EUROPEAN CENTRAL BANK

EUROSYSTEM

Outlook for the euro area economy

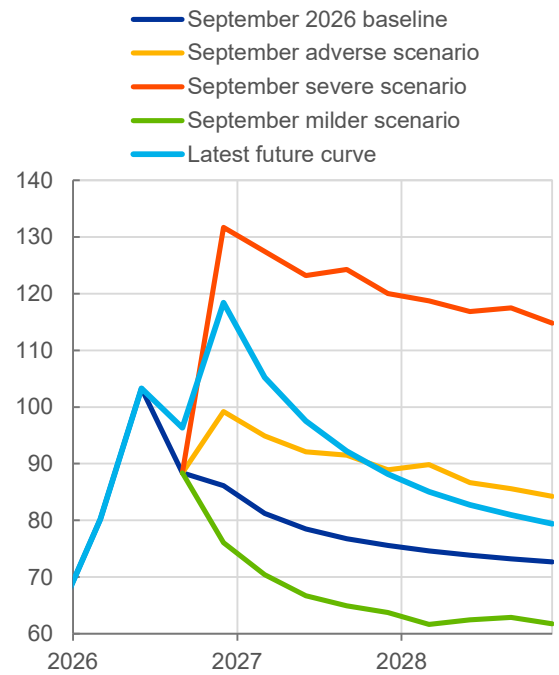
Background slides for Federal Reserve Bank of San Francisco Economic Research Symposium on AI and the economy

San Francisco, 30 October 2026

Philip R. Lane
Member of the Executive Board

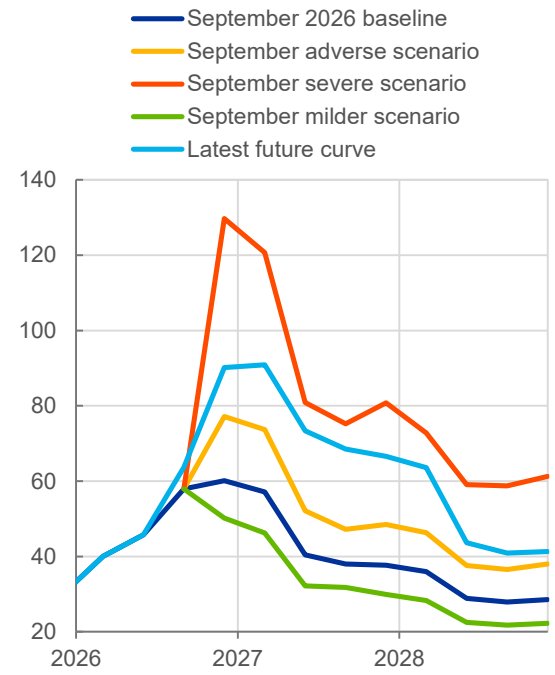
Outlook and scenarios for energy commodity prices

Oil prices
(USD per barrel)



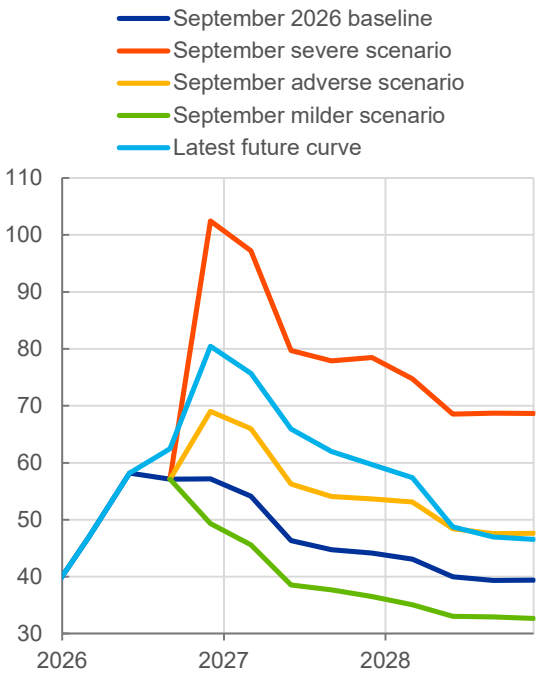
Sources: Refinitiv and ECB staff calculations.
Notes: Projections are based on physical prices for the current month. Cut-off for the September 2026 baseline is 19 August 2026. September scenarios are based on percentiles as at 19 August 2026. The latest future curve is also averaged over ten business days. The latest observations are for 29 October 2026.

Gas prices
(EUR/MWh)



Sources: Refinitiv and ECB staff calculations.
Notes: Projections are based on day-ahead prices for the current month. Cut-off for the September 2026 baseline is 19 August 2026. September scenarios are based on percentiles as at 19 August 2026. The latest future curve is also averaged over ten business days. The latest observations are for 29 October 2026.

Synthetic energy commodity price index (SECPI)
(USD index)



Sources: Refinitiv and ECB staff calculations.
Notes: SECPI (a synthetic energy commodity price index) is computed as a weighted average of oil and gas prices. Projections are based on spot prices for the current month. Cut-off for the September 2026 baseline is 19 August 2026. September scenarios are based on percentiles as at 19 August 2026. The latest future curve is also averaged over ten business days. The latest observations are for 29 October 2026.

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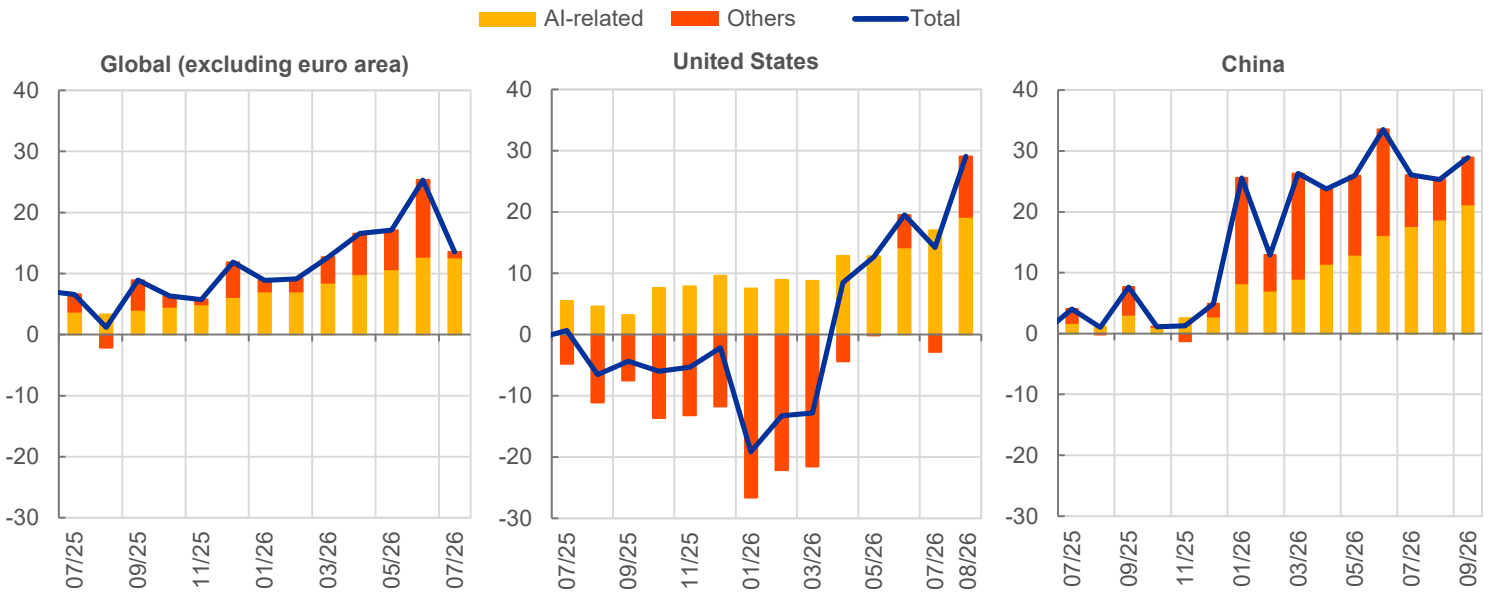
Role of AI in import growth

Goods imports by component

(annual percentage changes, percentage points)



Sources: Trade Data Monitor and ECB staff calculations.
Notes: "AI-related" goods reflect a basket of goods related to the construction and operation of AI data centres as defined by Emter et al. (2026) following Waugh (2026). Data are in nominal terms. The latest observations are for July 2026 for global imports excluding the euro area, August 2026 for the United States and September 2026 for China.

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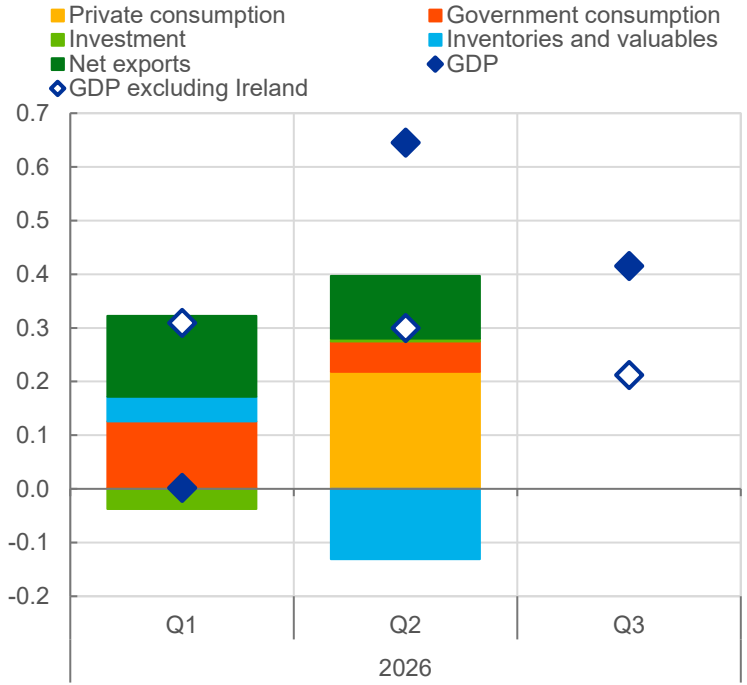
Short-term growth outlook

GDP growth and components

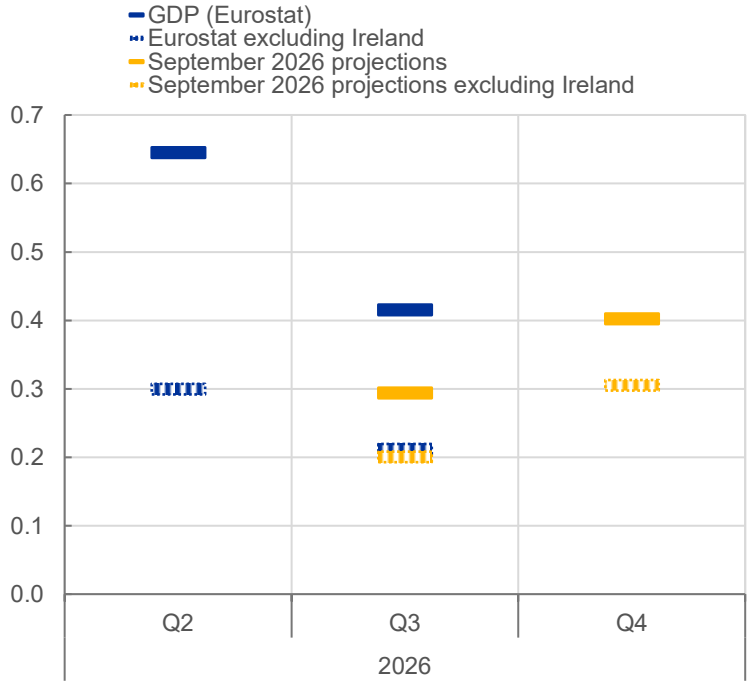
(quarter-on-quarter percentage changes and percentage points)



Sources: Eurostat and ECB staff calculations.
Notes: The expenditure breakdown excludes Ireland. The latest observations are for the third quarter of 2026 for GDP.

GDP estimates

(quarter-on-quarter percentage changes)



Sources: Eurostat, September 2026 ECB staff macroeconomic projections, ECB and ECB staff calculations.
Note: The latest observations are for the third quarter of 2026 for GDP.

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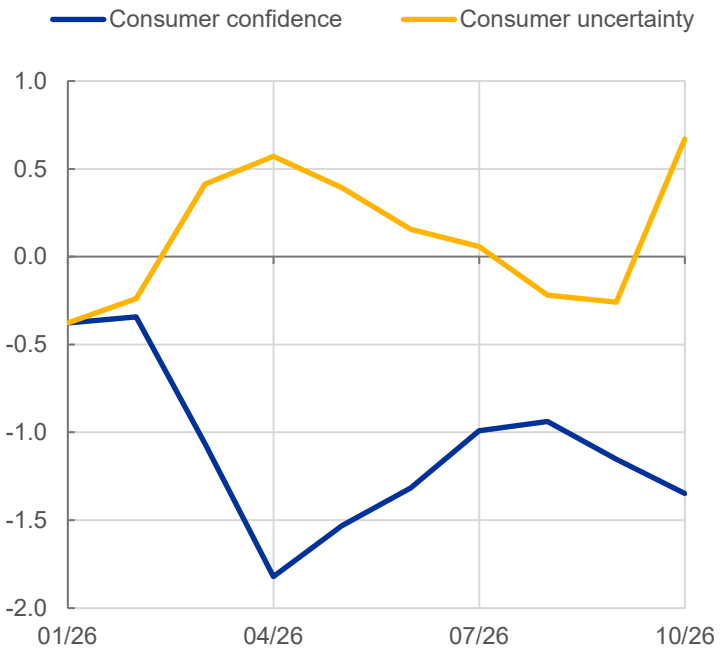
Households – private consumption and housing investment

Expectations of households
(standardised net balances)



Sources: European Commission DG-ECFIN (Economic and Financial Affairs) and ECB calculations.
Notes: Confidence and uncertainty are standardised over 1999-2026 and 2019-2026. The latest observations are for October 2026. The INSEE consumer confidence indicator for France fell to a historical low in October.

Housing investment dashboard
(low-high percentiles, unless otherwise indicated)

	2023	2024	2025	2026	Last percentile
Housing investment					10
Composite building output					59
Demand limiting production (low-high)					45
Building permits					77
Housing transactions					78
Housing as a good investment					61
Housing loan growth					54
Mortgage costs (low-high)					59

Sources: Eurostat, European Commission (EC) DG-ECFIN, ECB Consumer Expectations Survey and MFIs (monetary financial institutions). Notes: Housing investment, building output and building permits are two-quarter moving averages. Demand limiting production is the EC factor limiting production. Loan growth is year-on-year MFI lending growth and mortgage costs are MFI costs for house purchases. The latest observations are for the second quarter of 2026 for housing investment and transactions, August 2026 for building output, June 2026 for building permits, August 2026 for loan growth and mortgage costs, and September 2026 for the remaining indicators.

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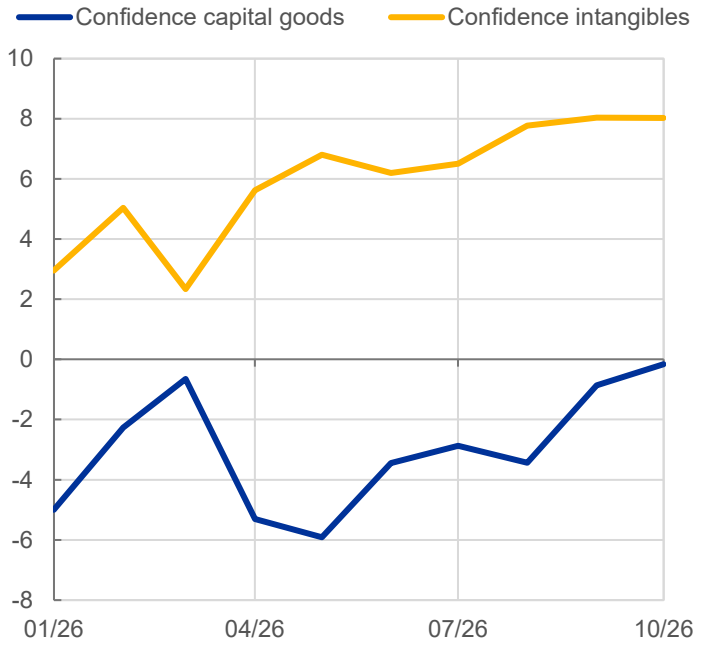
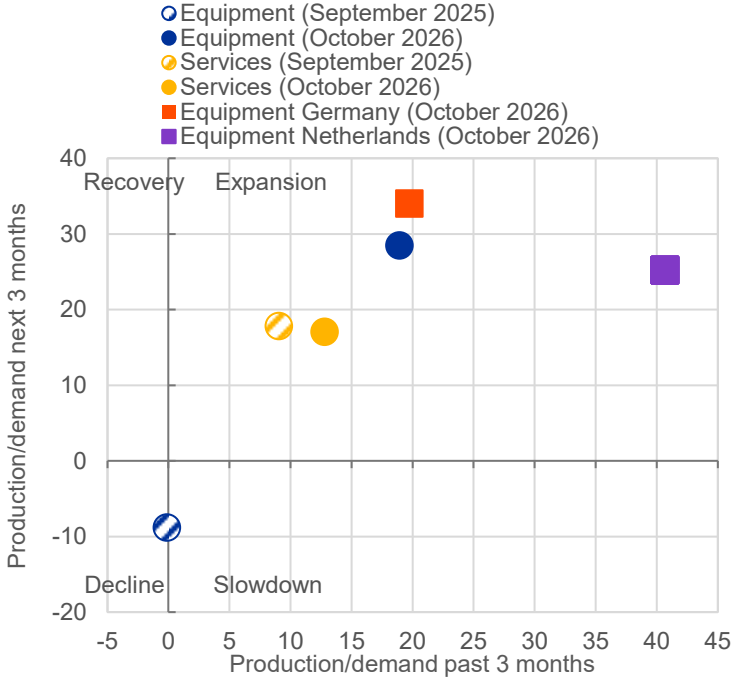
Business investment

Confidence indicators for business investment
(percentage balances)



Sources: European Commission DG-ECFIN (Economic and Financial Affairs) and ECB staff calculations.
Notes: Intangible confidence is the weighted average of confidence in the following NACE (statistical classification of economic activities) subgroups of the core digital and media economy sectors: publishing activities (NACE J58), computer programming and consultancy (NACE J62), and information service activities (NACE J63). The latest observations are for October 2026.

Short-term indicators on computer production and computer services demand
(percentage balances)



Sources: European Commission, DG-ECFIN (Economic and Financial Affairs) and ECB staff calculations.
Notes: Equipment refers to computer, electronic and optical products (C26 in the statistical classification of economic activities – NACE); services refers to computer programming, consultancy and related activities (NACE J62). The latest observations for past and expected production/demand are for October 2026.

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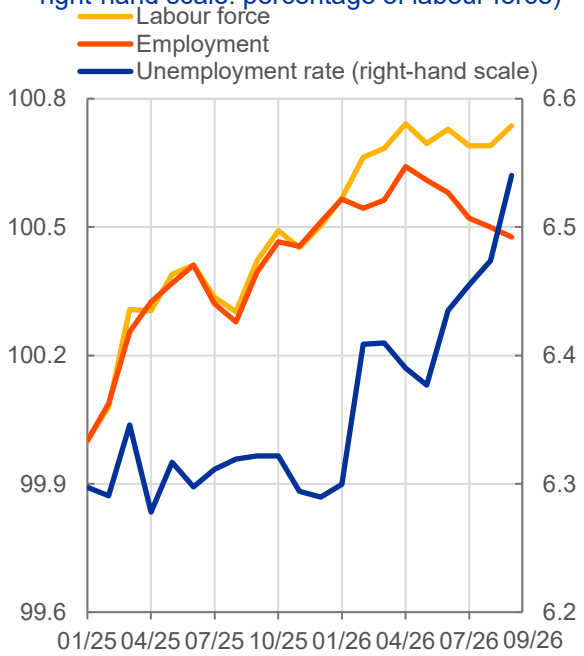
Labour market developments

Unemployment rate, employment and the labour force

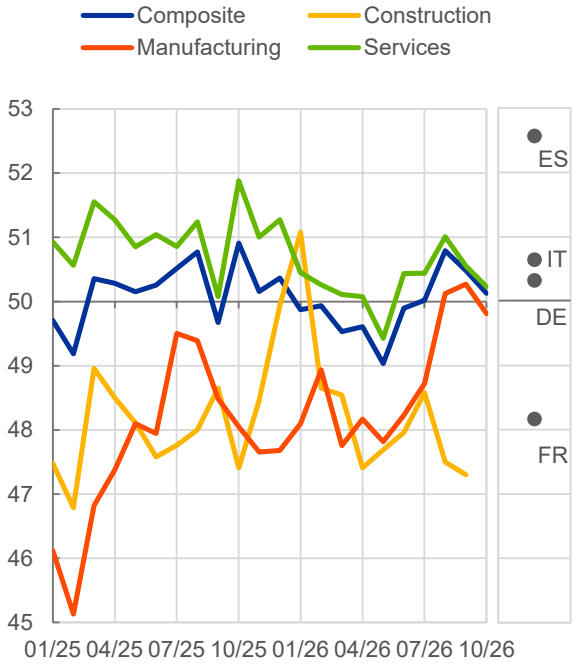
(left-hand scale: January 2025 = 100; right-hand scale: percentage of labour force)



Sources: Eurostat labour force survey main indicators and ECB calculations.
Note: The latest observations are for September 2026.

PMI employment

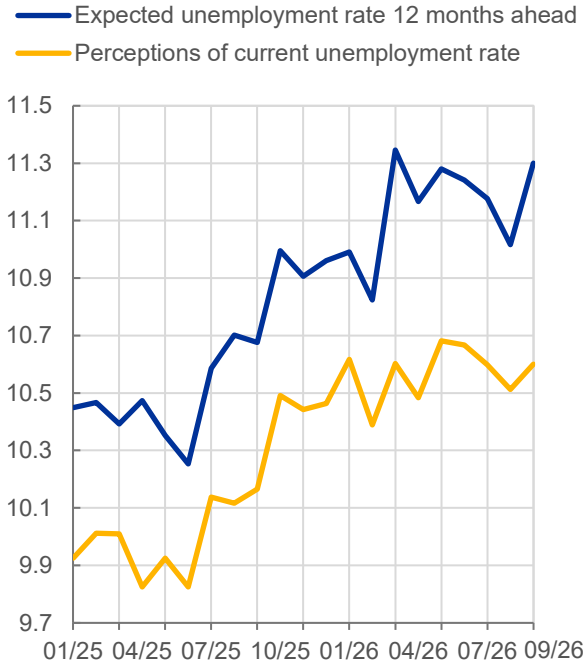
(diffusion index)



Source: S&P Global Purchasing Managers' Index (PMI).
Note: The latest observations are for October 2026, and for September 2026 for construction, Italy and Spain.

Unemployment perceptions and expectations

(percentages)



Sources: ECB Consumer Expectations Survey and ECB calculations.
Note: The latest observations are for September 2026.

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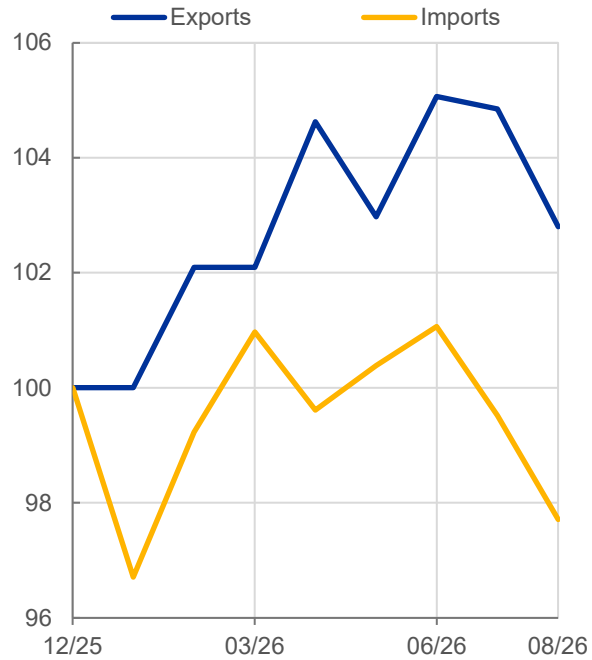
Euro area exports

Exports and imports of goods

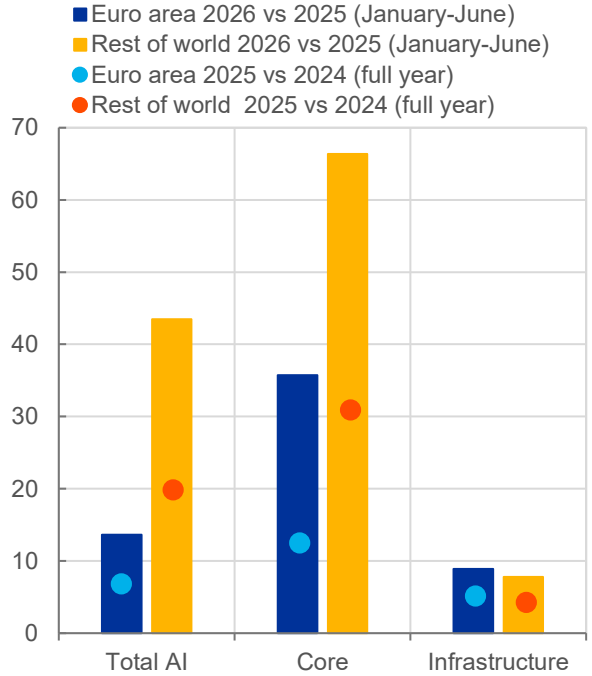
(index, December 2025 = 100)



Sources: Eurostat and ECB staff calculations.
Notes: Extra-euro area trade. As export and import volume data for August are not available, the latest data point is approximated by deflating August values with industrial export and import prices, respectively. The underlying data are seasonally adjusted. The latest observations are for August 2026.

Export value growth of AI-related goods by use

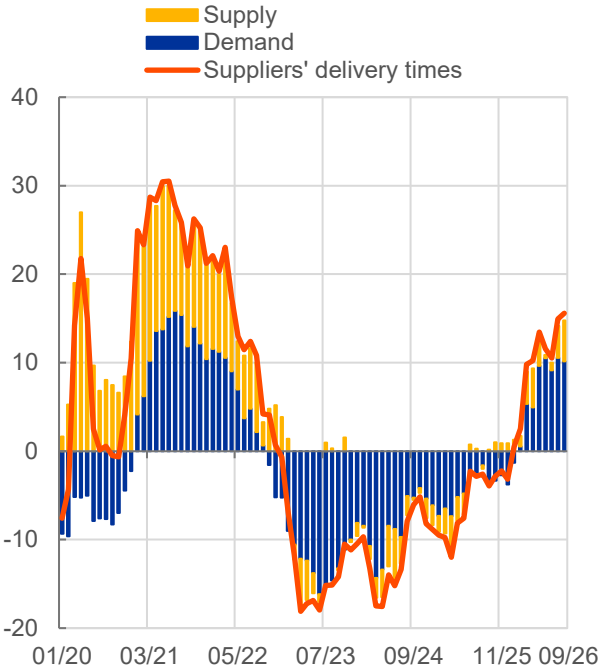
(percentages)



Sources: Eurostat, Trade Data Monitor and ECB staff calculations.
Notes: Based on Emter et al. (2026), who use an LLM (large language model) following Waugh (2026) method to identify (i) core data centre goods, (ii) data centre infrastructure as well as (iii) upstream AI goods and (iv) broad industrial goods used in AI production. The latter are not shown due to their small size. The latest observations are for June 2026.

Decomposition of technology suppliers' delivery times

(PMI points, difference from baseline)



Sources: S&P Global Purchasing Managers' Index (PMI) and ECB staff calculations.
Notes: Bars show the median contributions of demand (+,+) and supply (+,−) shocks estimated from a two-variable Bayesian vector autoregression with new export orders and suppliers' delivery times, six lags, and impact sign restrictions. The latest observations are for September 2026.

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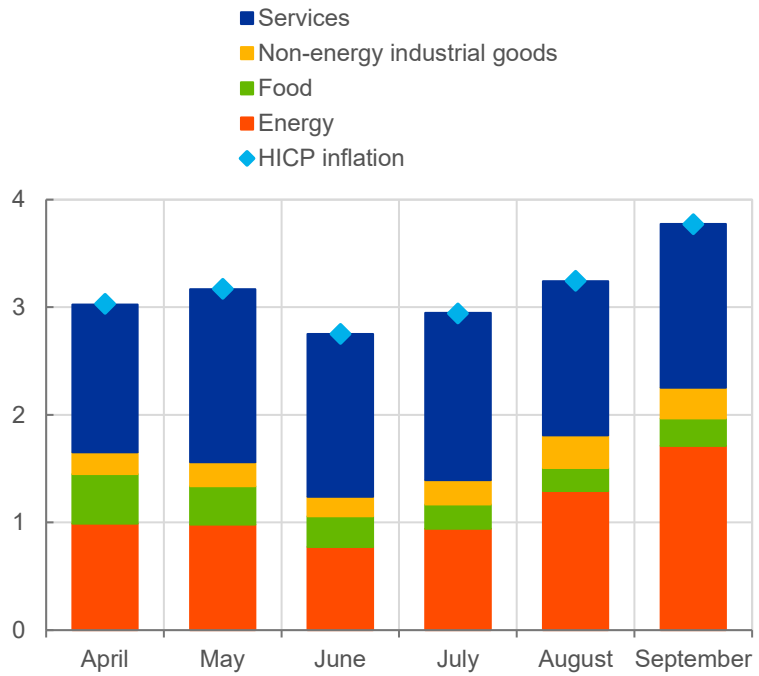
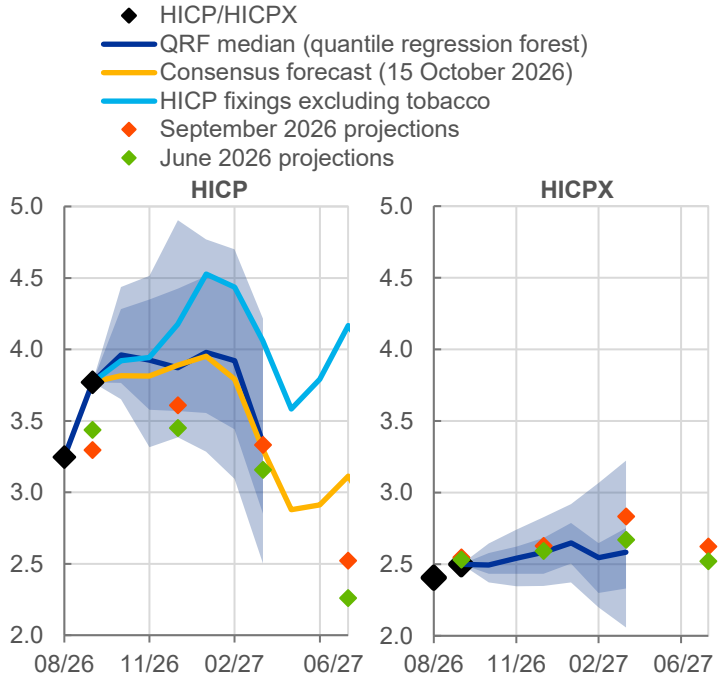
Recent inflation developments and short-term outlook

Headline inflation and main components
(annual percentage changes, percentage point contributions)



Sources: Eurostat and ECB calculations.
Note: The latest observations are for September 2026.

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



Sources: Eurostat, September 2026 ECB staff macroeconomic projections, Consensus Economics and ECB calculations.
Notes: QRF estimated on 27 October 2026 with 80% of September data available, for details see Lenza et al. (2025). Light (dark) shaded areas denote the QRF 5-95 (16-84) range. Cut-off for the QRF and for the inflation fixings excluding tobacco is 26 October 2026. The latest observations are for September 2026.

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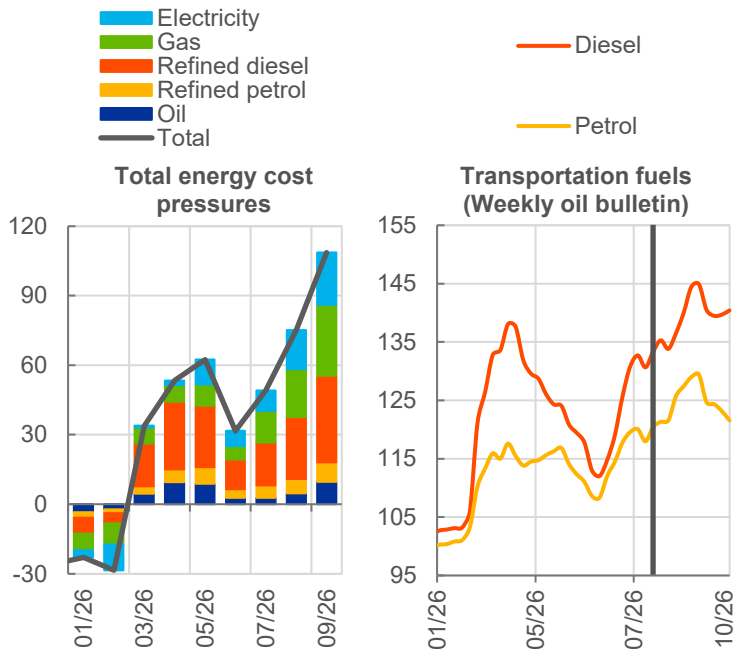
Energy and food inflation

Fuel prices and total energy costs index

(left panel: annual percentage changes, percentage point contributions; right right: index, 2025=100)

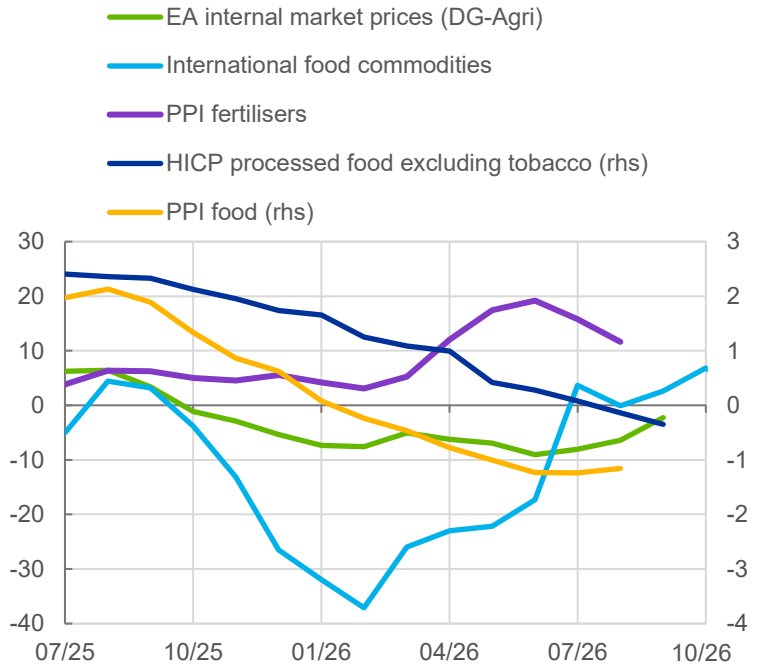


Sources: Eurostat, LSEG (London Stock Exchange Group), WOB (Weekly oil bulletin) and ECB calculations.

Notes: Left-hand panel: contributions of oil, gas and electricity to EU final energy consumption are used as weights for the total energy cost index. Weights are kept fixed after 2024. Right-hand panel: vertical line on 19 August 2026 (NIPE cut-off). The latest observations are for the week of 26 October 2026 for WOB and September 2026 for the total energy cost index.

Pipeline pressures for food

(annual percentage changes)



Sources: HWWI (Hamburg Institute for International Economics), Eurostat and ECB calculations.

Notes: PPI stands for Producer Price Index. The latest observations are for September 2026 for the DG-Agri (European Commission Directorate-General for Agriculture and Rural Development) and HICP, October 2026 for international food commodities and August 2026 for the remaining measures.

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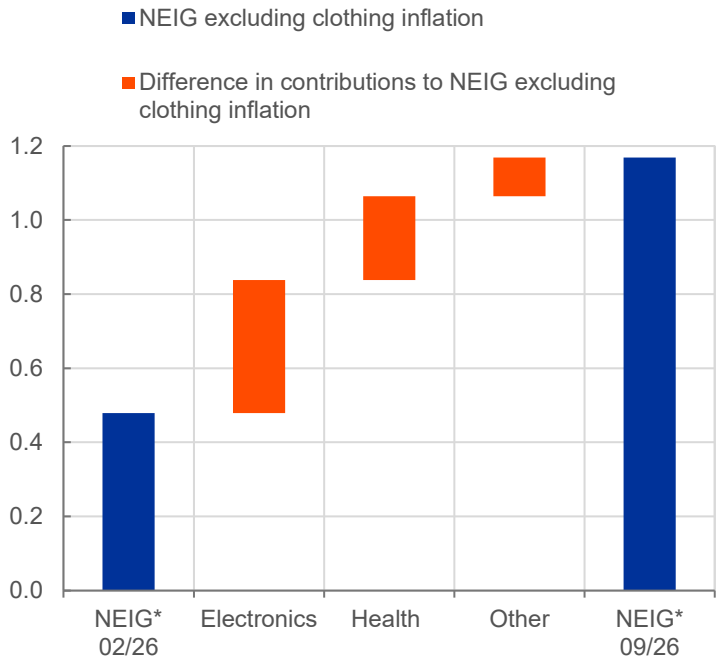
Goods and services inflation

Decomposition of inflation in goods excluding clothing

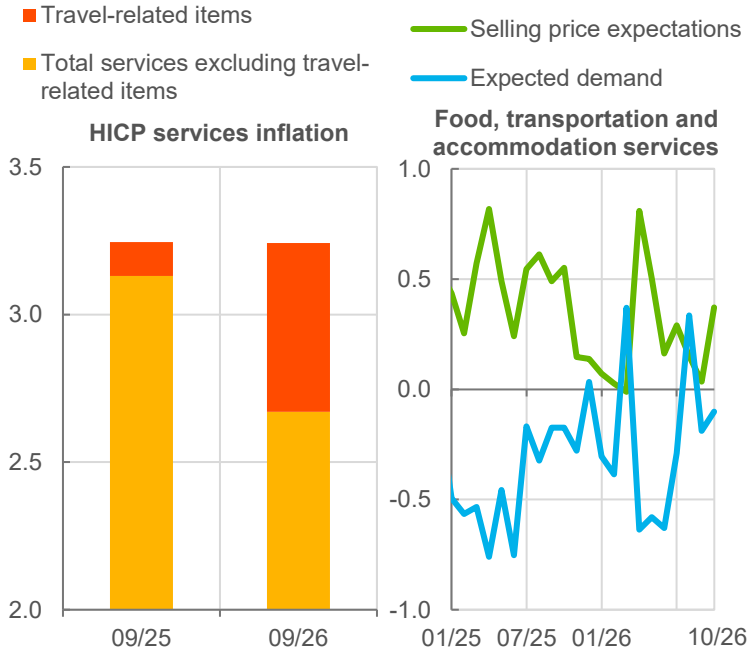
(annual percentage changes, percentage point contributions)



Sources: Eurostat, and ECB calculations.
Notes: NEIG* refers to NEIG (non-energy industrial goods) excluding clothing items. The blue bars refer to the NEIG* inflation level in February and September 2026. The red bars show the difference of the contributions to NEIG* inflation from three categories of items between these two dates. The latest observations are for September 2026.

Services inflation and surveys on tourism

(left panel: annual percentage changes, percentage point contributions; right panel: standard deviations)



Sources: Eurostat, EC (European Commission) and ECB calculations.
Notes: EC expected demand and selling price expectations are for the aggregates of food, transportation, and accommodation services (Economic Bulletin 2025/1, Section 2) and are expressed as standardised deviations from their historical averages. The latest observations are for September 2026 for services and October 2026 for remaining measures.

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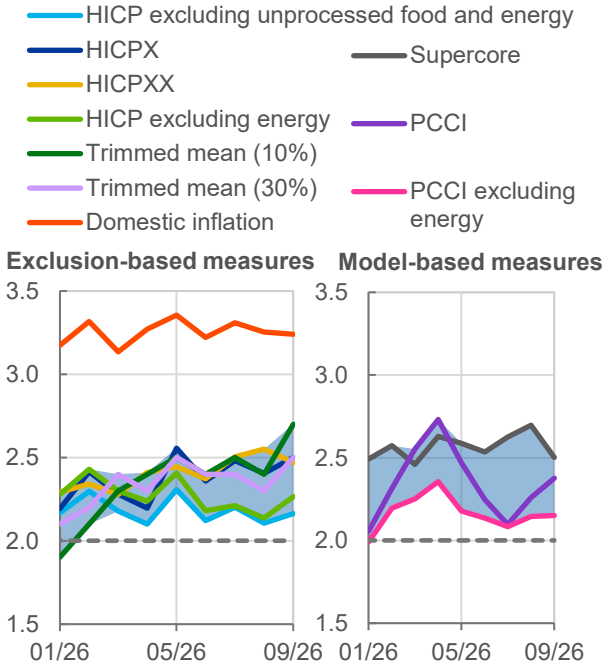
Underlying inflation, indirect and second-round effects

Measures of underlying inflation

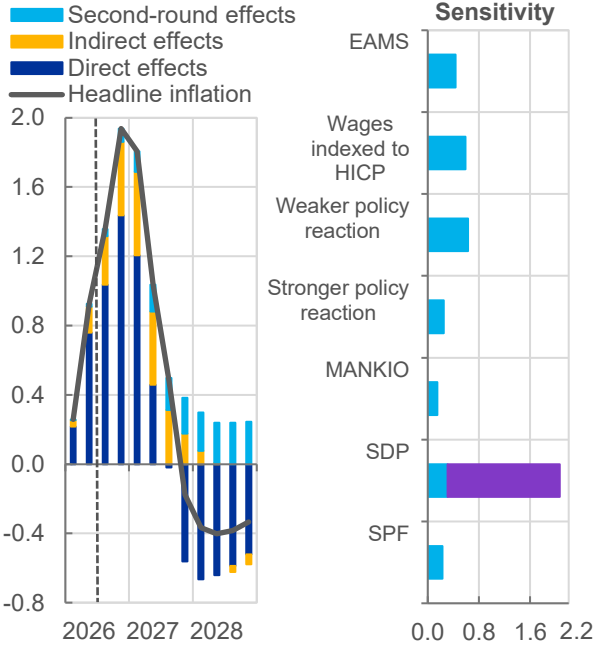
(annual percentage changes)



Sources: Eurostat, and ECB calculations.
Notes: PCCI stands for persistent common component of inflation. HICPX stands for HICP excluding energy and food. HICPXX stands for HICP excluding energy, food, clothing and footwear, and travel related items. The latest observations are for September 2026.

Multi-sector model estimates

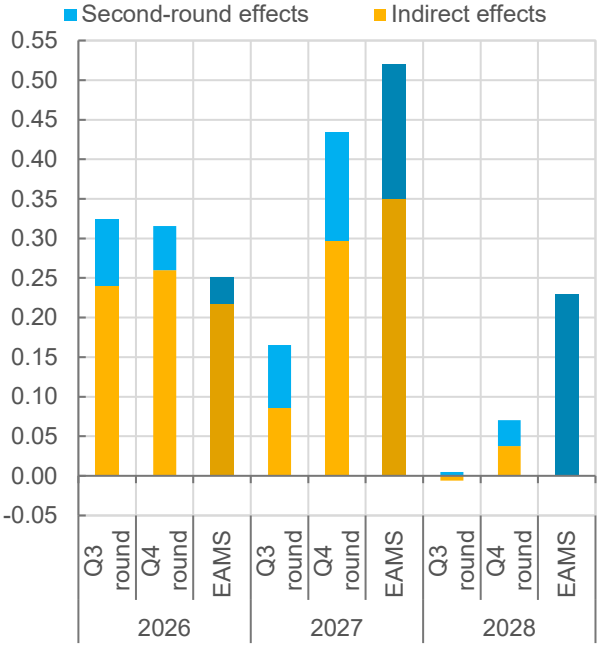
(left panel: annual percentage changes, percentage points; right panel: cumulative contributions in percentage points)



Sources: September 2026 ECB staff macroeconomic projections, ECB SPF (Survey of Professional Forecasters), and ECB calculations.
Notes: EAMS (Multi-sector production network model), MANKIO (Multi-Agent New Keynesian Input-Output model) and SDP (State-dependent pricing model, as in Ghassibe and Nakov (2025)). The purple bar reflects the non-linear amplification of second-round effects in SDP. The latest observations are for the second quarter of 2026 for import and producer prices, and the fourth quarter of 2026 for SPF.

Survey of Professional Fore-casters and multi-sector model

(percentage point contributions)



Sources: ECB SPF (Survey of Professional Forecasters), and ECB calculations.
Notes: EAMS (Multi-sector production network model) are shown with darker colours and estimated using the September 2026 ECB staff macroeconomic projections. Both the SPF and the EAMS are for the calendar years. The latest observations are for the second quarter of 2026 for import and producer prices used in the EAMS, and the fourth quarter of 2026 for SPF.

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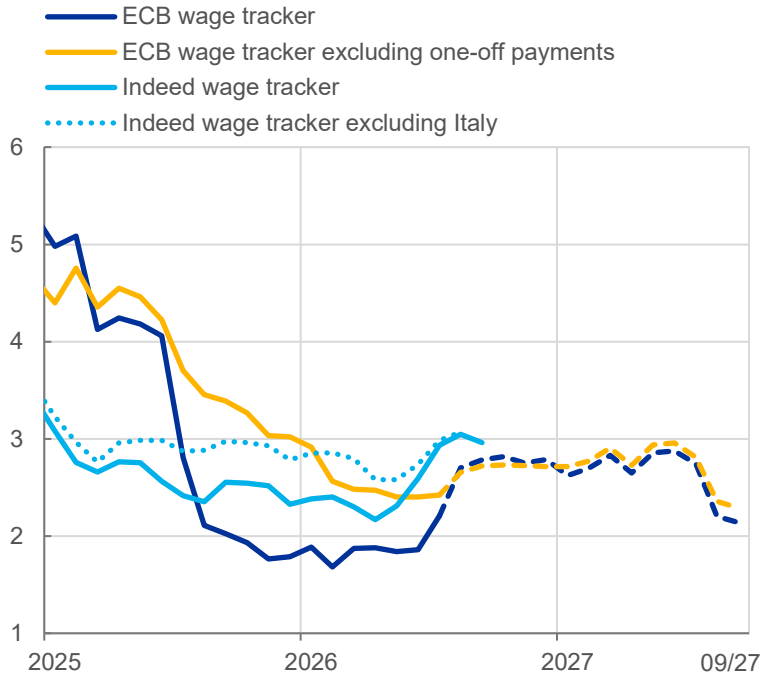
Wage growth and wage growth expectations

ECB wage tracker and Indeed wage tracker

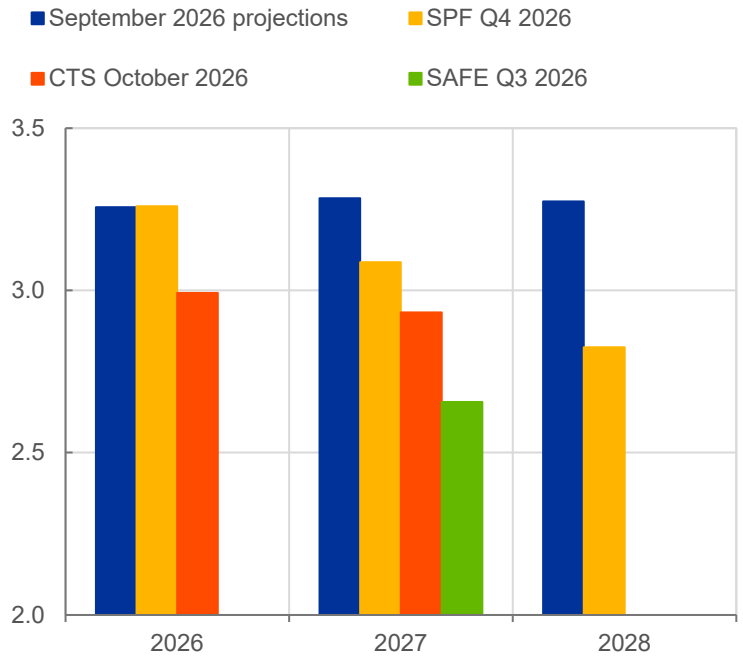
(annual percentage changes)



Sources: ECB wage tracker and Indeed wage tracker.
Notes: The dashed lines denote forward-looking information. The latest observations are for September 2026 for the Indeed wage tracker and for September 2027 for the ECB wage tracker. The increase in the Indeed tracker since early 2026 is driven primarily by Italy, reflecting methodological improvements related to the EU Pay Transparency Directive.

Survey-based wage expectations

(annual percentage changes)



Sources: Eurostat, September 2026 ECB staff macroeconomic projections, CTS (Corporate Telephone Survey), SPF (Survey of Professional Forecasters) and SAFE (Survey on the Access to Finance of Enterprises).
Notes: The SAFE survey asks about the 12-month-ahead wage growth expectations, while all the other surveys are for calendar years. SAFE wage growth expectations for the third quarter are shown only for firms included in both the second and third quarter rounds. The latest observations are for the third quarter of 2026 for SAFE and for the fourth quarter of 2026 (October) for SPF and CTS.

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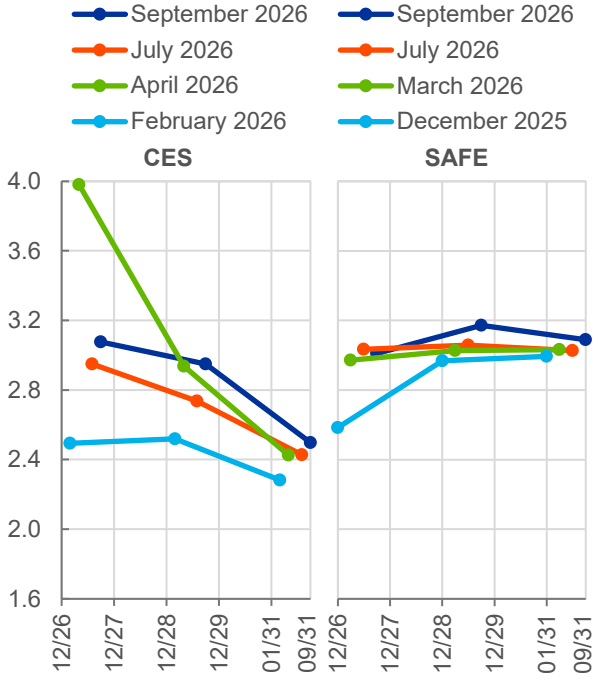
Inflation expectations

Inflation expectations of consumers and firms

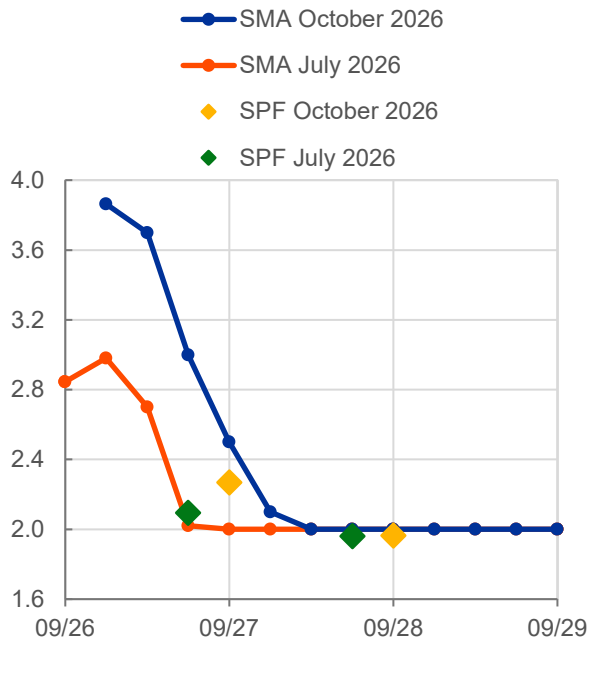
(annual percentage changes)



Sources: ECB CES (Consumer Expectations Survey) and SAFE (Survey on the Access to Finance of Enterprises). Notes: Consumer and firm inflation expectations refer to one, three and five-years ahead. SAFE inflation expectations for July and September 2026 are shown only for firms included in both the second and third quarter rounds. The latest observations are for September 2026 for CES and the third quarter of 2026 for SAFE.

SMA and SPF inflation expectations

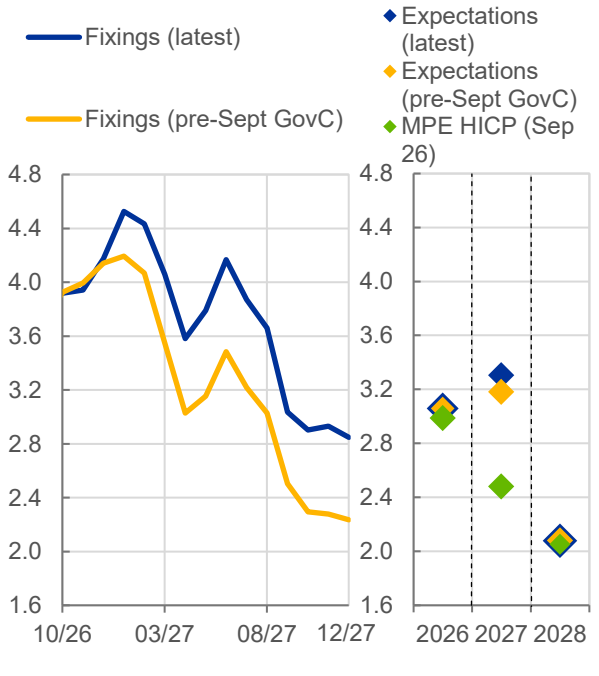
(annual percentage changes)



Sources: SMA (Survey of Monetary Analysts), SPF (Survey of Professional Forecasters) and ECB calculations.
Notes: Mean inflation expectations for SPF and the median for SMA. The latest observations are for October 2026.

Market-implied monthly path and annual averages of HICPxT inflation

(percentages per annum)



Sources: Bloomberg, LSEG, ECB projections database and ECB calculations. Notes: Monthly inflation paths from inflation fixing contracts referring to HICPxT. Calendar year forecasts based on (B)MPE projections, and the average inflation expectation components from three term structure models: 1) JSZ; 2) JSZ with bias correction (Burban et. al, 2021 for both); and 3) Grønlund, Jørgensen and Schupp (2024). "Pre-Sept GovC" refers to 9 September 2026. The latest observations are for 26 October 2026.

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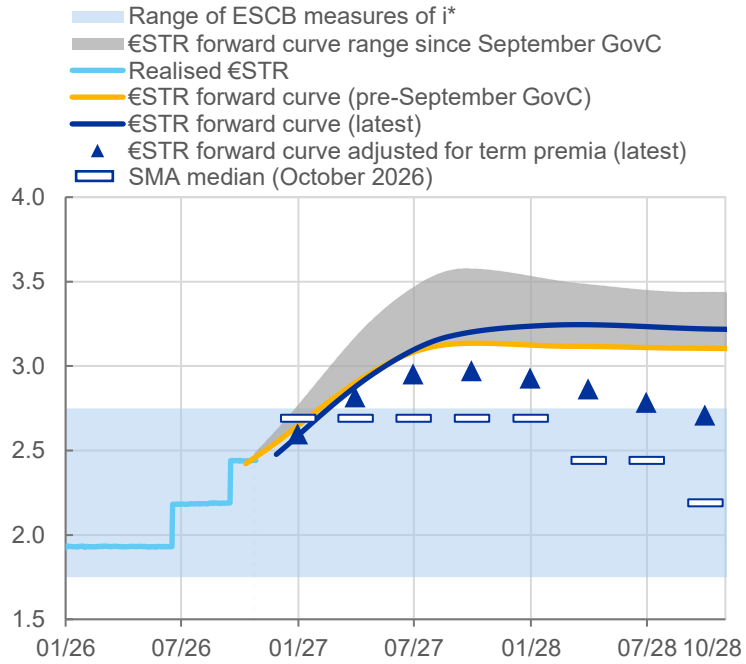
€STR forward curve and expectations for the deposit facility rate (DFR)

€STR forward curve and survey-based expectations for the deposit facility rate

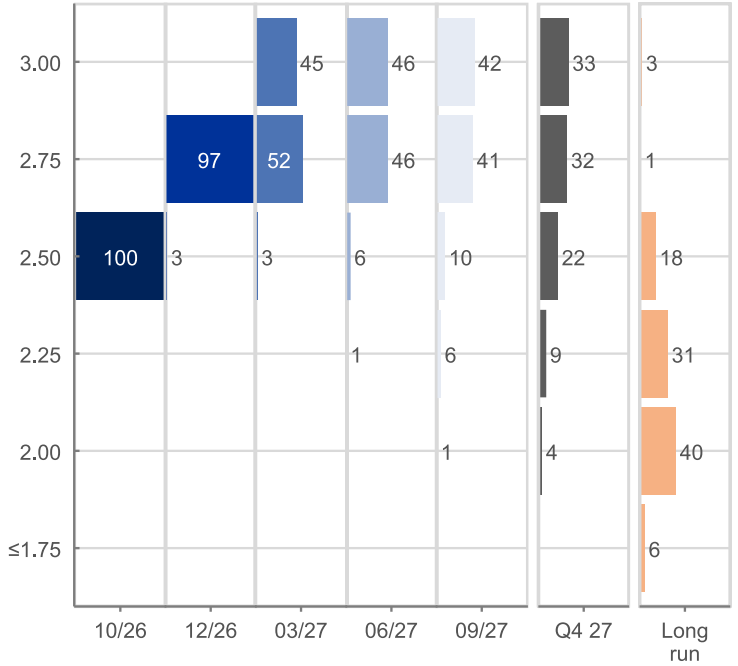
(percentages per annum)



Sources: London Stock Exchange Group, SMA and ECB calculations. Notes: Bars depict median responses to the October SMA on future DFR expectations. Surveys are adjusted for the latest €STR vs. DFR spread. Model estimates of the term premia are based on two affine term structure models (both variations of Joslin et al. (2011)), and a lower bound term structure model following Geiger and Schupp (2018). The range for the (nominal) equilibrium rate i* (1.75% to 2.75% in the third quarter of 2026) is based on Eurosystem estimates updated in October 2026 (Economic Bulletin 2025/1, Box 8). "Pre-September GovC" refers to 9 September 2026. The latest observations are for 26 October 2026.

Expected DFR level at selected Governing Council meetings

(percentage of respondents)

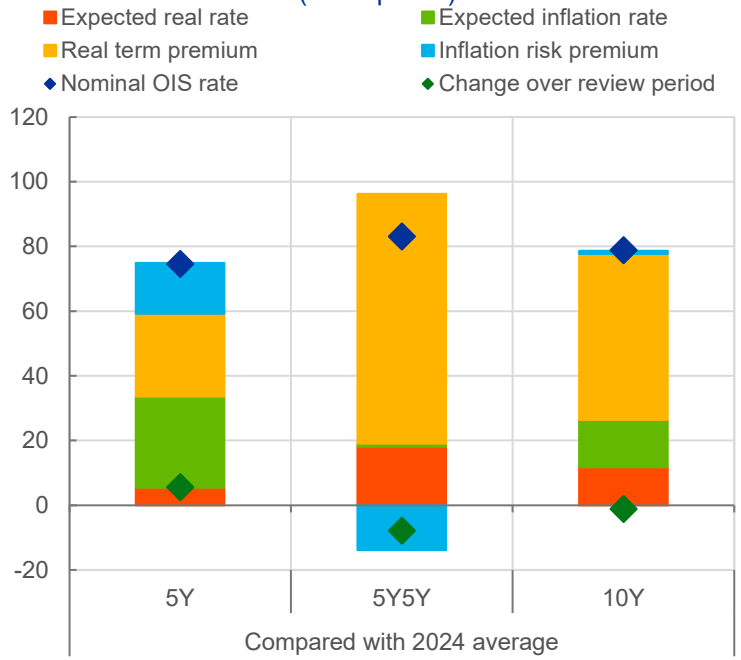


Source: ECB Survey of Monetary Analysts (SMA).
Notes: Total response counts for all projection horizons are as follows: 69 up to the fourth quarter of 2027 and 67 for the long-term outlook. Percentages may not sum to 100%. The latest observations are for October 2026.

Long-term risk-free rates and drivers

Decomposition of changes in euro area OIS rates

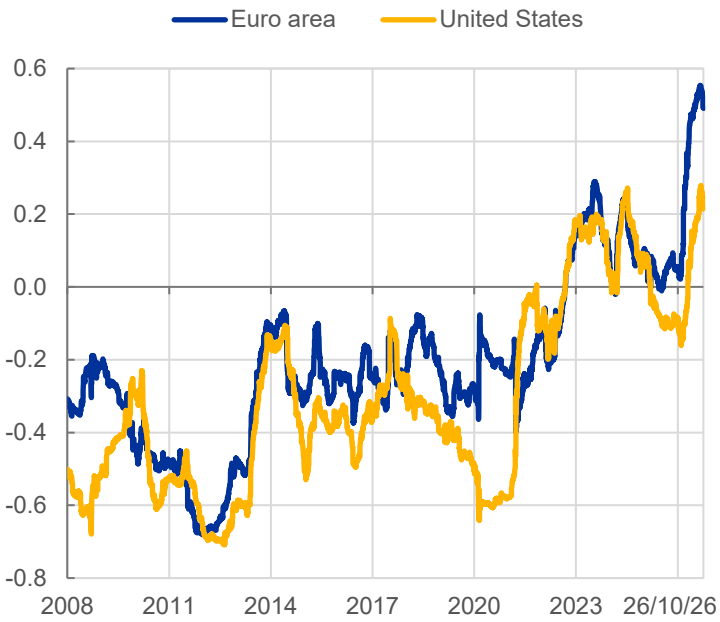
(basis points)



Sources: LSEG, Bloomberg and ECB calculations.
Notes: Real term premia (rate expectations) are nominal term premia (rate expectations) minus inflation risk premia (inflation expectations). Nominal components from three models: two variants of Joslin et al. (2011), one based on Geiger and Schupp (2018). Inflation components come from two Joslin et al. (2011)-type affine term structure models estimated on ILS rates unadjusted for the indexation lag (see Burban et al., 2022). OIS stands for Overnight Index Swap, ILS stands for Inflation-Linked Swap. The latest observations are for 26 October 2026.

1-year rolling stock-bond correlation coefficient

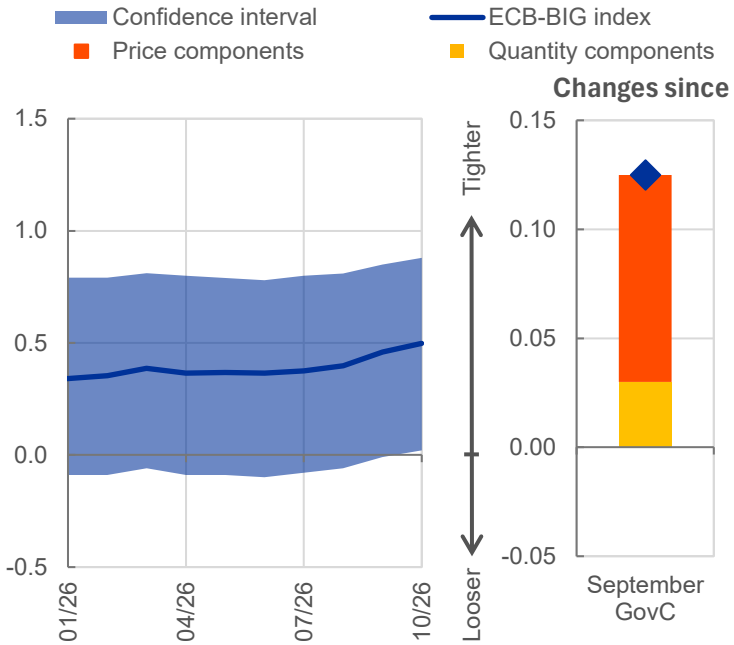
(correlation coefficient)



Sources: LSEG (London Stock Exchange Group), Bloomberg and ECB calculations.
Notes: The correlation is computed using daily returns in bond and stock indices. Indices are the EUROSTOXX and 10-year OIS for euro area, S&P 500 and US 10-year treasury for United States. The latest observations are for 26 October 2026.

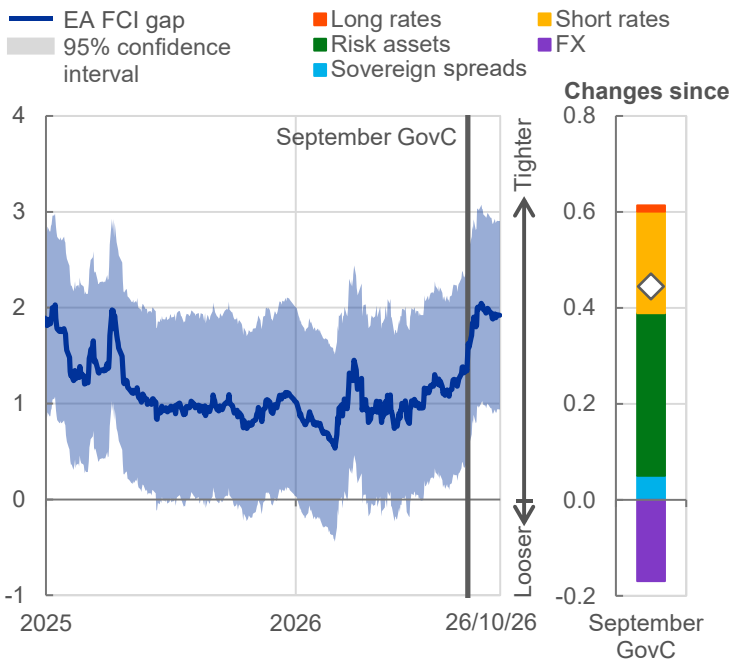
Financing and financial conditions

Financing conditions according to the ECB-BIG
(index)



Sources: ECB (projections database), ECB calculations and Allayioti, Di Casola and Magistretti (2026). Notes: Bayesian vector autoregression (BVAR) model with mixed-frequency. "Price components": lending rates and MF FCI; "Quantity components": credit volumes and BLS. 90% confidence. "Changes since September GovC": changes between current nowcast for October and nowcast for September as of September GovC. The latest observations are for October 2026.

Financial conditions
(index)



Sources: Bletzinger, T., Martorana, G. and Mistak, J. (2026) and ECB calculations. Notes: The Macro-Finance FCI (Financial conditions index) is shown as a gap from the neutral long-run mean, which is the value to which the index converges once domestic inflation is at target and the output gap is closed. Short (long) rates contribution contains the €STR and 1-year-in-1-year real rate (10-year OIS and 5-year real rates). The bands reflect parameter estimation uncertainty. The latest observations are for 26 October 2026.

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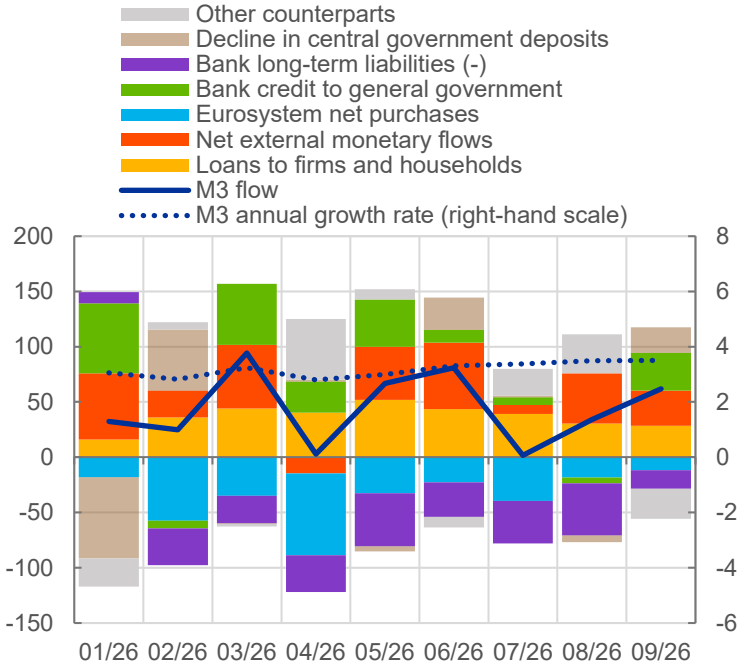
Monetary aggregates and bank funding costs

Sources of money creation

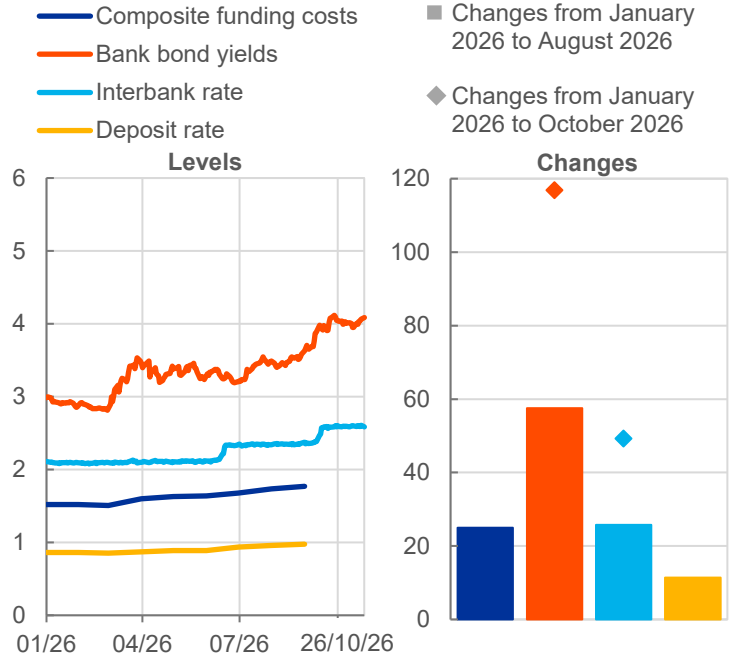
(left-hand scale: average monthly flows in EUR bn; right-hand scale: annual percentage changes)



Sources: ECB (BSI (balance sheet items)) and ECB calculations.
Note: The latest observations are for September 2026.

Bank funding costs

(left panel: percentages per annum; right panel: basis points)

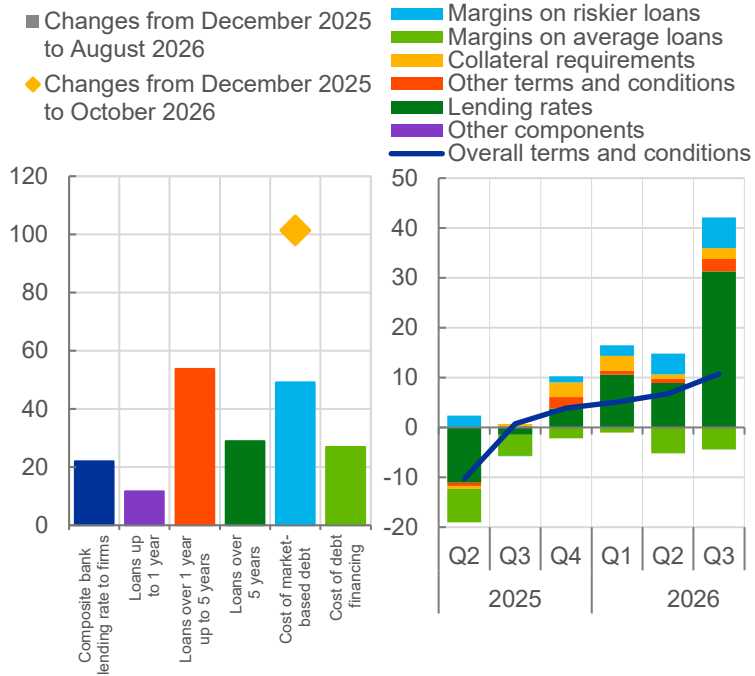


Sources: ECB (BSI, MIR (MFI interest rates), CSDB (Centralised securities database), MMSR (Money market statistical reporting database)), S&P Dow Jones Indices (iBoxx) and ECB calculations. Notes: Composite funding costs are computed by weighing rates on new business costs of each component by outstanding amounts. For the "Composite funding costs" and "Deposit rates". The latest observations are for August 2026 for monthly data and for 26 October 2026 for daily rates.

Lending rates and terms and conditions for loans

Lending rates and BLS terms and conditions for firms

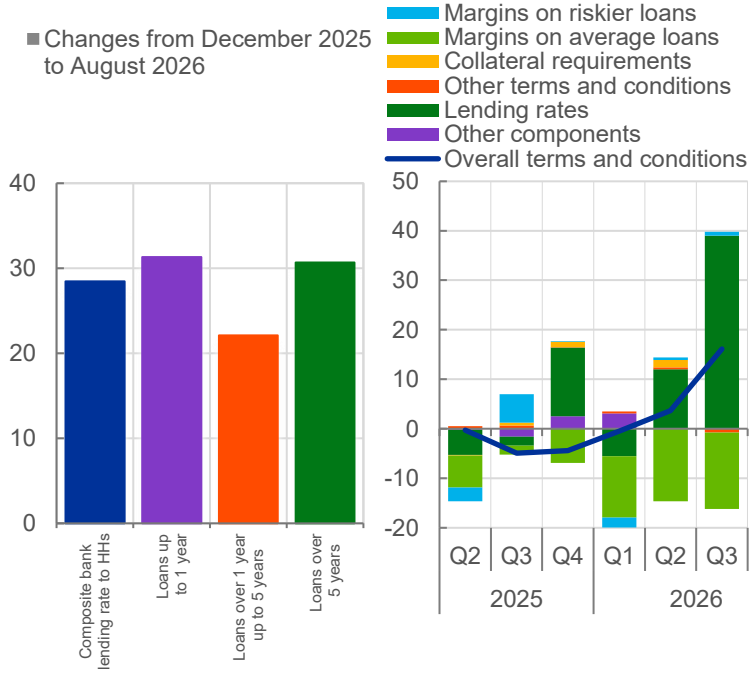
(left panel: basis points; right panel: net percentages)



Sources: Bank of America Merrill Lynch, ECB (MIR (MFI interest rates), BLS (Bank Lending Survey), projections database) and ECB calculations.
Notes: "Composite bank lending rate" aggregates short and long-term rates of new business volumes (24-month moving average). The latest observations are for August 2026 for MIR, the third quarter of 2026 for BLS and 26 October 2026 for cost of market-based debt and debt financing.

Lending rates and BLS terms and conditions for housing loans

(left panel: basis points; right panel: net percentages)

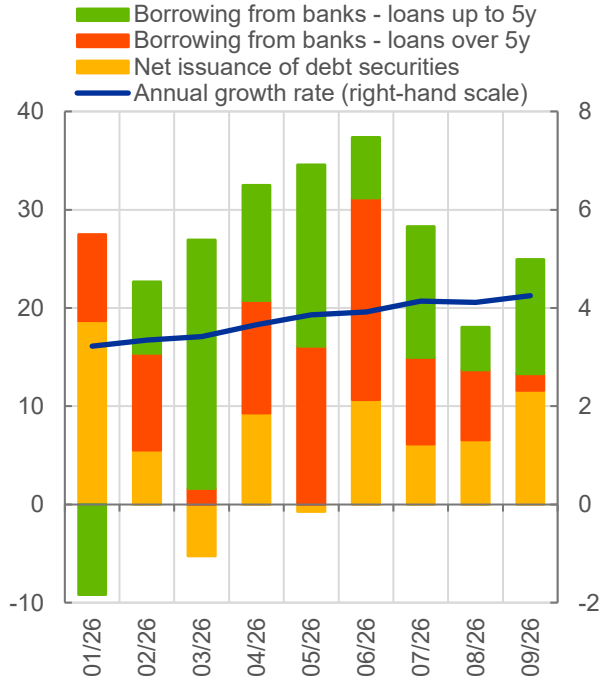


Sources: ECB (MIR, BLS (Bank Lending Survey), Financial Market Data, Composite Indicator of Systemic Stress), S&P Global, Check24, MutuiSupermarket, Idealista, Hypotheker and ECB calculations.
Notes: "Composite bank lending rate" aggregates short and long-term rates of new business volumes (24-month moving average). The latest observations are for August 2026 for MIR and the third quarter of 2026 for BLS.

Debt financing of firms

Total borrowing by firms

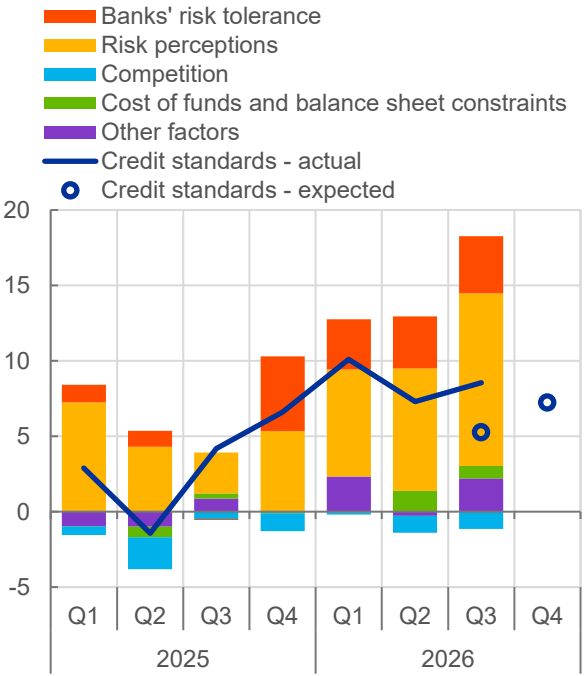
(left-hand scale: average monthly flows in EUR bn; right-hand scale: annual percentage changes)



Sources: ECB (BSI (Balance Sheet Items), CSEC (CSDB-derived securities issues statistics)) and ECB calculations.
Notes: The seasonal adjustment for debt securities is not official. Bank loans are adjusted for sales, securitisation and cash pooling. The latest observations are for September 2026.

Changes in credit standards for loans to firms

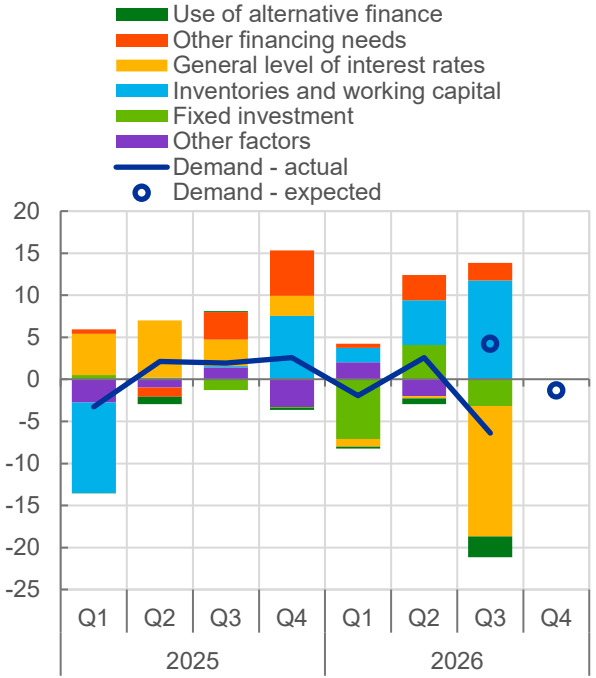
(net percentages of banks reporting a tightening)



Source: ECB (BLS (Bank Lending Survey)).
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 the third quarter of 2026 (past) and the fourth quarter of 2026 (expected).

Changes in demand for loans to firms

(net percentages of banks reporting an increase)



Source: ECB (BLS).
Notes: "Other financing needs": average of "M&A and corp. restructuring" and "debt refinancing/restructuring and renegotiation". "Use of alternative finance": average of internal financing, loans from other banks and non-banks, and debt and equity market financing. The latest observations are for the third quarter of 2026 (past) and the fourth quarter of 2026 (expected).

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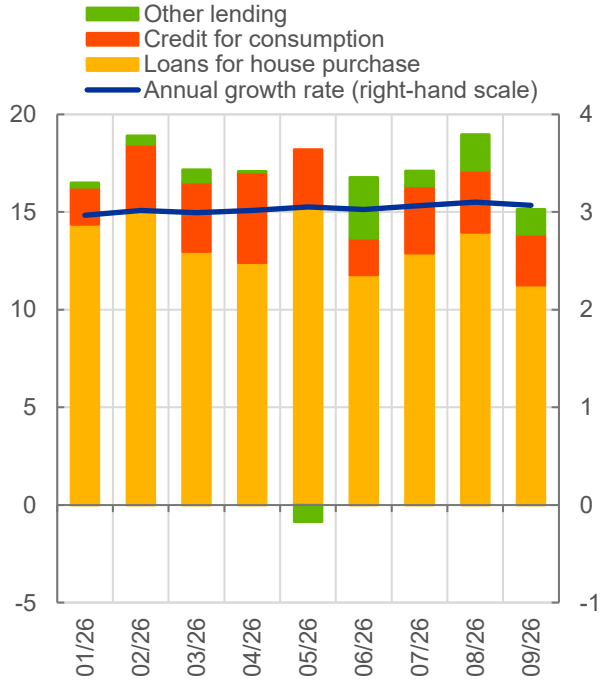
Loans to households

Loans to households

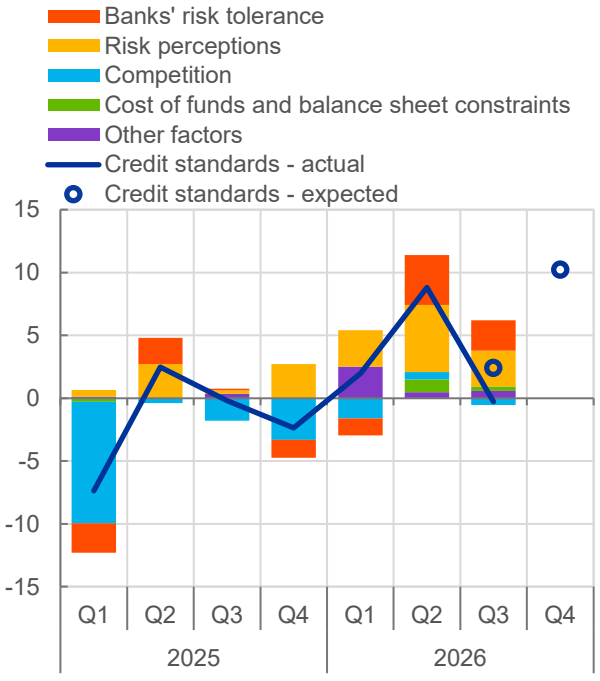
(left-hand scale: average monthly flows in EUR bn; right-hand scale: annual percentage changes)



Sources: ECB (BSI (balance sheet items)) and ECB calculations.
Notes: Bank loans adjusted for sales and securitisation and seasonally adjusted. The latest observations are for September 2026.

Changes in credit standards for housing loans

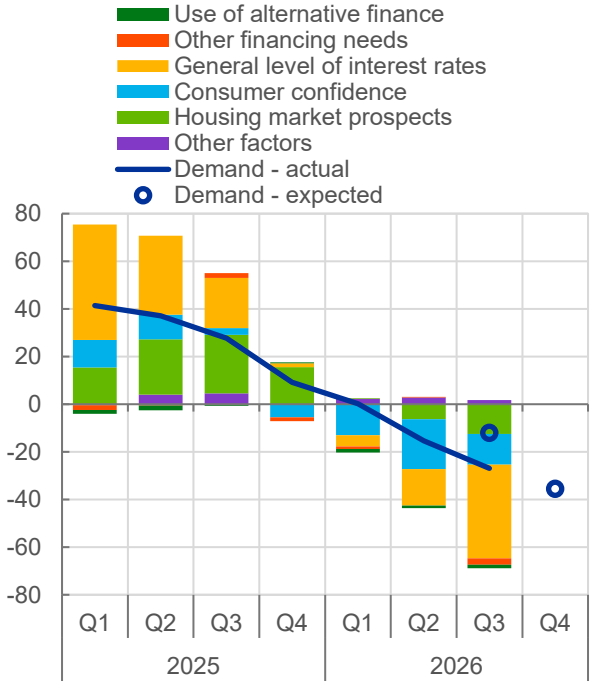
(net percentages of banks reporting a tightening)



Source: ECB (BLS (Bank Lending Survey)).
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 the third quarter of 2026 (past) and the fourth quarter of 2026 (expected).

Changes in demand for housing loans

(net percentages of banks reporting an increase)



Source: ECB (BLS (Bank Lending Survey)).
Notes: "Other financing needs": average of "regulatory and fiscal regime of housing markets" and "debt refinancing/restructuring and renegotiation". "Use of alternative finance": average of "internal financing", "loans from other banks", and "other sources of external finance". The latest observations are for the third quarter of 2026 (past) and the fourth quarter of 2026 (expected).

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