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**Director General
Economics**

Challenges for global monetary policy in an environment of high inflation: the case of Europe

*The views expressed in this
presentation do not necessarily reflect
those of the ECB Board Members or
the Governing Council*

CEMLA

27 September 2022

1. Drivers of high inflation

- Unprecedented succession of global shocks – reopening, bottlenecks, energy, food – ...
- ...and euro area specificities – highly open economy and highly dependent on Russian gas – ...
- ...have lifted inflation to historical highs and are threatening the growth prospects.
- Euro area – US comparison reveals some important differences in the drivers of high inflation

2. September ECB staff projections

- Further significant downward (upward) revision to GDP growth (inflation) in 2022-23
- In 2024, GDP growth slightly revised down and inflation projected at 2.3% (2.3% core inflation)
- Risks: prevalence of downside (upside) risks to growth (inflation)

3. ECB monetary policy decisions

- Frontloaded transition from the prevailing highly accommodative level of policy rates towards levels that will ensure a timely return of inflation to 2%

4. Long-term challenges for monetary policy

- Changing structural sources of inflation due to impact of current supply shocks on potential growth; energy transition; geopolitics; demographics, etc. are drawing a increasingly challenging environment

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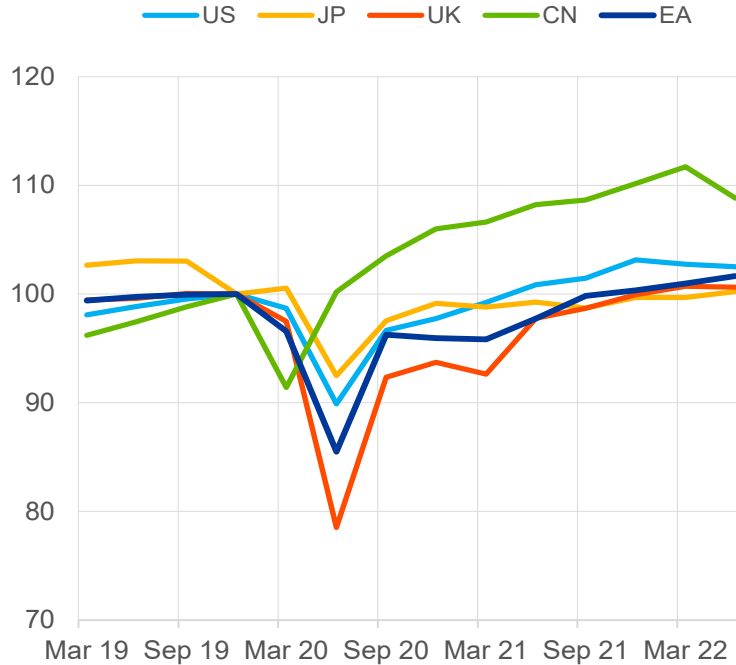
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Global developments in output and inflation

Real GDP

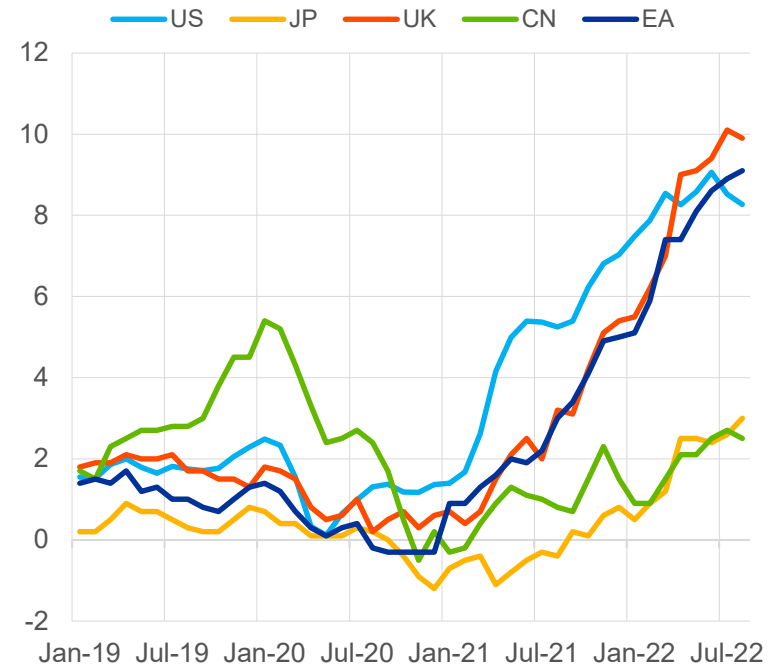
(level, 2019Q4=100)



Source: ECB.
Latest observation: 2022Q2.

Inflation

(annual percentage changes)

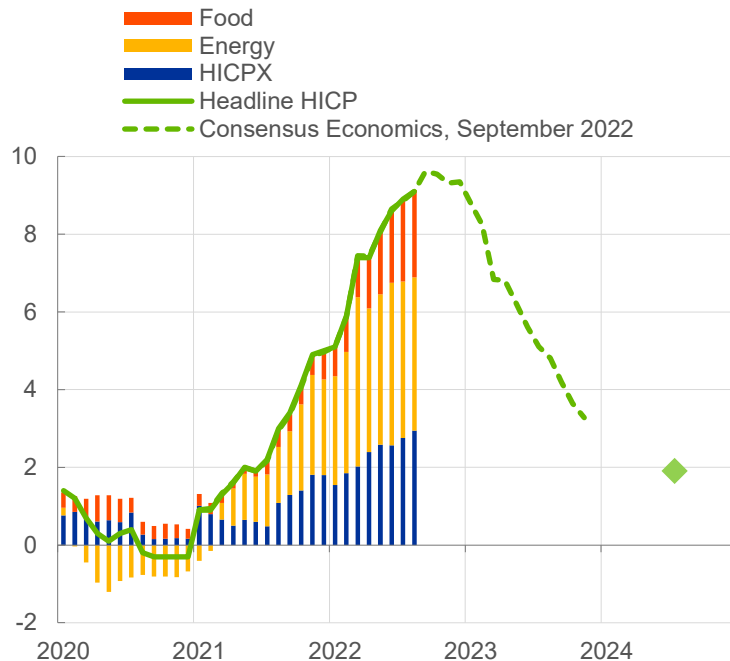


Source: OECD.
Note: Inflation refers to HICP for the euro area, CPI for the remaining countries.
Latest observation: August 2022.

The contribution of energy and food inflation

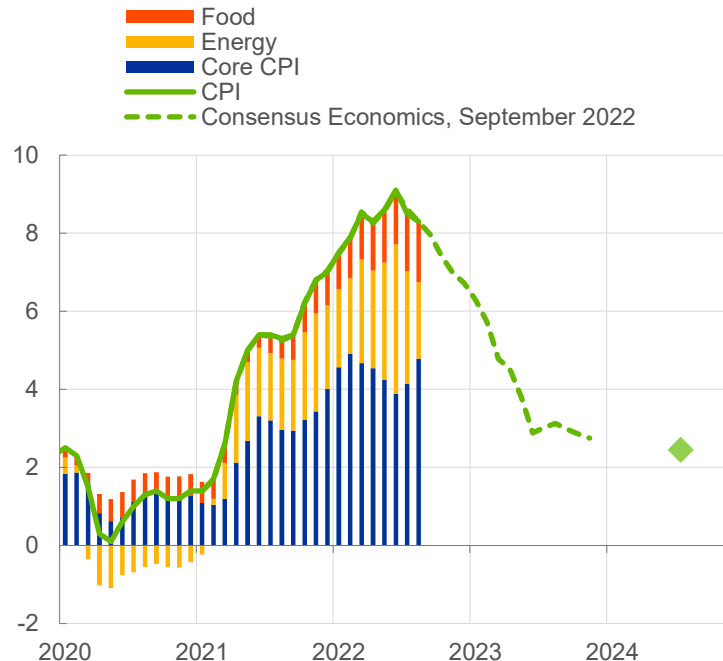
HICP inflation in the euro area

(annual percentage changes and pp contributions)



CPI inflation in the United States

(annual percentage changes and pp contributions)



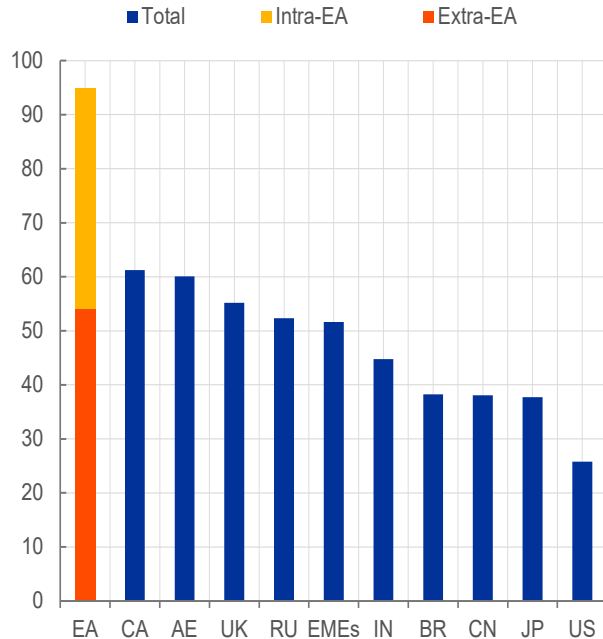
Sources: Eurostat, Haver, Consensus Economics Forecasts and ECB staff calculations.

Notes: For the euro area, the panel shows the HICPX stands for HICP excluding food and energy. For the United States, CPI CORE stands for CPI excluding food and energy.

Latest observations: August 2022 for euro area and for the United States. Dashed lines represent the monthly profiles from the Consensus Economics survey collected on the 12-th of September 2022. The diamond represent calendar-year expectations for 2024 as collected by Consensus Economics on the 11-th of July 2022.

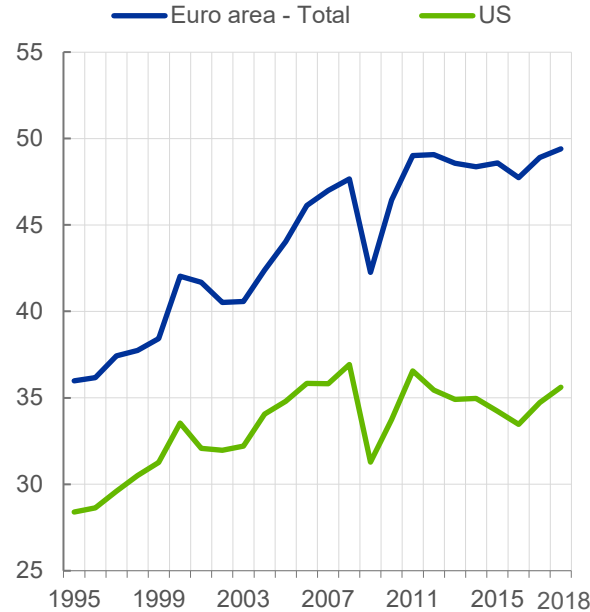
Exposure to supply bottlenecks and to the energy shock

Trade openness in 2021 (percentage of GDP)



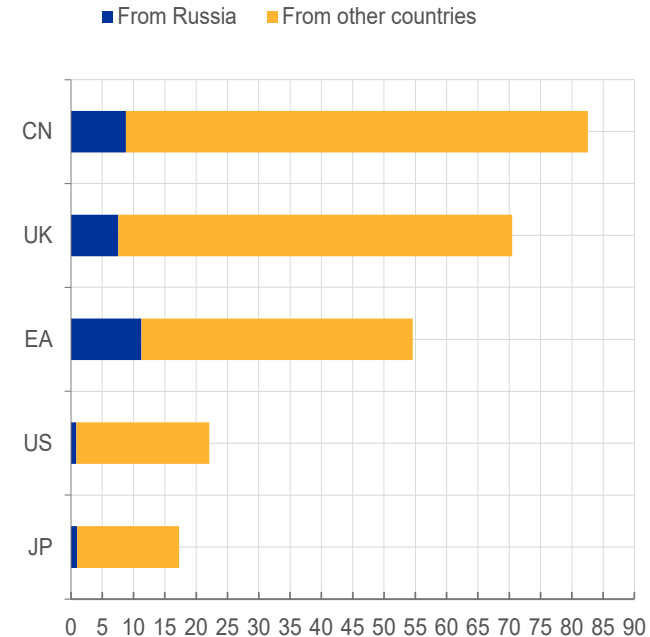
Sources: IMF World Economic Outlook, Eurostat, ECB calculations.
Note: Annual data for 2021. Trade openness is calculated as the share of exports and imports in goods and services to GDP. For the euro area, both intra and extra trade is considered. AE: advanced economies, EME: emerging market economies

Participation in global value chains (percentage of gross export)



Sources: OECD TiVA (2021)
Latest observations: 2018.

Energy dependency (share of total energy use)

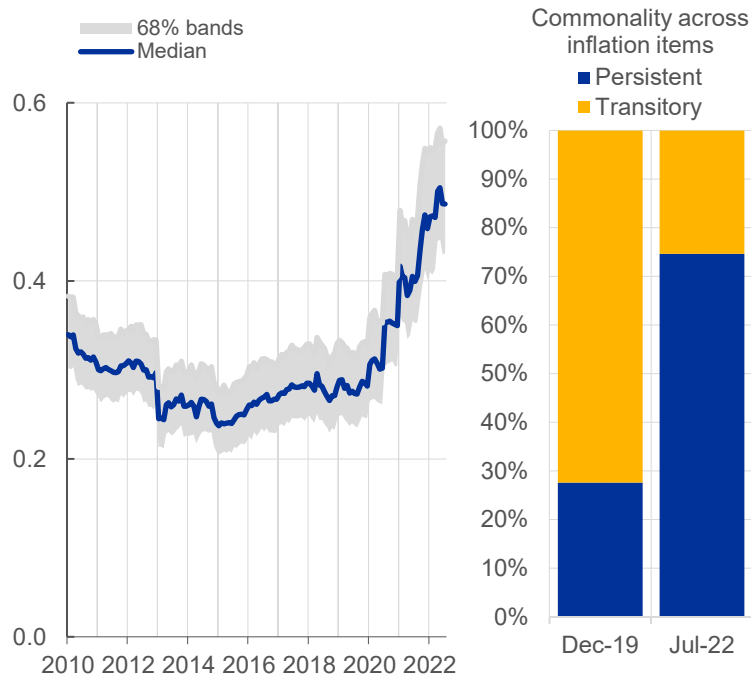


Source: OECD TiVA 2021 and ECB Staff calculations.
Notes: Energy includes Mining and quarrying (energy producing products) and Coke and refined petroleum products.

The growing incidence of energy as a common factor of sectoral interdependence

Connectedness among HICP items

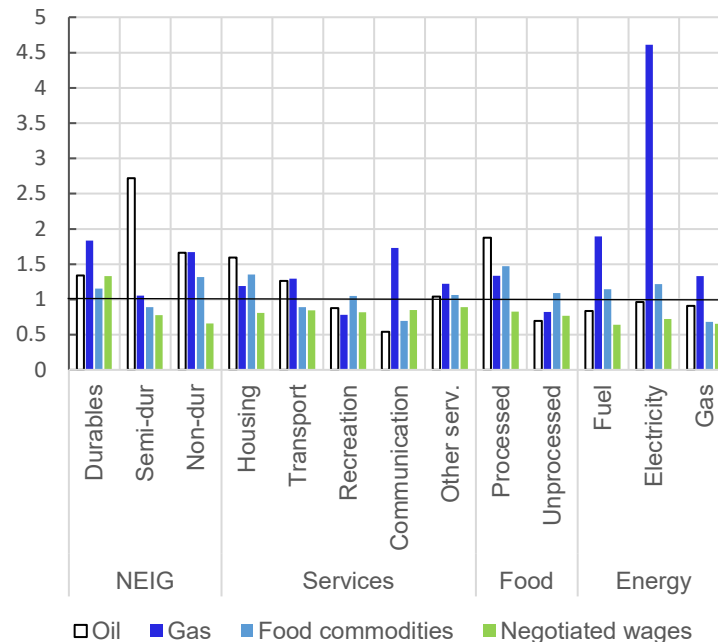
(share of variance)



Impact of disturbances associated with selected indicators on HICP inflation

categories - latest vs pre-pandemic

(ratio of forecast error variance)



Oil Gas Food commodities Negotiated wages

Sources: ECB Staff estimations.

Notes: Chart shows the ratio of the forecast error variance of HICP items for a one-year ahead horizon that is attributable to disturbances associated with selected inflation drivers in a full sample compared to pre-pandemic times.

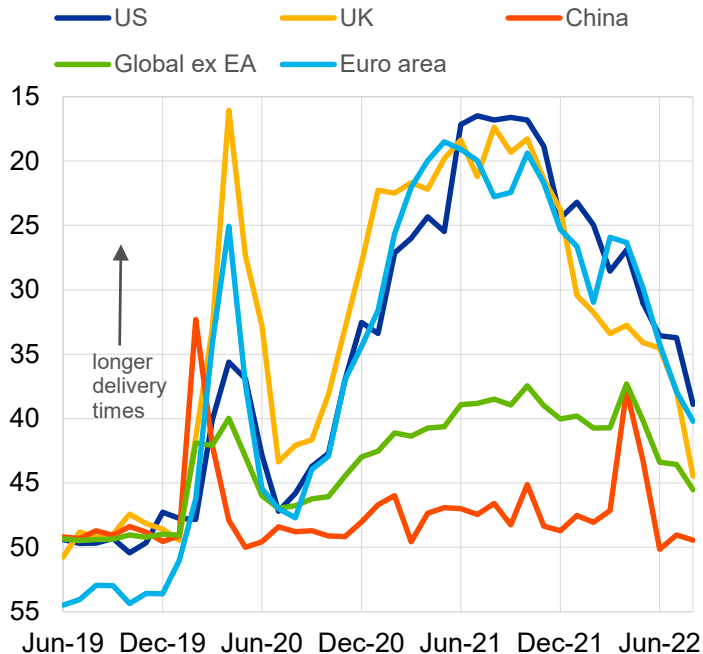
Latest observations: June 2022.

Sources: ECB Staff estimations. Notes: Connectedness is based on [Diebold and Yilmaz \(2014\)](#), at zero forecast horizon (contemporaneous). The bar chart shows relative variances of the common persistent and transitory components based on the trend inflation model of [Stock and Watson \(2016\)](#). Latest observations: July 2022.

Easing bottlenecks and fading impact of reopening

Suppliers' delivery times

(diffusion indices)



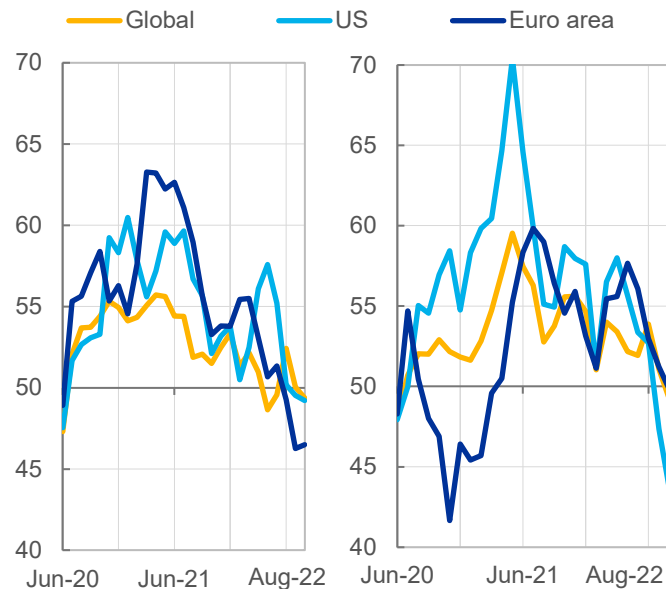
Sources: Haver, S&P Global and ECB calculations.
Latest observation: August 2022.

Manufacturing and services

(diffusion indices)

PMI Manufacturing output

PMI Services activity

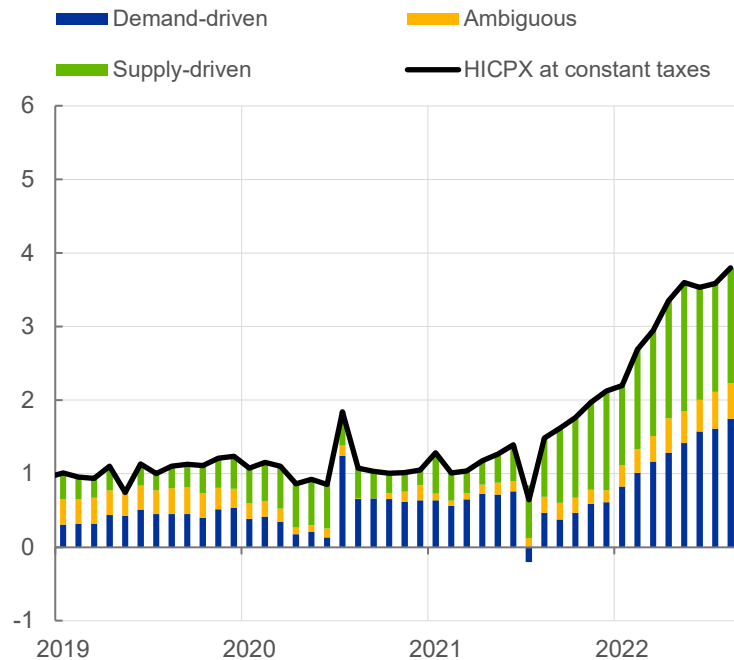


Source: S&P Global.
Latest observation: August 2022.

Drivers of core inflation

Drivers of EA HICPX inflation

(annual percentage changes and percentage point contributions)

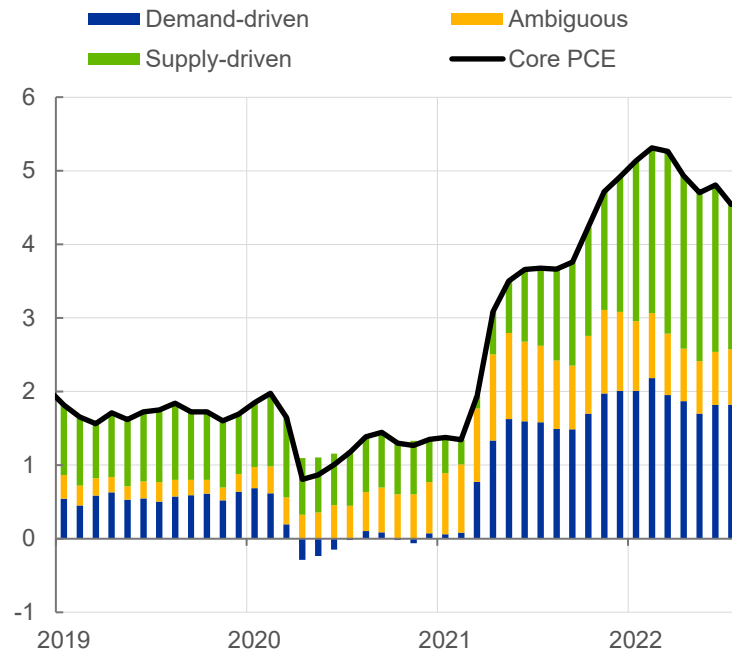


Sources: Eurostat and ECB staff calculations.

Notes: Seasonally adjusted series. Based on a replication (Goncalves/Koester - August 2022) of Shapiro's work (2022). Series used in left-hand chart are at constant taxes. Latest observation: August 2022.

Drivers of US core PCE inflation

(annual percentage changes and percentage point contributions)



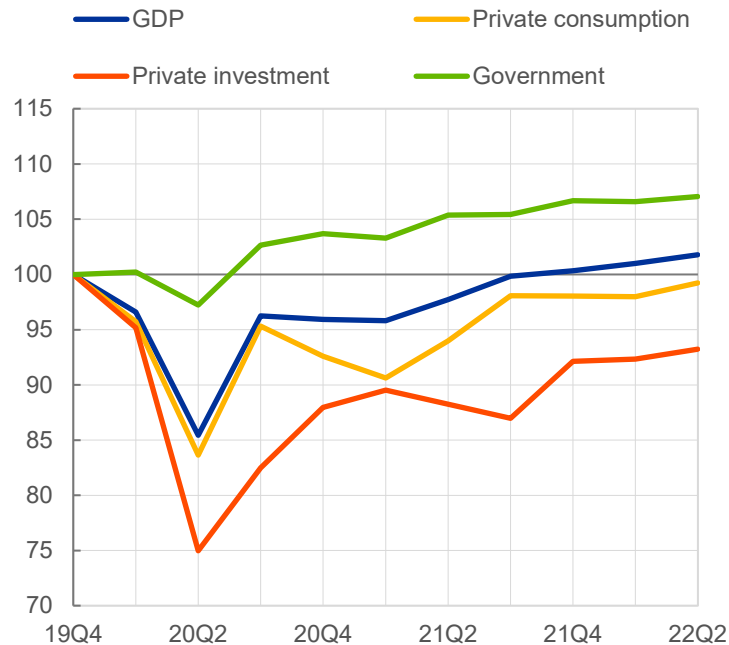
Sources: ["Supply- and Demand-Driven PCE Inflation"](#), Shapiro (2022).

Latest observation: July 2022.

The role of domestic demand

Euro area - GDP and demand components

(level, 2019Q4=100)



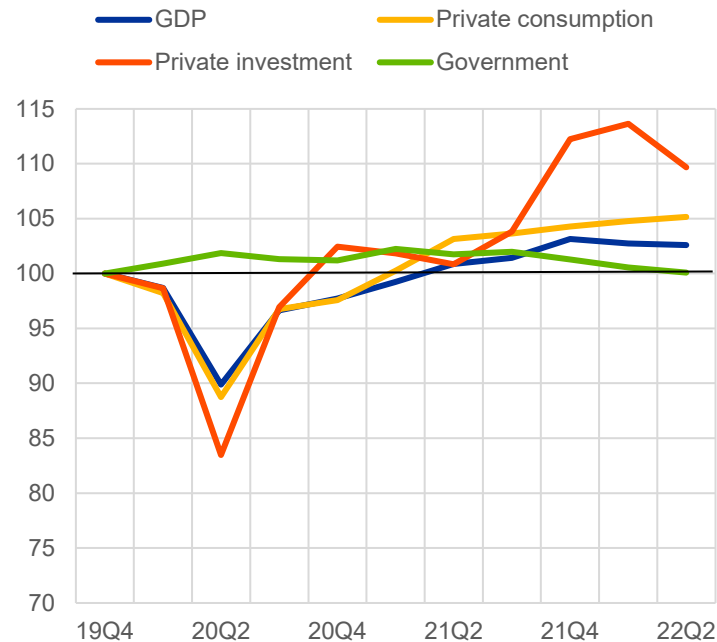
Sources: ECB staff calculations.

Notes:

Latest observations: 2022Q2.

United States - GDP and demand components

(level, 2019Q4=100)

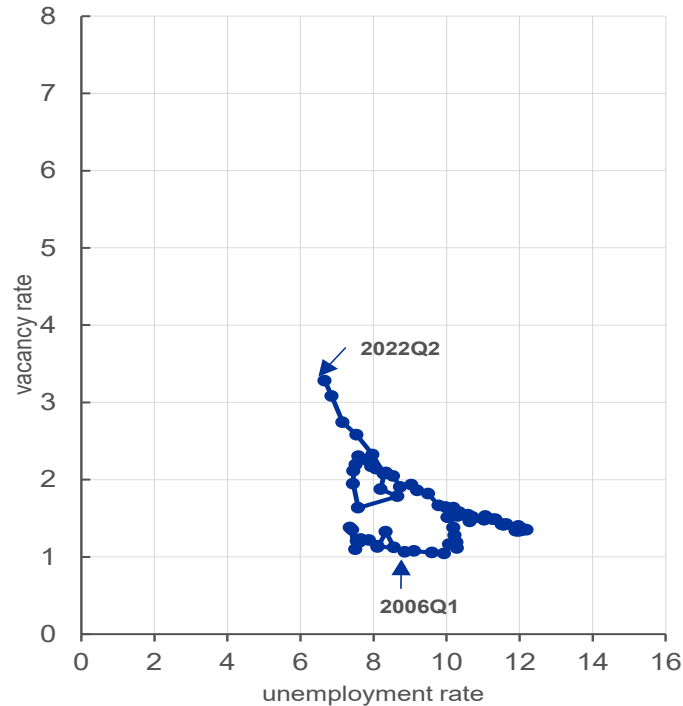


Sources: Bureau of Economic Analysis and ECB staff calculations.

Latest observations: 2022Q2.

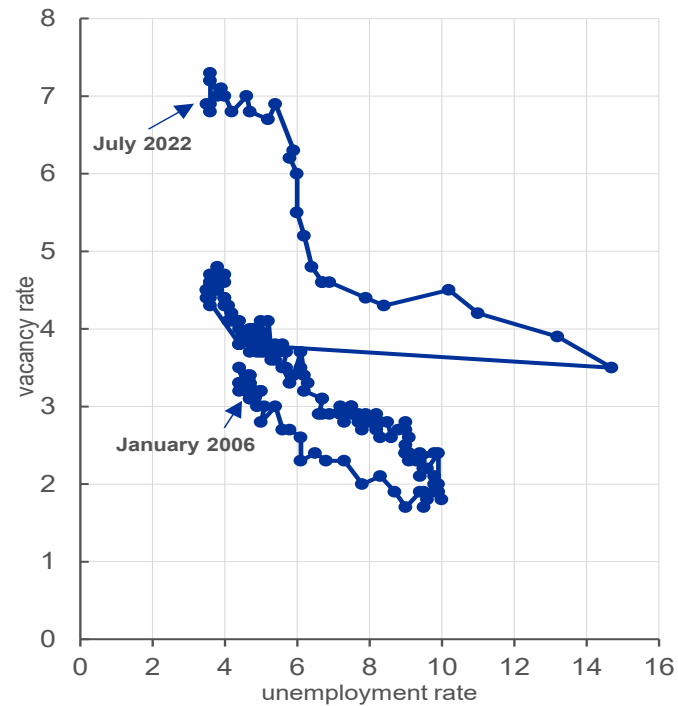
The tightness of the labour market

Euro area Beveridge curve (percentages)



Source: Eurostat.
First observation: 2006Q1.
Latest observation: 2022Q2.

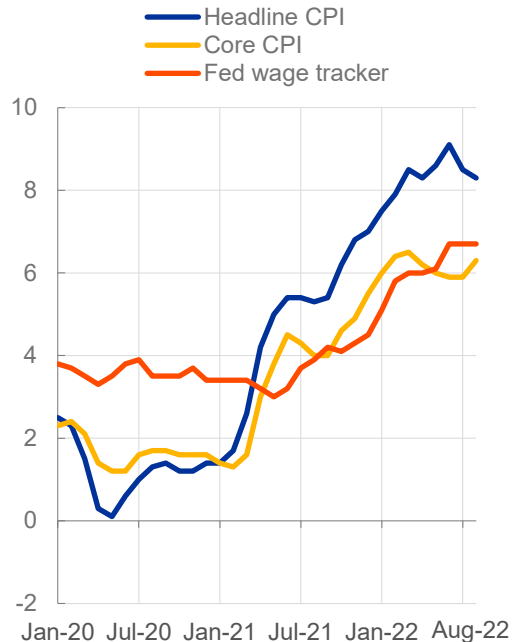
United States Beveridge curve (percentages)



Source: Bureau of Labor Statistics.
First observation: January 2006.
Latest observation: July 2022.

US: CPI inflation and Fed wage tracker

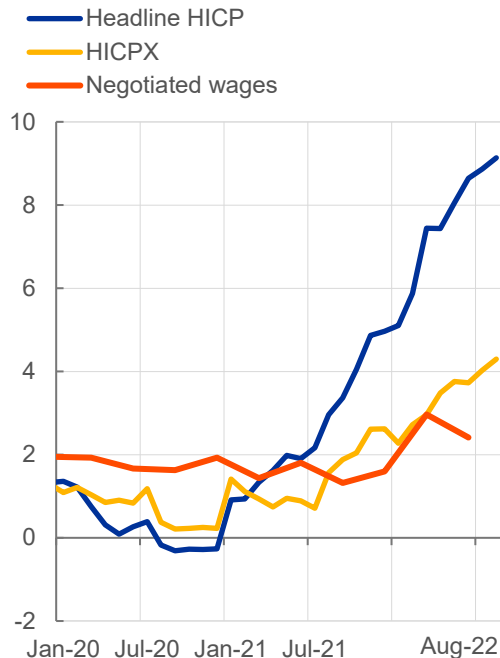
(annual percentage changes)



Sources: Bureau of Labor Statistics and Atlanta Fed.
Latest observation: August 2022.

Euro area: HICP inflation and negotiated wages

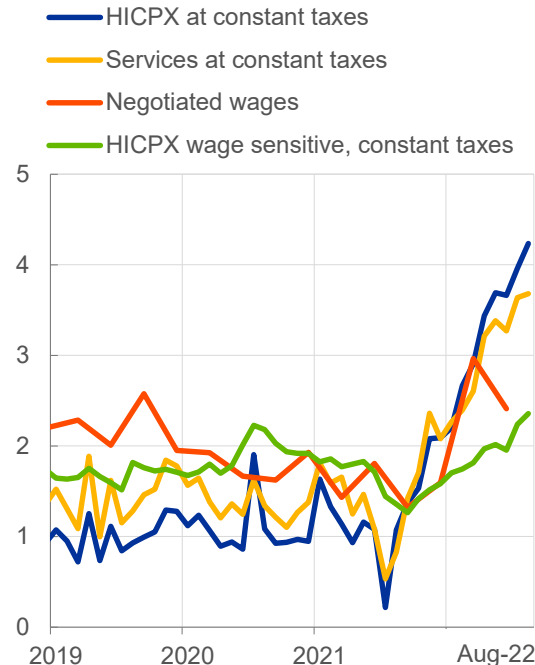
(annual percentage changes)



Sources: Eurostat and ECB calculations.
Notes: Data for negotiated wages were revised due to a new submission for France by Banque de France.
Latest observations: August 2022 for HICP data and Q2 2022 for negotiated wages.

Euro area: inflation of wage sensitive items

(annual percentage changes)



Sources: Eurostat and ECB calculations.
Note: HICPX wage sensitive items are a composite measure based on items with a share of wages in direct costs above 40%.
Latest observations: Q2 2022 for negotiated wages and August 2022 for the rest.

Market & surveys measures of inflation expectations

Market-based 5y5y inflation compensation

(annual percentage change)



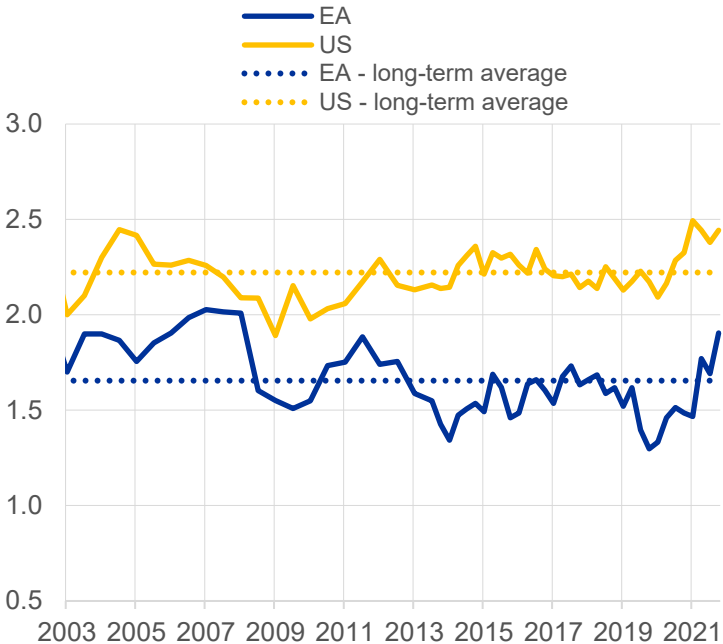
Sources: Bloomberg, Refinitiv and ECB calculations.

Note: 5 year implied forward I/L swap rate 5 years ahead for EA and 5-year forward 5 years ahead BEIR for US.

Latest observation: 21 September 2022

Long-term survey-based expectations (5ya)

(annual percentage changes)



Sources: Long-term Consensus Economics forecasts.

Notes: Last value refers to 2024, collected on the 11th July 2022. Long-term averages since April 2003. Forecasts for the second calendar year are available at quarterly frequency only since April 2014.

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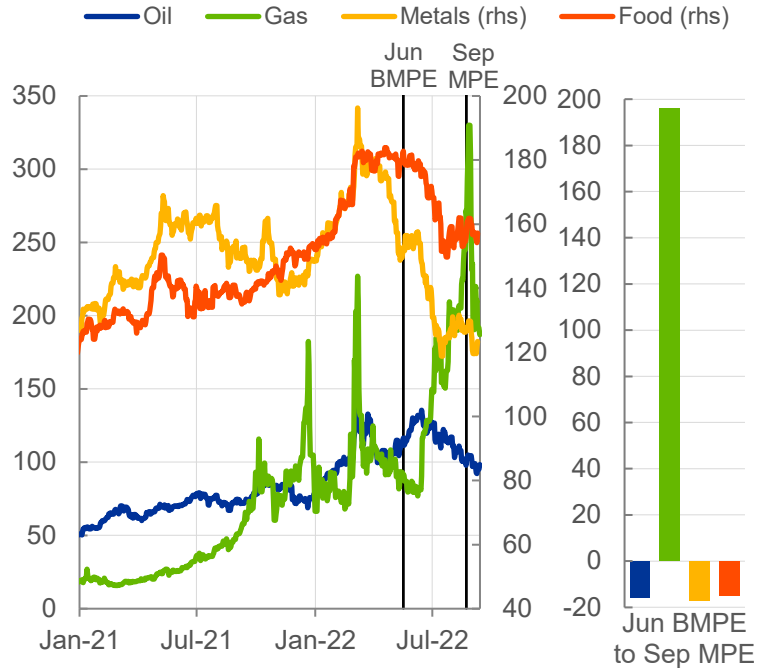
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Key changes in technical assumptions: the gas crisis and a weaker euro

Commodity prices

(lhs: see footnote, rhs: percent)

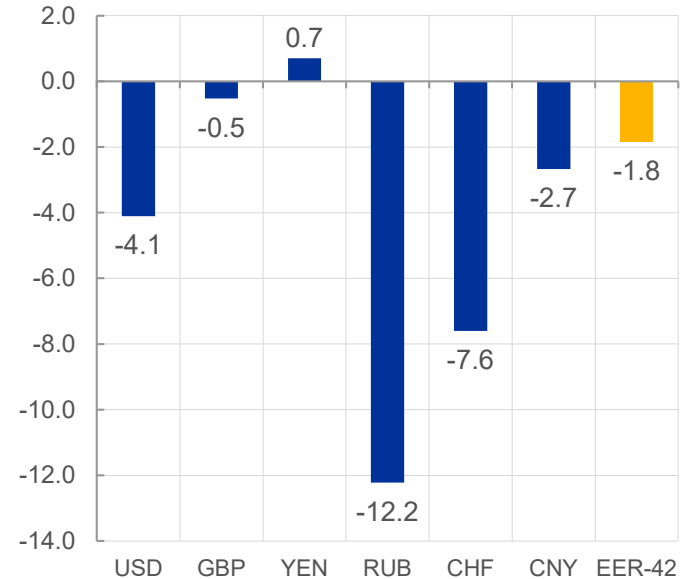


Sources: Refinitiv, HWWI and ECB staff calculations.

Notes: Units of line chart: lhs: USD per barrel (oil); EUR per MWh (gas), rhs: indices, 100=2020. Latest observations: energy 12/09/2022, non-energy 09/09/2022.

Euro exchange rate

(percentage changes from June 2022 BMPE)

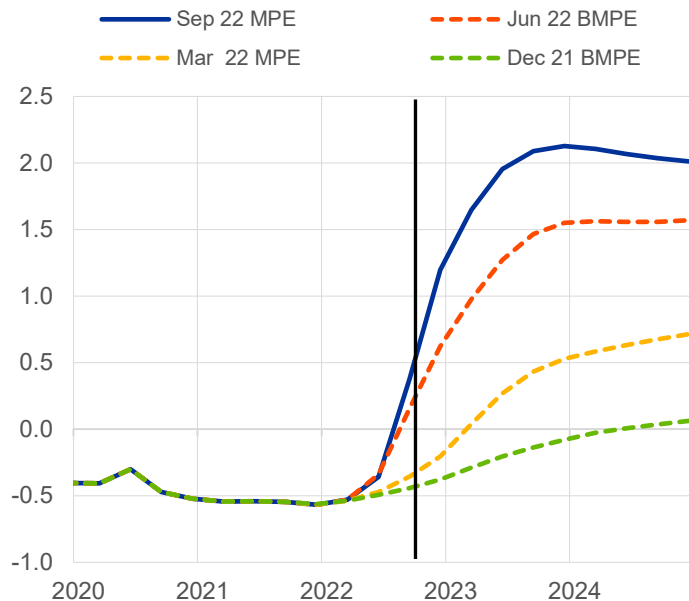


Sources: ECB calculations.

Note: The cut-off date refers to 17 May for the June BMPE and 22 August for the September MPE.

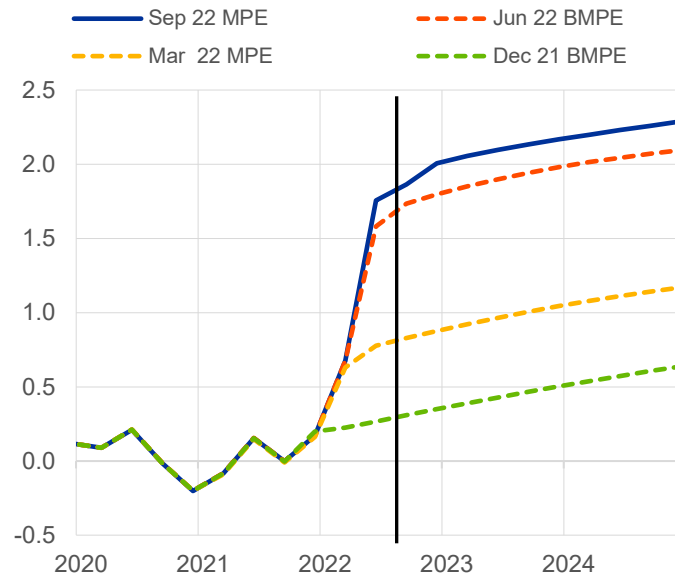
Short-term interest rates

(% per annum)



Long-term interest rates

(% per annum)

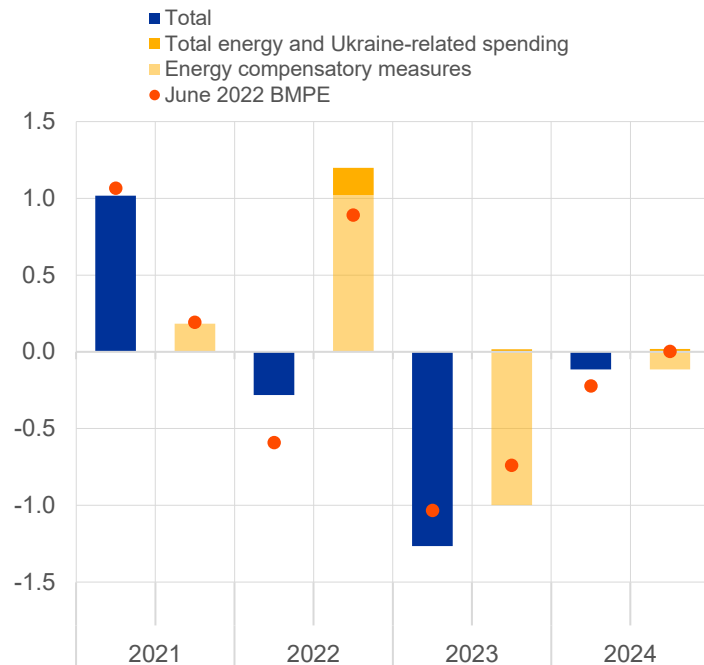


Notes: The assumptions for short-term interest rates are based on market expectations of the three-month EURIBOR, as implied in futures rates. The long-term interest rates for the euro area are based on the weighted average of countries' ten-year government bond yields, weighted by annual GDP figures.

More fiscal support measures

Discretionary fiscal measures

(annual changes, fiscal stance concept)

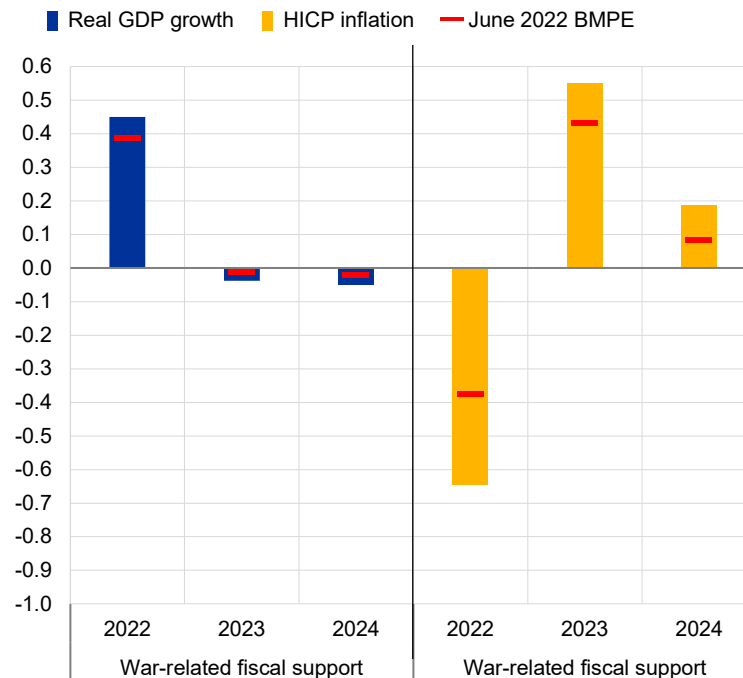


Source: ECB calculations.

Notes: The fiscal support related to the war in Ukraine, including energy measures, refers to measures adopted by governments after 24 February 2022. For more information on the fiscal measures related to the war in Ukraine please find a Box in the Economic Bulletin Issue 5, 2022: Euro area fiscal policy response to the war in Ukraine and its macroeconomic impact.

Impact of war-related support

(percentage points)



Source: ECB calculations.

Notes: For the June 2022 BMPE (horizontal line), simulations conducted with Basic Model Elasticities (BMEs) and New Multi Country Model. For the Sep. 2022 MPE (bars), revisions in fiscal assumptions since June 2022 BMPE simulated with BMEs. The panels show the growth and inflation impact of the energy and other war related support adopted after 24 February 2022. For more information on the simulations please find a Box in the Economic Bulletin Issue 5, 2022: Euro area fiscal policy response to the war in Ukraine and its macroeconomic impact.

Stagnating GDP in the second half of 2022 / early 2021 and higher inflation

Activity

- Stagnating activity at 2022Q4-2023q1
- Later on, the economy is set to recover as headwinds fade
- Labour markets relatively resilient, still somewhat higher unemployment rate in 2023-2024

Inflation

- Higher inflation outlook due to further large supply shocks being passed-through quicker than usually.
- Large revisions due to data surprises, higher energy prices and wages and the weaker euro
- Robust wage growth due to solid labour market and inflation compensation contribute to above target inflation in the medium-term

Risks (Gov Council 8 Sept)

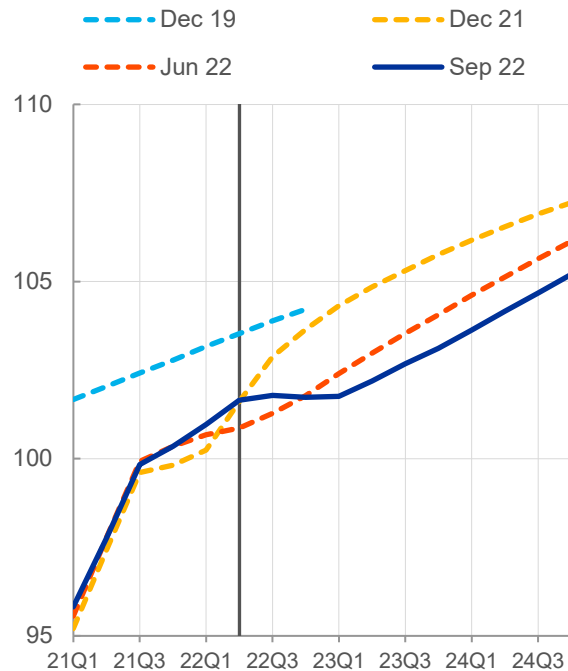
- Prevalent downside risks to growth and upside risk for inflation
- Downside scenario to address large uncertainty: strong downward impact on GDP and persistently higher inflation

		Sep 22 MPE (annual % change)			Revisions vs Jun 22 BMPE (percentage points)		
	2021	2022	2023	2024	2022	2023	2024
Real GDP	5.2	3.1	0.9	1.9	0.3	-1.2	-0.2
HICP	2.6	8.1	5.5	2.3	1.3	2.0	0.2
HICP excl. energy and food	1.5	3.9	3.4	2.3	0.6	0.6	0.0

Large revisions to GDP growth and HICP inflation

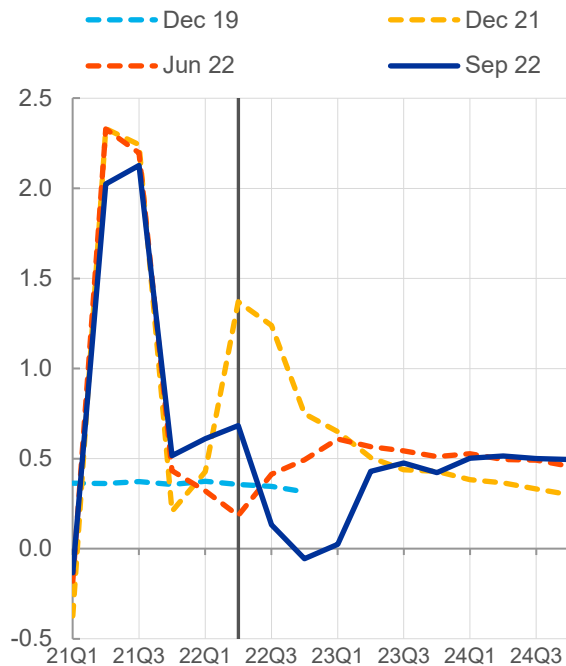
Real GDP

(index: 2019Q4 = 100)



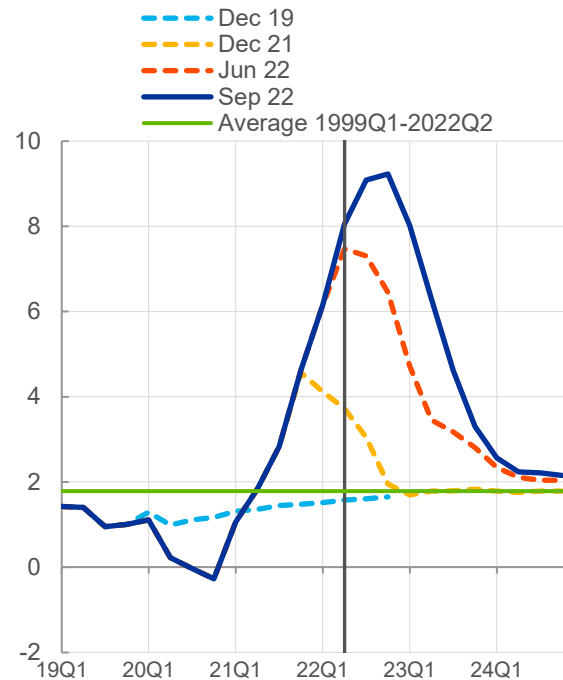
Real GDP

(q-o-q % changes)



HICP

(y-o-y % changes)

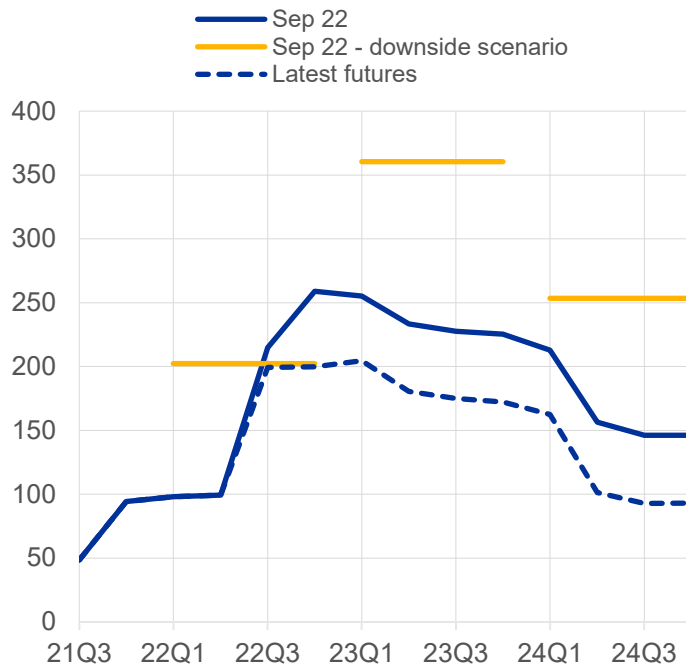


Sources: ECB and Eurosystem staff projections.

Assumptions for the downside scenario

Gas price

(EUR/MWh)



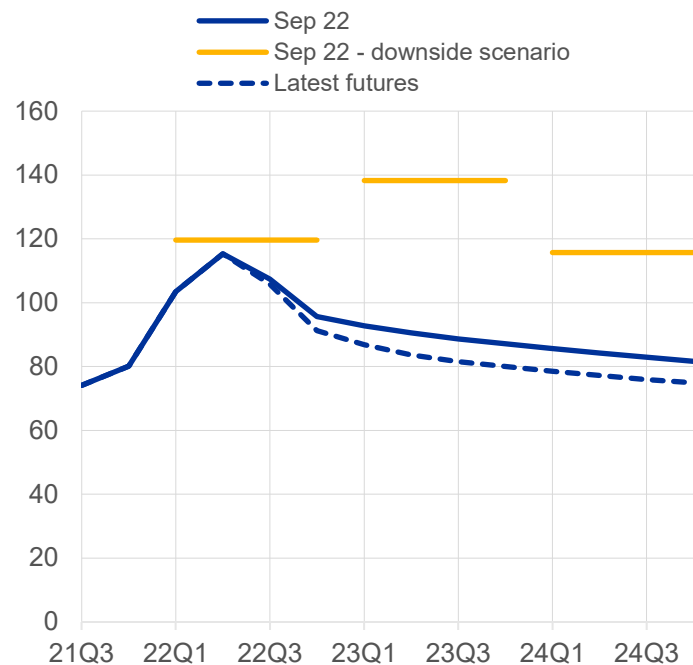
Source: Refinitiv and ECB staff calculations.

Notes: Gas prices in the scenario were derived guided by the estimated elasticity to a supply shock in a BVAR model, upwardly adjusted to reflect the expected larger price effects in a tight market. Technical assumptions for gas prices are based on futures prices averaged over the three working days preceding the cut-off date.

The cut-off date for assumptions of the September 2022 ECB staff projections was 22 August 2022, latest futures refer to 12 September 2022.

Oil price

(USD/barrel)



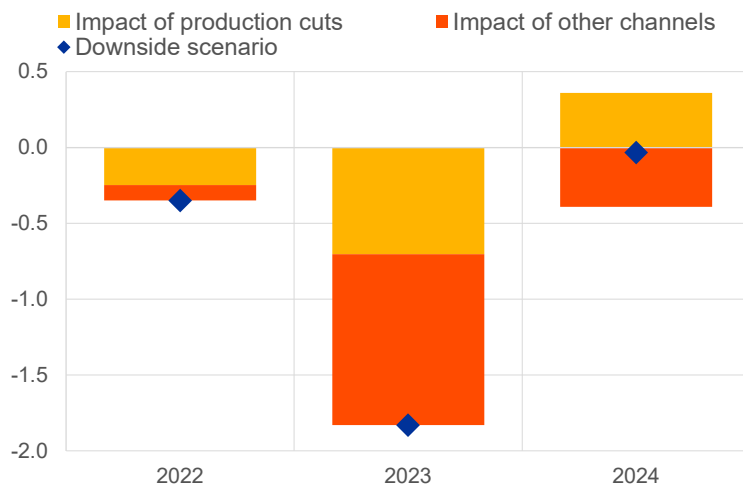
Source: ECB staff calculations.

Notes: Oil prices in the scenario were derived based on the estimates of Hamilton (2009) for major oil supply shocks. Technical assumptions for oil prices are based on futures prices averaged over the three working days preceding the cut-off date. The cut-off date for assumptions of the September 2022 ECB staff projections was 22 August 2022, latest futures refer to 12 September 2022.

Real GDP and HICP inflation in the downside scenario

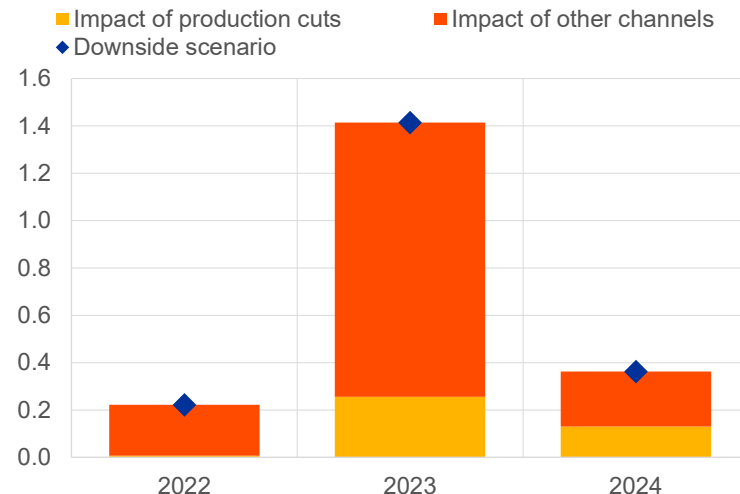
Real GDP growth

(p.p. deviation from baseline growth)



HICP inflation

(p.p. deviation from baseline growth)



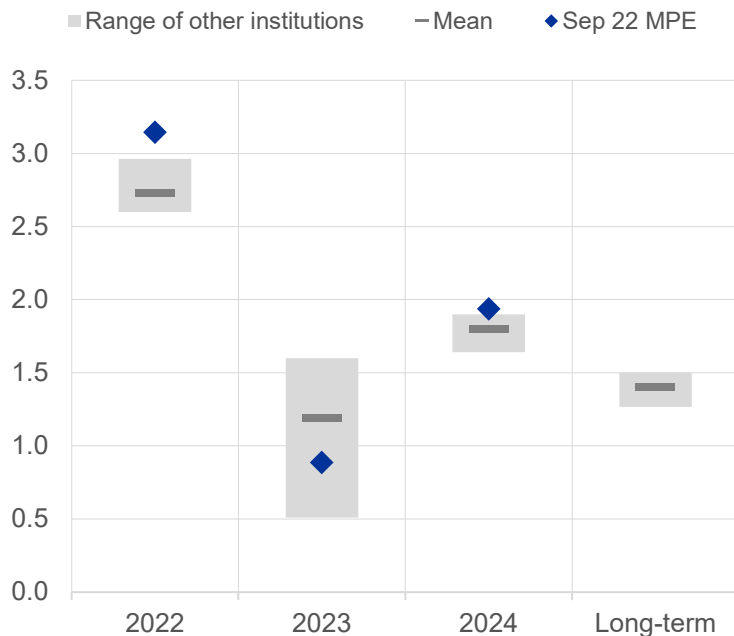
	September 2022 baseline projections			Downside scenario		
	2022	2023	2024	2022	2023	2024
Real GDP	3.1	0.9	1.9	2.8	-0.9	1.9
HICP	8.1	5.5	2.3	8.4	6.9	2.7
HICP excluding energy and food	3.9	3.4	2.3	3.9	3.5	2.4

Source: ECB staff projections.

Comparison with other forecasts

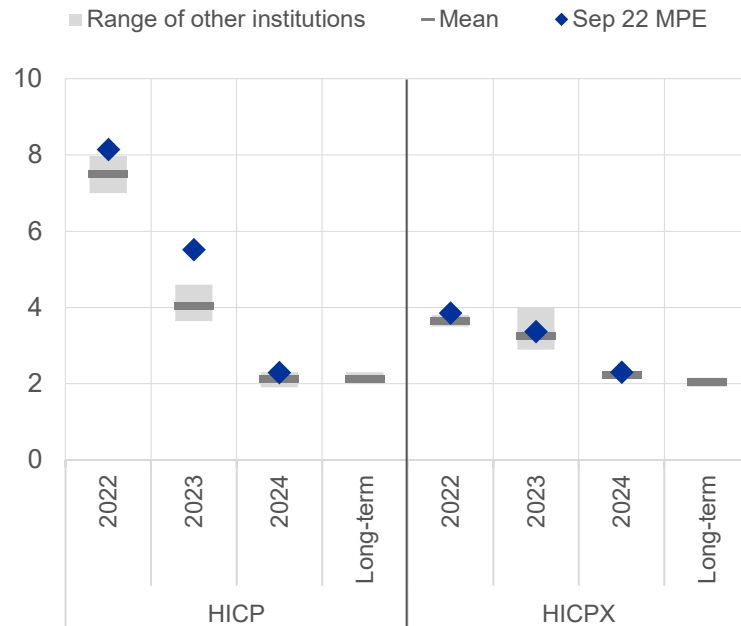
Real GDP

(annual percentage changes)



HICP(X)

(annual percentage changes)



Sources: ECB "MPE" (Sep 2022), ECB Survey of Monetary Analysts "SMA" (Sep 2022), Euro Zone Barometer "EZB" (Aug 2022 – 2024 and long-term from Jul 2022 survey), Consensus Economics "CE" (Aug 2022 – 2024 and long-term from Jul 2022 survey), IMF (Jul 2022), ECB Survey of Professional Forecasters "SPF" (Jul 2022), European Commission "EC" (Jul 2022 – HICPX from May 2022 forecast), OECD (Jun 2022). Long-term forecasts refer to 2026 for EZB and 2027 for other institutions. GDP and HICP: The ranges for 2022 and 2023 include OECD, SMA, SPF, EZB, CE, IMF and EC; for 2024 and long-term it includes SMA, SPF, EZB and CE. HICPX: The ranges for 2022 and 2023 include OECD, SMA, SPF, CE and EC; for 2024 and long-term it includes SMA and SPF. HICPX is defined by the EC as inflation excl. energy and unprocessed food.

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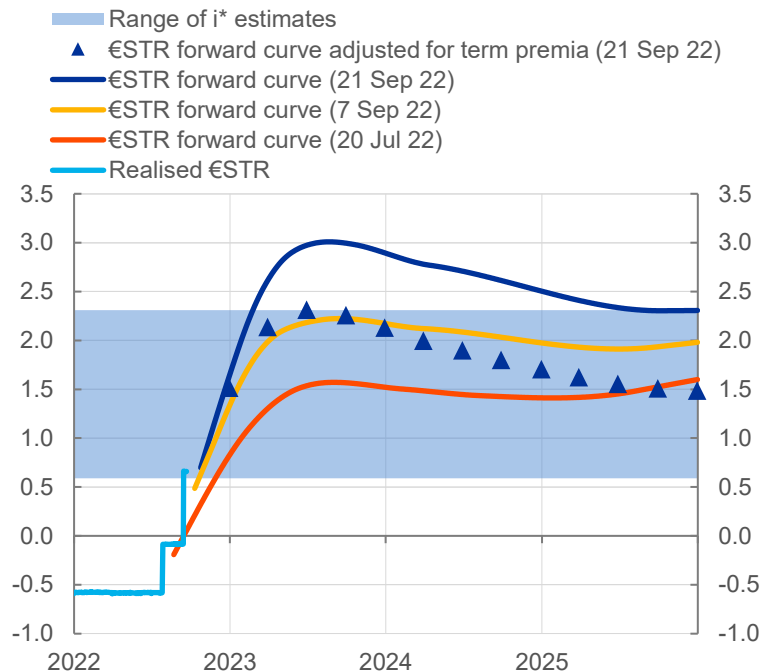
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Policy normalisation:

- End of APP on 1 July
- First rate increase by 50bp on 22 July
- Frontloaded transition from the prevailing high accommodative level of policy rates towards levels that will ensure a timely return of inflation to 2%:
 - Second rate increase by 75bp on 8 September
 - Based on the current assessment, over the next several meetings the Governing Council expects to raise interest rates further to dampen demand and guard against the risk of a persistent upward shift in inflation expectations
- The Governing Council will regularly re-evaluate the policy path in light of incoming information and the evolving inflation outlook. Future policy rate decisions will continue to be data-dependent and follow a meeting-by-meeting approach.

€STR forward curve and survey expectations on the deposit facility rate

(percentage per annum)



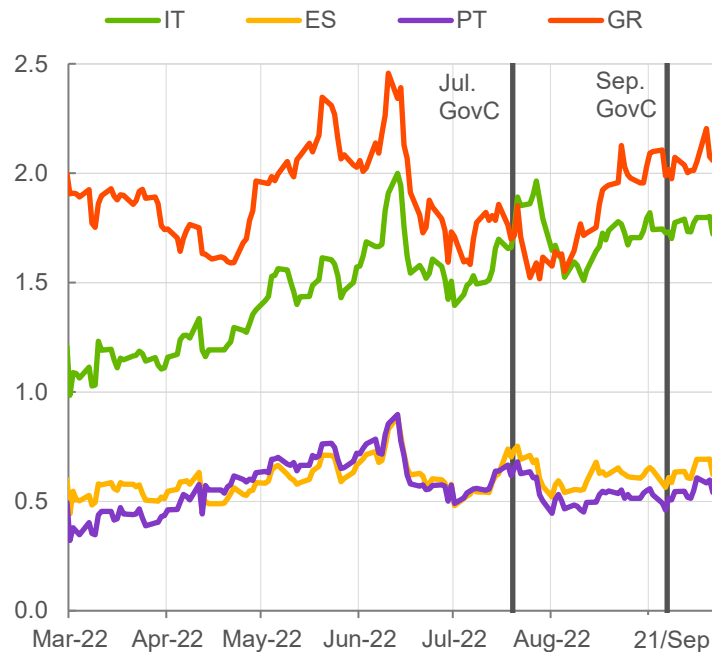
Sources: Bloomberg, Refinitiv and ECB calculations.

Notes: Model estimates are built on the term premium-adjusted forward curve based on an affine and a lower bound term structure model incorporating survey information on interest rate expectations.

Latest observation: 21 September 2022 for realised €STR.

10-year sovereign spread vs OIS rates

(percentage per annum)



Sources: Refinitiv, Bloomberg and ECB calculations.

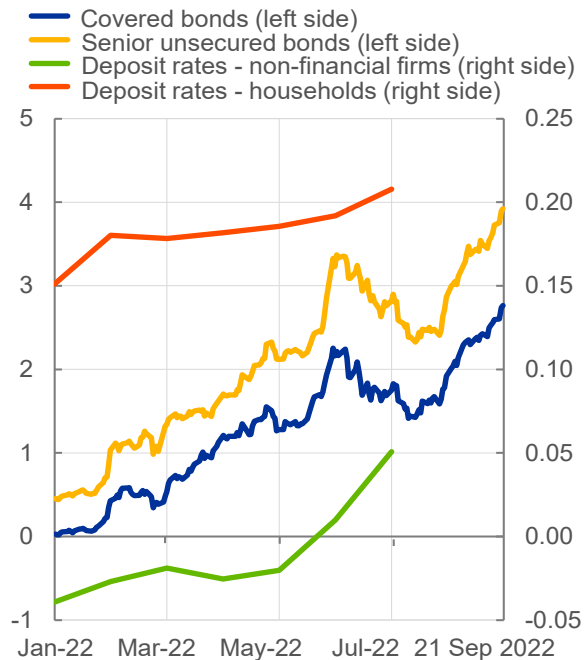
Notes: The spread is the difference between individual countries' 10-year sovereign yields and the 10-year OIS rate. The solid vertical lines refers to the day of the July GovC (20 Jul), and the September GovC (7 Sep), respectively.

Latest observation: 21 September 2022.

Bank funding costs and lending rates to firms and households increasing

Developments in marginal bank funding costs

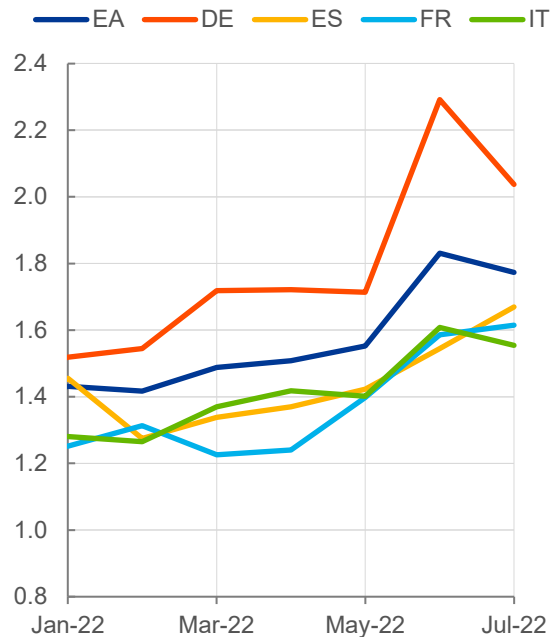
(percentages per annum)



Sources: ECB (BSI, MIR), IHS Markit iBoxx and ECB calculations.
Notes: Daily bank bond yields. Monthly deposit rates on new business volumes weighted by outstanding amounts.
Latest observations: 21 September 2022 for bank bonds, July 2022 for deposit rates.

Lending rates to NFCs across countries

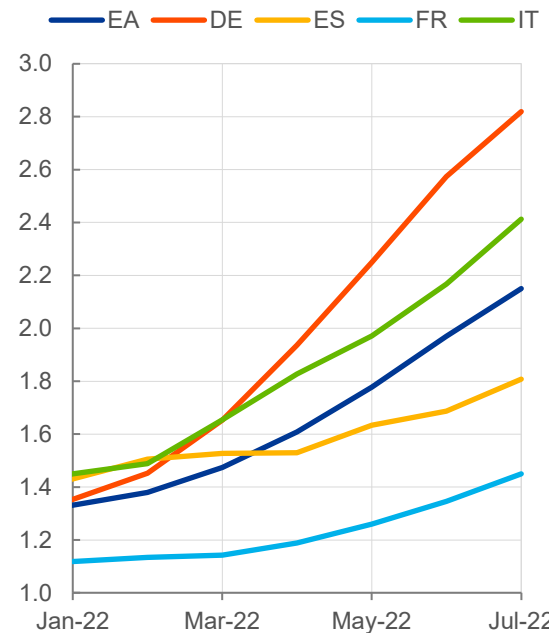
(percentages per annum)



Source: ECB (MIR).
Note: The indicator for the total cost of borrowing for firms is calculated by aggregating short-term and long-term rates using a 24-month moving average of new business volumes.
Latest observation: July 2022.

Lending rates to households for house purchase across countries

(percentages per annum)



Source: ECB (MIR).
Note: The indicator for the total cost of borrowing for households for house purchase is calculated by aggregating short-term and long-term rates using a 24-month moving average of new business volumes.
Latest observation: July 2022.

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- Unprecedented succession of global shocks – reopening, bottlenecks, energy, food – ...
- ...and euro area specificities – highly open economy and highly dependent on Russian gas – ...
- ...have lifted inflation to historical highs and are threatening the growth prospects.
- Euro area – US comparison reveals some important differences in the drivers of high inflation

2. September ECB staff projections

- Further significant downward (upward) revision to GDP growth (inflation) in 2022-23
- In 2024, GDP growth slightly revised down and inflation projected at 2.3% (2.3% core inflation)
- Risks: prevalence of downside (upside) risks to growth (inflation)

3. ECB monetary policy decisions

- Frontloaded transition from the prevailing highly accommodative level of policy rates towards levels that will ensure a timely return of inflation to 2%

4. Long-term challenges for monetary policy

- Changing structural sources of inflation due to impact of current supply shocks on potential growth; energy transition; geopolitics; demographics, etc. are drawing a increasingly challenging environment

Post-pandemic

- Pandemic required massive economic support and led to high public debt;
- But also brought about European solidarity through NGEU

Geopolitics and deglobalisation

- Attack on European peace order/threat to security in Europe
- Higher needs for defense (spending)
- Need for stronger European cooperation

Gas crisis

- Uncertainty about energy provision/risks of further supply cuts
- Record-high spikes in energy prices
- Need for reducing energy dependence and accelerating green transition

Green, digital and demographic transition

- Need for more sustainable energy production and consumption
- Facilitate digitalization and reap its benefits
- Address challenges from ageing

Thank you!