

The circulation of liquidity in the euro area: interpreting central banks' TARGET positions

Between 2016 and 2022, bank reserves tripled on the liability side of Eurosystem balance sheets before gradually falling back, while, remarkably, the distribution of this liquidity between countries remained relatively stable. However, significant fluctuations affected the national balances resulting from cross-border settlements ("TARGET balances", named after the original name of the main wholesale settlement system in the euro area).

This article presents a model that quantifies the contribution of each type of monetary policy operation to the evolution of TARGET balances since the introduction of the euro. The first major movements are attributable to banking sector refinancing operations, particularly during the sovereign debt crisis of 2011-12; then between 2015 and 2025, the Eurosystem's asset purchase programmes – and their repayment at maturity – account for most of the changes observed.

Régis Breton, Thibaut Gentil, Sébastien Ray
 Directorate General Financial Stability and Operations
 Analytical Modelling Centre for Financial Stability

JEL Codes
 E42, E58,
 F33

The authors would like to thank David Adam and Éric Desclos for their review and comments, which greatly helped to improve this article.

TARGET balances at end-2025

(order of magnitude)

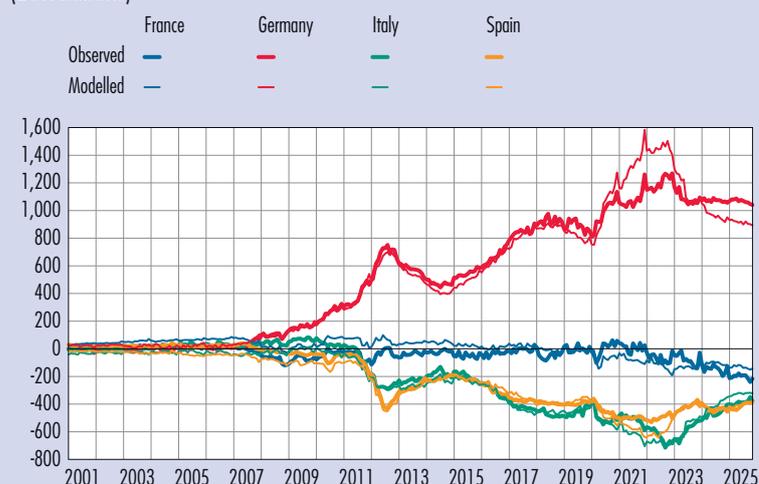
1,000 billion euro
 for Germany

–400 billion euro
 for Italy and Spain

–200 billion euro
 for France

TARGET balances of the four largest national central banks in the euro area

(EUR billions)



Sources: European Central Bank; authors' calculations.

Notes: Most recent value at November 2025.

TARGET is the real-time gross settlement system for the Eurosystem.

TARGET balances are the central bank positions resulting from transactions in the TARGET system.

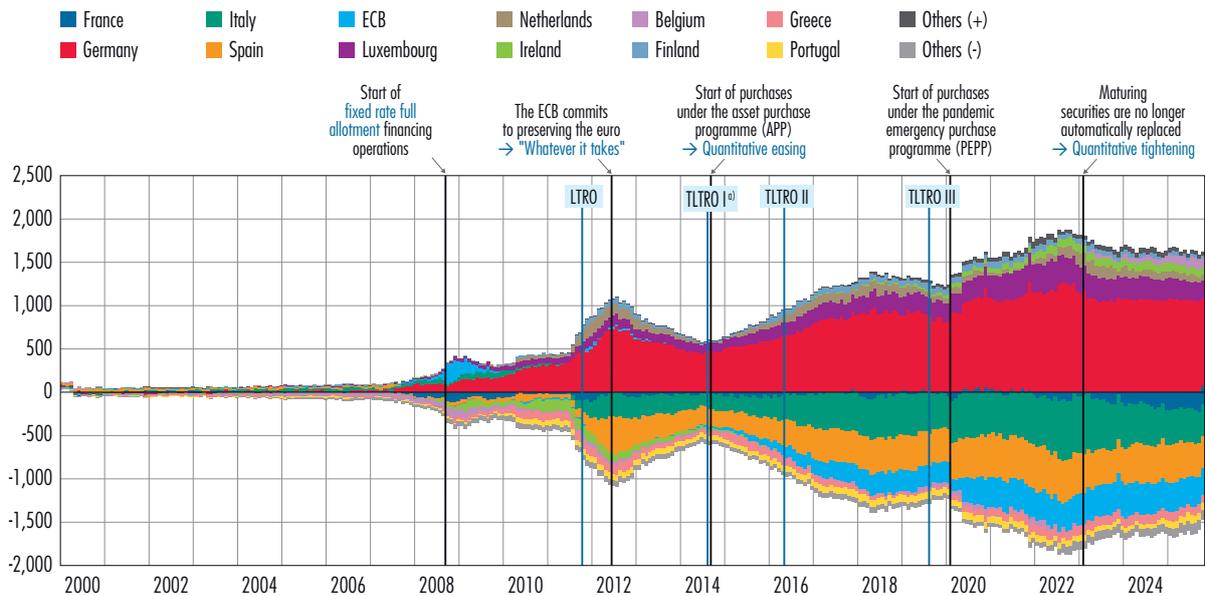
TARGET balances are positions recorded on the balance sheets of Eurosystem central banks linked to the organisation of payments across borders. Technical and initially little known outside central banking circles, they quickly became part of public debate during the euro area sovereign debt crisis in 2011-12. At the time, their rapid increase in size (see Chart 1) was analysed from the perspective of the crisis, as a consequence of the Eurosystem’s responses to the stress placed on the banking system or, for certain commentators, as a sign of dysfunction in the euro area.

Since then, a number of studies have helped to explain how TARGET accounts work and to clarify how they should be interpreted.¹ In particular, several recent studies have demonstrated that the existence of persistent balances can be explained by the implementation of unconventional monetary policy measures:² after declining with the end of the sovereign debt crisis, TARGET balances rose again in absolute terms, in parallel to the purchase programmes implemented by the Eurosystem between the end of 2014 and 2022 (see Chart 1).

This article seeks to quantify the contribution of monetary policy operations to the evolution of TARGET balances.

C1 TARGET positions of euro area central banks

(EUR billions)



a) Targeted longer-term refinancing operation.

Source: European Central Bank.

Notes: Most recent value at November 2025.

TARGET, Trans European Automated Real-time Gross settlement Express Transfer system; TARGET positions, central bank balances resulting from TARGET transactions; ECB, European Central Bank.

1 See, in particular, Jobst et al. (2012), ECB (2013).

2 Grossman-Wirth and Hallinger (2018), Debever and Toulemonde (2021), Eisenschmidt et al. (2024).

1 The European monetary union allows liquidity to circulate freely

The central bank money issued by the Eurosystem in the form of banknotes and reserves (commercial bank deposits with the central bank) circulates freely within the euro area. This circulation, which is what results in central banks' TARGET balances, plays an essential role in the functioning of the monetary union, particularly with regard to the organisation of payments and the implementation and transmission of monetary policy. It also promotes financial integration and the mobilisation of savings towards investment throughout the monetary union.

The circulation of liquidity creates the TARGET positions appearing on central banks' balance sheets

The circulation of reserves can result from payment flows between commercial banks, as a counterpart to proprietary transactions or transactions on behalf of their customers.³ When a payment is made between two commercial banks in the same country, the reserves remain on the balance sheet of that country's national central bank (NCB), which

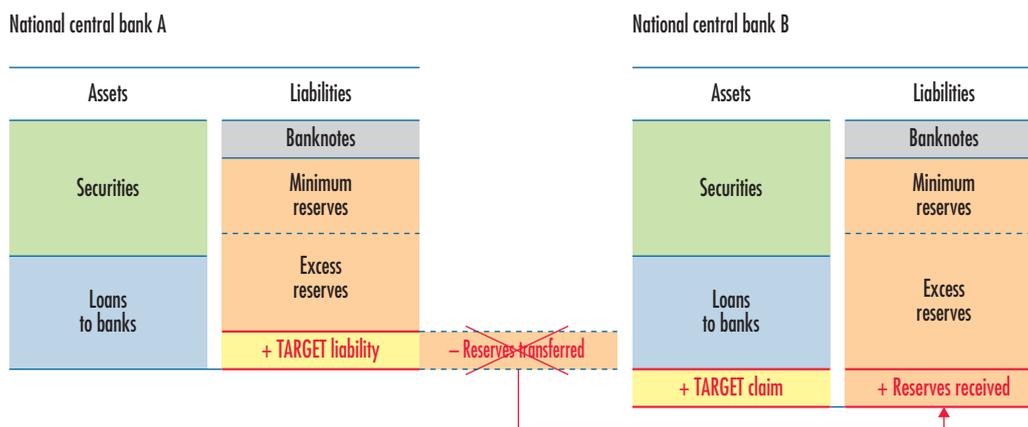
simply transfers them from one account to another. However, when the two commercial banks have their accounts with two different NCBs, the reserves are transferred between countries from one NCB to the other: the receiving NCB (B in Diagram 1) records a new TARGET claim in respect of the reserves received (recorded on the liability side); the other (A in Diagram 1) records a new TARGET liability to replace the transferred reserves.

Monetary policy operations can also generate TARGET positions. For example, when an NCB purchases a security from a commercial bank for which it does not maintain an account, it records it on the asset side of its balance sheet and recognises a TARGET liability on the liability side. Meanwhile, the NCB that maintains the commercial bank's account creates reserves on that account and recognises a TARGET claim on the asset side of its own balance sheet (see Diagram 2 below).

TARGET balances (or positions) therefore reflect the accounting in the balance sheets of the Eurosystem central banks of the movement of reserves between jurisdictions.⁴ They constitute a net position vis-à-vis the European Central Bank (ECB),

D1 Illustration of the TARGET mechanism

Example of the transfer of reserves from one jurisdiction to another



Source: Arrata and Gentil, 2025.

Note: TARGET, Trans European Automated Real-time Gross settlement Express Transfer system; TARGET positions, central bank balances resulting from TARGET transactions.

³ In terms of operations, these reserve transfers are carried out via the T2 real-time gross settlement system, formerly known as the TARGET (Trans-European Automated Real-time Gross settlement Express Transfer) system and then TARGET2, in which the European System of Central Banks and commercial banks in the euro area participate – see Banque de France (2022) for a detailed description.

⁴ More specifically, between banks that have accounts in different NCBs, regardless of the country of residence of those banks' customers.

D2 Illustration of the TARGET mechanism

Example of a national central bank (NCB) that purchases securities from a commercial bank outside its jurisdiction

Purchasing NCB		NCB holding the selling commercial bank's account	
Assets	Liabilities	Assets	Liabilities
	Banknotes		Banknotes
Loans to banks	Minimum reserves	Loans to banks	Minimum reserves
Securities	Excess reserves	Securities	Excess reserves
+ Securities purchased from the commercial bank	+ TARGET liability	+ TARGET claim	+ Reserves credited to the commercial bank's account

Source: Authors.

Note: TARGET is the real-time gross settlement system for the Eurosystem.

TARGET positions are the central bank balances resulting from transactions in the TARGET system.

which acts as the central counterparty. In total, they net out to zero, and their amount is unlimited (introducing a limit would be incompatible with an integrated monetary union – Jobst, 2011). In fact, some NCBs have built up persistent credit or debit positions.⁵ This situation does not arise in the United States, where the equivalent of TARGET accounts for the Federal Reserve System operates under different terms and conditions (see Box 1 below).

A central bank's TARGET balance is the difference between the liquidity reported on its balance sheet and the liquidity it has issued

In order to analyse TARGET balance movements using central bank balance sheets, we have to take into account both the issuance of liquidity and the liquidity's location. Reserves are mainly issued (or destroyed) in the context of monetary policy operations. These issues are carried out by the NCBs and recorded on their balance sheets, as the monetary policy of the euro area – although decided collectively – is implemented in a decentralised manner. On the asset side, the counterparts of the liquidities created by an NCB (loans to banks, securities purchased) do not circulate and remain on its balance sheet. On the liability side, the reserves created can flow to other NCBs.

The TARGET balance resulting from the circulation of liquidity can be read in a central bank's balance sheet as the difference between the liquidity on its liability side and the liquidity it has issued, still visible on the asset side – shown as **L** and **A** respectively in Diagram 3.

D3 Schematic balance sheet of a Eurosystem central bank

Assets	Liabilities
Assets net of liabilities other than L	Bank deposits and banknotes
TARGET position	

$TARGET = L - A$
 Liquidity on the liability side of the central bank Liquidity created by the central bank

Source: Authors.

Note: In this example, the TARGET position is positive; a TARGET claim is thus recognised in the central bank's assets. In the event of a negative TARGET position, A is superior to L and a TARGET liability is recorded on the liability side of the balance sheet.

⁵ These balances earn interest at a reference rate. The associated interest flows are pooled as part of the monetary income reallocation arrangement (Arrata and Gentil, 2025).

BOX 1

The United States Federal Reserve’s Interdistrict Settlement Accounts¹

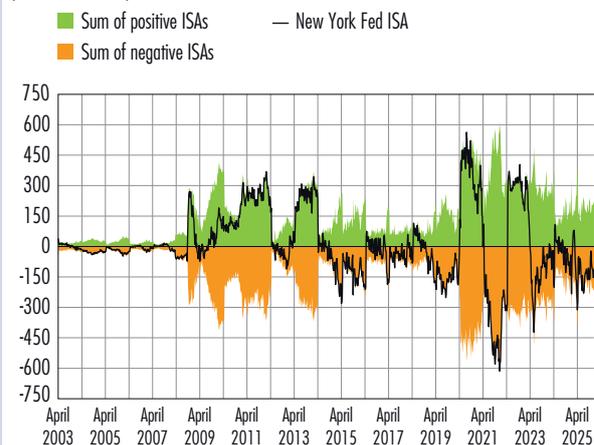
The United States Federal Reserve System is organised into 12 “districts”, which each have one regional Federal Reserve Bank. While the Federal Reserve publishes a consolidated balance sheet, each Federal Reserve Bank maintains its own balance sheet. Interdistrict Settlement Accounts (ISAs) are used to record transactions between them, for example in the case of reserve movements between commercial banks located in different districts. They are the equivalent of the Eurosystem’s TARGET balances.

ISA accounts function differently from TARGET balances in two ways that reflect specific institutional and operational characteristics of the US monetary system:

- In the United States, monetary policy implementation is delegated to the Federal Reserve Bank of New York (FRBNY). It mainly consists of buying (or selling) securities as part of the management of the SOMA (System Open Market Account) portfolio. During these transactions, the FRBNY mainly interacts with banks in its district. It thus creates reserves on its own liability side, while the securities purchased are apportioned to all 12 Federal Reserve Banks according to an annually revised key. The counterpart involves an increase in the FRBNY’s ISA and a decrease for the ISA of the other Federal Reserve Bank.
- ISAs are subject to an approximate annual rebalancing in April: the amount netted from each federal bank’s account is the average ISA balance over the previous 12 months. This adjustment involves a transfer of securities from the SOMA portfolio, which is mainly made up of federal government securities.

Changes in US Federal Reserve System ISA balances

(EUR billions)



Sources: United States Federal Reserve (FRED data); authors’ calculations.

Notes: Balance of the New York Fed’s ISA (Interdistrict Settlement Account) and sums of positive and negative balances across the United States’ 12 Federal Reserve Banks. Weekly data. The vertical lines approximately correspond to the April adjustments.

These operating procedures result in a very different dynamic from that of TARGET balances (see chart). The Federal Reserve Bank of New York has the most variable balance, but the annual readjustment limits the accumulation of credit or debit positions.

¹ This box provides a simplified overview of ISA principles and draws on preliminary work carried out by Benjamin Rocheteau during an internship at the Banque de France. For a detailed description, see Wolman (2013).

2 A simple modelling of TARGET balances

The accounting identity in Diagram 3 (above) allows us to model TARGET balances based on the distribution of overall liquidity between the various central banks. It is then possible to establish the link between the balances of the various NCBs and their net assets, and ultimately connect them to monetary policy operations.

The distribution of liquidity between jurisdictions is relatively stable

Since the introduction of the euro, the total amount of liquidity on the liability side of central banks' balance sheets has changed significantly.

Prior to 2008, this amount mainly corresponded to credit institutions' minimum reserves and banknotes, and its steady increase simply reflected the demand for banknotes and the growth in deposits in the euro area. However, in the aftermath of the 2008 financial crisis, there was a succession of unconventional monetary policy measures, which resulted in the creation of a regime of structural liquidity excess. After 2016, the amount of liquidity in circulation rose well above EUR 2,000 billion (see Chart 2a).

Each NCB's share of total liquidity has remained relatively stable since 2016 (see Chart 2b) but total liquidity itself has varied by a factor of one to three, from nearly EUR 2,000 billion in 2016 to a peak of more than EUR 6,000 billion in 2022. During this period of sharp liquidity growth, the Banque de France's share, for example, remained relatively stable, between 17% and 23%, and the Bundesbank's share fluctuated between 35% and 44% (see Appendix 1).

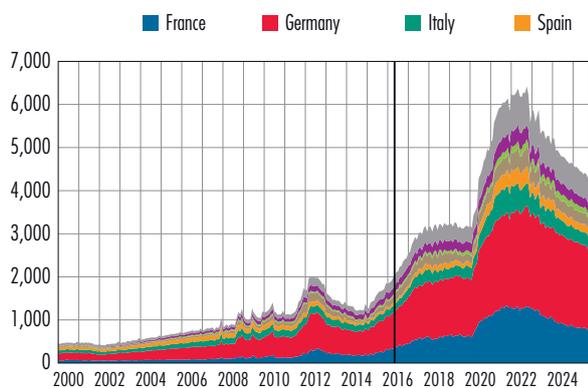
This stable distribution of the liquidity stock results from the aggregation of different types of flows. Some relate directly to Eurosystem operations, in particular the purchases made by all NCBs of financial securities from non-euro area counterparties, whose accounts are often held in German banks (Baldo et al., 2017). Other flows are linked to the circulation of money between private economic players, because once liquidity has been created in a given location, its use generates new transactions that gradually disperse it around jurisdictions.

A "constant liquidity distribution" model describes most of the changes in the TARGET balances

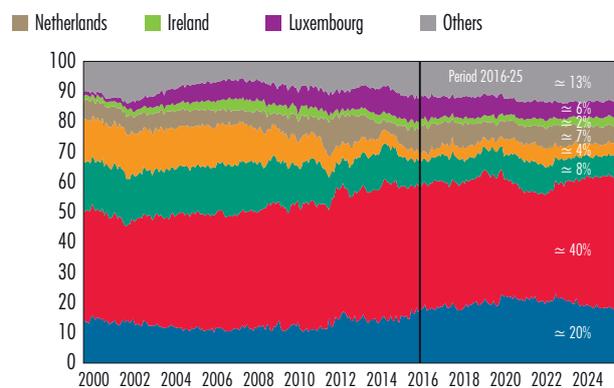
Based on the above observation, the model assumes that the amount of liquidity on the liability side of an NCB's

C2 Liquidity on the liability side of euro area central banks' balance sheets

a) By value
(EUR billions)



b) As a proportion
(% of total amount)



Sources: European Central Bank; authors' calculations.
Notes: Most recent value at November 2025.

Liquidity corresponds to bank reserves and banknotes on the liability side of euro area central bank balance sheets. Its accounting definition is provided in Appendix 1.
In Chart 2b, the percentages shown correspond to the averages calculated over the 2016-25 reference period.

balance sheet is a constant fraction γ_{NCB_i} of that of the Eurosystem as a whole. However, at the euro area level, the amount of liquidity in circulation is equal to its counterpart, i.e. the amount A_{EA} of net assets held by the Eurosystem. The TARGET balance is thus expressed as:

$$TARGET_{NCB_i}^{modelled}(t) = \underbrace{\gamma_{NCB_i} \cdot A_{EA}(t)}_{\substack{\text{Liquidity} \\ \text{on } NCB_i \\ \text{liability side}}} - \underbrace{A_{NCB_i}(t)}_{\substack{\text{Liquidity created} \\ \text{by the } NCB_i \\ \text{(i.e. assets net} \\ \text{of liabilities)}}$$

Constant fraction Liquidity created by the Eurosystem (assets net of liabilities)

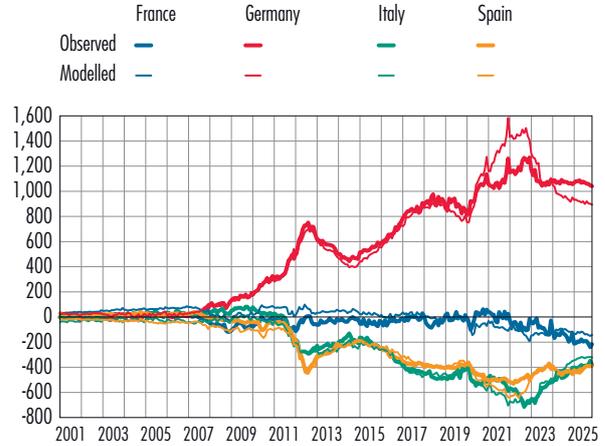
where $TARGET_{NCB_i}^{modelled}(t)$ represents the TARGET balance modelled for NCB_i ($i = 1$ to 20) at date t .

For the purpose of this study, the capital allocation keys (γ_{NCB_i}) used are the averages for the reference period from mid 2016 to mid 2025: $\gamma_{DE} = 40\%$, $\gamma_{FR} = 20\%$, $\gamma_{IT} = 8\%$, and $\gamma_{ES} = 4\%$ (see Appendix 1). The modelled balances obtained using this simple approach correctly reproduce the major trends observed since the creation of the euro (see Chart 3).

Thus, assuming that the distribution of liquidity on the liability side of NCBs (L in Diagram 3) is fixed, TARGET positions can be explained primarily by the distribution of operations creating/destroying liquidity (assets net of liabilities – A in Diagram 3). Even for the period prior to 2016, when the distribution of liquidity was less stable, the gaps between the model and the observations remain small, as the amounts involved are limited. This modelling

C3 TARGET balances of the four largest national central banks in the euro area

(EUR billions)



Sources: European Central Bank; authors' calculations.

Notes: Most recent value at November 2025.

TARGET, Trans European Automated Real-time Gross settlement Express Transfer system; TARGET balances, central bank positions resulting from transactions in the TARGET system.

based on liquidity distribution allows for a preliminary analysis of balance movements, which can be explored in greater depth by examining economic and financial factors (balance of payments, commercial bank transactions, etc.): the 2011-12 crisis analysed below (Section 3) is one such example.

TARGET balances can also be broken down according to monetary policy operations

In addition to its ability to reproduce the main TARGET balance developments, the "constant liquidity distribution" model also allows us to link these developments to monetary policy measures and other central bank interventions. To do this, the modelled TARGET balance of an NCB_i is broken down in order to isolate the effects of the various items on the Eurosystem's balance sheet:

$$\begin{aligned}
 & \text{Breakdown} \quad \left\{ \begin{aligned} & TARGET_{NCB_i}^{modelled} = \gamma_{NCB_i} \cdot A_{EA} - A_{NCB_i} \\ & TARGET_{NCB_i}^{modelled} = \underbrace{\gamma_{NCB_i} \cdot \text{Securities}_{EA}}_{\text{Effect of securities on TARGET balance of } NCB_i} - \text{Securities}_{NCB_i} + \underbrace{\gamma_{NCB_i} \cdot \text{Loans}_{EA}}_{\text{Effect of loans to banks on TARGET balance of } NCB_i} - \text{Loans}_{NCB_i} + \dots \end{aligned} \right.
 \end{aligned}$$

3 TARGET balances mainly result from unconventional monetary policy operations

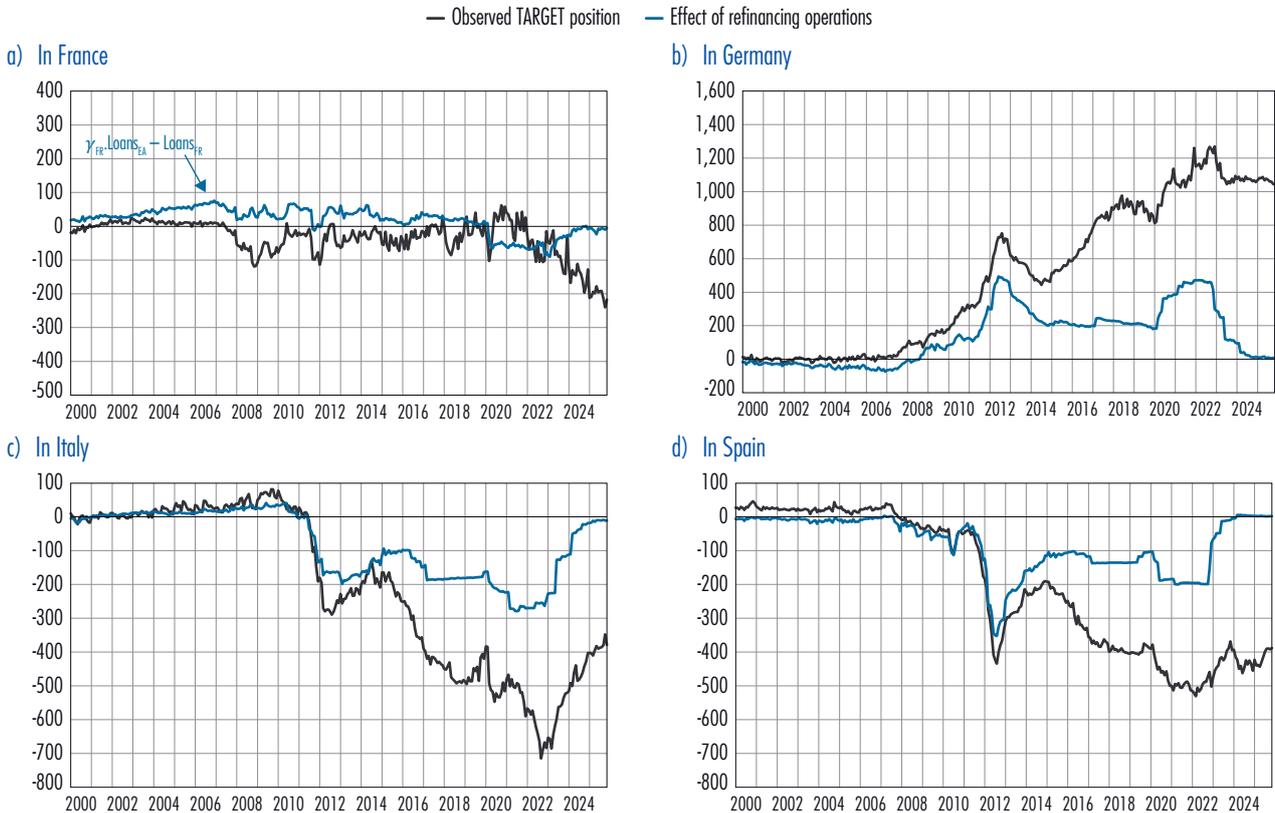
The breakdown of TARGET balances highlights the important role played by asset purchase programmes and long-term loans to banks within the framework of the accommodative monetary policy pursued between 2015 and 2022. However, other factors also had a temporary, but significant, impact, such as movements in non-monetary deposits on the liability side of central banks' balance sheets between 2020 and 2023 (see Appendix 2).

Prior to 2015, TARGET positions mainly reflected bank refinancing

The first significant fluctuation episode occurred during the sovereign debt crisis of 2011-12, when TARGET balances amounting to several hundred billion euro were transferred from the Italian and Spanish central banks to the Bundesbank. An examination of the breakdown of these balances according to the different types of transactions involved shows that this episode corresponds to local liquidity creation in the form of bank refinancing (see Chart 4).

C4 Effect on the main TARGET positions of loans granted to banks

(EUR billions)



Sources: European Central Bank; authors' calculations.

Key: When refinancing granted by an NCB, $(\Delta Loans_{NCB_i})$ is less than the share of NCB_i in the overall financing of the Eurosystem $(\gamma_{NCB_i} \Delta Loans_{EA})$, the TARGET balance increases.

Notes: Most recent value at November 2025. In Chart 4a, EA refers to the euro area and FR refers to France.

From the summer of 2011 onwards, Italian and Spanish commercial banks began to borrow increasingly large amounts from their respective central banks, first by using the main refinancing facility and then by subscribing to exceptional long-term refinancing operations in the winter of 2011-12. At the height of the crisis in the summer of 2012, Italian and Spanish banks' subscriptions amounted to 34% and 23%, respectively, of all Eurosystem refinancing operations; proportions that significantly exceed Italy and Spain's shares in the Eurosystem's overall liquidity (see Chart 2 above). In the wake of these borrowings, the liquidity in circulation was effectively redistributed across the euro area in proportions comparable to those in the model. The difference between the liquidity's origin and destination explains the main TARGET balance movements over the 2011-14 period. The effect of this episode on France's balance was neutral, as French banks' take-up of refinancing operations was proportional to their share of the liquidity created.

While the constant distribution model correctly reflects this episode, it does not alone allow us to identify the root causes; this still requires analysis of the reasons that led Italian and Spanish banks to subscribe massively to refinancing operations. An examination of commercial banks' balance sheet movements indicates that these borrowings were to address liquidity needs resulting from different circumstances: a decline in customer deposits in the case of Spanish banks; significant debt security purchases and reduced access to wholesale funding in the case of Italy (Cecioni and Ferrero, 2012; ECB, 2013). Correspondingly, in countries where participation in refinancing operations was lower (first and foremost, Germany), commercial banks recorded a liquidity surplus that mainly corresponded to an increase in customer deposits.

Conversely, the exceptional refinancing programme launched during the Covid crisis (TLTRO⁶ III, 2020-23) does not appear to have had an effect on TARGET balances. Liquidity seems to have remained in the jurisdictions where it was created. For example, as Italian banks had subscribed to more than 8% of the total amount

of the TLTRO III programme, the share of liquidity recognised in the Banca d'Italia's liabilities temporarily increased between 2020 and 2022, hence the weak variation in its TARGET balance compared to that provided by the model (see Chart 3 above). This result could be explained by the TLTRO III programme's attractive financial conditions: even if the eligible banks did not need extra liquidity, they had an incentive to subscribe to it and maintain the amounts as a safety net without necessarily drawing down on them.

Asset purchase programmes played a major role between 2015 and 2022

Between 2015 and 2022, the Eurosystem's monetary policy required central banks to sharply increase their securities holdings. Their overall portfolio reached EUR 5,100 billion (up from EUR 600 billion in 2015) and has gradually declined since 2022, to stand at EUR 4,082 billion at the end of November 2025. These changes lie behind the bulk of the variations in TARGET positions: since 2015, in the four major jurisdictions, the "securities component" of the modelled TARGET balance has evolved in parallel with the observed TARGET balance (see Chart 5 below).

The different central banks, operating within the framework of this unconventional monetary policy, purchased securities in proportions determined by the operational characteristics of the various programmes, unrelated to the observed distribution of liquidity. Among the main jurisdictions in the euro area, only the Banque de France acquired a proportion of total securities close to the proportion of liquidity observed on the liability side of its balance sheet (around 20%). France's TARGET balance is therefore the only one to have been little affected by asset purchases. The Bundesbank purchased 20% of securities ($Securities_{DE}$) and received 40% of the liquidity created in return ($\gamma_{DE} \times Securities_{EA}$): its balance increased. The Italian and Spanish central banks respectively purchased 15% and 13% of the securities and received 8% and 4% of the liquidity created: their balances decreased.

⁶ Targeted longer-term refinancing operation.

C5 Effect on the main TARGET positions of Eurosystem securities purchases

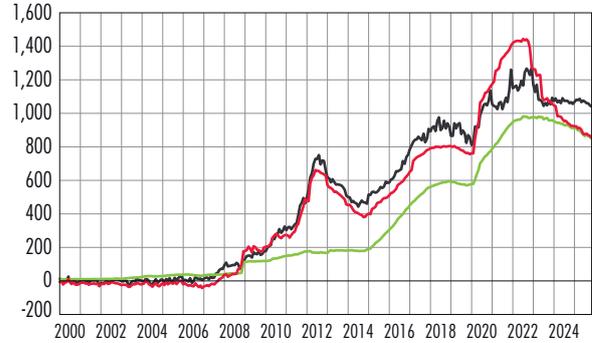
(EUR billions)

— Observed TARGET position — Effect of securities — Cumulative effect of refinancing operations and securities

a) In France



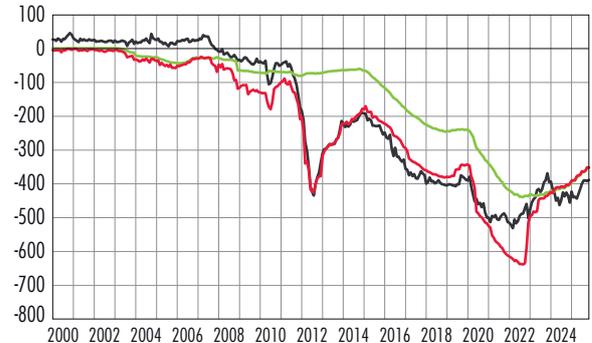
b) In Germany



c) In Italy



d) In Spain



Sources: European Central Bank; authors' calculations.

Notes: Most recent value at November 2025. In Chart 5a, EA refers to the euro area and FR refers to France.

The French TARGET balance decreased significantly in 2023-24, but remains moderate

Over the 2000-23 period, the Banque de France's TARGET balance remained contained within a range of +EUR 50 billion to -EUR 100 billion: a limited range well below that observed for the German, Italian and Spanish central banks (see Chart 1 above) and closer to the TARGET balance ranges of central banks in medium-sized countries such as Belgium and Finland, whose financial sectors are much smaller.

The breakdown provided by the model makes it possible to explain this stability by the closeness of the Banque de France's share in liquidity creating operations, on the one hand, to the fraction of liquidity recognised in its liabilities, on the other. The Banque de France contributed around

20% of the liquidity created by the Eurosystem through both asset purchases and bank refinancing operations, which roughly corresponds to the proportion of liquidity deposited with the Banque de France.

After mid-2023, France's TARGET balance became more negative, stabilising from October 2024 onwards at around -EUR 200 billion. According to the model, this negative shift was mainly due to changes in securities portfolio holdings (see Chart 5 above). The amount of securities held by the Banque de France declined less rapidly than that of the Eurosystem as a whole, meaning that it reabsorbed relatively fewer reserves than other jurisdictions. At the same time, in contrast to the examples of Italy and Spain in 2011-12, French banks' liquidity share remained close to 20% without needing to turn to central bank refinancing.

*
**

How should we interpret the variability of the Eurosystem central banks' TARGET balances? A model built on the strong assumption of a stable distribution of liquidity recorded on the liability side of the various central banks' balance sheets provides an intuitive interpretation of these positions since the launch of the euro, regardless of whether the conduct of monetary policy was restrictive or expansionary.

The changes in TARGET positions since 2015 can particularly be explained by the asset purchase programmes, through the differences in distribution arising between the creation of liquidity by national central banks and its redistribution by the European financial system. By reducing its balance sheet since 2023, the Eurosystem has contributed to the narrowing of the TARGET balances, which nevertheless remain substantial. Effects from temporary phenomena, such as changes in deposits by non-bank agents with central banks, may have added to this gradual process (see Appendix 2).

The constant liquidity distribution model is by nature more descriptive than predictive: in particular, there is no guarantee that liquidity will continue to be distributed in the same way in the future. The model could be enhanced through an identification of the mechanisms that explain the stability and variations in liquidity proportions, using other data sources in addition to the Eurosystem's public balance sheets.

References

[Arrata \(W.\) and Gentil \(T.\) \(2025\)](#)

“The allocation of monetary policy income within the Eurosystem”, *Banque de France Bulletin*, No. 260/6, September-October.

[Download the document](#)

[Baldo \(L.\), Hallinger \(B.\), Helmus \(C.\), Herrala \(N.\), Martins \(D.\), Mohing \(F.\), Petroulakis \(F.\), Resinek \(M.\), Vergote \(O.\), Usciati \(B.\) and Wangauteur \(Y.\) \(2017\)](#)

“The distribution of excess liquidity in the euro area”, *Occasional Paper Series*, No. 200, European Central Bank, November.

[Download the document](#)

[Banque de France \(2022\)](#)

“TARGET2, the Eurosystem’s RTGS system”, *Payments and market infrastructures in the digital era*, Chapter 7, Banque de France, May, pp. 107-133.

[Download the document](#)

[Cecioni \(M.\) and Ferrero \(G.\) \(2012\)](#)

“Determinants of TARGET2 imbalances”, *Questioni di Economia e Finanza*, No. 136, Banca d’Italia, September.

[Debever \(C.\) and Toulemonde \(N.\) \(2021\)](#)

“TARGET2 imbalances in the Euro Area”, *Tresor-Economics*, No. 284, *Direction générale du Trésor* (the French Treasury), May.

[Eisenschmidt \(J.\), Kedan \(D.\) and Schmitz \(M.\) \(2024\)](#)

“Euro area monetary policy and TARGET balances: A trilogy”, *Journal of International Money and Finance*, Vol. 141(C).

[European Central Bank \(2013\)](#)

“TARGET balances and monetary policy operations”, *Monthly Bulletin*, May, pp. 105-116.

[Download the document](#)

[Grossman-Wirth \(V.\) and Hallinger \(B.\) \(2018\)](#)

“Monetary policy and liquidity concentration in the euro area”, *Eco Notebook*, No. 93, Banque de France, 20 November.

[View blog post](#)

[Jobst \(C.\) \(2011\)](#)

“A balance sheet view on TARGET – and why restrictions on TARGET would have hit Germany first”, *VoxEU*, 19 July.

[Jobst \(C.\), Handig \(M.\) and Holzfeind \(R.\) \(2012\)](#)

“Understanding TARGET2: The Eurosystem’s euro payment system from an economic and balance sheet perspective”, *Monetary Policy & the Economy*, Q1/12, Oesterreichische Nationalbank, March, pp. 81-91.

[Wolman \(A. L.\) \(2013\)](#)

“Federal Reserve interdistrict settlement”, *Economic Quarterly*, Vol. 99, No. 2, Federal Reserve Bank of Richmond, second quarter, pp. 117-141.

Appendix 1

Calculation of liquidity distribution between countries

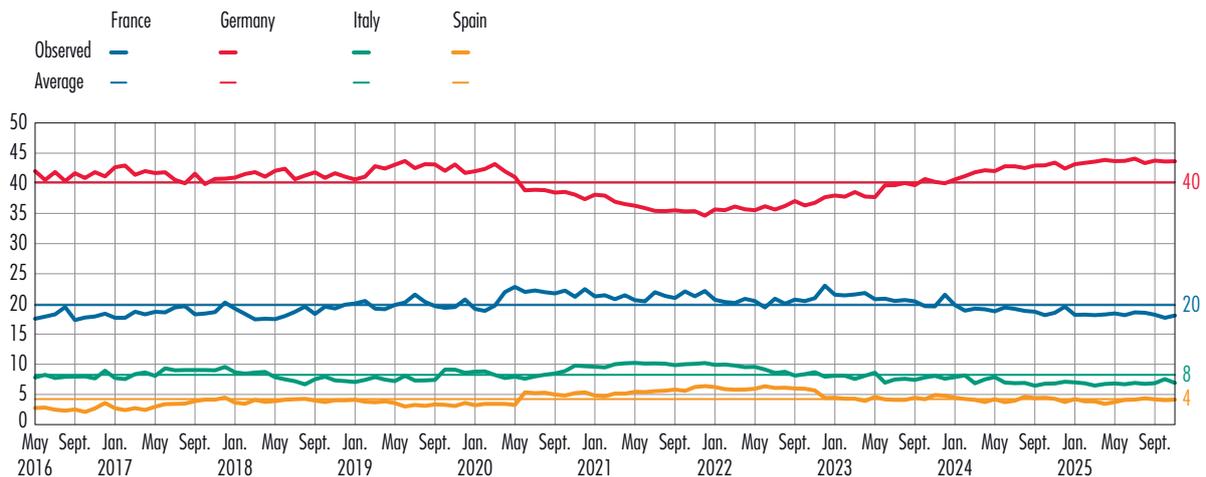
Definition of liquidity

The central bank liquidity used in this article corresponds to an aggregate of items published in the Eurosystem’s financial statements: the sum of bank reserves (item L020000 on the liability side of the central banks’ balance sheet) and banknotes “put into circulation” (the sum of items L010000 and L100400, minus item A090500). Item L010000 alone (“banknotes in circulation”) represents a flat-rate allocation of all Eurosystem banknotes among national central banks (NCBs) – see Arrata and Gentil, 2025. Items L100400 and A090500 bridge the gap between this amount and the amount of banknotes actually disbursed by the NCBs.

Method used to calculate the liquidity fractions on the liability side of each NCB balance sheet

The model presented in this article exploits the relative stability of the distribution of liquidity among Eurosystem NCBs. Its application necessitated the association of values with the liquidity fractions γ_{NCB} , which are coefficients specific to each NCB. These values were obtained by calculating the average liquidity share of each NCB between mid-2016 and mid-2025 (see their use in Chart 2, in the main body of the article), i.e. during the period of “abundant” liquidity (exceeding EUR 2,000 billion). They correspond to the straight lines shown in the chart below.

Bank reserves and banknotes on the liability side of the four largest national central banks in the euro area between mid-2016 and mid-2025
(% of euro area total)



Sources: European Central Bank; authors’ calculations.
Note: Most recent value at November 2025.

Appendix 2

The role of non-monetary deposits

National central banks (NCBs), in addition to their role as the “bank of banks” for their country, directly receive deposits in euro from certain institutions, particularly governments and foreign institutions (including central banks). For example, the French Treasury’s euro account is maintained by the Banque de France. These “non-monetary” deposits, which do not pertain to monetary policy, are one of the factors that contribute to NCBs’

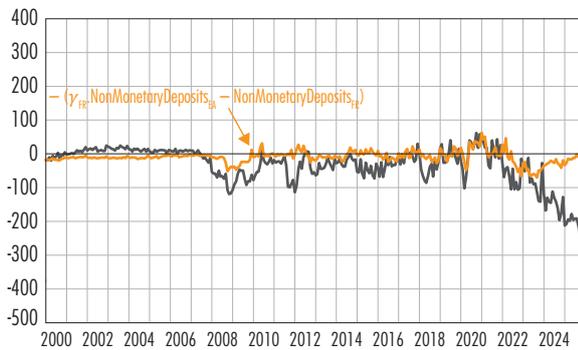
liquidity creation: a payment by the French Treasury injects liquidity into the banking sector through the Banque de France’s balance sheet. In the model with a stable distribution by country, this additional liquidity tends to be distributed among the euro area countries, and part of it therefore leaves France. Conversely, an inflow of liquidity is expected into France in the event of a decline in the balance of non-monetary deposits in other countries.

Effect on the main TARGET positions of non-monetary deposits

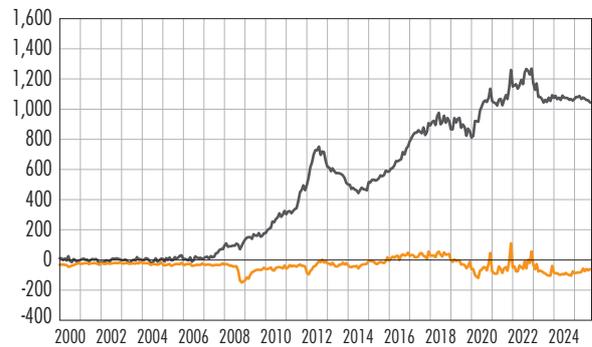
(EUR billions)

— Observed TARGET position — Effect of non-monetary deposits

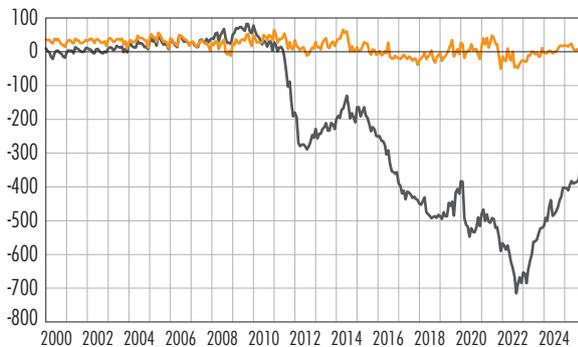
a) In France



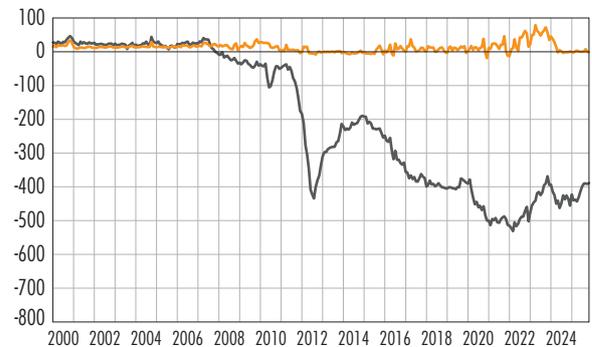
b) In Germany



c) In Italy



d) In Spain



Sources: European Central Bank; authors’ calculations.

Notes: Most recent value at November 2025. In Chart a, FR refers to France and EA refers to the euro area.

TARGET, Trans European Automated Real-time Gross settlement Express Transfer system; TARGET positions, central bank balances resulting from TARGET transactions.

The breakdown formula allows us to estimate the effect of fluctuations in non-monetary deposit balances on the TARGET balances of the four largest countries in the euro area (see chart above). Although this effect has always been minor in absolute terms, it explains certain temporary movements, particularly over the 2020-23 period. In Germany, for example, deposits from non-resident institutions (mainly central banks) peaked at the end of the year, which was reflected in the country's TARGET balance. In France, where fluctuations in the balance are small, non-monetary deposits accounted for most of the movements during the Covid period. Thus, the French Treasury's rapid accumulation of large amounts at the onset of the crisis is at the root of the temporarily positive balance in 2020-21. Conversely, the introduction in 2023 of an extremely fine-tuned management approach that enables the Treasury to keep outstanding amounts low led to a temporary outflow of liquidity from France. This effect subsequently faded as other governments (notably Spain) adopted similar behaviours.

Since 2023, the role of non-monetary deposits in liquidity movements has been negligible. This is because the rules adopted by the Eurosystem on remuneration of these deposits now encourage depositing institutions to reinject their surplus liquidity into the banking system and to keep only a small amount on NCB balance sheets.

Appendix 3

Application of the model to the Banque centrale du Luxembourg and the European Central Bank

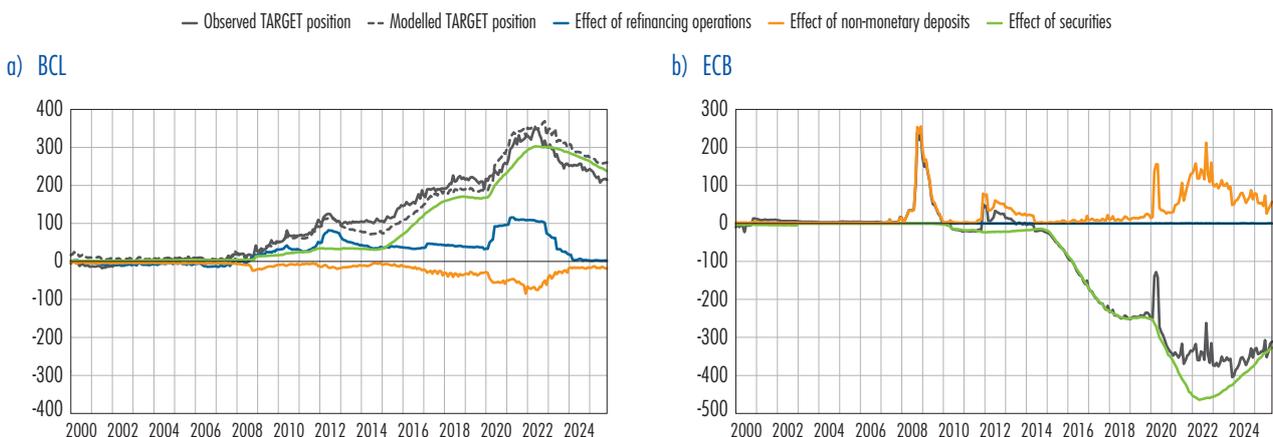
The largest TARGET balances in absolute terms after Germany, Spain and Italy are those of the European Central Bank (ECB) and the Banque centrale du Luxembourg (BCL). The constant liquidity distribution model accounts for them very effectively (see chart).

Under the Eurosystem’s calculation rules based on population and gross domestic product, the BCL has a very small share (less than 0.3%) in liquidity creation: its participation in the asset purchase programmes did not exceed EUR 12 billion. Nevertheless, 6% of euro area liquidity is recorded on the liability side of its balance sheet, due to Luxembourg’s importance in the European financial markets. The BCL’s balance sheet thus mainly consists of bank reserves on the liability side and a positive TARGET balance on the asset side, with the latter changing in proportion to the total central liquidity in the euro area, which is dominated by asset purchases and refinancing operations.

The ECB’s situation is the opposite. As it is not a national central bank, it does not maintain any commercial bank accounts and its liabilities therefore do not include liquidity (neither reserves nor net banknote issuance). The constant liquidity distribution model proves to be exact in this case, with a stable share equal to zero. The ECB’s TARGET balance therefore represents the counterpart to the liquidity it creates, mainly through its participation in asset purchase programmes, amounting to 8% of outstanding amounts. The very negative balance created as a counterpart to these purchases is partially offset by the presence of non-monetary deposits on the liability side of the ECB’s balance sheet. These are mainly deposits from non-euro area institutions, which tend to increase especially in times of crisis (2008, 2011, 2020).

Breakdown of Banque centrale du Luxembourg and European Central Bank TARGET balances

(EUR billions)



Sources: European Central Bank; authors’ calculations.
Notes: Most recent value at November 2025.

TARGET is the real-time gross settlement system for the Eurosystem. TARGET positions are the central bank balances resulting from transactions in the TARGET system.

In Chart b, the “Observed TARGET position” and “Modelled TARGET position” curves are combined.

Published by Banque de France	Translator/English Editor Scott Oldale
Managing Editor Claude Piot	Technical production Studio Creation Press and Communication
Editor-in-Chief Claude Blandin-Cornélis	ISSN 1952-4382
Editor Didier Névonnic	

To subscribe to the Banque de France's publications
<https://www.banque-france.fr/en/alertes/abonnements>

