Minasyan and others, forthcoming). International food prices are a strong determinant of headline inflation in the Western Balkans through their impact on domestic unprocessed and processed food prices but also on nonfood inflation. The (nominal effective) exchange rate is found to be another key driver of headline inflation, in line with a large exchange rate pass-through. Furthermore, the analysis confirms the strong persistence of both headline and core inflation, while inflation expectations are also found to be an important determinant of inflation. The latter findings suggest that it could take time for inflation to fall back to its presurge levels, underscore the importance of well-anchored inflation expectations, and support the decision of all Western Balkans central banks with autonomous monetary policy (Albania, North Macedonia, Serbia)

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Box 2.1. Inflation Dynamics in the Western Balkans *(continued)*

to increase key policy rates several times since March. By contrast, measures of slack such as unemployment or output gaps are not found to be statistically significant, likely reflecting data limitations in the presence of high informality.

Rising inflation has prompted governments in the region to take action to dampen its impact on households and firms. Albania, Bosnia and Herzegovina, Kosovo, and Serbia implemented one-off assistance packages, most of which are targeted at vulnerable groups. Albania and Bosnia and Herzegovina also introduced sizable public wage and pension increases. Household electricity tariffs are regulated and have remained unchanged so far in most Western Balkans countries (except for Kosovo and North Macedonia), helping to contain the rise of inflation but at high fiscal costs. Price caps and profit margin limits for critical staple food and fuel items have been introduced in all Western Balkans countries, with limited effectiveness. Some countries have also introduced export bans (North Macedonia, Serbia), which only make the global situations worse, and value-added tax and excise tax cuts (Montenegro, Serbia) on products such as flour, wheat, and sunflower oil, which are not well targeted either and may be difficult to exit in the future.

IN THIS ISSUE:

CHAPTER 1
The Fog of War Clouds the European Outlook

CHAPTER 2
Inflation in Europe: Assessment, Risks, and Policy Implications

PUBLICATIONS

REGIONAL ECONOMIC OUTLOOK
EUROPE - OCTOBER 2022