



EUROPEAN CENTRAL BANK
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EUROSYSTEM

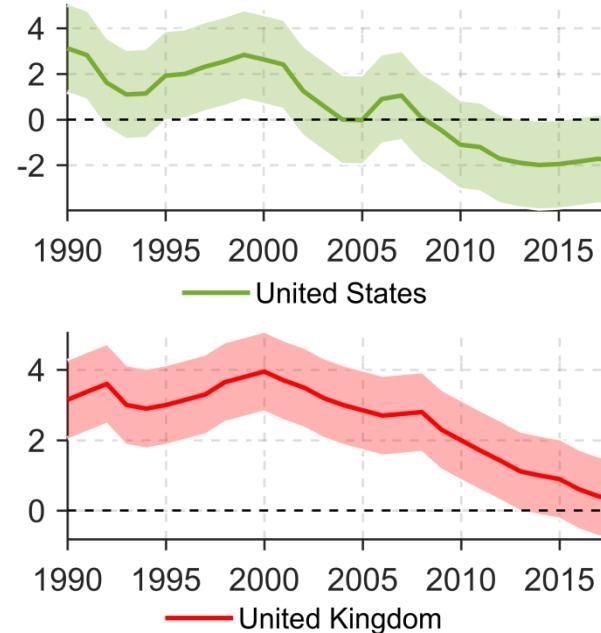
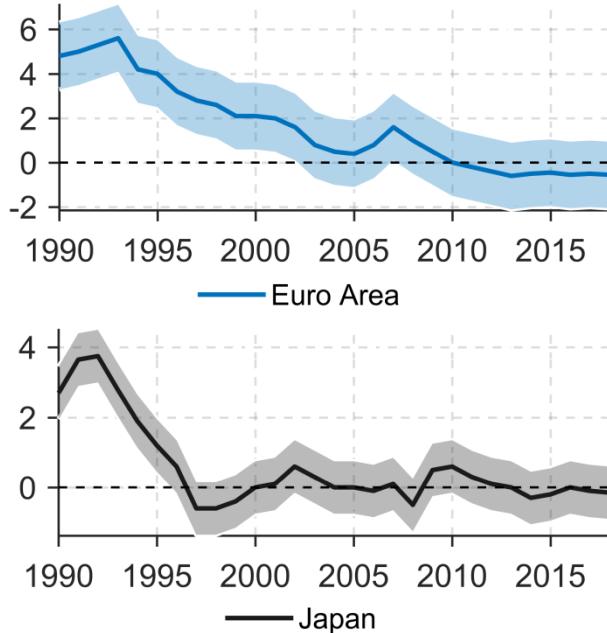
Going negative: the ECB's experience

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26 August 2020

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Secular decline in equilibrium real interest rates in major advanced economies

Model-based estimates of the real natural rate: Euro Area, United States, Japan, UK (%)

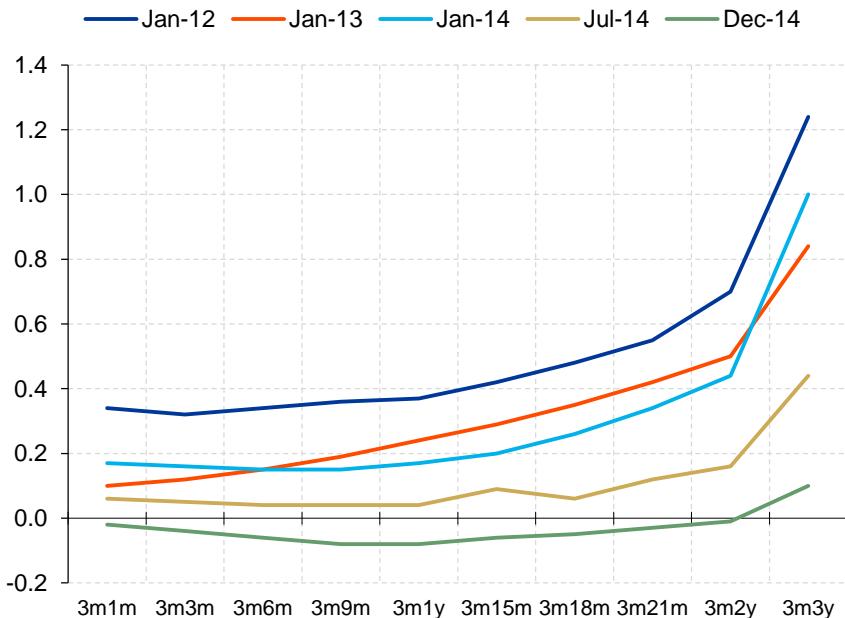


Source: ECB estimates.

Note: Estimates based on the methodology by Laubach and Williams (2003), Holston, Laubach and Williams (2017), and Fiorentini, Galesi, Pérez-Quirós and Sentana (2018). Bands reflect parameter and filter uncertainty.

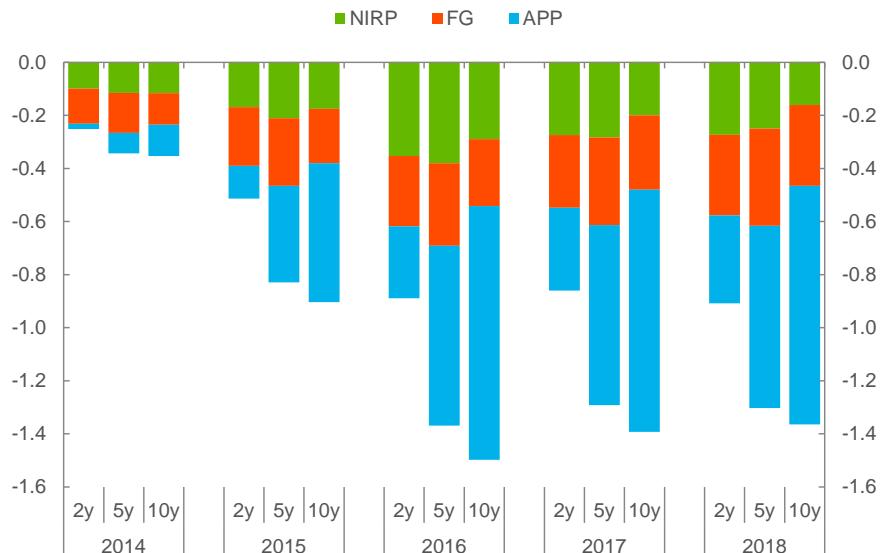
Breaking through the zero lower bound

Impact on Euribor forward curve (3-month Euribor rates)



Source: Thomson Reuters.

Impact of ECB's non-standard measures on the euro area sovereign yield curve (percentage points p.a.)



Source: Rostagno, Altavilla, Carboni, Lemke, Motto, Saint-Guilhem, Yianguo (2019).
Note: Evolution of the downward pressures that ECB's non-standard measures have exerted on euro area sovereign yields at selected maturities. The chart illustrates the contributions of individual measures. The results are based on a BVAR. The impact of NIRP and forward guidance (FG) on sovereign yields works via the EONIA rate and the OIS forward curve and the impact of the APP works via the term premia.

Substantial positive effects of NIRP on loan growth

Loan growth (EUR tn, year-on-year growth rate in %)

— Outstanding loan volume (left axis)
— Year-on-year growth rate (right axis)



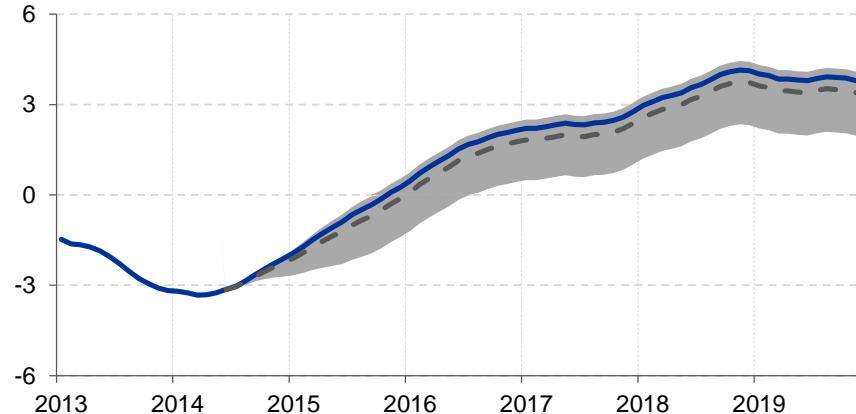
Source: ECB Statistical Data Warehouse (BSI).

Note: The outstanding loan volume refers to loans by euro area banks to non-banks (excluding general government).

Latest observation: June 2020 (monthly data).

Estimated impact of NIRP on bank loans to firms
(percentages p.a.)

— Actual loan growth
— Counterfactual
— Range of counterfactual loan growth

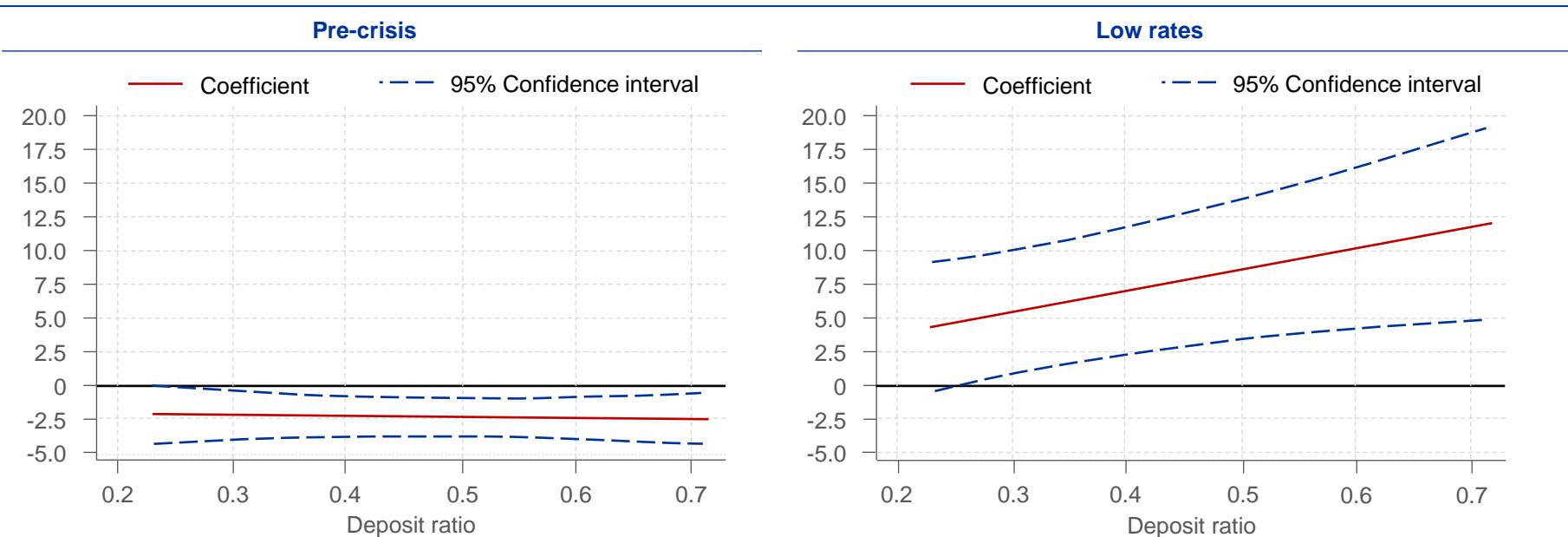


Source: ECB Economic Bulletin, Issue 03/2020.

Note: The blue line is the actual annual NFC loan growth (six-month moving average). Based on a range of empirical studies, the grey area represents the dispersion in loan growth among banks according to their exposure to NIRP-specific effects. The dashed line represents the median across all studies.

High-deposit banks suffering more from lower rates under NIRP

Effect of interest rate changes on bank equity value (coefficient of short-term rate surprises)

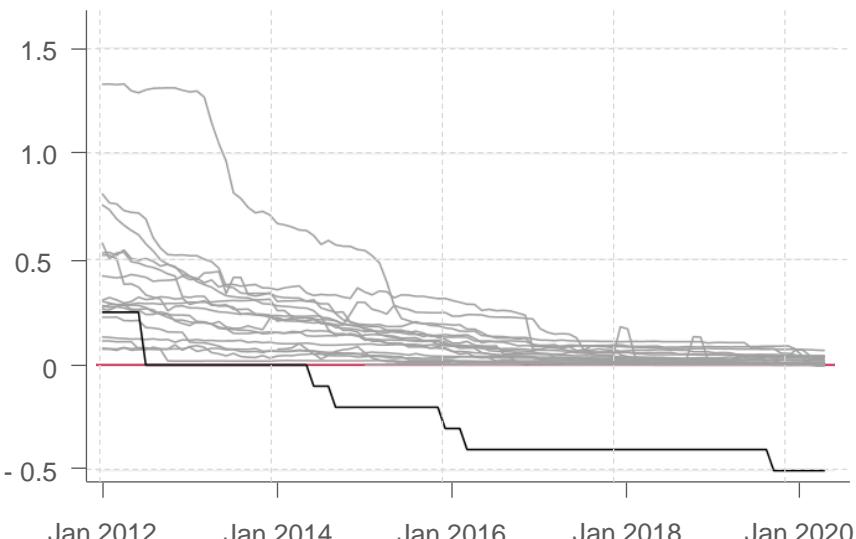


Source: Ampudia and van den Heuvel (2018).

Note: The chart shows the estimated impact and 95% confidence intervals of the short-term rate surprise on bank equity values as a function of banks' deposit ratios. For ease of presentation, the sample mean of the trend in the deposit ratio is added back to its de-trended ratio. The left panel shows the pre-crisis period and the right panel shows the very low/negative rate period.

Negligible pass-through of negative rates to household deposit rates,...

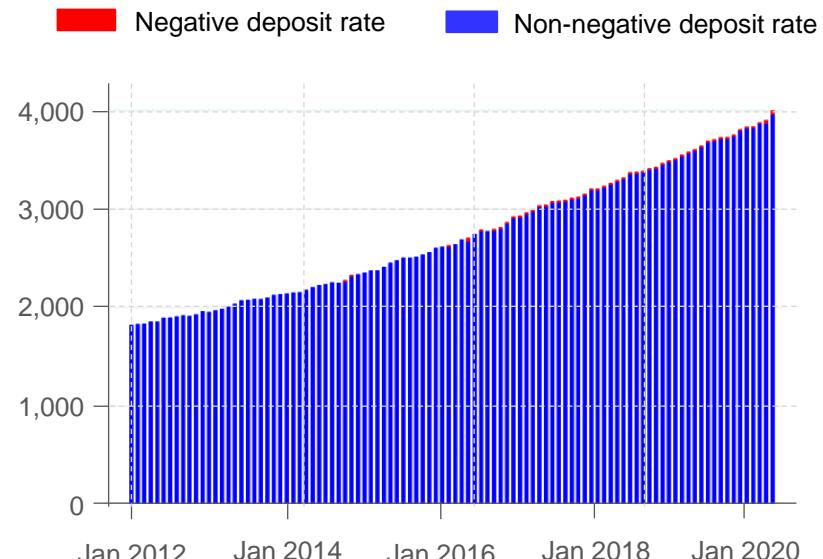
Average deposit rate on overnight deposit held by households (%)



Source: IBSI/IMIR, own calculations.

Note: Country averages are calculated across banks (weighted by deposit volume).
Latest observation: April 2020 (monthly data).

Volume of and interest rate on overnight deposits held by households (EUR bn)

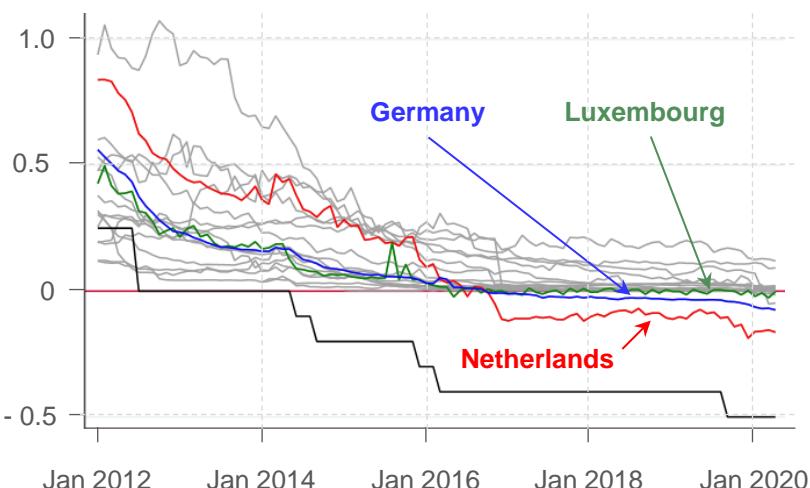


Source: IBSI/IMIR, own calculations.

Note: The threshold for negative deposit rates is set at ≤ 1 basis point.
Latest observation: April 2020 (monthly data).

... growing proportion of deposits by NFCs remunerated at negative rates

Average deposit rate on overnight deposit held by non-financial corporations (%)

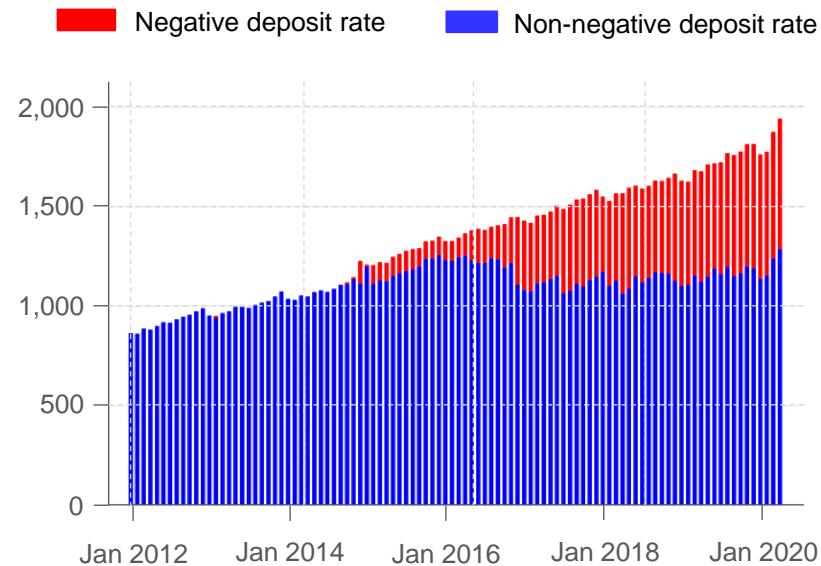


Source: IBSI/IMIR, own calculations.

Note: Country averages are calculated across banks (weighted by deposit volume).

Latest observation: April 2020 (monthly data).

Volume of and interest rate on overnight deposits held by non-financial corporations (EUR bn)



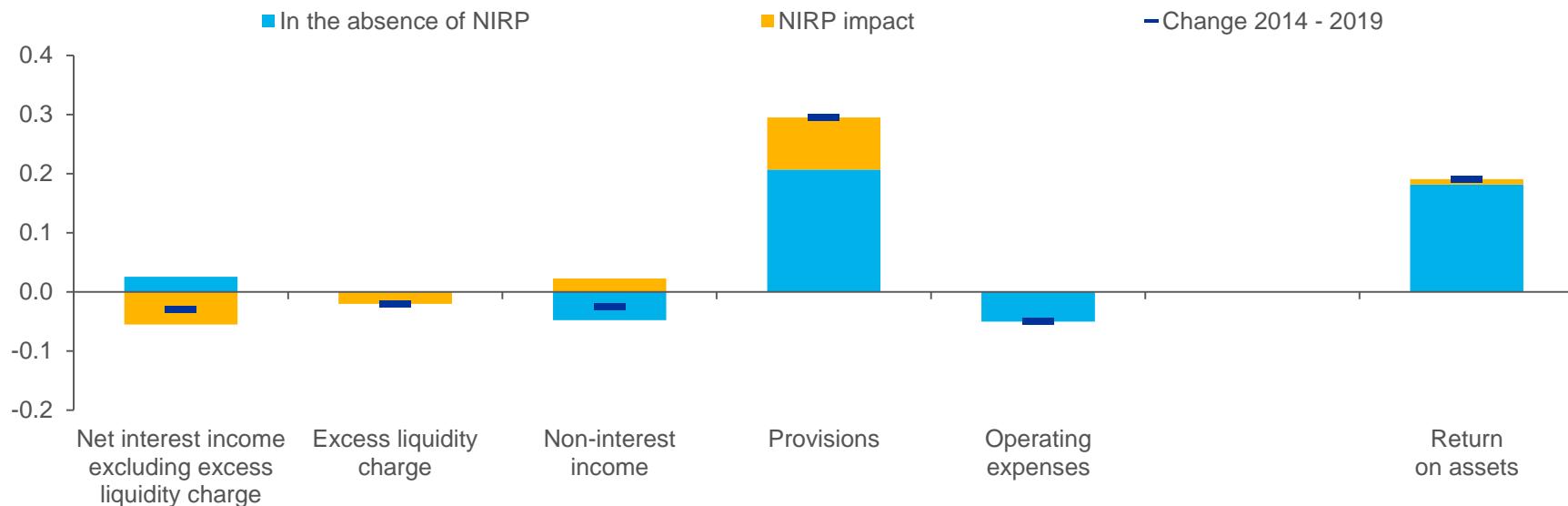
Source: IBSI/IMIR, own calculations.

Note: The threshold for negative deposit rates is set at ≤ 0%.

Latest observation: April 2020 (monthly data).

No drop in bank profitability due to NIRP

Changes in bank profitability between 2014 and the third quarter of 2019 and NIRP impact (% of total assets)



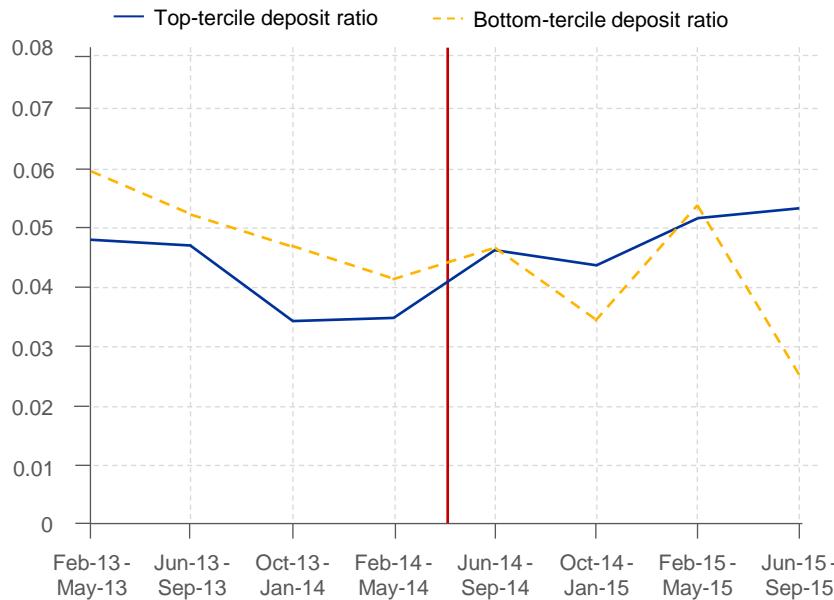
Source: ECB and ECB calculations, based on Altavilla, C., Boucinha, M. and Peydró, J.-L., "Monetary policy and bank profitability in a low interest rate environment", Economic Policy, Volume 33, Issue 96, 2018, pp. 531-586.

Note: Profitability figures are based on supervisory data, the sample is balanced (covering 194 euro area banks) and adjusted for the largest mergers and acquisitions. The NIRP impact is obtained with a dynamic VAR model.

Evidence of higher risk-taking, but not necessarily inefficient

Volatility of borrowers' return-on-assets

(Average ROA volatility of loan-financed firms)

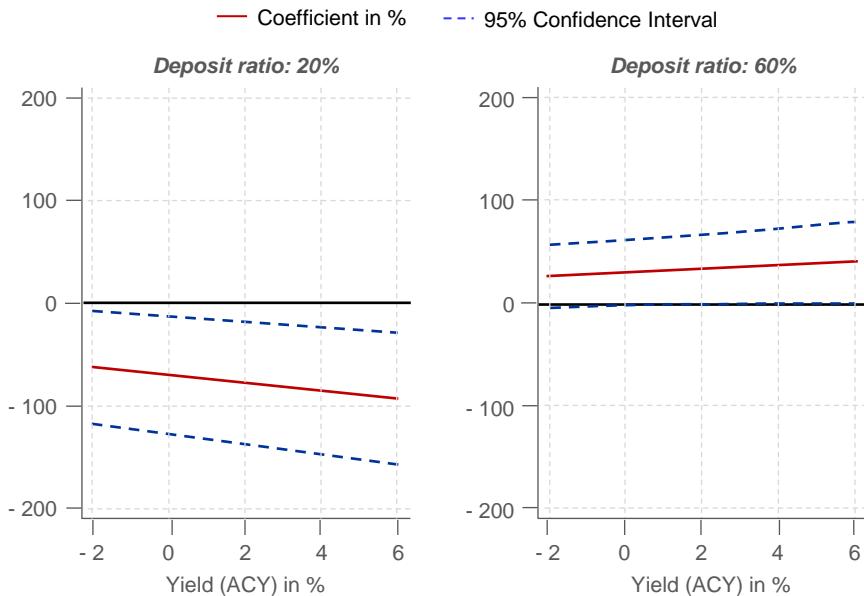


Source: Heider, Saidi and Schepens (2019).

Note: 4-month forward-looking average of ROA volatility of private and publicly listed firms that received loans from euro-area lead arrangers in the top (solid line) and bottom tercile (dashed line) of the distribution of the average ratio of deposits over total assets in 2013.

Effect of deposit ratio on high-yield security holdings

(coefficients of difference-in-differences regression)

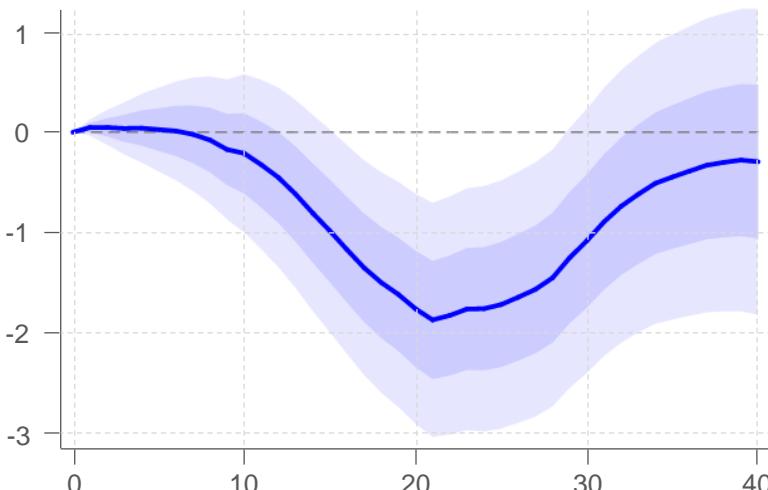


Source: Bubeck, Maddaloni and Peydró (2020).

Note: The chart shows the change in securities holdings of large euro area banks as a function of the yield of the security, for two different values of the deposit ratio. Deposit ratios are calculated as the ratio of customer deposits over total liabilities. ACY is the adjusted current yield of a security.

If not countered by appropriate measures, another drop in natural interest rates could burden banks further, on top of structurally low bank profitability

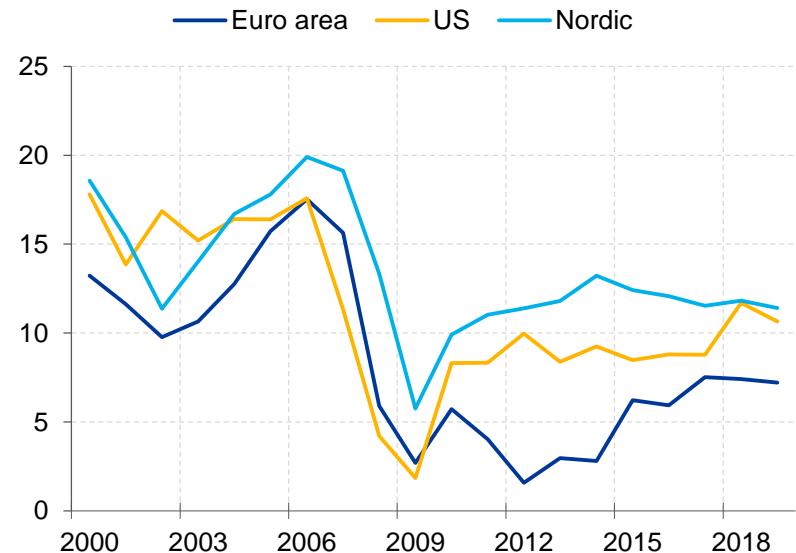
Natural rate of return after pandemic periods
(%)



Source: Jordà, Singh and Taylor (2020).

Note: Shaded areas represent bands that indicate one and two standard deviations around the study's response estimates.

Long-term evolution of banking sector profitability:
return on equity (%)



Source: Bloomberg, ECB calculations.

Note: The sample consists of 21 large banks for the euro area, 17 for the United States and 6 for the Nordic countries.

Conclusion

- The ECB's negative interest rate policy has been **successful** in turning the zero lower bound into an effective lower bound well below zero and in supporting bank lending.
- NIRP can have **side effects** on banks' profitability and risk-taking behaviour. However, the positive effects dominated in the euro area, partly due to policy innovations that directly counteracted side effects.
- The overall balance may shift, as side effects may become more relevant over time. A **forceful policy response by governments** is **indispensable** for raising potential growth.



Thank you for your attention