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Member of the Executive Board

Monetary policy transmission in the euro area

Banque de France-CEPR-ECB Conference
Monetary Policy Challenges for European
Macroeconomies

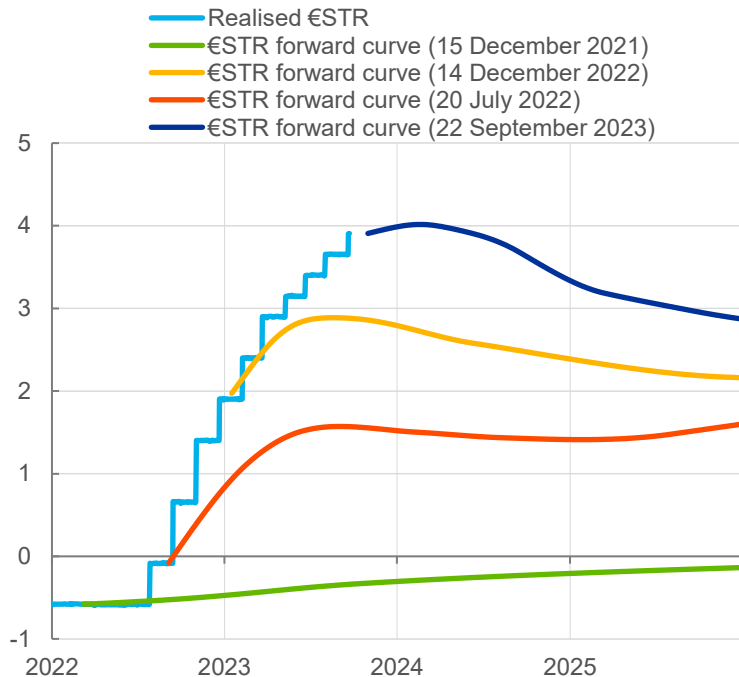
Paris, 26 September 2023

- 450 basis point cumulative increase in policy rate
- ECB balance sheet shrinkage: targeted longer-term refinancing operations (TLTROs); asset purchase programme (APP)
 - Policy rates; yield curve
 - Balance sheet channel; bank lending channel; risk-taking channel

- ❑ Permanent and cyclical components of shift in monetary policy
- ❑ Excess liquidity and monetary policy tightening
- ❑ Pandemic boost to household and corporate balance sheets
- ❑ Supply-driven inflation shock versus demand-driven

Euro short-term rate (€STR) forward curves

(percentages per annum)



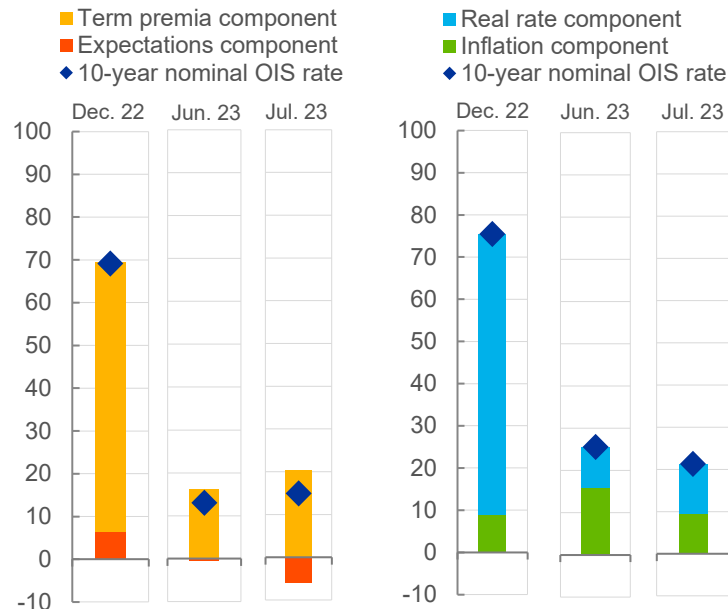
Sources: Refinitiv, Bloomberg and ECB calculations.

Notes: The date of each forward curve refers to the day before a meeting of the Governing Council.

Latest observations: 22 September 2023.

Decomposition of changes in the 10-year nominal OIS rate since previous GovCs

(basis points)



Sources: Refinitiv, Thomson Reuters and ECB calculations.

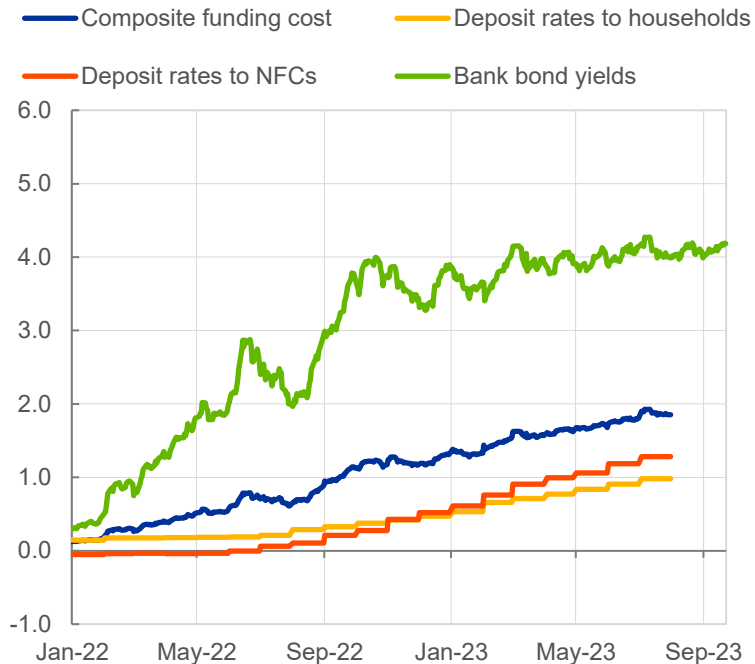
Note: The decomposition of the 10-year spot OIS rate into expected rates and term premia is based on an affine term structure model fitted to the euro area OIS curve. The estimation method follows Joslin, Singleton and Zhu (2011). The EA real rate is calculated by subtracting the inflation-linked swap rate from the nominal OIS rate.

Latest observation: 22 September 2023.

Bank funding costs and corporate bond spreads

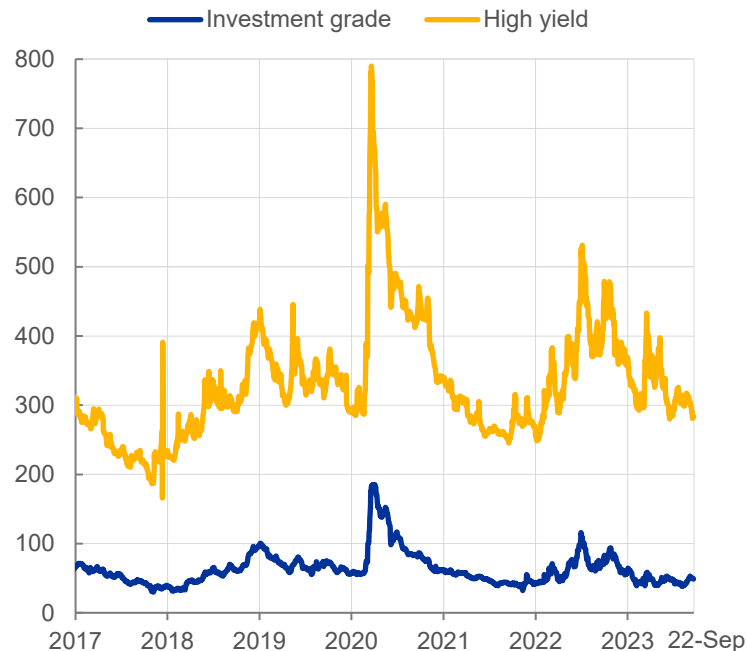
Euro area bank funding costs

(percentages per annum)



Euro area corporate bond spreads

(basis points)



Sources: ECB (BSI, MIR), IHS Markit iBoxx and ECB calculations.

Notes: Daily bank bond yields. Monthly deposit rates on new business volumes for non-financial corporations (NFCs) and households weighted by outstanding amounts. Composite funding cost, calculated as a weighted average of the cost of deposits and market debt funding, with the respective outstanding amounts on bank balance sheets used as weights.

Latest observations: 22 September 2023 for bond yields and July 2023 for BSI and MIR.

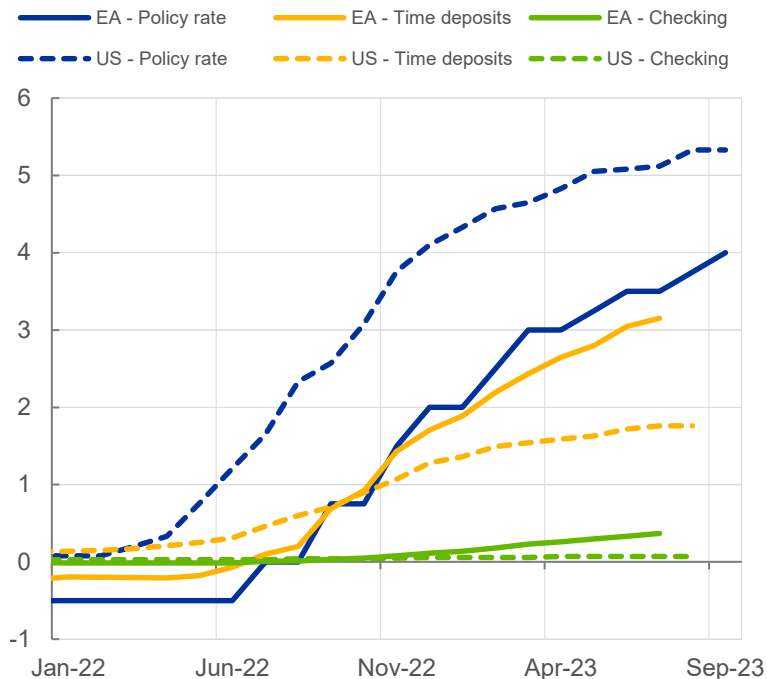
Source: IHS Markit iBoxx.

Notes: The spreads are based on indices including companies that issue bonds denominated in euro without strict restriction on their domicile and are calculated as weighted averages of bond spreads over the Markit iBoxx swap curve.

Latest observations: 22 September 2023.

Interest rate pass-through in the euro area and the United States

(percentages per annum)

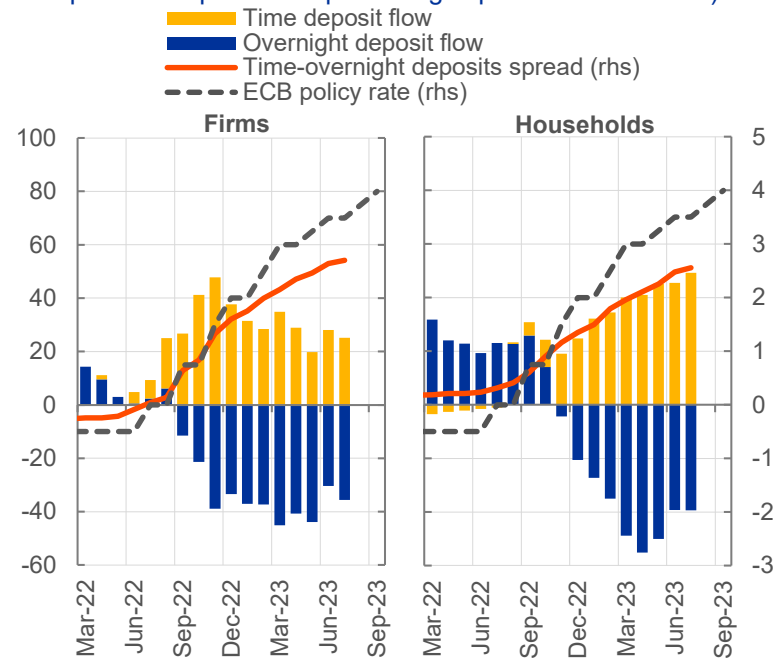


Sources: ECB (MIR, FM), RateWatch, FDIC and ECB calculations.

Notes: The US policy rate is the federal funds rate. US time deposits are national rates on 12-month CDs for non-jumbo deposits (< USD 100,000). Checking account rates are national rates on non-jumbo deposits. Time deposits in the euro area are those with a maturity of up to 2 years. The euro area policy rate is the MRO rate up to May 2014 and the DFR thereafter. Latest observations: September 2023 for the euro area policy rate, August 2023 for US rates and July 2023 for euro area deposit rates.

Overnight and time deposits by firms and households

(lhs: 3-month average flows, EUR billions; rhs: percentage points for spread and percentages per annum for rates)



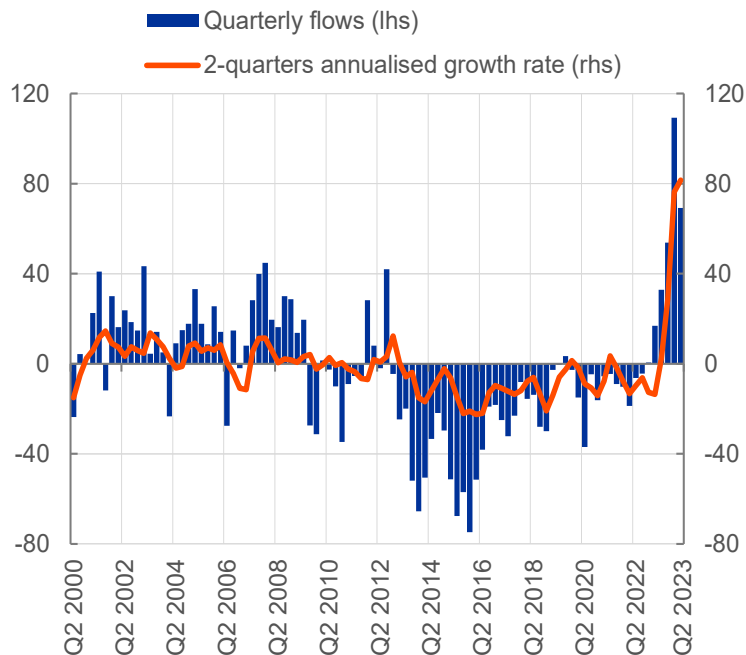
Sources: ECB (BSI, MIR, FM) and ECB calculations.

Notes: Time deposits are those with a maturity of up to 2 years.

Latest observations: September 2023 for the ECB policy rate and July 2023 for time and overnight deposit flows and for the spread.

Net purchases of debt securities by households

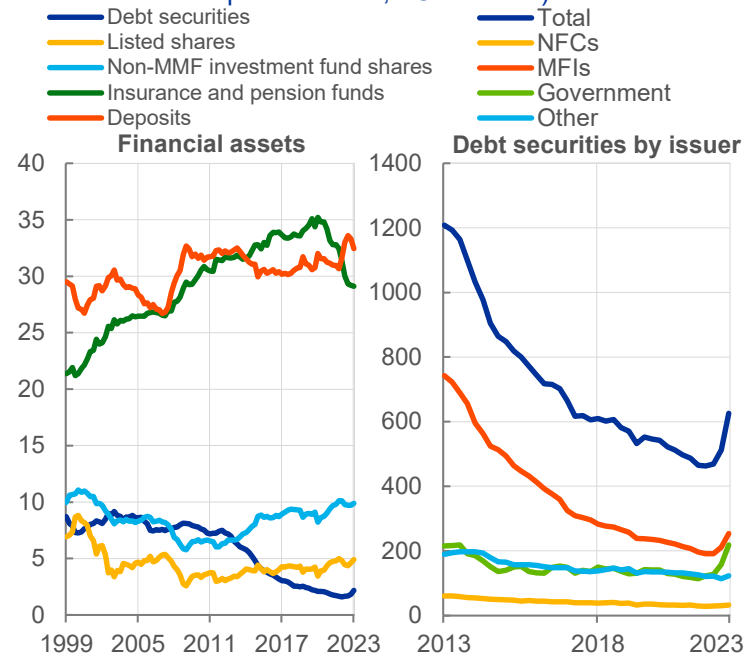
(lhs: quarterly flows, EUR billions, seasonally adjusted; rhs: annual percentage changes)



Sources: ECB (QSA, SHSS) and ECB calculations.
Latest observations: Q2 2023.

Composition of household financial assets

(left panel: percentages of household total financial assets; right panel: stocks, EUR billions)

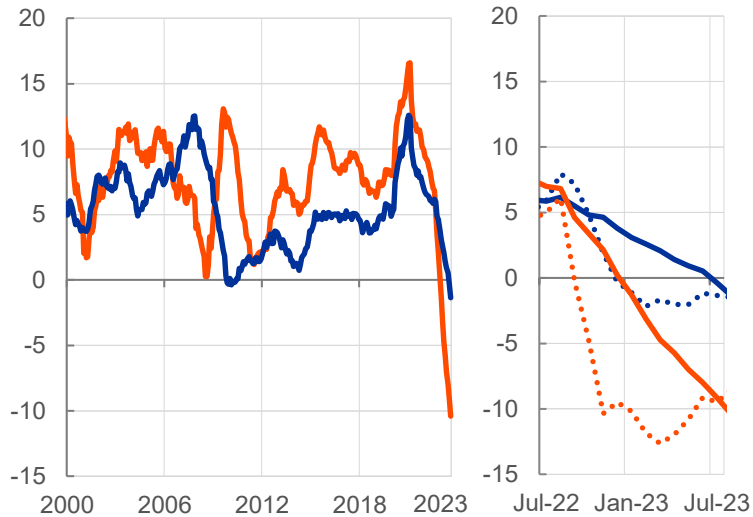


Sources: ECB (QSA) and ECB calculations.
Latest observations: Q1 2023.

M3 and M1 dynamics

(annual percentage changes)

- M3 (annual growth rate)
- M3 (3-month annualised growth rate)
- M1 (annual growth rate)
- M1 (3-month annualised growth rate)



Source: ECB (BSI).

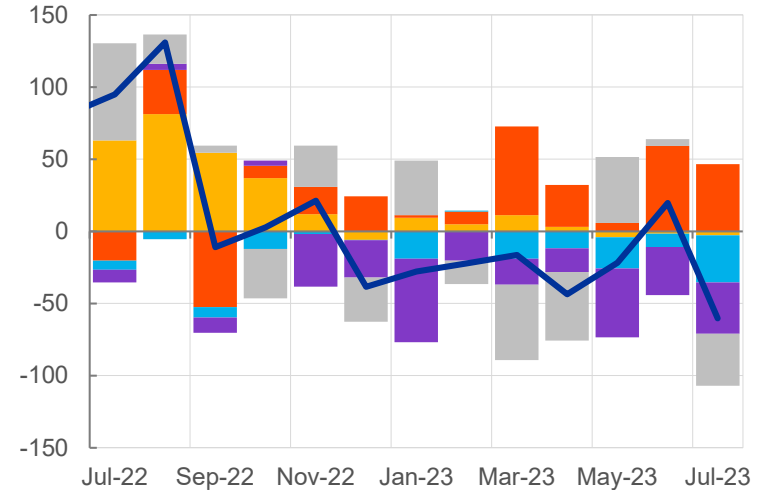
Notes: M3 and M1 are adjusted for the operational incident in TARGET2 which inflated the September 2022 figures for OFI deposits and loans, reversing them in October and November 2022.

Latest observations: July 2023.

Sources of money creation

(monthly flows, EUR billions)

- Other counterparts
- Banks' long term funding (-)
- Eurosystem purchases
- Net external monetary flows
- Loans to firms and households
- M3



Source: ECB (BSI).

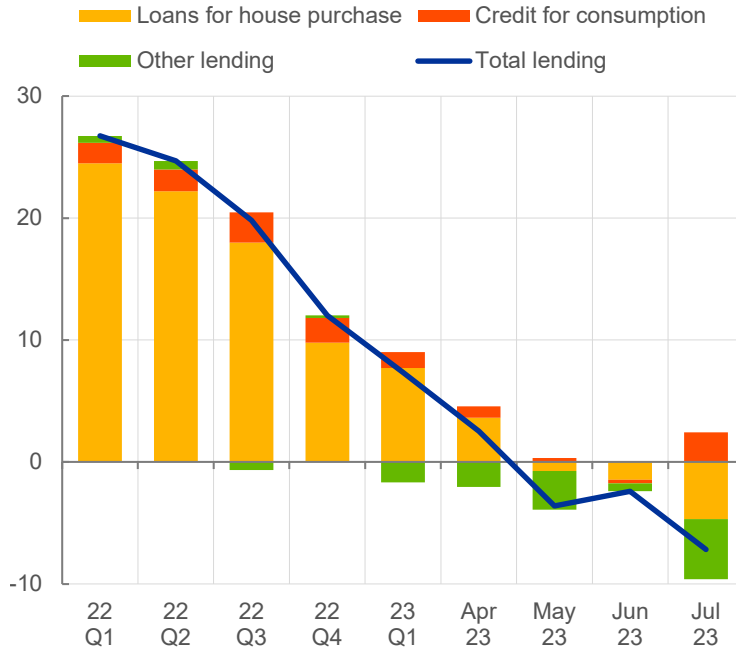
Notes: M3 flows are adjusted for the operational incident in TARGET2 which inflated the September 2022 figures for OFI deposits and loans, reversing them in October and November 2022. "Other counterparts" includes bank credit to government, central bank government deposits, other credit to the private sector and the residual.

Latest observations: July 2023.

Lending to households

Bank loans to households

(average monthly flows, EUR billions)



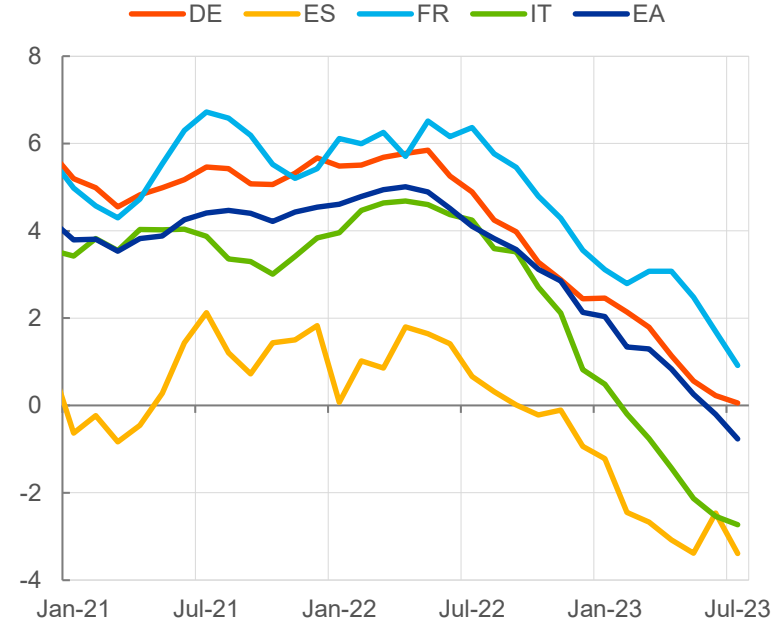
Sources: ECB (BSI) and ECB calculations.

Notes: MFI loans are adjusted for sales, securitisation and cash pooling. For the breakdown items of loans to households, this adjustment is indirectly treated for seasonality. The difference between the sum of breakdowns and the total is attributed to loans for house purchase.

Latest observations: July 2023.

Loans to households by country

(3-month annualised growth rates, percentage changes)

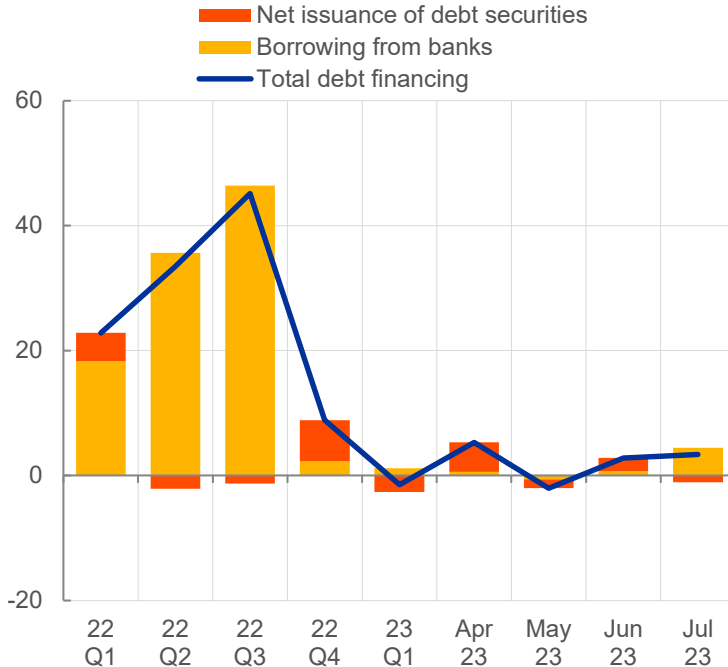


Source: ECB (BSI).

Latest observations: July 2023.

Net debt financing flows of firms

(average monthly flows, EUR billions)

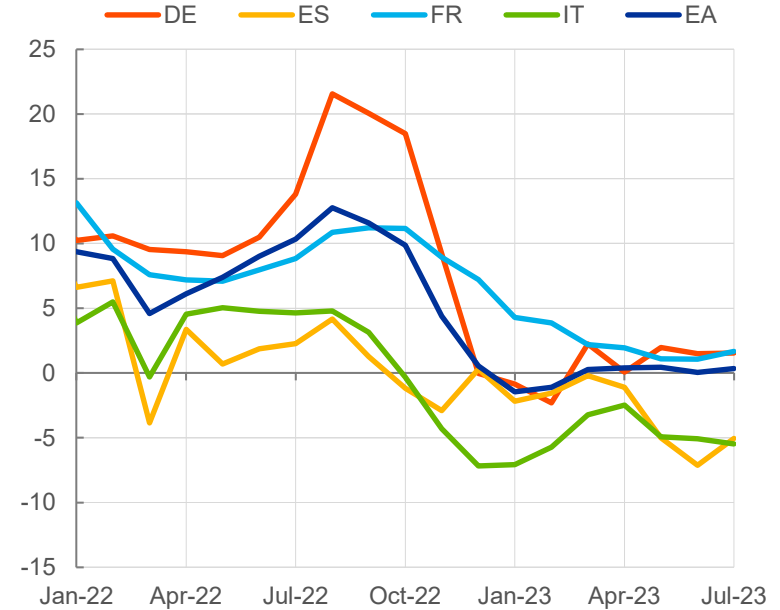


Sources: ECB (BSI, CSEC) and ECB calculations.

Notes: The seasonal adjustment for the net issuance of debt securities is not official. MFI loans are adjusted for sales, securitisation and cash pooling. Latest observations: July 2023.

Loans to firms by country

(3-month annualised growth rates, percentage changes)

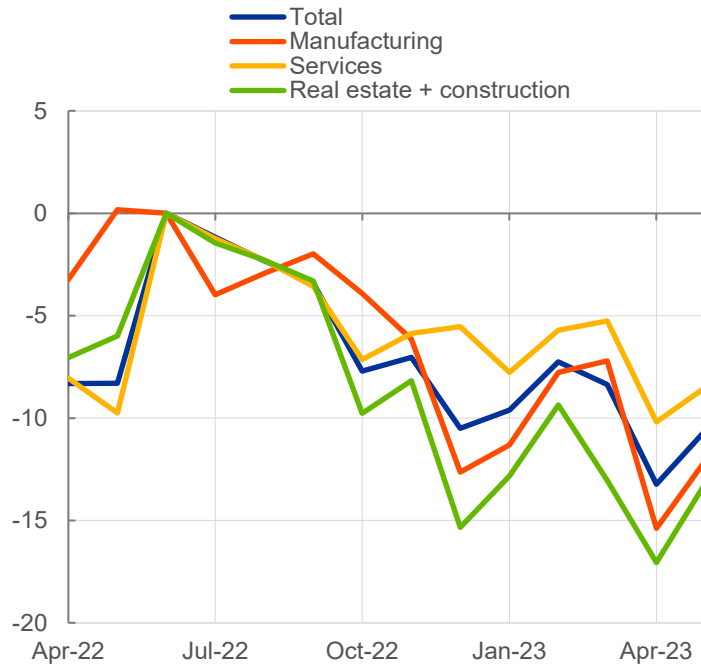


Sources: ECB (BSI) and ECB calculations.

Notes: MFI loans are adjusted for sales, securitisation and cash pooling. Latest observations: July 2023.

Change in gross loan flows since June 2022

(percentage changes since June 2022)



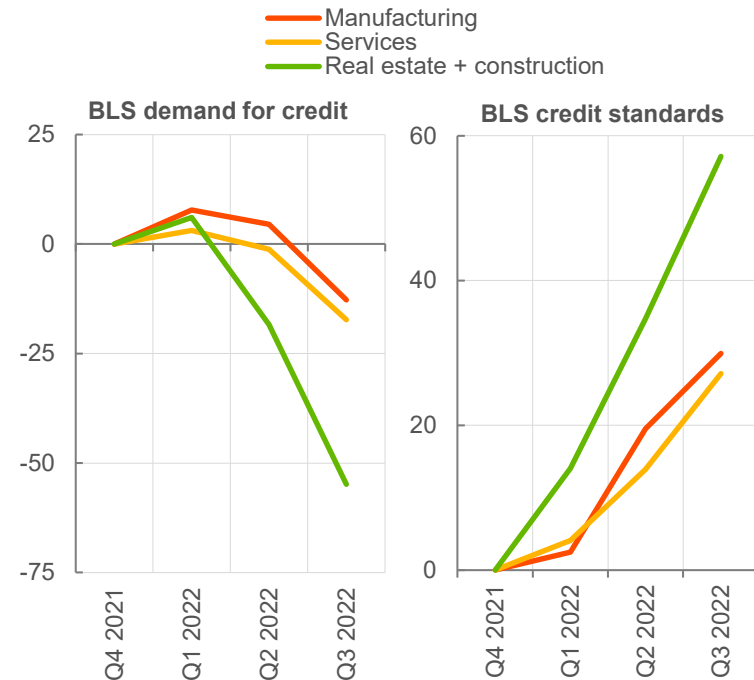
Sources: ECB (AnaCredit, MIR) and ECB calculations.

Notes: The sectors are identified with NACE letter codes as follows: manufacturing: C; real estate + construction: F+L; services: G, H, I, J, M, N, O, P, Q, L, R, S, T, U.

Latest observations: May 2023.

Credit demand and credit standards

(cumulated net percentages)



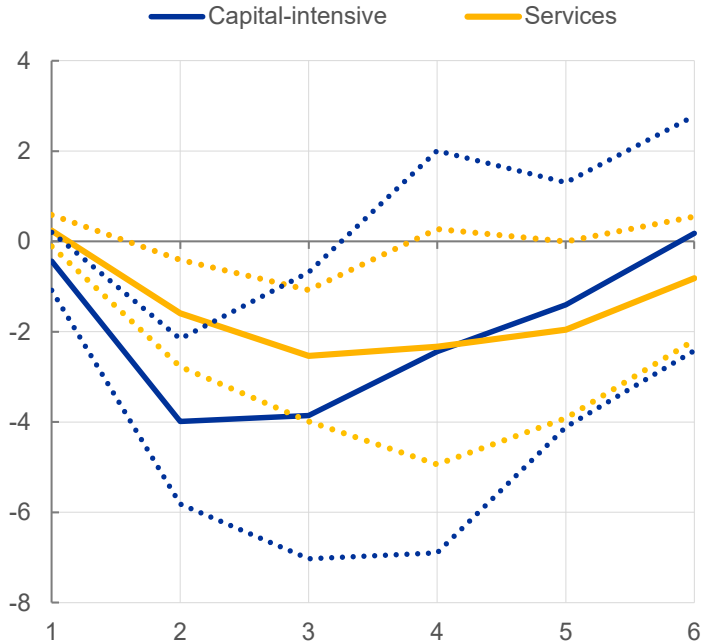
Sources: Bank Lending Survey (BLS) and ECB calculations.

Notes: The chart shows the survey responses for manufacturing and the following averages of cumulated responses for the two other sectors: real estate + construction: construction, residential real estate and commercial real estate; services: services, and wholesale and retail trade.

Latest observations: Q2 2023.

Impact of monetary policy on economic activity, total and by sector

(percentages)

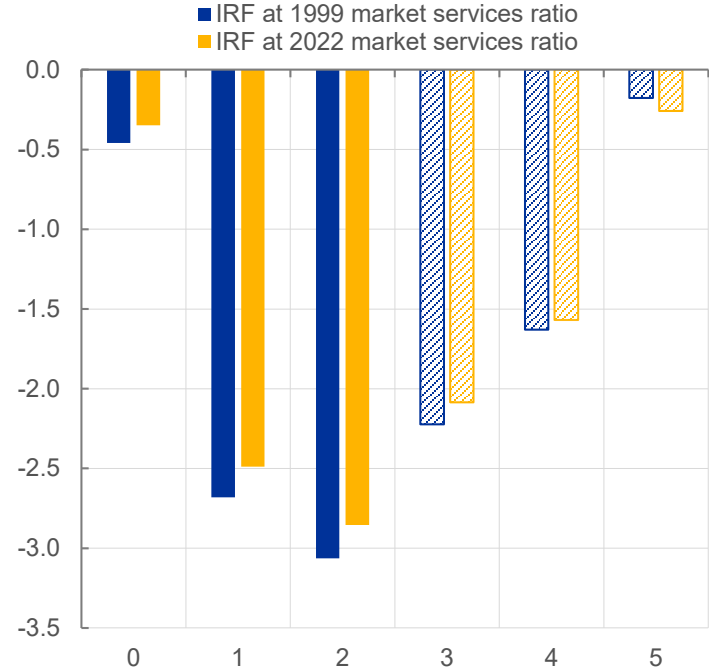


Sources: ECB, Eurostat and ECB calculations.

Notes: The vertical axis refers to the impact of a 100 basis point policy rate hike. The horizontal axis refers to the horizon of the impulse response function (IRF) (in years). Dotted lines are 90% confidence intervals.

Dampening effect of higher service intensity on transmission to economic activity

(percentages)



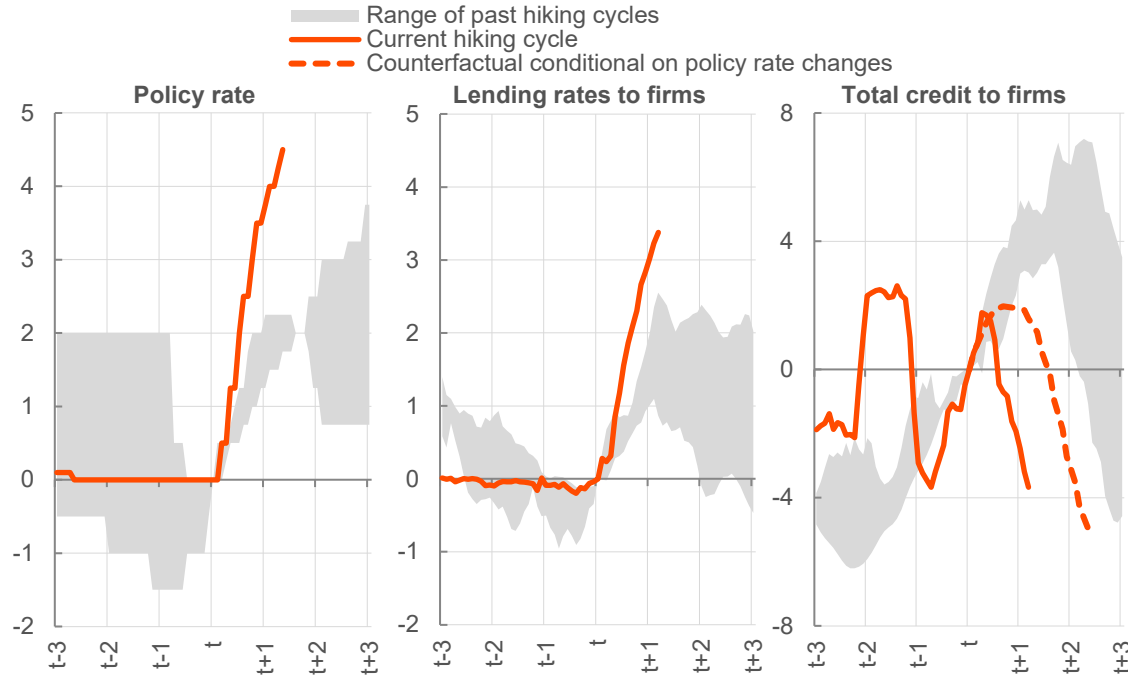
Sources: ECB, Eurostat and ECB calculations.

Notes: The vertical axis refers to the impact of a 100 basis point policy rate hike, conditional on the service ratio prevailing in 1999 and 2022 respectively. The horizontal axis refers to the horizon of the IRF (in years). Solid bars indicate that the respective effects are significant at least at a 10% level.

Monetary policy transmission to lending conditions across hiking cycles

Monetary policy transmission across hiking cycles

(x-axis: years; y-axis: cumulative changes in p.p. for rates; credit growth in deviation from the start of the cycle (t) in p.p. for total credit to firms)



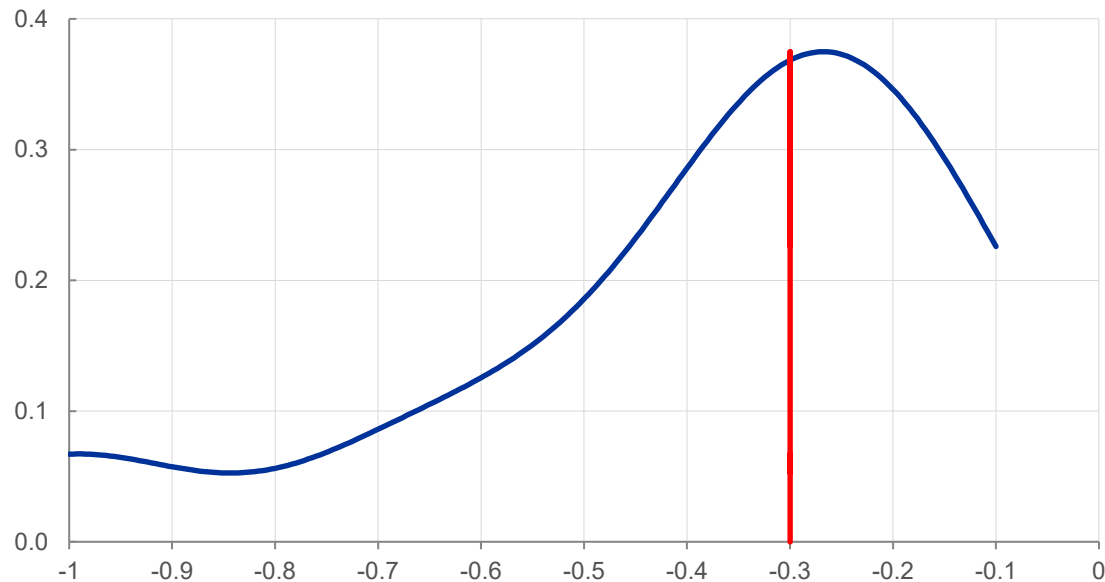
Sources: ECB (BSI, CSEC, MIR) and ECB calculations.

Notes: The ECB relevant policy rate is the Lombard rate up to December 1998, the MRO rate up to May 2014 and the DFR thereafter. Total credit is loans and debt securities. MFI loans are adjusted for sales and securitisation and cash pooling. Starting months correspond to the month immediately preceding the first hike, or explicit announcement of the first hike, of the cycle. Hiking cycles considered are those starting in January 1989, October 1999, November 2005 and May 2022. The dotted line shows a counterfactual for lending volumes, taking December 2021 as the last observation and projecting volumes conditional on the path of monetary policy rates. The exercise is based on the BVAR model in Altavilla, Giannone and Lenza (2016).

Latest observations: July 2023 for lending rates and credit and September 2023 for the policy rate.

The effect of a credit supply shock on real GDP

Impact of a credit supply shock on real GDP (percentage points)



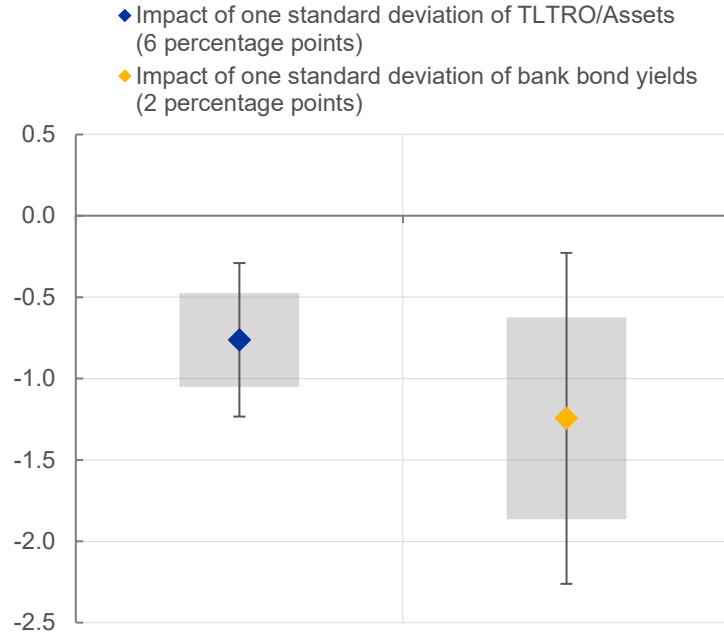
Sources: Gilchrist, S. and Zakrajsek, E. (2011); Barnett, W.A. and Thomas, R.L. (2014); Mumtaz, H., Pinter, G. and Theodoridis, K. (2018); Basset, C. et al. (2014); Altavilla, C., Darracq Paries, M. and Nicoletti, G. (2019); Chen, K., Higgins, P. and Zha, T. (2021); Gambetti, L. and Musso, A. (2017); Mendicino, C. et al. (2019); Jermann, U. and Quadrini, V. (2012); Gerali, A. et al. (2010); Darracq Paries, M., Kok Sorensen, C. and Rodriguez-Palenzuela, D. (2011); World Economic Outlook, IMF (2023); Barauskaitė, I. et al. (2022); Moccero, D.N., Darracq Paries, M. and Maurin, L. (2014); Ciccarelli, M., Maddaloni, A. and Peydro, J.-L. (2015).

Notes: The chart shows the distribution of the impact on real GDP of a credit supply shock across studies. The vertical line reports the estimate obtained by using the LSI as an external instrument in a Bayesian vector autoregressive (BVAR) model to quantify the impact of a credit supply shock on real GDP growth. The solid blue line shows the kernel density of the distribution of 15 estimates, truncated at the minimum and maximum estimate. The x-axis shows the percentage point decline in GDP cumulated over a 3-year horizon of a credit supply shock that reduces loan growth by 1 p.p. The median impact across studies is -0.3 p.p.

Drivers of loan supply restrictions and Loan Supply Indicator

Drivers of loan supply restrictions

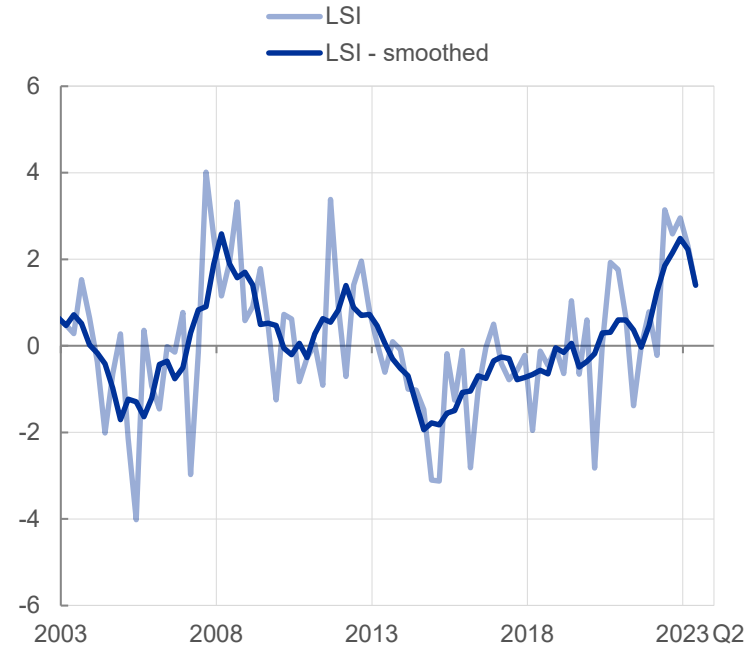
(percentage points)



Sources: ECB (AnaCredit, iBSI, MOPDB), IHS Markit iBoxx and ECB calculations.
Notes: Coefficients from a regression of 3-months-ahead loan supply shocks (Amiti and Weinstein, 2018) on TLTROs over assets, level of bank bond yields, bank fixed effects and country-time fixed effects. Sample December 2019 to November 2022. Standard error clustered at the country-time level.
Latest observations: November 2022.

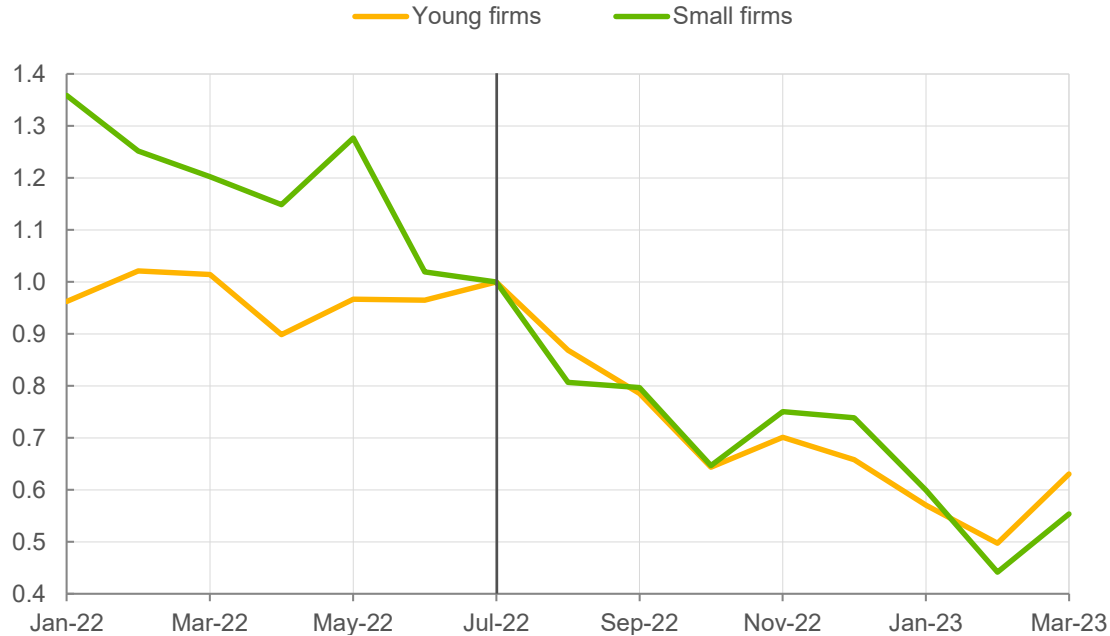
Loan Supply Indicator (LSI)

(index)



Sources: ECB (BLS) and ECB calculations.
Notes: The LSI uses the BLS NFC credit standards and purges them purges them from demand and macrofinancial factors using the methodology described in Altavilla, C., Darraçq Paries, M. and Nicoletti, G. (2019).
Latest observations: Q2 2023.

Bank loan volumes of fringe firms relative to the total market since the policy hike (ratios to overall market developments)



Sources: ECB (CSEC, AnaCredit, RIAD), Orbis and ECB calculations.

Notes: The chart compares loan rate and volume dynamics of small and young firms relative to general market movements around the start of the hiking cycle in July 2022 based on merged AnaCredit and Orbis data. The grey line denotes the start of the hiking cycle. The series are standardised by overall market developments in rates and volumes, and subsequently to unity at the start of the hiking cycle.

Latest observations: March 2023.

- ❑ Banking transmission is forceful
- ❑ Interaction with macroeconomic developments
- ❑ Non-linear amplification risks
- Data-dependent monetary policy (... strength of monetary transmission): hard and soft information on banking channels