



EUROPEAN CENTRAL BANK

EUROSYSTEM

# Inflation and monetary policy in the euro area

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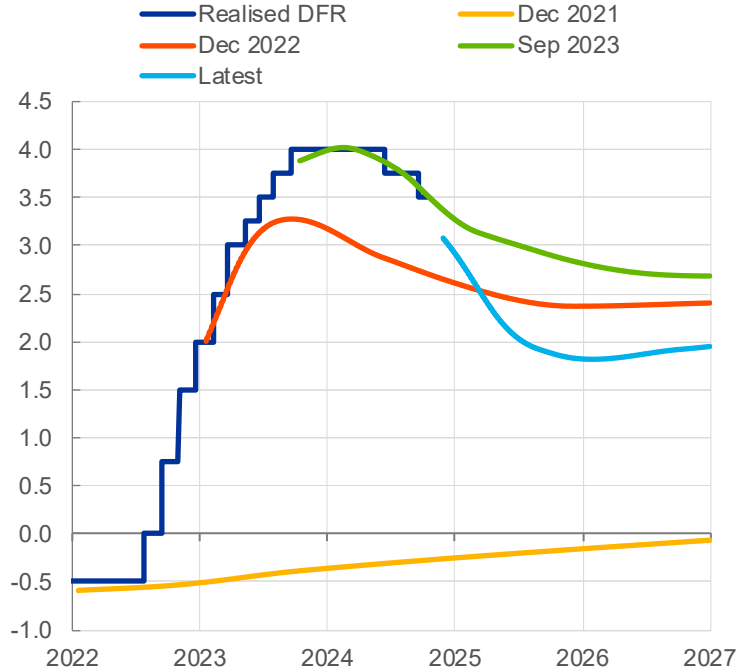
Seminar at Columbia University



22 October 2024

**Philip R. Lane**  
Member of the Executive Board

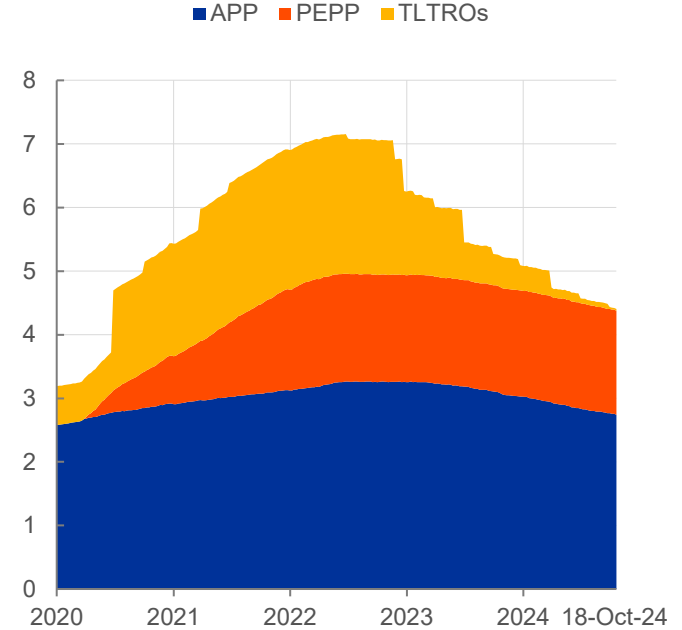
## Policy rate path and risk-free curve (percentages per annum)



Sources: Bloomberg and ECB calculations.

Notes: The cut-off dates for the data used for the €STR forward curves are 17 December 2021, 16 December 2022, 15 September 2023, and 21 October 2024.

## Evolution of Eurosystem balance sheet (trillion EUR)



Source: ECB Calculations.

Notes: Purchase programmes are based on book value at amortised cost. The latest observations is for 18 October 2024.

## September 2024 staff projections: key macroeconomic variables

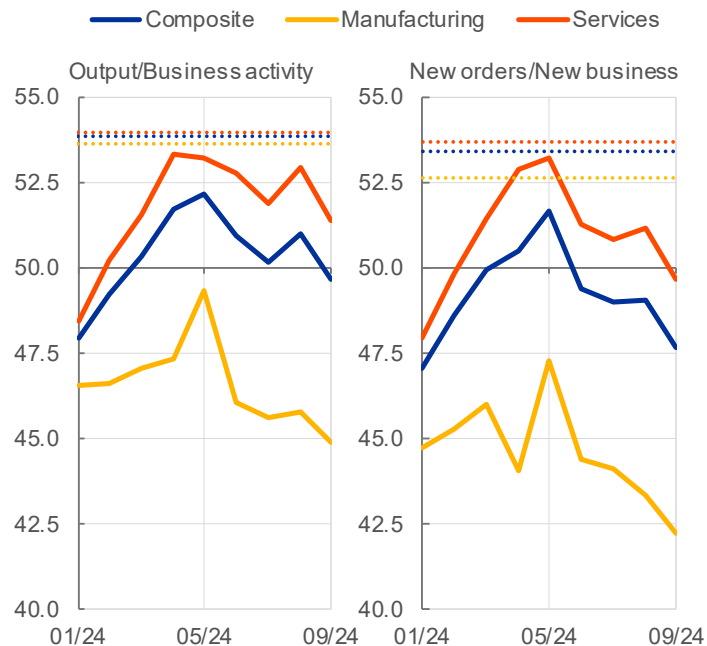
	September 2024				vs. June 2024			
	(annual percentage change)				(percentage points)			
	2023	2024	2025	2026	2023	2024	2025	2026
<b>HICP</b>	5.4	2.5	2.2	1.9	0.0	0.0	0.0	0.0
<b>HICP excl. energy and food</b>	4.9	2.9	2.3	2.0	0.0	0.1	0.1	0.0
<b>Compensation per employee</b>	5.3	4.5	3.6	3.2	0.1	-0.3	0.1	0.0
<b>Unit labour costs</b>	6.2	4.5	2.6	2.1	0.1	-0.2	0.1	0.0
<b>Real GDP</b>	0.5	0.8	1.3	1.5	-0.1	-0.1	-0.1	-0.1
<b>Private consumption</b>	0.7	0.8	1.4	1.5	0.1	-0.4	-0.3	-0.1
<b>Government consumption</b>	1.0	1.2	1.1	1.1	0.2	0.0	0.0	0.0
<b>Total investment</b>	1.2	-0.5	1.2	2.1	-0.1	-0.6	-0.3	0.1
<b>Unemployment rate (% of labour force)</b>	6.5	6.5	6.5	6.5	0.0	0.0	0.0	0.2
	September 2024				vs. June 2024			
	(Q4 on Q4 percentage change)				(percentage points)			
	23Q4	24Q4	25Q4	26Q4	23Q4	24Q4	25Q4	26Q4
<b>HICP</b>	2.7	2.6	2.0	1.9	0.0	0.1	0.0	0.1
<b>HICP excl. energy and food</b>	3.7	2.9	2.1	1.9	0.0	0.3	-0.1	-0.1
<b>Compensation per employee</b>	4.8	4.3	3.3	3.0	0.1	-0.2	-0.2	0.0
<b>Unit labour costs</b>	5.9	3.7	2.2	1.9	0.0	0.1	-0.3	0.0
<b>Real GDP</b>	0.2	1.1	1.5	1.4	0.1	-0.4	0.1	-0.2
<b>Private consumption</b>	0.8	0.9	1.5	1.4	0.2	-0.8	0.0	-0.2
<b>Government consumption</b>	1.6	0.4	1.5	0.9	0.3	-0.2	0.3	-0.2
<b>Total investment</b>	1.5	-0.7	1.3	2.3	-0.1	-0.8	0.2	0.1
<b>Unemployment rate (% of labour force)</b>	6.5	6.5	6.5	6.4	0.0	0.0	0.1	0.1

Source: ECB staff macroeconomic projections – September 2024.

Note: Revisions calculated based on rounded figures.

## Composite, manufacturing and services Purchasing Managers' Indices

(diffusion index)

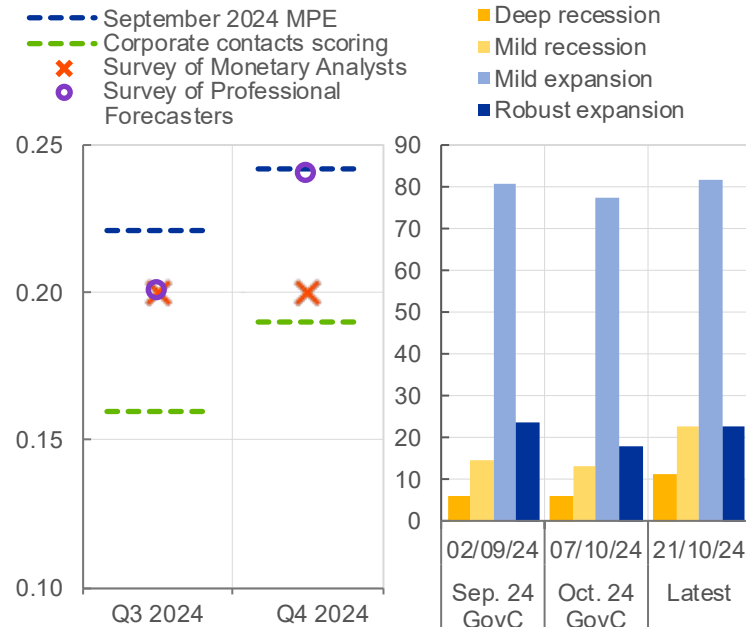


Source: S&P Global.

Notes: Dotted lines refer to 2015-19 means. Output and new orders correspond to manufacturing and composite and business activity and new business to services. The latest observations are for September 2024.

## Real GDP growth estimates and recession probabilities

(left-hand scale: quarter-on-quarter percentage changes; right-hand scale: percentage)

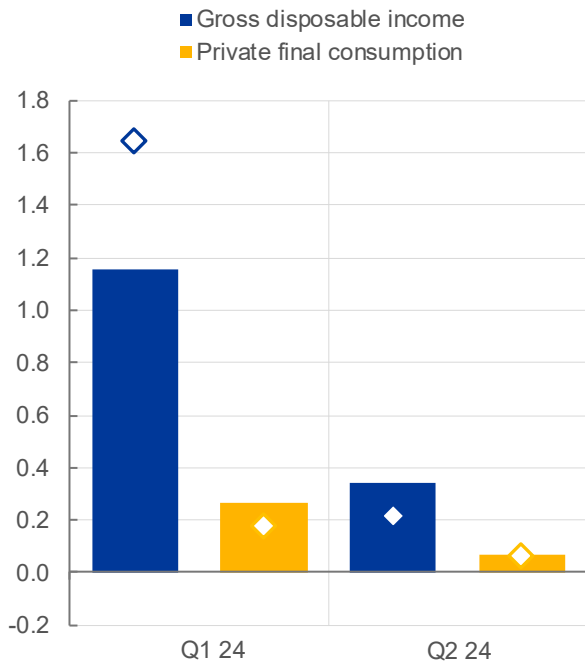


Sources: Eurostat, ECB calculations and ECB staff macroeconomic projections for the euro area (MPE), September 2024. Notes: lhs: corporate contacts scoring is the average score (range from -2 to 2) given by ECB staff in their assessment of what non-financial companies said about q-o-q developments in activity. Rhs: probabilities estimated by a panel logit model since Q1 1999. Deep (mild) recession defined as four consecutive quarters below -0.25% (0%) q-o-q growth, mild (robust) expansion as four consecutive quarters above 0% (0.25%). The latest observations are for 9 October for SPF, 18 October for contacts scoring, and 21 October for SMA. For the rhs panel, the latest observations are for 21 October. [www.ecb.europa.eu](http://www.ecb.europa.eu)

# Private consumption

## Real private consumption and disposable income

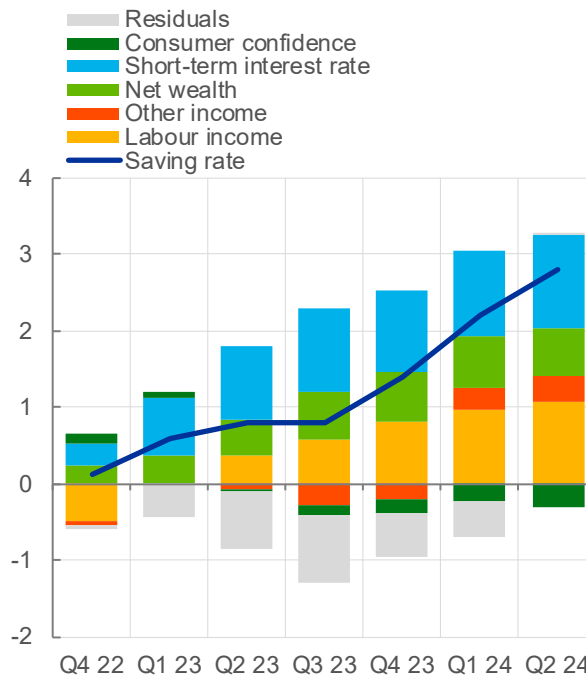
(quarter-on-quarter percentage changes)



Sources: Eurostat, September 2024 MPE and ECB calculations.  
Notes: Data are seasonally adjusted and in real terms. Diamonds correspond to the September 2024 MPE. The latest observations are for the second quarter of 2024.

## Model-based decomposition of the change in the saving rate

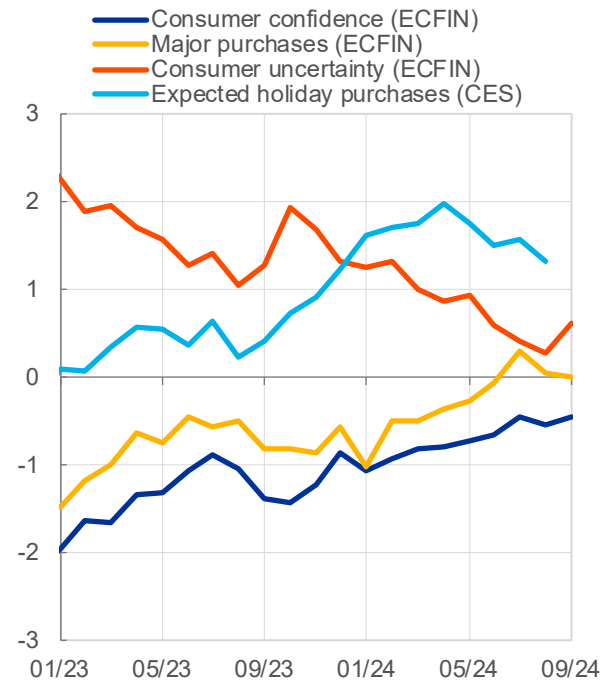
(percentage point changes)



Sources: Eurostat, European Commission Directorate-General for Economic and Financial Affairs (DG-ECFIN), and ECB calculations.  
Notes: Decomposition based on an error-correction model for private consumption, including real household labour and other income, real net wealth, real interest rate and household confidence. Real interest rates are computed as the difference between the nominal three-month EURIBOR and households inflation expectations one-year ahead from DG-ECFIN.

## Consumer sentiment and business services expectations

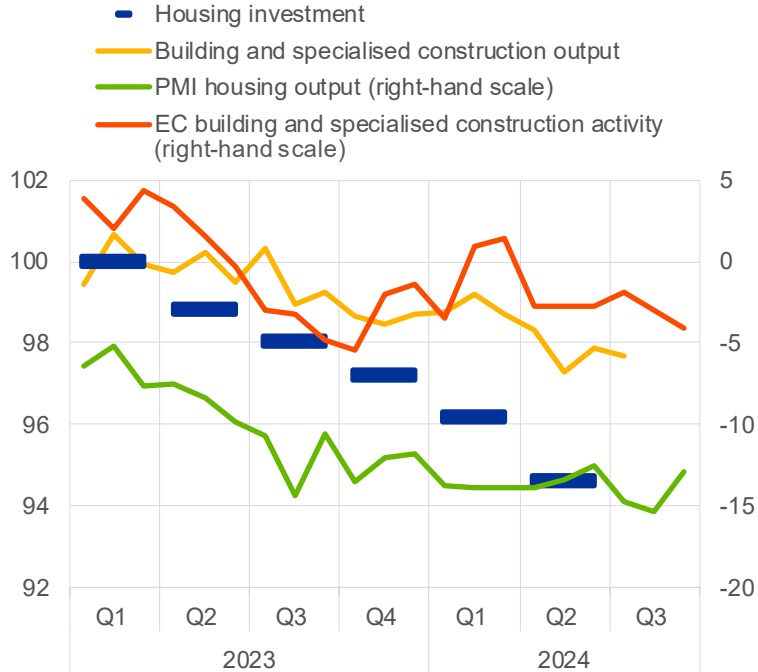
(standardised indices)



Sources: Eurostat, DG-ECFIN, Consumer Expectations Survey (CES) and ECB calculations.  
Notes: Consumer confidence and major purchases are standardised over 1999-2019, consumer uncertainty over April 2019-September 2024 with respect to the average of Q4 2021, expected holiday purchases over April 2020-August 2024. The latest observations for expected holiday purchases are for August 2024 and otherwise for September 2024.

## Housing investment and short-term indicators

(index: Q1 2023 = 100, balances, diffusion index)

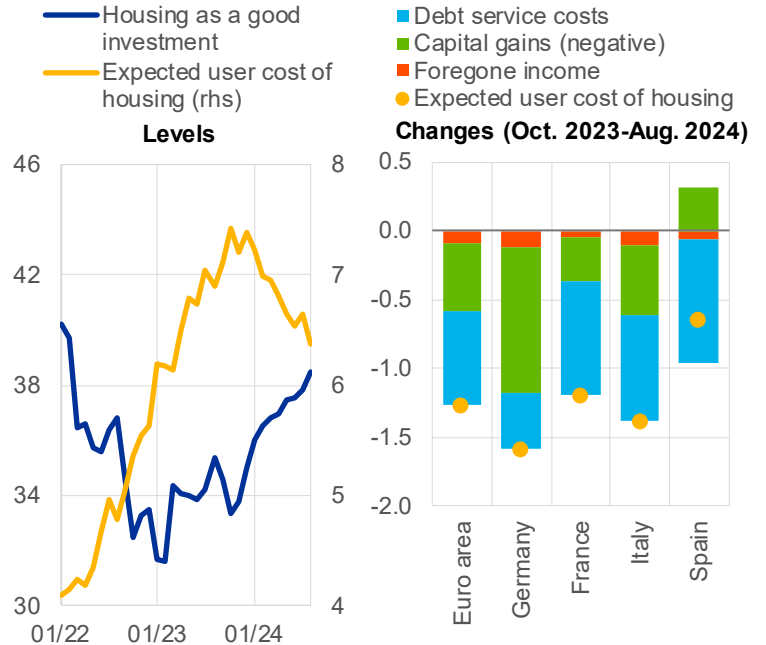


Sources: Eurostat, S&P Global, DG-ECFIN, ECB and ECB calculations.

Notes: The latest observations are for the second quarter of 2024 for housing investment, July 2024 for building and specialised construction output and September 2024 for PMI and European Commission (EC) building and specialised construction activity.

## Housing as a good investment and expected user cost of housing

(panel a: lhs balance, percentages, rhs percentages; panel b:

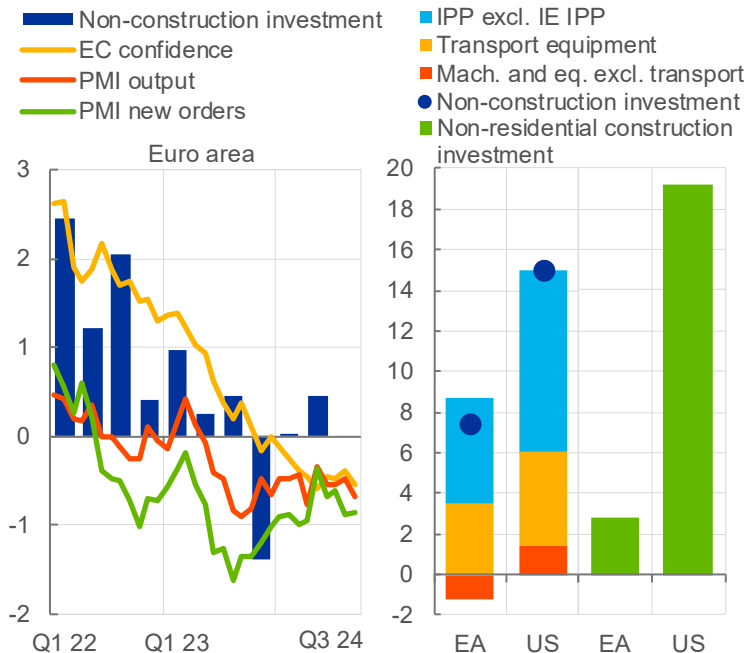


Sources: Eurostat, S&P Global, DG-ECFIN, ECB and ECB calculations.

Notes: The expected user cost of housing applies the methodology described in the [Economic Bulletin box](#) entitled "Housing investment and the user cost of housing in the euro area", using 12-months-ahead expectations of mortgage rates, interest rates on savings and house price growth to measure expectations about debt service costs, foregone income and capital gains, respectively. The latest observation is for August 2024.

## Investment and capital goods indicators

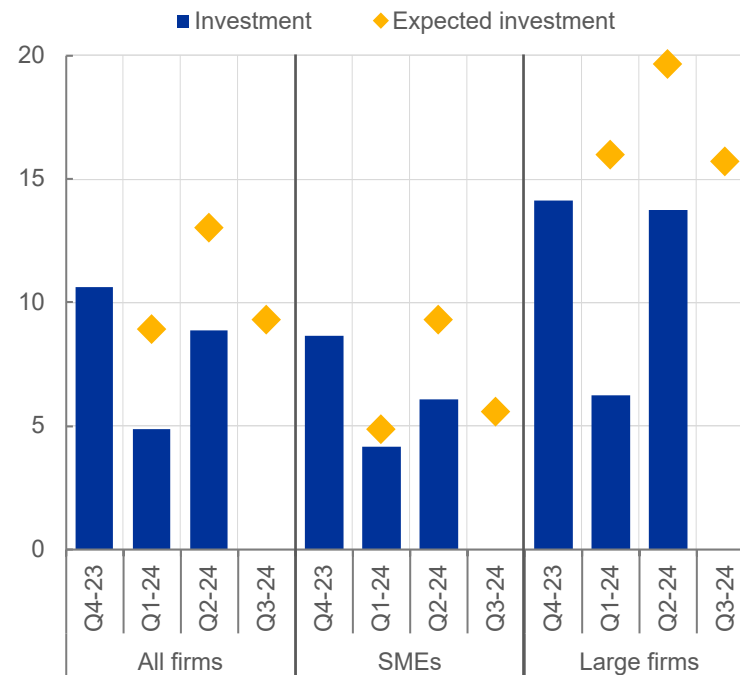
(lhs: quarter-on-quarter percentage changes, standardised surveys; rhs: Q2 2024 cumulated percentage changes since Q4 2021, percentage points)



Sources: Eurostat, S&P Global, DG-ECFIN and Bureau of Economic Analysis.  
 Notes: lhs: The PMI is expressed in terms of the deviation from 50 divided by 10. European Commission (EC) confidence refers to the capital goods sector and is standardised over the period 2000-19. Euro area non-construction investment excludes Irish intellectual property products. Rhs: Non-residential construction investment also includes investment by the public sector. The latest observations are for the second quarter of 2024 for investment and September 2024 for PMI and EC confidence.

## Fixed investment (SAFE)

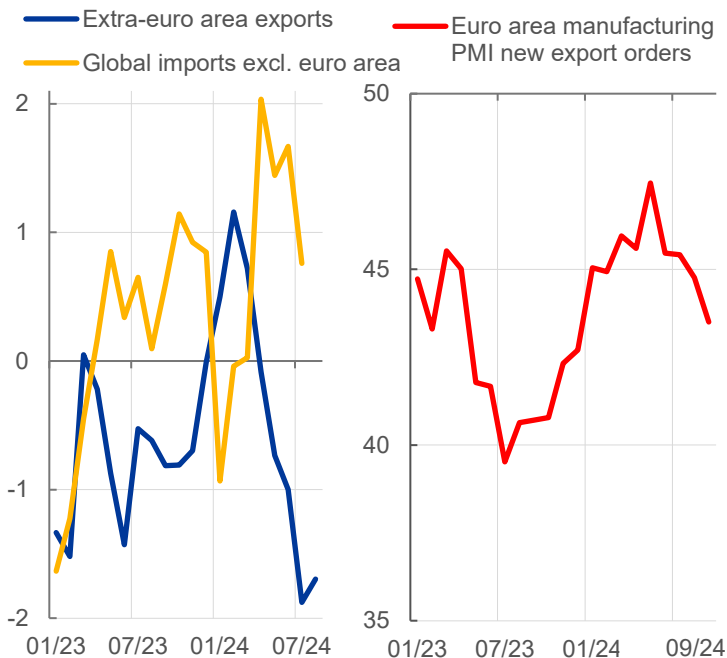
(net percentages of respondents)



Source: Survey on Access to Finance for Enterprises (SAFE).  
 Notes: Bars refer to developments over the preceding three months and diamonds to expectations over the next three months. The expected investment line is shifted by one period to compare with realisations. The question on expected investments was first included in the questionnaire covering the second and third quarters of 2023. The observations refer to pilot 2 (Oct-Dec 2023), round 30 (Jan-Mar 2024) and round 31 (Apr-Jun 2024).

## Euro area goods trade volumes

(lhs: three-month-on-three-month growth, percentages; rhs: diffusion index)

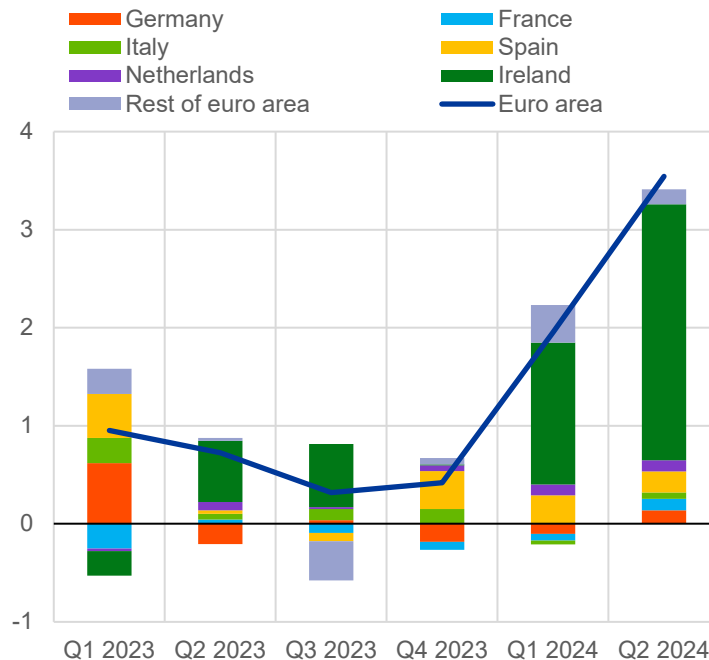


Sources: Eurostat, CPB and S&P Global.

Notes: The underlying data are seasonally adjusted and based on customs data. As export volume data for August is not available, the latest data point is approximated by deflating August values with industrial export prices. The latest observations are for July 2024 for global imports, August 2024 for exports and September 2024 for PMI.

## Services exports

(quarter-on-quarter growth, percentages)



Source: Eurostat.

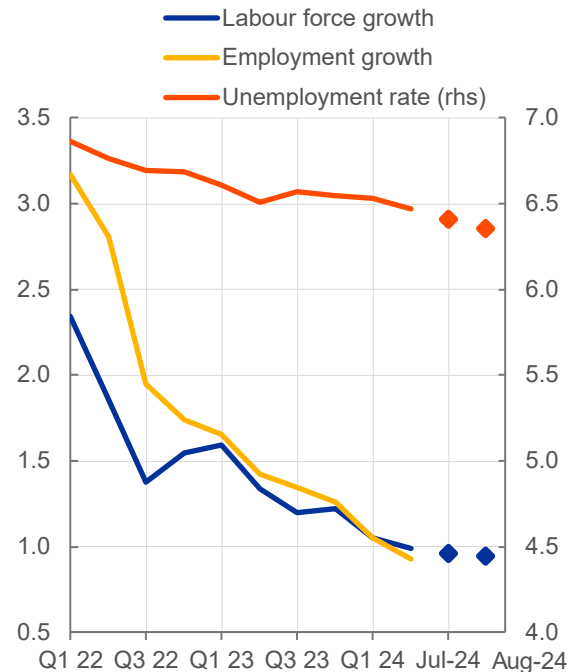
Note: The latest observations are for Q2 2024.



# Labour market developments

## Employment, unemployment and labour force developments

(left: year-on-year percentage changes, right: percentage points)

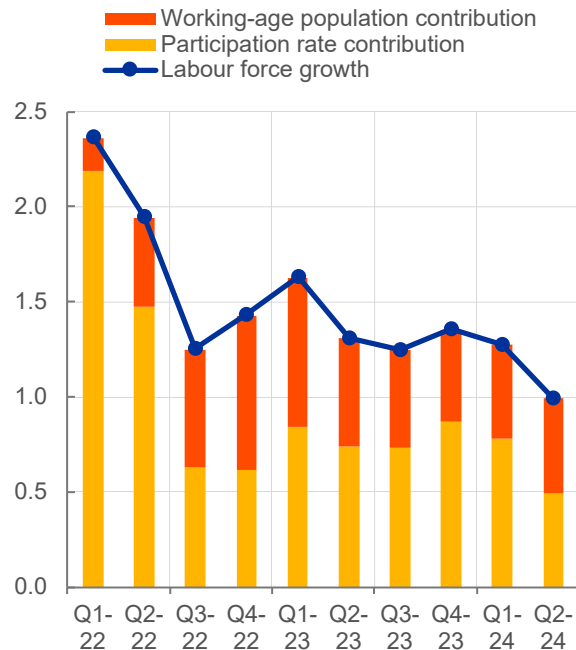


Source: Eurostat.

Notes: Employment growth is based on national accounts data and labour force growth and the unemployment rate are based on Labour Force Survey data. The latest observations are for Q2 2024 for employment growth and August 2024 for the unemployment rate and labour force growth.

## Labour force growth from participation and population

(year-on-year percentage changes and contributions)

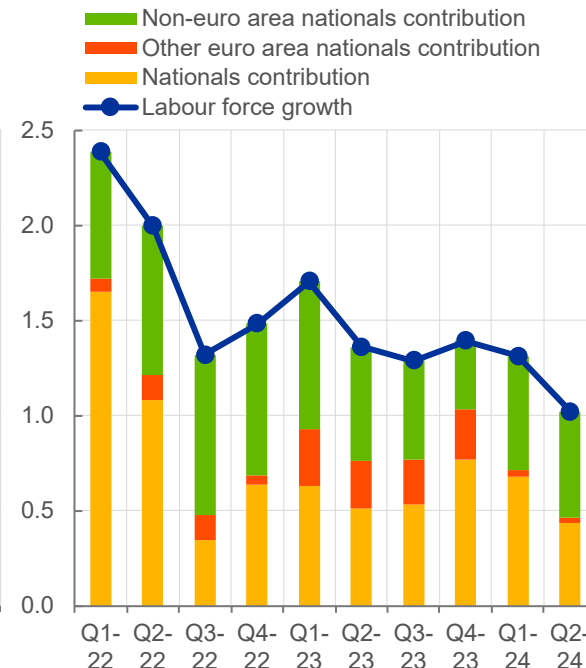


Source: Eurostat.

Note: The latest observations are for Q2 2024

## Migration and labour force growth

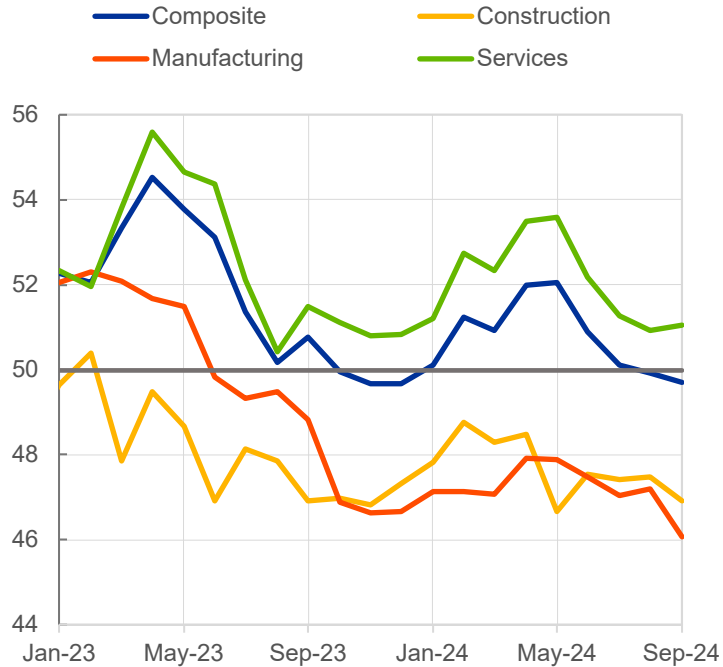
(year-on-year percentage changes and contributions)



Source: Eurostat.

Note: The latest observations are for Q2 2024.

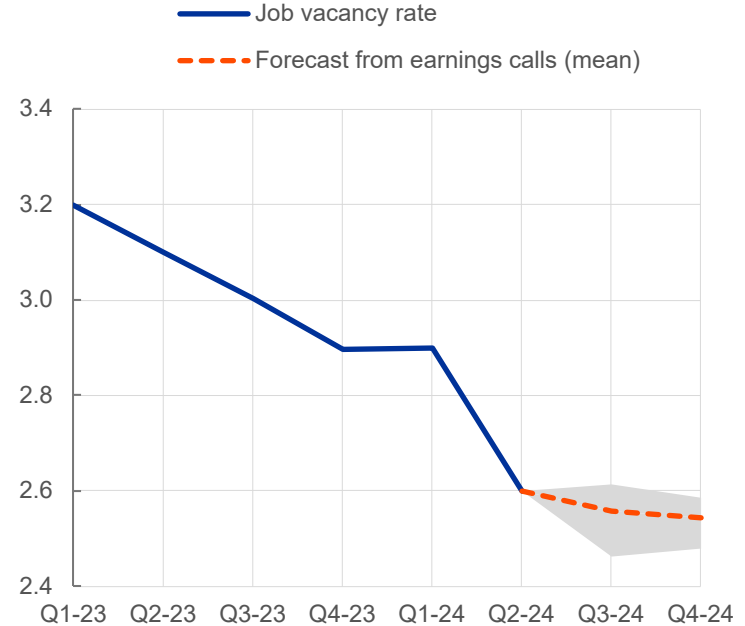
## PMI employment (diffusion index)



Source: S&P Global.

Notes: A value of 50 indicates the neutral threshold between expansionary territory (>50) and contractionary territory (<50). The latest observations are for September 2024

## Nowcast of the job vacancy rate (percentages)

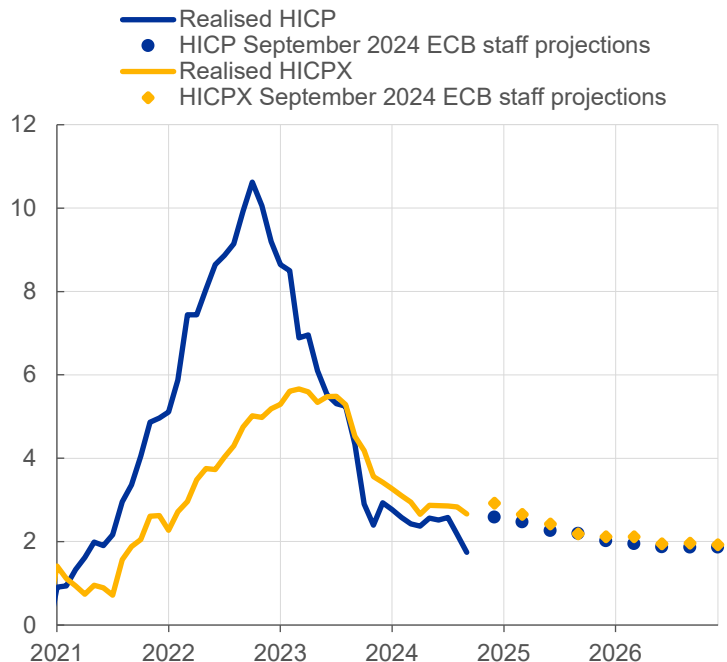


Sources: NL Analytics and Eurostat.

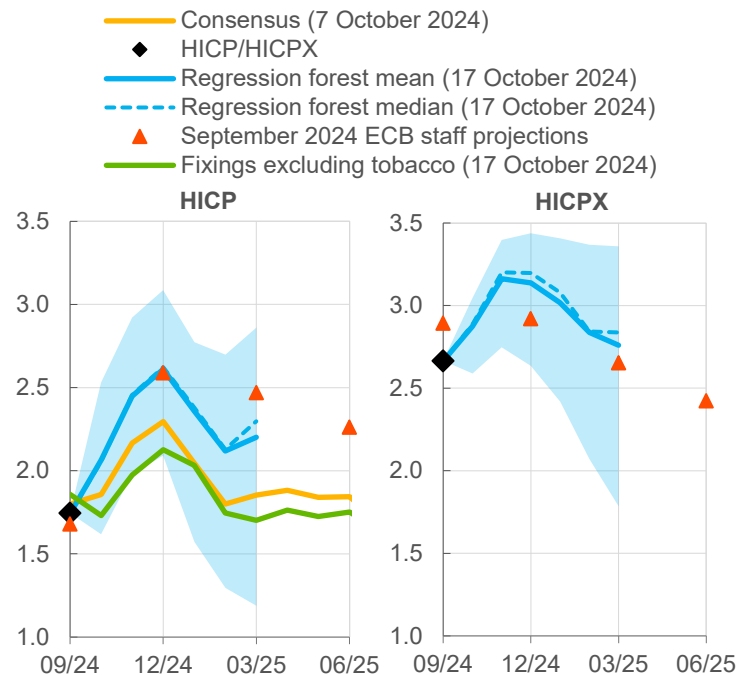
Notes: Mean (red dashed line) and the min-max range (grey area) of forecasts of the job vacancy rate obtained with several MIDAS regressions. The latest observations are for Q2 2024 for the job vacancy rate. Forecasts are up to Q4 2024.

# Recent inflation developments and short-term outlook

## Headline inflation, core inflation and ECB staff projections (annual percentage changes)



## Short-term forecasts for HICP and HICPX (annual percentage changes)



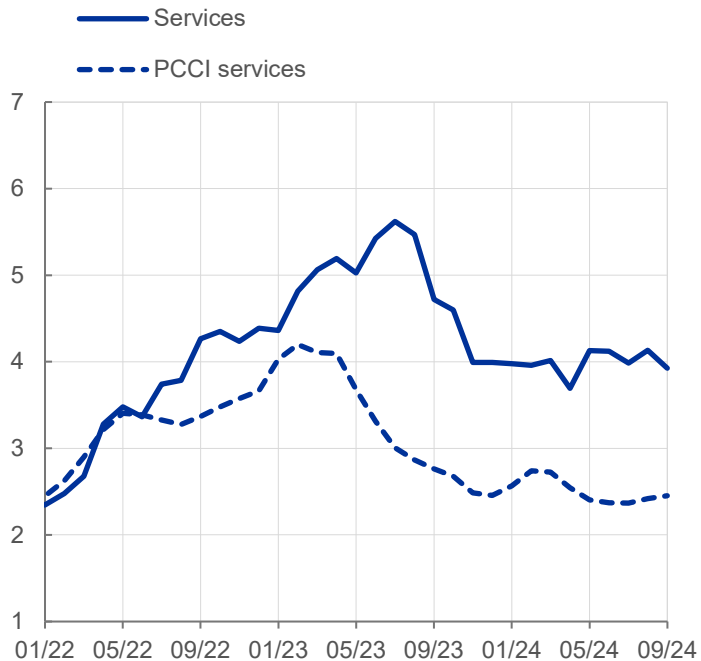
Sources: Eurostat, and September 2024 ECB staff projections.

Notes: Harmonised Index of Consumer Prices (HICP) refers to headline inflation and HICPX to HICP excluding food and energy. Realised HICP and HICPX are at a monthly frequency, and HICP and HICPX projections are at a quarterly frequency. The latest observations are for September 2024.

Sources: Eurostat, September 2024 ECB staff projections, Consensus Economics, Bloomberg and ECB calculations.

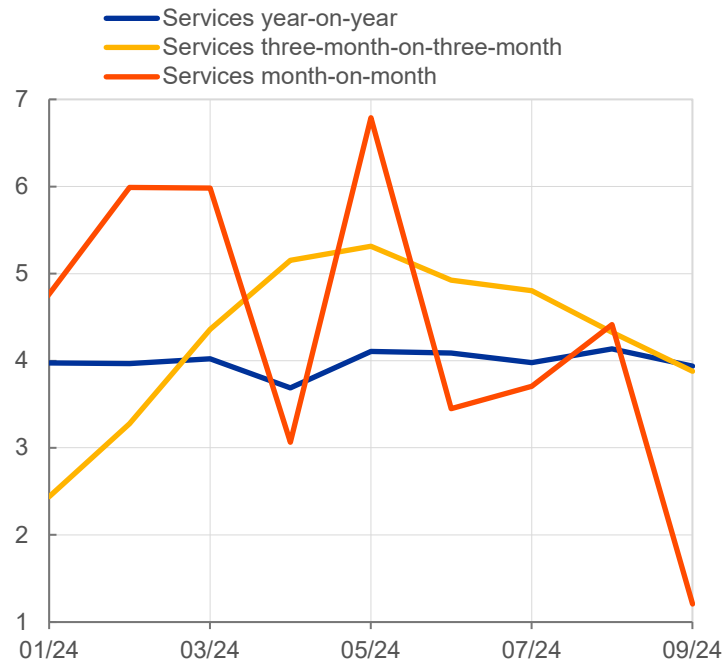
Notes: Quantile Regression Forest estimates are from [Lenza, Moutachaker and Paredes \(2023\)](#). The HICP fixings are observed market prices. The latest observations are for September 2024.

## PCCI services (annual percentage changes)



Sources: Eurostat and ECB calculations.  
Note: The latest observations are for September 2024.

## Services inflation momentum (annual percentage changes and annualised percentage changes)

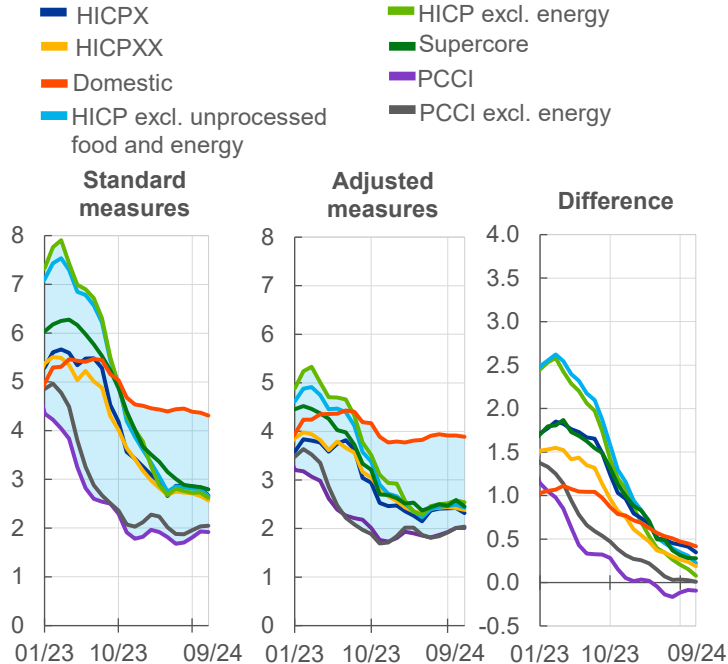


Sources: Eurostat and ECB calculations.  
Note: The month-on-month rates and the three-month-on-three-month rate are calculated from seasonally adjusted data and are thus subject to revisions. The latest observations are for September 2024.

# Measures of underlying inflation

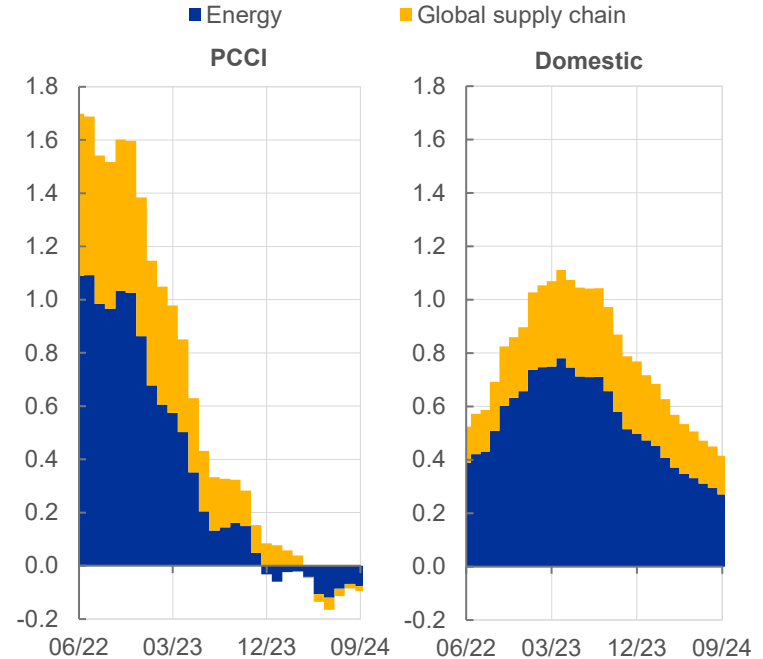
## Measures of underlying inflation

(annual percentage changes)



## Impact of past shocks linked to energy and global supply chain bottlenecks

(percentage points)



Sources: Eurostat and ECB calculations.

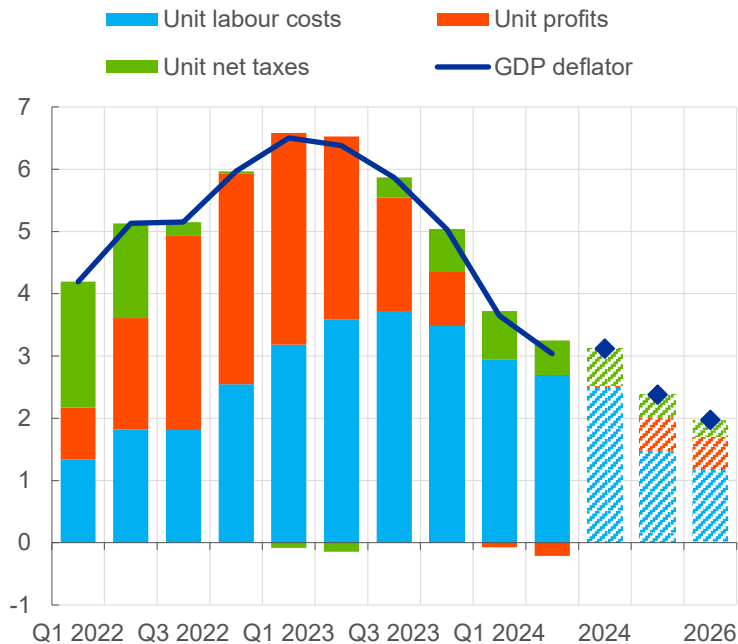
Notes: The adjusted measures abstract from energy and supply bottleneck shocks using a large SVAR, see [Banbura, Bobeica and Martínez-Hernández, \(2023\)](#), "What drives core inflation? The role of supply shocks", *ECB Working Paper*, No 2875. The latest observations are for September 2024.

Sources: Eurostat and ECB calculations.

Note: Impact computed based on [Banbura, Bobeica and Martínez-Hernández, \(2023\)](#). The latest observations are for September 2024.

## GDP deflator

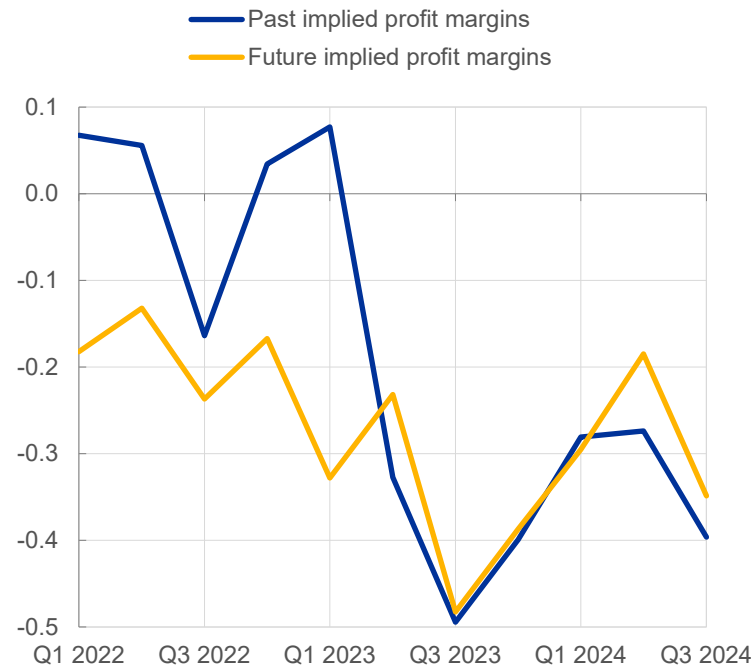
(annual percentage changes and percentage point contributions)



Sources: Eurostat, September 2024 ECB staff projections and ECB calculations.  
 Notes: Unit net taxes reflect taxes minus subsidies. When the contribution of subsidies on products is larger than the contribution of indirect taxes, the unit tax contribution turns negative. The latest observations are for Q2 2024.

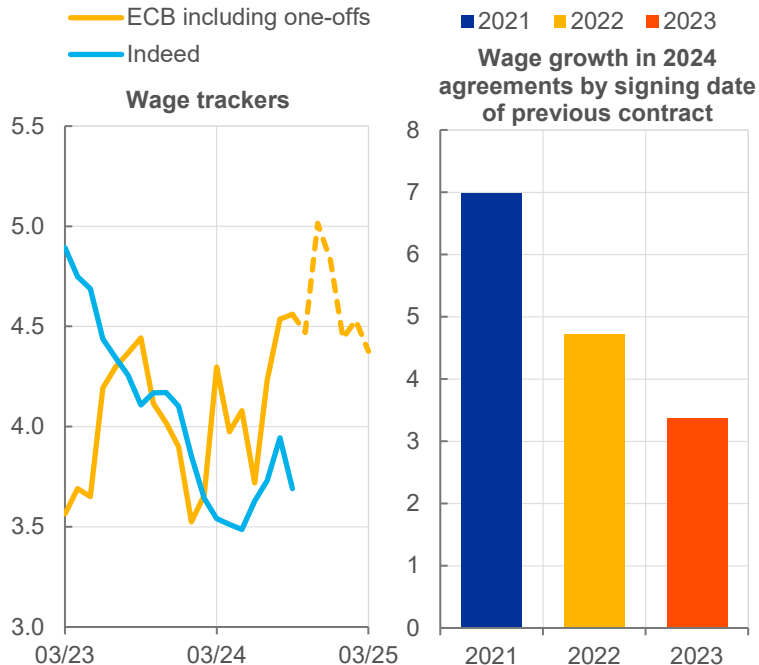
## Profit indicators from surveys

(average of survey scores)



Source: Corporate Telephone Survey (CTS).  
 Notes: The score is calculated as selling price score - 0.5 x input cost score - 0.5 x wage score. Past and future selling and input price scores refer to developments in the previous and next quarters. The latest observations are for Q3 2024.

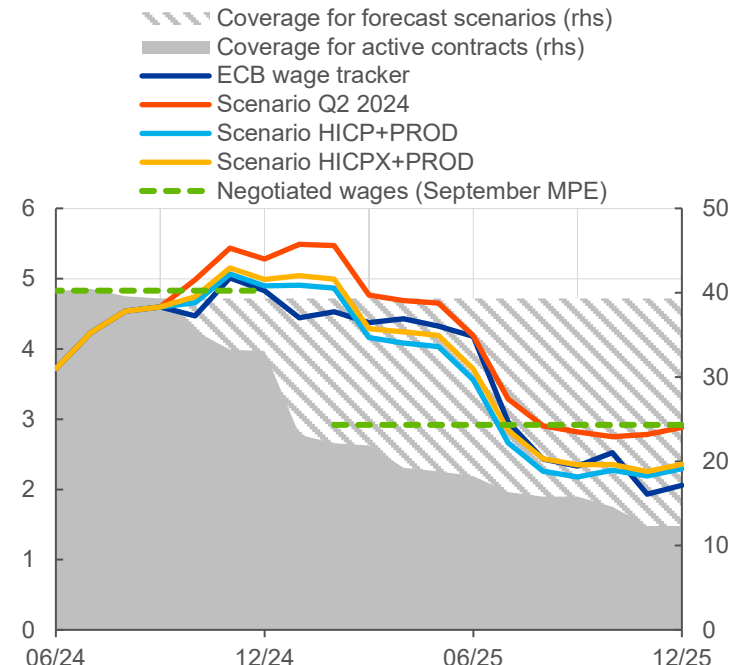
## Euro area wage tracker (annual percentage changes)



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

Notes: Left-hand side: One-off payments are spread over 12 months from the agreed disbursement. Right-hand side; 12-month structural wage growth for contracts signed in 2024 depending on the year of signing of the previous contract. The latest observations are for March 2025 for the wage tracker and September 2024 for the indeed tracker.

## Wage tracker scenarios (annual percentage changes)



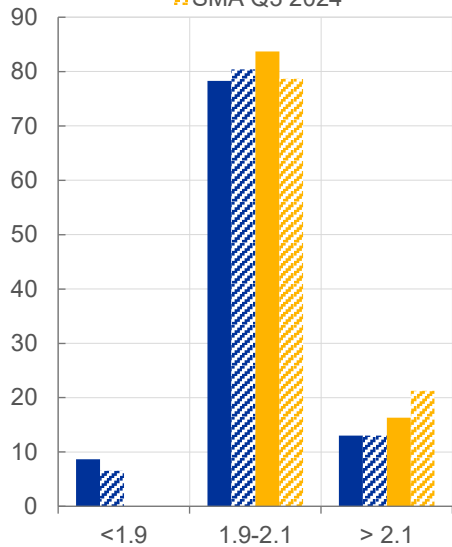
Notes: The forecast scenarios take sectors with contracts expiring after the current date and assumes that new contracts are concluded with a structural wage increase per year based on a full pass-through of projected (September MPE) HICP or HICPX inflation and productivity growth (scenarios HICP+PROD and HICPX+PROD), or at the same rate of wage increase observed for contracts signed in Q2 2024 (Scenario: Q2 2024). The forward-looking tracker only considers active agreements. All scenarios include one-off payments smoothed over 12 months. The latest observations are for December 2025.

# Inflation expectations

## Distribution of longer-term inflation expectations

(percentages of respondents)

- SPF Q4 2024
- ▨ SPF Q3 2024
- SMA Q4 2024
- ▨ SMA Q3 2024



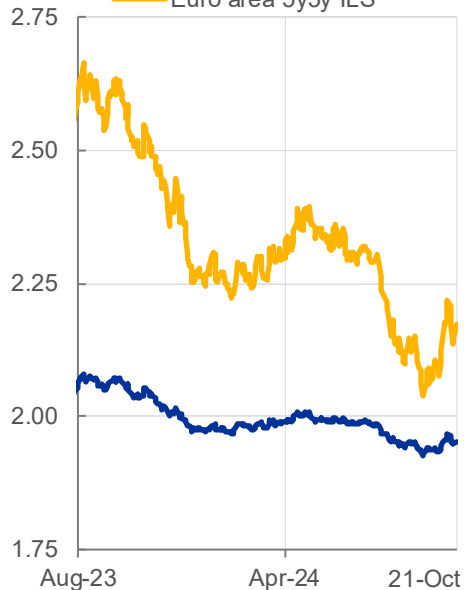
Sources: SPF, SMA and ECB calculations.

Notes: The vertical axis shows percentages of respondents, the horizontal axis shows the HICP inflation rate. Longer-term inflation expectations refer to four to five years ahead. The latest observations are for Q4 2024.

## Euro area inflation-linked swap rates

(percentages per annum, index)

- Euro area 5y5y ILS expectation component
- Euro area 5y5y ILS



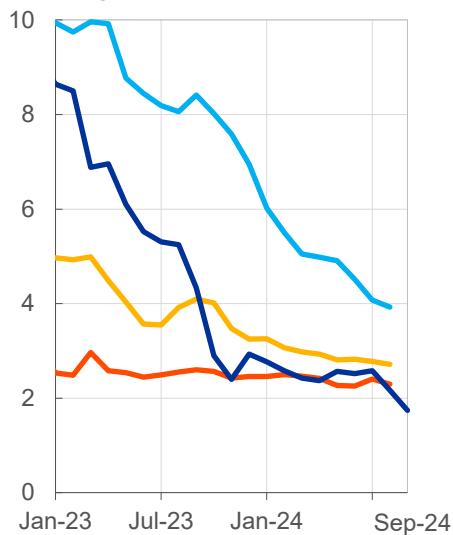
Sources: LSEG, Bloomberg and ECB calculations.

Notes: Premia-adjusted forward inflation-linked swaps (ILS) rates are an average of estimates from two affine term structure models as in Joslin, Singleton and Zhu (2011) applied to ILS rates non-adjusted for the indexation lag; see Burban et al. (2022). The latest observations are for 21 October 2024.

## ECB Consumer Expectations Survey

(annual percentage changes)

- Perception of past inflation
- Inflation expectations one year ahead
- Inflation expectations three years ahead
- HICP



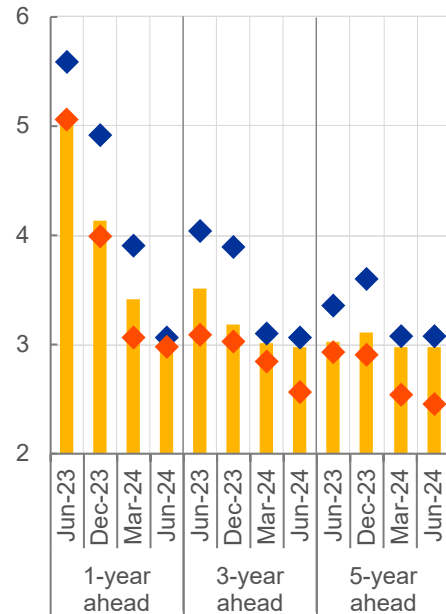
Sources: Eurostat and ECB CES.

Notes: The series refer to the median value for CES. The latest observations are for September 2024 for HICP and August 2024 for the rest.

## Firms' expectations about euro area inflation

(percentages per annum)

- All firms
- ◆ SME
- ◆ Large firms

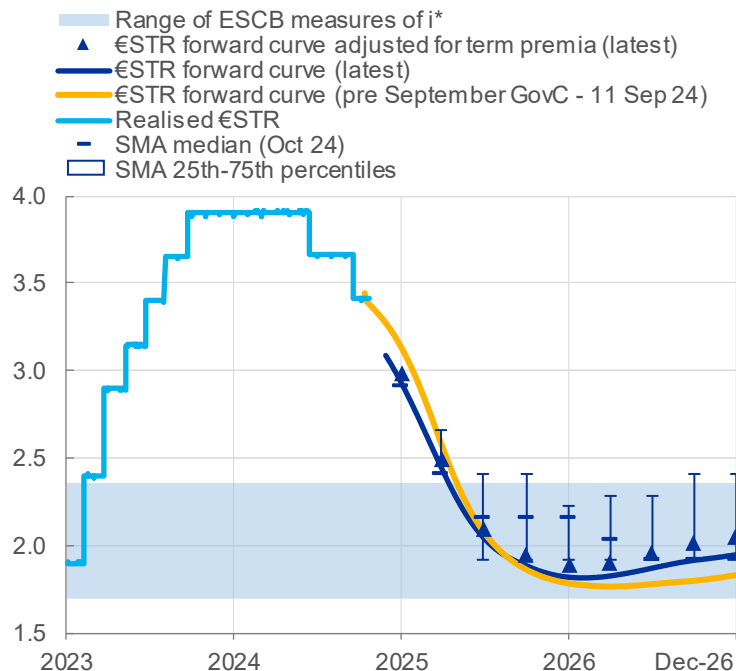


Sources: Survey on the Access to Finance of Enterprises (SAFE) and ECB calculations.

Notes: Survey-weighted median of firms' expectations about euro area inflation in one year, three years and five years respectively. The latest observations are for June 2024.



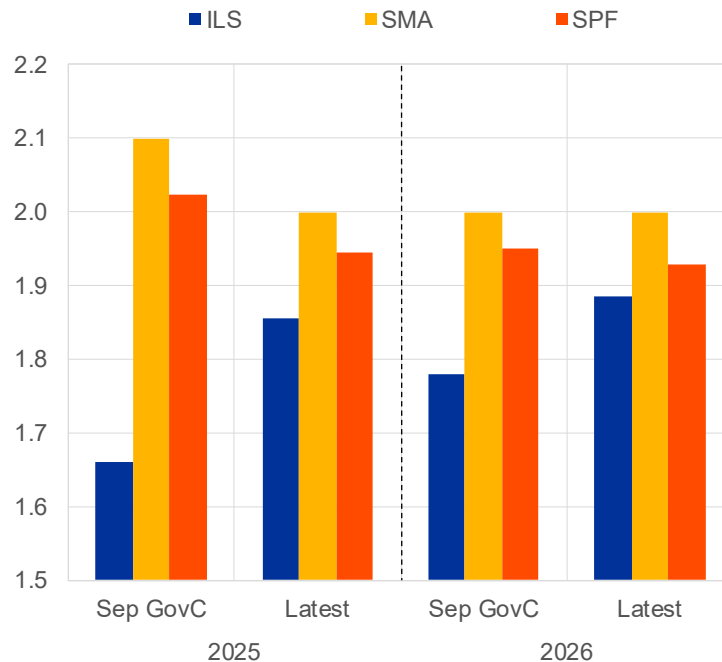
## €STR forward curve (percentages per annum)



Sources: Bloomberg, SMA and ECB calculations.

Notes: The bars depict the median of responses to the October SMA survey on expectations of future deposit facility rates. Surveys are adjusted for an €STR vs. deposit facility rate spread. Model estimates are based on two affine term structure models, with and without survey information on rate expectations (both variations of Joslin, Singleton and Zhu (2011)), and a lower bound term structure model following Geiger and Schupp (2018) incorporating survey information on rate expectations. The range for the (nominal) neutral rate  $i^*$  is based on ESCB estimates. The latest observations are for 21 October 2024.

## Market and survey-based euro area inflation expectations (percentages per annum)

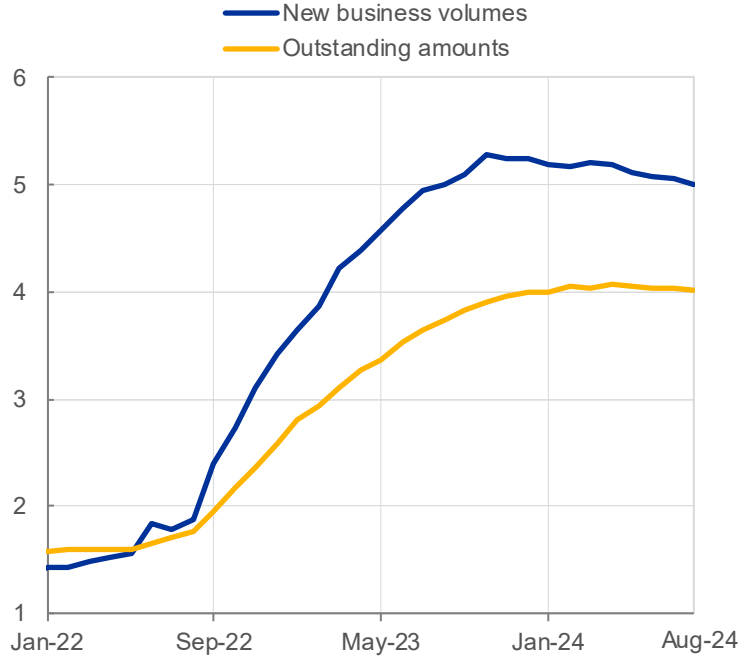


Sources: ECB, LSEG and ECB calculations.

Notes: Market-based expectations are average expected monthly year-on-year inflation rates for the given year based on two affine term structure models; see Burban, V. et al (2022), "Decomposing market-based measures of inflation compensation into inflation expectations and risk premia", *Economic Bulletin*, Issue 8 and Grønlund, Jørgensen and Schupp (2024). Sep GovC refers to 11 September 2024 for ILS expectation, September 2024 for SMA, and Q3 2024 for SPF. The latest observations are 21 October 2024 for ILS expectations, October 2024 for SMA, Q4 2024 for SPF.

# Lending rates for firms and housing loans

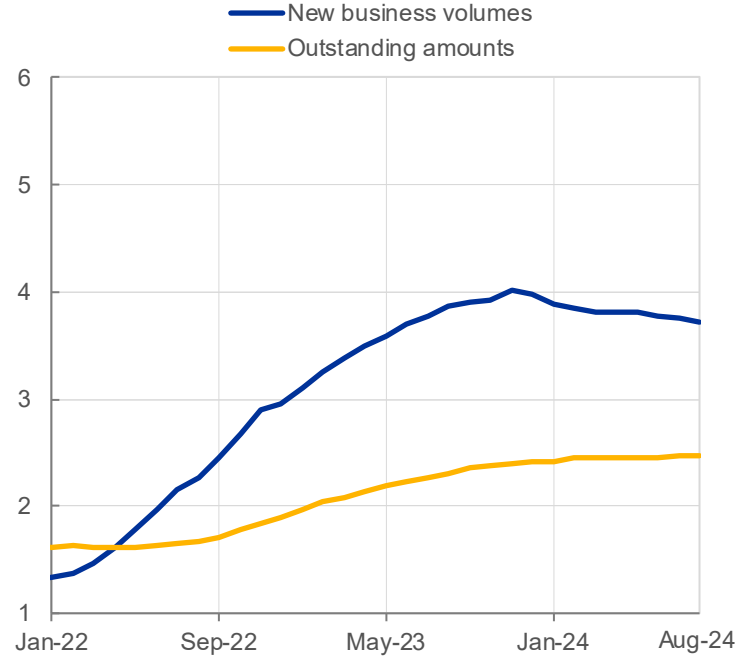
## Lending rates for firms (percentages per annum)



Source: ECB.

Notes: Interest rates on new business are equivalent to the indicator for the total cost of borrowing for firms, which is calculated by aggregating short-term and long-term rates on new business using a 24-month moving average of new business volumes. The latest observations are for August 2024.

## Lending rates for households (percentages per annum)



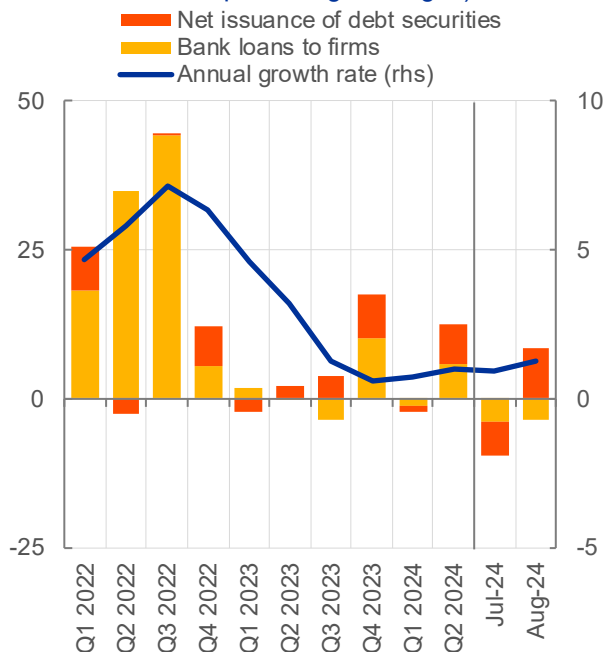
Source: ECB.

Notes: Interest rates on new business are equivalent to the indicator for house purchase, which is calculated by aggregating short-term and long-term rates on new business using a 24-month moving average of new business volumes. The latest observations are for August 2024.

# Firms – net debt financing, credit standards and loan demand

## Net debt financing flows of euro area firms

(average flows over the period in EUR billions, annual percentage changes)

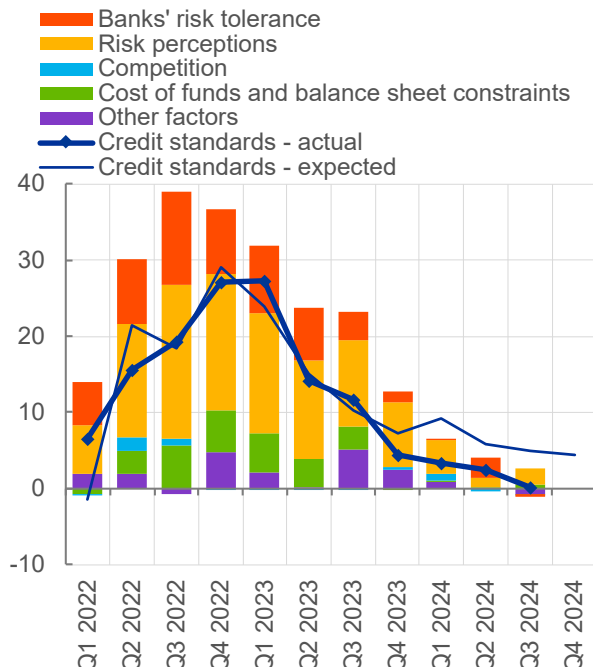


Sources: ECB (BSI, CSEC) and ECB calculations.

Notes: The seasonal adjustment for the net issuance of debt securities is not official. MFI loans are adjusted for sales, securitisation and cash pooling. The latest observations are for August 2024.

## Changes in credit standards for loans to firms

(net percentages)

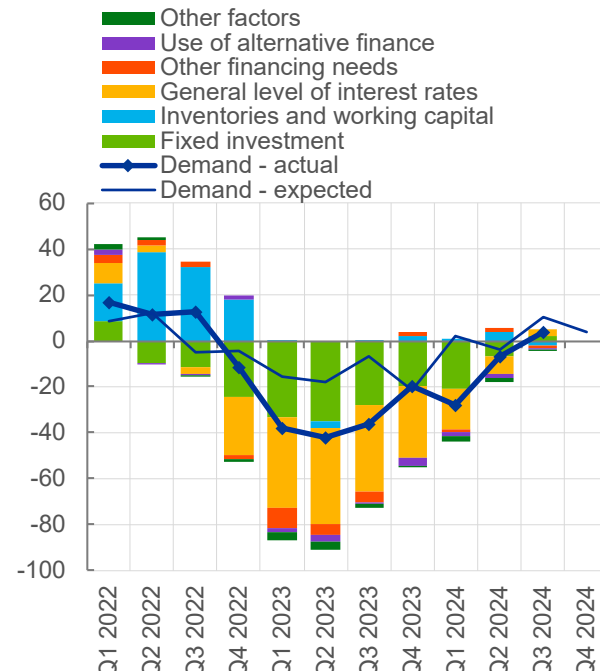


Source: ECB (BLS).

Notes: "Other factors" refer to further factors which were mentioned by banks as having contributed to changes in credit standards. The latest observations are for Q3 2024 for backward-looking series and Q4 2024 for forward-looking series.

## Changes in demand for loans to firms

(net percentages)

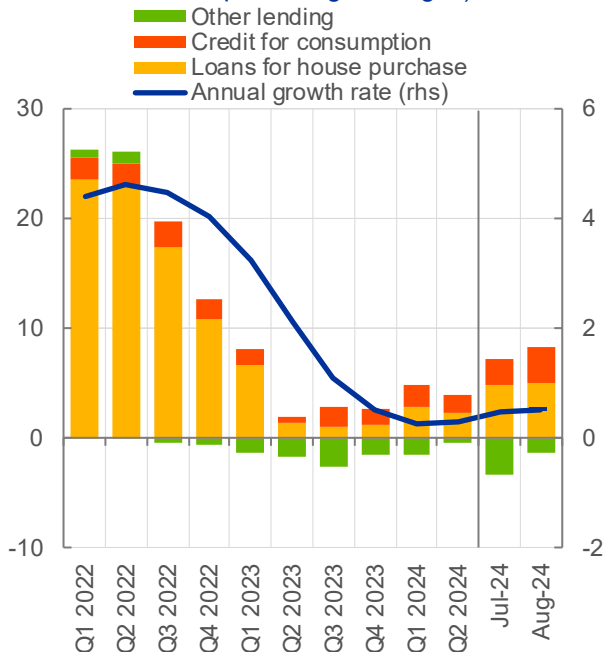


Source: ECB (BLS). Notes: "Other financing needs" is the average of "M&A and corporate restructuring" and "debt refinancing/restructuring and renegotiation". "Use of alternative finance" is the average of "internal financing", "loans from other banks", "loans from non-banks", "issuance/redemption of debt securities" and "issuance/redemption of equity". The latest observations are for Q3 2024 for backward-looking series and Q4 2024 for forward-looking series.

# Households – loans to households, credit standards and loan demand

## Bank loans to households by purpose

(average flows over the period in EUR billions, annual percentage changes)

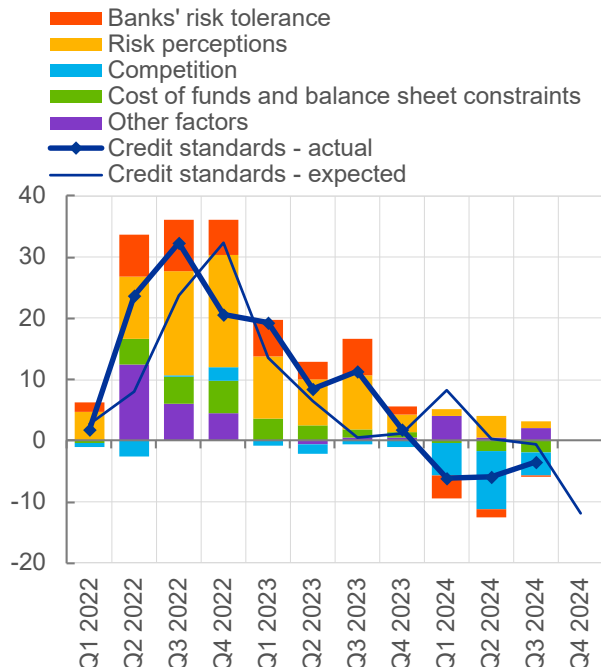


Sources: ECB (BSI, CSEC) and ECB calculations.

Notes: MFI loans are adjusted for sales and securitisation. The latest observations are for August 2024.

## Changes in credit standards for housing loans

(net percentages)

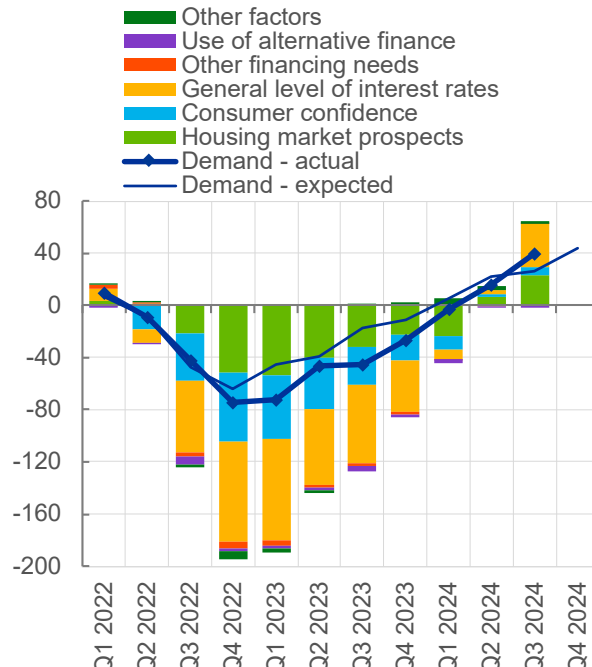


Source: ECB (BLS).

Notes: "Other factors" refer to further factors which were mentioned by banks as having contributed to changes in credit standards. The latest observations are for Q3 2024 for backward-looking series and Q4 2024 for forward-looking series.

## Changes in demand for housing loans

(net percentages)



Source: ECB (BLS). Notes: "Other financing needs" is the average of "debt refinancing/restructuring and renegotiation" and "regulatory and fiscal regime of housing markets". "Use of alternative finance" is the average of "internal finance of house purchase out of savings/down payment", "loans from other banks" and "other sources of external finance". The latest observations are for Q3 2024 for backward-looking series and Q4 2024 for forward-looking series.