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The allocation of monetary policy income within the Eurosystem

The central banks of the euro area ensure the decentralised implementation of a single, collectively-defined monetary policy. While their monetary income follows a common trend, it also varies in line with factors specific to each jurisdiction. Most of this income is pooled then reallocated among national central banks (NCBs) in accordance with a legally-defined framework. In practical terms, each NCB receives or remits an annual "net result of pooling monetary income" equal to the difference between the income due to it and that which it has generated. This article analyses recent changes in the net results of pooling of the four largest euro area NCBs and shows that they stem from a consistent mechanism that factors in the specific role of certain central banks in purchases of supranational securities between 2015 and 2022.

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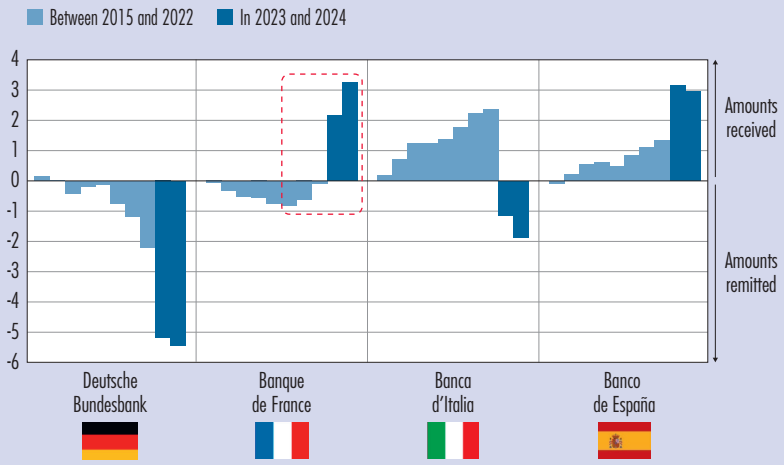
JEL codes
E42, E58,
F33

EUR 3.3 billion
received by the Banque de France in 2024 as part of monetary income reallocation among euro area central banks

EUR 800 million
remitted by the Banque de France in 2020

Amounts received/remitted by the four largest Eurosystem national central banks under monetary income reallocation arrangements

(EUR billions)



Sources: National central banks.
Note: The Banque de France, a net contributor under monetary income reallocation arrangements between 2015 and 2022, became a net beneficiary in 2023-2024 (see red dotted line above).

BANQUE DE FRANCE
EUROSYSTÈME

As of 1 October 2025, the Eurosystem comprises the 20 national central banks (NCBs) of the euro area Member States plus the European Central Bank (ECB). The governors of these institutions meet regularly within the Governing Council to define monetary policy stance. Decisions taken apply to all jurisdictions and their implementation is delegated to the NCBs[1], which derive most of their interest income and expense from this. Therefore, net interest incomes of the various NCBs evolve firstly in a synchronised manner (see table below, block ❶). In a context of excess liquidity, they remained at high levels during the period of low interest rates between 2015 and 2022, before falling sharply following the rise in rates in 2023 and 2024. Since they are members of the Eurosystem, NCBs aim to ensure price stability in the euro area and may therefore alternate between periods of positive and negative income, depending on the measures taken to fulfil this mandate (Bénassy-Quéré, 2024 and 2025).

Adding to this common trend, NCBs' interest income also varies with national factors, such as the characteristics of the domestic banking system or liquidity flowing in and out of the jurisdiction. In turn, these national factors are themselves partly related to the monetary integration of the euro area. This is why the Statute of the European System of Central Banks (ESCB) provides for cross-jurisdictional reallocation rules[2], which aim to maintain a proportionate distribution of income generated from the common monetary policy (referred to as monetary income). These rules result in the net interest incomes shown in block ❷ of the table below and are described in the first part of this article.

For an NCB, the net result of pooling monetary income ("net result of pooling" in the rest of this article) is the difference between income after and before reallocation (see block "❷ – ❶" in the table). Since 2023, the net result of pooling of some of the main NCBs has switched between positive and negative (see Chart 1 below), giving rise to questions (Baglioni, 2024; Cesaratto et al., 2025). These changes are analysed in the second part of this article.

Net interest income of the Eurosystem's four largest national central banks

(EUR billions)

	❶ Net interest income **before reallocation** of monetary income				❷ Net interest income **after reallocation** of monetary income				❷ – ❶ **Net result of pooling** monetary income				
	DE	FR	IT	ES	DE	FR	IT	ES	DE	FR	IT	ES	Other
2015	2.3	5.9	6.4	4.1	2.4	5.9	6.6	4.0	0.1	-0.1	0.2	-0.1	-0.1
2016	3.3	6.8	7.0	4.5	3.3	6.5	7.8	4.8	0.0	-0.3	0.7	0.2	-0.6
2017	4.2	7.6	8.0	5.1	3.8	7.1	9.2	5.6	-0.4	-0.5	1.2	0.5	-0.9
2018	4.9	8.7	9.4	6.1	4.7	8.1	10.6	6.7	-0.2	-0.6	1.2	0.6	-1.1
2019	4.6	8.1	9.6	6.1	4.5	7.4	10.9	6.6	-0.1	-0.7	1.4	0.5	-1.0
2020	2.9	6.0	8.5	4.6	2.1	5.2	10.3	5.5	-0.8	-0.8	1.8	0.8	-0.9
2021	2.5	6.7	8.1	4.4	1.3	6.1	10.3	5.5	-1.2	-0.6	2.2	1.1	-1.5
2022	4.0	7.5	6.6	4.2	1.7	7.4	9.0	5.5	-2.2	-0.1	2.4	1.4	-1.4
2023	-13.9	-16.8	-4.8	-8.9	-19.1	-14.7	-5.9	-5.8	-5.2	2.2	-1.1	3.1	1.0
2024	-13.1	-19.3	-4.2	-9.4	-18.5	-16.0	-6.1	-6.5	-5.4	3.3	-1.9	3.0	1.1

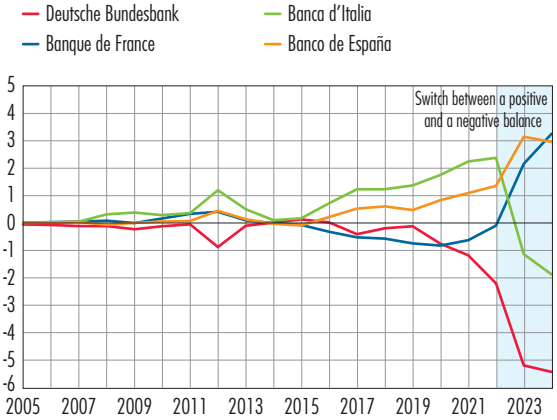
Sources: National central banks (annual financial statements); authors' calculations.
Notes: ISO country codes: DE Deutsche Bundesbank, FR Banque de France, IT Banca d'Italia, ES Banco de España.
Net interest income (NII) is the main component of the profit/loss of national central banks. For example, in 2024, the Deutsche Bundesbank's profit/loss before transfer to/from provisions was –EUR 19.8 billion euros, compared with NII after reallocation of monetary income of –EUR 18.5 billion. For the Banque de France, the figures were –EUR 17.8 billion and –EUR 16 billion, respectively.

1 The ECB has participated in the deployment of certain unconventional monetary policy measures (asset purchase programmes), however, it does not hold deposit accounts for commercial banks nor grant them loans.

2 See Article 32 of the Statute of the ESCB and ECB decision (EU) 2016/2248.

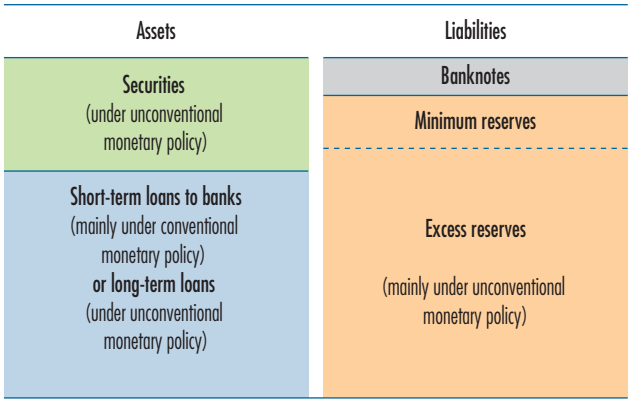
C1 Net results of pooling monetary income of the Eurosystem's four largest national central banks between 2005 and 2024

(EUR billions)



Source: Eurosystem

D1 Simplified balance sheet of a national central bank that only implements monetary policy at national level, in the absence of inter-jurisdictional flows



Source: Authors.

1 The rules for the reallocation of monetary income

Interactions between a national central bank and commercial banks within its jurisdiction

Monetary policy implementation in the Eurosystem is decentralised. Each NCB interacts mostly with the commercial banks within its jurisdiction. It handles their deposit accounts and provides them with liquidity (i.e. deposits, known as reserves, and banknotes) through various refinancing operations[3], or as a consequence of asset purchase programmes. In a simplified configuration where (i) its sole mission is to implement monetary policy by dealing only with banks in its jurisdiction and (ii) there are no inter-jurisdictional liquidity flows, its balance sheet can be presented as shown in Diagram 1.

With the exception of banknotes, most items on this balance sheet bear interest. However, their relative size varies from one NCB to another. For example, some NCBs may hold a higher proportion of securities or loans than others. Some NCBs may also hold securities with higher yields than others, thereby generating more monetary income. Nevertheless, although its implementation is decentralised, euro area monetary policy is defined collectively for the entire area. Under this approach, the interest income it generates in each jurisdiction is pooled then redistributed[4] to the NCBs using an allocation key, referred to as the Eurosystem key.[5] In practical terms, each year, each NCB receives or remits a net result of pooling, corresponding to the difference between the share of income it is entitled to and the income generated by its own balance sheet. In the simplified (and fictitious) case where the only items on the NCBs' balance sheets correspond to those in Diagram 1, the net result of pooling of a given NCB is calculated as follows (equation at the top of the next page).

The ECB is not involved in the monetary income reallocation mechanism: the sum of net results of pooling across all euro area NCBs is therefore zero.

3 See *https://www.banque-france.fr/en/monetary-strategy/operational-framework/refinancing-operations*

4 Income generated by sovereign and agency securities purchased for monetary policy purposes since 2015 is treated differently. This exception is explained later in the article.

5 An NCB's Eurosystem key (in 2024, 27% for Germany, 20% for France, 16% for Italy, 12% for Spain) is based on its country's population and gross domestic product. It is updated every five years or when a new country joins the euro area.

$$\underbrace{Simplified\_Net\_Pooling\_Result_i}_{\text{Simplified Net Result of Pooling of a NCB } i} = \underbrace{Key_i}_{\text{Eurosystem key of the NCB } i} \times \underbrace{\sum_{k \in \text{€area NCBs}} (l\_securities_k + l\_loans_k - l\_reserves_k)}_{\text{Sum of interest generated by all Eurosystem NCB balance sheets (on securities, loans and reserves)}} - \underbrace{(l\_securities_i + l\_loans_i - l\_reserves_i)}_{\text{Interest generated by the balance sheet ot the NCB } i}$$

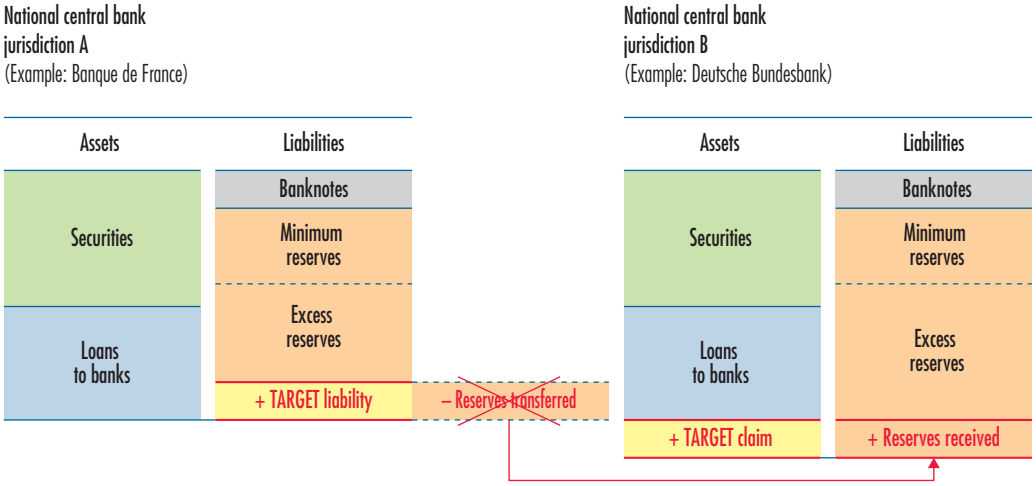
The reallocation principles outlined above are sufficient in simple cases. However, to describe the mechanism as it is actually applied within the Eurosystem, other rules need to be added to take account of (i) cross-jurisdictional liquidity flows and (ii) the diversity of the missions of NCBs, whose balance sheets do not consist solely of monetary items generating pooled income. These rules are set out below.

The circulation of liquidity

Cash and cashless liquidity circulates between the different jurisdictions of the euro area. Commercial banks use part of their central bank deposits (i.e. their reserves) to carry out cross-border transactions, either on their own behalf or on behalf of their customers. For example, if a customer of a French bank pays for goods purchased from a customer of a German bank, their deposits are transferred from the liabilities of the French bank to those of the German bank. Matching this, an identical amount of reserves is transferred from the French bank's assets to those of the German bank. In other words, reserves are transferred from the liabilities of the Banque de France to those of the Deutsche Bundesbank, but the former does not transfer any assets to the latter. The balance sheets of the two NCBs are therefore rebalanced by TARGET positions (Jobst et al., 2012): a TARGET debt is recorded as a liability on the Banque de France's balance sheet and a TARGET claim is recorded in assets on the balance sheet of the Deutsche Bundesbank (see Diagram 2). These positions bear interest at a "reference rate", which is fixed by a decision of the ECB Governing Council. Until the end of 2024, this corresponded to the rate paid on the main refinancing operations. Since 1 January 2025, it is equal to the deposit facility rate.[6]

D2 Illustration of the TARGET mechanism

Example of the transfer of reserves from one jurisdiction to another



Source: Authors.
Note: TARGET = Trans-European Automated Real-time Gross settlement Express Transfer system.

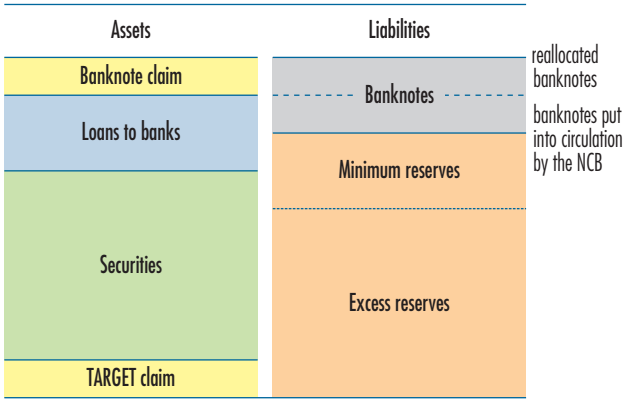
6 European Central Bank (ECB) decision (EU) 2024/2939.

While an NCB may be "subjected to" these liquidity movements, it may also trigger them, as for example when it purchases securities from a commercial bank from another jurisdiction. It then records the securities in assets, while the reserves created by the transaction end up in the liabilities of another NCB. A TARGET debt is therefore recorded in its liabilities, and an equivalent TARGET claim is recorded in the assets of the other NCB. Central bank purchases of securities generated most of the TARGET positions open in 2024. In particular, they account for the TARGET debt of the ECB, which holds a portfolio of monetary policy securities but has no bank deposits in its liabilities.

Unlike deposits, banknotes guarantee the anonymity of transactions, making it impossible to track their circulation in the economy. It is therefore not possible to incorporate the effect of inter-jurisdictional flows of banknotes in central bank balance sheets. However, the Eurosystem applies an accounting principle similar to TARGET for dealing with banknotes, namely the "banknote position" (Handig et al., 2007; Krsnakova et al., 2012). This is set in such a way that the amount of banknotes in an NCB's liabilities corresponds to 92% of the amount of banknotes in circulation in the euro area multiplied by its Eurosystem key. The remaining 8% is allocated to the ECB, meaning that its banknote position is positive (i.e. the ECB is a creditor of the other NCBs). This position – shown in assets in Diagram 3 opposite – bears interest at the reference rate, just like a TARGET position.

The monetary income reallocation mechanism takes into account TARGET and banknote positions. Adding these to the simplified formula presented above, and referring to the balance sheet shown in Diagram 3, an "intermediate" form of the net result of pooling may be expressed as below.

D3 Example of the balance sheet of a fictitious national central bank whose sole mission is to implement monetary policy



Source: Authors.

At Eurosystem level, the sum of TARGET and banknote positions is zero. Interest paid (and received) on these positions is therefore returned during the reallocation of monetary income, with the exception of the portion from ECB positions, as the ECB is not involved in the reallocation mechanism (see Appendix 2).

Interactions between the pooled and the non-pooled balance sheet

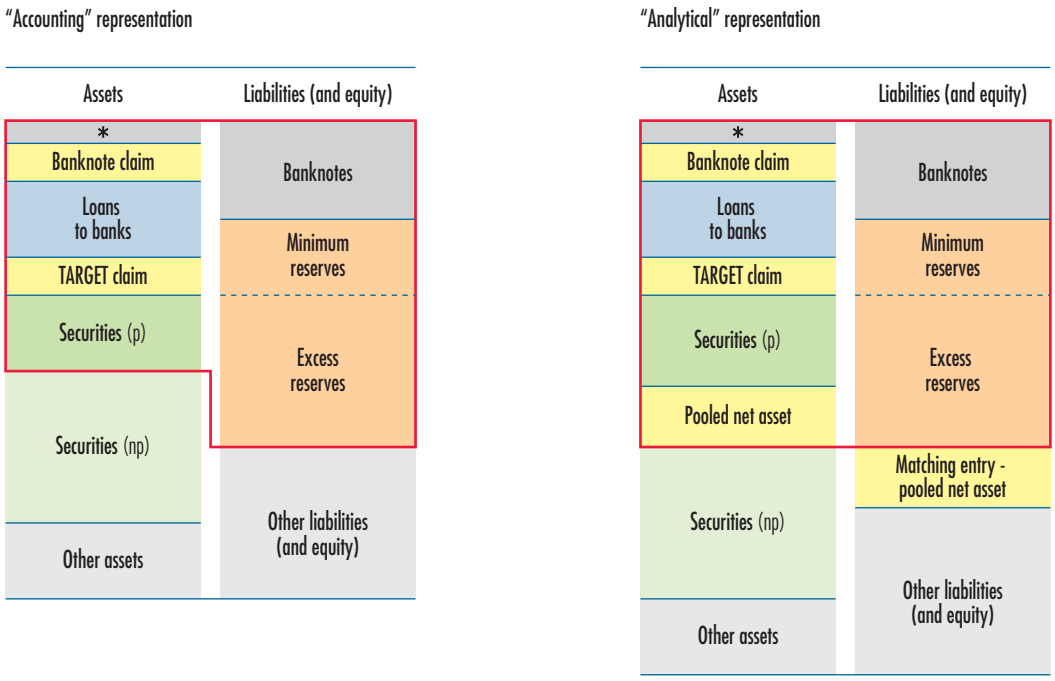
If the activities of NCBs were limited to the implementation of monetary policy, the balance sheet in Diagram 3 would suffice to present them. If, in addition, the interest generated by these activities was pooled in its entirety, the aforementioned redistribution rules would suffice to calculate the income allocated to each NCB. However, NCBs engage in other activities which generate non-pooled income. For example, they manage the accounts of non-bank entities (mainly government and non-central agencies). They also carry out financial activities for their own account: they make investments, manage their foreign exchange reserves, deal with the International Monetary Fund, etc.

$$Intermediate\_Net\_Pooling\_Result_i = Key_i \times \sum_{k \in €area\ NCBs} (I\_securities_k + I\_loans_k - I\_reserves_k + I\_Target\&banknotePos_k) - (I\_securities_i + I\_loans_i - I\_reserves_i + I\_Target\&banknotePos_i)$$

In addition, the implementation of unconventional monetary policies from 2014 onwards has required the introduction of specific rules: while the revenues and risks associated with the purchases of supranational securities, non-financial corporate bonds and covered bonds are pooled, those of government and agency bonds are not.

Therefore, the NCBs' balance sheet looks like the one presented in Diagram 4 below ("accounting" representation). Here, all monetary items that generate income to be pooled form the pooled monetary balance sheet (boxed in red). There is no reason for this to balance exactly: assets and liabilities may be of different sizes. For example, when purchasing sovereign bonds, which appear on the assets side of the non-pooled balance sheet, NCBs credit bank deposit accounts, which appear on the liabilities side of the pooled monetary balance sheet. They therefore create a difference between the size of the assets and the liabilities in the pooled monetary balance sheet, i.e. a "pooled net asset" that may be highlighted by representing the NCBs' balance sheet with an interpositional item (see Diagram 4, "analytical" representation). This pooled net asset is included within the scope of the monetary income reallocation mechanism as an item bearing interest at the reference rate. In other words, if an NCB holds non-pooled assets financed by pooled monetary policy liabilities, it must pool a fixed portion of the interest income generated by these assets. Conversely, if non-pooled liabilities finance pooled assets (i.e. there is a negative pooled net asset), a fixed portion of the cost of these liabilities must be pooled.

D4 Balance sheet template for a Eurosystem national central bank



Pooled monetary balance sheet, i.e. interest is pooled (in full)
Intra-Eurosystem claims and liabilities **
(p) Monetary policy securities except i) sovereign, agency and non-central administration securities acquired since 2015; ii) covered bonds acquired before 2014
(np) Monetary policy securities listed in i) and ii) above, and non-monetary policy securities (see Agreement on Net Financial Assets (ANFA) of 19 December 2022)
* By convention, each national central bank includes a small amount of gold (non-interest bearing) in its pooled monetary balance sheet in proportion to its Eurosystem key (see Annex II-A-6 of Decision (EU) 2016/2248).
** Other inter-central bank positions may exist and be included in the pooled monetary balance sheet. They have been disregarded here for reasons of simplicity.

Source: Authors.

Ultimately, the net result of pooling of an NCB may be presented as follows:[7]

$$Net\_Pooling\_Result_i = Key_i \times \sum_{k \in \text{€area NCBs}} (I\_pooled\_securities_k + I\_loans_k - I\_reserves_k + I\_Target\&banknotePos_k + I\_pooled\_net\_asset_k) - (I\_pooled\_securities_i + I\_loans_i - I\_reserves_i + I\_Target\&banknotePos_i + I\_pooled\_net\_asset_i)$$

The sum of the NCBs' pooled net assets is not necessarily zero.

2 An analysis of changes in net results of pooling monetary income

Up until 2014: relatively low net results of pooling

Net results of pooling remained relatively low until 2014 (see Chart 1). They rose temporarily in 2012 as a result of long-term loans granted to banks in response to the risk of financial fragmentation in the euro area. Otherwise, with a few exceptions,[8] the Eurosystem's pooled monetary balance sheet consisted of **items bearing interest at the MRO rate**[9] and banknotes (non-interest bearing): pooled monetary income consisted mainly of seigniorage income.[10] However, because of the way in which the banknote adjustment mechanism is designed, the seigniorage income accruing to NCBs is always allocated based on the Eurosystem keys (see Section 1), hence the low net results of pooling at that time.

2015-2021: an increase in net results of pooling linked to unconventional monetary policies

Between end-2014 and 2022, the Eurosystem launched several unconventional monetary policy measures to address various crises. NCBs implemented these measures, which increased the size of their balance sheets and created **new positions, bearing interest at rates different from the MRO rate:**

- they granted new long-term loans to banks (TLTRO[11] I, II and III), at interest rates that were generally lower than the MRO rate;
- they purchased securities from various categories of issuers: mainly sovereign and agency bonds (on the secondary market), with non-pooled income, but also supranational bonds, non-financial corporate bonds and covered bonds, with pooled income;
- they therefore generated large volumes of bank deposits on their liabilities, most of which exceeded minimum reserve requirements and bore interest (at least partially) at the deposit facility rate.

These three items provided the NCBs with interest income (positive until 2021) subject to pooling. A breakdown of the net results of pooling of the four largest NCBs highlights the predominant role of bank deposits and TLTROs (see Chart 2 below). The Deutsche Bundesbank and the Banque de France each accounted for an amount of the Eurosystem's excess reserves above the amount based on their Eurosystem key. Conversely, loans were granted mainly to Italian and Spanish banks. The impact of monetary policy securities subject to income pooling was less significant and slightly positive for the Deutsche

7 There are other rules for monetary income reallocation that are not described in this document, relating, for example, to when a new country joins the euro area. Their effects have been minor over the recent period.

8 In particular, sovereign securities under the Securities Market Programme and small amounts of excess reserves.

9 Rate on main refinancing operations.

10 Banknotes are a free resource backed by assets that generate interest income (at the MRO rate).

11 Targeted longer-term refinancing operations.

Bundesbank, as the average yield on the covered bonds and non-financial corporate bonds on its balance sheet was comparatively lower than the average yield on those purchased by the other NCBs.

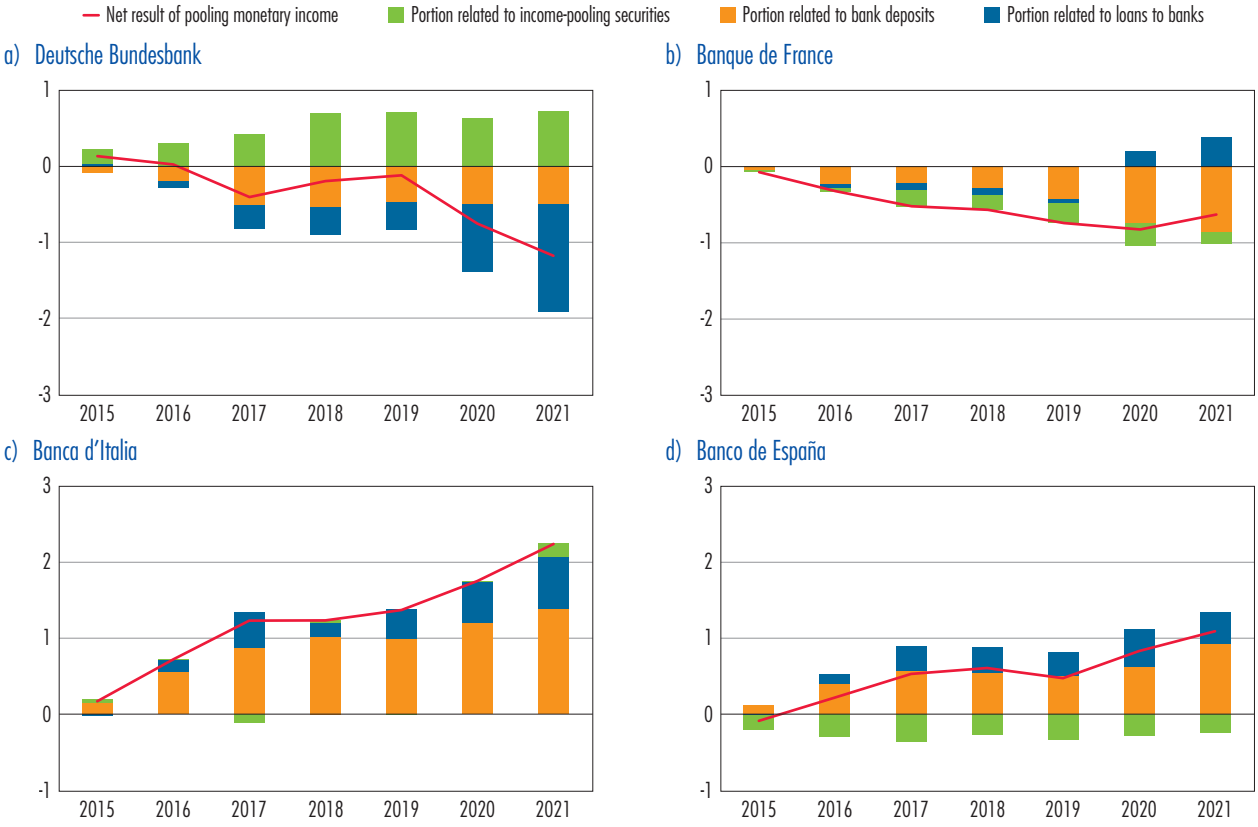
Moreover, the increase in the size of NCBs' balance sheets was accompanied by a growth in intra-Eurosystem positions, including:

- TARGET claims and liabilities of the various jurisdictions, stemming from the situation of abundant liquidity;
- pooled net assets resulting from the increase in the volume of sovereign and agency securities with non-pooled income, of which the main counterparty was an increase in the amount of bank deposits with pooled income.

However, the reference rate, i.e. the MRO rate, was close to zero in 2015, and zero between 2016 and 2021. Therefore, intra-Eurosystem claims and liabilities did not generate significant income and did not affect net results of pooling.

C2 Breakdown of net results of pooling of the Eurosystem's four largest national central banks between 2015 and 2021
"Gross" perspective

(EUR billions)



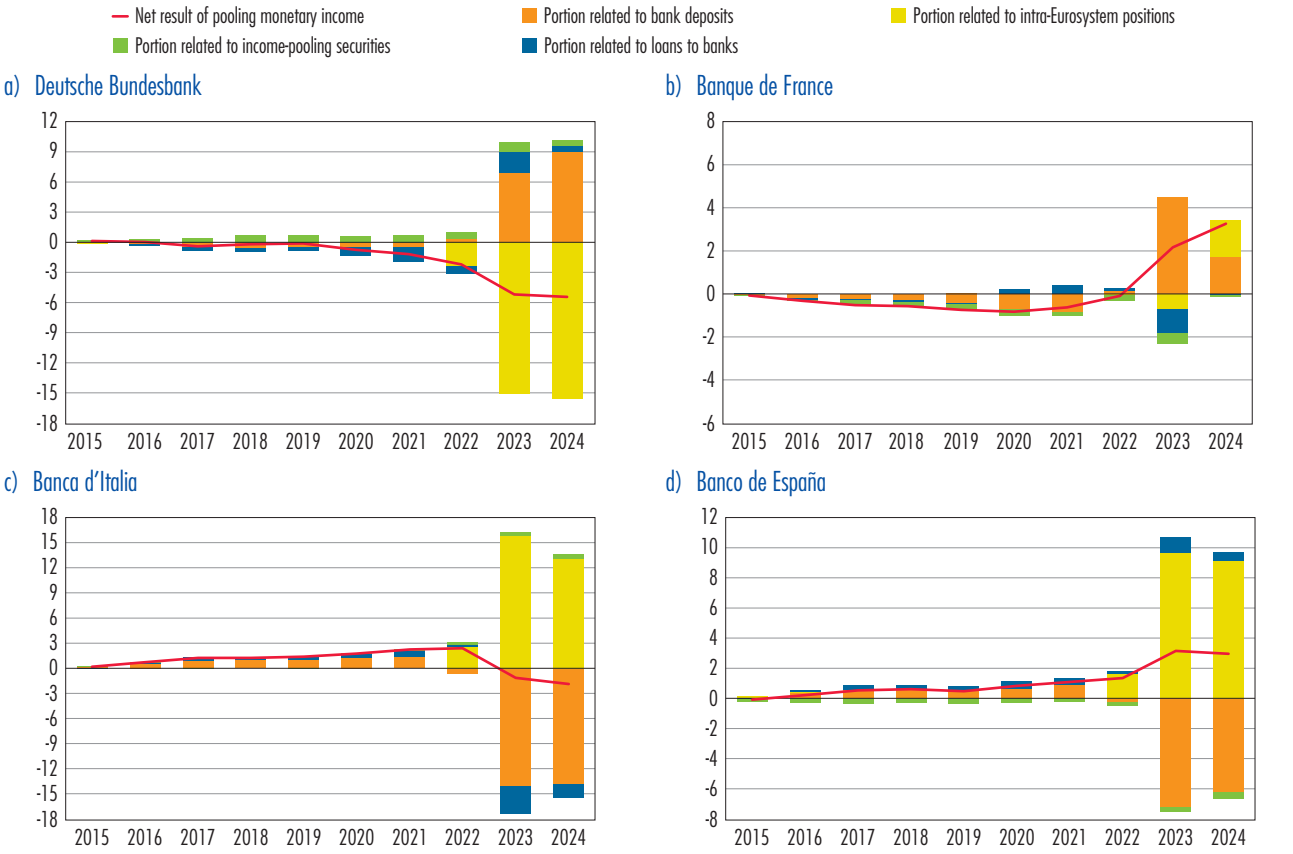
Sources: Eurosystem; authors' calculations.
Note: Under the "gross" perspective, the income associated with each balance sheet item is calculated by multiplying the balance sheet amount by its average remuneration rate. Residual amounts related to specific reallocation rules disregarded in this document as well as certain adjustments stemming from recalculations of previous years' amounts are grouped into the "portion related to income-pooling securities".

2022-2024: following the start of monetary policy normalisation, certain net results of pooling switched between positive and negative

In the second half of 2022, then in 2023 and 2024, the Eurosystem normalised its policy rates: the MRO rate gradually rose from 0% to 4.5%, before falling back to 3.15%. The outstanding securities purchased by NCBs declined slightly, as part of a very gradual normalisation process.

Over the 2022-24 period, net results of pooling therefore comprised the same three components as between 2015 and 2021, plus a fourth: with the MRO rate now positive, intra-Eurosystem claims and liabilities were generating income that impacted net results of pooling. Chart 3 highlights the significance of this phenomenon: strongly negative contributions to the net result of pooling of the Deutsche Bundesbank, positive contributions for the Italian and Spanish central banks, and contributions close to zero for the Banque de France. The latter situation stemmed from the fact that the income generated by the Banque de France from its pooled net intra-Eurosystem position was fairly close to its share of income derived from the sum of pooled intra-Eurosystem positions. However, this was not the case for the other three major NCBs. For example, the net income generated by the Deutsche Bundesbank from its pooled intra-Eurosystem position was significantly higher than the amount owed to it based on its Eurosystem key. It therefore remitted a portion of this income under reallocation arrangements (see negative yellow bar in Chart 3).

C3 Breakdown of net results of pooling of the Eurosystem's four largest national central banks between 2015 and 2024
"Gross" perspective
(EUR billions)



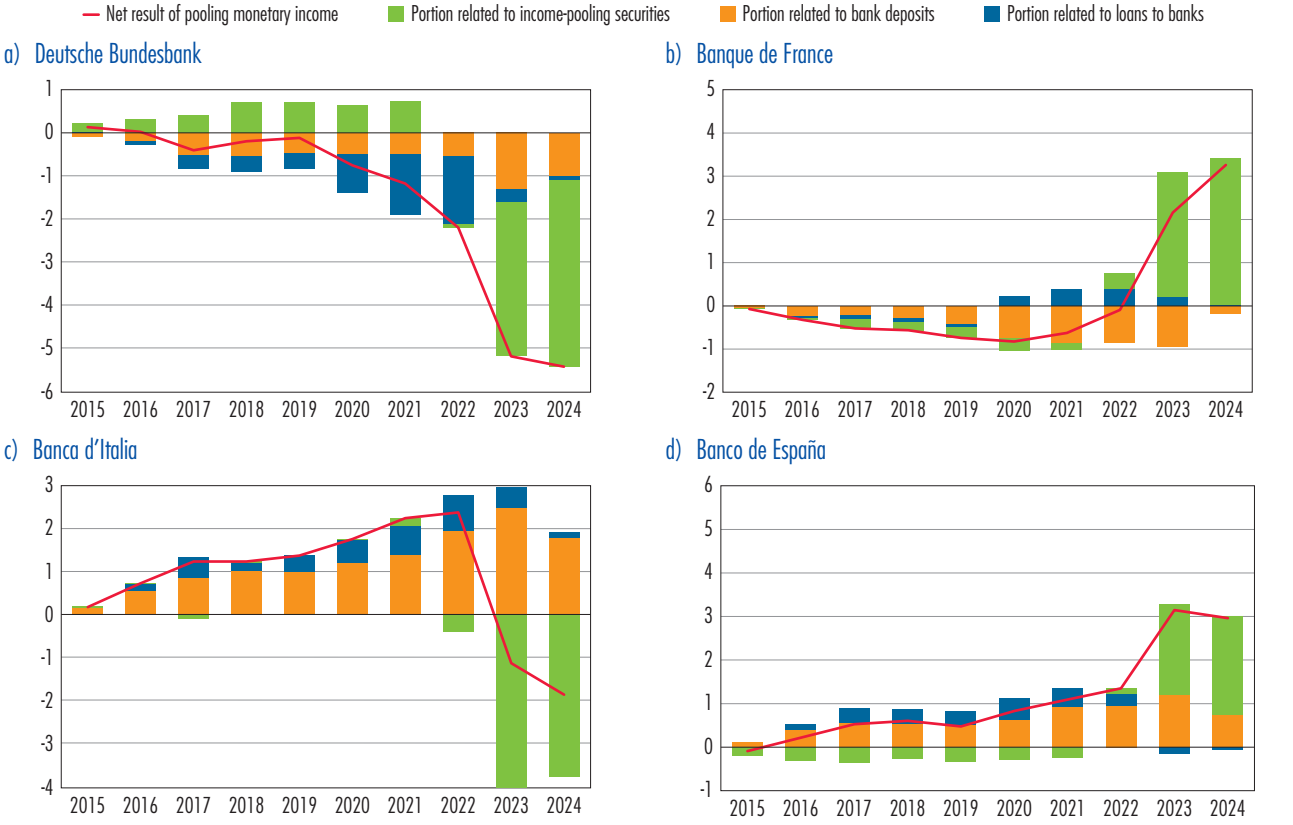
Sources: Eurosystem; authors' calculations.
Note: Under the "gross" perspective, the income associated with each balance sheet item is calculated by multiplying the balance sheet amount by its average remuneration rate.
Intra-Eurosystem positions correspond to TARGET and banknote positions as well as to the pooled net asset, as described in Diagram 4. Residual amounts related to specific reallocation rules disregarded in this document as well as certain adjustments stemming from recalculations of previous years' amounts are grouped into the "portion related to income-pooling securities".

Nevertheless, contributions to net results of pooling related to intra-Eurosystem positions were largely offset by matching contributions related to bank deposits (shown in orange). To put it simply, Banca d'Italia's purchases of securities from German financial institutions generated liquidity which was recorded in the liabilities of the Deutsche Bundesbank, combined with a TARGET claim in its assets and a TARGET debt in Banca d'Italia's liabilities. Banca d'Italia therefore paid interest on this position, which was transferred back to it during the reallocation process (hence the size of the yellow bar on the chart). In return, through this process, it participated in the interest payments borne by the Deutsche Bundesbank on the liquidity it helped to generate (see negative orange bar on the chart).

Therefore, interest generated on intra-Eurosystem positions may be linked to other positions and interpreted as carrying costs. In the previous example, it is a carrying cost for deposits. This interpretation may be applied to all aggregates in an NCB's monetary balance sheet: all other things being equal, should an aggregate be absent, it would be offset by a change of the same amount either in the TARGET position (if the aggregate were to appear in the balance sheet of another NCB) or in the pooled net asset (if it were to appear in the non-pooled portion of the same NCB's balance sheet). In other words, net of its carrying cost, the pooled interest income on an asset – or the pooled interest expense on a liability – is determined by the difference between the rate at which it bears interest and the reference rate. Taking the example of deposits placed in deposit

C4 Breakdown of the net results of pooling of the Eurosystem's four largest national central banks between 2015 and 2024
"Net of carrying costs" perspective

(EUR billions)



Sources: Eurosystem; authors' calculations.
Note: Under the "net of carrying costs" perspective, the income associated with each balance sheet item is calculated by multiplying the balance sheet amount by its average remuneration rate less the reference rate (see Appendix 1).
Residual amounts related to specific reallocation rules disregarded in this document as well as certain adjustments stemming from recalculations of previous years' amounts are grouped into the "portion related to income-pooling securities".

facilities, the net expense amounts to the deposit facility rate less the reference rate (i.e. the MRO rate through 2024).

By netting the portions of the net results of pooling which offset each other by design (see Appendix 1), the changes observed since 2022 become easier to interpret. The sharp variations in net results of pooling observed in 2023 were primarily related to monetary securities with pooled income (see Chart 4 above). These securities, most of which were purchased during the period of low interest rates, provided an average yield that was substantially lower than their carrying cost, i.e. the MRO rate (3.8% on average in 2023 and 4.1% in 2024). However, the French and Spanish central banks purchased a portion of these securities that was higher than their Eurosystem key. This was particularly the case because, unlike the Deutsche Bundesbank and the Banca d'Italia, they were part of the NCBs designated to purchase supranational securities on behalf of the entire Eurosystem (see Appendix 3). A share of the associated carrying cost was therefore transferred back to them via the reallocation mechanism of monetary income.

⁂

In conclusion, between 2014 and 2022, the Eurosystem pursued unconventional monetary policies and only a few national central banks were tasked with purchasing certain categories of securities on behalf of all NCBs, particularly supranational bonds. Although they yielded low returns between 2015 and 2021, these securities generated a small profit for the NCBs that held them because their carrying costs were zero. However, from mid-2022 onwards, the rise in interest rates resulted in high carrying costs and therefore a strongly negative net income. The NCBs that held these securities, such as the Banque de France and Banco de España, shared the costs with the other NCBs, which made their net results of pooling strongly positive and contributed to reducing those of the other NCBs. Therefore, while the changes in net results of pooling of certain NCBs may appear significant, they are actually the effect of an income reallocation mechanism adapted to the decentralised implementation of a common monetary policy.

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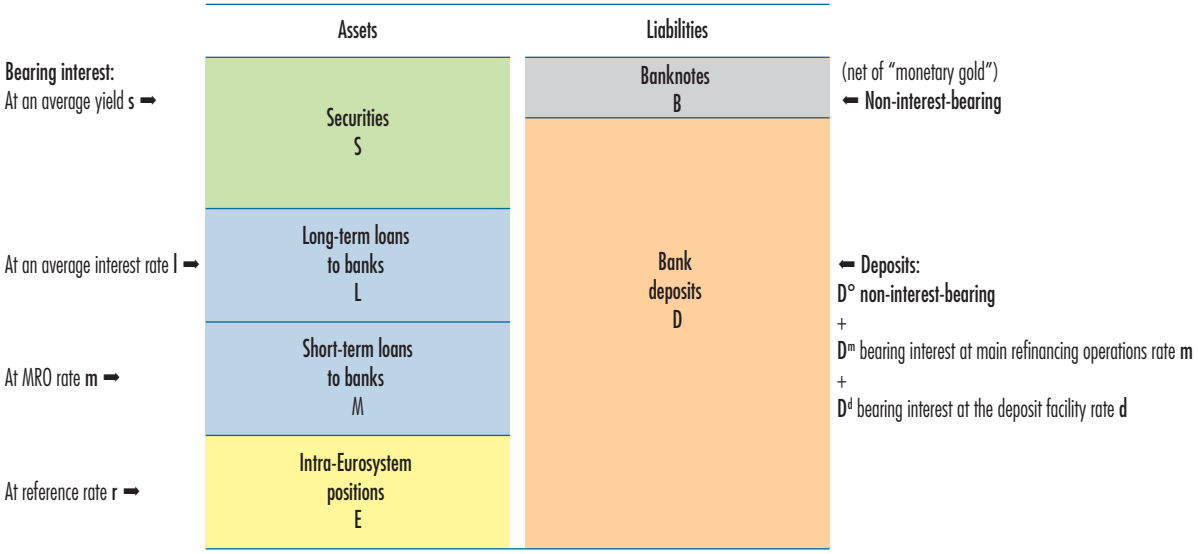
Appendix 1
Breakdown of monetary income pooling balances "Net of carrying costs" perspective

The pooled monetary balance sheet of a national central bank (NCB) can be broken down as follows.

Pooled monetary balance sheet of a national central bank: Analytical representation



Source: Authors.
Notes:

The "banknotes" item corresponds to all banknotes on the liabilities side of the national central bank (NCB). More specifically, these are banknotes in circulation net of "monetary gold", which represents a small fraction of the NCB's gold holdings. According to the rules for reallocating monetary income, this fraction must be included in the pooled monetary balance sheet. As gold does not earn interest, it is treated here as "negative banknotes".

Intra-Eurosystem positions include the TARGET and banknote positions and the pooled net asset (see Diagram 4 in the main body of the article).

Bank deposits are broken down into three components:
– D° non-interest-bearing deposits including: i) excess reserves not placed in a "deposit facility account" in periods when the deposit facility rate is positive; ii) excess reserves subject to the two tier system between 30 October 2019 and 21 July 2022; and iii) all minimum reserves after 20 September 2023;
– Dm deposits bearing interest at the main refinancing operations rate correspond to minimum reserves through 21 December 2022;
– Dd deposits bearing interest at the deposit facility rate include: i) excess reserves placed in a "deposit facility" account; (ii) excess reserves not placed during periods when the deposit facility rate is negative (excluding the portion subject to the two-tier system between 30 October 2019 and 21 July 2022); and (iii) minimum reserves between 22 December 2022 and 20 September 2023.
This ignores the fact that some deposits were remunerated at specific, non-zero rates that differed from monetary policy rates.

TARGET is the Trans-European Automated Real-time Gross settlement Express Transfer system.

For this NCB, using notations from this diagram, the gross expression of the NCB's (daily) monetary income to be pooled is expressed as:

$$R = \frac{1}{360}\left[(S.s + L.l + M.m + E.r) - (B.0 + D^0.0 + D^m.m + D^d.d)\right]$$

In this expression, the income associated with each item of the pooled balance sheet is calculated by multiplying the balance sheet amount by its remuneration rates. Thus, securities are considered to earn *S.s*, long-term loans *L.l*, etc.

To obtain the "Net of carrying costs perspective", it is necessary to (i) rewrite *E* in terms of the other items on the balance sheet, and (ii) group the terms of the expression to obtain a net rate – net of the carrying cost – for each item:

i) : $$R = \frac{1}{360}\left[(S.s + L.l + M.m + \underbrace{(B + D^0 + D^m + D^d - T - L - C).r}) - (B.0 + D^0.0 + D^m.m + D^d.d)\right]$$

Breakdown of *E* using the accounting equation "*Assets = Liabilities*"

ii) : $$R = \frac{1}{360}\left[\underbrace{S.(s - r)} + L.(l - r) + M.(m - r) + B.r + D^0.r + D^m.(r - m) + D^d.(r - d)\right]$$

S.s is the gross perspective of the income generated by the securities and -*S.r* the carrying cost

In this new breakdown, securities *S*, for example, are viewed as earning *S.(s – r)*. This approach depicts the financial situation more accurately because, if we analyse the effect of the presence of an isolated item on the NCB's balance sheet (all other things being equal), the related income does not appear to be merely linked to its remuneration rate. By holding securities *S*, the NCB reduces its intra-Eurosystem position by the same amount: either it reduces its TARGET position (vis-à-vis a situation whereby another NCB holds these securities), or it reduces its pooled net asset (vis-à-vis a situation where it holds these securities in the non-pooled part of its balance sheet). It therefore substitutes securities for an intra-Eurosystem position, and therefore substitutes income *S.s* for income *S.r*, hence the income net of the carrying cost of *S.(s – r)* associated with the securities.

If $\tilde{S}, \tilde{L}, \widetilde{M}, \tilde{B}, \widetilde{D^0}, \widetilde{D^m}, \widetilde{D^d}$ are the respective sums of the $S, L, M, B, D^0, D^m, D^d$ items of all Eurosystem NCBs, and $\tilde{s}, \tilde{l}$ the equivalents of s and l, the "net of carrying costs" perspective of monetary income to be pooled among all NCBs is expressed in the same way:

$$\tilde{R} = \frac{1}{360}\left[\tilde{S}.(\tilde{s} - r) + \tilde{L}.(\tilde{l} - r) + \widetilde{M}.(m - r) + \tilde{B}.r + \widetilde{D^0}.r + \widetilde{D^m}.(r - m) + \widetilde{D^d}.(r - d)\right]$$

Moreover, for all dates prior to 1 January 2025, *r = m*. If *k* is the NCB's Eurosystem key and $\bar{X}$ the $k \times k \times \tilde{X}$ share for each $\tilde{X}$, aggregate, the "net of carrying costs" perspective of the net result of pooling for the NCB (i. e. $P = \bar{R} - R$) is:

$$\boldsymbol{P = \frac{1}{360}\left[\underbrace{\bar{S}(\bar{s} - m) - S(s - m)} + \underbrace{\bar{L}(\bar{l} - m) - L(l - m)} + \underbrace{(\bar{B} - B)m} + \underbrace{(\overline{D^0} - D^0)m + (\overline{D^d} - D^d)(m - d)}\right]}$$

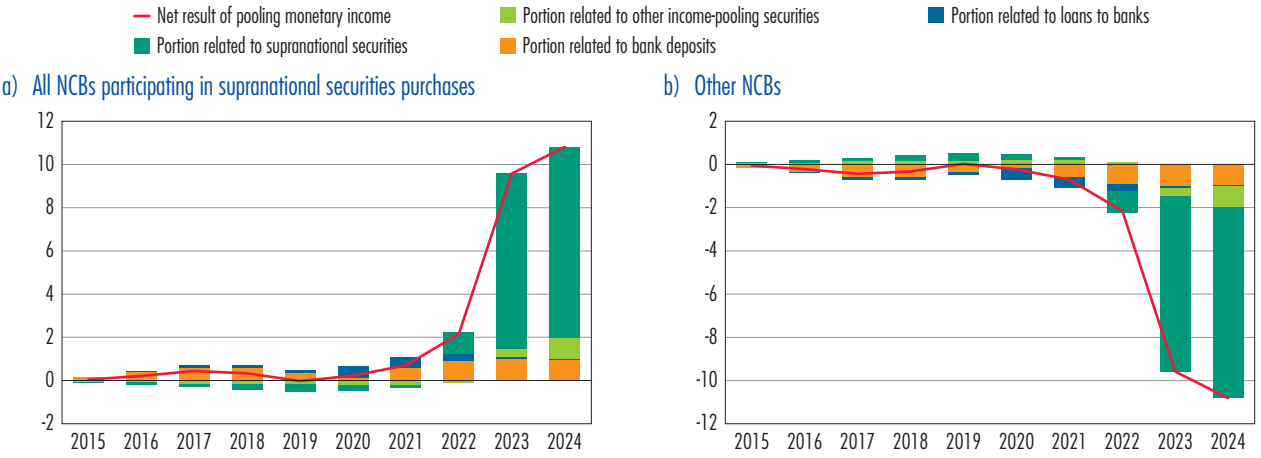
Portion related to income-pooling securities | Portion related to long-term loans ([T]LTRO) | Portion related to banknotes (≈0) | Portion related to bank deposits

This breakdown is used in Chart 4 (see above). The importance of supranational securities purchases in recent changes in net results of pooling is also reflected in the chart below, which distinguishes NCBs that participated in supranational securities purchases from the other NCBs (see Appendix 3).

Breakdown of net results of pooling in the Eurosystem: national central banks holding supranational securities vs other NCBs

"Net of carrying costs" perspective

(EUR billions)



Sources: Eurosystem; authors' calculations.

Note: Residual amounts related to specific reallocation rules disregarded in this document as well as certain adjustments stemming from recalculations of previous years' amounts are grouped into the "portion related to other income-pooling securities".

Appendix 2
Interest on TARGET positions and monetary income reallocation

By definition, all Eurosystem TARGET positions sum to zero.[1] Therefore, if the European Central Bank (ECB) participated in monetary income reallocation, interest paid or received during the year on these positions would cancel out in full at the end of the year: each central bank would receive the amount it paid, or pay the amount it received via its net result of pooling. As the ECB is the only Eurosystem member that does not participate in monetary income reallocation[2], only the interest it has paid (or received) does not cancel out. This interest is shared among the various NCBs in proportion to their Eurosystem key, resulting in the amounts highlighted in the table below.

The interest paid on TARGET positions is therefore mostly returned at the end of the year through the reallocation of monetary income. However, it allows for a better matching of revenues and expenses throughout the year. For example, an inflow of bank deposits to an NCB liability generates a cost that the interest on the TARGET claim resulting from this inflow helps to finance until year-end when monetary income is redistributed.

Reallocation of interest related to TARGET positions

(EUR billions)

	Interest received on TARGET position **before reallocation**	Interest received on TARGET position **after reallocation**	Portion of the net result of pooling related to TARGET positions	IInterest received on TARGET position **before reallocation**	Interest received on TARGET position **after reallocation**	Portion of the net result of pooling related to TARGET positions
	Deutsche Bundesbank			Banque de France		
	(A1)	(A2)	(A3) = (A2) – (A1)	(F1)	(F2)	(F3) = (F2) – (F1)
2021	0	0	0	0	0	0
2022	7	1	-6	0	0	1
2023	41	4	-38	-3	3	6
2024	44	4	-40	-6	3	9

	Banca d'Italia			Banco de España		
	(I1)	(I2)	(I3) = (I2) – (I1)	(E1)	(E2)	(E3) = (E2) – (E1)
2021	0	0	0	0	0	0
2022	-4	0	4	-3	0	3
2023	-23	2	25	-16	2	18
2024	-20	3	22	-18	2	20

"Interest received on TARGET position after reallocation" corresponds to the interest paid by the European Central Bank on its TARGET debt multiplied by the Eurosystem key of the country concerned:
27% (Eurosystem allocation key for Germany); **20**% (key for France); **16**% (key for Italy); **12**% (key for Spain).
Sources: Eurosystem; authors' calculations.
Note: TARGET = Trans-European Automated Real-time Gross settlement Express Transfer system.

1 Actually, it is not exactly zero as certain central banks outside the euro area have TARGET positions (Bulgaria, Denmark, Poland and Romania), although these positions are very small and always positive.

2 If its net profit allows for this, the interest received by the ECB is paid over to the NCBs in the form of a dividend.

Appendix 3
Breakdown of monetary policy security purchases within the Eurosystem

Sovereign and agency securities:
EUR 3,300 billion on the Eurosystem's balance sheet at end-2024

The Eurosystem national central banks (NCBs) pool neither the risks nor the revenues from government, agency or local government bond purchases conducted from 2015 onwards: each NCB only holds securities from its own jurisdiction and owns a fraction of the total formed by all NCBs close to its Eurosystem key when market conditions allow for this.[1] The ECB holds the rest.

Supranational securities:
EUR 387 billion

As of 24 October 2019, only six Eurosystem NCBs had carried out purchases of supranational and multilateral development banks' securities in order to "simplify implementation and protect market functioning", namely, the central banks of France, Spain, Greece, Slovakia, Latvia and Estonia.[2] In addition, the Central Bank of Luxembourg replaced its maturing bonds. As the risks on these securities are shared, the income they generate is pooled and redistributed.

Non-financial corporate bonds:
EUR 333 billion

The central banks of six countries – Germany, France, Italy, Spain, Belgium and Finland – purchased corporate bonds on behalf of the entire Eurosystem. Each of these NCBs was assigned a specific market segment. For example, the Banque de France was responsible for purchasing French corporate bonds, while the Banque Nationale de Belgique purchased Belgian, Cypriot, Greek, Luxembourg, Maltese, Portuguese, Slovenian, Slovak and Dutch bonds. Dutch bonds were also purchased by the Deutsche Bundesbank, Banca d'Italia and Banco de España.[3] This programme was conducted on a risk-pooling basis. The income generated by the NCBs responsible for these purchases is then redistributed through the net result of pooling.

Covered bonds:
EUR 260 billion

All Eurosystem NCBs conducted covered bond purchase programmes (CBPP) on a risk- and income-pooling basis – with the exception of CBPP 1 and 2. Only securities issued by euro area entities were eligible, and NCBs were allowed to purchase securities of entities outside their jurisdiction. The ECB completed the purchases.

1 For example, the Bank of Greece did not initially purchase Greek sovereign securities because they did not meet the eligibility criteria defined by the Eurosystem.

2 See ECB, *FAQ on the public sector purchase programme*: Q1.7 "Which NCBs bought EU supranational securities? "

3 See ECB, *FAQ on purchases of corporate sector purchase programme*: Q2.4 "Who conducts the purchases? "

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