

SPEECH

The ECB's balance sheet reduction: an interim assessment

Speech by Isabel Schnabel, Member of the Executive Board of the ECB, at the annual ECB Conference on Money Markets

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Excess liquidity in the euro area has declined measurably over the past two years. It has fallen by more than a third relative to its peak in 2022, and it dropped below €3 trillion about a month ago.

This decline in excess liquidity predominantly resulted from banks repaying the loans they had taken under the third series of targeted longer-term refinancing operations (TLTROs). More recently, the phasing-out of reinvestments of bonds maturing under the Eurosystem's monetary policy portfolios has increasingly contributed to the decline.

As of January 2025, the Eurosystem will no longer reinvest any of its monetary policy bond holdings, leading to a run-off in our portfolios of around €40 billion per month.

The ECB is closely monitoring the impact of the decline in excess liquidity on financial markets, the banking system and the economy at large to assess how these developments are affected by the changes to our operational framework that we announced earlier this year.

In my remarks, I would like to take stock of where we stand today. My main message is that, while excess liquidity is remaining ample, the ECB's balance sheet reduction is progressing smoothly and has helped improve market functioning, with clear signs of increased market activity and a redistribution of reserves across banks and borders.

Supplying reserves on demand reduces uncertainty

Historical episodes of central banks reducing the size of their balance sheets, let alone by significant amounts, have been rare. For this reason, all major central banks are closely monitoring the transition from abundant to less ample excess liquidity.

For the ECB, staff projections suggest that, from a historical perspective, excess liquidity will remain ample for some time (Slide 2). However, there is significant uncertainty about banks' ultimate liquidity preferences, as well as about the capacity of money markets to efficiently distribute excess liquidity across the euro area.^[1]

If banks wished to hold a higher level of excess reserves, for instance due to stricter prudential regulation, the projected decline in excess liquidity might put upward pressure on money market rates earlier than suggested by historical regularities.

To cater for this uncertainty, the Governing Council in March decided on changes to the ECB's operational framework for implementing monetary policy.^[2]

The framework has three key characteristics (Slide 3).^[3]

The first is that it is a demand-driven system, meaning that the marginal unit of reserves is provided elastically on demand through our standard refinancing operations and against a broad set of collateral.

A demand-driven system allows banks to hold the level of reserves that they find optimal and insures against risks of fragmentation and sudden liquidity imbalances as reserves become less ample. This requires banks to regard access to our standard refinancing operations as an integral part of their liquidity management, without any stigma attached, while retaining a diversified funding mix.

The second key characteristic of our framework is the mix of instruments used to supply reserves.

Our short-term refinancing operations are at the centre of liquidity provision. At a later stage, we will gradually complement them with new structural longer-term lending operations and a new structural bond portfolio, taking into account legacy bond holdings. Both will provide a more stable source of liquidity to reflect the economy's growing currency demand.

The third key characteristic is that monetary policy is implemented through a "soft" floor with a narrow spread.

As reserves become less ample, money market rates could rise relative to the deposit facility rate (DFR) – the rate through which we steer our monetary policy stance – and could potentially become too volatile. In view of this, on 18 September, the spread between the rate on the main refinancing operations (MROs) and the DFR was reduced from 50 basis points to 15 basis points.

This historically narrow spread limits both the scope for upward pressure on money market rates and their volatility, and it sets incentives for banks to borrow liquidity in our operations as our balance sheet normalises.

In this context, a "soft" floor means that the Governing Council will tolerate deviations from the DFR in both directions, provided such movements do not blur the signal about the intended monetary policy stance.

At the same time, the reduced spread is still large enough to preserve incentives for banks to find market-based funding solutions to insure themselves against liquidity shocks, thereby avoiding the risk of excessive liquidity transformation through the Eurosystem balance sheet.^[4]

Balance sheet reduction progresses smoothly

Clarity on the operational framework has helped banks, and financial markets more broadly, prepare for a period with less ample reserves. Since we announced the changes to our framework in March, further significant balance sheet reduction has taken place.

This reduction has been progressing smoothly, and many of the concerns over the potential impact of the decline in our balance sheet on the economy have not materialised.

This is illustrated by three developments.

First, the phasing-out of reinvestments by the Eurosystem has not led to any bottlenecks in the absorption of bonds so far, in spite of increased net issuance by governments. Foreign investors have been absorbing the largest share of the net issuance of bonds in the euro area since the Eurosystem ended its reinvestment of securities under the asset purchase programme (APP), with households also playing an important role in some economies (Slide 4, left-hand side).^[5]

Second, we have not seen an excessive rise in long-term interest rates. While the term premium initially increased from historically unprecedented negative territory, it has recently fallen again and stabilised at low levels (Slide 4, right-hand side).

The fact that the impact on the term premium has been contained reflects the gradual and transparent approach central banks have taken when reducing their balance sheets.

This gradualism is probably one reason why announcements of quantitative tightening are often found to have smaller effects on bond prices than announcements of quantitative easing.^[6] Since bonds held by the central bank mature only gradually, investors may heavily discount redemptions that are due far out in the future.

Third, subdued credit growth over the past two years cannot be attributed to the reduction in excess liquidity, and in our monetary policy bond portfolios, in particular. Instead, it has been, by and large, the result of weak loan demand and higher interest rates.

According to our most recent bank lending survey, 95% of banks reported that the ECB's monetary policy asset portfolio had no impact on their lending volumes to firms over the past six months. 96% of banks expect this to remain the case over the next six months.

That is, banks do not mechanically make their lending decisions dependent on the level of excess liquidity, with base money "multiplying" into broad money.^[7]

The decline in excess liquidity may even contribute to higher rather than lower credit growth. New evidence for the United States suggests that reserves injected during quantitative easing crowded out bank lending, possibly because regulation has made bank balance sheet capacity costly.^[8]

The impact of falling excess liquidity on money markets

So, balance sheet reduction has not left any significant footprint in many areas, at least so far. But in other areas, especially in the euro area money market, the ongoing decline of excess liquidity is starting to leave some traces on activity and prices.

I would now like to explain what these traces are and what they imply for monetary policy and the likely future evolution of money market rates.

In a demand-driven system, gauging the amleness of reserves is not necessary for informing the process of quantitative tightening, which is running steadily and predictably in the background.

The reason is that, in contrast to a supply-driven system, our framework does not require estimating the volume of reserves necessary to steer short-term money market rates towards the steering rate. In the euro area, the narrow corridor ensures that overnight rates will remain close to the DFR.

But it matters for the implementation of our monetary policy how the decline in excess liquidity affects the take-up in our standard refinancing operations, how it shapes the distribution of reserve holdings across the euro area and how it influences the rates at which banks borrow in money markets.

We have therefore developed a comprehensive monitoring toolbox to allow us to understand how banks adapt to the decline in excess liquidity and whether this process may eventually require changes to our operational framework. A review of the key parameters of the operational framework is scheduled for 2026.^[9]

Based on this analysis, I would like to discuss three developments that have emerged over the course of this year and that suggest that the changes to our framework have been effective in supporting market functioning, in reviving market activity and in implementing our policy stance.

Easing of collateral scarcity has led to normalisation in repo markets

The first development relates to a steady and measurable rise in secured money market rates in the euro area and beyond (Slide 5, left-hand side). While in some parts of the world repo rates are already trading above the main policy rate, or have temporarily drifted outside of the target range, in the euro area the repo funds rate is now trading broadly at the level of the DFR.

Within the euro area, repo rates have also converged across collateral classes (Slide 5, right-hand side). Over the past years, transactions secured by German government collateral, in particular, were trading at a significant premium over others. This premium has declined considerably.

The increase in repo rates could result from two factors: higher collateral availability and lower excess liquidity.^[10] Depending on which factor dominates, the implications for monetary policy would differ.

One of the main conclusions of our monitoring work is that it was primarily the reversal of collateral scarcity that was driving repo rates higher.

Between 2021 and 2023, the ECB's large bond holdings and the significant take-up in our TLTROs resulted in a sharp decline in the collateral available for secured lending.

Collateral scarcity, in turn, caused repo rates to drop sharply. At the peak, more than 70% of repos were trading at least 30 basis points below the DFR (Slide 6, left-hand side). Repos against German collateral temporarily traded more than 100 basis points below the DFR.

Collateral availability has improved significantly over the past 18 months.

Large issuance by euro area sovereigns, the Eurosystem's reduced market footprint from the gradual rundown of the monetary policy bond portfolio and the return of collateral mobilised with the Eurosystem all contributed to easing the strains in repo markets and thus to the gradual normalisation of repo rates from extreme conditions (Slide 6, right-hand side).^[11]

The question is whether the rise in repo rates will continue.

Any answer to this question is inherently speculative. But for as long as there is ample excess liquidity, it is likely that repo rates will stay in the vicinity of the DFR, as banks would be expected to lend reserves in the repo market if there were persistent gains to be made there as opposed to depositing these reserves with the ECB.

And, for now, the DFR is anchoring one-day repo rates, even for collateral of lower-rated sovereign bonds (Slide 7, left-hand side). This is because most Eurosystem counterparties still have excess liquidity several times larger than their minimum reserve requirements, especially the larger ones (Slide 7, right-hand side).

The extent to which markets can mitigate upward pressure on repo rates critically depends on market participants taking advantage of arbitrage opportunities arising from the spread between money market rates and the DFR.

This includes banks' willingness to lend reserves across borders, as the distribution of excess liquidity holdings is highly uneven across countries and institutions (Slide 8, left-hand side).

So, on reporting dates, or at lower levels of excess liquidity, repo rates could rise above the DFR. This may happen, for example, if banks start to refrain from lending reserves in money markets, for instance to keep their regulatory liquidity ratios above a certain threshold.

Such intermediation constraints may help explain the premium that we are seeing today for repo transactions covering the year-end, even for the most liquid collateral (Slide 8, right-hand side). High price mark-ups often reflect trades with non-banks that have no access to our lending facilities.

Pick-up in market-based funding and redistribution of excess liquidity

This brings me to the second development. As excess liquidity has declined, we have seen a notable pick-up in market-based funding activity, which has also contributed to reserves circulating from banks with abundant liquidity to those with less liquidity.

Repo volumes of transactions between euro area counterparties have grown by nearly 25% since excess liquidity started to decline, with the strongest growth seen for cross-border transactions (Slide 9, left-hand side). With the repayment of the TLTROs, we have also seen a considerable rise in liquidity-motivated transactions, which now seem to have stabilised at a comparatively high level (Slide 9, right-hand side).

The issuance of bank bonds has also played an important role in providing market-based funding and in redistributing central bank reserves.^[12]

Since 2022 banks have issued a record amount of covered and senior unsecured bonds to substitute maturing TLTRO funding, with several issuers returning to the market after a long absence (Slide 10, left-hand side). For covered bonds, last year saw a record number of issuers tapping this market, including a variety of small-sized issuers.

Banks were major investors in the covered bonds issued by other banks. From 2022 to mid-2024, banks absorbed the lion share of the net issuance of covered bonds (Slide 10, right-hand side).

Cross-border transactions played an important part in this, as banks with abundant liquidity invested in covered bonds of their peers located elsewhere (Slide 11, left-hand side).

These cross-border flows suggest that there are no signs of fragmentation. So does the fact that changes in TARGET2 balances, reflecting cross-border flows, have measurably contributed to recent changes in excess liquidity (Slide 11, right-hand side).

In Italy, for example, large TARGET2 inflows offset a significant part of the decline in excess liquidity related to the repayments of TLTRO III.^[13] In reserve-rich countries, the opposite effect prevailed.

This smooth redistribution of reserves is another indication that Eurosystem excess liquidity remains ample, and it is likely to have reduced the need of banks to use the ECB's standard refinancing operations (Slide 12). Less than 1% of the peak of outstanding TLTROs was rolled over into MROs or the three-month longer-term refinancing operations.

Moreover, the take-up of our operations did not materially increase after we reduced the spread between the rate on the MROs and the DFR to 15 basis points.

One reason is that, in most cases, funding via market-based sources remains more attractive than the recourse to ECB operations, even with a narrower spread (Slide 13, left-hand side). Currently, borrowing from the ECB may be more economical only for some non-high-quality liquid assets (HQLA) collateral.

In addition, we are seeing that banks are willing to reduce the share of reserves in their holdings of HQLA. This share fell from a peak of 78% in late 2022 to 56% today (Slide 13, right-hand side). As the aggregate liquidity coverage ratio (LCR) has stabilised around 160% over the past two years, banks have started to substitute reserves for other HQLA.

Yet, as excess liquidity declines further, we expect more and more banks to tap our liquidity-providing operations, also because a substantial share of euro area banks – representing about 25% of minimum reserve requirements – are currently not active in repo markets.

While this may change, membership requirements for central clearing counterparties, such as size, credit rating and operational capacity, may currently make it difficult for smaller banks to obtain collateralised credit.^[14]

Low sensitivity of €STR to changes in excess liquidity

Borrowing in the unsecured money market could, in principle, be an alternative for these banks, especially because sourcing liquidity via unsecured trades has become cheaper compared with secured trades in the repo market since the middle of last year.

While repo rates have trended upwards, €STR – the euro area's benchmark rate representing banks' overnight unsecured borrowing conditions – has barely budged (Slide 14).

The stickiness of €STR is the third development I would like to discuss today. What does it imply for monetary policy? And why is this stickiness not necessarily surprising?

The unsecured segment of the euro area money market is special in two respects.

First, banks are rarely on the lending side, mostly for regulatory reasons. The Basel III reforms treat secured lending preferentially, establishing repo as the preferred choice for banks' short-term lending overall.

From a borrower's perspective, too, secured borrowing is more attractive than unsecured as leverage ratio costs can be significantly mitigated by netting lending and borrowing through central counterparty (CCP) clearing in the secured market.

As a result, the unsecured market is primarily used by banks to intermediate deposits from non-banks without access to the ECB's balance sheet. Since 2022, an average of around 85% of the volume of trades have had non-banks as a counterparty, especially money market funds.

Since this intermediation service carries the costs of balance sheet expansion through the leverage ratio, banks typically demand a spread relative to the DFR to compensate them for binding their balance sheet capacity.^[15]

Second, trades in the unsecured money market are typically relationship-based. Around 80% of €STR trading volumes come from depositor-bank relationships that are active almost every day (Slide 15, left-hand side).

Relationship trading has important implications for the pricing of the trade. Specifically, banks impose higher intermediation fees on customers that come only sporadically and are less predictable.

Empirical evidence suggests that banks reduce the extent of regulatory cost pass-through to their most stable clients by 2.4 basis points for taking on unsecured deposits (Slide 15, right-hand side). Such discounts are economically significant and can, in part, be explained by banks' ability to profit from cross-selling other, more lucrative business to their stable depositors.

So, the microstructure of the unsecured money market is consistent with a weak responsiveness of €STR to changes in excess liquidity.

The question is whether, and to what extent, this will change as excess liquidity declines further.

There are two sides to this.

On the one hand, as many smaller banks do not have access to the repo market, they may start competing for liquidity in the unsecured market once borrowing needs become more imminent. Increased competition could put upward pressure on €STR.

On the other hand, lenders in the unsecured market seem price-insensitive. As repo rates trade well above €STR, lenders should have an incentive to place their cash in the repo market. However, so far there has been little migration across the two segments.

This is predominantly because most lenders that are active in the unsecured market do not have access to repo markets (Slide 16, left-hand side). Moreover, those that have a more diversified liquidity management may find it difficult to lend excess cash in secured markets, which operate mainly in the morning hours (Slide 16, right-hand side).^[16]

Money market funds, for example, allow redemption notices until 14:00 and need to preserve liquidity to meet any potential outflows until then.^[17] Unsecured markets may thus be the only viable option for them to place liquidity in the afternoon.

This suggests that banks are likely to maintain some pricing power in this market, keeping the sensitivity of €STR to changes in excess liquidity more muted.

Overall, it is uncertain which channel will dominate. It is therefore too early to assess whether €STR is an appropriate indicator of reserve scarcity. Its resilience so far may simply suggest that reserves remain ample.

But should the gap between repo rates and €STR continue to widen as excess liquidity declines, it will be necessary to assess how this affects the transmission of monetary policy to the real economy.

Conclusion

All in all, and with this I would like to conclude, our analysis suggests that excess liquidity remains ample in the euro area.

Recent upward pressure on rates in some segments of the money market reflects, by and large, a reduction in collateral scarcity, due to the increased bond issuance by governments and the reduced Eurosystem market footprint. The improved availability of collateral has helped to significantly improve market functioning in the euro area.

In addition, increasing market-based funding activity and growing signs of redistribution of reserves across banks and borders suggest that banks have started adapting to an environment with less ample reserves.

We expect this process to continue as excess liquidity declines further, with banks increasingly sourcing liquidity through our standard refinancing operations, as these constitute an integral part of a smooth implementation of monetary policy in our operational framework.

Thank you.

Annexes

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[The ECB's balance sheet reduction: an interim assessment](#)

1.

Schnabel, I. (2023), "[Back to normal? Balance sheet size and interest rate control](#)", speech at an event organised by Columbia University and SGH Macro Advisors, New York, 27 March.

2.

ECB (2024), [Changes to the operational framework for implementing monetary policy](#), Statement by the Governing Council, 13 March.

3.

Schnabel, I. (2024), [“The Eurosystem’s operational framework”](#), speech at the Money Market Contact Group meeting, Frankfurt am Main, 14 March.

4.

Since excess reserves count towards the fulfilment of prudential liquidity ratios, the combination of a very low cost of carry and a broad collateral framework could encourage banks to engage in excessive liquidity transformation, as they receive Level 1 high-quality liquid assets (HQLA) by pledging non-HQLA as collateral. These risks are especially high when banks have access to longer-term refinancing operations and are permitted to pledge non-marketable assets as collateral, as our framework foresees.

5.

Ferrara, F.M. et al. (2024), [“Who buys bonds now? How markets deal with a smaller Eurosystem balance sheet”](#), *The ECB Blog*, 22 March.

6.

Du, W., Forbes, K. and Luzzetti, M.N. (2024), “Quantitative Tightening Around the Globe: What Have We Learned?”, *NBER Working Paper*, No 32321, National Bureau of Economic Research, April. See also Schnabel, I. (2024), [“The benefits and costs of asset purchases”](#), speech at the 2024 BOJ-IMES Conference on “Price Dynamics and Monetary Policy Challenges: Lessons Learned and Going Forward”, Tokyo, 28 May.

7.

Schnabel, I. (2023), „Money and inflation“, Thünen Lecture at the annual conference of the Verein für Socialpolitik, Regensburg, 25 September.

8.

Diamond, W. et al. (2024), “The reserve supply channel of unconventional monetary policy”, *Journal of Financial Economics*, Vol. 159, September. While preliminary research by ECB staff suggests that reserves may in some instances have crowded-in rather than crowded-out bank lending in the euro area, this may reflect the partly different nature of reserve creation in the euro area, where the TLTROs were designed specifically with the aim to stimulate bank lending.

9.

In March 2024 the Governing Council also clarified that it stands ready to adjust the design and parameters of the framework earlier, if necessary, to ensure that the implementation of monetary policy

remains in line with the established principles (see footnote 2).

10.

Other factors, such as intermediation capacity constraints, could also affect repo rates.

11.

These effects were reinforced by stopping the rise in inflation. As monetary policy restriction is gradually being removed, interest rate expectations are adjusting lower, making bonds more valuable in nominal terms. In addition, during the period of high inflation, some market participants sought collateral in the repo market to facilitate short-selling. A surge in net securities borrowing by hedge funds probably exerted downward pressures on special repo rates. This trend has now reversed.

12.

See also Hudepohl, T. et al. (2024), "[How banks deal with declining excess liquidity](#)", *The ECB Blog*, 18 June.

13.

The increase in inflows may also be related to other cross-border transactions. In particular, over the past two years non-resident holdings of Italian government bonds have increased notably.

14.

Bilateral repo trading is an alternative, but it does not offer the same advantages as CCPs in terms of balance sheet impact, credit risk and operational efficiency. In particular, transactions can be netted when conducted through the same CCP.

15.

The impact of regulatory costs on €STR is most visible on days when banks aim to optimise their regulatory ratios. On these days, mostly quarter-ends, some banks lower their rates by more than 10 basis points below the DFR for warehousing overnight deposits of non-banks. While these costs also occur in the secured market, they can be significantly reduced by netting lending and borrowing through CCP clearing. For the banks that are most active in the repo market, netting potential can reach up to 70% of total repo borrowing volumes.

16.

For example, the repo market's close link to bond markets means that trades need to be executed early in a day to give bond dealers a clear guideline for available liquidity and securities.

17.

Similarly, pension funds value intraday flexibility as their liquid buffers serve to fulfil potential margin calls that may arise over the course of the business day.