



EUROPEAN CENTRAL BANK

EUROSYSTEM

# Monetary policy in times of stubborn inflation

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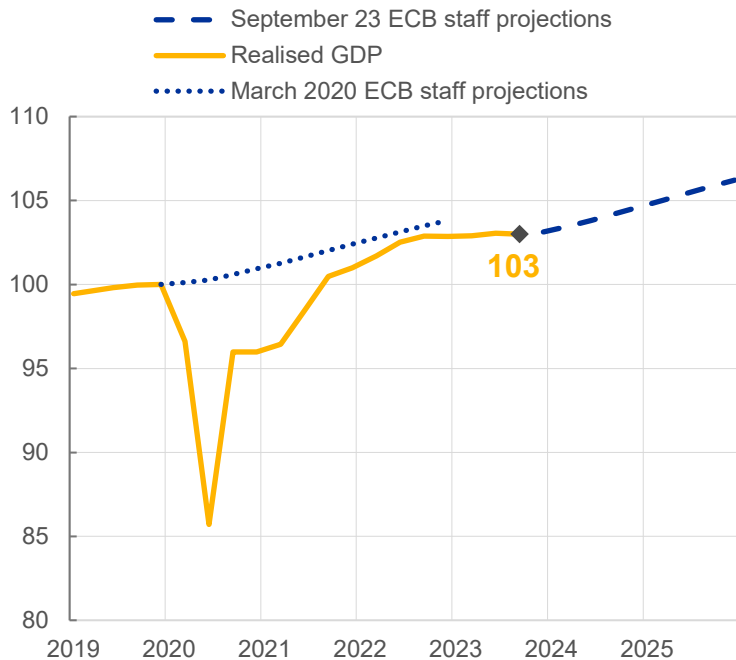


International Economic Policy Lecture  
University of Würzburg, 21 November 2023

# Economic growth and inflation in the euro area since the start of the pandemic

## Real GDP

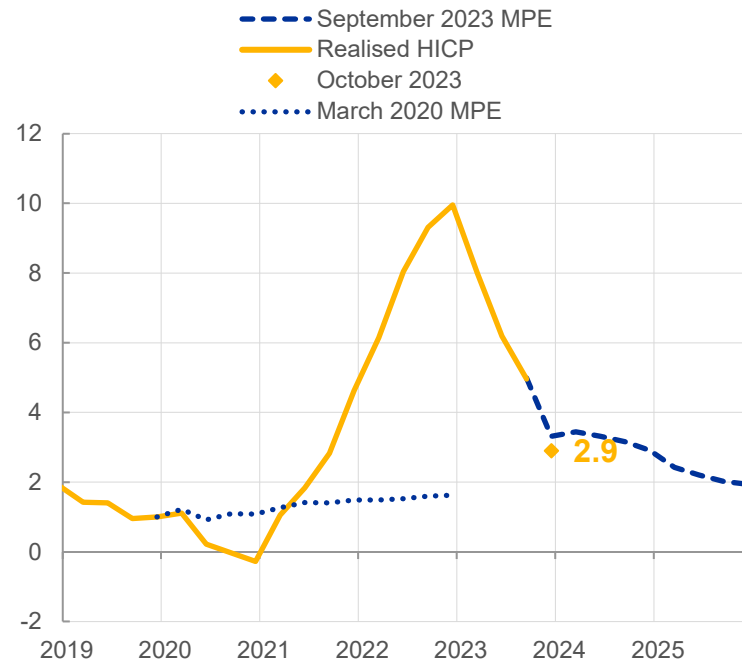
(index: Q4 2019 = 100)



Sources: Eurostat, ECB and Eurosystem.  
Latest observation: Q3 2023 for realised GDP (diamond).

## Inflation

(annual percentage changes, quarterly data)



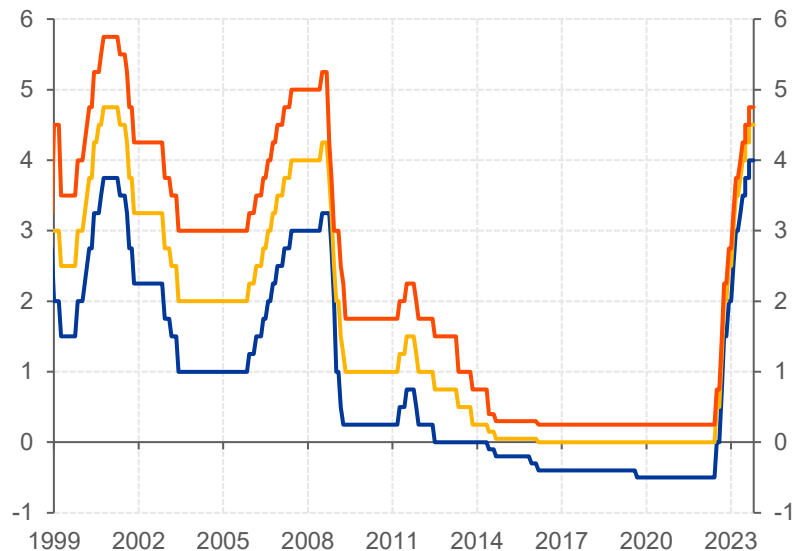
Sources: Eurostat, ECB and Eurosystem.  
Latest observation: Q3 2023 for quarterly data, October 2023 for monthly data (diamond).

# ECB has taken determined policy action to tackle unprecedented inflation surge

## ECB key interest rates

(%)

— DFR — MRO — MLF

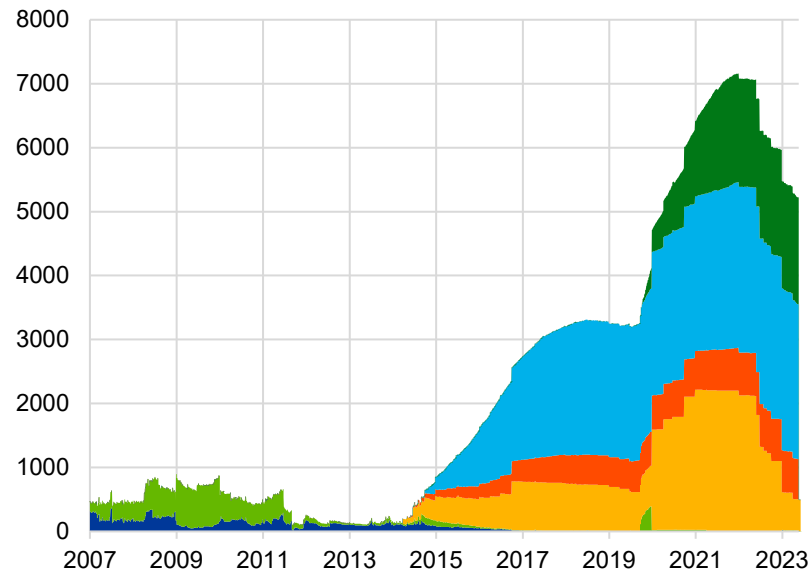


Source: ECB.  
Latest observation: November 2023.

## Monetary policy assets

(€ billion)

■ MRO ■ LTRO ■ TLTRO ■ Private APP ■ Public APP ■ PEPP

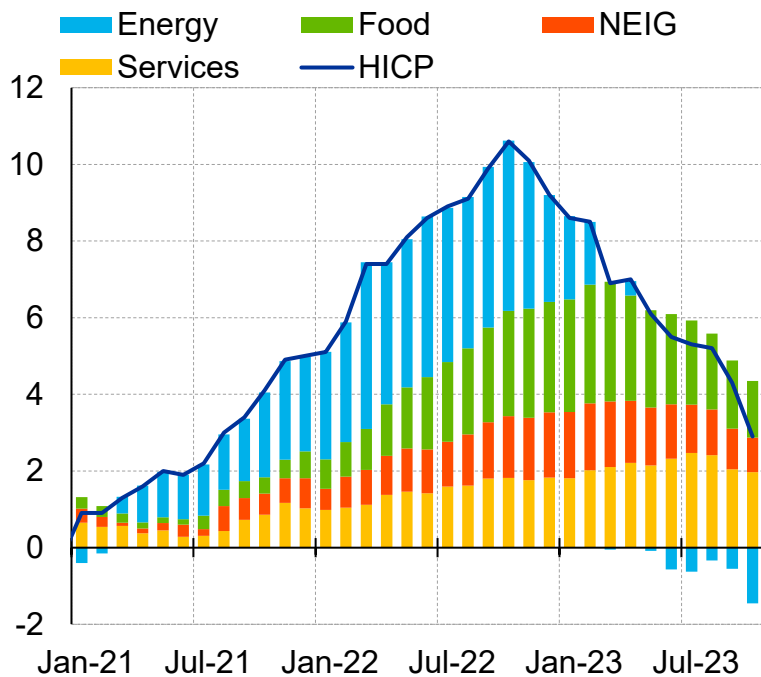


Source: ECB.  
Notes: Public APP is PSPP, Private APP is CBPP3, ABSPP and CSPP.  
Latest observation: November 2023.

# Inflation has declined on the back of large base effects related to energy and food

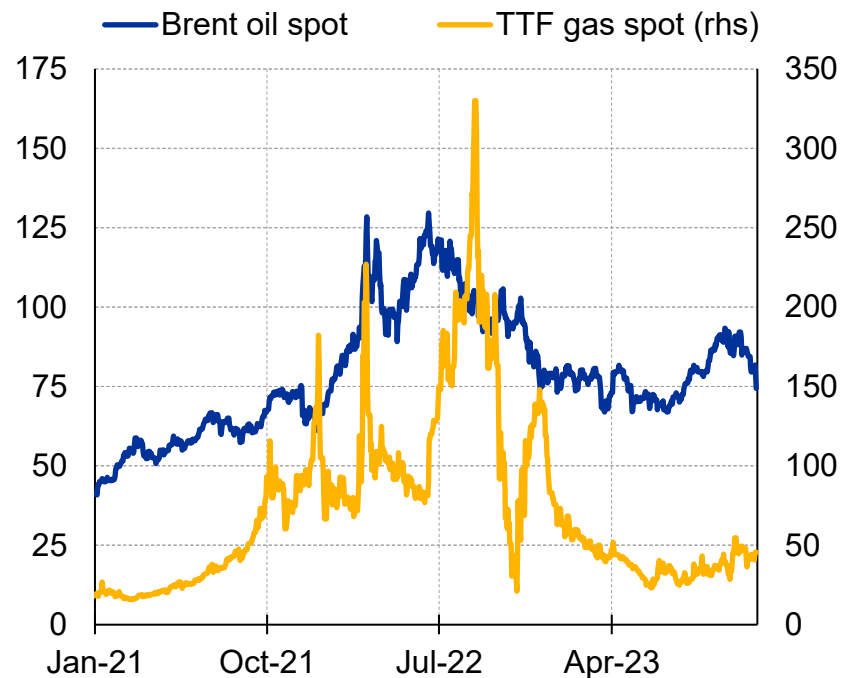
## HICP inflation and contributions

(annual percentage changes and percentage point contribution)



## Crude oil and natural gas prices

(oil: EUR/barrel, gas: EUR/MWh)

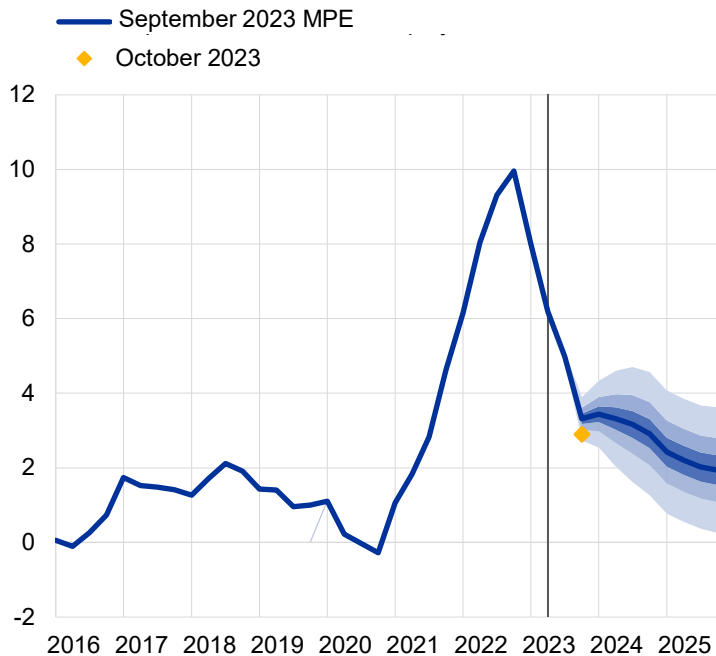


Sources: Bloomberg and ECB calculations.  
Latest observation: 16 November 2023.

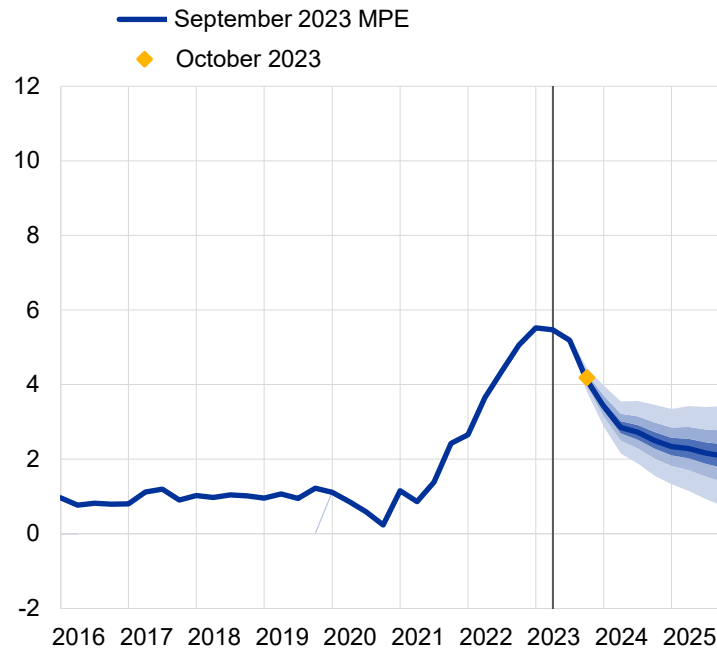
Sources: Eurostat and ECB calculations.  
Latest observation: October 2023.

# Disinflation process is projected to slow with inflation moving towards 2% by end-2025

## HICP inflation projections (annual percentage changes)



## HICP excluding energy and food inflation projections (annual percentage changes)



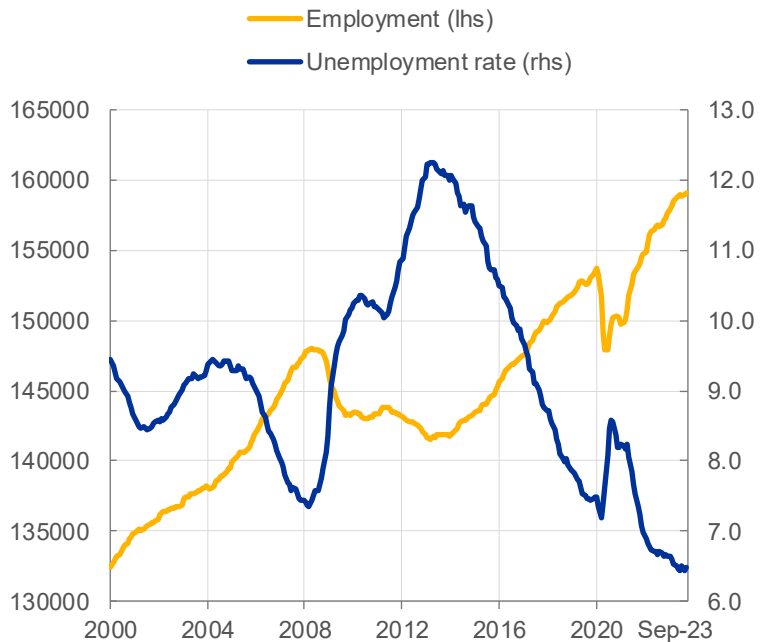
Source: September 2023 MPE and Eurostat.

Notes: The ranges shown around the central projections are based on past projection errors, after adjustment for outliers. The bands, from darkest to lightest, depict the 30%, 60% and 90% probabilities that the outcome will fall within the respective intervals. For more information, see Box 6 of the March 2023 ECB staff macroeconomic projections for the euro area.

Latest observation: October 2023 for monthly data (diamond).

## Unemployment rate and employment

(lhs: thousands of persons; rhs: percentage of the labour force)



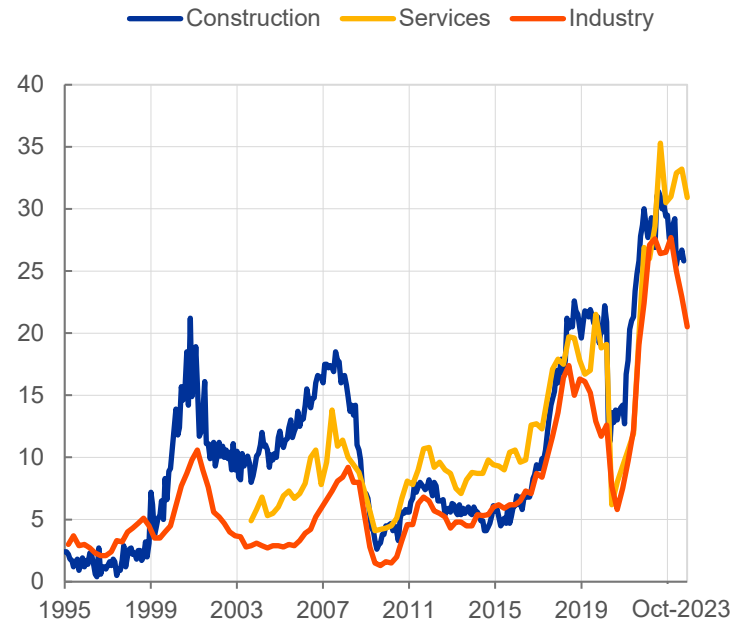
Source: ECB calculations based on Eurostat data.

Notes: The monthly employment data have been computed manually as the difference between labour force and unemployment.

Latest observation: September 2023.

## Labour as a factor limiting production

(percentage of firms)



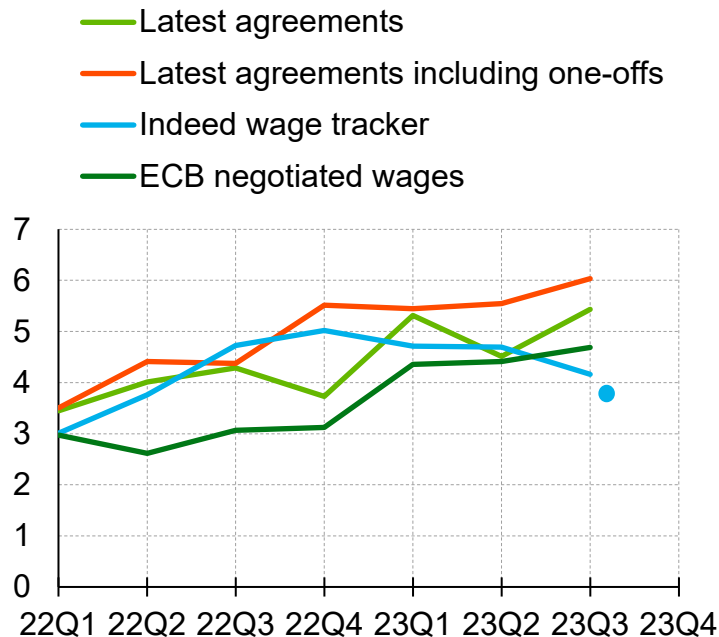
Source: European Commission.

Latest observation: October 2023.

# Strong wage growth and falling productivity put upward pressure on unit labour costs

## Wage trackers

(annual percentage change)



Sources: Calculated based on micro data on wage agreements provided by Deutsche Bundesbank, Banco de España, the Dutch employer association (AWVN), Oesterreichische Nationalbank, Bank of Greece, Banca d'Italia and Banque de France.

Notes: Indicator of latest wage agreements shows the wage growth implied by agreements reached in a quarter for 12 months ahead. Indeed tracker measures wage growth in online job ads, computed by the Central Bank of Ireland.

Latest observations: October 2023 for Indeed Wage Tracker; Q3 2023 for indicators of latest agreements and ECB negotiated wages.

## Labour productivity per hour

(index 2019 Q4 = 100)



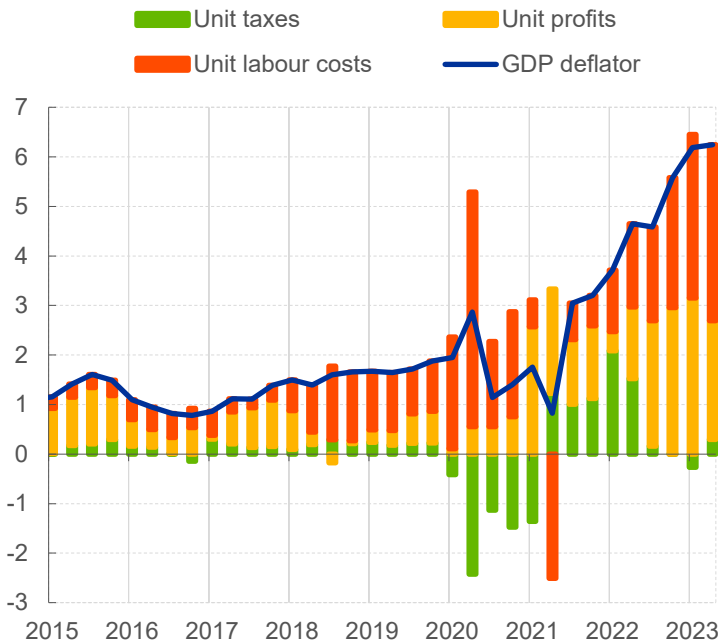
Sources: ECB calculation based on Eurostat data.

Notes: The dashed line represents the historical average from January 2000 to December 2019.

Latest observation: 2023 Q2.

## Contributions to GDP deflator

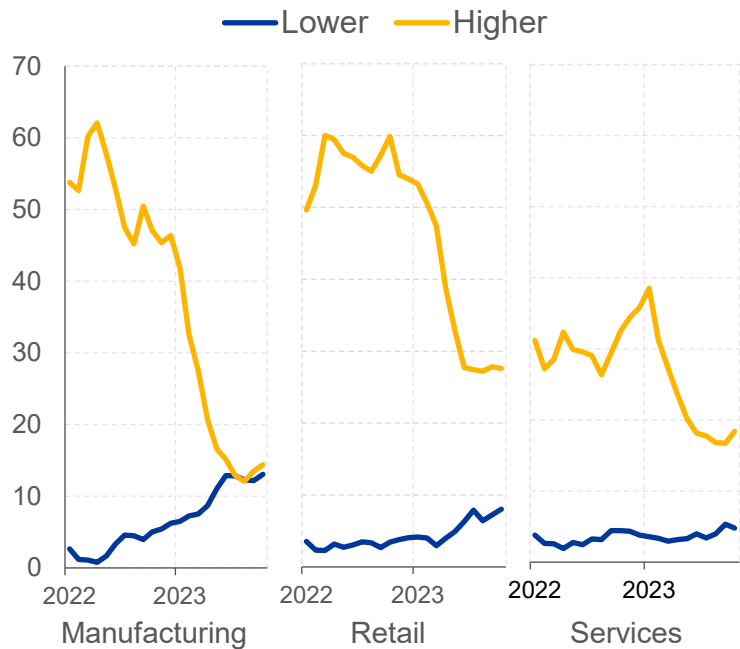
(annual percentage changes and percentage change contributions)



Sources: Eurostat, ECB calculations.  
 Notes: Unit taxes refer to unit net indirect taxes defined as indirect taxes minus subsidies.  
 Latest observation: 2023 Q2.

## Selling price expectations

(share of firms expecting lower/higher selling prices)



Source: European Commission (including Eurostat) and ECB calculations.  
 Notes: Data are non-seasonally adjusted.  
 Latest observation: October 2023.

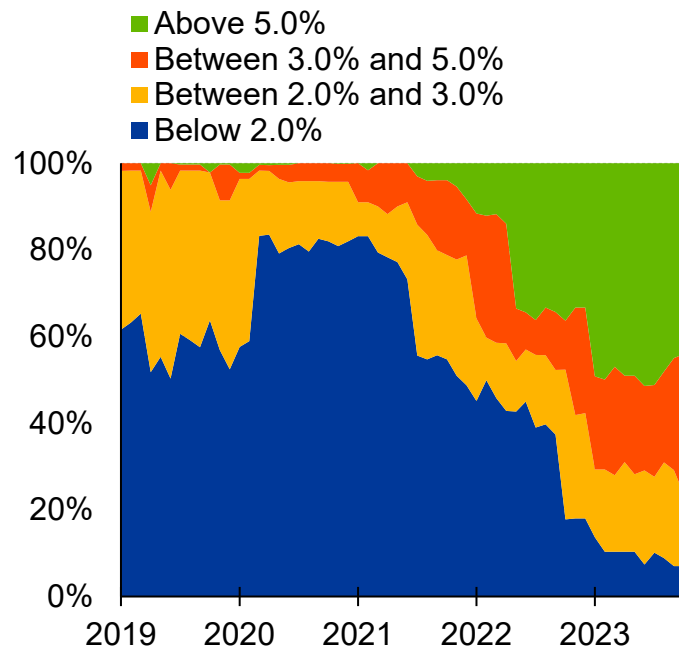


# Share of services and non-energy goods with very high inflation rates remains large

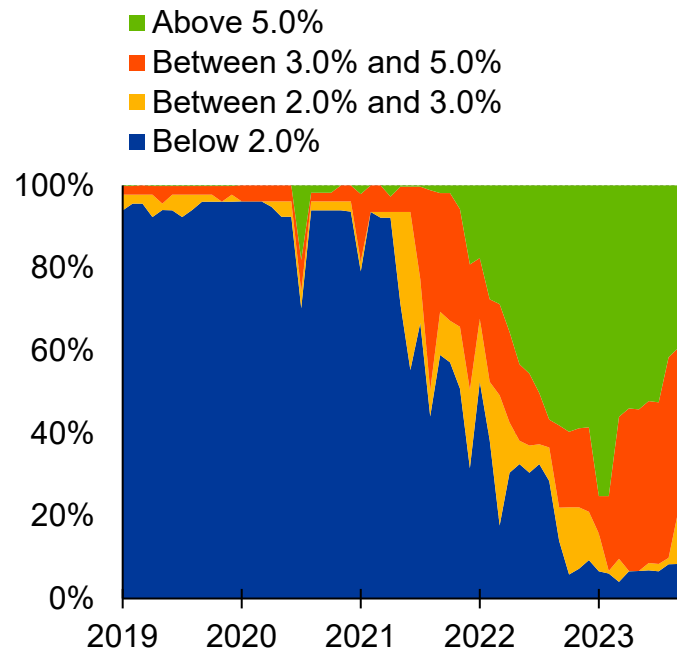
## Weighted distribution of price changes

(%)

### Services



### Non-energy industrial goods



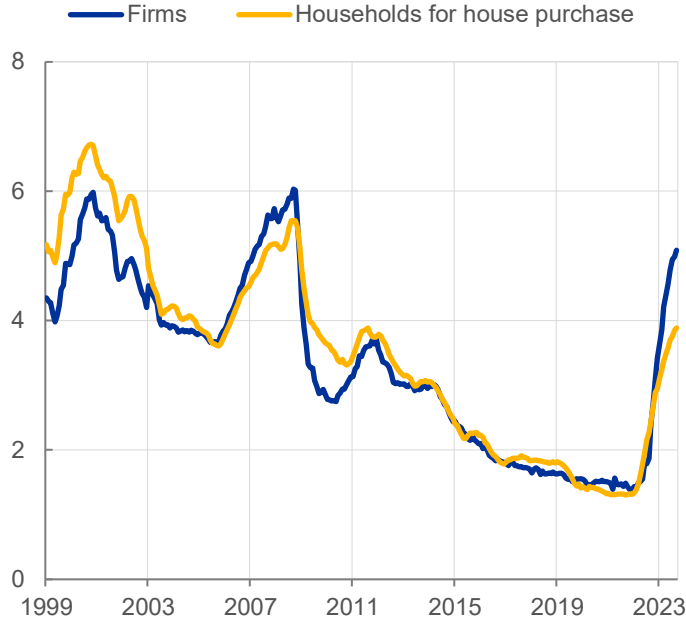
Source: Eurostat, ECB calculations.

Notes: Based on 39 items for Services and 33 items for Non-energy industrial goods; the weight of items sums up the weight of items in the HICP basket in the different categories.

Latest observation: October 2023.

# Strong transmission of monetary policy to funding costs and bank lending

## Composite cost of borrowing (percentages per annum)

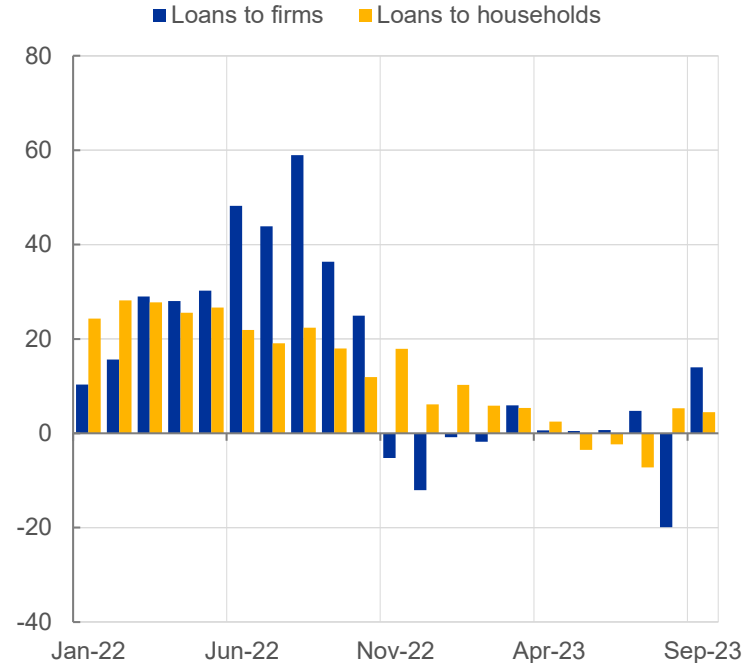


Sources: ECB (MIR) and ECB calculations.

Notes: The indicator for the total cost of bank 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: September 2023.

## Bank loans to firms and households (monthly flow in EUR bn)



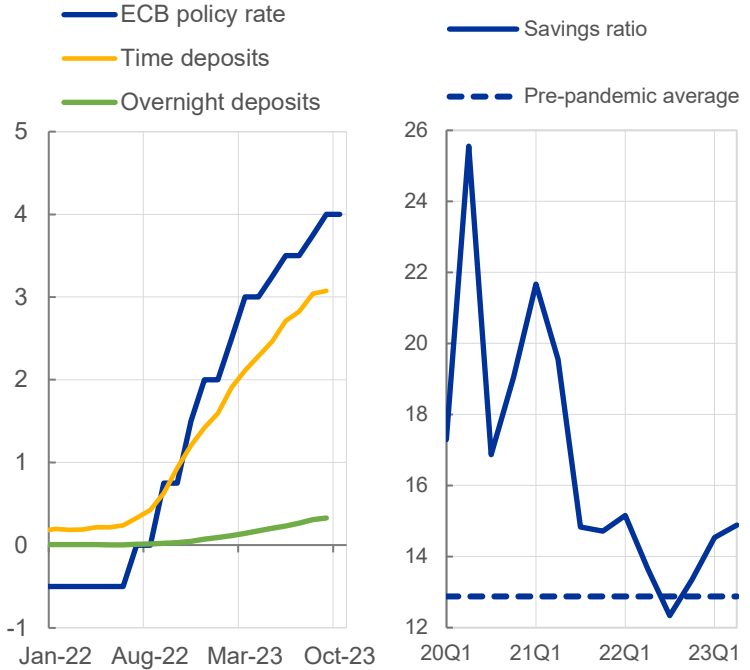
Sources: ECB (BSI).

Notes: Loans to households and firms are adjusted for sales and securitisation. Loans to firms are also adjusted for cash pooling.

Latest observation: September 2023.

## Household deposit rate pass-through and savings ratio

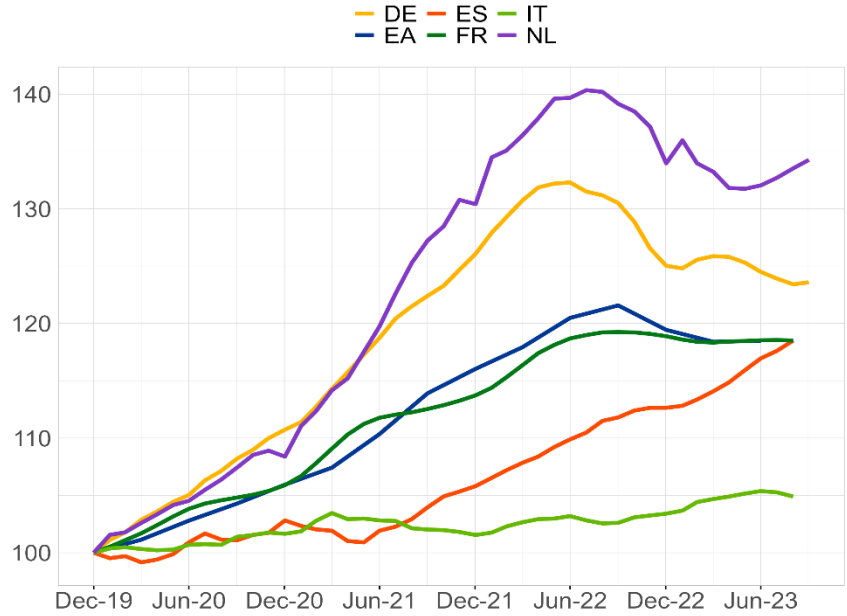
(lhs: percentage per annum: rhs: percentage share of nominal income)



Sources: Eurostat, ECB (MIR, FM) and ECB calculations.  
 Notes: Time deposits are those of maturity of up to 2 years. Pre-pandemic average of savings ratio is calculated over the period 1999 Q1-2019 Q4.  
 Last observations: October 2023 for the ECB policy rate, September 2023 for deposit rates, 2023 Q2 for savings ratio.

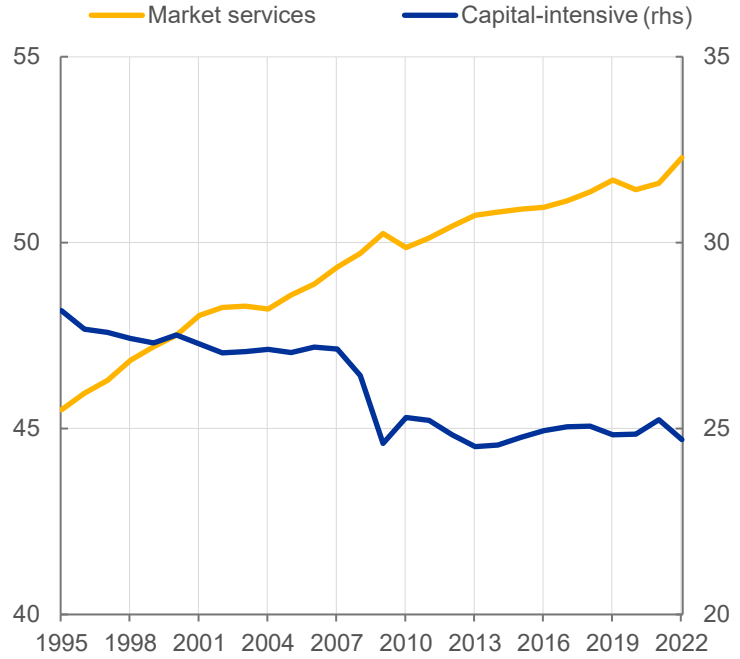
## House prices

(Monthly RRE price indices – December 2019 = 100)



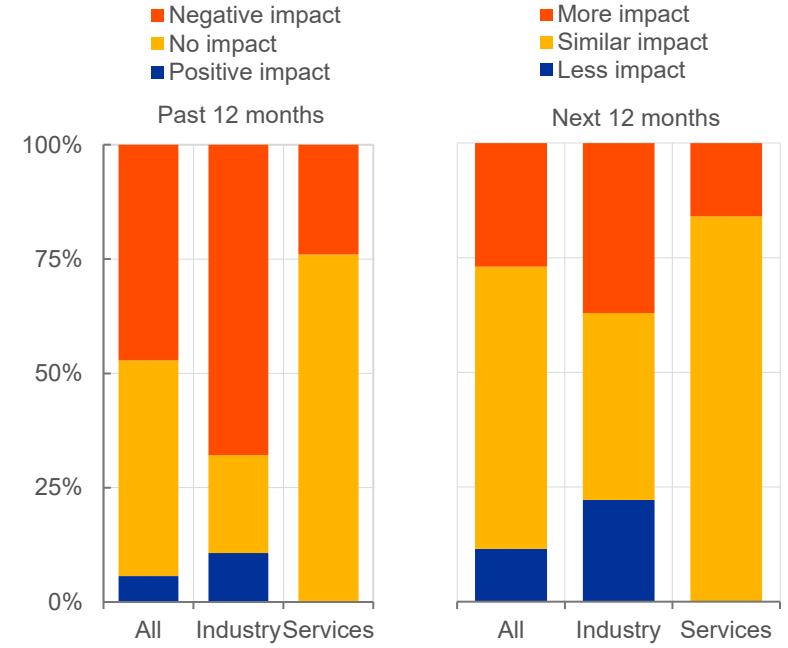
Sources: Europace, Eurostat, Immobiliare.it, Indomio.es, Meilleursagents.com, Statistics Netherlands.  
 Notes: RRE stands for Residential Real Estate. Last EA observation from Eurostat is for Q2 2023, so several countries with more timely data available are added. For IT and ES an average listing price index is reported. For all other countries the index reported is a hedonic price index based on transaction prices.  
 Latest observation: September 2023 for DE and NL, August 2023 for ES, FR and IT, Q2 2023 for EA.

## Sectoral shares in euro area gross value added (percentages)



Sources: Eurostat and ECB calculations.  
 Notes: The market services sector includes, among others, wholesale and retail trade, transportation, accommodation and food services, information and communication, and financial and real estate services. The capital-intensive sector includes, among others, mining, manufacturing, energy and water supply, and construction.

## Survey: Impact of changes in financing conditions on firms' activity (percentage of firms)

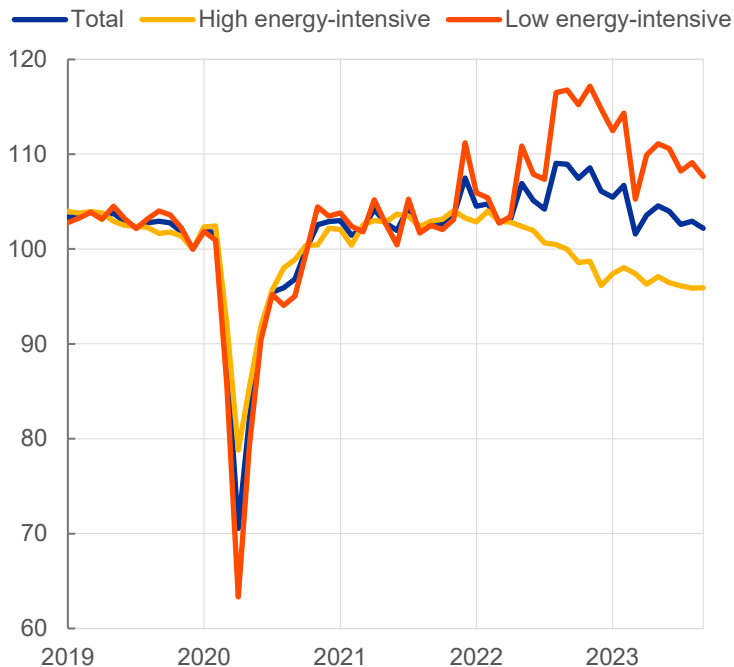


Sources: ECB Corporate Telephone Survey.  
 Notes: The chart shows the answers to the question "How do financing conditions (cost and availability of funding) since mid-2022 affect business activity over past 12 months and in the next 12 months?".  
 Latest observations: October 2023.

# Energy shock threatens to leave permanent scars in the euro area

## Industrial production: manufacturing sector

(index: December 2019 = 100)

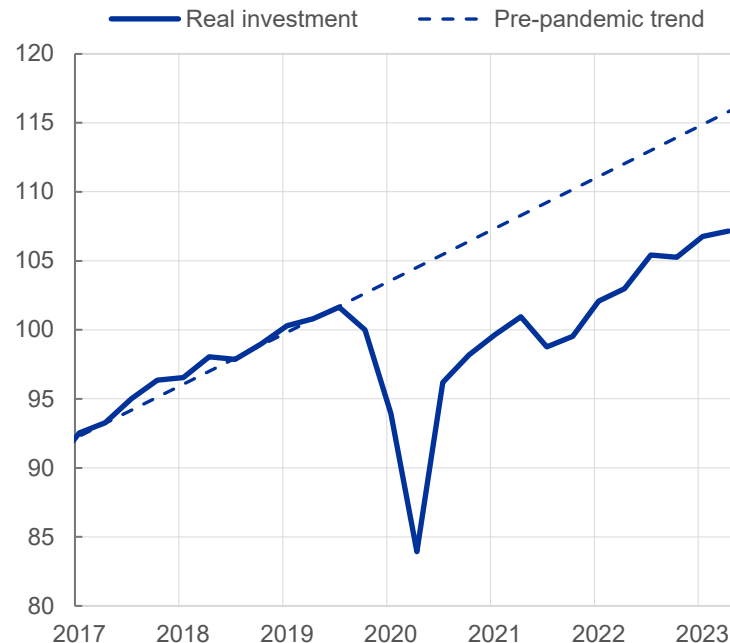


Sources: Eurostat, Trade Data Monitor and ECB staff calculations.

Notes: Data are seasonally-adjusted. Industrial production indices for individual sectors are aggregated with value-added weights. Low (high) energy-intensity sectors are defined as those with an energy intensity lower (higher) than that of the median sector. For more details, see [Chiacchio, De Santis, Gunnella and Lebastard \(2023\)](#). Latest observation: September 2023.

## Real business investment

(index: 2019 Q4 = 100)



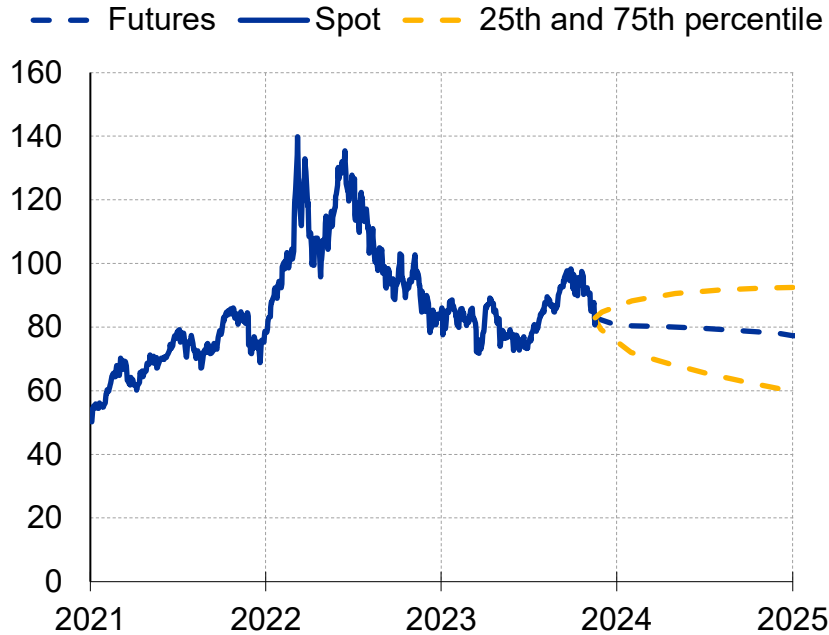
Source: ECB calculation based on Eurostat data.

Notes: Pre-pandemic trend estimated on the basis of quarterly data between 2013 Q1 and 2019 Q4. Real investment adjusted for the statistical volatility of intangible investment in Ireland. Latest observation: 2023 Q2.

# Euro area economy could be hit by new supply-side shocks in future

## Oil prices and futures curve

(USD per barrel)

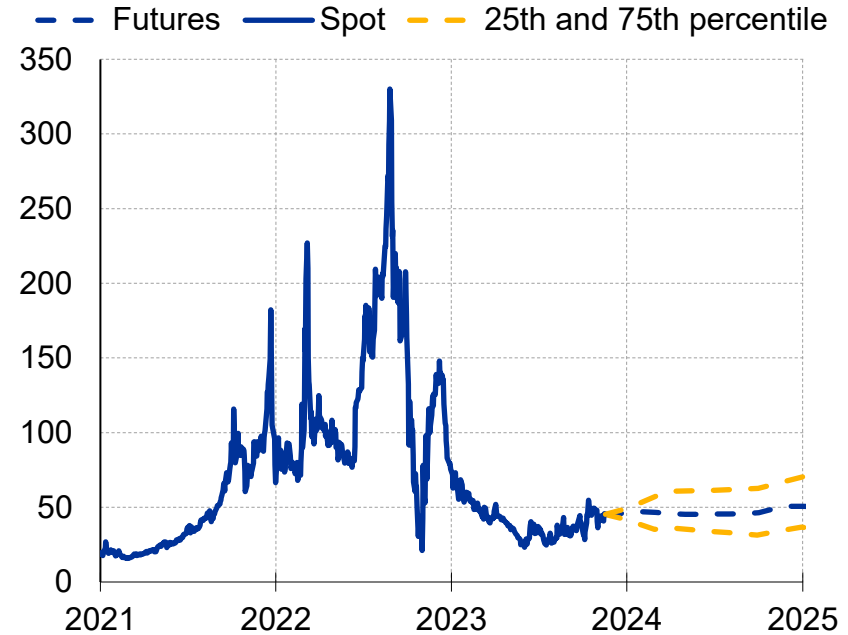


Sources: Refinitiv and ECB staff calculations.

Notes: The percentiles are computed from option-implied densities.  
Latest observation: 17/11/2023.

## Gas prices and futures curve

(EUR per MWh)

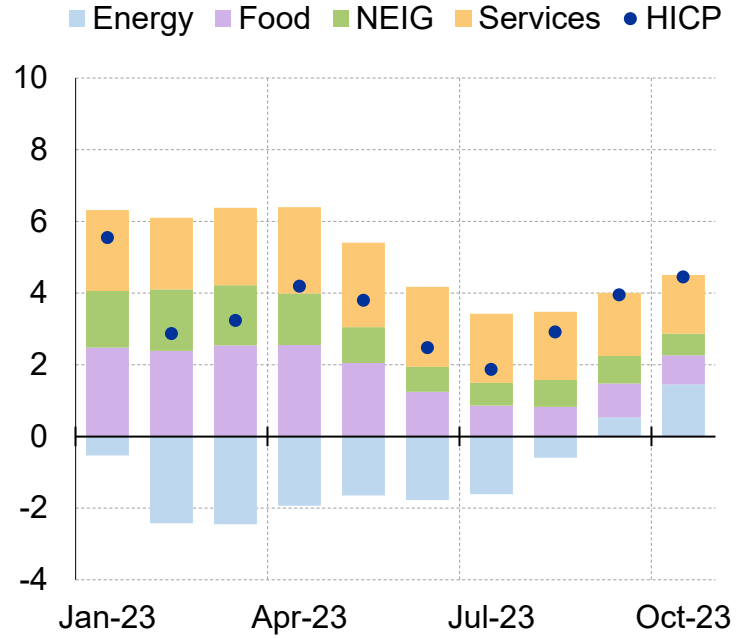


Sources: Refinitiv, Morningstar and ECB staff calculations.

Notes: The percentiles are computed from option-implied densities. The percentiles calculated as of 16/10/2023.  
Latest observation: 17/11/2023

## Momentum of HICP and main components

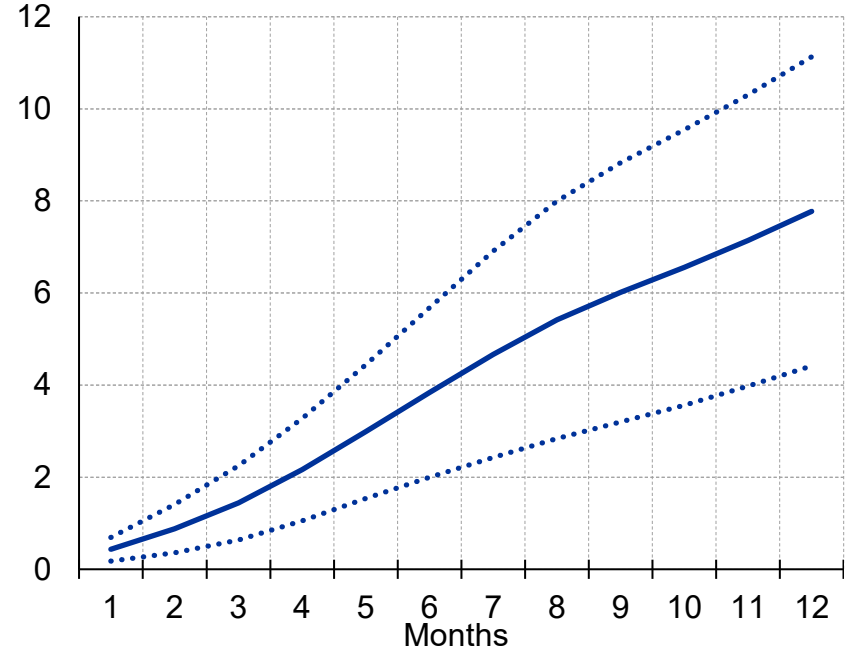
(annualised 3m-on-3m percentage changes, percentage points contributions)



Sources: Eurostat, ECB calculations.  
Latest observation: October 2023.

## Global food price effects of a one-degree temperature rise during El Niño

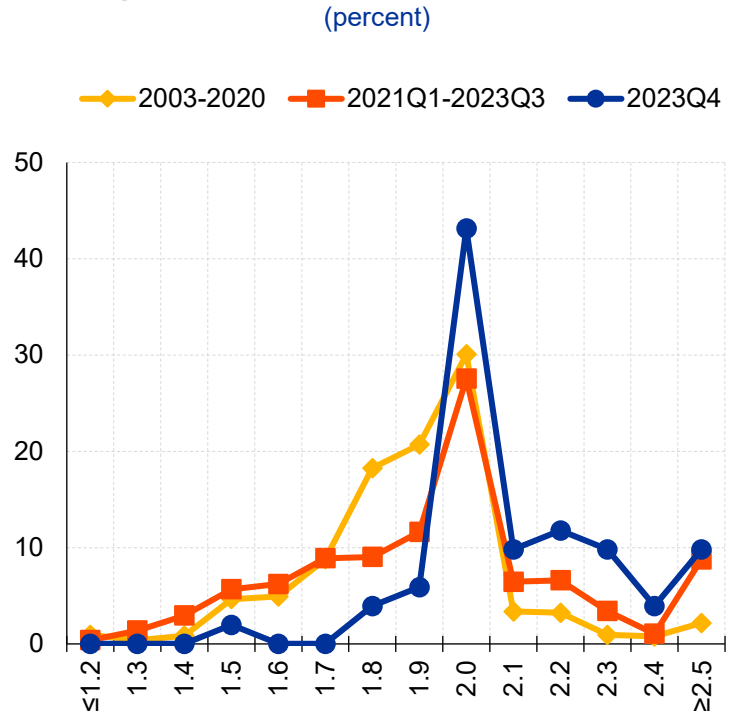
(percent)



Sources: Haver, NOAA, Bloomberg and ECB calculations.  
Notes: Price reaction shows impact of a 1°C increase in temperature during El Niño controlling for fertiliser and oil prices and global industrial activity with 68% confidence intervals.  
Latest observation: May 2023 (monthly sample starting in January 1960).

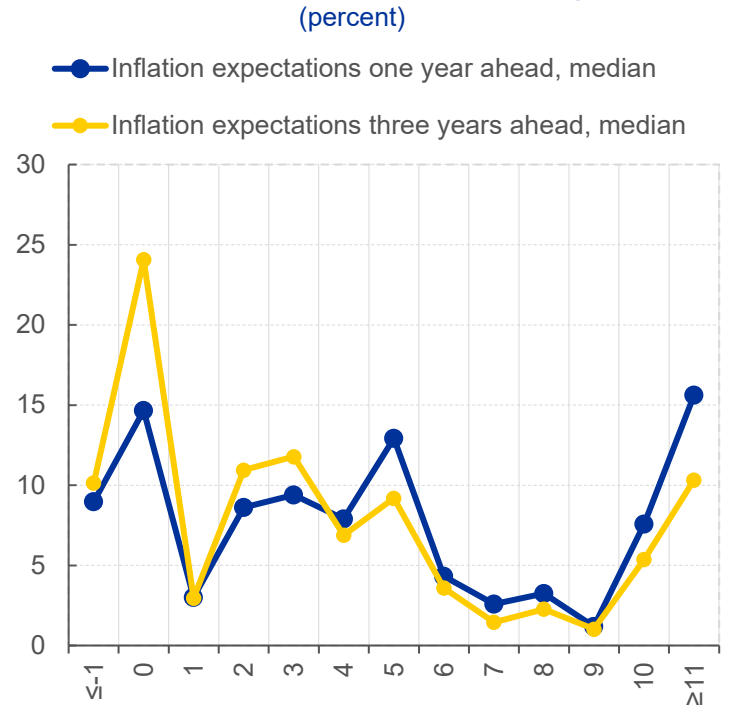
# Longer-term inflation expectations continue to signal some upside risks

## SPF: Cross-sectional distribution of longer-term inflation point forecasts (percent)



Sources: ECB SPF  
Latest observation: 2023Q4.

## CES: Cross-sectional distribution of inflation point forecasts (1 to 3 years) (percent)



Sources: ECB CES and ECB calculations  
Latest observation: September 2023.



**Thank you very much for your attention!**