

A new operational framework for the European Central Bank

SUMMARY

The European Central Bank's operational framework is a set of tools it uses to control the amount of money flowing through the economy in order to keep prices stable. The calibration of those tools determines how quickly and strongly the central bank can steer short-term interest rates and ultimately how monetary policy affects economic output and inflation. The operational framework concerns *how* a monetary decision is implemented, not *what* the decision is.

Over the last 10 years, the ECB has introduced several new policy tools, which has led to a significant increase in excess liquidity – that is, reserves held by banks beyond minimum requirements. In the course of recent monetary tightening efforts, the ECB has started to shrink its balance sheet, and excess liquidity has fallen by about €1.2 trillion.

The new operational framework is a reaction to ongoing changes in the liquidity environment, from a situation of abundant excess liquidity to one of less ample liquidity. To this end, the ECB has effectively made a small adjustment to the width of the corridor between two policy rates, which will be implemented as of September 2024. In addition, two new instruments will be added to the ECB monetary policy toolbox: a structural portfolio of assets, and long-term refinancing operations. No specific details have been provided on the new tools in terms of technical features or the timing of their introduction.



IN THIS BRIEFING

- Introduction
- Historic evolution
- The updated operational framework
- Reasons for the framework update
- Conclusion



Introduction

The European Central Bank's operational framework is a set of tools it uses to control the amount of money flowing through the economy and to keep prices stable. In essence, the European Central Bank (ECB) has four broad levers in its [operational toolbox](#) to steer short-term interest rates and ultimately how monetary policy affects economic output and inflation:

- setting interest rates for the ECB [standing facilities](#), which credit institutions can use to get or deposit liquidity (see section below on the detailed historic evolution);
- [open market operations](#): these operations allow the ECB to provide liquidity to, or withdraw liquidity from, the market;
- reserve requirements: [deposits](#) that credit institutions need to hold at national central banks;
- forward guidance: the ECB provides information on its future monetary policy [intentions](#), based on its assessment of the outlook for price stability.

After eight years of balance sheet expansion, the ECB started to reduce the amount of liquidity in the economy in [March 2023](#). To facilitate a decrease in excess reserves – that is, reserves held by banks beyond minimum requirements – the ECB [announced](#) a change to its operational framework for implementing monetary policy. The ECB's operational framework affects how quickly and strongly the central bank can affect inflation and economic output via its control over short-term interest rates. Besides speed and strength, this also matters for the [uniformity](#) of the central bank's control across Eurozone Member States. The operational framework update is to be understood as independent of the ECB's monetary policy stance. The operational framework concerns *how* a monetary decision is implemented and not *what* the decision is.

The ECB effectively made a small adjustment to the key policy rate corridor, reducing the spread between policy rates asymmetrically, with the intention of reducing volatility. Reflecting the high level of uncertainty around liquidity demand and its distribution, there was no indication given of desirable excess reserves. As a consequence, information on two new instruments, a structural portfolio of assets and long-term refinancing operations, remains vague. It works as a hybrid system, combining the smallest possible central bank balance sheet with both structural (permanent portfolio) and fine-tuning operations (refinancing operations). Its main objective is to allow for effective control of short-term money market rates in [transition](#) from a situation of abundant excess liquidity to one of less ample liquidity.

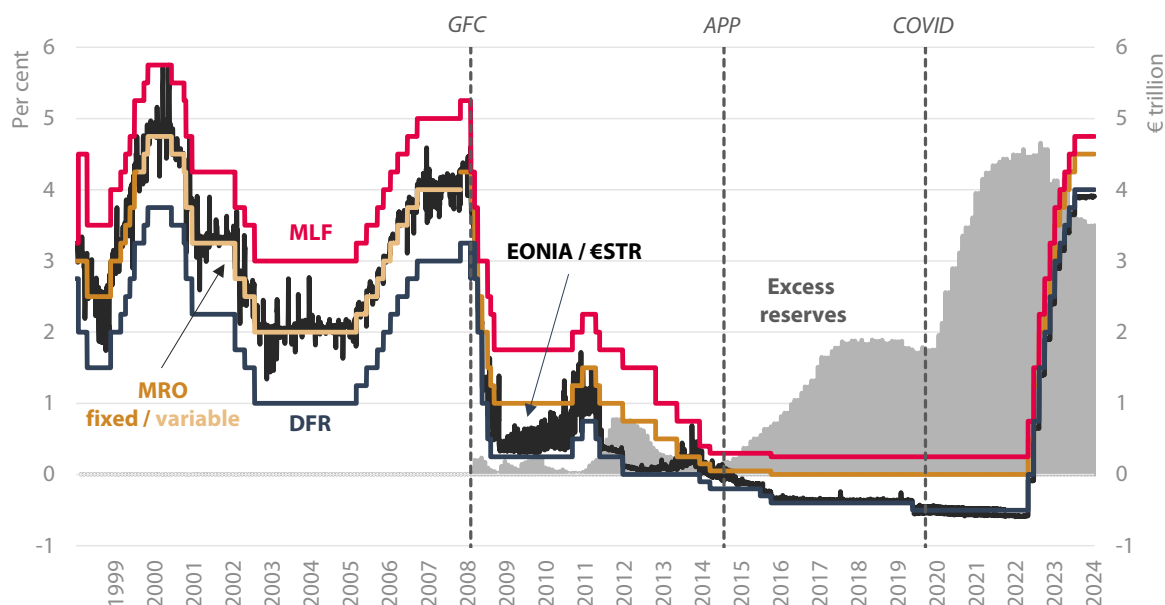
Historic evolution

Over the past 25 years since the creation of the euro, the ECB's framework for implementing monetary policy has undergone multiple changes. Figure 1 below shows the evolution of the [three key interest rates](#) set by the ECB and illustrates how the central bank moved from a corridor (before the 2008 financial crisis) to a de facto floor system. The yellow line shows the interest rate on the **main refinancing operations** (MRO), which is the rate banks pay when they borrow money from the ECB for one week. This rate moves in the middle of a corridor between two other rates. The lower bound, or floor, is the rate on the **deposit facility** (DFR), which banks can use to make overnight deposits with the Eurosystem. The ceiling is the rate the ECB sets on the **marginal lending facility** (MLF), which offers overnight credit to banks from the Eurosystem. With these three rates the ECB tries to steer the short-term market rate, [EONIA/€STR](#)¹ (black line), which reflects the wholesale euro unsecured borrowing costs of euro area banks.

Before the 2008 global financial crisis, the ECB operated in a **corridor or scarce reserves system**,² characterised by no excess reserves (grey bars), where the short-term market rate the ECB is intending to steer (black line) closely follows the MRO (yellow line) in the middle of the corridor. At that time a common operational system, this framework works by means of the amount of liquidity provided by operational instruments of the central bank. The ECB estimated the amount of reserves

needed, and provided that amount of liquidity through auction-like main refinancing operations. The corridor of the interest rates averaged 200 basis points, which ensured activity on the interbank market – where banks borrow and lend money among themselves – and kept the ECB balance sheet low. However, the ability to steer the money market rate in the middle of the corridor (with some tolerance for volatility around the MRO) required two things. Firstly, a good understanding and predictability of banks' (autonomous) aggregate liquidity needs.³ Secondly, a thorough knowledge of the interbank money market and its efficiency of redistribution of liquidity between banks.

Figure 1 – Key ECB interest rates, overnight rate and excess liquidity, % (left-hand axis) and € trillion (right-hand axis)



MLF: marginal lending facility; MRO: main financing operations; DFR: deposit facility rate; GFC: global financial crisis; APP: asset purchase programme.

The latter, efficient redistribution of liquidity between banks, was no longer functioning during the 2008 financial crisis. After the collapse of Lehman Brothers, the market for liquidity [froze](#), because banks essentially stopped lending to each other and started [hoarding liquidity](#), which dramatically increased interbank funding costs. To keep control over short-term market rates, the ECB moved to a fixed-rate full allotment tender procedure, where banks could demand any preferred amount of liquidity against eligible collateral at a fixed interest rate. This new scheme completely changed the functioning of the operational framework, as **liquidity was no longer determined solely by the ECB, but also by banks' liquidity demand**. The shift to a demand-driven 'floor', or 'abundant reserve system', led to a subsequent fall in the short-term market rate to the 'floor' given by the deposit facility rate (DFR). The evolution of the overnight market rate after the financial crisis reflects a time of [recurrent crises in the euro area](#). After hitting the floor in the course of the initial 2008 crisis, the overnight market rate slowly rose back up and actually crossed the MRO before collapsing again in 2011 during the sovereign debt crisis. Coupled with persistent below target inflation, the Eurozone's situation in the 2010s illustrates that both the monetary policy stance and the choice of the optimal (or feasible) operational framework depends on the economic and regulatory environment at a given time.

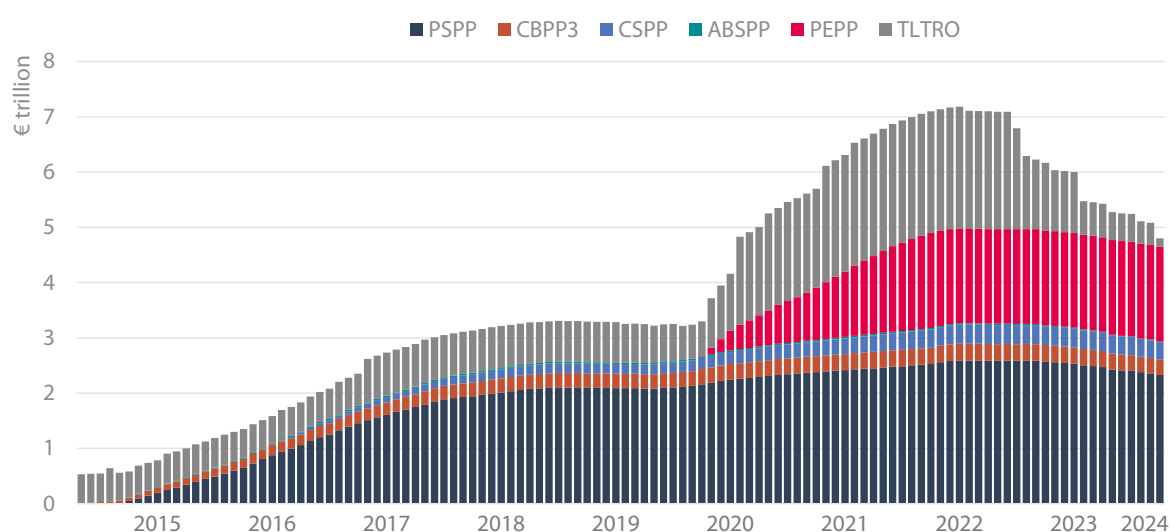
Economic recovery from the double-dip recession remained weak, with 2013-2014 growth averaging [0.6%](#) across the euro area. The gradual repayment of the three-year long-term refinancing operations (**LTRO**), introduced in 2011 to provide additional liquidity in light of the sovereign debt crisis, led to a [passive tightening](#) of financial conditions (as seen in the decrease of

excess reserves in 2012-2013 in Figure 1). As a result, in 2013 short-term interest rates picked up from the floor again, and rose even when the MRO was cut by 25 basis points to 0.5 % in May 2013. Likewise, shrinking the corridor by cutting the MLF, implementing forward guidance, and even turning the DFR slightly negative at -0.1 % and -0.2 %, all failed to bring inflation back up to the target. Thus, monetary policy reached the so-called **zero lower bound**,⁴ which severely limited the capacity of the ECB to ensure price stability with 'conventional' monetary policy tools.

Against this backdrop, the ECB introduced its first comprehensive asset purchase programme (**APP**) at the beginning of 2015. Together with the introduction of targeted long-term refinancing operations (**TLTRO**) in 2014, these 'unconventional' policy measures created unprecedented levels of [excess liquidity](#) in the banking system, and the ECB moved effectively from a corridor towards a floor system. Following the launch of the pandemic emergency purchase programme in 2020, excess liquidity in the euro area rose to a historic peak of nearly €4.7 trillion in mid-2022.

During recent monetary tightening efforts, the ECB has started to shrink its balance sheet ([quantitative tightening](#)), and excess liquidity has fallen by about €1.2 trillion (see Figure 2). This reduction is mainly [driven](#) by banks repaying the funds borrowed through the [TLTRO](#). In addition, the ECB has been reducing its asset holdings since March 2023. Hence, the [new system](#) is a reaction to a situation in which excess liquidity is partially, but not fully, drained from the system.

Figure 2 – ECB holding assets by programme, € trillion



Data source: [ECB data portal](#), University of Leipzig's [TLTRO-Tracker](#). PSPP is the public sector purchase programme; CBPP3 is the third covered bond purchase programme; CSPP is the corporate sector purchase programme; ABSPP is the asset-backed securities purchase programme; PEPP is the pandemic emergency purchase programme; TLTRO are targeted long-term refinancing operations.

Conceptually, this process [moves](#) the money supply curve from the flat part further left to the steep part of the demand curve, so that discrete changes in liquidity again have an effect on the level of short-term interest rates – something that is not the case with abundant reserves. Hence, the crucial question concerns the exact location of the inflection point at which the ECB reduces its balance sheet to such an extent (leaner balance sheet) that it incentivises banks to draw liquidity from the interbank market, which, in turn, might lead to tensions on the money market. The [IMF](#) estimates the total necessary amount of euro area bank excess reserves to be about €1.3 trillion or less, compared with €3.5 trillion as of February 2024. There is, however, considerable uncertainty about the exact location of the inflection point, because recent estimates of banks' liquidity demand have been [blurred](#) by years of large excess reserves; this demand could have shifted fundamentally due to [changes](#) in banking regulations and risk management procedures. To navigate carefully through this fog, the ECB indicated that it would closely monitor money market activity, recalibrating its

monetary policy tools if and when needed. Based on the experience, the ECB will review the key parameters of the operational framework in 2026.

The updated operational framework

The operational framework update brought in two key changes:⁵ a change in the calibration of the key policy rates; and two novel policy tools, about which there are very limited details.

Firstly, from 18 September onwards, there will be **a narrower corridor of policy rates**. The middle rate on the MRO will be anchored at 15 basis points above the deposit rate, as opposed to 50 basis points currently. The highest rate, on the MLF, will remain at 25 basis points above that MRO. The corridor will shrink from 75 basis points to 40 basis points. This helps to limit the volatility in an asymmetric way (closer to the DFR), because it makes having too little liquidity more expensive than having too much. The goal is to anchor the rate more towards what the ECB calls a **'soft' floor** at the DFR, which is soft in the sense that, with reserves becoming less ample, the ECB will tolerate limited upward deviations. According to the ECB, the short-term market rates are expected to **stay closer** to the deposit rate, but – and this is one of the main intentions – with small fluctuations above that rate (towards the MRO). The effectiveness of the asymmetric narrow corridor as insurance against upward deviations of the market overnight rate could be weakened if there was a **stigma** in borrowing from the MRO as a signal of inability to borrow from the market. It should be emphasised that narrowing the spread will become important only once excess liquidity decreases to a point where some banks, unlike now, need to start borrowing from the MRO again. At that point, the ECB will move from a de facto supply-driven system, where banks can get as much liquidity as they like against broad collateral requirements, towards a demand system, where the *marginal* unit of reserves is provided through regular refinancing operations (MRO).

Secondly, the updated operational framework will contain two **new policy tools**, which have not yet been clearly defined in terms of technical features or when they will be introduced. Because part of the liquidity demand is structural, the ECB plans to add an additional instrument to its toolbox, a new permanent portfolio of assets to satisfy structural liquidity needs at a longer maturity. While the details on the size and composition have not yet been decided, the ECB added cautious wording on **secondary objectives and climate change**. In contrast to the current monetary policy portfolio, which aims to extract duration from the market, the purpose of the permanent portfolio is to provide structural liquidity to the banking system. The second novel tool will be additional longer-term refinancing operations complementing this new permanent portfolio. In a similar fashion, no detailed information has been provided as to what conditions apply to such long-term lending facilities, for instance on potential maturity or whether fixed or variable rates will apply. The ECB plans to introduce these two instruments 'once the Eurosystem balance sheet begins to grow durably again'. As such, there are no objective criteria for determining the point at which these new policy tools will be introduced, nor any indication of what parameters might be looked at to establish the desired amount of excess liquidity.⁶

Overall, the update of the operational framework contained very limited information about the future implementation of monetary policy. The ECB's vagueness reflects the level of uncertainty about how liquidity demand is distributed across the euro area and how money markets are functioning. Given this lack of knowledge, it has been **argued** that a more precise and detailed decision at this point would have entailed the risk of taking a wrong turn.

The new 'soft' floor framework with a narrower spread can be characterised as a hybrid system, combining the smallest possible central bank balance sheet with both structural (permanent portfolio) and fine-tuning operations (refinancing operations). Its main objective is to allow for effective control of short-term money market rates in transition from a situation of abundant excess liquidity to one of less ample liquidity.

Table 1 – Corridor v. floor system

In general, the choice between a corridor and a floor system involves a trade-off between incentivising banks to insure themselves against liquidity shocks and limiting volatility. A wider corridor is consistent with a smaller central bank balance sheet. By encouraging banks to manage their liquidity buffers more tightly and facilitating greater activity in the interbank market, a corridor system would also help to limit risky behaviour by banks in the context of moral hazard due to overreliance on liquidity injections by the central bank. These risks are especially [high](#) with longer-term refinancing operations and non-marketable assets as collateral, as the new ECB framework envisages. On the other hand, a small or even zero-width corridor (i.e. a floor system), allows more precise control of the overnight rate, so that volatility is limited. Moreover, it would lower risks of liquidity shortages that may have implications for financial stability and impair monetary transmission.

	Corridor system	Floor system
Pros	<ul style="list-style-type: none"> • Smaller balance sheet • Banks are encouraged to manage their liquidity buffers more tightly • Larger interbank activity: uncovers information through price signals 	<ul style="list-style-type: none"> • More precise control of the overnight rate • Lower risk of liquidity shortages • Balance sheet tools available at the effective lower bound
Cons	<ul style="list-style-type: none"> • Requires more frequent market operations • Increased vulnerability to intermittent liquidity shortages • (Estimation of autonomous liquidity demand necessary) 	<ul style="list-style-type: none"> • Larger balance sheet • Liquidity spiral: weaker incentives for banks to manage liquidity buffers • Less interbank market activity

Source: [Borio \(2023\)](#); [IMF \(2024\)](#).

Reasons for the framework update

The aim of the update was to address four concerns regarding the prevailing floor system.

First, the floor was 'leaky', meaning that the short-term rate was falling further and further below the DFR. At first glance, this seems to be counterintuitive: why would banks be willing to loan money for less than the interest they would receive from the central bank? The reason is a [segmentation](#) of the money market between banks and the increasing share of non-bank financial intermediaries ([NFBFI](#)), which do not have access to the deposit facility. Due to balance sheet costs, banks will only pay a rate below the DFR for deposits of non-banks.⁷ This widening spread between the DFR and the short-term rate has raised concerns about the effective transmission of monetary policy.

A second concern was that, by providing ample reserves, banks were discouraged to seek market-based funding solutions. A functioning interbank market in the Eurozone matters for both legal and economic reasons. There is a [legal obligation](#) to act in line with the principle of an open market economy in the Treaty on the Functioning of the European Union. Economically, market solutions have disciplining effects for banks to build their own liquidity buffers and help to discover information conveyed in prices, which is important for market participants and supervisors alike. While a structurally higher supply of liquidity may be stabilising in the short run, it could pose [longer-term risks](#) to financial stability by distorting market prices and inducing excessive risk-taking. In addition to this concern over a 'vertical moral hazard', in a currency union with sovereign member countries the risk of a 'horizontal moral hazard' in monetary and fiscal interactions also has to be taken into account.

A third concern is that providing reserves through asset purchases reduces the free floating of safe assets, which could potentially lead to [scarce collateral](#) in some segments of the financial market and delay the transmission of monetary policy. Repurchase agreements ('repos'), which allow the borrowing and lending of cash against collateral, account for the largest part of the money market

in the euro area (56%) and are, therefore, crucial for the transmission of monetary policy. Together with market segmentation, the scarcity of safe assets can also help to explain why the floor is leaky. Because financial institutions rely on government bonds for regulatory purposes, they are willing to lend their cash in exchange for bonds at a rate below the DFR. To prevent scarcity of safe assets, the ECB changed the ceiling for the remuneration of government deposits to 20 basis points below the short-term interest rate (€STR) in February 2023. With this measure, the ECB aimed to provide incentives for a gradual reduction of such deposits, to minimise the risk of adverse effects on market functioning and ensure the smooth transmission of monetary policy.

Finally, one ECB-specific concern is that it operates in a currency union with long-standing structural differences across EU countries (e.g. levels of public debt and corresponding variations in sovereign debt risk premiums). This is further exacerbated by the lack of complete banking union, leading to gaps in the financial architecture and bank fragmentation. The problem of a supply-driven floor system is that liquidity is unevenly distributed across Member States and banks. For example, 40% of banks hold the entire excess liquidity from asset purchases in terms of total assets, with the highest share being held in Germany. Therefore, one important reason for putting refinancing operations at the centre of liquidity provision in the new framework is to ensure that liquidity reaches all corners of the euro area.

Conclusion

With two main changes to the operational framework, the re-calibration of the key policy rates and two novel policy tools, the ECB is trying to prepare for a transition with less excess liquidity. The ECB's lack of precision over certain elements reflects the level of uncertainty about how liquidity demand is distributed across the euro area and how money markets are functioning.

The spread between the MRO and the DFR reflects the trade-off the ECB faces between limiting volatility and incentivising banks to insure themselves against liquidity shocks in financial markets. This trade-off depends on the cost of carry, which is the spread between the rate banks pay for borrowing reserves and the remuneration they receive when depositing these reserves back with the central bank. According to the ECB, the chosen spread of 15 basis points is small enough to contain volatility but large enough to preserve incentives for money market activity by encouraging banks to manage their liquidity prudently.

Because of high uncertainty over aggregate liquidity needs, the ECB indicated that it would closely monitor money market activity, recalibrating its monetary policy tools if and when needed during the transition to a 'soft' floor operational framework with a narrow corridor. This uncertainty stems from the fact that recent estimates of banks' liquidity demand have been blurred by years of large excess reserves, and this demand could have shifted fundamentally due to changes in banking regulations and risk management procedures.⁸ Consequently, the ECB has decided to closely monitor and review the available options to maintain control during the transition process of balance sheet normalisation in 2026 or, if necessary, earlier. However, the uncertainty might be overestimated. The key argument is that, in a corridor system, reserves are scarce and only serve settlement purposes, while they also serve as a store of value in a floor system with abundant reserves. With abundant reserves, uncertainty arises mainly from reserves' impact on the overall constellation of relative yields. During the transition phase to a system with scarcer reserves, where liquidity is used for settlements, there is also uncertainty over liquidity demand. This dual function of reserves means that the uncertainty and volatility of demand for reserves is partly a function of a floor system itself. Because of this endogeneity, the predictability of demand for reserves in a scarce reserve system may be underestimated, while the cost of transition from an abundant to a fully scarce reserve system may be overestimated.

In conclusion, the new ECB 'soft' floor system can be characterised as a hybrid system, using the minimal quantity of excess reserves that remains consistent with the floor system in principle, but allowing the possibility of market rates to exceed the DFR if and when there is a liquidity shortage

in the system. To this end, the ECB made a small adjustment to the width of the corridor, making it more narrow and asymmetric to limit volatility. Reflecting the high level of uncertainty around liquidity demand and its distribution, no indication was given of desirable excess reserves. As a consequence, information about the two new instruments, a structural portfolio of assets and long-term refinancing operations, remains vague. According to a recent IMF study, a near-zero corridor system such as the ECB's new 'soft' floor framework would allow the ECB to control the overnight money market more precisely relative to a standard corridor system. The IMF estimates that a hybrid system would be consistent with a total amount of euro area bank excess reserves of about [€1.3 trillion](#) or less, compared with €3.5 trillion as of February 2024. While a greater role for the interbank market will require banks to strengthen their liquidity management, it also opens the possibility of [self-fulfilling liquidity runs](#) as potential liquidity squeezes in the money market may affect the [fragmentation of monetary policy transmission](#) disproportionately in the European monetary union; these risks call for completion of the [banking union](#). Adequate financial regulation combined with strong banking supervision, risk management and crisis management, including European deposit insurance, would be a complement to the ECB's new operational framework, contributing to a sound economic and monetary union.

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ENDNOTES

- ¹ The euro short-term rate ([€STR](#)) is a rate which reflects the wholesale euro unsecured overnight borrowing costs of euro area banks.
- ² Reserves in a corridor system are scarce because interest paid on reserves is lower than market interest rates. Therefore, banks have an incentive to reduce excess reserves or the lending of extra funds to other banks on the money market.
- ³ Autonomous liquidity needs mainly [stem](#) from banknotes in circulation and government balances at central banks, as well as net foreign assets and a miscellaneous category that includes items in the course of settlement (net float).
- ⁴ The zero lower bound occurs when the short-term nominal interest rate is at or near zero, which limits the central bank's capacity to stimulate economic growth.
- ⁵ There is no change in the minimum reserve requirements or to the remuneration of those reserves.
- ⁶ The new 'normal' of the ECB's balance sheet is likely to be different from pre-2008 levels. The estimated equilibrium excess liquidity, together with banks' demand, has [risen](#) over time to meet internal and regulatory liquidity constraints, as the financial system expands and regulations change.
- ⁷ Confronted with similar problems in the United States, the Federal Reserve decided to set up the [overnight reserve repo facility](#) for a broader set of financial institutions, including non-banks, to drain the excess liquidity. The fact that market-based finance is much [less important](#) than in the US, and bank lending more important (total assets owned by banks as a percentage of GDP are [244 %](#) in the euro area compared to 100 % in the US), speaks against this solution for the Eurozone. At the same time, the share of banks in the euro area vis à vis non-banks, which do not have direct interactions with the central bank, has [decreased](#) significantly, from 52 % in 2009 to 37 % in 2020.
- ⁸ The [unexpected interest volatility spikes](#) in the United States in September 2019 illustrate this problem, although the supply of reserves was still well above what banks had indicated in surveys as their lowest comfortable level.

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