Inflation in the euro area –
causes and outlook

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Hochschule der Deutschen Bundesbank, 18 August 2022
Economic growth and inflation in the euro area since the start of the pandemic

**Real GDP growth**
(index: Q4 2019 = 100)

- Jun. 22 Eurosystem staff projections
- Realised GDP
- March 2020 ECB staff projections

**Inflation**
(annual percentage changes, quarterly data)

- Jun. 22 Eurosystem staff projections
- Realised HICP
- Realised HICP (Jul. 22)

Sources: Eurostat, ECB and Eurosystem.
Latest observation: Q2 2022.
The war is having a marked negative impact on economic growth.

**Real GDP growth projections**
(annual percentage changes)

- June 2022 Eurosystem staff projections
- Downside scenario
- December 2021 Eurosystem staff projections
- Consensus Economics forecast

**Euro area PMIs**
(diffusion index)

- Composite PMI, Euro Area
- PMI future business activity expectations

Sources: Eurosystem and Consensus Economics.
Note: Consensus Economics forecast: survey 8 August 2022, published 11 August 2022.

Source: Markit.
Latest observation: July 2022.
Negative economic surprises and faltering gas supply raise stagflation concerns

Economic surprises in major jurisdictions

Sources: Bloomberg and ECB calculations.
Notes: The data shows economic data surprises relative to market expectations. A positive (negative) reading means that data releases have been stronger (weaker) than expected.
Latest observation: 15 August 2022.

EU natural gas prices and pipeline flows from Russia to Europe

Sources: Bloomberg and ECB calculations.
Notes: The chart shows natural gas prices in Europe (Dutch TTF futures) in addition to natural gas pipeline flows from Russia to Europe (via Nord Stream to Germany, Yamal to Poland, Ukraine and Bulgaria).
Latest observation: 15 August 2022.
Euro area unemployment rate at record low amid an increasingly tight labour market

**Unemployment and vacancies**  
(Left-hand scale: percentages; right-hand scale: ratio)

- **Unemployment rate**  
- **Unemployment to vacancies ratio (rhs)**

Sources: Eurostat and ECB staff calculations.  
Notes: Vacancies data not available for Italy and Estonia. Vacancies data for France only available for firms with more than 10 employees.  
Latest observations: Q1 2022.

**Limits to production – shortage of labour**  
(Percentage balances)

- **Manufacturing**  
- **Services**

Source: European Commission.  
Notes: Survey in industry and the services sector; percentage of firms who indicate labour shortages as limits on production and business.  
Latest observation: Q3 2022.
Sharp increase in inflation since 2021 after a prolonged period of subdued inflation.

Euro area inflation
(annual percentage changes)

Source: ECB.
Latest observation: July 2022 (flash).
Energy is the main contributor to headline inflation in the euro area

**Energy contribution to HICP**
(annual percentage changes; percentage point contributions)

**Commodity prices**
(index: 1 January 2021 = 100)

Sources: Eurostat and ECB staff calculations.
Latest observation: July 2022 (flash).

Sources: Bloomberg, Refinitiv and ECB calculations.
Latest observation: 12 August 2022.
Inflation pressures are becoming increasingly broad-based.

**Measures of underlying inflation**
(annual percentage changes)

- HICP excluding energy and food
- PCCI (persistent and common component of inflation)
- Supercore
- Trimmed mean (10%)
- Trimmed mean (30%)

Sources: ECB and ECB staff calculations.
Latest observation: July 2022 (flash) for HICP excluding energy and food, June 2022 for the rest.

**Share of HICP components according to pace of change**
(percentage point contributions)

- Below 1%
- Between 1% and 2%
- Between 2% and 3%
- Above 3%

Sources: ECB and ECB staff calculations.
Latest observation: June 2022.
Projections are pointing to a decline in inflation, but history of projection errors

Inflation projections – HICP
(annual percentage changes)

Sources: Eurostat, ECB and Eurosystem.
Latest observation: 2021 for HICP and HICP-X (annual data).

Inflation projections – HICP-X
(annual percentage changes)

Notes: Dashed lines refer to oil price assumptions in respective ECB and Eurosystem staff projection exercises. Oil price futures curves are calculated using 10 business day averages. (*) the blue diamond shows the average oil price level in August 2022 (1 to 12 August 2022).
Latest observations: July 2022 for monthly data; 12 August 2022 for August 2022 (blue diamond) and 04 August 2022 for oil price futures (grey line).

Oil prices and assumptions
(USD per barrel)
No wage-price spiral yet, but risks are increasing

Negotiated wages
(annual percentage changes)

Source: Bundesbank and ECB.
Last observation: Q1 2022.
Depreciation of euro exchange rate implies further pressure on inflation

**EUR/USD, EUR NEER and USD NEER**

(lhs: USD per EUR, rhs: index – 01/01/2018=100)

- **EUR/USD (lhs)**
- **EUR NEER (rhs)**
- **USD NEER (rhs)**

![Graph of EUR/USD, EUR NEER, and USD NEER](image)

**Drivers of EUR/USD**

(lhs: cumulative changes since Jan-22, rhs: percent)

- **EA macro**
- **US macro**
- **Global risk**
- **EA risk**

![Graph of Drivers of EUR/USD](image)

Sources: ECB and ECB staff calculations.
Notes: Nominal effective exchange rate for 42 trading partners.
Latest observation: 12/08/2022.

Source: ECB calculations.
Global tightening of monetary policy and financing conditions, but recent headwinds

**EUR OIS forward curve**
(percentage per annum)

- 16-Dec-21 (pre-GovC)
- 3-Feb-22 (pre-GovC)
- 14-Jun-22 (Highest point)
- 15-Aug-22 (latest point)

**Market pricing of terminal rate**
(percentage per annum)

- Euro area
- US

Sources: Bloomberg and ECB.
Notes: "GovC" refers to Governing Council meetings.
Recent flattening of euro area sovereign yield curve amid recession fears

**Euro area GDP-weighted yield curve**

(Percentages)

- Pre-Dec 2021 GovC (15 Dec 2021)
- Pre-Ad hoc June GovC (14 Jun 2022)
- Latest

Sources: Bloomberg and ECB.
Latest observation: 15 August 2022.

**Decomposition of 10-year OIS into real rate and inflation**

(Left-hand scale: percentages per annum, cumulative change since 4 January 2021; right-hand scale: basis points)

Sources: Bloomberg, Refinitiv and ECB calculations.
Notes: Real rate is defined as the difference between the nominal 10-year OIS rate and 10-year inflation-linked swap rate. “GovC” refers to Governing Council meetings.
Latest observation: 16 August 2022.
Rising funding costs for banks, corporates and households, but real rates stay low

**Composite bank funding costs** (% per annum)

- Composite funding cost
- Deposit rates for households
- Deposit rates for NFCs
- Bank bond yields

**Cost of debt financing for euro area firms** (% per annum)

- Nominal cost of debt financing
- Cost of market-based debt
- Cost of bank borrowing
- Real cost of debt financing

**Cost of borrowing of households for house purchase** (% per annum)

- Nominal cost of borrowing
- Real cost of borrowing

Sources: ECB (MIR, BSI), IHS Markit iBoxx and ECB calculations.
Notes: Composite funding cost is the weighted average of the cost of deposits and market debt funding, with the respective outstanding amounts on bank balance sheets used as weights. Deposit rates are on new business. Calculated assuming that deposit rates remain at their June level until 12 August 2022. Latest observations: June 2022 for BSI and MIR; 12 August 2022 for iBoxx.

Sources: ECB (MIR, QSA), Merrill Lynch, Refinitiv, Bloomberg, Consensus Economics and ECB calculations.
Notes: The diamonds refer to estimates assuming the cost of bank borrowing remained at its June 2022 level in July and August 2022. Latest observations: June 2022 for the nominal and real cost of debt financing and bank borrowing; 12 August 2022 for the cost of market-based debt.

Sources: ECB (MIR), Bloomberg, Consensus Economics and ECB calculations.
Notes: The cost of borrowing indicator for households for house purchase is calculated by aggregating short- and long-term rates on new loans for house purchase using a 24-month moving average of new business volumes. Latest observations: June 2022.
Monetary policy has dampened inflation expectations but risk of de-anchoring.

**Market-based measures of inflation compensation**
(percentages per annum)

- 5y5y inflation-linked swap rate

![Graph showing 5y5y inflation-linked swap rate]

Sources: Bloomberg, Refinitiv and ECB calculations
Notes: The real forward rates are calculated by subtracting the inflation-linked swap forward rates from the nominal OIS forward rates.
Latest observation: 15 August 2022.

**Inflation expectations in the ECB Consumer Expectations Survey**
(left panel: annual percentage changes; right panel: x-axis: annual percentage changes; y-axis: percentages of respondents)

- Median (3 years ahead)
- Mean (3 years ahead)

![Graph showing inflation expectations in the ECB Consumer Expectations Survey]

Sources: ECB Consumer Expectations Survey and ECB staff calculations.
Notes: “Median” refers to the median across individual respondents. The data are winsorised at the 2nd and 98th percentile. Mean values are 4.6%, 4.3% and 4.8% for April, May and June respectively. Median values are 2.7%, 2.5% and 3.0% for April, May and June respectively.
Latest observations: June 2022.
Fragmentation risk in euro area sovereign bond markets amid normalisation

10-year euro area sovereign bond spreads
(basis points)

Decomposition of 5-year Italian sovereign bond yield
(percent)

Source: Bloomberg.
Latest observation: 15 August 2022.

Source: ECB calculations based on Corradin, Grimm and Schwaab (2021).
Latest observation: 12 August 2022 (daily data).

Change
1st-Jun 2022 to 14th-Jun 2022

Italy
Greece
Portugal
Spain

PEPP announcement

659x79
Change
1st-Jun
2022 to
14th-Jun
2022

10%
10%
72%
5%

16
No acute threat to fiscal sustainability in euro area countries

Average nominal sovereign yields on total government debt securities
(percentage points)

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Sources: ECB and ECB calculations.
Latest observation: May 2022.

Residual maturities (years)

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Sources: ECB and ECB calculations.
Notes: All original maturities. Annual averages per year. For 2022, average over the period from January to May.
Potential growth matters more for sovereign finances than interest rates

Impact of an interest rate (IR) and GDP shock on debt-to-GDP ratio
(percentages)

Sources: European Commission and ECB calculations.
Notes: High-debt economies are countries with a debt-to-GDP ratio exceeding 90% in 2019. Interest rate shock assumes permanently higher interest rates by 100 basis points (bp) across countries and maturities. Potential growth shock assumes potential growth lower by 1 percentage point (pp) for three years, implying permanently lower potential output levels.
Favourable interest rate-growth differentials support decline in public debt ratios

Interest rate-growth differential
(percentage points, average over period)

Sources: European Commission and ECB calculations.
Notes: The interest rate-growth differential is calculated using the implicit interest rate on government debt and the growth rate of nominal GDP. The implicit interest rate in year t is interest payments by the government in year t divided by government gross debt in t-1. Countries are sorted according to the 2022-2023 average interest rate-growth differential. Figures for 2022 and 2023 refer to the European Commission Spring 2022 Economic Forecast.

Government debt in selected countries
(percentages of GDP)

Source: European Commission
Notes: The range shows the min and the max of all euro area countries. Figures for 2022 and 2023 refer to the European Commission Spring 2022 Economic Forecast. Latest observation: 2023.