



EUROPEAN CENTRAL BANK

EUROSYSTEM

Interest rate analytics

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Member of the Executive Board

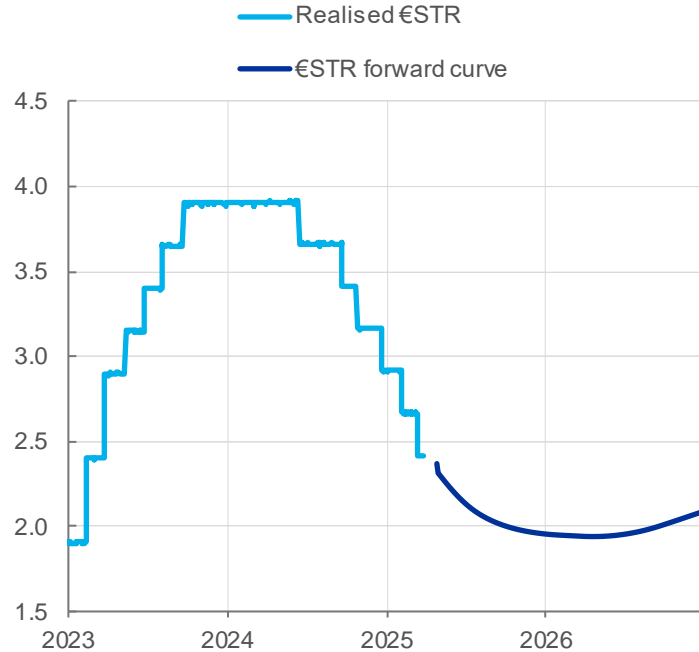
Euro area OIS rates and Eonia/€STR

(percentage per annum)

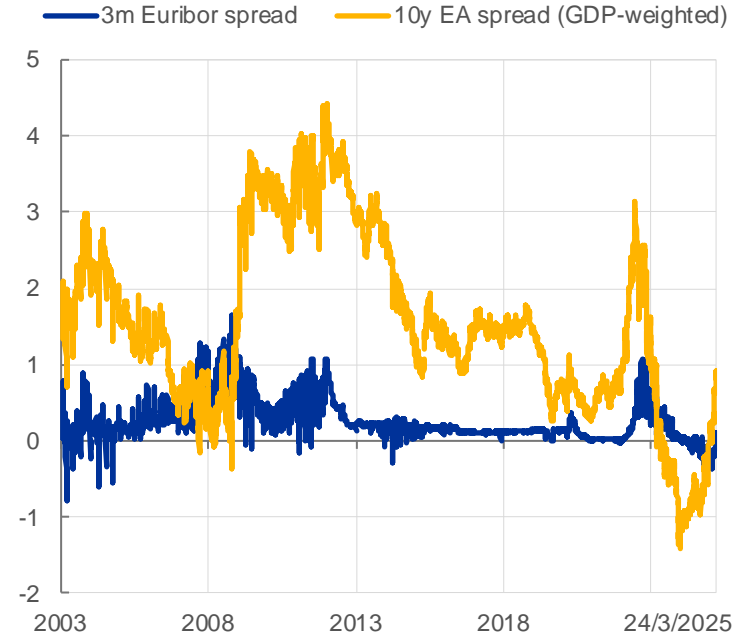


Source: Bloomberg and ECB calculations.
Last observation 24 March 2025.

€STR forward curve (percentages per annum)



3-month Euribor and 10-year GDP-weighted sovereign spread to Eonia/€STR (percentages per annum)

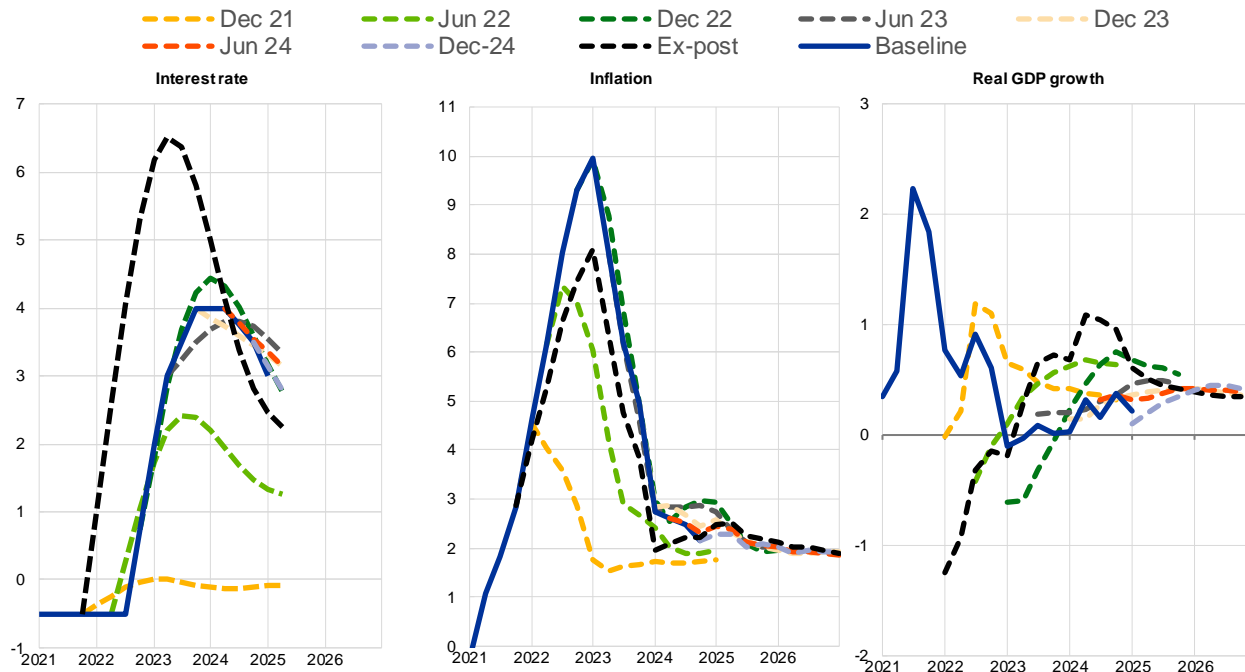


Sources: LSEG and ECB calculations.
Latest observation: 24 March 2025.

Sources: LSEG and ECB calculations.
Note: The chart displays the 3m Euribor and 10yEA GDP-weighted yield as a difference to Eonia/€STR.
Latest observation: 24 March 2025.

Optimal policy in real time and with hindsight

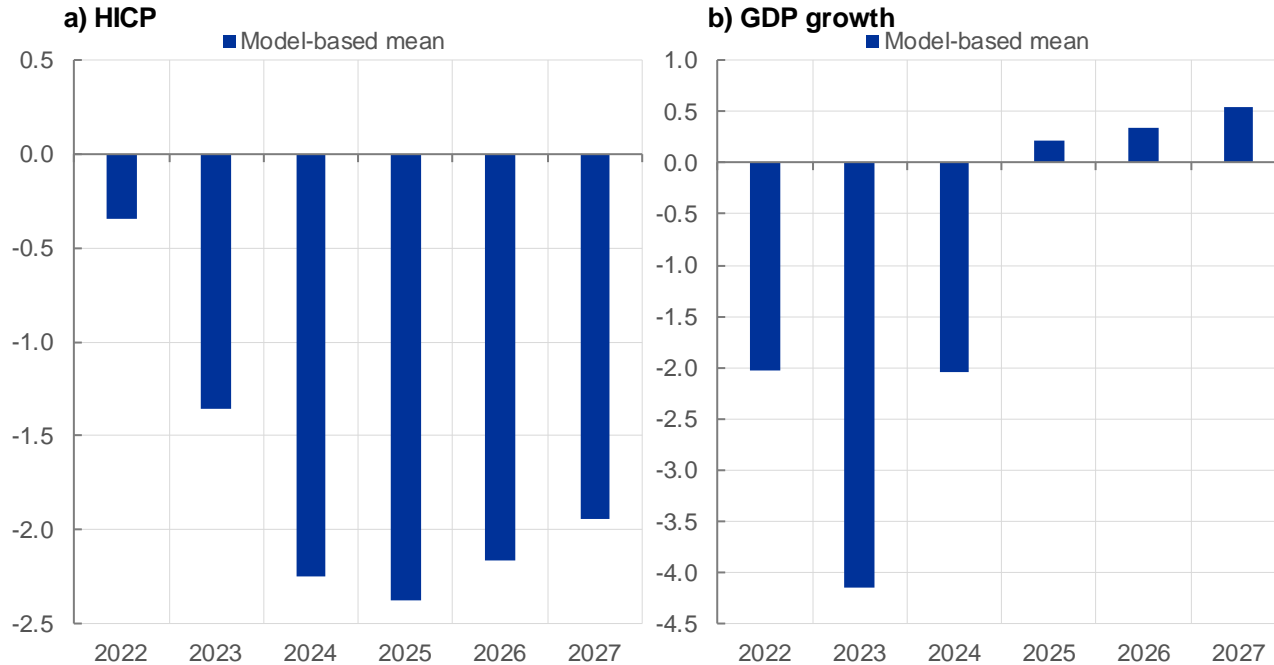
(left panel: percentages per annum; middle panel: annual percentage changes; right panel: quarterly percentage changes)



Source: The charts are an updated version of those shown in Lane, P.R. 2024. "The 2021-2022 inflation surges and the monetary policy response through the lens of macroeconomic models", Speech, SUERF Marjolin Lecture, 18th November. ECB calculations based on the MMR model (see Mazelis, F., Motto, R., Ristinieni, A. (2023), op. cit.) with the exercises documented in the Handbook on Inflation (Coenen, Mazelis, Motto, Ristinieni, Smets, Warne, Wouters (forthcoming)).

Notes: The optimal policy rate path simulations beyond the first quarter of 2025 are not shown for confidentiality reasons. "Actual" denotes historical data. The other dashed lines on the left graph are a sequence of optimal policy counterfactuals computed in real time at each projection vintage from the fourth quarter of 2021 to the fourth quarter of 2024. The "With hindsight" lines denote the optimal policy counterfactual computed in the fourth quarter of 2021 with the benefit of hindsight by assuming that the same information that we now have on subsequent inflation and output developments was already available in the fourth quarter of 2021. The middle and right panels show implied inflation and output growth respectively.

Impact of monetary policy tightening according to a suite of models (annual percentage changes)

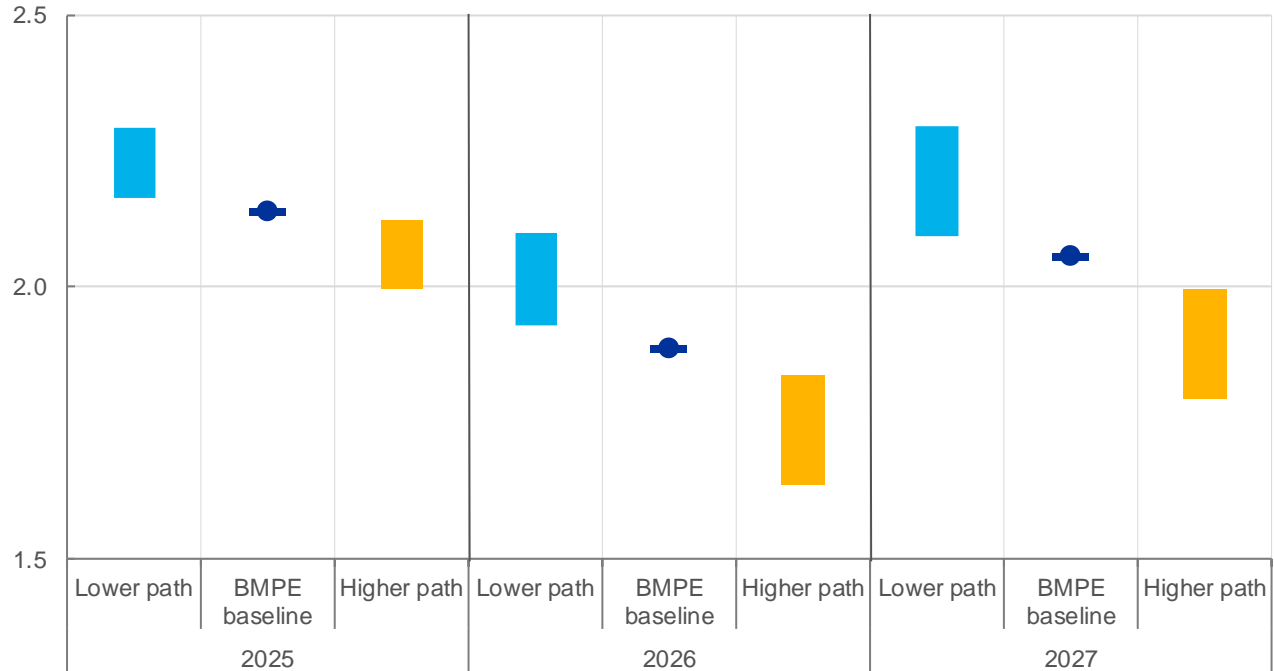


Sources: The charts are an updated version of those shown in Lane, P.R. 2024. "The 2021-2022 inflation surges and the monetary policy response through the lens of macroeconomic models", Speech, SUERF Marjolin Lecture, 18th November. ECB calculations based on the NAWM II model (see Coenen, G., Karadi, P., Schmidt, S., Warne, A. (2018), "The New Area-Wide Model II: an extended version of the ECB's micro-founded model for forecasting and policy analysis with a financial sector", Working Paper Series, No 2200, ECB, November), the MMR model (see Mazelis, F., Motto, R., Ristinieni, A. (2023), op. cit.) with the exercises documented in the Handbook on Inflation (Coenen, Mazelis, Motto, Ristinieni, Smets, Warne, Wouters (forthcoming)) and the ECB-BASE model (see Angelini, E., Bokan, N., Christoffel, K., Ciccarelli, M., Zimic, S. (2019), "Introducing ECB-BASE: The blueprint of the new ECB semi-structural model for the euro area", Working Paper Series, No 2315, ECB, September).

Notes: This chart reports the results of a simulation involving changes to short-term rate expectations between December 2021 and March 2025 and changes to expectations regarding the ECB's balance sheet between October 2021 (to account for anticipation) and September 2024. "Mean" denotes the average across six model variants. The latest observation is for 6 February 2025 for the underlying short rate expectations from MP-dated ESTR forward contracts.

Annual euro area inflation in the projections and under alternative policy paths based on information from December 2024

(annual percentage changes)



Sources: The charts are an updated version of Lane, P.R. 2025. Speech, ECB and its Watchers XXV 12 March. Eurosystem staff macroeconomic projections for the euro area, December 2024; ECB calculations using the New Area-Wide Model (Coenen, Karadi, Schmidt and Warne, 2019), the MMR model (Mazelis, Motto and Ristinemi, 2023), and the BASE model (Angelini, Bokan, Christoffel, Ciccarelli and Zimic, 2019).

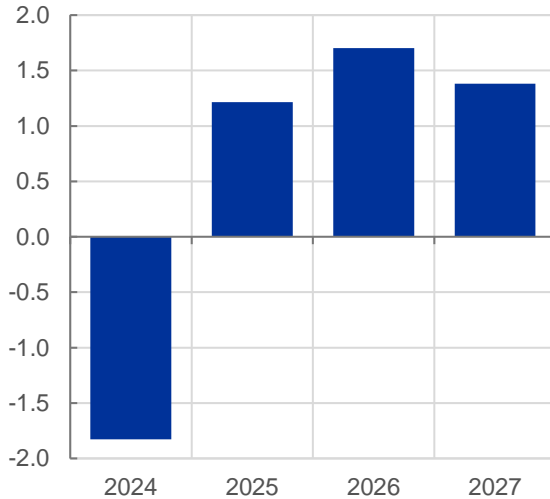
Notes: Circles represent the annual inflation forecasts from the December 2024 projections. Ranges are constructed from the minimum and maximum of annual inflation rates across the three different models.

Indicators of restrictiveness

Still-important rolling-off of super-cheap debt that was taken out in the “low for long” era that is now being refinanced at higher rates	Evolving contribution of quasi-exogenous influences on financing conditions (such as global upward pressure on term premia)	Dynamics of bond and equity risk premia
Transmission of easing since the peak of the hiking cycle	Evolution of credit standards in bank lending	Different timelines for market-based and bank-based transmission
Impact of the anticipation of future rate cuts on current financing conditions	Responsiveness of consumption and investment to shifting monetary conditions	Responsiveness of price setting to shifting monetary conditions

Note: See also Lane, P.R. 2025 “A middle path for ECB monetary policy”, Speech, Peterson Institute for International Economics (PIIE), 5 February.

Total investment projections (annual percentage changes)



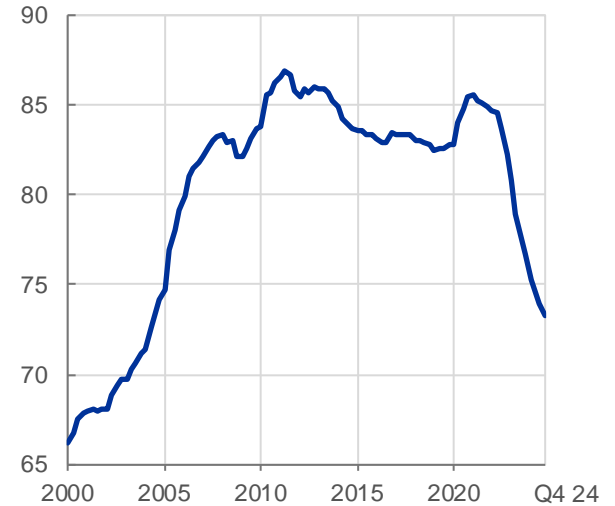
Source: March 2025 ECB staff macroeconomic projections for the euro area. See also Lane, P.R. 2025, background slides for remarks at conference “The ECB and its Watchers” XXV, 12 March.

Bank lending to euro area firms (outstanding amounts; percentages of GDP)



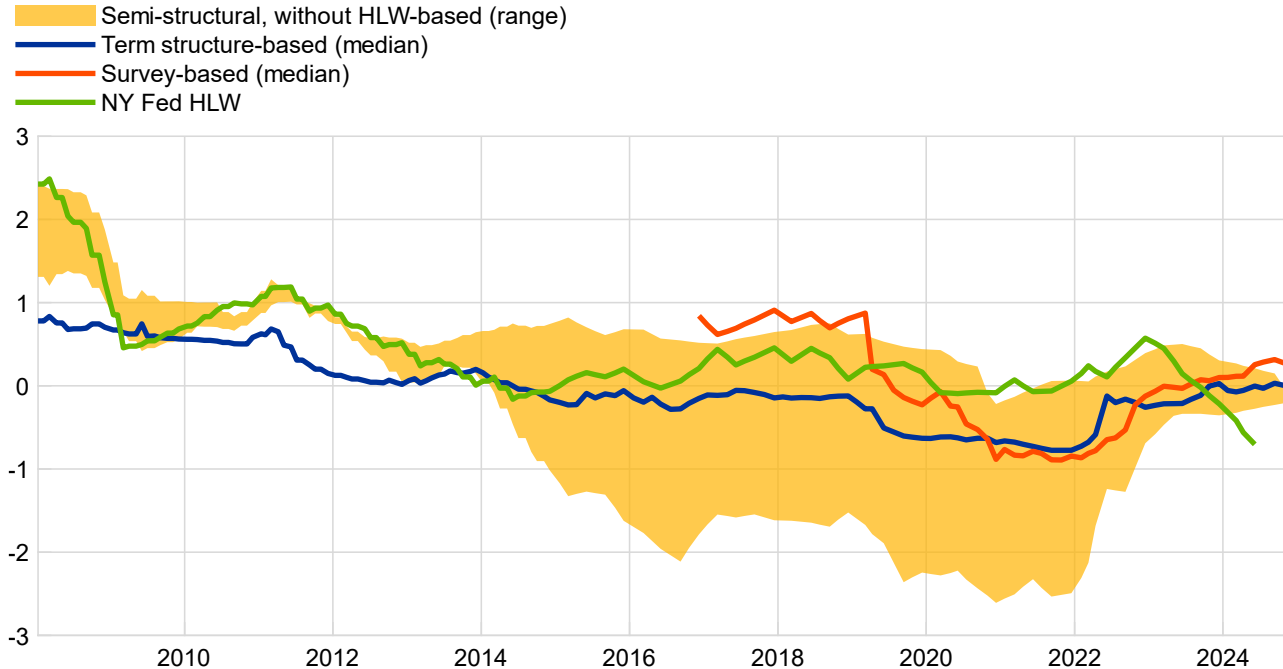
Sources: ECB, Eurostat and ECB calculations. See also Lane, P.R. 2025, background slides for remarks at conference “The ECB and its Watchers” XXV, 12 March. Notes: Loans are corrected for sales, securitisations and cash pooling. The latest observations are for the fourth quarter of 2024.

Bank lending to euro area households as a share of household disposable income (outstanding amounts; percentage of nominal gross disposable income)



Sources: ECB, Eurostat and ECB calculations. See also Lane, P.R. 2025, background slides for remarks at conference “The ECB and its Watchers”, 12 March. Notes: Loans are corrected for sales and securitisations. The latest observations are for the fourth quarter of 2024.

Real natural rates of interest in the euro area (percentages per annum)



Notes: A version of the chart was published in Brand, C., Lisack, N., Mazelis, F. "Natural rate estimates for the euro area: insights, uncertainties and shortcomings", Economic Bulletin, Box 8, Issue 1, ECB, 2025 that also describes details of the models.