EUROPEAN CENTRAL BANK
EUROSYSTEM

Annual Report

2023

Contents

The year at a glance

In 2023 the ECB consolidated progress in its fight against inflation in the euro area. The year began with headline inflation still close to record highs. The negative effects of earlier supply and demand shocks, while easing, were still driving up prices. But two key developments paved the way for inflation to decline sharply during the year.

First, the effects of the past shocks began to fade. Energy prices, which had spiked as a consequence of Russia’s unjustified war against Ukraine, fell steeply, and global supply bottlenecks further eased. The drop in energy prices, in particular, accounted for half of the decline in inflation in 2023. Second, the ECB continued to tighten monetary policy, which helped to lower inflation further by dampening demand. Altogether, from January to September, we raised interest rates by an additional 200 basis points.

In doing so, we continued to follow a data-dependent approach to rate decisions given the highly uncertain environment. To calibrate accurately how far rates needed to rise, we introduced three criteria: the inflation outlook, the dynamics of underlying inflation and the strength of monetary policy transmission. By September, we saw the inflation outlook improving and monetary policy being transmitted forcefully. But underlying inflation remained elevated and domestic price pressures were strong.

We decided on this basis that the key ECB interest rates had reached levels that, if maintained for a sufficiently long duration, would make a substantial contribution to the timely return of inflation to our target. At the same time, we committed to holding rates at these levels for as long as necessary, while continuing to follow a data-dependent approach, based on the same criteria, to determine the appropriate level and duration of restriction.

In parallel, we advanced the normalisation of the Eurosystem balance sheet to ensure it remained consistent with our overall stance. It fell by over €1 trillion in 2023, with a large part of this decline due to maturing and early repayments under our targeted longer-term refinancing operations. We also concluded reinvestments under our asset purchase programme as the year progressed. And, in December, we announced the gradual phasing-out of reinvestments under the pandemic emergency purchase programme.

While we were consolidating progress in the fight against inflation, we advanced our work on taking account of climate-related risks within our tasks. In March we published the first climate-related financial disclosures of the Eurosystem’s corporate sector holdings. The carbon intensity of our corporate asset reinvestments fell by around two-thirds in the 12 months from October 2022 when we had started tilting them towards issuers with a better climate performance.

In 2023 we saw considerable progress in another area crucial for our work: payments. We launched our new T2 wholesale payment system in March. T2 contributes to the harmonisation and efficiency of Europe’s financial markets, introducing a new real-time gross settlement system – which replaces the TARGET2 system that had been in operation since 2007 – and streamlining liquidity management of central bank money.

We also launched the preparation phase of the digital euro project. This phase started in November after a fruitful two-year investigation phase, and will lay the foundations for the potential issuance of a digital euro. A digital euro would complement cash, not replace it. Cash remains the most frequently used means of payment among euro area citizens, and a clear majority consider it important to have the ability to pay in cash.

This is in part why the ECB is preparing a new series of euro banknotes – the most tangible, visible symbol of European unity. The Governing Council selected “European culture” and “Rivers and birds” as two potential themes for this new series, based on the outcome of two public surveys carried out in the summer of 2023. Looking ahead, European citizens will have the chance to express their preferences on a shortlist of possible designs, with the ECB expected to decide on the final designs in 2026.

In a year that marked the 25th anniversary of the ECB, we celebrated the arrival of Croatia in the euro area. Croatia’s adoption of the euro in January brought the number of countries in the euro area to 20 – almost double the number when the single currency was first launched. The euro area’s expansion reflects the continued attractiveness of our monetary union in an increasingly unpredictable world. In 2023 people’s support for the euro remained close to record high levels.

All this could not have been done without the hard work and the dedication of ECB staff to our mission: maintaining price stability for the people of the euro area. It is an honour to lead them and this institution.

Frankfurt am Main, April 2024

Christine Lagarde

President

Year in figures

The euro area labour market was resilient

6.5%

The euro area unemployment rate averaged 6.5% in 2023, falling from 6.6% in January to 6.5% in March and remaining broadly stable for the remainder of the year.

Inflation in the euro area declined sharply

-6.3 percentage points

Headline inflation in the euro area was 2.9% in December 2023, down from 9.2% in December 2022. The decline was increasingly broad-based across components.

The ECB raised its key interest rates further

+200 basis points

The ECB raised its key interest rates by a further 200 basis points over 2023, bringing the deposit facility rate to 4%. The tightening of monetary policy was transmitted forcefully to the economy.

Euro area bank resilience strengthened further

15.6%

The Common Equity Tier 1 ratio of euro area banks stood at 15.6% in the third quarter. This was close to its highest level since the start of European banking supervision and reflected the higher profitability and de-risking of bank portfolios.

Payment preferences

60%

60% of euro area citizens consider having the option to pay in cash important. At the same time, just over half of euro area consumers prefer to pay by card or other electronic payment methods.

New ECB statistical indicators on climate change

3 sets of indicators

The ECB published three new sets of statistical indicators on sustainable finance, carbon emissions and physical risks as part of its broader climate action plan.

25th anniversary of the European Central Bank

25 years

In 2023 the ECB celebrated its 25th anniversary with the message "The Value of Unity", allowing the ECB to highlight the success of the single currency and its benefits for the people of Europe.

Corporate sector portfolio decarbonisation

-65%

The carbon intensity of reinvestments decreased by more than 65% in the 12 months that followed the start of tilted reinvestments in October 2022.

1 Inflation declines sharply as the ECB's monetary policy tightening continues to be transmitted strongly

The global economy fared better in 2023 than initially expected, continuing to expand at a moderate pace. The expansion was driven mainly by economic growth in emerging market economies and the United States, while most other advanced economies were more strongly affected by tight financing conditions and considerable geopolitical uncertainty. Global inflation declined markedly as energy commodity prices fell, while underlying price pressures remained elevated. The euro strengthened in nominal effective terms and against the US dollar.

In the euro area economic growth weakened in 2023. The industrial sector was particularly affected by tighter financing conditions, high input costs and weak global demand, whereas the services sector was initially still supported by lingering effects from the post-pandemic reopening of the economy. While the ECB's interest rate tightening was transmitted forcefully to economic activity, the labour market remained fairly resilient. Euro area governments continued to wind down support measures adopted in response to the pandemic, energy price and inflation shocks, reversing part of the previous fiscal loosening. Headline inflation declined sharply in the euro area, helped particularly by energy inflation dropping into negative territory as the strong energy price surges of 2022 unwound. Underlying inflation also started to moderate, underpinning a general disinflationary process and reflecting the fading impact of past shocks and the increasing effects of tighter monetary policy. However, domestic price pressures replaced external pressures as the most important inflation drivers, as the labour market supported strong nominal wage developments, with workers seeking compensation for past inflation-induced losses in purchasing power.

1.1 Global economic activity expanded at a moderate pace as headline inflation declined

Global economic growth was moderate in the face of monetary policy tightening and high uncertainty

The global economy continued to expand at a moderate pace in 2023, with growth remaining broadly unchanged from 2022 at 3.5% (Chart 1.1).[1] Although subdued in a historical comparison, growth was higher than expected at the start of the year, supported by strong labour markets and buoyant demand for services despite continued monetary policy tightening.[2] The global economy was driven mainly by activity in emerging market economies and the United States, while in most other advanced economies tight financing conditions and the prolonged effects of geopolitical factors on energy prices weighed more materially on demand. In the

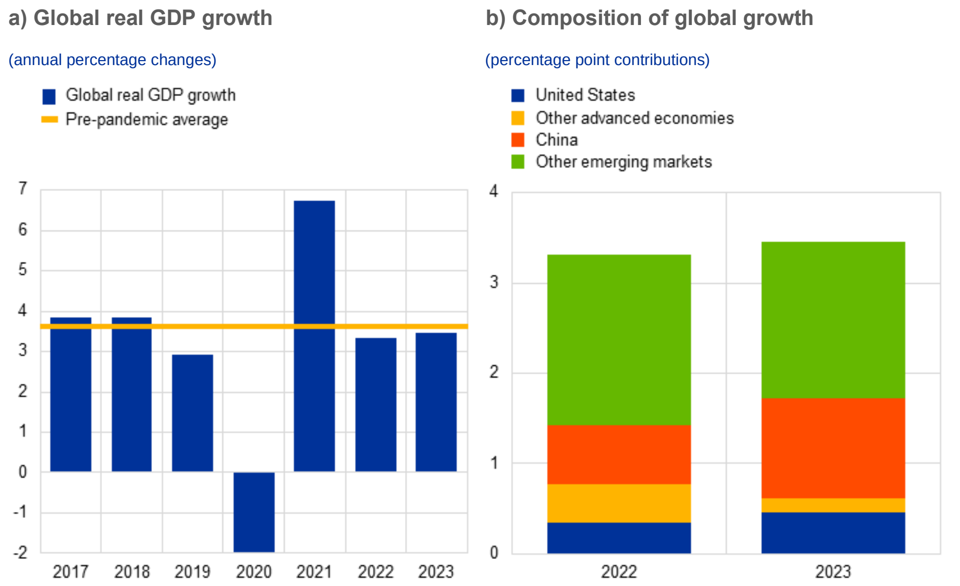
[1] The global economy as referred to in this section of the Annual Report excludes the euro area.

[2] The Eurosystem staff macroeconomic projections in December 2022 projected global growth to slow to 2.6% in 2023.

United States, the economy was more resilient than expected, on the back of robust domestic demand and a strong labour market. Turmoil in the US financial sector at the beginning of the year did not have a significant macroeconomic impact. In China, an economic rebound at the beginning of the year, following the relaxation of highly restrictive pandemic-related measures in December 2022, was ended by a renewed slump in the housing sector as well as weak domestic and external demand. The Chinese economy nonetheless achieved the government's stated growth target of around 5%.

Chart 1.1

Global GDP and its composition



Sources: ECB, ECB staff calculations and ECB staff macroeconomic projections, March 2024
Notes: "Global GDP" excludes the euro area. The pre-pandemic average is for the period from 2012 to 2019. Values for 2023 are estimates based on available data and the March 2024 ECB staff macroeconomic projections.

Global trade momentum weakened as consumption patterns normalised after the pandemic

Global trade was weak in 2023, as import growth slowed to 1.2%, well below the previous year's growth rate of 5.5% and the pre-pandemic average of 3.1%.[3] The slowdown reflected three major trends. First, global demand moved back from goods towards services as pandemic-related restrictions were fully phased out. Second, the share of consumption, which is generally less trade-intensive than investment, in domestic demand increased. Finally, emerging market economies, where trade responds less to changes in economic activity, made a larger contribution to global activity in 2023. Despite increasing trade barriers and business survey results suggesting possible value chain relocation, evidence of fragmentation in aggregate trade flows has so far remained limited.

Inflation declined but underlying price pressures remained elevated

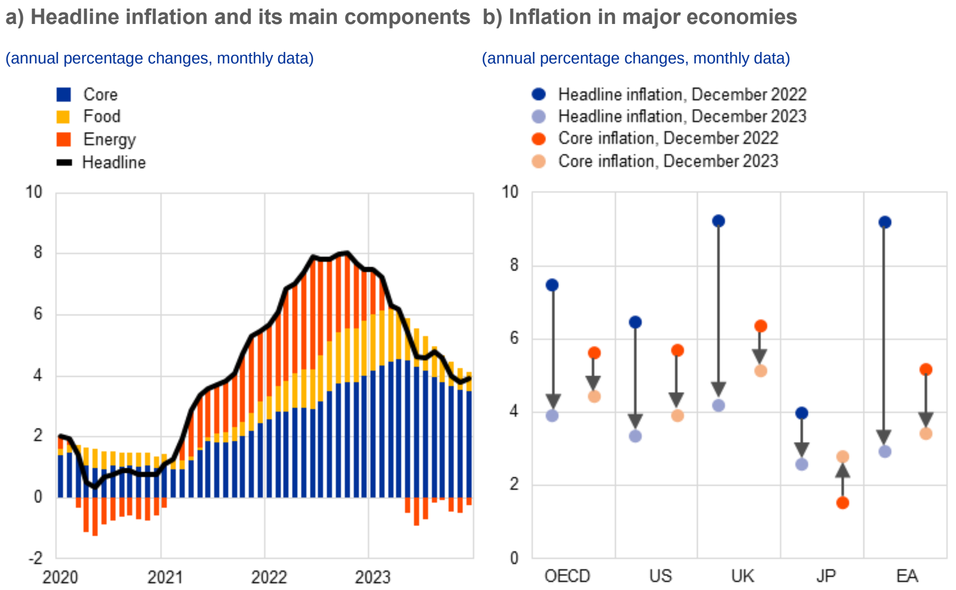
Annual headline consumer price index (CPI) inflation across OECD member countries excluding Türkiye declined from high levels during 2023, brought down by lower energy prices. It fell to 3.9% in December, and for the whole of 2023 stood at 5.3%, compared with 7.3% in 2022 (Chart 1.2, panel a). Inflation excluding energy and food also declined, but to a much lesser extent, indicating that underlying price

3 The pre-pandemic average is measured over the period from 2012 to 2019.

pressures remained strong and broad-based. This was particularly evident in advanced economies, where tight labour markets contributed to high wage growth rates, making services price inflation more persistent (Chart 1.2, panel b).

Chart 1.2

OECD headline and core inflation rates



Sources: National sources via Haver Analytics, OECD and ECB staff calculations.
Notes: EA: euro area. OECD inflation excludes Türkiye and is computed on the basis of national CPIs and annual private final consumption expenditure weights expressed in purchasing power parity terms. Core inflation excludes energy and food. The latest observations are for December 2023.

Energy commodity prices declined as low demand outweighed supply constraints

Energy commodity prices declined throughout 2023 as a result of lower demand. Oil prices fell by 4%, as weak demand for oil from advanced economies outweighed the increase in demand that followed the relaxation of lockdown measures in China. Low oil demand also more than offset the effects of supply cuts by the OPEC+ group as well as the risks to supply from geopolitical factors including the sanctions on Russia and the conflict in the Middle East. The fall in European gas prices was substantially larger, as gas prices continued the decline that started towards the end of 2022 and were reduced by another 58% in the course of 2023. European gas consumption remained below historical norms as a result of lower industrial demand, reduced gas consumption among households and mild weather in the winter months. The stable supply of liquified natural gas (LNG) also allowed European countries to start the heating season with full gas storage. Despite greater stability in the European gas market compared with the previous year, supply risks, such as strikes at Australian LNG terminals, continued to cause periods of high price volatility, illustrating the sensitivity of the European gas market during the transition away from Russian gas imports.

The euro strengthened in nominal effective terms and against the US dollar

The euro strengthened in nominal effective terms (+3.9%) and against the US dollar (+3.4%) on the basis of year-end data, amid notable intra-year fluctuations. The exchange rate dynamics were primarily influenced by evolving market expectations resulting from shifts in monetary policies and volatile economic outlooks. Initially bolstered in the first half of the year by improved macroeconomic conditions in the euro area and a faster pace of monetary policy tightening, the euro started to depreciate against the US dollar in mid-July. The strengthening of the dollar, which was broad-based, was attributed to positive economic data surprises and market expectations of a tighter-for-longer monetary policy stance in the United States. A reassessment of the stance towards the end of the year amid declining inflation rates resulted in a renewed appreciation of the euro. Across major trading partners' currencies, the euro strengthened significantly against the Turkish lira, the Russian rouble, the Japanese yen and the Norwegian krone. However, it weakened against the pound sterling, the Swiss franc and the Polish zloty.

The major risks to the outlook for global economic growth at the end of 2023 included a further escalation of geopolitical tensions, a stronger slowdown in the Chinese economy and more persistent inflationary pressures that would require tighter monetary policy than anticipated. The materialisation of such risks would reduce global economic activity. Moreover, global commodity markets remained very sensitive to supply risks, which in turn could fuel inflation and weigh on global growth in the year ahead.

1.2 Economic activity stagnates in the euro area

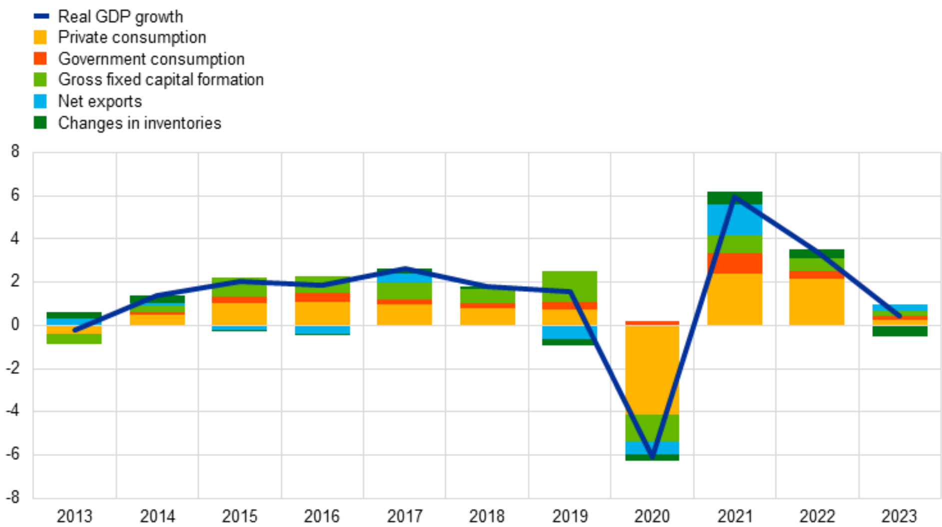
Euro area growth weakened as the effects of higher interest rates broadened

Euro area real GDP rose by 0.4% in 2023, having grown by 3.4% in 2022 (Chart 1.3). Growth reflected positive contributions from domestic demand and net trade. Changes in inventories had a dampening impact. By the end of the year output in the euro area was 3.0% above its pre-pandemic level (in the final quarter of 2019) and 1.4% above its level in the first quarter of 2022, when Russia invaded Ukraine. The slowdown in growth in 2023 was largely attributable to the economic repercussions of the war, which had varying effects across countries, reflecting their different economic structures. While the industrial sector was particularly affected by tighter monetary policy, high energy prices and weakening global demand, the services sector held up relatively well, still benefiting from post-pandemic reopening effects. However, towards the end of the year the weakness in growth dynamics broadened as the impact of higher interest rates spread across the various sectors, alongside spillover effects from the weak industrial sector to services.

Chart 1.3

Euro area real GDP

(annual percentage changes; percentage point contributions)



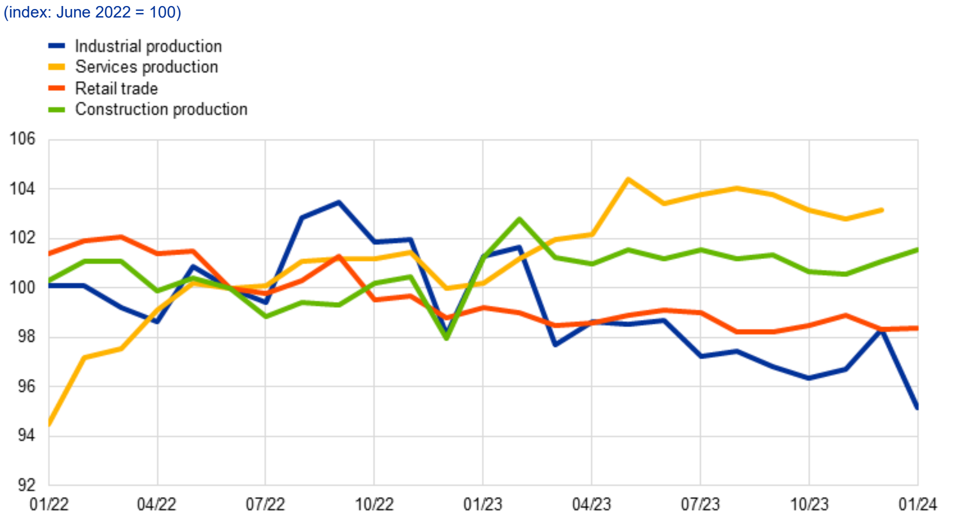
Source: Eurostat.
Note: The latest observations are for 2023.

Consumer spending was geared more towards services than goods

Private consumption growth weakened considerably in 2023. It stagnated in the first half of the year as the continued drop in spending on goods, as captured by retail trade volumes (Chart 1.4), offset the still positive demand for services. In the third quarter private consumption increased, driven by households' consumption of services, which was boosted by lingering reopening effects, and the rebound in spending on durable goods. Overall spending on goods (including semi-durable and non-durable goods) continued to contract amid tighter financing conditions. Overall, household spending increased by 0.5% in 2023. Real disposable income supported household spending to some extent in 2023 as nominal wage growth increased, inflation slowed down gradually and employment growth remained resilient. Nevertheless, the transmission of tighter financing conditions to the real economy seems to have weighed on household spending, as savings remained elevated.

Chart 1.4

Euro area production and retail trade



Sources: Eurostat and ECB calculations.
Notes: Retail trade is shown in real terms. The latest observations are for December 2023 for services production, otherwise for January 2024.

Investment was dampened by tighter financing conditions

Non-construction investment growth (a proxy for private non-housing investment) slowed throughout 2023.[4] While the first quarter of the year saw robust growth on the back of easing supply bottlenecks, the quarterly rates of increase gradually declined and investment fell in the fourth quarter, as both domestic and foreign demand weakened, backlogs dissolved, corporate profits slowed and financing conditions tightened. Uncertainty stemming from Russia's war against Ukraine and the conflict in the Middle East among other factors likely also reduced investment incentives for firms. Nevertheless, abundant profits, ample cash reserves and a decline in indebtedness have on average strengthened corporate balance sheets over past years and contributed – along with funds from the Next Generation EU (NGEU) programme supporting digitalisation and climate-related investment – to some resilience of investment compared with other expenditure components. Overall, non-construction investment grew by 2.9% in 2023.

Construction investment broadly continued to weaken over the course of 2023. The main reason for this was the decline in residential construction investment due to high construction costs, the continued rise in mortgage interest rates and the tightening of bank lending standards, which made it more difficult for households to access finance and dampened demand for residential property. Other areas of construction, such as civil engineering, remained more resilient, supported by public infrastructure investments. At the end of 2023 construction investment was 2.1% above its pre-pandemic level, having fallen by 0.6% overall in 2023.

The euro area goods trade balance returned to surplus in 2023 amid lower prices for imported energy. Export growth remained subdued in a context of weak foreign demand. Manufacturing exports were supported by the easing of supply bottlenecks,

4 See the box entitled "Intangible assets of multinational enterprises in Ireland and their impact on euro area GDP", *Economic Bulletin*, Issue 3, ECB, 2023.

while lingering effects from the energy supply shock and the appreciation of the euro in effective terms contributed to export weakness. The subdued export performance extended to services exports in the second half of the year, as support from pent-up demand after the reopening of the global economy was fading. As domestic demand cooled, euro area imports also declined, driven by decreasing intermediate goods imports as firms destocked and energy imports fell. Overall, the contribution from trade to euro area GDP growth was slightly positive in 2023.

Labour market

The euro area labour market remained resilient overall

The euro area labour market remained resilient overall in 2023, although labour market developments and survey indicators at the end of the year pointed towards a cooling down. The unemployment rate averaged 6.5% in 2023; it declined from 6.6% in January to 6.5% in March and remained broadly stable at that level for the rest of the year (Chart 1.5). Total employment and total hours worked held up well amid a stagnating economy, rising in 2023 by 1.4% and 1.6% respectively. Average hours worked increased by only 0.2% in 2023, and in the last quarter of 2023 stood 1.3% below the pre-pandemic level, likely driven by factors such as labour hoarding (i.e. companies holding on to more workers than necessary in downturns) and an increase in sick leave. The labour force participation rate in the age group 15-74 years increased to a level of 65.7% in the fourth quarter of 2023, 1.1 percentage points above its pre-pandemic level. In the second half of the year, labour demand showed some signs of softening, with the job vacancy rate still high but gradually receding from the peak reached in the second quarter of 2022. Overall, while the ECB’s interest rate increases continued to be transmitted forcefully to the economy, total employment and the euro area labour market, which is among the European Union’s objectives to which the ECB can contribute, if this is without prejudice to maintaining price stability, remained relatively resilient.

Chart 1.5
Labour market

(left-hand scale: quarter-on-quarter percentage changes; right-hand scale: percentages)

Sources: Eurostat and ECB calculations.
Note: The latest observations are for January 2024 for the unemployment rate, and for the fourth quarter of 2023 for employment and hours worked.

1.3 Fiscal policy measures in a challenging macroeconomic environment

The euro area budget deficit ratio decreased as governments started to wind down discretionary support measures

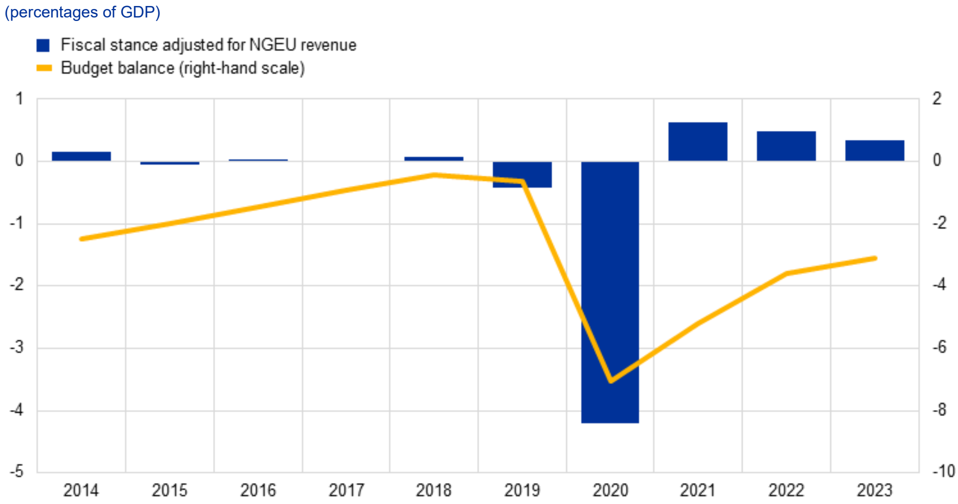
The euro area general government deficit ratio continued to decrease in 2023, following a path started at the height of the pandemic (Chart 1.6).[5] The gradual tightening of fiscal policy is also reflected in the fiscal stance, which tightened moderately in 2023 for the third year in a row.[6] However, only slightly over a third of the loosening in 2020 has so far been reversed (Chart 1.6). This means that the cyclically adjusted budget balance remains well below its pre-pandemic level, owing to lasting measures adopted in the context of the pandemic in 2020 and the energy-related support provided from 2022 onwards.

[5] After the cut-off date for this report, official fiscal outcomes for 2023 were released which, in specific countries, point to significantly higher budget deficits than previously estimated.

[6] The fiscal stance reflects the direction and size of the stimulus from fiscal policies to the economy beyond the automatic reaction of public finances to the business cycle. For more details on this concept, see the article entitled "The euro area fiscal stance", *Economic Bulletin*, Issue 4, ECB, 2016.

Chart 1.6

Euro area general government balance and fiscal stance



Sources: Eurosystem staff macroeconomic projections for the euro area, December 2023 and ECB calculations.
Note: The measure of the fiscal stance is adjusted on the revenue side from 2021 by netting out grants from the NGEU Recovery and Resilience Facility as these revenues do not have macroeconomic tightening effects.

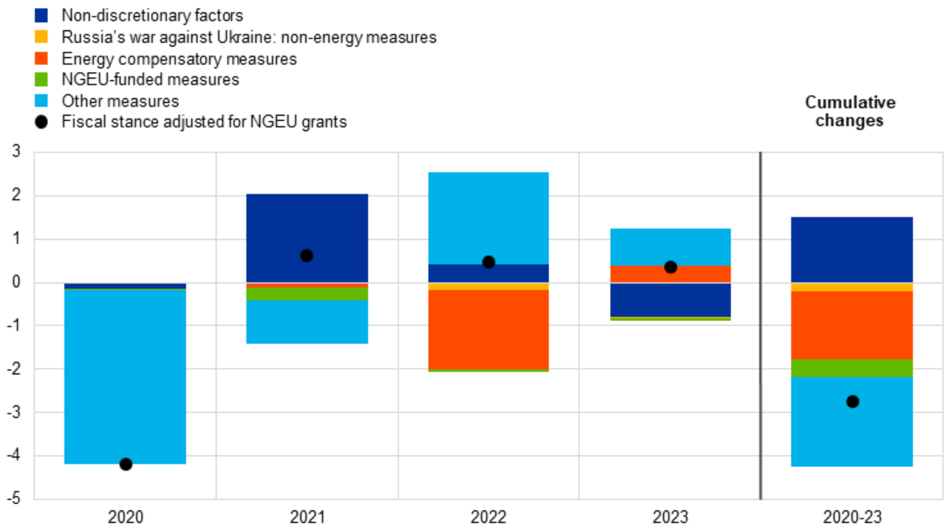
A further tightening of the fiscal stance would be appropriate

Seen from the end-2023 perspective, a challenge for fiscal authorities will be how best to reverse this cumulative expansion of the last four years (Chart 1.7) and to reduce debt ratios, particularly given that demographic developments, the green and digital transitions as well as the geopolitical environment will require fiscal room for manoeuvre in the future. The 2024 government budgets pointed towards a continuation of the fiscal tightening cycle at the euro area level. This largely reflected an unwinding of discretionary fiscal measures that had been adopted in response to the energy and inflation shocks. Such measures were estimated to have amounted to over 1% of GDP in 2023, yet only a small part of this was expected to remain in place in 2024. Notably, however, some of the expansionary measures adopted by governments during the pandemic seemed to be of a more long-lasting nature and, on the basis of the 2024 budgets, were not set to expire in the short run. This was the case for increased transfers and subsidies but to some extent also tax reductions.

Chart 1.7

Decomposition of the euro area fiscal stance and discretionary measures

(percentages of GDP)



Sources: Eurosystem staff macroeconomic projections for the euro area, December 2023 and ECB calculations.
Notes: The measure of the fiscal stance is adjusted on the revenue side from 2021 by netting out grants from the NGEU Recovery and Resilience Facility as these revenues do not have macroeconomic tightening effects. "Other measures" mainly relates to measures adopted during the pandemic and their subsequent unwinding.

A further tightening of the fiscal stance also appears appropriate from the viewpoint of monetary policy. As the energy crisis has now largely faded, governments should continue to roll back the related support measures, which is essential to avoid driving up medium-term inflationary pressures. This would otherwise call for tighter monetary policy. Besides rolling back the pandemic and energy-related measures, governments should more generally make progress towards sounder fiscal positions to ensure that public finances are on a sustainable path.

The EU needs a robust and credible framework for economic and fiscal policy coordination

A robust EU framework for economic and fiscal policy coordination and surveillance remains crucial. After extensive discussions, the Council of the European Union agreed in 2023 on a reform of the EU's economic governance framework, which opened the way for a trilogue between the European Commission, the EU Council and the European Parliament. 2024 will be an important year to transit towards its implementation.[7]

[7] In an opinion issued in July 2023, the ECB welcomed the European Commission's reform proposals and offered some technical observations and suggestions to further enhance the new framework and ensure it will be more transparent and predictable. See Opinion of the European Central Bank of 5 July 2023 on a proposal for economic governance reform in the Union (CON/2023/20) (OJ C 290, 18.8.2023, p. 17).

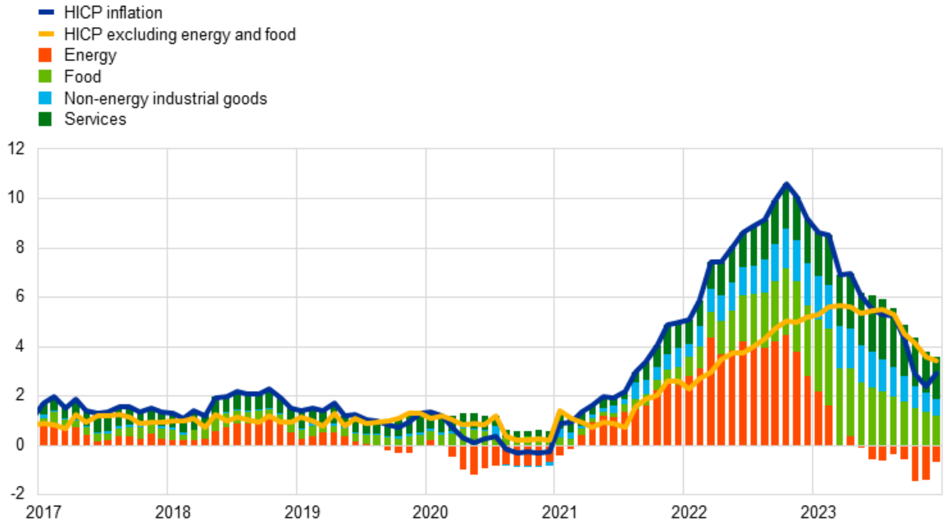
1.4 Headline inflation saw a steep decline throughout the year

Headline inflation fell by 6.3 percentage points between December 2022 and December 2023

Headline inflation in the euro area as measured by the Harmonised Index of Consumer Prices (HICP) was 2.9% in December 2023, a decline of 6.3 percentage points from its level in December 2022. It fell steadily throughout the year, with the disinflationary process also showing up in underlying inflation as the year progressed. In November headline inflation reached a temporary trough of 2.4%, the lowest level in more than two years (sharply down from the peak of 10.6% in October 2022) (Chart 1.8). However, inflation moved slightly higher again in December, owing to the downward effects of energy-related fiscal measures on price levels a year earlier. All major components of inflation saw declines in year-on-year inflation rates over the second half of 2023, reflecting the fading impact of previous cost shocks and weaker demand amid tighter monetary policy. However, year-on-year inflation rates (other than for energy prices) were at year-end still significantly above their longer-term averages, while annualised quarter-on-quarter rates had already moved much closer to such benchmarks. Price dynamics for goods decelerated more swiftly than those for services, as easing supply bottlenecks and input costs took considerable pressure off. Services price inflation rose until mid-year, owing to still strong post-pandemic demand, increasing labour costs, and temporary factors related to fiscal measures. With the reduction in energy and food inflation, the disparities in inflation rates across euro area countries also diminished substantially.

Chart 1.8
Headline inflation and its main components

(annual percentage changes; percentage point contributions)



Sources: Eurostat and ECB calculations.
Note: The latest observations are for December 2023.

Energy inflation dropped sharply while food inflation moderated

Developments in energy prices accounted for more than half of the drop in headline inflation between December 2022 and December 2023. Energy inflation was still high in January 2023, but by year-end had declined by 25.6 percentage points into negative territory. This reflected the unwinding of the strong surges in wholesale energy prices that had taken place in 2022. However, energy inflation remained somewhat volatile, as wholesale energy markets were sensitive to events such as the conflict in the Middle East. Meanwhile, food inflation peaked at 15.5% in March 2023. It then declined substantially throughout the rest of the year, although was still over 6% towards year-end owing to the persistent impact of earlier cost shocks stemming from energy and other inputs, and to higher pressures from unit profits and labour costs.

Underlying inflation started to moderate but remained elevated at year-end

Core inflation – as measured by HICP inflation excluding the volatile components energy and food – continued to increase into the first quarter of the year, but then moderated from a peak of 5.7% to stand at 3.4% in December. This decline was initially driven by non-energy industrial goods inflation, as demand for goods weakened amid tighter financing conditions (see Section 1.2) and accumulated pressures from past supply bottlenecks and high energy costs started to dissipate. Meanwhile, services inflation hovered at high levels until August as a result of still strong demand after the reopening of the economy (for contact-intensive services sectors such as recreation and holidays) as well as rising labour costs, especially given the larger labour share in the cost structure of the services sector compared with manufacturing. Towards the end of the year, however, services inflation also fell somewhat and confirmed the general disinflationary process. Moreover the lagged dynamics in services inflation reflected the fact that many services components typically lag headline inflation (e.g. housing, postal and medical services). All other indicators of underlying inflation also moderated significantly during the year, reflecting the fading impact of past shocks and the increasing impact of tighter monetary policy, yet they continued to span a wide range and most indicators still clearly exceeded pre-pandemic levels.[8]

Labour costs became the most important contributor to domestic inflation later in the year

Growth in the GDP deflator (a reliable measure of domestic price pressures) was on average 6.0% in 2023. This compared with average import price inflation of -2.9%, reflecting the shift from external to domestic drivers of inflation. While profits had still played a prominent role in domestic price pressures at the turn of the year 2022/2023 (see Box 2), labour costs gradually became the dominant factor, given strong wage developments and a reduction in labour productivity (Chart 1.9). Annual growth in compensation per employee increased to 5.1% on average in 2023 from 4.5% in 2022, rates substantially above the pre-pandemic (2015-19) average of 1.7%, which was facilitated by still tight labour markets (see Section 1.2). The further strengthening reflected in part workers seeking compensation for past inflation-induced losses in the purchasing power of nominal wages. Growth in negotiated wages rose to 4.5% on average in 2023; the difference compared with actual wage growth implies a still sizeable wage drift component, though lower than in 2021-22.[9] Growth in both compensation per employee and negotiated wages started to edge down towards the end of the year, but their growth levels remained elevated and

8 For more information on underlying inflation, see the box entitled "Underlying inflation measures: an analytical guide for the euro area", *Economic Bulletin*, Issue 5, ECB, 2023.

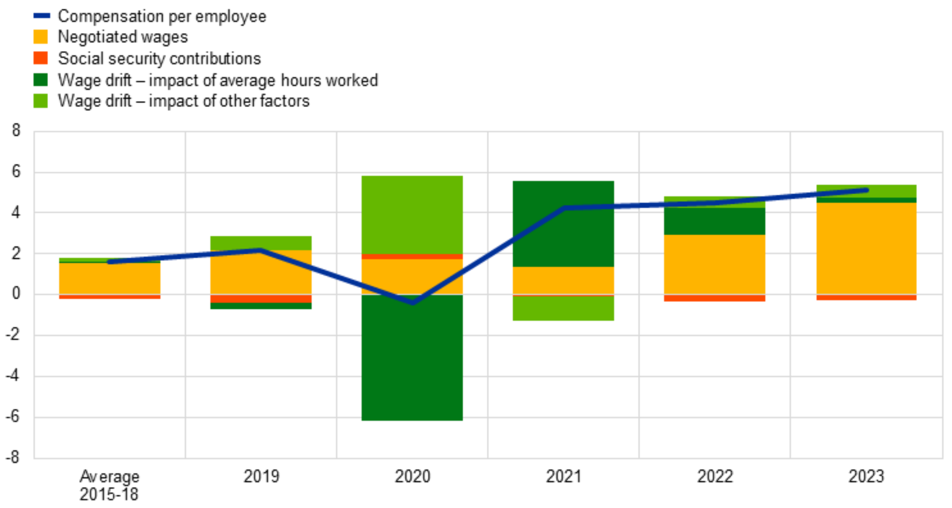
9 Wage drift measures deviations of developments in actual wages from developments in negotiated wages, reflecting changes in overtime, bonuses, tight labour markets and other factors.

signalled still high nominal wage pressures going into 2024. This reflected a recovery of real wages rather than evidence of destabilising wage-price dynamics.

Chart 1.9

Euro area compensation per employee

(annual percentage changes; percentage point contributions)



Sources: Eurostat, ECB and ECB calculations.

Longer-term inflation expectations declined slightly, remaining anchored around the ECB's 2% target

Average longer-term inflation expectations of professional forecasters, which had stood at 2.2% in late 2022, edged down to 2.1% in 2023. Other survey data, such as from the ECB Survey of Monetary Analysts and Consensus Economics, also suggested that longer-term inflation expectations were well anchored around the ECB's 2% target. A market-based measure of longer-term inflation compensation (the five-year forward inflation-linked swap rate five years ahead) rose to a peak of 2.7% in August, but decreased to 2.3% in late December amid news of lower than anticipated headline inflation and a subdued economic growth outlook (see Section 1.2). In any case market-based measures corrected for risk premia implied "genuine" expectations very close to 2%. On the consumer side, median inflation expectations for three years ahead remained slightly above this at 2.5% in December, possibly reflecting high uncertainty, negative economic sentiment and still high price levels relative to wages.[10]

[10] For more on consumer inflation perceptions and uncertainty, see the box entitled "A closer look at consumers' inflation expectations – evidence from the ECB's Consumer Expectations Survey", *Economic Bulletin*, Issue 7, ECB, 2022. For recent results of the Consumer Expectations Survey on economic growth expectations, see "Economic growth and labour markets", ECB, 2024. For more information on consumers' perceptions of the relationship between inflation and economic conditions, see Candia, B., Coibion, O. and Gorodnichenko, Y., "Communication and the Beliefs of Economic Agents", *NBER Working Paper Series*, No 27800, National Bureau of Economic Research, 2020.

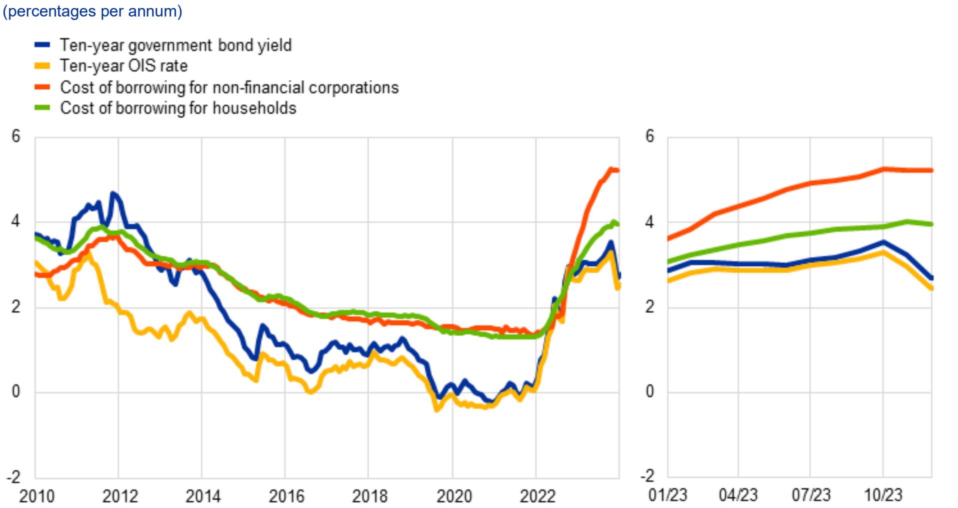
1.5 Credit and financing conditions tightened strongly as policy rates increased

Lower bond yields despite monetary policy tightening, reflecting a change in expectations towards the end of the year

With inflationary pressures remaining elevated and persistent throughout 2023 (see Section 1.4), the ECB continued to tighten monetary policy decisively until September, and subsequently maintained the key ECB interest rates at restrictive levels, to ensure that inflation returns to the 2% target over the medium term (see Section 2.1). The – risk-free – ten-year overnight index swap (OIS) rate hovered around 3% through most of the year, reaching a peak of 3.3% in October before declining to an average 2.5% in December (Chart 1.10). The decline in the ten-year OIS rate towards the end of the year was due to a sharp drop in financial market interest rate expectations, mostly after inflation came in lower than expected. The drop in expectations was only partially compensated by an increase in the term premium. Long-term government bond yields followed developments in the OIS rate very closely. Their spreads were not significantly affected by the process of normalising the Eurosystem balance sheet (see Section 2.1) and at year-end were virtually the same as in December 2022. The euro area GDP-weighted average of ten-year nominal government bond yields averaged 2.7% in December 2023, 10 basis points below its level a year earlier.

Chart 1.10

Long-term interest rates, and the cost of borrowing for firms and for households for house purchase



Sources: Bloomberg, LSEG and ECB calculations.
Notes: Monthly observations. The euro area ten-year government bond yield is a GDP-weighted average. The indicators for the cost of borrowing are calculated by aggregating short-term and long-term bank lending rates using a 24-month moving average of new business volumes. The latest observations are for December 2023.

Equity markets were supported by lower risk premia

Stock prices increased in 2023, in both the non-financial sector and, particularly, the banking sector. A decline in equity risk premia supported equity prices amid low and falling volatility despite heightened geopolitical tensions. The index of euro area bank stocks was boosted further by expectations of an increase in bank earnings in both the long and short term, with the March banking sector market turbulence in the United States and Switzerland having a sizeable but temporary negative impact. The broad indices of euro area non-financial corporation and bank equity prices ended

2023 around 12% and 23% above their respective end-2022 levels. Corporate bond yields declined and stood, on average, at lower levels in December 2023 than in December 2022 in both the investment grade and high-yield segments, owing to lower risk-free rates combined with a compression of corporate bond spreads.

Broad money and bank intermediation reflected the tightening of monetary policy

Broad money (M3) stagnated, mainly reflecting the tightening of monetary policy. Its annual rate of change was only 0.1% in December, having declined significantly during 2023 and even temporarily reaching negative rates for the first time since the inception of Monetary Union (Chart 1.11). The decline was driven by subdued credit creation, high opportunity costs of holding liquid assets and the reduction in the Eurosystem balance sheet. While bank balance sheets remained robust overall, repayments of funds borrowed under the third series of targeted longer-term refinancing operations and a contraction in the Eurosystem asset portfolios reduced excess liquidity. Bank funding costs increased steeply, although by less than policy rates, as banks turned to more expensive market funding sources and competed more actively for customer deposits by offering higher interest on them.

Bank lending rates increased steeply for firms and households as monetary policy tightened

The transmission of the monetary policy tightening to broader financing conditions remained strong in 2023. As indicated by the euro area bank lending survey, banks tightened their credit standards (i.e. internal guidelines or loan approval criteria) for loans to households and firms substantially further. This was confirmed by the survey on the access to finance of enterprises for firms and the Consumer Expectations Survey for households. Nominal bank lending rates increased steeply again in 2023, reaching their highest levels in almost 15 years. The composite bank lending rate for loans to households for house purchase stood at 4.0% at the end of the year, up by about 100 basis points compared with the end of 2022, and the equivalent rate for non-financial corporations increased by 180 basis points to 5.2%, a rise of almost twice the increase seen for households (Chart 1.10). The increases in lending rates were more rapid and larger than in previous episodes of monetary policy tightening, mostly reflecting the faster and larger policy rate hikes since July 2022. The disparity in lending rates across countries remained contained, indicating that changes in the ECB’s monetary policy were being transmitted to lending rates smoothly across the euro area.

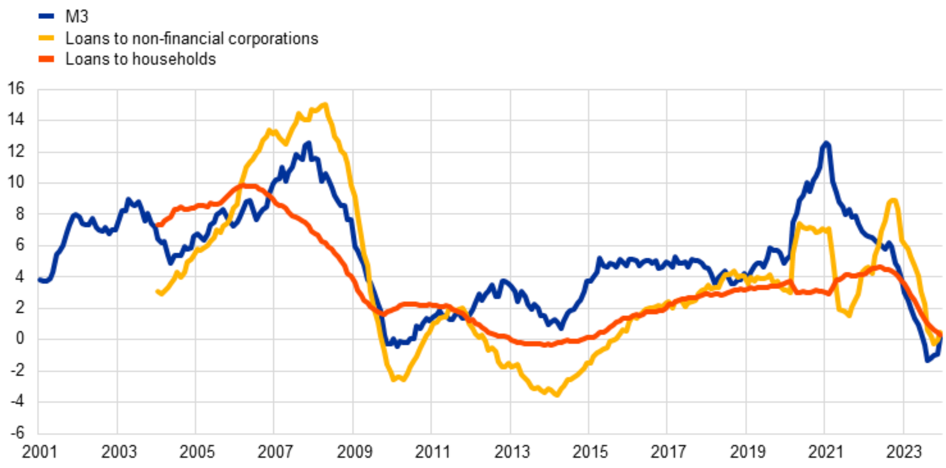
Bank lending to households and firms weakened markedly

Bank lending to households and firms weakened markedly in 2023, on the back of tighter credit conditions (Chart 1.11). Net monthly flows of loans were almost zero in the last three quarters of the year. The annual growth rate of bank loans to households declined, standing at 0.3% in December, mostly reflecting the slowdown in mortgages amid falling house prices for the first year since 2014. The annual growth rate of bank loans to firms also fell, reaching 0.4% in December, and the net flows of overall external financing to firms were at historical lows (Chart 1.12).

Chart 1.11

M3 growth and the growth of credit to firms and households

(annual percentage changes)

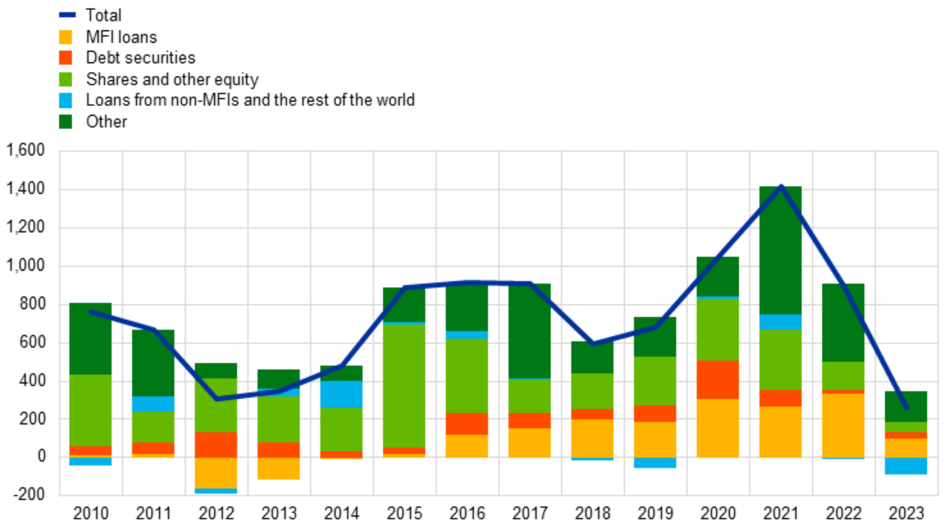


Source: ECB.
Notes: Firms are non-financial corporations. The latest observations are for December 2023.

Chart 1.12

Net flows of external financing to firms

(annual flows in EUR billions)



Sources: ECB and Eurostat.
Notes: Firms are non-financial corporations. MFI: monetary financial institution. In “loans from non-MFIs and the rest of the world”, non-monetary financial institutions consist of other financial intermediaries, pension funds and insurance corporations. “MFI loans” and “loans from non-MFIs and the rest of the world” are corrected for loan sales and securitisation. “Other” is the difference between the total and the instruments included in the chart and consists mostly of inter-company loans and trade credit. The latest observations are for the third quarter of 2023. The annual flow for 2023 is computed as a four-quarter sum of flows from the fourth quarter of 2022 to the third quarter of 2023.

Box 1
The macroeconomic implications of climate change

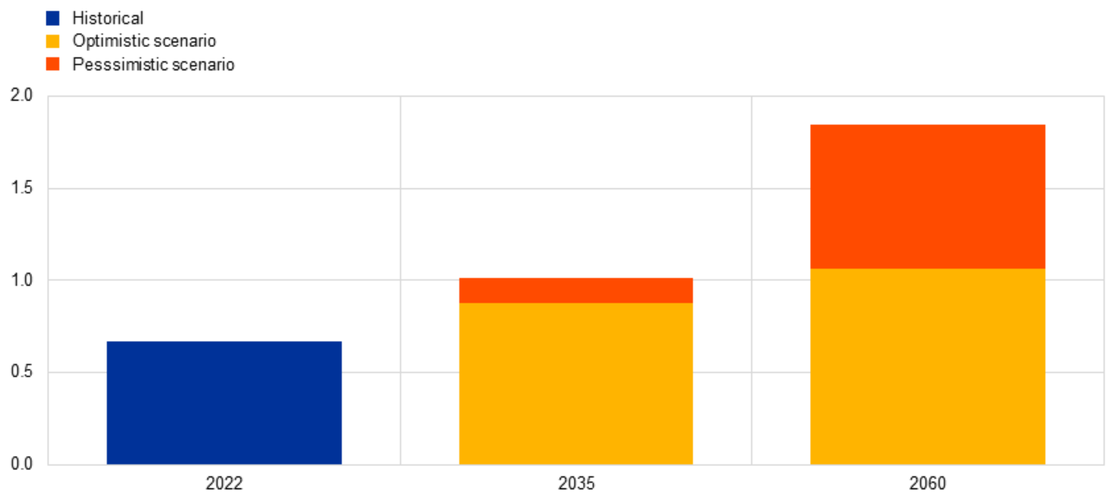
The ECB is working to better understand the macroeconomic consequences of climate change and policies to mitigate its impact, in line with commitments made following the 2020-21 monetary policy strategy review.[11] These efforts are highly relevant to the ECB's primary mandate to maintain price stability. The complexity of climate change and the non-linear and highly uncertain nature of its effects call for enhanced macroeconomic analysis to limit forecast errors and understand the structural changes climate change is creating in the economy.

Climate change is already affecting euro area inflation. ECB research estimates that the extreme summer heat in 2022 increased food inflation in Europe by around 0.7 percentage points after one year, i.e. in 2023 (Chart A).[12] Services inflation can also be affected by hotter summers, possibly through the impact on food prices and the sensitivity of tourism-related services to temperature.[13] The impact of higher summer temperatures on inflation could be greater in a hotter climate: a heatwave similar to that of 2022 occurring in the climate of 2035 could, in a pessimistic scenario, increase average food price inflation by 1 percentage point. In an optimistic scenario, the effect of a similar heatwave would only be marginally less severe (0.8 percentage points). Increasing temperatures will have a greater impact on regions that are already hotter. This implies different effects on inflation in different euro area countries, which would make the transmission of a single monetary policy more challenging.

Chart A

Increasing impact of heatwaves on food price inflation in Europe

(year of heatwave, percentage points)



Source: Kotz et al. (see footnote 12).
Notes: Impacts estimated with a global panel regression approach, using monthly prices and high-resolution climate data. The bars show the cumulative deviation of food inflation from the baseline projection after 12 months as a result of extreme June, July and August temperatures. The chart is based on combining elasticities of a 1°C increase in temperatures with results from 21 global climate models. Temperatures are based on a summer equivalent to that in 2022 (i.e. in the upper tail of the temperature distribution on the basis of projected future climates) and are retrieved from climate model results under an optimistic emissions scenario (in which the rise in global temperatures would be below 2°C in 2100) and a pessimistic scenario (in which emissions would rise throughout the next century). Impacts could be reduced through ambitious adaptation to warmer climates.

Extreme weather events typically reduce output in the short run, but the total economic impact extends beyond the direct and immediate impacts that would arise, for example, through the destruction of houses, factories and machinery. Examples include disruption in other regions or sectors through supply-chain linkages or impaired infrastructure. Revenue losses in affected

11 See "ECB presents action plan to include climate change considerations in its monetary policy strategy", *press release*, ECB, 8 July 2021.

12 See Kotz, M., Kuik, F., Lis, E. and Nickel, C., "The impact of global warming on inflation: averages, seasonality and extremes", *Working Paper Series*, No 2821, ECB, May 2023.

13 See Ciccarelli, M., Kuik, F. and Martínez Hernández, C., "The asymmetric effects of weather shocks on euro area inflation", *Working Paper Series*, No 2798, ECB, March 2023.

sectors and lower output will usually reduce demand for the products and services of other sectors. Another effect is higher uncertainty, which could lead households and businesses to reassess their views on disaster risk and therefore depress spending.

Over longer horizons climate change can also reduce output growth more persistently.[14] For example, reduced snowfall will threaten the viability of many skiing areas in Europe, and some Mediterranean regions may become too hot for summer tourism, although some northern regions may benefit. Yields in agriculture and forestry will likely be depressed by hotter average temperatures. While changing crops can alleviate some of the effects, less predictable temperature and rainfall patterns are also likely to weigh on agricultural output. Higher temperatures above the comfort zone of around 19-22°C – which are likely to occur more frequently in a warmer climate – reduce the productivity of workers.

Adaptation, i.e. adjustment to warmer climates, could help limit macroeconomic impacts. This includes, for example, installing air conditioning to reduce the impact of heat stress on labour productivity, or switching crops to limit agricultural productivity losses. However, such measures will likely have implications for government budgets and fiscal space.[15] Insurance provides a further tool for adaptation, but there is already a substantial climate insurance protection gap in Europe.[16]

Achieving emission reductions to meet the goals of the Paris Agreement and avert more catastrophic global warming requires a wide-ranging structural transformation of the economy. Capital and labour need to be reallocated across and within sectors, and even within individual firms (e.g. car makers will need to switch factories from making combustion engine cars to making battery-powered electric vehicles). The success of that reallocation will depend on the implementation of effective transition policies; the flexibility of markets and in particular the ability of the economy to finance and absorb the substantial capital investment required; the development of decarbonised technologies and the availability of skilled labour to implement them.

Analysis suggesting a benign economic impact of climate policy measures introduced to date is unlikely to capture the full picture.[17] Available model-based assessments of carbon price pathways find only a limited effect on output and inflation.[18] However, the measures included still fall substantially short of meeting the EU's emission reduction target, and the broader impact of the transition – including effects from strengthened regulation and targets – can be less straightforward to quantify.

The speed of transition critically affects the ultimate economic impact: delaying the transition will require faster and more radical policy changes later on, increasing the probability of stranded assets and higher structural unemployment.[19] Moreover, different transition policies vary in their

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14 See the article entitled "How climate change affects potential output", *Economic Bulletin*, Issue 6, ECB, 2023.

15 See "The climate change challenge and fiscal instruments and policies in the EU", *Occasional Paper Series*, No 315, ECB, revised June 2023.

16 See Christophersen, C. et al., "What to do about Europe's climate insurance gap", *The ECB Blog*, ECB, 24 April 2023.

17 See the box entitled "Climate-related policies in the Eurosystem/ECB staff macroeconomic projections for the euro area and the macroeconomic impact of green fiscal measures", *Economic Bulletin*, Issue 1, ECB, 2023.

18 See the article entitled "The macroeconomic implications of the transition to a low-carbon economy", *Economic Bulletin*, Issue 5, ECB, 2023.

19 These issues are explored in the climate scenarios published by the Network for Greening the Financial System, a group of 134 central banks and supervisors and 21 observers, to which the ECB and the European System of Central Banks actively contribute.

impact on productivity.[20] Market-based policies – such as carbon taxes – have less impact on the productivity of carbon-intensive firms than non-market-based policies (such as banning certain products or processes).

The competitiveness of the euro area economy is also affected by global choices regarding transition policies. These include higher carbon prices as well as industrial policies such as the recent Inflation Reduction Act in the United States. The EU Emissions Trading System (EU ETS) can trigger "carbon leakage", i.e. the relocation of economic activity and emissions to regions with laxer emissions requirements. This can be reduced by carefully calibrating the Carbon Border Adjustment Mechanism together with existing carbon leakage prevention mechanisms.[21]

Overall, climate change and mitigation policies affect nearly all aspects of macroeconomic analysis performed by central banks. Key open questions remain, related for example to the way the transition should unfold and the resultant structural changes to the economy; to the macroeconomic impact of extreme weather and risks from accelerated climate change; and to the role of nature capital and ecosystem services.

Box 2
The role of unit profits in recent domestic price pressures

This box focuses on how unit profits contributed to the dynamics of domestic price pressures in 2023 from an accounting perspective.

Domestic price pressures were very strong in 2023 but receded slightly in the course of the year as unit profits declined

Growth in the GDP deflator, which shows a strong co-movement with developments in HICP inflation excluding energy and food (HICPX), can be broken down into the contributions from unit labour costs, unit profits and unit taxes (minus subsidies) (Chart A).[22,23] Annual growth in the GDP deflator rose significantly further in 2023, to an average of 6.0% from 4.7% in 2022. This contrasts with an average rate over the period from 1999 to 2021 of 1.6%. From a historical high of 6.4% in the first quarter of 2023, the growth figure started to moderate and reached 5.3% in the fourth

20 See Benatti, N., Groiss, M., Kelly, P., Lopez-Garcia, P., "Environmental regulation and productivity growth in the euro area: testing the Porter hypothesis", *Working Paper Series*, No 2820, ECB, May 2023.

21 See Böning, J., Di Nino, V. and Folger, T., "Benefits and costs of the ETS in the EU, a lesson learned for the CBAM design", *Working Paper Series*, No 2764, ECB, January 2023.

22 Unit profits are calculated as gross operating surplus and mixed income divided by real GDP and include a correction for the income of the self-employed. A more encompassing indicator would set gross operating surplus and mixed income in relation to real output, which includes intermediate consumption in addition to GDP. However, real output is not available given a lack of information on intermediate consumption.

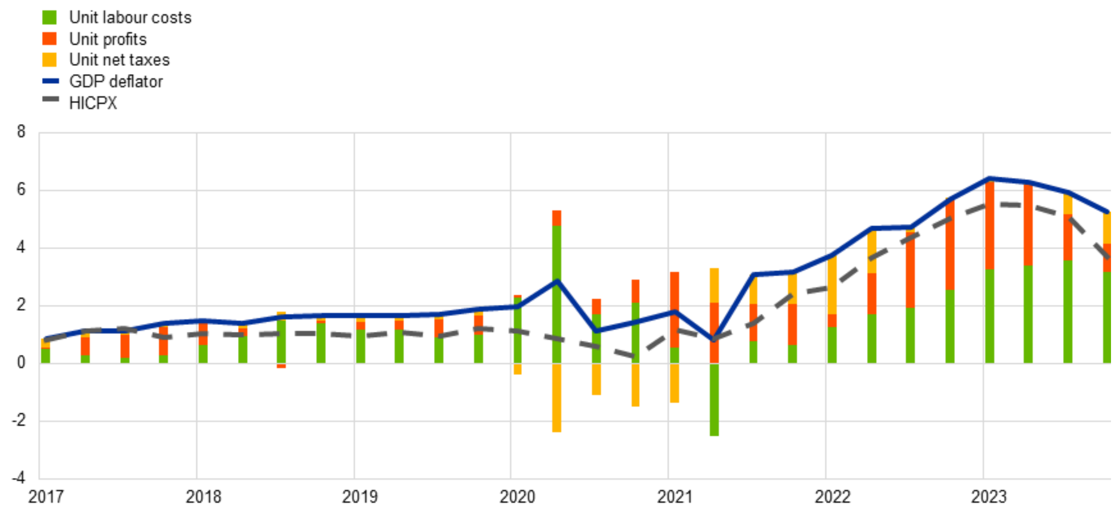
23 The main conceptual differences between the GDP deflator and the HICPX result from the fact that the latter is based on the selling prices of goods and services consumed by households in the categories included whether they are produced domestically or imported, while the former captures the prices of the value added of all products produced by the domestic economy and does not include the contribution from intermediate consumption to final prices. See the box entitled "How have unit profits contributed to the recent strengthening of euro area domestic price pressures?", *Economic Bulletin*, Issue 4, ECB, 2023.

quarter. Unit profits contributed over several quarters in 2022 and 2023 to the surge in the GDP deflator, accounting for about half or more of its elevated growth rate. This compares with an average contribution of slightly more than one-third over the period 1999 to 2019. The contribution of unit profits then declined strongly during 2023, helping to offset increases in the contribution of unit labour costs over the period.

Chart A

GDP deflator and contributions

(annual percentage changes; percentage point contributions)



Source: Eurostat and ECB calculations.

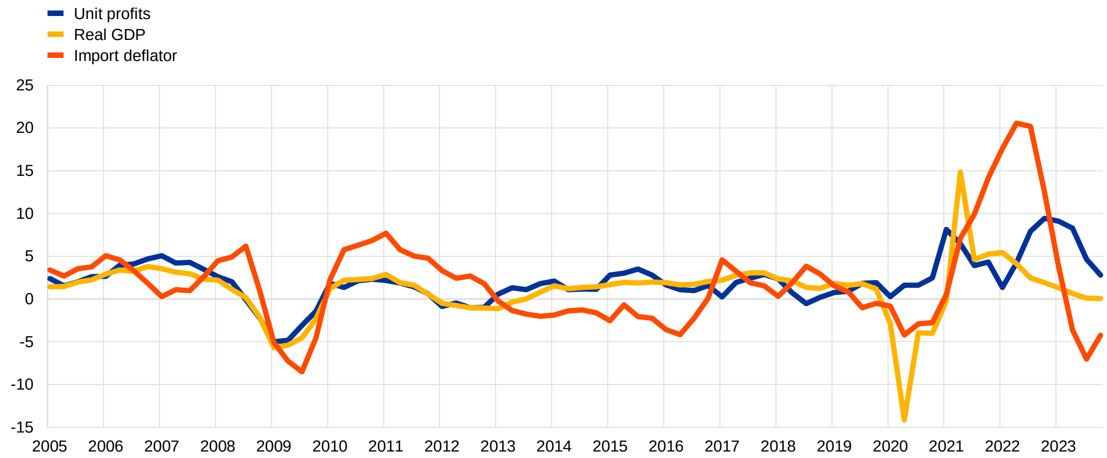
Exceptional economic developments after the pandemic explain strong unit profit growth in 2022 and early 2023

Unit profits typically move closely with developments in cyclical indicators such as real GDP. They are, moreover, typically affected by marked changes in the terms of trade, for instance owing to large fluctuations in import or oil prices. These features reflect the fact that, when demand is stronger relative to potential output, it is easier for price-setters to raise prices and unit profits without losing market share, while at times of input cost shocks e.g. from energy prices, profits are typically used at least temporarily to avoid passing the full cost increase through to selling prices. The economic weakening over 2022 and 2023, to the extent that it was driven by demand falling relative to supply, and the sharp deterioration of the terms of trade in 2022, related to the surge in import prices, would therefore have both pointed to weaker developments in unit profits than were observed (Chart B). This suggests that other mechanisms and more exceptional factors may have been at play during that period. One source of the strength of unit profits in these years was the supply-demand imbalances in many economic sectors. While supply chain disruptions during the pandemic led to widespread supply constraints, debt-financed government measures limited the impact of the growth slowdown on disposable incomes and contributed to high savings. Such savings and the related pent-up demand boosted demand in many sectors following the reopening after the lockdowns. In such an environment of strong aggregate demand relative to supply, pronounced input cost increases can lead price-setters to raise their prices without necessarily changing their mark-up pricing strategy. This implies a pass-through of input costs and a large contribution of unit profits to domestic price pressures, as recently observed.[24]

Chart B

Unit profits, real GDP and the import deflator

(annual percentage changes)



Source: Eurostat and ECB calculations.
Note: The latest observations are for the fourth quarter of 2023.

As exceptional factors unwound, unit profits realigned with the economic cycle and their typical buffer role

With the fading of supply-demand imbalances after the pandemic and the significant moderation in energy and other input cost pressures in the course of 2023, unit profit growth started to recede and return gradually to more normal levels. The unwinding of supply-demand imbalances made it harder to raise margins without losing market share and contributed to more contained increases in unit profits. The turn in the environment towards more moderate input cost pressures allowed more limited selling price dynamics. This meant that unit profit growth was set to decline even if firms maintained their approach to passing through input cost prices and setting mark-ups. The decline in input cost pressures may have, moreover, made it easier for firms to buffer labour cost pressures. The weaker unit profit developments are also consistent with the relatively weak cyclical economic environment in 2023. Overall, unit profits appear to have resumed their typical buffer role, counteracting a larger pass-through of the high unit labour cost pressures to domestic prices.

[24] See Arce, O., Hahn, E. and Koester, G., "How tit-for-tat inflation can make everyone poorer", *The ECB Blog*, ECB, 30 March 2023 and the box entitled "How have unit profits contributed to the recent strengthening of euro area domestic price pressures?", *Economic Bulletin*, Issue 4, ECB, 2023.

2 Monetary policy in restrictive territory

In 2023 the ECB stayed the course in raising key policy interest rates to, and keeping them at, levels sufficiently restrictive to ensure a timely return of inflation to the 2% medium-term target. In the first nine months of the year it increased rates by 200 basis points, bringing the deposit facility rate to 4%, as exceptionally high inflationary pressure stemming from high energy costs spread through the economy. High food prices were also a significant contributing factor. In addition, the effects of supply bottlenecks and of pent-up demand linked to the lifting of pandemic-related restrictions were, although easing, still driving up prices, and wage growth picked up. The ECB's decisions reflected a data-dependent approach and were based on the assessment of the medium-term inflation outlook in light of the incoming economic and financial data, the dynamics of underlying inflation and the strength of monetary policy transmission. In the course of the year the available information increasingly showed that the tightening of monetary policy was being forcefully transmitted to the economy. In addition, incoming inflation data indicated that the disinflation process, as signalled especially by the decline in measures of underlying inflation, continued to make progress. Ultimately the Governing Council decided at its October and December meetings to keep the key ECB interest rates unchanged.

The Eurosystem balance sheet continued to contract as part of the monetary policy normalisation that began in 2022, notwithstanding the additional €45 billion contribution from Hrvatska narodna banka's balance sheet following the adoption of the euro by Croatia on 1 January 2023. The Eurosystem balance sheet reached €6.9 trillion by year-end, a decline of more than €1 trillion in one year and of almost €2 trillion when compared with its peak in mid-2022. The reduction was mainly the result of the maturing and early repayments of long-term funds borrowed by banks under the third series of targeted longer-term refinancing operations (TLTRO III) and was supported by the end of both the full and the partial reinvestment phase in the asset purchase programme (APP), in the periods starting in March and July respectively. In December 2023 the Governing Council decided to advance the normalisation of the Eurosystem balance sheet, expressing its intention to gradually phase out reinvestments under the pandemic emergency purchase programme (PEPP) starting in July 2024. In 2023, following the announcement of December 2022, the Eurosystem worked on the review of its operational framework for steering short-term interest rates, which was concluded in March 2024.

Moreover, the ECB proceeded in 2023 with the gradual removal, initiated in 2022, of its pandemic-related collateral easing measures, and the Hellenic Republic's credit rating was upgraded to investment grade level. Throughout 2023 the Eurosystem emphasised risk management to ensure efficient policy implementation, including by diversifying the credit assessment sources it accepts. With the key interest rates having been raised to bring down inflation, the ECB incurred losses from negative interest income, which were partly offset by previously established financial buffers. The monetary income of the ECB is expected to increase again in the future, which will support its operational effectiveness.

2.1 Pursuing a restrictive monetary policy to bring inflation back to the 2% target

Inflation was still 8.6% in January, while the economy remained resilient despite mounting challenges

In early 2023 economic growth stagnated in the euro area, after a marked deceleration since mid-2022. However, the economy showed signs of resilience in the face of significant challenges from subdued global economic activity, geopolitical uncertainties owing to Russia's war against Ukraine and high inflation along with tighter financing conditions. Headline inflation declined in January as a result of lower energy prices but remained high at 8.6%, also in light of high food prices. This was partly due to the pervasive impact of high energy costs across the economy, which also influenced food prices, alongside ongoing – although fading – pandemic-related factors such as supply chain disruptions and pent-up demand. Wage growth was also picking up.

The Governing Council raised rates in February and expressed its intention to raise them further

In light of the medium-term inflation outlook, the Governing Council reaffirmed its intention to pursue a restrictive monetary policy and raised the three key ECB interest rates by 50 basis points at its February meeting. It also said that it intended to raise interest rates by another 50 basis points at its meeting in March, and would then evaluate the subsequent monetary policy path. The Governing Council remained steadfast in raising interest rates at a steady pace to levels sufficiently restrictive to ensure a timely return of inflation to its 2% medium-term target. Keeping interest rates at restrictive levels should gradually reduce inflation by dampening demand and pre-empting any sustained upward shift in inflation expectations.

At its February meeting, the Governing Council also established modalities for reducing Eurosystem securities holdings under the APP. This followed on from its December 2022 decision to no longer reinvest the principal payments from maturing securities in full from March onwards, so that the APP portfolio would decrease by a monthly average of €15 billion from March to June 2023, with the subsequent reduction pace to be determined later. Corporate bond reinvestments would be tilted more strongly towards issuers with a better climate performance. While maintaining a focus on the ECB's price stability objective, this strategy was aimed at taking better account of climate-related financial risk in the Eurosystem balance sheet and gradually decarbonising corporate bond holdings in alignment with the ECB's secondary objective of supporting the general economic policies in the EU, which include efforts to mitigate the impact of climate change (see Box 8).

US banking sector turbulence fuelled uncertainty in Europe, emphasising the need for a data-dependent approach to rate decisions

In March, amid the banking sector turbulence in the United States and Switzerland, financial market tensions soared and increased uncertainty about the outlook for euro area growth and inflation. In addition, the March ECB staff macroeconomic projections foresaw sustained high inflation levels, particularly in inflation excluding energy and food, although inflation was expected to decrease in the coming years. With inflation projected to remain too high for too long, the Governing Council decided to raise the three key ECB interest rates by 50 basis points. Moreover, the heightened uncertainty emphasised the importance of a data-dependent approach to the Governing Council's policy rate decisions. It therefore also clarified its "reaction function", explaining that its policy rate decisions would be guided by three criteria: the inflation outlook in light of incoming economic and financial data, the dynamics of underlying inflation and the strength of monetary policy transmission. The Governing Council also continued to monitor market tensions closely, standing ready to respond as necessary to preserve price stability and contribute to financial stability in the euro area. In the following months, the euro area banking sector proved resilient to the tensions emanating from outside the euro area.

It became increasingly evident that restrictive monetary policy was having a significant impact on euro area financing conditions

As the year advanced, it was increasingly evident that the Governing Council's restrictive interest rate policy was having a significant impact on the economy. Past rate increases were being transmitted forcefully to euro area monetary and financing conditions – the initial stages of the transmission mechanism – and were gradually having effects across the economy, even though the lags and strength of transmission to the real economy remained uncertain. In April borrowing rates for businesses and mortgages reached their highest levels in over a decade. The resultant decline in credit demand, along with tighter credit standards, led to a progressive slowdown in loan growth. Banks also repaid the largest amount of funds borrowed under TLTRO III in June, causing a significant decline in excess liquidity. This reduction did not hinder the smooth transmission of monetary policy rate changes to risk-free rates in money markets, although an asymmetry emerged in the reaction of the spread between the euro short-term rate (€STR) and the ECB's deposit facility rate. The spread did not narrow with the liquidity reduction, in contrast to its widening when liquidity had increased (see Box 3).

The Governing Council continued to raise policy rates as underlying price pressures remained high…

Headline inflation declined markedly. It dropped to 6.1% in May from 8.5% in February, with 6.9% in March and 7.0% in April. Nevertheless, while inflation was expected to decline further toward the target, largely driven by the concurrent tightening of financing conditions that was increasingly dampening demand, price pressures were still anticipated to remain too strong for too long. The Governing Council therefore opted for another two consecutive 25 basis point interest rate increases, in May and June respectively.

…stopped APP reinvestments as of July…

After the pace of reinvestment was reduced in March, July marked the end of APP reinvestments. Reinvestments under PEPP were still set to continue until at least the end of 2024. At the same time, developments since the Governing Council's previous monetary policy meeting supported its expectation that inflation would drop further over the remainder of the year but stay above target for an extended period. On this basis, the Governing Council stayed on course to raise interest rates by an additional 25 basis points in July.

…and returned minimum reserve remuneration to 0%, improving policy efficiency

The Governing Council also decided in July to reduce the remuneration of minimum reserves from the deposit facility rate to 0%. This decision was aimed at maintaining the effectiveness of monetary policy by retaining control over the monetary policy stance while ensuring a full pass-through of interest rate decisions to money markets. It also enhanced policy efficiency by reducing overall interest expenses stemming from reserves while achieving the same degree of monetary restriction.

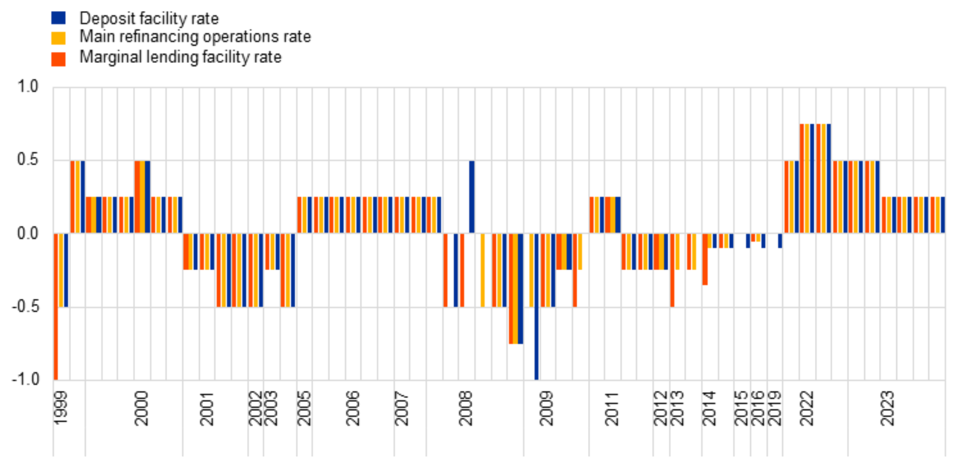
As inflation declined more slowly the Governing Council raised rates in September, bringing the deposit facility rate to 4%…

With inflation in August showing almost no progress from the 5.3% recorded in July, and the inflation outlook in the September ECB staff projections revised upwards for 2023 and 2024, mainly owing to a higher path for energy prices, the Governing Council increased the key ECB rates by another 25 basis points at its September meeting. This brought the cumulative increase over 2023 to 200 basis points and the deposit facility rate to 4% (Chart 2.1).

Chart 2.1

Changes in the key ECB policy rates

(percentage points)



Source: ECB.

…and said that maintaining current policy rate levels for a sufficiently long duration would contribute substantially to the timely return of inflation to the target

However, the economy was expected to remain subdued in the following months, after having stagnated over the first half of the year. The increasing impact of the Governing Council’s tightening measures on domestic demand, coupled with a challenging international trade environment, led ECB staff to significantly lower their economic growth projections in September 2023. Additionally, while underlying price pressures persisted at high levels, most indicators started to ease, and the projected path for inflation excluding energy and food was also revised slightly downwards. On the basis of this updated assessment, the Governing Council also considered that the key ECB interest rates had reached levels that, maintained for a sufficiently long duration, would make a substantial contribution to the timely return of inflation to its target.

October ended the longest period of consecutive rate hikes in the history of the euro

After ten consecutive rate hikes, the Governing Council decided at its October meeting to keep the key ECB interest rates unchanged. From the start of the rate increases in July 2022, the ECB had raised the deposit facility rate from -0.50% to 4% by September 2023. While inflation was still anticipated to remain persistently high owing to robust domestic price pressures, it continued to decrease significantly in September, dropping to 4.3%. This decline was accompanied by an easing in measures of underlying inflation. The increased geopolitical risks arising from October onwards from the conflict in the Middle East also further underscored the importance of the Governing Council's data-dependent approach to determining the appropriate level and duration of restriction in its key policy rates.

Inflation dropped to 2.4% in November

As the year came to a close, inflation continued to decrease, reaching 2.4% in November. At its December meeting, however, the Governing Council assessed that it was likely to temporarily rise again in the near term, owing to base effects. Underlying inflation had eased further. The Eurosystem staff macroeconomic projections suggested that inflation would resume its gradual decline in 2024. At the same time domestic price pressures were seen as remaining elevated, primarily owing to strong growth in unit labour costs.

The Governing Council kept rates unchanged and decided to advance the Eurosystem's balance sheet normalisation

Against this background, the Governing Council decided at its December meeting to keep its key rates unchanged.

The Governing Council also decided in December to advance the normalisation of the Eurosystem balance sheet. It expressed the intention to reinvest, in full, the principal payments from maturing PEPP securities until mid-2024, before reducing the portfolio by an average €7.5 billion per month until year-end and discontinuing reinvestments thereafter.

2.2 Eurosystem balance sheet developments as monetary policy tightens further

The Eurosystem balance sheet was gradually reduced, with the end of APP reinvestments and the maturing of TLTRO III operations

In 2023 the Eurosystem balance sheet continued the gradual reduction started in 2022 with the normalisation of monetary policy. It declined further as the full and partial reinvestment phases of the APP ended in February and June respectively. Under the PEPP, the Eurosystem continued full reinvestments throughout the year. By the end of 2023 the balance sheet had declined to €6.9 trillion, mainly on account of TLTRO III operations maturing as well as early repayments, and to some extent also as the APP portfolio began to be wound down.

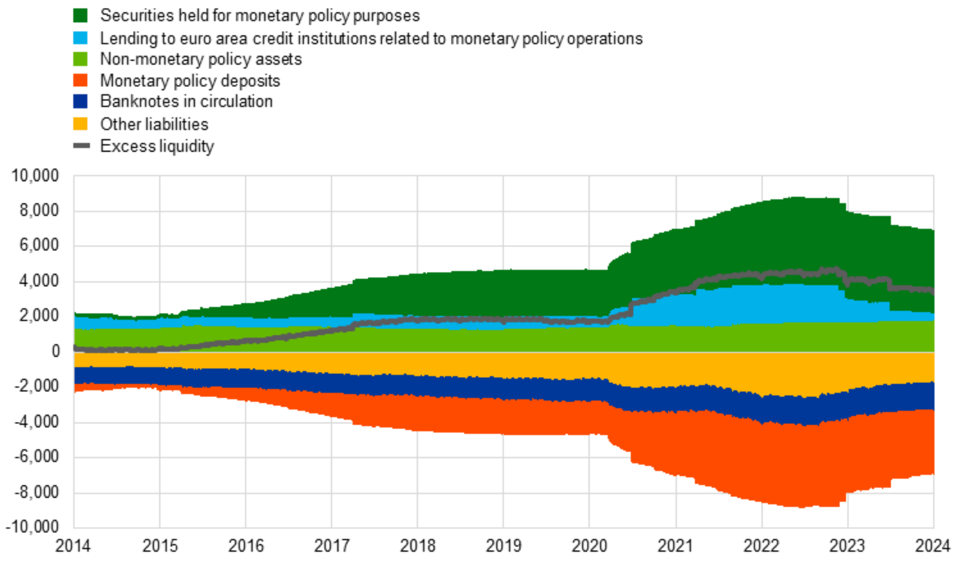
At the end of 2023 monetary policy-related assets on the Eurosystem balance sheet amounted to €5.1 trillion, a decline of €1.2 trillion compared with the end of 2022. Loans to euro area credit institutions accounted for 6% of total assets (down from 17% at the end of 2022) and assets purchased for monetary policy purposes represented 68% of total assets (up from 62% at the end of 2022). Other financial assets on the balance sheet consisted mainly of foreign currency-denominated assets, gold and euro-denominated non-monetary policy portfolios.

On the liabilities side, the overall amount of credit institutions' reserve holdings and recourse to the deposit facility decreased to €3.5 trillion at the end of 2023 (from €4.0 trillion at the end of 2022) and represented 51% of total liabilities (compared with 50% at the end of 2022). Banknotes in circulation were virtually unchanged at €1.6 trillion and accounted for 23% of total liabilities (up from 20%).

In 2023, following the announcement of December 2022, the Eurosystem worked on the review of its operational framework for steering short-term interest rates, which was concluded in March 2024.

Chart 2.2
Evolution of the Eurosystem's consolidated balance sheet

(EUR billions)



Source: ECB.
Notes: Positive figures refer to assets and negative figures to liabilities. The line for excess liquidity is presented as a positive figure, although it refers to the sum of the following liability items: current account holdings in excess of reserve requirements and recourse to the deposit facility.

The adoption of the euro by Croatia on 1 January 2023 and the inclusion of Hrvatska narodna banka's balance sheet in the consolidated balance sheet of the Eurosystem increased the latter's total assets and liabilities by €45 billion.

APP and PEPP portfolio distribution across asset classes and jurisdictions

The run-off of the asset purchase programmes was well absorbed by the market

The APP comprises four asset purchase programmes: the third covered bond purchase programme (CBPP3), the asset-backed securities purchase programme (ABSPP), the public sector purchase programme (PSPP) and the corporate sector purchase programme (CSPP). The PEPP was introduced in 2020 in response to the pandemic. All asset categories eligible under the APP are also eligible under the PEPP; a waiver of the eligibility requirements was temporarily granted for the PEPP for securities issued by the Hellenic Republic.[25]

In December 2021 the Governing Council confirmed its intention to gradually start the normalisation of its monetary policy, by reducing the pace at which it purchased securities for the PEPP and, subsequently, the APP. It announced the end of net asset purchases under the PEPP, and in March 2022 gave an expected end date for the net purchases under the APP. The Eurosystem ended net purchases under the PEPP as of 1 April 2022 and continued to reinvest (in full) the principal payments from maturing securities purchased under the programme. It ended net purchases

25 The waiver was granted at the inception of the PEPP and was in place until September 2023. In that month, the relevant credit rating was upgraded to investment grade level, and the waiver was consequently no longer needed.

under the APP as of 1 July 2022 and began to only reinvest (in full) the principal payments from maturing securities. It then decided to reduce the Eurosystem holdings under the APP at a measured and predictable pace through partial reinvestment of the principal payments from maturing securities between March and June 2023, thereby ensuring that the Eurosystem maintained a continuous market presence under the APP over this period. Finally, the Governing Council confirmed on 15 June 2023 that it would discontinue reinvestments under the APP as of July 2023. For the PEPP, full reinvestments were continued till the end of 2022 and throughout 2023. On 14 December 2023 the Governing Council announced its intention to continue to reinvest, in full, the principal payments from maturing securities purchased under the PEPP during the first half of 2024 and reduce the PEPP portfolio by €7.5 billion per month on average over the second half of 2024, before discontinuing reinvestments under the PEPP at the end of that year. Reinvestment purchases continued to be conducted in a smooth manner and in line with the respective prevailing market conditions.

The size of the APP portfolio remained stable during the full reinvestment phase from July 2022 to February 2023. During the partial reinvestment phase, from March to June 2023, it declined by €60 billion, at an average pace of €15 billion per month, before the full run-off started in July 2023. Overall, APP holdings declined from €3.254 trillion (at amortised cost) at the end of 2022 to €3.026 trillion at the end of 2023. The PSPP accounted for the bulk of these holdings, with €2.403 trillion or 79% of total APP holdings at the end of the year. Under the PSPP, redemptions were in general reinvested in the jurisdiction in which principal repayments fell due. In addition, some national central banks purchased securities issued by EU supranational institutions. The weighted average maturity of the PSPP holdings stood at 7.0 years at the end of 2023, with some variation across jurisdictions. The ABSPP accounted for less than 1% (€13 billion) of total APP holdings at year-end, the CBPP3 for 9% (€286 billion) and the CSPP for 11% (€324 billion). Corporate and covered bond purchases were guided by benchmarks reflecting the market capitalisation of all eligible outstanding corporate and covered bonds respectively. The Eurosystem continued to tilt its corporate securities purchases towards issuers with a better climate performance and published its first climate-related financial disclosures for the corporate securities holdings under the CSPP and PEPP, as well as for its non-monetary policy portfolios – see Section 11.5. Securities purchases under the APP were implemented smoothly throughout the first half of 2023. The partial reinvestment phase and the discontinuation of the purchases were well absorbed by the financial markets and did not cause any major disturbance.

At the end of 2023 PEPP holdings amounted to €1.7 trillion (at amortised cost). Covered bond holdings accounted for less than 1% (€6 billion) of the total, corporate sector holdings for 3% (€46 billion) and public sector holdings for 97% (€1,614 billion).[26] The weighted average maturity of the PEPP public sector securities holdings stood at 7.3 years at the end of 2023, with some differences across jurisdictions.

26 The total exceeds 100% as a result of rounding.

Redemptions of private sector securities under the APP and PEPP amounted to €80 billion in 2023, while redemptions of public sector securities under the PSPP and PEPP amounted to €438 billion. Reinvestments under the APP and PEPP amounted to €36 billion for private sector securities and €271 billion for public sector securities. Given the large and unevenly distributed redemptions, the public sector reinvestments were smoothed across jurisdictions and across time to ensure a regular and balanced market presence, giving due regard to market price formation and market functioning considerations. This smoothing mechanism led to additional temporary deviations of the PEPP holdings from the allocation in accordance with the Eurosystem capital key, but these were largely reversed by the end of the smoothing period, which is the calendar year in which the redemptions take place.

The assets purchased under the PSPP, CSPP, CBPP3 and PEPP continued to be made available for securities lending to support bond and repo market liquidity. In 2023 repo market conditions improved significantly compared with the previous year, which was reflected in smaller lending volumes.

Developments in Eurosystem refinancing operations

At the end of 2023 the outstanding amount of Eurosystem refinancing operations was €410 billion, representing a decline of €914 billion compared with the end of 2022. This change mainly reflects voluntary early repayments (€312.5 billion) and the maturing of operations (€612.9 billion) under the TLTRO III series. The weighted average maturity of outstanding Eurosystem refinancing operations decreased from around 10.5 months at the end of 2022 to 5.2 months at the end of 2023.

Gradual phasing-out of pandemic collateral easing measures

In March 2022 the ECB announced the gradual phasing-out of pandemic-related collateral easing measures. These measures were a core element of the ECB’s monetary policy response to the pandemic, making it easier for counterparties to access Eurosystem credit operations by increasing the volume of eligible collateral. The central focus of the measures was a temporary reduction in valuation haircuts across all asset classes by a fixed factor of 20% and temporary extensions to the additional credit claim (ACC) frameworks implemented by some national central banks.

The gradual phase-out started in July 2022. In a second step, which took effect from 29 June 2023, the temporary reduction in valuation haircuts for marketable and non-marketable assets was fully phased out by implementing a new haircut schedule, thus marking the return to the ECB’s pre-pandemic risk tolerance level for credit operations.[27]

[27] The date of entry into force took into account the date of the TLTRO III operation which matured in June.

A third step in the phasing-out of the pandemic collateral easing measures will be a comprehensive review of the ACC framework. Some national central banks terminated their national ACC frameworks in full or in part in the course of 2023 or before.[28] In November 2023, the ECB announced the discontinuation of the eligibility of short-term debt instruments for use as collateral under the Guideline on temporary collateral measures[29], as well as of some specific features of the ACC frameworks. In addition, it decided to reinstate the €25,000 minimum size for domestic credit claims accepted as collateral for domestic use, as well as to extend the validity of the ACC frameworks with their remaining features, until at least the end of 2024. These decisions are to be implemented in the course of 2024.

In September 2023 the relevant credit rating of the Hellenic Republic was upgraded from credit quality step 4 to step 3 on the Eurosystem's harmonised rating scale (from BB+ to BBB-), positioning all debt instruments issued by the central government of the Hellenic Republic at investment grade level.[30] The debt instruments issued by the central government of the Hellenic Republic, which previously benefited from a waiver included in the Guideline on temporary collateral measures, are therefore as of September 2023 subject to the eligibility criteria under the general collateral framework.

Developments in eligible marketable assets and mobilised collateral

The nominal amount of eligible marketable assets increased by €1.2 trillion in 2023, reaching a level of €18.3 trillion at the end of the year (Chart 2.3). Central government securities continued to be the largest asset class (€9.9 trillion). Other asset classes included corporate bonds (€1.9 trillion), covered bank bonds (€1.8 trillion) and unsecured bank bonds (€2 trillion). Regional government securities (€603 billion), asset-backed securities (€600 billion) and other marketable assets (€1.4 trillion) each accounted for a comparatively small fraction of the eligible assets universe.

28 The impact on collateral of terminating elements of ACC frameworks was especially considerable for Spain, France and Portugal.

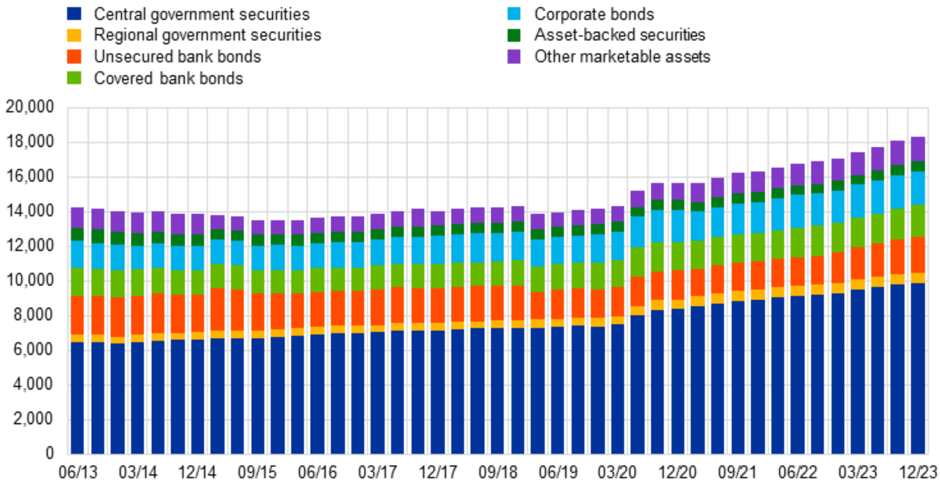
29 Guideline of the European Central Bank of 9 July 2014 on additional temporary measures relating to Eurosystem refinancing operations and eligibility of collateral and amending Guideline ECB/2007/9 (ECB/2014/31)(OJ L 240, 13.8.2014, p. 28).

30 For an assessment of the financial and economic effects the upgrade to investment grade is expected to have on the Greek economy, see Anastasatou, M., Balfoussia, H., Bragoudakis, Z., Malliaropulos, D., Migiakis, P., Papageorgiou, D. and Petroulas, P., "Effects of a sovereign credit rating upgrade to investment grade on the Greek economy", *Economic Bulletin*, No 58, Bank of Greece, 2023, pp. 7-28.

Chart 2.3

Developments in eligible marketable assets

(EUR billions)



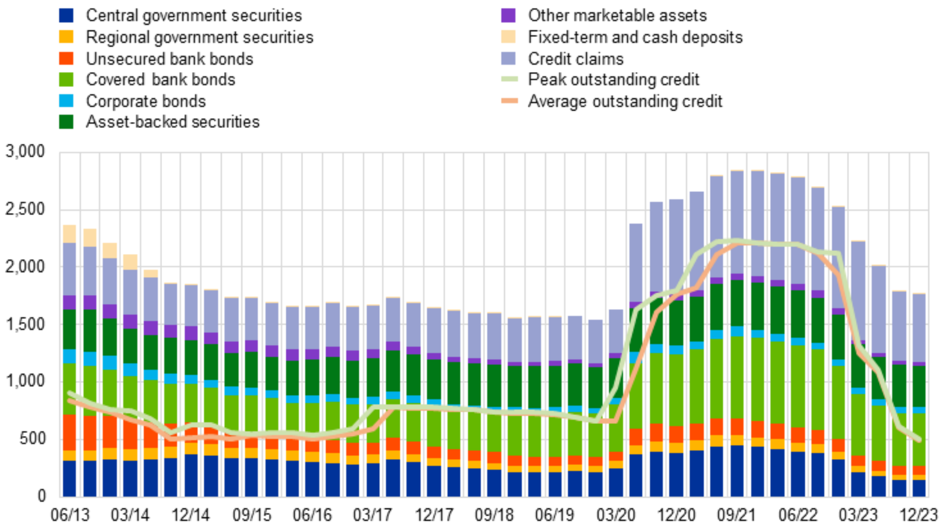
Source: ECB.
Notes: Asset values are nominal amounts. The chart shows averages of end-of-month data for each period.

Between the adjustment of the interest rates applicable to TLTRO III in November 2022 and the end of 2023, counterparties repaid 80% of their outstanding credit, which was accompanied by a sizable reduction in mobilised collateral of more than €900 billion (Chart 2.4). Following the early repayments between November 2022 and January 2023, counterparties demobilised in particular government bonds, which have a relatively high opportunity cost and can be used in private repo funding. In addition, they demobilised more than €250 billion of covered bonds and asset-backed securities in the course of 2023. The maturity of the TLTRO III operation in June 2023 was also accompanied by a large reduction in mobilised collateral (around €300 billion), which corresponded to 60% of the net credit repaid on that day. However, two-thirds of that drop in mobilised collateral was due to the partial phasing-out of the pandemic collateral easing measures, in particular the phasing-out of certain pools of ACCs in France as well as the reversal of the remaining 10% haircut reduction.

Chart 2.4

Developments in mobilised collateral

(EUR billions)



Source: ECB.
For collateral, the averages of end-of-month data for each period are shown, and values are after valuation and haircuts. For outstanding credit, daily data are used.

2.3 Managing financial risks of monetary policy instruments

The Eurosystem continuously manages the financial risks inherent in the implementation of its monetary policy operations. Its risk management function endeavours to attain risk efficiency, i.e. to achieve monetary policy objectives with the lowest amount of risk.[31]

Losses arose because of interest rate sensitivity mismatches between assets and liabilities

The ECB increased its key interest rates several times in 2023 to bring inflation back to the Governing Council's medium-term target of 2%. This increased the cost of the liabilities on the balance sheets of Eurosystem central banks, while the income generated on their APP and PEPP securities portfolios and TLTRO III remained low. This resulted in negative interest income, which can be partly offset against financial buffers built up in previous years. If these buffers are fully utilised, any remaining losses are recorded on the balance sheets. However, such losses can be offset with future profits and do not affect the ability of Eurosystem central banks to operate effectively. Over time, the Eurosystem's asset-liability mismatch is expected to decrease, which will improve its profit and loss accounts.[32]

The main changes to the Eurosystem's risk management framework in 2023 were a further diversification of its credit assessment sources and a stronger tilting of purchases of corporate sector securities towards issuers with a better climate performance.

31 See "The financial risk management of the Eurosystem's monetary policy operations", ECB, July 2015.

32 See the explainer "Profits and losses of the ECB and the euro area national central banks: where do they come from?", ECB, updated on 19 May 2023.

Further diversification of credit assessment sources

2023 was marked by the acceptance of additional credit assessment sources within the Eurosystem Credit Assessment Framework (ECAF). The ECAF is a risk management framework employed by the Eurosystem to mitigate the credit risk of assets used in monetary policy operations. It defines the procedures, rules and techniques that ensure the Eurosystem requirement of high credit standards for all eligible assets is met on an ongoing basis. This involves the assessment, acceptance and monitoring of different types of credit assessment source.

The Bank of Greece's in-house credit assessment system was accepted as a credit assessment source

In April 2023 the Governing Council decided to accept the Bank of Greece's in-house credit assessment system, which provides assessments of Greek legal entities in the non-financial sector, as a credit assessment source. These assessments can now be used to determine the eligibility of credit claims on Greek non-financial corporations as collateral for Eurosystem credit operations, and valuation haircuts for them. The Bank of Greece's in-house assessment system is one of nine national central bank credit assessment systems currently accepted by the Governing Council.

Scope Ratings GmbH was accepted as a new external credit rating agency

In November the Governing Council decided to accept Scope Ratings GmbH as an external credit assessment institution (ECAI), following a thorough Eurosystem assessment of the company's application based on the Eurosystem's acceptance criteria for ECAIs. The assessment encompassed quantitative and qualitative criteria, as well as any relevant supervisory feedback from the European Securities and Markets Authority. The ratings provided by Scope Ratings will be used together with the ratings of the already accepted ECAIs (DBRS Morningstar, Fitch Ratings, Moody's and S&P Global Ratings) to determine the eligibility of collateral assets for monetary policy operations, and the valuation haircuts to be applied, once the process of integrating Scope Ratings into the Eurosystem IT infrastructure has been concluded.

Managing risks of the asset purchases in the APP and PEPP

Financial risks of asset purchases continued to be managed on the basis of specific risk control frameworks for each asset class

In 2023 reinvestment of principal payments from maturing securities continued to be conducted for monetary policy purposes under the PEPP and, until the end of June, also under the APP. The financial risks of these programmes are managed on the basis of specific financial risk control frameworks that take into account each programme's policy objectives and the features and risk profiles of the different asset types purchased. The frameworks consist of eligibility criteria, credit risk assessments and due diligence procedures, pricing frameworks, benchmarks and limits. They applied to net asset purchases and continue to apply to the reinvestment of principal payments from maturing holdings, as well as to the holdings for as long as they remain on the Eurosystem's balance sheet. The key elements of these frameworks, as summarised in Section 2.3 of the ECB's Annual Report 2022, Table 2.1, are still valid. For corporate sector securities, the Eurosystem applied a stronger tilting of its reinvestments of principal payments from maturing securities towards issuers with a better climate performance as of the start of partial reinvestment under the APP in March 2023.

Box 3
The evolution of excess liquidity and its impact on the euro unsecured market rate

This box explores the repercussions of the reduction in the Eurosystem balance sheet on the euro money market. The decline in excess liquidity resulting from the balance sheet reduction has not disrupted the pass-through of changes in the key ECB interest rates to unsecured money market rates. However, an asymmetry emerged in 2023 in the reaction of the spread between the euro short-term rate (€STR) and the ECB's deposit facility rate, which has been less responsive to the reabsorption of excess liquidity than to the earlier injection of liquidity. Preliminary analysis suggests that this phenomenon is likely to be temporary.

The new monetary policy tightening reduced liquidity

Since the deposit facility rate was no longer negative and as a result of the recalibration of the conditions for TLTRO III, excess liquidity declined from €4.4 trillion on 27 July 2022 to €3.3 trillion on 31 December 2023 (Chart A, panel a). The €1.1 trillion reduction occurred primarily through the repayment of €1.7 trillion which had been borrowed by banks under TLTRO III. The maturing of Eurosystem APP holdings also contributed to this decline, with redemptions that were not reinvested absorbing €0.3 trillion. Conversely, the evolution of autonomous factors released €0.9 trillion of excess liquidity back into the system, reflecting a reduction in institutional customers' non-monetary policy deposits with the Eurosystem. This reduction took place in a gradual manner, after adjustments were made in the remuneration of these deposits.

Lower liquidity has not narrowed the spread between the €STR and the deposit facility rate

Historical data suggests that a significant decline in excess liquidity should result in a narrowing of the spread between the €STR and the deposit facility rate. However, the recent reduction in excess liquidity has not led to a compression of this spread (Chart A, panel b), which widened until the second half of 2022 and then stabilised at around -10 basis points from November 2022 onwards. This departure from historical patterns raises questions about whether it is a temporary phenomenon or a structural shift.

Chart A

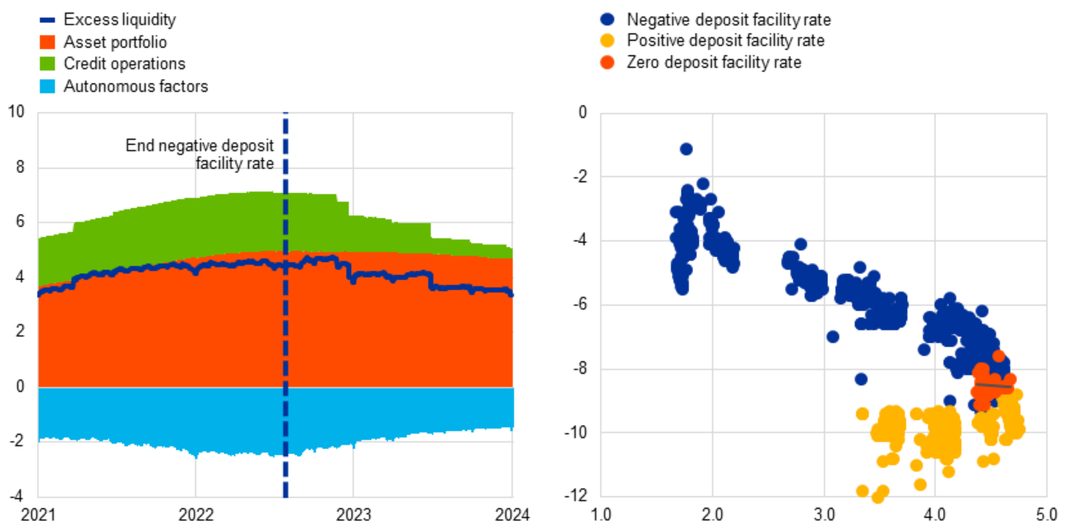
Evolution of excess liquidity

a) Excess liquidity and components

(EUR trillions)

b) Excess liquidity and the €STR/deposit facility rate spread

(x-axis: excess liquidity in EUR trillions; y-axis: spread in basis points)



Sources: ECB (market operations database), Bloomberg and Eurosystem calculations.
Note: Panel a): the negative deposit facility rate period ends on 26 July 2022, with the rate moving from -0.50% to 0.00% on 27 July. Panel b): the negative deposit facility rate period (covered by this chart) is from 1 October 2019 to 26 July 2022. The zero deposit facility rate period is from 27 July to 13 September 2022. The positive deposit facility rate period starts on 14 September 2022, when the rate was increased from 0.00% to 0.75%.

Drivers

The effective deactivation of the two-tier system for the remuneration of banks' excess reserves in July 2022 resulted in an additional €1 trillion of excess liquidity becoming available for trading (Chart B, panel a). During the period of negative rates and following the introduction of the two-tier system in October 2019, excess liquidity effectively available for trading was lower than the headline figure for excess liquidity, as part of the excess liquidity held with the Eurosystem benefited from a favourable remuneration, i.e. it was exempt from negative interest rates. The end of negative policy rates in July 2022 eliminated this advantage. The release of additional tradable funds bolstered, among other things, banks' trading in unsecured overnight deposits.

According to the money market statistical reporting (MMSR) dataset, unsecured borrowing rose from a daily average of €120 billion during the negative deposit facility rate period in 2021 and 2022 to €210 billion towards the end of 2023, with the increase involving all counterparty sectors (Chart B, panel b). The return to positive rates and the end of the two-tier system thus led to a notable increase in supply in the unsecured segment.

In a context of excess supply, banks benefited from greater market power in the negotiation of interest rates with customers, as evident in the greater dispersion of rates in their contributions to the calculation of the €STR, with the majority tilting the rate down. While investors supplying funds preferred short maturities since they expected the ECB to raise interest rates, banks had limited appetite for short maturities, which do not provide benefits for regulatory liquidity metrics while being a costly way to increase total balance sheet size. Banks therefore tend to charge a premium to depositors to compensate for the negative effect of such deposits on their leverage ratio. The premium resulted in downward pressure on the €STR, particularly at quarter and year-end reporting dates.

Chart B

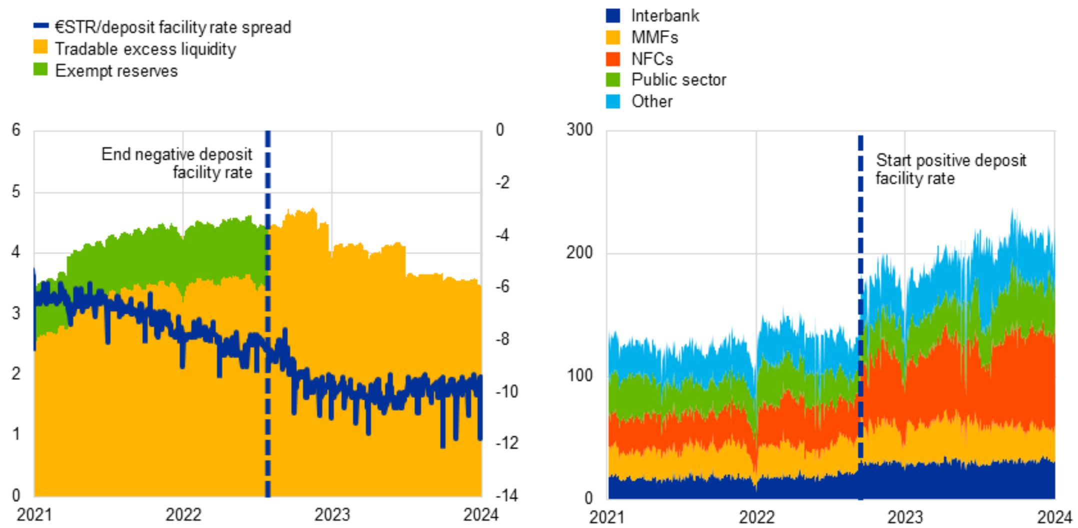
Trading activity

a) Tradable excess liquidity and the €STR/deposit facility rate spread

(left-hand scale: excess liquidity in EUR trillions; right-hand scale: spread in basis points)

b) Unsecured borrowing by counterparty sector

(EUR billions)



Sources: ECB (market operations database, MMSR), Bloomberg and Eurosystem calculations.
Note: Panel a): the negative deposit facility rate period ends on 26 July 2022, with the rate moving from -0.50% to 0.00% on 27 July. “Exempt reserves” refers to the portion of excess liquidity exempt from negative remuneration under the two-tier system. Panel b): the positive deposit facility rate period starts on 14 September 2022, when the rate was increased from 0.00% to 0.75%. The turnover reflected in the chart includes all €STR overnight deposits, deposits from non-financial corporations, call accounts and some other residual borrowing with maturities up to one year. MMFs: money market funds; NFCs: non-financial corporations. “Other” includes investment funds (excluding money market funds), pension funds and insurance funds, and residual sectors.

The uncompressed spread may be a temporary phenomenon

In conclusion, the absence of a compression of the spread between the €STR and the deposit facility rate could be a temporary phenomenon as, in a context of excess supply, banks retain market power to negotiate the price of short-term deposits to cover effects on regulatory ratios. A realignment of the €STR and deposit facility rate may still occur, as excess liquidity levels will decline further, which could change the balance of power between cash demand and supply.

3 European financial sector: resilient but operating in a fragile financial stability environment

Banks in the euro area proved to be resilient in 2023, particularly in the face of bank failures in the United States and Switzerland. They benefited from progress made on several fronts, along with continued supervisory engagement. The financial stability environment nonetheless remained fragile as tighter financial conditions challenged the real economy and the financial sector. National authorities continued to implement or tighten macroprudential buffers in order to enhance the strength of the banking sector. Moreover, the regulatory frameworks for banks, as well as for financial infrastructure and innovations, were further improved to increase the long-term resilience of the financial system.

3.1 The financial stability environment in 2023

The financial stability environment in the euro area remained fragile

The financial stability environment in the euro area remained fragile throughout 2023, reflecting a combination of challenges related to high inflation, tighter financial conditions, weaker growth prospects and fresh geopolitical tensions in the Middle East adding to the impact of Russia's ongoing war against Ukraine. In March 2023 bank failures in the United States and Switzerland triggered a financial shock which was potent but ultimately short-lived, owing to resolute policy action that resulted in financial stability concerns quickly shifting towards other challenges, such as the implications of higher interest rates and downside risks to growth. Rising ECB policy rates continued to gradually drive up funding costs for all sectors of the economy. However, the lengthening of interest rate fixation periods for loans granted in previous years, alongside resilient labour markets and accumulated savings, muted the credit risk implications of higher borrowing costs for borrowers throughout the year. Overall, asset quality of euro area banks remained robust but bank loan losses started to rise, albeit from low levels, and non-bank financial intermediation (NBFI) entities continued to face elevated credit risk associated with higher numbers of rating downgrades in their bond portfolios.

Tighter financial conditions and higher debt servicing costs for households, firms and governments

Euro area sovereigns, having locked in low interest rates in previous years and against the backdrop of the ECB's Transmission Protection Instrument, saw a broad-based increase in funding costs in 2023, with limited dispersion across countries over the year. However, as governments are faced with having to roll over maturing debt at higher interest rates, their funding costs remain sensitive to the evolution of fiscal fundamentals, notably the risk of fiscal slippage, which could reignite sovereign debt sustainability concerns. At the same time, any unwarranted, disorderly sovereign debt market dynamics can be countered by flexibility in the ECB's pandemic emergency purchase programme reinvestments and by the ECB's Transmission Protection Instrument, if the necessary conditions are fulfilled.

Similarly, prior to and during the pandemic, the corporate sector benefited from low interest rates and its earnings held up well in 2023. As the effects of the recovery faded, credit conditions tightened and debt servicing costs went up, corporate vulnerabilities increased. Although generally still low, there was a nascent rise in corporate failures during the year. Real estate firms were particularly vulnerable owing to the ongoing downturn in euro area commercial property market.

The household sector was faced with a deterioration in debt servicing capacity in 2023, owing to rising interest rates and the ongoing correction in residential property markets. The steep increase in borrowing costs from the beginning of the monetary policy tightening cycle clearly had a negative impact on mortgage demand. That notwithstanding, a strong labour market alongside housing supply constraints underpinned an orderly cooling in residential real estate markets. Nevertheless, still elevated valuations suggest that vulnerabilities could materialise if price corrections become disorderly.

Financial markets remained vulnerable to negative surprises

Looking through several episodes of volatility in 2023, the overall pricing in financial markets during the year appeared to be predicated on optimistic expectations about the future macro-financial outlook and was therefore considered to be vulnerable to negative surprises. While risk premia in the corporate bond market seemed to be well aligned with historical patterns, they were significantly compressed in the equity market. The unusually modest reaction of stock prices to rising interest rates was seen as rendering equities vulnerable to abrupt repricing if the adverse effects of the economic slowdown on corporate profitability turned out to be greater than anticipated by investors. Furthermore, market risk sentiment remained highly sensitive to further surprises regarding the outlook for inflation, growth and, by extension, the path of monetary policy.

Banks maintained strong capital buffers, as stress tests confirmed banks' resilience to adverse shocks

The Common Equity Tier 1 (CET1) ratio of euro area banks stood at 15.6% in the third quarter of 2023. This was close to its highest level since the start of European banking supervision and reflected the higher profitability and de-risking of bank portfolios. Strong capital and liquidity buffers helped to preserve trust in the euro area banking system during the tensions triggered by bank failures in the United States and Switzerland early in the year. In addition, euro area banks' return on equity increased further to 10.0%, its highest level in more than a decade, driven by wider net interest margins as yields on assets rose faster than the cost of funding. While bank earnings benefited from these tailwinds, they were likely at risk from three headwinds: (i) the combination of higher inflation, rising debt servicing costs and a deteriorating macroeconomic environment potentially having an adverse impact on bank asset quality, which had already started to materialise with initial signs of rising default rates and payment arrears; (ii) tighter credit standards reducing demand for loans, and flows of new lending declining to their lowest levels since 2015; and (iii) funding costs appearing set to rise, as aggregate deposit rates began to inch up – notably for term deposits – and market funding costs started to become more expensive. Notwithstanding these challenges, the results of the 2023 EU-wide stress test conducted by the European Banking Authority (EBA) confirmed that banks could be expected to remain resilient to severely adverse shocks.

NBFI sector remained vulnerable to liquidity and credit risks

The NBFI sector remained relatively stable in 2023, with continued inflows into sovereign and investment-grade corporate bond funds. This helped to increase the absorption of debt issued by sovereigns and corporates. At the same time, NBFI entities actively reduced their overall credit risk exposure during the year through an ongoing de-risking process, rebalancing their investment portfolios towards comparatively safer assets. Nevertheless, they remained vulnerable to credit risk. Owing to the high level of economic uncertainty and tighter financial conditions, the NBFI sector was potentially at risk from revaluation losses as a result of rating downgrades in bond portfolios, as well as from defaults. It also continued to be exposed to liquidity risk, with cash buffers in equity and bond funds remaining low in the context of tightening financial conditions. Overall, as liquidity holdings across the segments of the NBFI sector remained subdued, there was the risk that sudden investment fund outflows, large margin calls or lapsing insurance policies would lead to forced asset sales. Real estate investment funds were still particularly exposed to revaluation losses and investor outflows, especially given the challenges in the commercial real estate sector. The instability in this segment was particularly concerning, owing to its importance for the real estate sector and its potential to amplify risks to that sector.

Euro area banks, funds and insurers continued to face challenges stemming from climate change in 2023. Cyber risk also required close monitoring. The increasing frequency of major natural disasters as a result of climate change, and the growing magnitude of associated losses also pushed up insurance prices amid only limited availability of insurance against climate-related hazards.[33] This underlined the risk of a greater incidence of climate shocks exacerbating profitability challenges faced by non-life insurers and widening prevailing protection gaps (the proportion of economic losses not covered by insurance), with a potential adverse impact on the macroeconomic situation and financial stability.

3.2 Macroprudential policy: safeguarding financial sector resilience in turbulent macro-financial conditions

National authorities continued to implement or tighten macroprudential buffers

The ECB has the task of assessing macroprudential capital measures proposed by national authorities for banks in countries participating in the Single Supervisory Mechanism. Importantly, it also has the power to apply more stringent capital measures if necessary. The ECB's close monitoring of national macroprudential policy stances in 2023 did not identify a need for this, as several countries had already implemented new macroprudential measures or tightened existing ones to strengthen the resilience of their banking systems to accumulated vulnerabilities and downside risks.

33 Only 25% of climate-related catastrophe losses are currently insured in the EU. For further details, see "Policy options to reduce the climate insurance protection gap", *Discussion Paper*, ECB and the European Insurance and Occupational Pensions Authority, April 2023.

Preserving financial system resilience and promoting targeted macroprudential policy actions

Macroprudential buffers should be maintained to preserve banks' resilience in case conditions in the banking sector deteriorate

In 2023 financial stability concerns shifted towards the implications of higher interest rates and downside risks to growth. From a macroprudential perspective, tighter financial conditions drove a continued downturn in the financial cycle, but systemic risks did not materialise. Notably, banks' capital positions remained strong, although the level of capital headroom varied across banks and countries, and credit supply constraints were not linked to banks' capital requirements. Looking ahead, higher debt servicing costs and a deteriorating macroeconomic environment could challenge the debt servicing capacity of the non-financial sectors and gradually impair banks' asset quality. This, together with lower lending volumes and rising funding costs, could have a negative impact on banks' profitability and resilience.

Against this background, national authorities continued to tighten macroprudential policy 2023 in order to boost the resilience of banks. This was facilitated by banks' profitability and capital headroom, which remained high on average despite the challenging macro-financial environment. Some national authorities activated the countercyclical capital buffer to address vulnerabilities linked to the build-up of credit risk and to create more macroprudential space in the form of releasable capital buffers. In 2023 eight countries introduced or tightened the countercyclical buffer, bringing the total number of countries that had implemented or announced a positive countercyclical buffer rate to 14 by the end of year. In addition, a total of 11 countries had implemented or announced either a broad or sectoral systemic risk buffer,[34] while banks in ten countries saw an increase in their O-SII buffers, in part owing to the ECB's revised floor methodology.[35] Finally, 15 countries kept borrower-based measures in place to prevent banks' excessive risk-taking in lending to households.

The ECB communicated its analysis and views on macroprudential policy topics in 2023. In the macroprudential policy chapters of the May and November issues of its Financial Stability Review, it highlighted the importance of preserving macroprudential buffers in case conditions in the banking sector deteriorate.[36] It also explained why existing borrower-based measures needed to remain in place and continue to act as structural backstops to ensure that lending standards do not deteriorate and that borrowers remain resilient. Furthermore, it suggested that high levels of banking sector profitability could provide an opportunity for some countries to implement additional targeted increases in macroprudential buffers, provided that procyclical effects were avoided. Last but not least, the ECB issued opinions

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34 By the end of 2023 seven countries had introduced or announced a sectoral systemic risk buffer to address risks in the residential real estate sector (Belgium, Germany, Lithuania, Malta, Portugal and Slovenia) and the corporate sector (France).

35 See "Governing Council statement on macroprudential policies", ECB, December 2022. In addition, in line with the new floor, higher O-SII buffers became applicable for banks in three countries from 1 January 2024 (Greece, Spain and Italy) and will become applicable in one more country from 1 January 2025 (Slovenia).

36 See "Financial Stability Review", ECB, May 2023 and "Financial Stability Review", ECB, November 2023.

explaining why imposing extraordinary taxes on credit institutions in some countries could have negative implications for financial stability.[37]

Experience from the pandemic suggests that the role of releasable macroprudential buffers should be enhanced

The ECB dedicated one issue of its Macroprudential Bulletin to discussing the possible implementation of a positive neutral rate for the countercyclical buffer. Overall, experience from the pandemic suggests that the role of releasable macroprudential capital buffers needs to be enhanced to effectively address adverse systemic shocks that can occur independently of a country's position in the financial or economic cycle. By the end of 2023 six countries had already implemented or announced frameworks for setting a positive neutral rate.[38] These frameworks were based on different approaches, which resulted in varying positive neutral rates. Over the medium term, a more harmonised approach towards setting positive neutral rates across banking union countries would seem desirable, as it would enhance consistency and effective policymaking while allowing for sufficient national flexibility. With regard to the NBFI sector, the ECB continued to call for a comprehensive set of policy measures to holistically address vulnerabilities in this sector. These measures should take existing frameworks into account and be rooted in strong international coordination.

Cooperation with the European Systemic Risk Board

The ESRB continued to analyse potential sources of systemic risk and published a recommendation on commercial real estate

In 2023 the ECB provided analytical, statistical, logistical and administrative support to the European Systemic Risk Board (ESRB) Secretariat. Notably, the ECB co-chaired the ESRB's Instruments Working Group (IWG), Analysis Working Group (AWG) and Task Force on Stress Testing, as well as the ECB/ESRB Project Team on climate risk monitoring. It also co-chaired the agile teams established under the AWG/Macroprudential Analysis Group (MPAG) and the IWG/Macroprudential Policy Group (MPPG) on the impact of higher inflation and rising interest rates on financial stability, and the AWG/MPAG agile team on systemic liquidity.

The ECB also supported the ESRB's work on: (i) macroprudential tools for cyber resilience;[39] (ii) systemic implications and policy options with regard to crypto-assets and decentralised finance;[40] (iii) monitoring vulnerabilities related to NBFI;[41] (iv) policy options to address risks in corporate debt and real estate investment funds;[42] v) vulnerabilities in the commercial real estate sector, on which the ESRB published

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37 See (i) Lithuania: Opinion of the European Central Bank of 4 April 2023 on the imposition of a temporary solidarity contribution (CON/2023/9); (ii) Italy: Opinion of the European Central Bank of 12 September 2023 on the imposition of an extraordinary tax on credit institutions (CON/2023/26); (iii) Slovenia: Opinion of the European Central Bank of 2 November 2023 on the imposition of a temporary tax on banks (CON/2023/35); (iv) Latvia: Opinion of the European Central Bank of 11 December 2023 on a temporary mortgage loan borrower protection fee payable by credit institutions (CON/2023/42); and (v) Netherlands: Opinion of the European Central Bank of 15 December 2023 on the imposition of a tax on credit institutions (CON/2023/45).

38 The following countries had introduced or announced a positive neutral rate for the countercyclical buffer at the end of 2023: Ireland (1.5%), Cyprus (0.5%), Latvia (1%), Lithuania (1%), Netherlands (2%) and Slovenia (1%).

39 See "Advancing macroprudential tools for cyber resilience", ESRB, February 2023.

40 See "Crypto-assets and decentralised finance", ESRB, May 2023.

41 See "NBFI Monitor", ESRB, June 2023.

42 See "Issues note on policy options to address risks in corporate debt and real estate investment funds from a financial stability perspective", ESRB, September 2023.

a recommendation;[43] and (vi) macroprudential frameworks for managing climate risk.[44] More detailed information can be found on the ESRB's website and in its Annual Reports.

3.3 Microprudential activities to ensure the safety and soundness of individual banks

Banks remained resilient owing to the progress made in past years and continuous supervisory engagement

Notwithstanding the challenging macroeconomic environment, European banks remained resilient throughout 2023, including in the aftermath of the March turmoil, which was triggered by the failure of some regional banks in the United States and culminated in Europe with the UBS takeover of Credit Suisse overseen by the Swiss authorities. In a dedicated data collection exercise conducted by the ECB and the EBA, banks reported €73 billion of net unrealised losses on debt securities at book value. This was considered a contained amount compared with the figure reported in the United States. Improved asset quality and profitability helped banks withstand the severe economic downturn in the adverse scenario of the ECB's 2023 stress test. This overall resilience is attributable to banks' efforts over the years, to their diversified funding and good liquidity environment, and to the ECB's continuous supervisory engagement, e.g. the work conducted on interest rate risk in the banking book since 2021. In the 2023 Supervisory Review and Evaluation process (SREP), the overall SREP score remained broadly unchanged. The Pillar 2 requirements for CET1 capital were set at 1.2% on average, compared with 1.1% in 2022.

In spite of the SREP results and although European banks showed record profitability in 2023, the ECB sees no room for complacency. The gradually increasing pass-through of its policy rates to bank deposit rates and the broader increase in bank funding costs, as well as a deterioration in asset quality in the real estate sector and other interest rate sensitive sectors, could put the sustainability of high profits at risk. The ECB's supervisory work remains focused on persistent weaknesses in risk management, governance and internal controls, and on emerging risks.

Supervision became more risk-based and effective

Over the course of 2023, ECB Banking Supervision became more risk-based and effective. On the basis of its internal work and the expert group recommendations, the ECB implemented a new risk tolerance framework empowering supervisors to adapt and prioritise their activities according to the individual situation of the bank under their supervision, rather than applying a one-size-fits-all approach. In the same vein, it introduced a new multi-year assessment framework for the SREP, enabling supervisors to better calibrate the intensity and frequency of their analyses. It also started to develop more timely and forceful escalation processes, building on the full

43 See "ESRB issues a recommendation on vulnerabilities in the commercial real estate sector in the European Economic Area", *press release*, ESRB, 25 January 2023.

44 See "Towards macroprudential frameworks for managing climate risk", ECB and ESRB, December 2023.

range of supervisory tools, including periodic penalty payments, for instance in the field of climate-related and environmental risks.[45]

Three banks were sanctioned by the ECB in 2023.[46]

In December 2023 the ECB published the supervisory priorities for 2024-2026, which focus on (i) strengthening resilience to immediate macro-financial and geopolitical shocks, (ii) accelerating the effective remediation of shortcomings in governance and the management of climate-related and environmental risks, and (iii) furthering progress in digital transformation and building robust operational resilience frameworks.

As part of its continued efforts to enhance transparency, in 2023 the ECB published (i) its four-step approach to determine the Pillar 2 requirement on a risk-by-risk basis, (ii) the credit risk SREP methodology and market risk SREP methodology for application in the 2024 cycle, and (iii) the Guide to qualifying holding procedures; and in January 2024 it released an updated version of the Supervisory Manual, which was last published in 2018.

In April 2023 the ECB, together with the Single Resolution Board, welcomed a set of legislative changes to the European crisis management and deposit insurance framework that had been proposed by the European Commission.

In October 2023 Claudia Buch was appointed as the new Chair of the Supervisory Board of the ECB, in accordance with the established institutional selection process.

More detailed information can be found on the ECB's banking supervision website and in the 2023 ECB Annual Report on supervisory activities.

3.4 The ECB's contribution to EU and international policy initiatives

Several milestones were achieved in improving the regulatory framework

Further progress was made in 2023 on improving the regulatory framework for the financial sector. The main achievements were (i) the agreement on the EU's implementation of the final Basel III reforms, (ii) the initiatives to tackle climate-related risks, and (iii) the proposal to strengthen the EU's crisis management and deposit insurance framework. Important headway was also made on regulating crypto-assets and on enhancing market infrastructure regulation, for example with regard to central clearing.

45 See "Powers, ability and willingness to act – the mainstay of effective banking supervision", speech by Frank Elderson, Member of the Executive Board of the ECB and Vice-Chair of the Supervisory Board of the ECB, at House of the Euro, Brussels, 7 December 2023.

46 Using its power to impose sanctions on supervised credit institutions, the ECB sanctioned Landesbank Hessen-Thüringen Girozentrale and Goldman Sachs Bank Europe for misreporting capital needs, in February 2023 and May 2023 respectively. In August 2023 it sanctioned de Volksbank for miscalculating capital needs.

Improving the regulatory framework for banks

Banking regulation work focused on Basel III implementation, the EU's sustainable finance agenda and crisis management

In 2023 the ECB continued to support the negotiations on the EU banking package, which comprises a set of amendments to the Capital Requirements Regulation (CRR)[47] and the Capital Requirements Directive (CRD)[48] aimed at implementing the final Basel III reforms in the EU. In December the preparatory bodies of the European Parliament and the EU Council endorsed the EU banking package. Adoption of the final CRR and CRD texts is expected by the end of April 2024 once the legal revision has been concluded. The reforms are intended to further bolster the resilience of the EU banking system, especially by increasing the capital needed to cover credit, operational and market risk exposures. They will also enhance the supervisory toolkit, including for addressing climate-related and other sustainability risks.[49] Furthermore, the ECB contributed to the EU sustainable finance agenda, notably by publishing opinions on a directive on corporate sustainability due diligence and a regulation on environmental, social and governance (ESG) rating activities.[50]

The discussions on completing the banking union focused on improving the EU's crisis management and deposit insurance framework. On 18 April 2023 the European Commission published a legislative proposal aimed at strengthening bank crisis management in the EU and, in particular, at enhancing authorities' options for handling the failure of smaller and medium-sized banks. The ECB strongly welcomed the legislative package in an opinion[51], stressing the need for better tools and funding options for crisis management. Beyond the proposed legislative package, the ECB called for further steps to complete the banking union. In particular, this requires establishing a European deposit insurance scheme and setting up a European framework for liquidity in resolution.

Finalising a regulatory framework for crypto-assets and anti-money laundering

Important progress was made on regulating crypto-assets and improving the anti-money laundering framework

The ECB continued to support the finalisation and implementation of a regulatory framework for crypto-assets in 2023, at both the European and the international level. Following the entry into force in the EU of the Markets in Crypto-assets

47 Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and amending Regulation (EU) No 648/2012 (OJ L 176, 27.6.2013, p. 1).

48 Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC (OJ L 176, 27.6.2013, p. 338).

49 For a more detailed assessment of the EU banking package and the ECB's stance, see "Strong rules, strong banks – the banking package", *Annual Report 2022*, ECB, May 2023.

50 See Opinion of the European Central Bank of 6 June 2023 on a proposal for a directive on corporate sustainability due diligence (CON/2023/15) (OJ C, 249, 14.7.2023, p. 3) and Opinion of the European Central Bank of 4 October 2023 on the transparency and integrity of Environmental, Social and Governance (ESG) rating activities (CON/2023/30) (OJ C, C/2023/1354, 01.12.2023).

51 See Opinion of the European Central Bank of 5 July 2023 on amendments to the Union crisis management and deposit insurance framework (CON/2023/19) (OJ C 307, 31.8.2023, p.19).

Regulation[52] in June, the ECB provided input on a number of technical standards that were coordinated by the European Banking Authority and European Securities and Markets Authority and aimed at implementing the Regulation. At the international level, it contributed to the progress made in international fora such as the Financial Stability Board (FSB), the Basel Committee on Banking Supervision (BCBS) and the Committee on Payments and Market Infrastructures (CPMI). Specifically, the FSB finalised its Global Regulatory Framework for Crypto-asset Activities, providing high-level recommendations for regulating crypto-asset activities and markets, and for global stablecoin arrangements. These recommendations were incorporated into the broader G20 roadmap on crypto-assets, which was adopted in October and had also benefited from ECB input. In addition, the ECB supported the work of the BCBS on tightening and clarifying aspects of its standard on banks' exposures to crypto-assets. In particular, the adjustments tighten the criteria for stablecoins to receive a preferential regulatory treatment.

The ECB also continued to contribute actively to the finalisation of the European Commission's proposed legislative package on anti-money laundering and countering the financing of terrorism (AML/CFT), including the creation of an EU-level anti-money laundering authority. As outlined in its opinions,[53] the ECB supported close cooperation and information sharing between AML/CFT supervisors and European banking supervision, and more generally, an effective EU regime to counter the misuse of the EU financial system for money laundering and terrorism financing.

Supporting the progress towards the capital markets union and strengthening the NBFI regulatory framework

Continued efforts to advance the capital markets union and regulation of the NBFI sector

Legislative work continued in 2023 on initiatives to deepen the integration of the EU's capital markets as part of the European Commission's 2020 capital markets union action plan. During the year the ECB contributed to the public policy debate on the future of the capital markets union in various publications and speeches.[54] In addition, the ECB President, together with the Presidents of the Eurogroup, the European Investment Bank, the European Council and the European Commission published an op-ed on the importance of the capital markets union for channelling Europe's savings into growth. The ECB also actively participated in Eurogroup

52 Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on markets in crypto-assets, and amending Regulations (EU) No 1093/2010 and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937 (OJ L 150, 9.6.2023, p.40).

53 See (i) Opinion of the European Central Bank of 16 February 2022 on a proposal for a regulation establishing the Authority for Anti-Money Laundering and Countering the Financing of Terrorism (CON/2022/4) (OJ C 210, 25.5.2022, p. 5); (ii) Opinion of the European Central Bank of 16 February 2022 on a proposal for a directive and a regulation on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing (CON/2022/5) (OJ C 210, 25.5.2022, p.15); and (iii) Opinion of the European Central Bank of 30 November 2021 on a proposal for a regulation to extend traceability requirements to transfers of crypto-assets (CON/2021/37) (OJ C 68, 9.2.2022, p.2).

54 See Panetta, F., "Europe needs to think bigger to build its capital markets union", *The ECB Blog*, ECB, 30 August 2023; "A Kantian shift for the capital markets union", speech by Christine Lagarde, President of the ECB, at the European Banking Congress, Frankfurt am Main, 17 November 2023; and "Banking Union and Capital Markets Union: high time to move on", speech by Luis de Guindos, Vice-President of the ECB, at the Annual Joint Conference of the European Commission and the European Central Bank on European Financial Integration, Brussels, 7 June 2023.

discussions on the future of European capital and financial markets, and contributed to the legislative process related to the review of the European Market Infrastructure Regulation.[55]

Furthermore, the ECB continued to highlight the importance of addressing structural vulnerabilities in NBFI and improving the relevant policy framework from a macroprudential perspective. Reviewing recent stress episodes in the NBFI sector, policy implications for the liquidity preparedness and leverage in this sector were discussed in its Financial Stability Review and Macroprudential Bulletin.[56] The ECB was also involved in the FSB's assessment of the financial stability implications of leverage in NBFI and actively contributed to the ongoing policy work to enhance the resilience of NBFI.[57] With regard to open-ended funds, the ECB contributed to the revision of the FSB's policy recommendations to address structural liquidity mismatch in such funds.[58]

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55 See Chapter 4 for further details on the European Market Infrastructure Regulation.

56 See "Non-banks' liquidity preparedness and leverage: insights and policy implications from recent stress events", *Financial Stability Review*, ECB, May 2023; and "The growing role of investment funds in euro area real estate markets: risks and policy considerations", *Macroprudential Bulletin*, ECB, 3 April 2023.

57 See "The Financial Stability Implications of Leverage in Non-Bank Financial Intermediation", FSB, 6 September 2023; and "Enhancing the Resilience of Non-Bank Financial Intermediation, *Progress Report*, FSB, 6 September 2023.

58 See "Revised Policy Recommendations to Address Structural Vulnerabilities from Liquidity Mismatch in Open-Ended Funds", FSB, 20 December 2023, and "The growing role of investment funds in euro area real estate markets: risks and policy considerations", *Macroprudential Bulletin*, No 20, ECB, April 2023.

4 Smooth functioning of market infrastructure and payments

The Eurosystem plays a central role in developing, operating and overseeing market infrastructures and payments. In 2023 the Eurosystem successfully renewed its wholesale payment system and continued developing TARGET Services. With a view to further enhancing integration and innovation in European payments and securities markets, the Eurosystem updated its retail payments strategy and started analysing the potential impact of emerging technologies on the settlement of wholesale financial transactions. In its work on exploring a potential digital euro, the Eurosystem moved from the investigation to the preparation phase.

4.1 TARGET Services

The Eurosystem successfully launched its new T2 wholesale payment system

On 20 March 2023 the Eurosystem successfully launched its new T2 wholesale payment system, replacing the TARGET2 system in operation since November 2007. The T2 system introduces a real-time gross settlement (RTGS) system, a central liquidity management function that optimises liquidity management across all TARGET Services, offering a set of common components that are shared across TARGET Services and extended operating hours. The migration took place between 17 and 20 March 2023, with all banks starting settlement in the new system in a “big bang” approach on Monday, 20 March 2023. The new system complies with the international standard for financial institution message exchange (ISO 20022) and brings significant efficiency gains. Moreover, the new T2 set-up enables market participants to streamline central bank money liquidity management for their euro transactions in wholesale and retail payments, as well as for securities settlement.

Approximately 1,000 banks use T2 to initiate transactions in euro, either on their own behalf or on behalf of their customers. Taking into account branches and subsidiaries, more than 40,000 banks worldwide can be reached via T2. In 2023 on average 409,444 payments per day with an average daily value of €2.2 trillion were processed using T2 and its predecessor TARGET2. This was a 2.9% increase in the daily volume of payments compared with payments made using TARGET2 in 2022.

From 1 January 2023, following Croatia’s accession to the euro area, the Croatian financial community migrated from its national RTGS system to TARGET2/T2. Onboarding of the Croatian market to TARGET Services continued in June with the migration to the TARGET Instant Payment Settlement (TIPS) service and in September, when the Croatian central securities depository (CSD) joined TARGET2-Securities (T2S).

The Croatian CSD was onboarded as part of a wave in which five CSDs successfully joined the T2S platform, including Euroclear Bank, one of the largest CSDs in the world, the Bulgarian National Bank Government Securities Settlement System and

Central Depository AD, the other CSD operating in Bulgaria, Središnje klirinško depozitarno društvo d.d. (SKDD) in Croatia and Euroclear Finland. The T2S platform now connects 24 CSDs from 23 European markets, allowing securities settlement in euro and Danish krone. This migration wave was an important development for T2S and the Eurosystem from the operational, business and strategic perspectives. In particular, the successful inclusion of a CSD (Euroclear Finland) that maintains end-investor accounts reconfirms that Eurosystem market infrastructures can support all EU markets and jurisdictions. Additionally, from a business perspective, the migration of Euroclear Bank brings Eurobond instruments directly into T2S and, as of 2024, into the Eurosystem Collateral Management System (ECMS). In 2023, T2S processed on average 699,868 transactions per day with an average daily value of €790.3 billion.

TIPS continued to play an important role in the development of instant payments in euro, with more banks and national communities joining in 2023. The growth in the number of participants in TIPS led to a rise in transaction volumes of more than 127% compared with 2022, with a peak of 28 million instant payments settled in December 2023 (compared with 18.7 million in December 2022). Testing for the connection of Sveriges Riksbank and the Swedish krona to TIPS for instant payments in 2024 was successfully completed. The collaboration between the Eurosystem and Danmarks Nationalbank to connect the Danish krone to TIPS (and T2) in 2025 continued smoothly.

In July 2023 the Eurosystem published a new pricing structure for TIPS that entered into force on 1 January 2024. It ensures that the service operates on a cost recovery basis, without making a profit. At the same time, the pricing of TIPS aims to support the take-up of instant payments in Europe, which is also expected to accelerate, given the legislative proposal put forward by the European Commission to make instant payments in euro available to all citizens and businesses holding a bank account in the EU and in European Economic Area countries.

In addition to the three settlement services (T2, T2S and TIPS), the Eurosystem is developing a new TARGET Service, the ECMS, which will be a unified system for managing the assets used as collateral in Eurosystem credit operations for all euro area jurisdictions. The launch of the ECMS has been moved from April 2024 to November 2024 to give users more time to complete testing of the ECMS functionalities in a stable environment.

4.2 Digital euro project

The ECB launched the preparation phase of the digital euro project

The two-year investigation phase of the digital euro project concluded in October 2023. The stocktake of the work conducted during the investigation phase formed the basis for the ECB Governing Council's decision to launch the preparation phase. The start of this new phase does not imply a decision on whether to issue a digital euro. That decision can only be considered by the Governing Council after the adoption of the legislative framework for the digital euro at the EU level.

During the investigation phase, the Eurosystem agreed on the high-level design and technical requirements for a digital euro. The work was supported by a prototyping exercise to validate the proposed design from a technical perspective and through focus group research[59] to gain input on the preferences and expectations of potential users. Close and transparent engagement with market participants, other EU institutions and policymakers ensured that all stakeholders could provide their feedback on design and distribution options. Market research on technical aspects showed that there is a sufficiently large pool of European providers able to develop digital euro solutions and that a variety of architectural and technological design options are available.

The first stage of the preparation phase, which started on 1 November 2023, will last two years and will lay the foundations for the potential issuance of a digital euro. During this timeframe, the focus will be on finalising the digital euro rulebook and selecting providers that could potentially develop a digital euro platform and infrastructure. The Eurosystem will also conduct further testing and experimentation, and will continue to consult with all stakeholders – including the public – to ensure that a digital euro meets the highest standards of quality, security, privacy and usability.

Possible subsequent steps will be decided by the Governing Council based on the results of the first stage of the preparation phase and developments in the legislative process.

4.3 Innovation and integration of market infrastructure and payments

The Eurosystem updated its retail payments strategy

In November 2023 the Eurosystem published an update of its retail payments strategy in the light of the significant changes in the payment landscape in the four years since its launch. In particular, Big Tech has increased activities in the payment area, potentially negatively affecting Europe's strategic autonomy in payments. In addition, Russia's war against Ukraine underscored the relevance of (cyber) risks to critical infrastructures in Europe, including for payment services. Moreover, considerable progress was made on the digital euro project.

The updated strategy retains its main goals, namely to develop pan-European solutions for payments at the point of interaction (i.e. at the physical point of sale and in the mobile and e-commerce space) and to further strengthen the Single Euro Payments Area (SEPA), primarily through full deployment of instant payments. It also includes a new goal to increase the resilience of retail payments, including by having alternative payment solutions available as a contingency. Finally, the complementarity between the Eurosystem's retail payments strategy and the digital euro project is also underlined, in particular the various ways in which a digital euro could contribute to meeting the goals of the strategy. For example, a digital euro

59 For more information, see the focus group findings in the "Study on New Digital Payment Methods", March 2022 and the "Study on Digital Wallet Features", March 2023 undertaken as part of the digital euro project.

would offer a pan-European payment solution in itself, while also helping private retail payment solutions achieve a pan-European reach.

Progress was made on financial integration in the area of post-trading

In line with its goal to further European financial market integration in the post-trading area and to contribute to achieving capital markets union, the Eurosystem's Advisory Group on Market Infrastructures for Securities and Collateral (AMI-SeCo) continued to report on the progress made by AMI-SeCo markets (the European Economic Area and UK and Swiss markets) on compliance with the standards under the T2S Harmonisation Agenda, the Single Collateral management Rulebook for Europe (SCoRE) (which is also necessary for interacting with ECMS), and corporate events standards (including standards on shareholder identification). The overall compliance rate with the T2S harmonisation standards remained at around 90%. The five new CSDs that joined T2S in September 2023 were assessed as having a high level of compliance with the T2S harmonisation standards. The 2023 Corporate Events Compliance Report provided evidence that progress has also been made on compliance with the corporate events standards. In the SCoREBoard report for the second half of 2023, AMI-SeCo noted some delays in progress by stakeholders on complying with the applicable SCoRE standards. In view of the rescheduling of the go-live of the Eurosystem's ECMS to November 2024, the AMI-SeCo agreed to defer the deadline for compliance with the relevant SCoRE standards.

With a view to identifying remaining barriers to securities post-trade market integration in the EU, AMI-SeCo launched a survey among its members and the members of the National Stakeholder Groups in November 2023. AMI-SeCo also provided input to the European Commission and the European Council on the post-trade aspects of the proposal by the Commission for more efficient cross-border withholding tax procedures and communicated its views on the potential shortening of the standard T+2 securities settlement cycle to the European Securities and Markets Authority (ESMA).

Lastly, the Eurosystem has started analysing the potential impact of emerging technologies, including distributed ledger technology (DLT), on the settlement of wholesale financial transactions (see Box 4).

4.4 Oversight and the role of central bank of issue

Comprehensive assessment of TARGET Services was launched

The safe and efficient functioning of financial market infrastructures (FMIs) and payments in the euro area is an ongoing priority for the Eurosystem in its oversight capacity. In addition, as central bank of issue for the euro, the Eurosystem is involved in cooperative arrangements for FMIs outside the euro area with meaningful euro-denominated activities.

As regards oversight of the Eurosystem's TARGET Services (see Section 4.1), key priorities included monitoring the T2-T2S consolidation project ahead of its go-live in March 2023 and the onboarding of new markets. Furthermore, comprehensive assessments of T2/TIPS against the Regulation on oversight requirements for systemically important payment systems (SIPS) and of T2S against the CPMI-IOSCO Principles were launched in October 2023.

The Eurosystem also oversees other SIPS, including EURO1, STEP2-T and the MasterCard Clearing Management System (MCMS). In 2023 it focused on finalisation of the first comprehensive assessment of the MCMS against the SIPS Regulation, the launch of new comprehensive assessments of EURO1 and STEP2-T against the SIPS Regulation, assessment of the MCMS against the cyber resilience oversight expectations for financial market infrastructures (CROE) and monitoring of the EURO1 migration to the ISO 20022 standard.

With respect to payment instruments, payment schemes and payment arrangements, in 2023 the Eurosystem reached a major milestone in identifying the payment arrangements to be overseen or monitored under the Eurosystem's framework for the oversight of electronic payment instruments, schemes and arrangements (PISA framework). In addition to onboarding newly overseen entities under the PISA framework, the Eurosystem conducted a comprehensive assessment of the first group of pan-European schemes and continued its work on card fraud monitoring.

As central bank of issue for the euro, the Eurosystem continued to be involved in cooperative oversight and crisis management arrangements for FMIs with material euro-denominated activities. As regards central counterparties (CCPs), the Eurosystem contributed to assessing risk management changes, proposals for the extension of services, recovery plans and resolution plans. With regard to securities settlement, the Eurosystem continued to give input on the regular evaluation of CSDs under the Central Securities Depository Regulation and to prepare for the future authorisation of entities operating DLT-based market infrastructures under Regulation (EU) No 2022/858 (DLT Pilot Regime Regulation).

In the area of cyber resilience, the review of the Eurosystem cyber resilience strategy for FMIs was finalised, with details on enhancements and revisions to be announced in early 2024. In addition, the ESCB conducted its periodic cyber resilience survey across 80 FMIs in the EU and initiated follow-up with the respective overseers and overseen entities.

The ECB supported various oversight-related global workstreams (for example, on CCP margining practices, FMI safeguards for financial risks unrelated to participant default and stablecoin arrangements), as well as the EU-wide CCP supervisory stress test coordinated by ESMA. The ECB also published an overview of EU CCPs' initial margin models, continuously monitored the impact of increased market volatility on CCPs and their members and organised, together with the Deutsche Bundesbank and the Federal Reserve Bank of Chicago, the 2023 Joint Conference on CCP risk management to facilitate discussion between the industry, regulatory bodies and academia.

The Eurosystem regularly contributes to developing new EU regulations for FMIs and payments. In particular, in 2023 it provided input to the ECB Opinion on the review of the European Market Infrastructure Regulation. The ECB also actively contributed to preparing secondary legislation for the Digital Operational Resilience Act, notably in the area of threat-led penetration testing being developed in accordance with the European framework for threat intelligence-based ethical red-teaming (TIBER-EU).

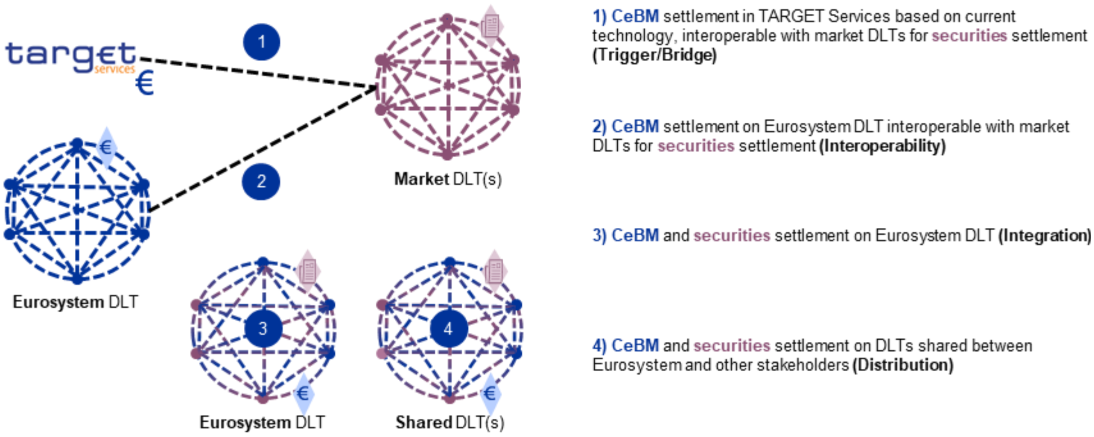
Box 4
New technologies for wholesale central bank money settlement

The Eurosystem is analysing the potential impact of emerging technologies, including distributed ledger technology (DLT), on the settlement of wholesale financial transactions. This work is part of the Eurosystem's efforts to ensure that central banks keep pace with and contribute to digital innovation in payments and securities settlement.

The financial industry is increasingly interested in potential applications of DLT, including for transactions that are currently settled in central bank money. If there is significant adoption of DLT by the industry, central banks may need to take action to safeguard the smooth functioning of payment systems and the role of central bank money as monetary anchor supporting the stability, integration and efficiency of the European financial system.

The Eurosystem has identified four conceptual solutions that could enable central bank money settlement of wholesale transactions where, for example, the securities leg of the transaction is settled using DLT-based infrastructure (Figure A).

Figure A
Conceptual solutions for central bank money settlement of wholesale transactions registered on DLT platforms



Source: See Neuhaus, H. and Plooij, M., "Central bank money settlement of wholesale transactions in the face of technological innovation", *Economic Bulletin*, Issue 8, ECB, 2023.
Notes: Blue lines, dots and icons represent central bank money (CeBM). Purple lines, dots and icons represent securities.

The Eurosystem plans to conduct exploratory work on DLT in the form of trials with real central bank money settlement and experiments with mock settlement in a test environment. These will be performed using three Eurosystem solutions enabling central bank money settlement of wholesale financial transactions recorded on DLT platforms: the Trigger Solution provided by the Deutsche Bundesbank, the TIPS Hash-Link solution provided by the Banca d'Italia (both examples of conceptual solution 1), and the Full-DLT Interoperability solution provided by the Banque de France (conceptual solution 2). Market players have been invited to express their interest in participating in trials and experiments planned to take place between May and November 2024. In parallel, the other two conceptual solutions will be further analysed internally within the Eurosystem.

A dedicated market contact group on DLT has been set up to support the Eurosystem’s exploratory work. This group provides expert input and keeps the Eurosystem abreast of advances in the use of DLT and other new technologies in wholesale financial markets.

5 Market operations activities and financial services provided to other institutions

The Eurosystem approved a new framework for the provision of euro liquidity lines to non-euro area central banks in August 2023 and kept in place several liquidity lines with non-euro area central banks, thereby providing a backstop to market-based funding. The ECB continued to offer US dollar operations to euro area counterparties on a regular basis. No ECB interventions took place in the foreign exchange market. The ECB remained responsible for the administration of various financial operations on behalf of the European Union and played a coordinating role in relation to the Eurosystem reserve management services framework.

5.1 Developments in market operations

Euro and foreign currency liquidity lines

The Eurosystem's swap and repo lines are monetary policy instruments. They help prevent tensions in international funding markets from hampering the effectiveness of euro area monetary policy transmission. Table 5.1 shows the liquidity lines in operation as of 31 December 2023.

In 2023 the ECB continued to provide US dollar liquidity on a weekly basis with a seven-day tenor in coordination with the Federal Reserve System, the Bank of Canada, the Bank of England, the Bank of Japan and the Swiss National Bank (the swap line network). From 20 March to 30 April 2023 the frequency of the seven-day dollar providing operations was increased to daily in a coordinated manner with the central banks of the swap line network. The higher frequency was intended to enhance effectiveness and strengthened the backstop role of the operation in a period of elevated pressure in US dollar funding conditions. Borrowing by euro area counterparties remained limited throughout the year.

Table 5.1
Overview of operational liquidity lines

Non-euro area counterpart	Type of arrangement	Reciprocal	Maximum borrowable amount (EUR millions)
Danmarks Nationalbank	Swap line	No	24,000
Sveriges Riksbank	Swap line	No	10,000
Bank of Canada	Swap line	Yes	Unlimited
People's Bank of China	Swap line	Yes	45,000
Bank of Japan	Swap line	Yes	Unlimited
Swiss National Bank	Swap line	Yes	Unlimited
Bank of England	Swap line	Yes	Unlimited
Federal Reserve System	Swap line	Yes	Unlimited
Narodowy Bank Polski	Swap line	No	10,000
Magyar Nemzeti Bank	Repo line	No	4,000
Banca Naţională a României	Repo line	No	4,500
Bank of Albania	Repo line	No	400
Andorran Financial Authority	Repo line	No	35
National Bank of the Republic of North Macedonia	Repo line	No	400
Central Bank of the Republic of San Marino	Repo line	No	100

Source: ECB.
Notes: List of central bank liquidity lines that the Eurosystem maintains (as of 31 December 2023). The table does not include repo lines established with non-euro area central banks under the Eurosystem repo facility for central banks (EUREP), for which the ECB did not disclose its counterparties. Under its new framework, the ECB has disclosed all liquidity lines since 16 January 2024.

On 3 August 2023 the Governing Council approved a new framework for the provision of euro liquidity lines to non-euro area central banks, following an in-depth review of the previous framework in place and based on experience in recent years. The new framework came into effect on 16 January 2024 and upholds the role of liquidity lines as monetary policy instruments, retains the fundamental elements of the framework in place so far but streamlines it, and integrates existing repo facilities into a unified permanent framework called EUREP. Swap lines are available to countries of highest creditworthiness or systemic importance from a euro area perspective. Access to a euro liquidity line might differ in normal times from periods of acute, broad-based financial market distress, when the establishment of precautionary lines with a broader set of countries could be warranted. The Governing Council will continue to assess requests for liquidity lines on a case-by-case basis.

Reporting on foreign exchange interventions

The ECB did not intervene in the foreign exchange market in 2023. Since the inception of the euro, the ECB has intervened in the foreign exchange market twice – in 2000 and 2011. Data on foreign exchange interventions are published on a quarterly basis with a delay of one quarter on the ECB's website and in the Statistical Data Warehouse. The information published in the quarterly table is also recapped in Table 5.2. If there were no foreign exchange interventions in the relevant quarter, this is explicitly stated.

Table 5.2

ECB foreign exchange interventions

Period	Date	Intervention type	Currency pair	Currency bought	Gross amount (EUR millions)	Net amount (EUR millions)
Q3 2000	22/09/2000	Coordinated	EUR/USD	EUR	1,640	1,640
	22/09/2000	Coordinated	EUR/JPY	EUR	1,500	1,500
Q4 2000	03/11/2000	Unilateral	EUR/USD	EUR	2,890	2,890
	03/11/2000	Unilateral	EUR/JPY	EUR	680	680
	06/11/2000	Unilateral	EUR/USD	EUR	1,000	1,000
	09/11/2000	Unilateral	EUR/USD	EUR	1,700	1,700
	09/11/2000	Unilateral	EUR/JPY	EUR	800	800
Q1 2011	18/03/2011	Coordinated	EUR/JPY	EUR	700	700
Q1 to Q4 2021	-	-	-	-	-	-
Q1 to Q4 2022	-	-	-	-	-	-
Q1 to Q4 2023	-	-	-	-	-	-

Source: ECB.

The reporting framework covers foreign exchange interventions carried out by the ECB unilaterally and in coordination with other international authorities, as well as interventions “at the margins” within the exchange rate mechanism (ERM II).

5.2 Administration of EU borrowing and lending operations

The ECB processed payments for various EU loan programmes

The ECB is responsible for the administration of accounts and processing of payments relating to the borrowing and lending operations of the EU under the medium-term financial assistance (MTFA) facility[60], the European financial stabilisation mechanism (EFSM)[61], the European instrument for temporary support to mitigate unemployment risks in an emergency (SURE)[62], the Next Generation EU (NGEU) programme[63] and the macro-financial assistance to Ukraine programme (MFA+)[64]. The ECB is also responsible for the administration of certain payments arising in connection with operations under the European Financial Stability Facility

60 In accordance with Article 141(2) of the Treaty on the Functioning of the European Union (OJ C 326, 26.10.2012), p. 47, Articles 17, 21.2, 43.1 and 46.1 of the Statute of the ESCB, and Article 9 of Council Regulation (EC) No 332/2002 of 18 February 2002 establishing a facility providing medium-term financial assistance for Member States’ balances of payments (OJ L 53, 23.2.2002, p. 1).

61 In accordance with Articles 122(2) and 132(1) of the Treaty on the Functioning of the European Union, Articles 17 and 21 of the Statute of the ESCB, and Article 8 of Council Regulation (EU) No 407/2010 of 11 May 2010 establishing a European financial stabilisation mechanism (OJ L 118, 12.5.2010, p. 1).

62 In accordance with Articles 17 and 21 of the Statute of the ESCB in conjunction with Article 10 of Council Regulation (EU) No 2020/672 of 19 May 2020 on the establishment of a European instrument for temporary support to mitigate unemployment risks in an emergency (SURE) following the COVID-19 outbreak (OJ L 159, 20.5.2020, p. 1).

63 In accordance with Articles 17 and 21 of the Statute of the ESCB in conjunction with Regulation (EU) No 2021/241 of the European Parliament and of the Council of 12 February 2021 establishing the Recovery and Resilience Facility (OJ L 57, 18.2.2021, p. 17).

64 In accordance with Articles 17 and 21 of the Statute of the ESCB in conjunction with Regulation (EU) 2022/2463 of the European Parliament and of the Council of 14 December 2022 establishing an instrument for providing support to Ukraine for 2023 (macro-financial assistance +) (OJ L 322, 16.12.2022, p. 1).

(EFSF)[65] and the European Stability Mechanism (ESM)[66] and for processing all payments in relation to the loan facility agreement for Greece[67]. In 2023 the ECB completed its preparations to perform paying agent services for the European Commission, thereby extending the ECB's current fiscal agent services.

As at 31 December 2023 the total outstanding nominal amount was €200 million under the MTFA facility, €42.8 billion under the EFSM, €98.4 billion under SURE and €39.54 billion under the loan facility agreement for Greece. Finally, in 2023 the ECB processed disbursements and interest payments of NGEU loans and grants to and from various Member States and MFA+ loans to Ukraine.

5.3 Eurosystem reserve management services

A number of Eurosystem national central banks provided services under the ERMS framework

In 2023 a comprehensive set of financial services continued to be offered within the Eurosystem reserve management services (ERMS) framework established in 2005 for the management of customers' euro-denominated reserve assets. A number of Eurosystem national central banks provide financial services within this framework – under harmonised terms and conditions and in line with market standards – to central banks, monetary authorities and government agencies located outside the euro area, as well as to international organisations. The ECB performs an overall coordinating role, monitors the smooth functioning of the services, promotes changes to improve the framework and prepares related reports for the ECB's decision-making bodies.

The number of customer accounts reported in the ERMS stood at 273 at the end of 2023, compared with 270 at the end of 2022. The total aggregated holdings (including cash assets and securities holdings) managed within the ERMS framework decreased by approximately 20% in 2023 compared with 2022.

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65 In accordance with Articles 17 and 21 of the Statute of the ESCB in conjunction with Article 3.5 of the EFSF Framework Agreement.

66 In accordance with Articles 17 and 21 of the Statute of the ESCB in conjunction with Article 5.12.1 of the ESM General Terms for Financial Assistance Facility Agreements.

67 In the context of the loan facility agreement between the Member States whose currency is the euro (other than Germany and Greece) and *Kreditanstalt für Wiederaufbau* (acting in the public interest, subject to the instructions of and with the benefit of the guarantee of the Federal Republic of Germany) as lenders and the Hellenic Republic as borrower and the Bank of Greece as agent to the borrower, and pursuant to Articles 17 and 21.2 of the Statute of the ESCB and Article 2 of Decision of the European Central Bank of 10 May 2010 concerning the management of pooled bilateral loans for the benefit of the Hellenic Republic and amending Decision ECB/2007/7 (ECB/2010/4) (OJ L 119, 13.5.2010, p. 24).

6 Cash remains the most frequently used means of payment among European citizens, with a low level of counterfeiting

Euro banknote circulation has been affected by rises in the ECB's key interest rates as cash holdings as a store of value decreased. A clear majority of European citizens find it important to have the option to pay in cash. Accordingly, the ECB aims to ensure effective access to and acceptance of cash in the euro area.

The Eurosystem is also committed to ensuring that cash remains as sustainable and environmentally friendly as possible and has assessed the environmental footprint of banknotes as a mean of payment. The preparations for the development of a new series of euro banknotes are an opportunity to make euro banknotes more relatable to all Europeans. The public is therefore consulted throughout the design process.

6.1 Circulation of euro banknotes and ensuring access to and acceptance of cash

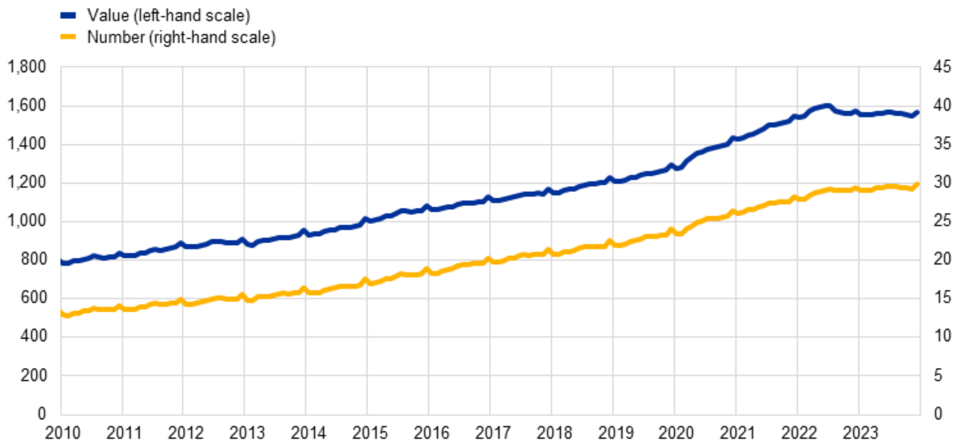
Euro banknote circulation has been affected by interest rate increases

At the end of 2023 euro banknote circulation reached 29.8 billion pieces and a total value of €1.57 trillion. The increases in the ECB's key interest rates since July 2022 have continued to have a dampening effect on holding cash as a store of value, since banknotes do not yield any interest. Accordingly, 2023 was marked by very low annual growth rates of 1.2% and -0.3% in terms of the number and value of banknotes respectively.

Chart 6.1

Number and value of euro banknotes in circulation

(left-hand scale: EUR billions; right-hand scale: billions)



Source: ECB.

To maintain the quality of euro banknotes in circulation as well as trust in them, Eurosystem national central banks processed 25.3 billion euro banknotes and replaced 3.3 billion worn-out banknotes with newly printed ones.

The value of euro coin circulation grew by 3.2% annually to reach €33.5 billion at the end of 2023, equivalent to 148.2 billion euro coins.

The ECB aims to ensure effective access to and acceptance of cash in the euro area, as 60% of euro area citizens consider it important to have the option to pay in cash

In 2022 the ECB conducted a study on payment attitudes of consumers in the euro area, which showed that 60% of citizens consider it important to have the option to pay in cash. To ensure effective access to and acceptance of cash, on 28 June 2023 the European Commission adopted a proposal for a regulation on the legal tender of euro banknotes and coins. In its Opinion on the Commission proposal, the ECB voiced its strong support for establishing clear rules on the mandatory acceptance of euro cash and on refusals of cash acceptance by retailers, for example “no cash” signs at shop entrances. Good access to and acceptance of cash are the key components of the Eurosystem 2030 cash strategy to ensure that euro cash continues to be widely available as an attractive, reliable and competitive means of payment and store of value.

6.2 Study on the environmental footprint of euro banknotes

The Product Environmental Footprint considers the full life cycle of banknotes from raw materials to manufacturing, distribution and disposal

The ECB conducted a Product Environmental Footprint study of euro banknotes to assess the environmental footprint of a person’s yearly cash payments using euro banknotes to ensure that cash remains as sustainable and environmentally friendly as possible.

The findings showed that the footprint of a person’s yearly use of euro banknotes is equivalent to driving eight kilometres by car and accounts for only 0.01% of their total annual environmental impact related to consumption activities.

The Product Environmental Footprint study also explored the progress made so far

Banknotes are reused several times once they are put into circulation. The distribution stage, including energy consumption and transportation, is the main contributor to their environmental footprint. The use of sustainable cotton in banknote paper has reduced the environmental impact of euro banknotes by almost 50% and the overall footprint of paying with euro banknotes by 3.6% compared to using conventional cotton from non-sustainable sources. Further reductions are foreseen once the move to more organic cotton takes place. Extensive research and development are underway to identify alternative waste disposal methods for banknotes, such as recycling and reusing waste material.

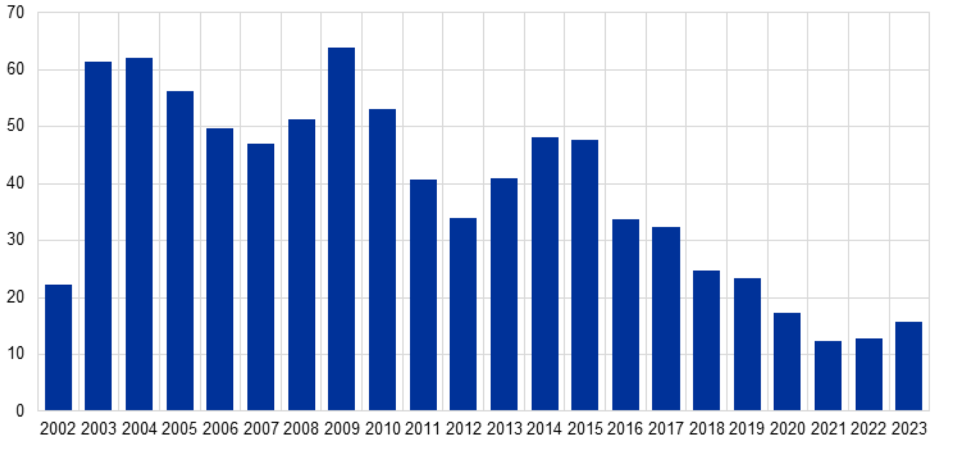
6.3 Development of euro banknote counterfeiting

2023 saw one of the lowest levels of counterfeits in proportion to total banknotes in circulation

Some 467,000 counterfeit euro banknotes were withdrawn from circulation in 2023, one of the lowest levels ever in proportion to total banknotes in circulation (Chart 6.2). In 2023, 16 counterfeits were detected per million genuine banknotes in circulation. Despite this very small proportion, the number of counterfeit banknotes increased compared with 2022, when the number of counterfeits was exceptionally low following the COVID-19 pandemic. There is little likelihood of receiving a counterfeit. Most counterfeits are of low quality with no or only very poor imitations of security features. Notes can be checked using the simple “feel, look and tilt” method described on the banknote security features web page and on the websites of the euro area national central banks.

Chart 6.2

Number of counterfeits detected annually per 1 million genuine notes in circulation



Source: ECB.

6.4 Preparations for future euro banknotes

The ECB is preparing to develop a new series of euro banknotes with a view to maintaining their high resilience to counterfeiting and making them as environmentally friendly as possible. This process reflects the Eurosystem’s commitment to cash and is an opportunity to make euro banknotes more relatable to all Europeans.

To ensure that the views of Europeans are reflected in the future design, the public is consulted throughout the redesign process

A multidisciplinary advisory group – with members from all euro area countries – proposed a shortlist of themes based on input from the public. The Governing Council subsequently selected seven themes, and the public was invited to express their preferences. Based on the outcome of two public surveys in summer 2023, the Governing Council selected "European culture" and "Rivers and birds" as two possible themes for future euro banknotes.

A decision on the final designs and when to produce and issue the new banknotes is expected in 2026

In addition, the Governing Council decided to establish an advisory group to propose motifs that could illustrate the selected themes by the end of 2024. After that, a competition will be held to design the new banknotes. European citizens will again have the chance to express their preferences on several design options. The ECB is expected to decide in 2026 on the final designs and on when to produce and issue the new banknotes. Once a decision to produce new banknotes has been taken, it will still be several years before the first banknotes are issued.

7 Statistics

The ECB – assisted by the national central banks (NCBs) – develops, collects, compiles and disseminates a wide range of statistics and data needed to support the ECB's monetary policy, as well as financial stability-related and other tasks of the European System of Central Banks (ESCB) and the European Systemic Risk Board. These statistics are also used by public authorities, international organisations, financial market participants, the media and the general public, and help the ECB to increase the transparency of its work.

In 2023 the ECB focused on new euro area statistics, namely detailed reporting on external statistics and breakdowns on the loans, currency and deposits component of government debt. The ECB also decided to expand the reporting population for Money Market Statistical Reporting and published new statistics on financial accounts with a breakdown of life insurance and pension entitlements by investment risk. As part of its climate action plan, the ECB published climate-related indicators on its website. In addition, the Eurosystem launched a survey to assess which topics could be included in the scope of the Integrated Reporting Framework.

7.1 New and enhanced euro area statistics and other developments

New details on external statistics were made available to users

In April 2023 the ECB started publishing additional details on external statistics in line with the amended ECB Guideline on external statistics, addressing the needs of users for more detailed cross-border statistics. The new series separate data for investment funds, insurance corporations and pension funds, other financial institutions, non-financial corporations, and combined households and non-profit institutions serving households. They also identify the type of debt instrument employed for direct investment. Additional details are available for debt securities, loans and trade credits and advances, and additional geographic counterparts.

New breakdowns on the loans, currency and deposits of general government debt were published

Furthermore, the ECB started to release new breakdowns for the loans, currency and deposits component of EU Member States' government debt, which allows for a more thorough evaluation of government financing. While debt securities typically make up the largest share of government debt, loans and deposits are significant components, equivalent to about 16% of euro area GDP in 2022 and 17.5% of total government debt. The data show the various sources of funding and provide a breakdown by creditor category, including commercial banks, multilateral institutions (such as the International Monetary Fund) and the European Union institutions (for example the European Investment Bank).

The ECB decided to expand the reporting population for the euro money market statistics

In April 2023 the ECB decided to expand the reporting population for Money Market Statistical Reporting (MMSR), adding 24 new banks to the 46 banks already reporting. The new MMSR banks will start reporting on 1 July 2024. The data they provide will help make the MMSR data published by the ECB more representative.

Data from the new reporting agents will be included in the calculation of the euro short-term rate (€STR) at a later stage to ensure that the newly reported data are of a sufficiently high quality. The expanded reporting population will support the representativeness, robustness and reliability of the benchmark.

The ECB published new statistics on financial accounts with a breakdown of life insurance and pension entitlements by investment risk

Following the amendment of its Guideline on the statistical reporting requirements for quarterly financial accounts, in October 2023 the ECB started publishing new breakdowns for life insurance, annuity entitlements and pension entitlements by allocation of investment risk for all EU Member States and the euro area. These entitlements are substantial components of household financial assets and are recorded in the financial accounts as liabilities of insurance corporations and pension funds (and to a much lesser extent of other sectors). The new data show to what extent households bear the investment risk of the premiums and contributions invested on their behalf.

7.2 Publication of new climate-related statistical indicators

In January 2023 the ECB published a first set of experimental and analytical climate change-related statistical indicators on its website. These indicators were collated in close cooperation with ESCB national central banks and are part of the ECB's broader climate action plan.

The ECB published three sets of statistical indicators on climate change

The experimental sustainable finance indicators give an overview of debt instruments with sustainability characteristics that are issued or held by residents in the euro area. They provide information on the proceeds raised to finance sustainable projects and, by extension, the transition to a net-zero economy.

Analytical carbon emission indicators for financial institutions supply information on the carbon-intensity of the securities and loan portfolios of financial institutions and thus help to assess the sector's role in financing the transition to a net-zero economy and the associated risks. The indicators provide information on banks' exposure to counterparties with a high dependence on carbon emission-intensive business models.

Analytical indicators on the physical risks in loan and security portfolios assess risks stemming from the impact of climate change-induced natural hazards, such as floods and wildfires, on the performance of loans, bonds and equities. The indicators can be used to compare physical risk across countries, sectors and hazards.

Work continued on all three datasets to further enhance the quality of the data and breakdowns available, including geographical, sectoral and other details.

7.3 Making banks' data reporting more efficient

The Integrated reporting Framework (IReF) seeks to integrate existing ESCB statistical data requirements for banks as far as possible into a single, standardised reporting framework applicable across the euro area.

The IReF is a first step towards a broader initiative for an integrated reporting system for statistical, prudential and resolution data in the European Union, as requested by the European banking industry and solicited by the European Parliament and the Council. The European Banking Authority, the ECB, the Single Resolution Board and the European Commission work together in an informal coordination group to further promote such integration. In 2023 they discussed the working modalities for a Joint Bank Reporting Committee (JBRC), involving relevant European and national authorities as well as the banking industry. The JBRC is expected to be set up in 2024.

The ESCB is also cooperating closely with the banking industry to optimise reporting and reduce the overall reporting burden via the Banks' Integrated Reporting Dictionary (BIRD). This is a voluntary and collaborative initiative that brings together the ESCB national central banks and commercial banks. BIRD – which can be accessed free of charge – helps banks to generate statistical, supervisory and resolution-related reporting output that complies with the reporting requirements set out in European legislation. BIRD is an integrated dictionary with redundancy-free content: the concepts underlying reporting obligations are all identified and described once, helping banks to decide which data to extract from their internal systems and how to process them.

One of BIRD's first deliverables will be to help banks comply with the IReF – a new data collection framework that will apply consistently across all euro area countries. Reporting agents will be able to use BIRD for IReF reporting, as well as other reporting obligations. BIRD will help to reduce banks' reporting burden and improve the quality of the data reported to the relevant authorities.

Box 5
First release of new Household Distributional Wealth Accounts

New experimental statistics provide quarterly information on households' wealth distribution in the euro area in line with national accounts.

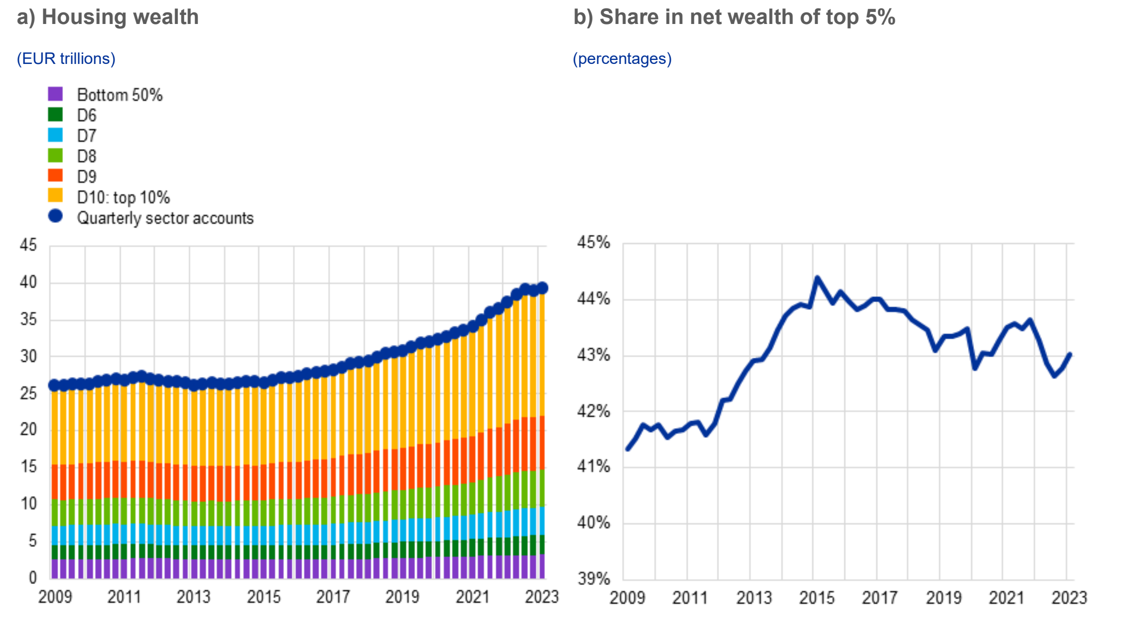
The new Distributional Wealth Accounts (DWA) published by the ECB provide insight into the distribution of wealth among households in the euro area and euro area countries, consistent with the aggregated quarterly sector accounts (QSA). The new statistics support the economic, monetary and financial stability analyses of the ECB. The DWA is linked to the ECB's 2021 monetary policy strategy review, which aims to include a systematic assessment of the two-way interaction between income and wealth distributions and monetary policy. The DWA will allow new insights into the monetary policy transmission process. The release follows the recommendations of the G20 Data Gaps Initiative to develop distributional information on household income, consumption, savings and wealth in line with the national accounts.

The method and results have been developed and compiled by the European System of Central Banks. The common approach may be further enhanced at national level, taking into account additional data sources available locally. Some national central banks have already implemented such improvements. The data combine the aggregated QSA with household-level information from the Household Finance and Consumption Survey (HFCS) between 2010 and 2021 and other sources. Results for the quarters after 2021 are estimated using data from the most recent sector accounts and the latest available HFCS wave or the NSI data collected in some countries. The data are compiled quarterly and published five months after the end of each period. Results are available for the euro area, 19 individual euro area countries (all euro area countries except Croatia) and Hungary.

The DWA provide data on net wealth and total assets and liabilities, and their components. Households are broken down into the top five deciles of net wealth and the bottom 50% as well as by employment and housing status. The DWA dataset also includes the Gini coefficient for net wealth, data on median and mean net wealth, the share of net wealth held by the bottom 50%, top 10% and top 5% of households, as well as the debt-to-asset ratio by household net wealth decile.

Chart A

Changes in housing wealth by net wealth decile and share in net wealth by the top 5%, euro area



Source: DWA.

Box 6

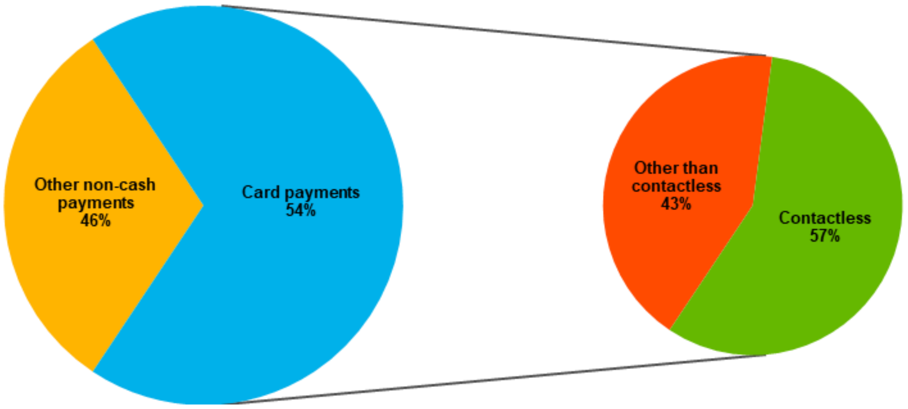
Payments statistics – enhanced scope and higher frequency

The amended ECB Regulation on payments statistics came into effect on 1 January 2022. The enhancements compared with the previous legal framework reflect both developments in the payments landscape and relevant changes to EU legislation. The frequency of data collection has also increased from annual to semi-annual and quarterly. The first release of payments statistics data collected under the amended framework took place on 9 November 2023 via the ECB Data Portal. Data were published for all quarters of 2022 and for the first two quarters of 2023, and for the two halves of 2022.

The payment statistics made available on a semi-annual basis now include information on innovative retail payment services, such as payments using mobile devices, contactless payments, e-commerce and new types of payment services as defined in the revised Payment Services Directive (PSD2). A press release is published with each half-yearly dissemination. As part of the enhanced data collection, data in the ECB Data Portal show, among other things, the strong demand for contactless card payments, which in the first half of 2023 accounted for 57% of all card payments in the euro area (Chart A).

Chart A

Share of contactless card payments as a percentage of all card payments in the euro area in the first half of 2023



Source: ECB.

Additionally, data are collected on fraudulent payment transactions, authentication methods for payment transactions and on payment schemes. On a quarterly basis and for the purposes of monitoring cross-border trade, data with a worldwide individual country breakdown are collected on card-based payment transactions, with further breakdowns by merchant category code.

8 ECB research activities

In 2023 ECB research focused, among other things, on assessing inflation developments, monetary transmission, climate change, and structural change. More specifically, the Heads of Research of the European System of Central Banks (ESCB) launched the Research Network on Challenges for Monetary Policy Transmission in a Changing World (ChaMP) aimed at using rich granular datasets to analyse the strength, speed and heterogeneity of monetary transmission channels in the euro area amid unprecedented shocks, structural changes and shifting inflation dynamics. The Household Finance and Consumption Network (HFCN) continued to deliver new insights into the impact of inflation on heterogeneous households across the euro area. The ECB's Consumer Expectations Survey (CES) is now firmly established as a source of valuable policy and research insights into the formation of household expectations. Climate change continued to be an important topic for ECB research activities. The ECB also collaborated closely with national central banks within the ESCB research clusters, organising annual workshops to discuss the most pressing issues in the different fields of specialisation.

8.1 Update on ESCB research initiatives

The ChaMP Network started work in May 2023

The ChaMP Network started work in May 2023. It is foreseen to last for two years, with a possible extension of one additional year. The Network is structured in two workstreams: transmission of monetary policy via the financial system (WS1) and transmission of monetary policy via the real economy (WS2). The ChaMP Network started with an initial work programme encompassing 180 research projects by over 250 authors from most central banks in the ESCB. The first workshops were held in Brussels on 25 October 2023 (WS2) and in Lisbon on 31 October 2023 (WS1). The WS1 workshop included presentations on the transmission of monetary policy via banks to corporations and households and on the role of non-bank financial intermediaries, while the WS2 workshop focused on the relevance of production networks between firms (for example supply constraints and other shocks) and of structural changes (for example digitalisation, (de)globalisation and climate change) for the transmission of monetary policy. The first in-person meeting of the leadership team took place in Lisbon on 30 October 2023.

The HFCN released the results of the fourth (2021) wave of the Household Finance and Consumption Survey (HFCS) in July 2023. The HFCS is a useful source of household-level information on household finances and consumption for several research projects conducted by HFCN members, the ECB's Research Taskforce on Heterogeneity and external researchers. These projects include work on the distributional effects of inflation shocks on household balance sheets,[68] differences in holdings of wealth between men and women (the gender wealth gap), measuring

[68] See Pallotti, F., Paz-Pardo, G. Slacalek, J., Tristani, O. and Violante, G. L., "Who Bears the Costs of Inflation? Euro Area Households and the 2021-2022 Shock", *Working Paper Series*, No 2877, ECB, 2023.

income uncertainty using expectations data, the heterogeneity of the effects of the pandemic on household finances, and the new Distributional Wealth Accounts (see Box 5).

8.2 Update on ECB research initiatives

The ECB's Consumer Expectations Survey (CES) was further developed in 2023, offering fresh household-sector insights for policy analysis and research. The ECB extended the survey's coverage beyond the initial six countries (Belgium, Germany, France, Italy, the Netherlands and Spain) in the pilot phase to include five additional euro area countries (Austria, Finland, Greece, Ireland and Portugal). The CES proved to be an invaluable policy and research tool for analysing household inflation expectations. Research showed that restrictive monetary policy together with active communication on the role of monetary policy in stabilising future inflation promoted public trust and prevented recent price and cost shocks from becoming entrenched in consumer inflation expectations.[69] The CES was also used to highlight the heterogenous impact of inflation on expectations across households. One important finding is that low-income households were most affected by inflation owing to their exposure to increases in the prices of necessities such as energy and food.

Climate-related research topics remained very prominent in 2023

Climate-related research topics remained very prominent in 2023. Research provided evidence of a disconnect, whereby banks with more extensive environmental disclosures extended more credit to polluting borrowers, without charging higher interest rates or shortening debt maturities.[70] Other work focused on the unintended consequences of carbon taxes. Analysis of the risk of "greenflation" (persistent deviations of inflation from our target stemming from carbon taxes or carbon pricing schemes) suggests that when carbon taxes are increased very slowly, decarbonisation can be achieved without endangering the ECB's mandate.[71] Other work has shown that carbon pricing mechanisms reduce firms' carbon emissions but also tilt their investment mix away from green innovation to short-term pollution abatement.[72] The effects of climate change on our understanding of macroeconomic and financial stability were also at the core of the policy panel discussion featured by the "WE_ARE_IN" conference jointly organised with the Centre for Economic Policy Research.

In 2023 ECB staff published 120 papers in the ECB's Working Paper Series. In addition, more policy-oriented or methodological studies were published in the ECB's Occasional Paper Series, Statistics Paper Series and Discussion Paper Series. Many of the ECB's research activities also resulted in publications in renowned

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69 See Ehrmann, M., Georgarakos, D. and Kenny, G., "Credibility gains from communicating with the public: evidence from the ECB's new monetary policy strategy", *Working Paper Series*, No 2785, ECB, February 2023.

70 See Giannetti, M., Jasova, M., Loumioti, M. and Mendicino, C., "Glossy green banks: the disconnect between environmental disclosures and lending activities", *Working Paper Series*, No 2882, ECB, 2023.

71 See Nakov, A. and Thomas, C., "Climate-conscious monetary policy", *Working Paper Series*, No 2845, ECB, 2023.

72 See Bustamante, M. C. and Zucchi, F., "Carbon trade-offs: how firms respond to emission controls", *Research Bulletin*, No 109, ECB, 17 July 2023.

academic journals, while 12 articles were released in the ECB's Research Bulletin targeting a more general audience. Box 7 describes in more detail the results of recent ECB work on the economic dynamics after extreme events – a topic of great importance for both price and financial stability.

8.3 Update on the work of ESCB research clusters

Regular research networks continued coordinating research efforts within the ESCB and maintaining relations with academic researchers. In particular, the ESCB research clusters on "Monetary economics" (Cluster 1), "International macroeconomics, fiscal policy, labour economics, competitiveness and EMU governance" (Cluster 2), "Financial stability, macroprudential regulation and microprudential supervision" (Cluster 3) and "Climate change" (Cluster 4) held workshops on the most pressing issues in their fields. The annual workshop of Cluster 1 in 2023 was postponed and will now be held at Narodowy Bank Polski in Warsaw on 21-22 March 2024. Cluster 2 held its annual workshop at the Bank of England on 16-17 November 2023. It featured five sessions focusing on productivity, labour markets, international macroeconomics, energy shocks, and climate policy and fiscal policy. Cluster 3 ran its annual workshop in Saariselkä, Finland on 23-25 November 2023, focusing on financial stability and financial intermediation. Cluster 4 held its second annual workshop in hybrid format at the ECB on 13-14 November 2023. The topics discussed ranged from the effect of temperature shocks on inflation to the dynamics of biodiversity.

Box 7
Economic dynamics after extreme events – quantifying the financial stability trade-offs for monetary policy during periods of high inflation

Recent research has focused on developing and applying new tools to assess and quantify the link between monetary policy and macroeconomic tail risks. Financial stability conditions and balance sheet capacity in the financial sector play a crucial role for macroeconomic tail risks, in line with an increasing body of evidence identifying financial distress as a strong predictor for near-term downside risks to growth. Furthermore, monetary interventions can affect financial stability in the short term through their immediate impact on the financial sector, both by providing financial intermediaries with liquidity during crises and risking sudden market disorder as rates are hiked and financing conditions tightened.[73]

When inflationary pressures started intensifying in 2022, the world's major central banks faced a dilemma: rapidly tighten monetary policy at the risk of fuelling financial stress after years of ultra-low interest rates or take a more gradual approach that would protect the financial system and economic activity, but risk above-target inflation becoming entrenched. To quantify this trade-off, an empirical non-linear model that incorporates financial stability conditions can be used to gauge the tail risks to the euro area economy posed by the tightening cycle which began in the third quarter of

73 See also Karadi, P. and Nakov, A., "Effectiveness and addictiveness of quantitative easing". *Journal of Monetary Economics,* Vol. 117, 2021, pp. 1096-1117, and Van der Ghote, A., "Interactions and Coordination between Monetary and Macroprudential Policies", *American Economic Journal: Macroeconomics,* Vol. 13(1), 2021, pp. 1-34.

2022.[74] The non-linear modelling approach has the advantage of capturing the possibly time-varying feedbacks between monetary policy and the risks of future financial instability. While rare, episodes of financial instability can have devastating macroeconomic consequences, making them acutely relevant to policymakers. As such, tools to assess these tail events can play an important role in informing policymakers aiming to manage macroeconomic risks.

The analysis revealed substantial downside risks to economic growth as of the third quarter of 2022. The model estimates a 10% probability that real GDP in the euro area would decline by more than 3% over the following year. Risks to financial stability were also tilted to the downside, with an elevated probability of stress in the financial system. These risks, driven by the jump in commodity prices and financial market stress following the Russian invasion of Ukraine, had to be balanced with upside risks to inflation, which was well above target.

Policy tightening above market expectations would have amplified short-term downside risks to growth and financial stability. This is because the probability of short-term financial distress is particularly sensitive to monetary policy. In the medium term, however, tighter monetary policy may also dampen financial stability risks by reducing the leverage of the financial system and raising risk premia across financial assets. The model quantifies the effects of tighter monetary policy on higher near-term and lower medium-term risks to the financial system and real economy.

74 See also Chavleishvili, S. and Manganelli, S., “Forecasting and stress testing with quantile vector autoregression”, *Journal of Applied Econometrics,* forthcoming, and Chavleishvili, S., Kremer, M. and Lund-Thomsen, F., “Quantifying financial stability trade-offs for monetary policy: a quantile VAR approach”, *Working Paper Series,* No 2833, ECB, 2023.

9 ECB legal activities and duties

This chapter deals with the jurisdiction of the Court of Justice of the European Union (CJEU) concerning the ECB, provides information on ECB opinions and cases of non-compliance with the obligation to consult the ECB on draft legislation falling within its fields of competence. It also reports on the ECB's monitoring of compliance with the prohibition of monetary financing and privileged access.

9.1 Jurisdiction of the Court of Justice of the European Union concerning the ECB

The CJEU put an end to more than a decade of litigation relating to the 2012 restructuring of the Greek public debt by dismissing the appeal on the last pending action for damages against the ECB

In September 2023 the CJEU dismissed the appeal in the last pending action for damages brought against the ECB and the European Union (EU) by holders of Greek sovereign bonds. The appellants were subject to the restructuring of the Greek public debt in 2012 by means of the activation of retrofit collective action clauses.[75] At first instance, the appellants alleged that their forced participation in the restructuring of the Greek public debt was attributable to the ECB and the EU owing to, among other things, the involvement of the ECB and EU in the Eurogroup meetings and their role in the consultation process leading to the activation of retrofit collective action clauses.[76] The General Court found that the ECB and the EU did not act ultra vires and did not commit any breach of the right to property, the free movement of capital or the principle of equal treatment. The General Court also held that several provisions of the Treaty on the Functioning of the European Union invoked by the applicants (including Articles 123 and 127) do not constitute rules of law conferring rights on individuals and therefore cannot give rise to non-contractual liability on the part of either the EU or the ECB. The appeal, which alleged erroneous examination of certain pleas by the General Court, was dismissed by the CJEU in its entirety, thus putting an end to more than a decade of litigation in which the ECB has always prevailed by demonstrating that it acted lawfully.

The CJEU interpreted that the ECB's minimum standards for checking the fitness of euro banknotes do not apply to cash handlers, such as credit institutions and transporters of funds

In April 2023 the CJEU (Fifth Chamber) delivered its judgment in a preliminary ruling procedure submitted by the Supreme Administrative Court of Lithuania (Case C-772/21). The CJEU interpreted that the ECB's minimum standards for automated checking of the fitness of euro banknotes by banknote handling machines, referred to in Article 6(2) of ECB Decision (ECB/2010/14) on fitness checking of euro banknotes, do not apply to cash handlers, such as Brink's Lithuania. In the main proceedings, Brink's challenged Lietuvos bankas' decision according to which Brink's was in breach of the ECB's minimum standards, as two of its banknote handling machines had failed the fitness test (which was based on such standards). The CJEU determined that the ECB's minimum standards apply to the manufacturers of banknote handling machines. While cash handlers are not bound by those standards, they remain obliged to remedy a situation where an inspection

75 Case C-262/22 P, EU:C:2023:714.

76 Case T-868/16, EU:T:2022:58.

by a national central bank (NCB) finds that banknote handling machines do not comply with the ECB's minimum standards. The CJEU also concluded that Member States are precluded from obliging cash handlers to comply with the ECB's minimum standards, as introducing such an obligation under national law would not respect the EU's exclusive competence in the area of monetary policy, which includes checking the authenticity and fitness of banknotes.

The CJEU confirmed limits on the judicial review of banking supervisory decisions based on a broad discretion

In May 2023 the CJEU clarified the scope of judicial review from EU courts over the ECB decision adopted in the field of banking supervision on the basis of a discretionary power involving complex technical, economic and financial assessments. The ruling of the CJEU followed an appeal by the ECB against the judgment of the General Court of April 2021 by which it annulled the ECB's decision refusing to authorise Crédit Lyonnais to exclude from the calculation of its leverage ratio certain exposures deriving from the amounts collected on regulated saving accounts. The General Court considered that the decision was vitiated by a manifest error of assessment because the ECB failed to take into account that those accounts were not subject to a risk of massive withdrawals and, as a consequence, were not exposing the bank to a risk of fire sales. The CJEU, upholding the ECB's arguments, annulled the judgment of the General Court, ruling that the scope of judicial review from EU courts over ECB decisions adopted on the basis of a discretionary power must be limited and not lead the General Court substituting its own assessment for that of the ECB. That review must only seek to ascertain that the decision is not based on materially incorrect facts or vitiated by a manifest error of assessment or misuse of powers. In the case at hand, the CJEU considered that the General Court substituted its own assessment regarding the risk of fire sales of assets to which the bank was exposed for that of the ECB and, as a consequence, overstepped the limits of judicial review. Giving final judgment in the case, the CJEU dismissed Crédit Lyonnais's action at first instance in annulment of the contested decision, ruling that the bank failed to demonstrate that the ECB decision was vitiated by a manifest error of assessment.

The Court confirmed that the ECB has exclusive competence to withdraw banking licences, including for serious breaches of national AML/TF legislation

In September 2023 the CJEU[77] dismissed the appeal of Versobank AS against the judgment of the General Court of 6 October 2021, which had rejected the annulment action against the ECB's decision to withdraw the bank's authorisation to operate as a credit institution. In this judgment, the CJEU confirmed that the ECB has exclusive competence to withdraw the banking licence of all credit institutions established in participating Member States, regardless of their classification as significant institutions or less significant institutions, including on grounds relating to serious breaches of the national legislation transposing the AML Directive.

9.2 ECB opinions and cases of non-compliance

Articles 127(4) and 282(5) of the Treaty on the Functioning of the European Union require that the ECB be consulted on any proposed EU or draft national legislation falling within its fields of competence. All ECB opinions are published on EUR-Lex. In

[77] Case C-803/21 P.

2023 the ECB adopted 12 opinions on proposed Union legal acts and 35 opinions on draft national legislation.

There were 12 cases of non-compliance with the obligation to consult the ECB on draft legislation

Twelve cases of non-compliance with the obligation to consult the ECB on draft legislation were recorded: two in respect of Union legal acts and ten in respect of national laws. The ECB adopted own initiative opinions in respect of seven of these twelve cases.

The first EU case concerned an EU proposal for a regulation on harmonised rules on fair access to and use of data (Data Act). This case was considered to be clear and important because it concerns, among other things, the scope of access to and use of privately held data by the ECB and the NCBs for a number of defined public interest purposes. The second EU case concerned an EU legislative package proposing the establishment of a European Single Access Point (ESAP) providing centralised access to publicly available information of relevance to financial services, capital markets and sustainability. This case was considered to be clear and important because the establishment of an ESAP is an important milestone in the completion of the capital markets union, which should allow for a more efficient allocation of capital across the Union, contributing to the further development and integration of capital markets.

Two Hungarian non-compliance cases concerned central bank independence and the prohibition of monetary financing. The first Hungarian case concerned a Hungarian law on economic and financial measures, which prohibited certain institutions from purchasing, until 30 June 2023, a Hungarian forint-denominated debt instrument issued by an ESCB national central bank. This case was considered to be clear and important because it impedes the Magyar Nemzeti Bank from independently choosing the necessary means and instruments to conduct an efficient monetary policy and to independently achieve its primary objective of price stability. The second Hungarian case concerned amendments of the Law on the Magyar Nemzeti Bank introducing single foreign currency treasury accounts, which will be managed by the Magyar Nemzeti Bank, to supplement the already existing single Hungarian forint treasury account. This case was considered to be clear and important because it concerns the compliance of the remuneration of the State's treasury accounts of an NCB with the monetary financing prohibition.

Two Slovak non-compliance cases concerned cash. The first Slovak case concerned a Slovak law on social insurance limiting cash payments for public social insurance contributions. This case was considered to be clear and important owing to the limitation it imposes on the use of cash as a means of payment and the absence of a proportionality assessment of this limitation, taking into account the criteria established by the CJEU in its Hessischer Rundfunk judgment (C-422/19 and C-423/19). The second Slovak case concerned a Slovak law amending the Constitution of the Slovak Republic, which guarantees the issuance of cash as legal tender, further specifies that everyone has the right to make a payment for the purchase of goods and the provision of services using cash as legal tender, guarantees that the acceptance of such payment may only be refused for reasonable or generally applicable reasons, and guarantees the right to perform a cash transaction in a bank or a branch of a foreign bank. This case was considered to be clear and important because the constitutional law guarantees the issuance of cash as legal tender and in this context sets out a general principle of mandatory acceptance of cash and a framework for exemptions in a Member State whose currency is the euro, which are matters falling within the exclusive competence of the ECB and the Union.

Five national non-compliance cases (four non-consultations and one late consultation) relate to special purpose bank tax and levies introduced in response to increased inflation and interest rates. These cases concerned: (1) a Polish law on crowdfunding for business ventures and assistance to borrowers, which introduced the concept of “mortgage holidays” to alleviate the burden on borrowers with outstanding mortgage loans following recent increases in interest rates by Narodowy Bank Polski; (2) a Portuguese law on a measure to temporarily reduce the benchmark Euribor rates by 30% for variable rate mortgage loans, which aims at mitigating the effects of rising interest rates on the residential mortgage market and provide greater predictability for families with variable rate mortgages; (3) a Romanian law on certain fiscal-budgetary measures to ensure the long-term financial sustainability of Romania, which concerns, among other things, the imposition of a turnover tax on credit institutions that are Romanian legal entities or Romanian branches of foreign legal entities; (4) a Slovak law on a special levy on business in regulated industries by (a) extending the scope of the regulated persons that are subject to a special levy to include credit institutions doing business in Slovakia, and (b) imposing a specific levy rate on these credit institutions; and (5) a Latvian law amending the Consumer Protection Law, which provides that during the year 2024 credit institutions will be under an obligation to pay a mortgage borrower protection fee for the benefit of borrowers who fulfil certain conditions. These cases were considered to be clear and important because the laws raise financial stability, prudential supervisory and, in the Latvian, Portuguese and Slovak cases, also monetary policy considerations.

The final national non-compliance case is a Spanish case concerning a law requiring the Banco de España to take the necessary measures to make it possible for investment firms to open accounts with the central bank in order to deposit the funds they receive from their customers. This case was considered to be clear and important because, apart from its direct impact on the operation of payment systems, it might raise issues relating to monetary policy and financial stability.

The ECB adopted 12 opinions on proposed Union legal acts

The ECB adopted 12 opinions on EU legislative proposals, covering topics such as a digital euro; the legal tender of euro banknotes and coins; the reform of economic governance in the Union; the Union’s crisis management and deposit insurance framework; measures to mitigate excessive exposures to third-country central counterparties (CCPs), improve the efficiency of Union clearing markets, and address the treatment of concentration risk towards CCPs and counterparty risk on centrally cleared derivative transactions; instant credit transfers in euro; climate-related matters, including the energy performance of buildings, corporate sustainability due diligence, and the transparency and integrity of environmental, social and governance rating activities; European Union labour market statistics on businesses; and the appointment of a new member of the ECB’s Executive Board.

The ECB adopted 35 opinions on draft national legislation

With regard to opinions on national legislation, which often cover more than one subject, the ECB adopted 19 opinions concerning NCBs; 15 opinions concerning the stability of the financial system; 13 opinions concerning the prudential supervision of credit institutions; seven opinions concerning currency matters and means of payment; five opinions concerning monetary policy instruments and operations and the implementation of monetary policy; and three opinions concerning payment and/or securities settlement systems. The topic of special purpose bank tax and levies introduced in response to increased inflation and interest rates was the subject of seven opinions in the course of 2023.

9.3 Compliance with the prohibition of monetary financing and privileged access

Pursuant to Article 271(d) of the Treaty on the Functioning of the European Union, the ECB is entrusted with the task of monitoring the compliance of the EU national central banks (NCBs) with the prohibitions laid down in Articles 123 and 124 of the Treaty and Council Regulations (EC) Nos 3603/93 and 3604/93. Article 123 prohibits the ECB and the NCBs from providing overdraft facilities or any other type of credit facility to governments and EU institutions or bodies, as well as from purchasing in the primary market debt instruments issued by these institutions. Article 124 prohibits any measure, not based on prudential considerations, which establishes privileged access by governments and EU institutions or bodies to financial institutions. In parallel with the Governing Council of the ECB, the European Commission monitors Member States' compliance with the above provisions.

The ECB also monitors the EU central banks' secondary market purchases of debt instruments issued by the domestic public sector, the public sector of other Member States and EU institutions and bodies. According to the recitals of Council Regulation (EC) No 3603/93, the acquisition of public sector debt instruments in the secondary market must not be used to circumvent the objective of Article 123 of the Treaty.

The prohibitions laid down in Articles 123 and 124 of the Treaty were in general respected

The ECB's monitoring exercise conducted for 2023 confirmed that Articles 123 and 124 of the Treaty were in general respected.

The ECB will continue monitoring the involvement of the Magyar Nemzeti Bank in the Budapest Stock Exchange as the purchase of the majority ownership of the Budapest Stock Exchange by the Magyar Nemzeti Bank in 2015 may still be seen as giving rise to monetary financing concerns.

The Central Bank of Ireland's final disposal of assets related to the Irish Bank Resolution Corporation during 2023 through sales of long-duration floating rate notes has brought to an end the serious monetary financing concerns that had persisted since 2013.

The financing by NCBs of obligations falling upon the public sector vis-à-vis the International Monetary Fund (IMF) is not considered as monetary financing provided it results in foreign claims that have all characteristics of reserve assets. However, financial donations as provided in previous years by the Nationale Bank van België/Banque Nationale de Belgique and Banque de France via the IMF for debt relief for heavily indebted poor countries did not result in any foreign claims and therefore require corrective measures.

10 The ECB in an EU and international context

The ECB continued to interact closely with its European and international counterparts in 2023. The connection between the ECB and the European Parliament is an essential part of the ECB's accountability framework. The ECB engaged in regular hearings and correspondence with the Committee on Economic and Monetary Affairs of the European Parliament (ECON). Additionally, the ECB interacted with ECON as part of its ongoing work on a digital euro. At international level, the ECB engaged constructively in dialogue with its G20 partners. It supported, among other things, the Indian Presidency's initiatives on financial sector regulation, cross-border payments and crypto-assets. The ECB also continued to engage in central bank-relevant discussions on various issues related to the functioning of the International Monetary Fund (IMF), including the review of IMF quotas, adjustments to the IMF's lending policies and toolkit, and matters surrounding Special Drawing Rights (SDRs) and their channelling.

10.1 The ECB's accountability

Accountability is an essential counterpart to independence

The ECB was granted independence under the Treaty on the Functioning of the European Union (TFEU). Being independent means that the ECB can take decisions in pursuit of its primary goal of maintaining price stability immune from political influence. However, accountability is an essential counterpart to this independence. The ECB is accountable for its actions to the European Parliament, which represents EU citizens. Fulfilling these accountability obligations is a crucial part of the ECB's responsibilities. The two-way dialogue between the ECB and the European Parliament allows the ECB to explain its actions and policies to the representatives of EU citizens and to listen to their concerns. Over time this dialogue has evolved beyond the requirements set out in Article 284(3) of the TFEU. To promote continued common understanding and effective cooperation, in June 2023 the President of the ECB and the President of the European Parliament signed an exchange of letters clarifying the accountability arrangements between the ECB and the European Parliament in the area of central banking.

The ECB continued its interactions with EU citizens' elected representatives

In 2023 the President of the ECB took part in four regular hearings of the ECON Committee and engaged in the plenary debate on the ECB's 2021 Annual Report in February, following which the European Parliament issued a resolution. In May the Vice-President then presented the ECB's 2022 Annual Report to the ECON Committee. On the same day, the ECB released its feedback on the input received from the European Parliament as part of its resolution on the 2021 Annual Report. Additionally, in May the ECB hosted the annual visit to the ECB by a delegation of Members of the ECON Committee. In addition, the ECB responded to 27 written questions from Members of European Parliament in the course of the year.

Furthermore, the ECB interacted closely with the ECON Committee in the context of its work on a digital euro. In 2023 the then Executive Board Member Mr Panetta participated in three ad hoc hearings of the ECON Committee to discuss progress made during the digital euro investigation phase, including the topics of user experience, legal tender, and the digital euro legislative process.[78] The ECB also organised staff-level technical seminars with the European Parliament and participated in events organised by Members of the European Parliament to discuss a digital euro.

Support for the euro was close to a record high in 2023

According to the latest Eurobarometer survey conducted in October and November 2023, 79% of euro area respondents support the euro and 43% tend to trust the ECB. The high level of support for the euro is a very positive sign, while the relatively lower level of trust in the ECB shows that the institution needs to continue its efforts to communicate with the public and citizens' elected representatives. Building public trust will also remain integral for the ECB going forward. As such, the ECB remains committed to actively participating in constructive dialogue with the European Parliament and citizens in the euro area.

10.2 International relations

G20

The G20 operated amid heightened geopolitical tensions and in a difficult global environment, working towards preserving multilateralism

The global economy during India's G20 Presidency in 2023 continued to be negatively affected by Russia's war against Ukraine and, in the last quarter, increased uncertainty owing to the conflict in the Middle East. G20 finance ministers and central bank governors were confronted with lower global growth, high inflationary pressures and volatile energy prices. While disagreements among members on geopolitical issues prevented the adoption of communiques at the February and July 2023 meetings, the joint G20 Leader's Declaration in New Delhi, as well as the decision to admit the African Union as a future permanent member to the G20, highlighted the membership's efforts to preserve the forum's effectiveness and inclusiveness. The ECB welcomed and supported the Indian Presidency's initiatives to improve the regulatory framework in the banking and non-banking sectors, facilitate cross-border payments and reach agreement on a G20 roadmap to contain the risks from crypto-asset ecosystems. The ECB also supported the G20's efforts to scale up sustainable finance from private and public sources for the global transition towards Net Zero. In view of the digital euro project, the G20 discussions on the design choices and safeguards for central bank digital currencies were also a high priority from the ECB's perspective.

[78] The ECB also kept the ECON Committee informed of the developments in the digital euro project via four written letters from Mr Panetta to the ECON Chair.

Policy issues related to the IMF and the international financial architecture

The ECB actively contributed to discussions at the IMF. In 2023 the IMF decided to increase its quota resources, continued to adjust its toolkit and further supported Ukraine

The ECB continued to play an active role in discussions about the international monetary and financial system at the International Monetary Fund (IMF) and in other fora, promoting the central bank perspective in common European positions taken in these fora.[79] In 2023 key topics included the review of IMF quotas, adjustments to the IMF's lending policies and toolkit, and matters surrounding Special Drawing Rights (SDRs) and their channelling.

On 15 December 2023 the IMF Board of Governors concluded the 16th General Review of Quotas and approved an increase of members' quotas by 50%, which will bring total IMF quotas to SDR 715.7 billion.[80] The quota increase will be allocated to members in proportion to their existing quota shares. Adjustments to the IMF toolkit were introduced, which also enabled the Fund's continued support for Ukraine.[81] A 48-month arrangement under the Extended Fund Facility for Ukraine was approved at the end of March 2023.[82] The IMF also further strengthened the preventive role and flexibility of its toolkit by concluding the review of precautionary instruments in October 2023. At the end of 2023 IMF lending remained close to its highest historical levels: the total General Resources Account credit outstanding stood at around SDR 92 billion, with the exposure to the Fund's largest borrower accounting for one-third of this amount.

Resources were mobilised to help countries in need

In a follow up to the allocation of USD 650 billion of SDRs in 2021 to meet a long-term global need to supplement existing reserves, which also helped countries to deal with the pandemic, efforts to channel SDRs or equivalent resources to further help emerging market economies and low-income countries reached a milestone in June 2023, when the global ambition to mobilise USD 100 billion was met. EU Member States made a major contribution to this effort, accounting for over 31% of commitments. The bulk of the global target is destined for the IMF's Resilience and Sustainability Trust and Poverty Reduction and Growth Trust. The ECB also continued to support international initiatives to help vulnerable countries tackle rising debt vulnerabilities, in particular implementation of the G20 Common Framework for Debt Treatments.

79 The ECB has observer status at the IMF, with a permanent ECB representative at the IMF headquarters in Washington, D. C. The ECB observer participates in selected IMF Executive Board meetings.

80 Quotas are denominated in Special Drawing Rights (SDRs), the IMF's unit of account, and reviewed at regular intervals.

81 These adjustments included temporarily increasing access limits (under both the General Resources Account and Poverty Reduction and Growth Trust) and introducing a new Framework for Upper Credit Tranche Financing in situations of exceptionally high uncertainty.

82 Two subsequent programme reviews were concluded in July and December 2023.

Box 8

The ECB's secondary objective in monetary policy

The ECB's primary objective, maintaining price stability, is established in Article 127(1) of the Treaty on the Functioning of the European Union. The Treaty further stipulates that, "without prejudice to the objective of price stability", the ECB shall also support the general economic policies in the European Union with a view to contributing to the achievement of the Union's objectives, as laid down in Article 3 of the Treaty on European Union.[83] This box explains how the secondary objective is considered in the conduct of the ECB's monetary policy and reporting activities.[84]

How the ECB acts upon its secondary objective in monetary policy decisions

In its monetary policy decisions, the ECB evaluates the proportionality of each measure.[85] This assessment includes an analysis of the benefits and possible side effects of monetary policy measures, including – where relevant – their impact on the ECB's secondary objective. The analysis considers how these measures interact and balance out over time. In practice, when adjusting its monetary policy instruments, the Governing Council chooses the configuration that best supports the general economic policies in the Union related to growth, employment and social inclusion, and that, with a view to contributing to the Union's broader objectives, protects financial stability and helps to mitigate the impact of climate change, provided that two configurations of the instrument set are equally conducive and not prejudicial to price stability.[86] For instance, the ECB has been tilting its reinvestments of corporate sector securities towards issuers with a better climate performance since October 2022. This decision was made in order to take better account of climate-related financial risk in the Eurosystem balance sheet and, with reference to the ECB's secondary objective, to support the green transition of the economy in line with the EU's climate neutrality objectives.[87]

How the ECB presents the effects of its actions on the secondary objective

The ECB communicates on how it has acted upon its secondary objective as part of its reporting on monetary policy. During monetary policy press conferences and in the detailed accounts of its monetary policy meetings, the ECB provides insights into the relevant factors influencing its monetary policy decisions, including considerations related to its secondary objective. Additionally, regular articles in the Economic Bulletin and the Research Bulletin, as well as dedicated occasional papers, offer in-depth analyses on how monetary policy interacts with crucial areas like the labour market, financial stability and climate change.[88] Furthermore, the ECB – in discharging its accountability and transparency obligations toward the European Parliament and the public – elaborates on how aspects of the secondary objective, such as the interplay between price stability

83 Article 3(3) of the Treaty on European Union provides, inter alia, that the Union shall work for "the sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment."

84 See also European Parliament Resolution on the ECB's Annual Report 2021 and the ECB's feedback statement to this Resolution.

85 Proportionality implies that the ECB's actions must, first, be suitable for attaining the legitimate objectives of the action at issue and, second, must not go manifestly beyond what is necessary to achieve those objectives. For more information, see Case C-62/14, Peter Gauweiler and Others (EU:C:2015:400) and Case C-493/17, Heinrich Weiss and Others (EU:C:2018:1000).

86 For more information, see Section 3.3 of the ECB's monetary policy strategy overview.

87 For more information on the Eurosystem's climate-related tilting since October 2022, see Section 11.5.1.

88 See the Occasional Papers that fed into the ECB's strategy review.

and financial stability or the integration of climate change considerations into monetary policy operations, are being addressed.[89]

In the ECB’s annual reports, the reporting on monetary policy decisions and the underlying analyses of relevance to the secondary objective is integrated across various chapters. Notably, the Annual Report for 2023: (i) provides an update on advances made during 2023 in the ECB’s analytical capacity with regard to climate change in statistics, including new climate-related statistical indicators for sustainable finance, carbon emissions and physical risks (Section 7.2); (ii) recalls that the medium-term orientation of the ECB’s monetary policy allowed for a gradual impact on growth and employment, which are elements of the ECB’s secondary objective (Section 1.2); (iii) recalls that the ECB continued to tilt corporate bond purchases more strongly towards issuers with a better climate performance (Sections 2.1, 2.2 and 2.3) and made climate-related financial disclosures for the corporate securities holdings under the corporate sector purchase programme and the pandemic emergency purchase programme (Section 2.2); (iv) provides a summary assessment of banks and the financial system and elaborates on sources of resilience and fragility for financial stability (Chapter 3) and reports on recent ECB research on quantifying the financial stability trade-offs for monetary policy during periods of high inflation (Box 7); and (v) provides a summary of the ECB’s efforts and progress in climate and environmental work (Section 11.5).

89 Coordinators of political groups in the Committee on Economic and Monetary Affairs (ECON Committee) in the European Parliament decide on two topics for each hearing with the ECB President which can be found on the ECON Committee’s website. These topics are addressed by the ECB President in the introductory remarks.

11 Promoting good governance, social and environmental sustainability

The ECB carries out key work on environmental, social and governance (ESG) issues. For a public institution like the ECB, this includes its accountability vis-à-vis European Union (EU) citizens and their elected representatives, communicating and engaging with different audiences, adhering to the highest ethical standards and transparency, empowering employees and promoting their well-being, as well as looking at climate and environmental impacts and risks.

11.1 Updates on environmental, social and governance matters

The ECB continued its work on environmental, social and governance-related topics in 2023

This overview of key ESG developments in 2023 is complemented by other sections of this annual report and additional information available on the ECB's website (Table 11.1).

Sections 11.2 and 11.3 outline how, as a European institution, the ECB worked towards continuously strengthening its governance frameworks as well as fostering transparency and closeness to citizens in 2023. Section 11.2 outlines the ECB's efforts to strengthen European and international cooperation in the areas of ethics, integrity and good conduct, thereby also responding to increased public interest in this area.[90] Section 11.3 describes the concerted efforts by the ECB to clearly explain its policies during a period of high inflation, targeting different audiences and addressing people's concerns about the future of our currency. Section 11.4 lists key developments in 2023 that affected the ECB's human resources management and provides updates on the appointment of a diversity and inclusion officer and a mediator. Lastly, Section 11.5 covers the ECB's work on climate-related and environmental topics and provides details on more specialised publications in this area.

Table 11.1
ECB websites and publications

Governance	Social	Environmental
Governance and corporate governance	Transparency and accountability	Climate change and the ECB
Organisation	Communication	Climate change and banking supervision
Ethics	Diversity and inclusion	Environmental protection at the ECB
Legal framework	Arts and culture	Banknotes' environment, health and safety

[90] Section 10.1 also outlines the ECB's fulfilment of its duties as a public institution through its accountability framework and communication to the public.

Climate-related risks are progressively being integrated into the overall risk framework

The ECB tackles ESG risks as part of its risk management frameworks for financial and non-financial risks, as described in the chapter on risk management in the ECB's Annual Accounts 2023.

Climate stress testing started in 2022 and has since become a regular exercise. It forms part of the action to progressively integrate climate-related risks into the overall risk framework. In its first climate risk stress test of the Eurosystem balance sheet, the ECB assessed the sensitivity of the Eurosystem's financial risk profile to climate change and in doing so enhanced the Eurosystem's climate risk assessment capabilities. The results provided a first estimate of the impact of climate risk on the ECB's balance sheet.

11.2 Strengthening ethics and integrity

Awareness of ethics and integrity remained a key priority in 2023

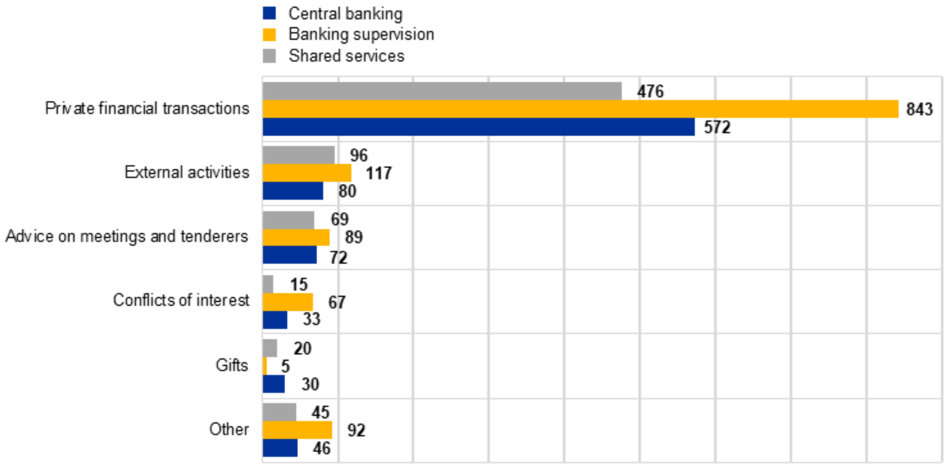
The ECB's Compliance and Governance Office (CGO) is entrusted with setting the appropriate rules on ethics and governance, and monitoring compliance with these. In 2023 new initiatives focused on providing an enhanced training experience to staff, ranging from introductory courses and e-learning programmes for newcomers, to refresher courses for longer-serving staff and tailormade training to address the needs of specific business functions. Various outreach projects were also organised over a period of six to eight weeks around Global Ethics Day, with a view to both drawing ECB staff's attention to the need to comply with the ethics rules and informing the public of the ECB's focus on these matters. The CGO continued to upgrade and streamline its processes, facilitate staff access to ethics advice and comply with the ECB's ethics standards.

Increased awareness in the areas of ethics and integrity and easy access to ethical advice led to a pronounced increase in requests from 1,690 in 2022 to 2,767 in 2023 (Chart 11.1).

The compliance checks, which were conducted with the support of an external audit firm, confirmed the overall adherence of ECB staff members and the ECB members of high-level bodies to the rules on private financial transactions.

Chart 11.1

Overview of requests received from ECB staff in 2023



Source: ECB.

The ECB's independent Ethics Committee complements the ECB's governance structure. It provides advice to high-level ECB officials on questions of ethics, mostly concerning private activities and post-mandate gainful employment, and assesses their declarations of interests. In addition, the Ethics Committee monitors European and international developments in the field of ethics and good conduct. It also advises on desirable updates of the ECB's ethics framework for high-level ECB officials, such as the recent enhancement of the rules on private financial transactions.

The Ethics and Compliance Committee continued to provide support to the national central banks and national competent authorities on the implementation of the Ethics Guidelines adopted in 2021, as well as guidance on a coherent and consistent interpretation of ethics standards across the Eurosystem. In addition, to best leverage and benefit from a diversity of views, the Committee organised sessions on topics of mutual interest, which were attended by over 50 different public institutions and organisations.

At the European level, in 2023 the ECB continued to play an active role in the ongoing interinstitutional negotiations on the establishment of an independent EU ethics body.

At international level, the ECB was closely involved in knowledge-sharing and standard-setting in the Ethics Network of Multilateral Organizations, in both its role as Vice-Chair of the network and through its contributions to meetings and the annual conference. The ECB also contributed to the first review of the EU's implementation of the United Nations Convention against Corruption.

11.3 Communication and transparency of ECB policy

The ECB faced a challenging communications environment

Falling, but still much too high, inflation and the increasingly tangible effects of the ECB policy tightening on the economy created a challenging communications environment for the ECB in 2023. In times of exceptional uncertainty and a cost-of-living crisis, the focus of ECB communication had to be on reassuring people and businesses about its commitment to bring inflation back to target and convince them that it would be able to do so with the key policy tools at its disposal.

The ECB's guiding principle for communications was "Explain, Explain, Explain" to help people understand its decisions

The ECB therefore stepped up its monetary policy communication. As monetary policy tightening started to produce its intended effect of dampening demand, it was important to explain the ECB's decisions, and re-emphasise that its primary mandate is to fight inflation. Alongside multiple public speaking engagements by ECB decision-makers, several posts on The ECB Blog explained how inflation affected real incomes and the importance of governments' structural policies for tackling inflation, and provided analytical insights on record high labour participation levels. ECB podcasts described the drivers of inflation and, through a dedicated podcast summer school, elaborated on the ECB's role in keeping prices stable.

Humility in communication to rebuild public trust

At the same time, legitimate questions about why the ECB had failed to foresee the inflation surge and why its macroeconomic projections had been off the mark required answers. The clarity and accuracy of the Eurosystem projections are especially important to anchor expectations and bolster the credibility of ECB policy. Similarly, it was essential to explain the various sources of uncertainty and communicate with a sense of humility as a means of fostering trust.

ECB communications strived to put balance sheet losses of the ECB and Eurosystem central banks into context

In 2023, as a consequence of past monetary policy decisions, notably large-scale asset purchases, the ECB and other central banks across the Eurosystem were confronted with losses on their balance sheets. The ECB made a special effort to explain where central bank profits and losses come from, for instance, via a dedicated explainer. This also allowed the ECB to place those losses in the context of many years of significant profits and to emphasise that its job is to take monetary policy decisions that further its price stability objective, and not to make profits.

Further extraordinary communications efforts in 2023 centred on the future of our currency, both in the form of cash and in a digital form.

The ECB started work on designing the next series of euro banknotes with the help of the European public

The ECB decided that the design of the third series of euro banknotes should include a participatory process involving the wider public. To that end, Europeans across the euro area were invited to participate in an online survey on the themes of the next banknote series and were given a chance to select their preferred design theme from among seven options. More than 365,000 people from across the euro area took part, and their preferences were taken on board in the Governing Council's decision to select "European culture" and "Rivers and birds" as themes for future banknotes. The communication and outreach around the next series of banknotes reinforced the message that the ECB and the Eurosystem remain committed to cash.

The ECB stressed that cash is here to stay – potentially complemented by a digital euro

Conveying its commitment to cash in 2023 was especially important, because the ECB is preparing for a possible introduction of a digital euro.

In October 2023 the Governing Council decided to close the investigation phase of the digital euro project and move forward to the preparation phase. That step was accompanied by a multi-pronged and multilingual communications campaign, involving a variety of communication channels and products across all euro area countries, including an official LinkedIn page on the digital euro project and a dedicated web page on the digital euro project. The campaign focused on the benefits and importance of introducing a digital euro, privacy concerns, and the legal tender role of both cash and the new digital currency. Beyond communicating to industry stakeholders, policymakers and civil society organisations, in an innovative approach, the ECB also reached out to relevant online content creators. The aim was to encourage digital entrepreneurs active in the field of money and finance to set out the rationale for a digital euro and explain its features to their online followers and subscribers.

Overall, these combined efforts and the ensuing broad media coverage succeeded in publicising the digital euro project and building further understanding. Analysis shows that while, at first, interest in a digital euro was greatest among younger generations of Europeans, awareness and understanding have now spread across all age groups.

The message "The Value of Unity" was used to celebrate 25 years of the euro and the ECB

2023 was also the year in which the ECB celebrated its 25th anniversary. On that occasion, the ECB organised an event attended by the top representatives of European Union institutions, the ECB's host country, Germany, and other euro area countries, as well as by former ECB presidents, Jean-Claude Trichet and Mario Draghi. In addition, at the end of 2023 and start of 2024 the ECB, together with other EU institutions, jointly commemorated 25 years of the euro. These historical milestones allowed the ECB to highlight the success of the single currency, its benefits for the people of Europe as a beacon of stability around the world and a symbol of European unity.

Connecting with younger people through the "Stability is our thing" social media campaign

With a view to connecting with younger people in particular, in 2023 the ECB ran the "Stability is our thing" campaign on social media. This aimed to explain in an interactive and personal way core aspects about the ECB and its work: the price stability target, the role of banking supervision and how the ECB's decisions affect everyday life. The campaign posts were seen 166 million times and reached 43 million young people.

There were more public access requests compared with 2022, including a marked increase for access to documents on institutional and governance topics

Public access to ECB documents is an integral component of the ECB's transparency policy. It promotes the ECB's openness and enhances its democratic legitimacy.

In 2023 the ECB received more requests (73 requests) for access to documents compared with 2022 (63 requests). Whereas requests continued to cover a wide range of topics, including supervisory issues or high-profile initiatives like the digital euro project, there was a marked increase in requests for access to documents on institutional and governance topics, reflecting greater public interest in such matters.

In line with the ECB's commitment to transparency, documents released in response to requests for public access were generally made available via the ECB's Public

Register of Documents. Moreover, with a view to enhancing transparency, the ECB prepared an overview of the topics covered in requests for access to documents received by the ECB since 2004.

No findings of maladministration were raised by the European Ombudsman regarding the ECB's handling of public access requests.

The ECB's initiatives to support transparency, openness and closeness to citizens were acknowledged through its nomination to the shortlist for the European Ombudsman's Award for Good Administration 2023 for "helping EU citizens understand monetary policy in times of high inflation".

11.4 Empowering our people to excel for Europe

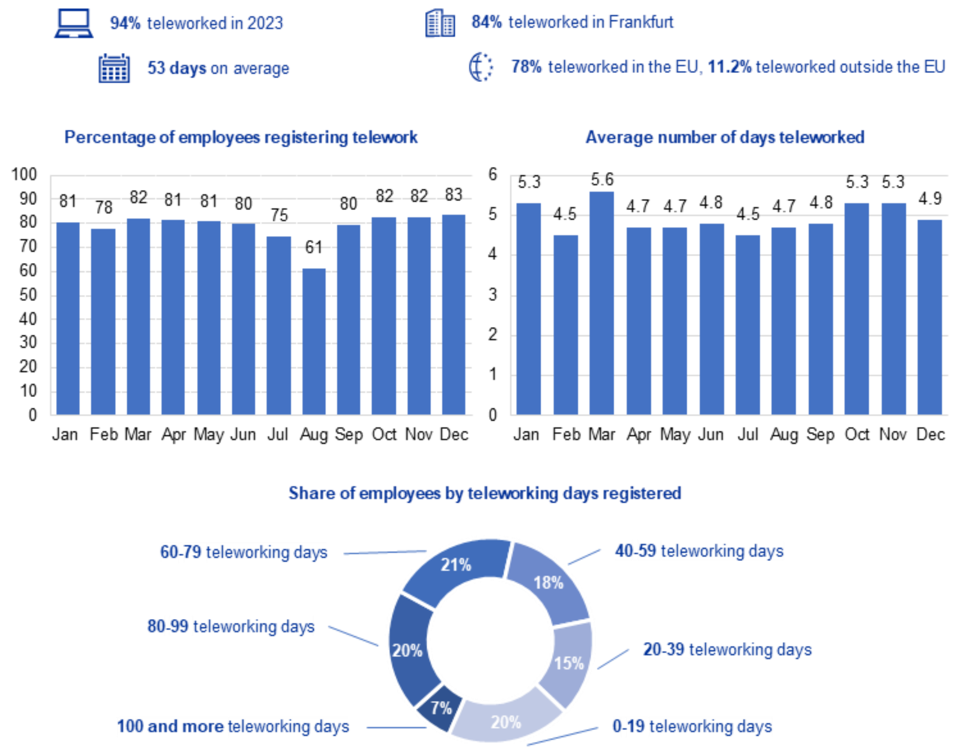
In the context of the gradual return to the office from 2022 onwards, the ECB focused on policies and programmes to support work-life balance, staff development and organisational resilience. A new teleworking policy was put in place in January 2023 that supports flexibility for staff and trainees. In 2023 the new virtual learning platform, EUREKA, was made available to institutions across the European System of Central Banks and Single Supervisory Mechanism, providing even more access to learning and mobility opportunities. In line with its objective of establishing a culture of lived inclusion, the ECB appointed a mediator and an HR diversity and inclusion adviser.

Working culture

The ECB launched its new teleworking policy

Following a transition phase in 2022, a new teleworking policy took effect on 1 January 2023. Based on the overall positive experiences during the period of remote working, the new policy provides flexible teleworking options to staff. It allows all ECB staff and trainees to telework up to 110 days per year, subject to compatibility with business needs.

Figure 11.1
Teleworking by ECB staff in 2023



Source: ECB.
Note: Data as at January 2024.

Training was offered to cultivate an enduring culture of mutual respect

The ECB places value on listening to staff and conducted a pulse survey at the beginning of 2023. Survey results showed that staff remained engaged, committed and connected to the work of the ECB. However, there is still work to be done to strengthen working culture. As a follow-up to the survey, the Executive Board championed an initiative to promote an organisational culture in which employees learn to respond effectively to inappropriate behaviour. Interactive workshops were introduced to help strengthen a "speak up" culture and how we all work together.

Talent development

ECB staff took advantage of opportunities for mobility

2023 was an important year for staff mobility in the ESCB and SSM. The ECB's new learning platform, EUREKA, offered for the first time a centralised view of learning and mobility opportunities across other institutions in the ESCB and SSM. EUREKA promotes knowledge-sharing and collaboration, and is available to ECB staff as well as all ESCB and SSM staff. Under the fifth edition of the Schuman Programme launched in 2023, 41 projects were offered as secondment opportunities, allowing staff exchanges between the ECB, national competent authorities (NCAs) and national central banks (NCBs). The ECB also continued to exchange staff members with several NCAs and European institutions, as part of a dedicated SSM swap programme. By the end of 2023 nine swaps were in place with two NCAs (Banco de España, the French Prudential Supervision and Resolution Authority) and one agency (European Insurance and Occupational Pensions Authority).

The ECB continued to foster leadership and professional growth

The ECB continued its Leadership Growth Programme to develop leadership competencies and increase leadership effectiveness. Furthermore, it organised the last seven cohorts of the Women's Leadership Programme, a successful programme launched in 2014 aimed at achieving a higher representation of women at the ECB. Another important development opportunity was offered in the form of the Mentoring Portal, which allows staff and trainees to offer mentoring and look for mentors. By the end of 2023 it had recorded nearly 100 mentor-mentee relationships.

Key initiatives were launched as part of the ESCB and SSM learning and development strategy

Further key initiatives were launched as part of the ESCB & SSM Learning & Development Strategy. NCAs and NCBs were onboarded to EUREKA, which provides access to a wide range of ESCB and SSM-wide learning and development opportunities. The flagship Central Banking & Banking Supervision Executive Education Programme was launched in October 2023. Two successful "hackathons" took place in the course of the year with participants from across the ESCB and SSM. The first hackathon took place in February on the topic of decentralised finance and a second one on climate change was held at the ECB's premises in November.

The ECB increased the traineeship grant

By offering a traineeship programme, the ECB promotes European integration of young graduate students and gives them an opportunity to acquire practical experience and put into practice the knowledge they have acquired during their studies. At the same time, the ECB benefits from trainees' knowledge of the current state of academic research as well as their enthusiasm and fresh ideas. As of 1 December 2023 the traineeship grant increased to €1,170 per month, and to €2,120 for PhD students having completed at least two years of their PhD studies for traineeship vacancies at that level. Trainees also receive accommodation benefits.

Diversity and inclusion

The ECB continued to foster diversity and inclusion

Mirroring European society and establishing a culture of lived inclusion is a long-term endeavour. To achieve this, the ECB strengthened its institutional basis by supporting its six grass roots diversity and inclusion (D&I) networks and rolling out its inclusion learning programme for staff, teams and leaders. To enable a culture based on inclusion, mutual respect and psychological safety, two new roles were created: as of 2023 the new Mediator prevents and addresses workplace frictions through assisted dialogue, and the new HR D&I Adviser applies a D&I lens to all people and culture topics.

Gender diversity and intersectionality were high on the agenda

Throughout 2023 the ECB kept gender diversity high on its agenda while embracing all facets of diversity and fostering an inclusive culture. This is reflected in EDGE Move & EDGEplus certification, the ECB's progress on the 2020-2026 gender targets, the introduction of paid parental leave for the co-parent not giving birth, piloting of a traineeship for talent on the autism spectrum, awareness sessions and events on race and ethnicity, allyship, disability and LGBT+ inclusion.

The ECB continued targeted outreach and talent acquisition

Tapping into the best talent of Europe, the ECB joined several career fairs for underrepresented groups, for example Europe's largest career fair for black and people of colour organised by ADAN (*Afro Deutsches Akademiker Netzwerk)*, the

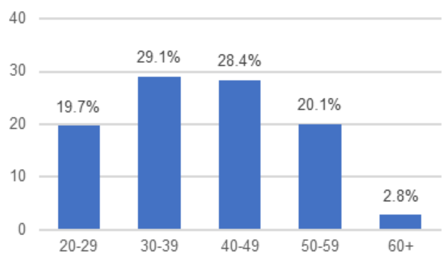
Sticks & Stones careers fair for LGBTIQ+ talent and allies and the herCAREER fair for women’s career advancement. To attract applicants with disabilities, the ECB promoted its vacancies on the myAbility platform. Strengthening its female pipeline and being inclusive of different socioeconomic backgrounds, the ECB continued to offer its ECB Scholarship for Women. In addition, and in a continued show of solidarity and support, the ECB launched a scholarship for 15 Ukrainian students enrolled in a Master’s degree in Ukraine.

Figure 11.2

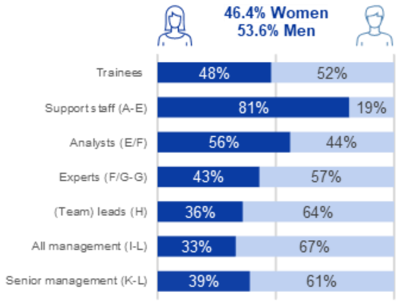
The ECB workforce in figures

5,156 employees and trainees, of which 7.8% work part-time[1]

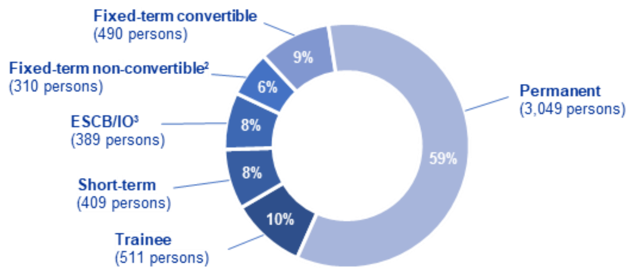
Our employees and trainees by age group[1]
(percentages of entire workforce, age ranges)



Our employees[4] and trainees by gender[1]
(percentages of workforce by salary band)



Our employees and trainees by contract type[1]



Our employees and trainees by other factors

6 diversity networks

54 training courses

7.1% overall mobility rate[4,5]

with 3,185 participations

8.8% overall promotion rate[4,6]

1.4% turnover rate[7]

Our employees and trainees by nationality[8]

	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	HR	IT	CY	LV
Employees and trainees (%)	2.4	2.1	0.8	0.7	24.5	0.6	3.3	5.3	8.9	7.7	1.5	18.8	0.6	0.7
All management (I-L, %)	2.9	1.3	0.4	0.7	32.0	0.7	3.7	3.9	12.5	11.4	0.4	15.0	0.5	0.5

	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK
Employees and trainees (%)	0.9	0.1	1.6	0.2	3.2	2.3	2.9	4.3	4.0	1.3	0.8	1.5	0.9	3.4
All management (I-L, %)	0.5	0.2	1.1	-	5.9	2.0	1.6	3.6	0.2	0.9	-	0.5	0.2	3.6

1 Data as at 31 December 2023.
2 Including 56 participants in the Graduate Programme.
3 Employees seconded from a national central bank of the European System of Central Banks, European public institutions/agencies or international organisations.
4 Refers only to permanent staff members and staff with fixed-term positions.
5 Refers to any permanent or temporary horizontal move across divisions or business areas.
6 Refers to any permanent or temporary move to a higher salary band, with or without a recruitment.
7 Refers only to permanent staff members and staff with fixed-term convertible positions.
8 The table shows shares of ECB employees and trainees by nationality, i.e. staff members holding multiple nationalities are counted for each nationality they declare. Totals may exceed 100% due to rounding and double nationalities. The countries are listed using the alphabetical order of the country names in the respective national language.

11.5 Advancing work on environmental and climate-related challenges

Understanding the implications of climate change and the transition needs for the economy and financial sector is essential for the ECB to deliver on its mandate

Climate change is advancing, and the longer we wait to reduce our emissions and to transition to a greener economy, the higher the costs.[91,92] Despite the progress made, the world is still not on track to limit the global temperature increase to 1.5°C above pre-industrial levels.[93] This means that the risks related to a changing climate and from an abrupt transition are growing, with impacts on monetary policy and the stability of the financial and banking systems. It is therefore essential for the ECB to understand the implications for the economy and financial sector to deliver on its mandate.

That is why the ECB, under the coordination of the climate change centre, continued to work on its climate agenda in cooperation with internal stakeholders and with the Eurosystem via relevant committees and dedicated fora on climate. In 2023 the ECB continued to integrate the objectives and environmental considerations of the European Climate Law into its strategy-setting, projects and policymaking processes.

The ECB published its climate and nature plan for 2024-2025

In the past year the ECB worked on its climate and nature plan for 2024-2025, which outlines the activities it will work on in order to achieve its strategic climate objectives. It also identified three focus areas for action: navigating the transition to a green economy, understanding the increased physical impact of climate change and advancing work on nature-related risks.

Highlights of climate-related work

Concrete advances were made on multiple fronts, covering a wide range of the ECB's tasks (Figure 11.3).

The Eurosystem's climate-related tilting for corporate asset repurchases yielded good results

In monetary policy implementation, the ECB published the first climate-related financial disclosures of the Eurosystem's corporate sector holdings in March 2023. The carbon intensity of reinvestments decreased by more than 65% in the 12 months that followed the start of tilted reinvestments in October 2022. The Governing Council strengthened the tilting parameter in February, when it decided to reduce the Eurosystem's holdings of securities. Since the discontinuation of reinvestments under the asset purchase programme in July, tilting continues for the corporate assets in the pandemic emergency purchase programme. The first review of the climate score methodology in October 2023 concluded that the framework had achieved its intended objectives and that its main building blocks would be maintained. The decarbonisation of corporate sector portfolios is expected to

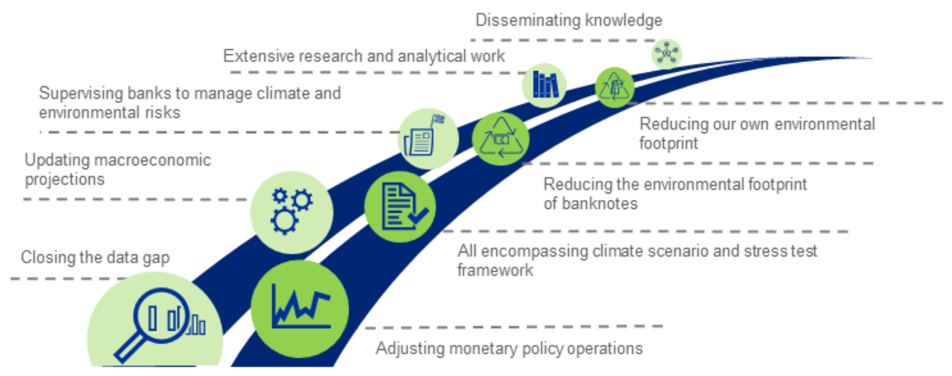
91 See "Faster green transition would benefit firms, households and banks, ECB economy-wide climate stress test finds", press release, ECB, 6 September 2023.

92 For more detailed information, see Intergovernmental Panel on Climate Change, "Climate Change 2023: Synthesis Report", 2023 and World Meteorological Organization, "The Global Climate 2011-2020: A Decade of Acceleration", 5 December 2023.

93 See the United Nations Environment Programme, "Emissions Gap Report 2023" for more details on the estimate that global warming under current unconditional Nationally Determined Contributions will reach 2.9°C above pre-industrial levels this century.

continue throughout 2024 on a path that supports the goals of the Paris Agreement. In addition, the Eurosystem continued preparatory work to incorporate climate considerations into its collateral framework and enhance its risk assessment and management.

Figure 11.3
Overview of key climate actions



Source: ECB.

The ECB explored the economic and financial impact of climate change and the implications for its tasks

Extensive analytical work supported the task of informing policymakers, the financial sector and the public about the economic and financial impact of climate change and its implications for the ECB's tasks.[94] In 2023 the ECB continued to assess the macroeconomic implications of climate change and mitigation policies and, in particular, the impact of green fiscal measures on the Eurosystem/ECB staff projections. A model-based analysis on the economic impact of carbon pricing found modest adverse effects for the economy. Findings from the Survey on the Access to Finance of Enterprises and the Bank Lending Survey indicate that euro area firms are investing in the transition, and that bank lending conditions are tighter for firms with high emissions and no credible plans to transition. On the implications for monetary policy, recent analysis explored the effects of climate change on the monetary policy transmission mechanism and found that, while the transition increases the cost of credit and reduces lending to all firms, its contractionary effect is milder for firms with low emissions and those that commit to decarbonisation. Several research papers investigated the links between a changing climate and inflation, finding that hotter temperatures can increase food inflation, but that demand-side effects from hotter summers can dampen inflation in the longer run, and that the effects are asymmetric across euro area economies (see Box 1). The ECB also advanced its understanding of how climate change affects potential output.

In an effort to improve the availability of climate data, the European System of Central Banks published climate change-related indicators on sustainable finance, greenhouse gas emissions and physical risk (see Section 7.2).

94 See the list of ECB publications on climate change. In addition, some ECB research papers were published in major academic journals.

The ECB is working on better understanding climate-related risks to the economy and financial systems, and developing an adequate macroprudential response

The ECB further developed its stress testing methodology to explore the resilience of the wider economy to different transition scenarios and the preparedness of supervised banks to deal with financial and economic shocks stemming from climate risk. In 2023 the ECB led the Network for Greening the Financial System (NGFS) workstream on scenario design and analysis, which published the fourth vintage of its long-term macro-financial climate scenarios. The scenarios provide an initial, common reference for analysing climate risks to the economy and financial system. The framework acknowledges the uncertainty and limitations of climate and economic modelling, for example with regards to tipping points. In collaboration with the European Insurance and Occupational Pensions Authority, the ECB developed policy options to reduce the climate insurance protection gap, given that only one-quarter of climate-related catastrophe losses in the EU are currently insured. The ECB also analysed climate change risks to sovereigns that can have a negative effect on financial stability and fiscal expenditures. The ECB and the European Systemic Risk Board published a report that gathers evidence on the most important financial stability indicators and develops a macroprudential framework for addressing climate risk. The report also suggests that heavy economic dependence on natural ecosystems could exacerbate climate-related financial stability risks.

With regard to ECB banking supervision, although the credit institutions supervised under the Single Supervisory Mechanism made meaningful progress in their climate and environmental-related risk management practices, a number of institutions did not achieve the progress expected for March 2023. The ECB will continue to closely monitor banks' progress and, if needed, take enforcement actions.[95]

The ECB is working on improving the safety and sustainability of euro banknotes

Over the years the ECB has continuously improved the safety and sustainability of euro banknotes throughout the cash cycle.[96] In 2023 it published the environmental footprint study of euro banknotes as a payment instrument. The future euro banknotes are being developed in line with eco-design principles, meaning that environmental aspects are considered at all stages of the banknote development process (see Section 6.2).

The ECB is analysing and contributing to policy discussions to scale up sustainable finance at EU and international level

Since 2021 ECB staff members have contributed to training courses and multilateral technical workshops with central banking peers and stakeholders outside the European Union. It also participated in numerous working groups and events with central banks and other institutions and fora to advance the climate agenda and profit from regular exchanges. These include the NGFS, the Financial Stability Board, the Basel Committee on Banking Supervision, the European Supervisory Authorities and the European Systemic Risk Board, the Bank for International Settlements, the G7, G20 and the International Monetary Fund.

Innovative research by the ECB investigated nature-related risks, the climate-nature nexus and their impact on the economy

Innovative research on nature-related risks showed that degradation of ecosystems will pose challenges for companies and potentially propagate to banks, as almost 75% of corporate loans in the euro area (nearly €3.24 trillion) are issued to borrowers with a high level of dependency on ecosystem services. Additionally, the

95 More detailed information can be found on the ECB's banking supervision website and in the 2023 ECB Annual Report on supervisory activities.

96 For more information see the ECB web page on "The Eurosystem cash strategy" and the ECB's environmental statements.

ECB explored for the first time transition risks and the climate-nature nexus. Taking into account climate change and land-use change as primary drivers of biodiversity loss, the impact of euro area companies on nature is equivalent to the loss of 582 million hectares of "pristine" habitats worldwide. The research highlights the importance of integrating climate change and nature loss in risk assessment frameworks, as they are inextricably linked.

Work is undergoing to improve the environmental performance of the ECB's own operations and non-monetary policy portfolios

In March 2023 the ECB started publishing its annual climate-related financial disclosures of its non-monetary policy portfolios in addition to its annual environmental statement, which together give an overview of the ECB's own operational environmental impacts and the carbon footprint of its financed emissions as well as the related targets.[97] Updated data on the ECB's environmental performance in 2023 will be made available in the course of 2024.

Box 9
ECB keeping up with innovation

In 2023 the ECB continued to make progress on developing and implementing innovative solutions that enhance the efficiency of its processes. Digital solutions, including artificial intelligence (AI), machine learning, robots and chatbots have been deployed throughout the organisation.

On the central banking side, AI was deployed at the ECB to deepen understanding of price-setting behaviour and inflation dynamics in the European Union (EU). Web scraping and machine learning was applied to assemble a huge amount of real-time data on individual product prices.[98] On the banking supervision side, the SupTech programme initiated in 2019 has provided 14 tools that help supervisors collect and analyse large volumes of quantitative and qualitative data, automatise processes, better collaborate, and use AI to speed up and sharpen supervisory analysis.[99]

Deploying digital projects at the ECB relies on an innovation-friendly ecosystem. Beyond technological solutions, innovation requires a growth mindset, curiosity and close cooperation among all ECB stakeholders. For this purpose, interdisciplinary innovation teams involving IT, knowledge management, central banking and banking supervision have developed innovative approaches to working that facilitate project management, innovation scouting, incubation and knowledge-sharing. Part of this ecosystem, the ECB's digital document system and information governance policy form a solid foundation for the development of AI by providing a vast resource of structured digitalised documentation. In addition, cooperation with global innovation leaders in public authorities, academia, start-ups and major industry players helps stimulate innovation within the ECB, the Eurosystem and beyond. In particular, the ECB coordinates the actions of the Eurosystem through the Eurosystem's Innov8 Forum with the BIS Innovation Hub Eurosystem Centre. The latter is a joint venture of the Bank for International Settlements and all Eurosystem central banks. Offices in Frankfurt and Paris were opened in March 2023, hosted and supported by

97 Since 2010 the ECB has run a certified environmental management system to manage the environmental footprint of its own operations, which has recently led to significant gains in energy conservation.

98 For more information, see the webpage of the Price-setting Microdata Analysis Network (PRISMA) and Moufakkir, M., "Careful embrace: AI and the ECB", *The ECB Blog*, 28 September 2023.

99 See "Technology, data and innovation – shaping the future of supervision", keynote speech by Elizabeth McCaul, Member of the Supervisory Board of the ECB, at the Supervision Innovators Conference 2023, Frankfurt am Main, 20 September 2023 and "How tech is shaping banking supervision", *The ECB Podcast*, 28 September 2023.

the Deutsche Bundesbank and Banque de France respectively. All members of the Eurosystem Innov8 Forum contribute and share knowledge in the innovation space.

Finally, innovation is strongly promoted by the Executive Board. In February 2023 Executive Board members participated for the first time in an Innovation Forum with a physical “market place-style” format and live and interactive demonstrations of a sample of major ECB innovation projects.

12 Meet our people

On 1 June 1998 the European Central Bank started operating as the central bank for the euro area with a clear mandate to maintain price stability. The ECB's 25th anniversary in 2023 was an opportunity to celebrate the many achievements of the institution over this period. ECB colleagues who started off at the European Monetary Institute, the precursor to the ECB, and have continued to work for the institution right through to the present day share their personal experiences below. In particular, they describe what it was like to work at a new institution with a start-up feel and how they contributed to many important milestones as the ECB immediately established its place among its peers and evolved over time.

Rita Choudhury, Senior Team Lead Economist-Statistician, Directorate General Statistics

My career pathway at the ECB has been remarkably formative. It began with a leap of faith, with a new job in a new country. I joined the ECB at its cusp, as a young Research Analyst in the still-developing Statistics Function. With just a few hundred employees, the ECB needed "all hands on deck", so we juggled multiple roles. A typical day was diverse: I discussed requirements with policy areas, designed statistical frameworks, programmed code and drafted the occasional speech. With institutional policies still in their infancy, I was also thrilled to see my creative solutions often rapidly deployed.

As the ECB matured, avenues for professional growth opened up. I worked in several different areas within Statistics and was able to deepen my levels of expertise and seniority. Particularly memorable responsibilities included being lead for country visits to our counterpart national central banks and national competent authorities to foster relationships and advise on their reporting preparations as new members of the euro area.

I am now in the newly established Data Office, which aims to optimise institutional data management (including in areas like artificial intelligence) and reports to the Chief Data Officer. I also contribute to the Diversity and Inclusion Forum. These are transversal roles and it is satisfying to work with varied groups and to help shape and influence broader ECB policies.

There have been setbacks, for instance Brexit comes to mind, given the uncertainties it raised about working here but, ultimately, thanks to a dynamic environment, motivated colleagues and continued prospects for development, it is the triumphs that I recall the most.

Dimitrios Koukidis, Principal Vendor Management Specialist, Directorate General Communications

I have strong memories of the build up to the ceremony to mark the inauguration of the ECB in June 1998. I was one of a small team of organisers for this major event. There was great enthusiasm and a sense of camaraderie among the team. This was in the face of all the organisational challenges that go with setting up a new institution that would quickly have to find its feet. For several years afterwards, I enjoyed helping to organise both public and staff events at the ECB as the range and scale of events continued to expand and evolve.

Fast forward to today: I now work in the Language Services Division, after taking up an internal mobility opportunity in 2016. I look after budgeting, procurement and vendor management tasks related to translation and editing, ensuring adequate cover across the 24 official languages of the European Union. These support functions play a crucial role in assisting the ECB to communicate clearly and effectively to expert and non-expert audiences. As is the case across the ECB, we continue to embed the latest technologies. For example, together with my colleagues, I am applying artificial intelligence techniques to help enhance the efficiency of our processes.

Reflecting on this long and exciting journey, I am proud to have done my part in establishing the ECB as a world-class institution that keeps prices stable and the financial system safe for around 350 million people in the euro area. I am also grateful for having been empowered to grow professionally and personally throughout my career at the ECB.

Francesco Mazzaferro, Director, European Systemic Risk Board Secretariat

I can still picture myself as a junior officer, working in the “Changeover Committee”, which – under the auspices of Tommaso Padoa-Schioppa – oversaw the transition of markets from ten national currencies to the euro at midnight on 31 December 1998. On that day, the culmination of everything I had contributed since starting at the European Monetary Institute in mid-1995, I naively thought the work was done. I feared that I risked getting trapped in routine after years of passion. But the following decade I spent in the newly established Directorate General for European and International Relations was to prove me wrong. Thanks to the wider interest in our monetary integration, I was given the opportunity to set up innovative joint technical assistance programmes by the Eurosystem for the benefit of central banks and supervisors in the European Union neighbourhood.

Ten years later, when the ECB became host to the independent European Systemic Risk Board (ESRB) in the wake of the financial crisis, I had the chance to try something new. In early 2010 I was asked to be the project manager to establish the ESRB. A year later I was appointed Head of the ESRB Secretariat. Since then I have genuinely enjoyed every single day working to preserve the resilience of the financial sector in a broad institutional setting alongside the central banks and supervisors at European and national level as well as an exceptional group of colleagues from the ECB and the ESRB member institutions.

Emily Witt, Head of Division, Directorate General Market Operations

When I joined the European Monetary Institute in 1995, I was among the first hundred colleagues tasked with the preparatory work for the introduction of the euro as the single currency for Europe. In 1998 I quickly learned how the ECB works together with the national central banks. I was thrilled to help coordinate the overall testing and to see that the newly established systems worked well, whether conducting monetary policy operations, executing payments or collecting statistics across Europe.

Encouraged by the ECB's objective to foster internal mobility, I worked in six different business areas (Payments, IT, HR, Secretariat, Statistics and Markets). This allowed me to increase my knowledge of core aspects of central banking and hone my skills in project management, people management and leadership. I felt stimulated by the exposure to diverse perspectives and thinking styles and was also able to build lasting networks and friendships across Europe.

I am inspired by the ECB's mission and proud to have contributed to the success of change management initiatives for the benefit of Europe. One such example is the roll-out of our document and records management system, which is key to sharing and distributing information efficiently among colleagues in the national central banks and safeguarding the ECB's institutional memory.

I am now very happy to be responsible for the Financial Operations Services Division. I like being close to the markets and enjoy the mixture of daily operations and interesting projects that involves cooperating with many different ECB business areas, central banks and external partners. Just recently, we established fiscal and paying agency services for the European Commission.

In my free time, I love reading, cooking and hiking. I am an active member of the ECB's hiking club, which is a great opportunity to meet colleagues outside of work and to get out into nature in different parts of Europe.

Annual accounts

Contents

Key figures

€674.5 billion
ECB's balance sheet

The ECB's balance sheet decreased by €24.4 billion in 2023, mainly due to the maturing of monetary policy securities.

€425.3 billion
Monetary policy securities

Securities held for monetary policy purposes decreased by €31.9 billion, as redemptions under the APP were only partially reinvested between March and June 2023 and such reinvestments were completely discontinued as of July 2023.

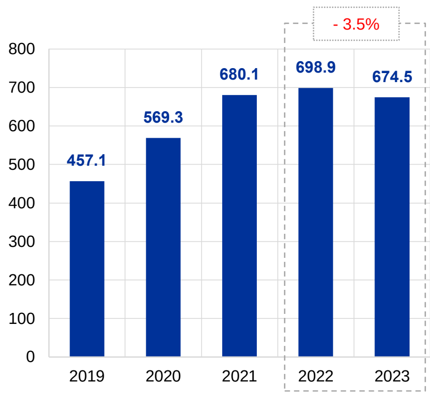
€6,620 million
Full release of the provision for financial risks

The provision for financial risks was released in full to partially offset losses incurred in 2023. The ECB's loss before the release of the provision for financial risks stood at €7,886 million and mainly arose from the interest expense resulting from the net TARGET liability. After this release, the loss for the year amounted to €1,266 million.

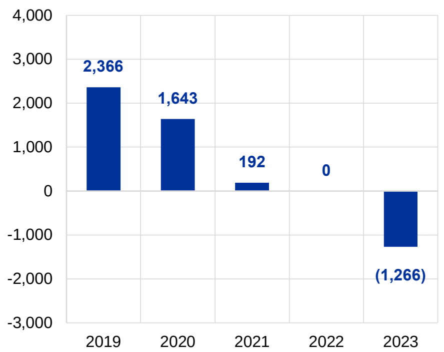
€1,266 million
ECB's loss for the year after the release of the provision for financial risks

This loss will be carried forward on the ECB's balance sheet to be offset against future profits. The ECB's loss, which follows almost two decades of substantial profits, reflects the role and necessary policy actions of the Eurosystem in fulfilling its primary mandate of maintaining price stability and has no impact on its ability to conduct effective monetary policy.

ECB's balance sheet
(EUR billions)



ECB's profit/(loss) for the year
(EUR millions)



1 Management report

1.1 Purpose of the ECB's management report

The management report[1] is an integral part of the ECB's Annual Accounts and is designed to provide readers with contextual information related to the financial statements.[2] Given that the ECB's activities and operations are undertaken in support of its policy objectives, the ECB's financial position and result should be viewed in conjunction with its policy actions.

To this end, the management report presents the ECB's main tasks and activities, as well as their impact on its financial statements. Furthermore, it analyses the main developments in the balance sheet and the profit and loss account during the year and includes information on the ECB's net equity. Finally, it describes the risk environment in which the ECB operates, providing information on the specific risks to which the ECB is exposed, and the risk management policies used to mitigate risks.

1.2 Main tasks and activities

The ECB is part of the Eurosystem, which comprises, besides the ECB, the national central banks (NCBs) of the Member States of the European Union (EU) whose currency is the euro.[3] The Eurosystem has the primary objective of maintaining price stability. The ECB performs its tasks as described in the Treaty on the Functioning of the European Union[4] and in the Statute of the European System of Central Banks and of the European Central Bank (Statute of the ESCB)[5] (Figure 1). The ECB conducts its activities in order to fulfil its mandate and not with the intention of generating profit.

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1 Throughout this document, the numbers presented may not add up precisely to the totals and percentages may not precisely reflect the absolute figures owing to rounding.

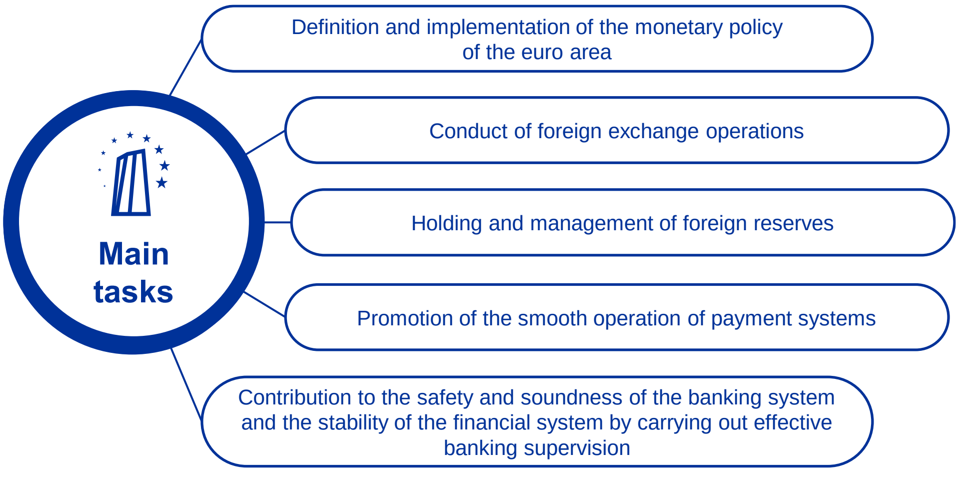
2 The "financial statements" comprise the balance sheet, the profit and loss account and the related notes. The "Annual Accounts" comprise the financial statements, the management report, the independent auditor's report and the note on profit distribution/allocation of losses. Further details on the related preparation and approval process can be found on the ECB's website.

3 The number of NCBs in the Eurosystem in 2023 was 20.

4 Consolidated version of the Treaty on the Functioning of the European Union (OJ C 202, 7.6.2016, p. 1), as amended. The unofficial consolidated text with the list of amendments can be found here.

5 Protocol (No 4) on the Statute of the European System of Central Banks and of the European Central Bank (OJ C 202, 7.6.2016, p. 230). The European System of Central Banks (ESCB) comprises the ECB and the NCBs of all 27 EU Member States.

Figure 1
The ECB's main tasks



The Eurosystem's monetary policy operations are recorded in the financial statements of the ECB and of the euro area NCBs, reflecting the principle of decentralised implementation of monetary policy in the Eurosystem. Table 1 below provides an overview of the main operations and functions of the ECB in pursuit of its mandate, and their impact on the ECB's financial statements.

Table 1

The ECB's key activities and their impact on its financial statements

Implementation of monetary policy

Lending and liabilities to euro area credit institutions related to monetary policy operations	Securities held for monetary policy purposes	Securities lending
The monetary policy operational framework of the Eurosystem consists of a set of monetary policy instruments. The Eurosystem conducts open market operations, offers standing facilities and requires credit institutions to hold minimum reserves.[1] These monetary policy instruments are used in a decentralised manner by the NCBs and are reflected in their financial statements under the balance sheet items "Lending to euro area credit institutions related to monetary policy operations denominated in euro" and "Liabilities to euro area credit institutions related to monetary policy operations denominated in euro". Accordingly, they have no impact on the ECB's financial statements.	Purchases of these securities are conducted by the ECB and the NCBs of the Eurosystem and are recorded under the balance sheet item "Securities held for monetary policy purposes". The securities currently held are accounted for at amortised cost subject to impairment. Coupon accruals and amortised premiums and discounts are included in the profit and loss account on a net basis under either "Other interest income" or "Other interest expense", depending on whether the net amount is positive or negative. Realised gains and losses, if any, are included in the profit and loss account under "Realised gains/losses arising from financial operations".	Securities held for monetary policy purposes are available for lending by the Eurosystem.[2] For the ECB, these operations are conducted via specialised institutions. These operations are recorded in the balance sheet items "Other liabilities to euro area credit institutions denominated in euro" and "Liabilities to non-euro area residents denominated in euro" if collateral is provided in the form of cash and this cash remains uninvested. Otherwise, the related securities lending operations are recorded in off-balance-sheet accounts. Interest accruals are included in the ECB's profit and loss account as "Other interest income" or "Other interest expense".

Liquidity provision in foreign currency	Liquidity provision to non-euro area central banks in euro
The ECB acts as an intermediary between non-euro area central banks and the Eurosystem NCBs by means of swap transactions aimed at offering short-term foreign currency funding to Eurosystem counterparties.[3] These operations are recorded in the balance sheet items "Liabilities to non-euro area residents denominated in euro" and "Other claims within the Eurosystem (net)" / "Other liabilities within the Eurosystem (net)", as well as in off-balance-sheet accounts. Interest accruals are included in the ECB's profit and loss account as "Other interest income" or "Other interest expense".	The Eurosystem may provide euro liquidity to non-euro area central banks by means of swap and repo transactions in exchange for eligible collateral.[4] For the ECB, the swap operations are recorded in the balance sheet items "Claims on non-euro area residents denominated in foreign currency" and "Liabilities to non-euro area residents denominated in euro" or "Other claims within the Eurosystem (net)" / "Other liabilities within the Eurosystem (net)", as well as in off-balance-sheet accounts. Interest accruals are included in the ECB's profit and loss account as "Other interest income" or "Other interest expense".

Conduct of foreign exchange operations and management of foreign reserves

Foreign exchange operations and management of foreign reserves
The ECB's foreign reserves are presented on the balance sheet, mainly under "Gold and gold receivables", "Claims on non-euro area residents denominated in foreign currency" and "Claims on euro area residents denominated in foreign currency", while any related liabilities would be presented under "Liabilities to euro area residents denominated in foreign currency" and "Liabilities to non-euro area residents denominated in foreign currency". Foreign exchange transactions are reflected in off-balance-sheet accounts until the settlement date. Net interest income, including coupon accruals and amortised premiums and discounts, is included in the profit and loss account under the item "Interest income on foreign reserve assets". Unrealised price and exchange rate losses exceeding previously recorded unrealised gains on the same items and realised gains and losses arising from the sale of foreign reserves are also included in the profit and loss account under the items "Write-downs on financial assets and positions" and "Realised gains/losses arising from financial operations" respectively. Unrealised gains are recorded on the balance sheet under the item "Revaluation accounts".

Promotion of the smooth operation of payment systems

Payment systems (TARGET)
Intra-Eurosystem balances of euro area NCBs vis-à-vis the ECB arising from TARGET[5] are presented together on the balance sheet of the ECB as a single net asset or liability position under "Other claims within the Eurosystem (net)" or "Other liabilities within the Eurosystem (net)". TARGET balances of non-euro area NCBs vis-à-vis the ECB are recorded on the balance sheet under "Liabilities to non-euro area residents denominated in euro". Balances of ancillary systems[6] connected to TARGET through the TARGET-ECB component are recorded on the balance sheet under "Liabilities to other euro area residents denominated in euro" or "Liabilities to non-euro area residents denominated in euro", depending on whether the managing entity is established in or outside the euro area. Interest accruals are included in the profit and loss account under "Other interest income" or "Other interest expense".

Contribution to the safety and soundness of the banking system and the stability of the financial system

Banking supervision – the Single Supervisory Mechanism
The annual expenses of the ECB in relation to its supervisory tasks are recovered via annual supervisory fees levied on the supervised entities. The supervisory fees are included in the profit and loss account under the heading “Net income/expense from fees and commissions”. Furthermore, the ECB is entitled to impose administrative penalties on supervised entities for failure to comply with applicable EU banking law on prudential requirements (including ECB supervisory decisions). The related income is recorded in the profit and loss account under the heading “Net income/expense from fees and commissions”.

Other

Banknotes in circulation	Own funds portfolio
The ECB has been allocated an 8% share of the total value of euro banknotes in circulation. This share is backed by claims on the NCBs, which bear interest at the rate used by the Eurosystem in its tenders for main refinancing operations and are recorded on the balance sheet under the item “Claims related to the allocation of euro banknotes within the Eurosystem”. The interest is included in the profit and loss account under the item “Interest income arising from the allocation of euro banknotes within the Eurosystem”. Expenses arising from the cross-border transportation of euro banknotes between banknote printing works and NCBs, for the delivery of new banknotes, and between NCBs, for the compensation of shortages with surplus stocks, are borne centrally by the ECB. These expenses are presented in the profit and loss account under the heading “Banknote production services”.	The own funds portfolio of the ECB is presented on the balance sheet, mainly under the item “Other financial assets”. Coupon accruals and amortised premiums and discounts are included in the profit and loss account under “Other interest income” and “Other interest expense”. Unrealised price losses exceeding previously recorded unrealised price gains on the same items and realised gains and losses arising from the sale of securities are also included in the profit and loss account under the items “Write-downs on financial assets and positions” and “Realised gains/losses arising from financial operations” respectively. Unrealised price gains are recorded on the balance sheet under the item “Revaluation accounts”.

1) Further details on the Eurosystem’s monetary policy instruments and, more specifically, on the open market operations can be found on the ECB’s website.
2) Further details on securities lending can be found on the ECB’s website.
3) Further details on the currency swap lines can be found on the ECB’s website.
4) Further details on the Eurosystem’s euro liquidity operations against eligible collateral can be found on the ECB’s website.
5) Further details on TARGET can be found on the ECB’s website.
6) Ancillary systems are financial market infrastructures that have been granted access to the TARGET-ECB component by the Governing Council, provided they fulfil the requirements defined in Decision (EU) 2022/911 of the ECB of 19 April 2022 concerning the terms and conditions of TARGET-ECB and repealing Decision ECB/2007/7 (ECB/2022/22) (OJ L 163, 17.6.2022, p. 1), as amended. The unofficial consolidated text with the list of amendments can be found here. Further details on ancillary systems can be found on the ECB’s website.

1.3 Financial developments

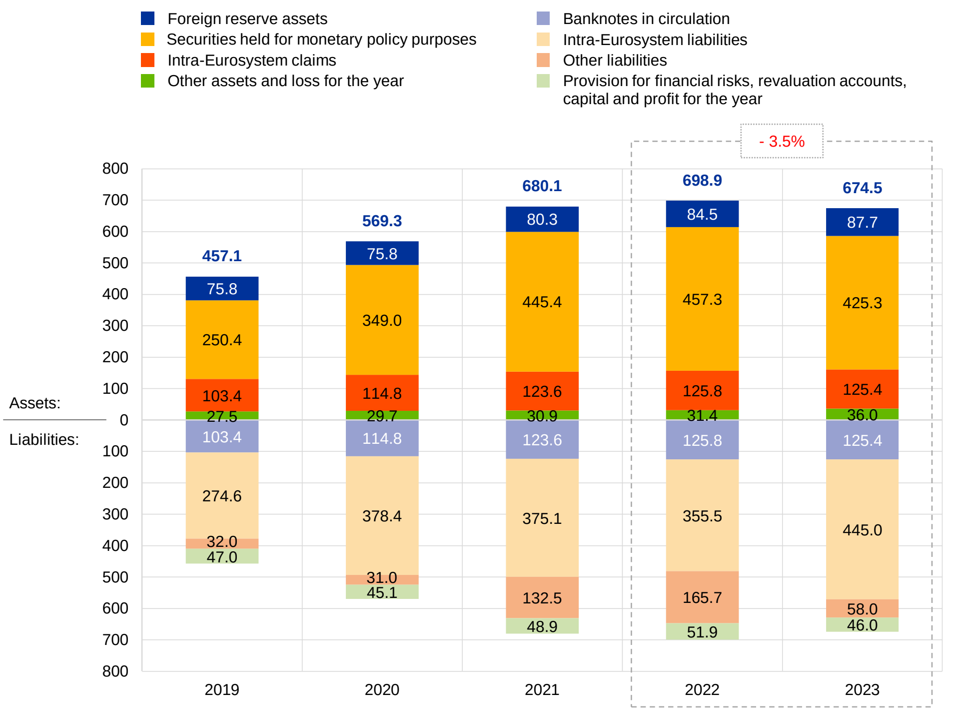
1.3.1 Balance sheet

The ECB's balance sheet expanded significantly in the period from 2019 to 2022, mainly owing to outright purchases of securities by the ECB in the context of the implementation of the monetary policy of the Eurosystem (Chart 1). In particular, the main drivers of the substantial expansion in 2020 and 2021 were net purchases of securities under the asset purchase programme (APP)[6] and the launch of the pandemic emergency purchase programme (PEPP)[7] in March 2020. Net purchases of securities under the PEPP and the APP were discontinued as of the end of March 2022 and 1 July 2022 respectively, leading to a more moderate increase in the ECB's balance sheet in 2022.

Chart 1

Main components of the ECB's balance sheet

(EUR billions)



Source: ECB.

6 The APP consists of the third covered bond purchase programme (CBPP3), the asset-backed securities purchase programme (ABSPP), the public sector purchase programme (PSPP) and the corporate sector purchase programme (CSPP). The ECB does not acquire securities under the CSPP. Further details on the APP can be found on the ECB's website.

7 Further details on the PEPP can be found on the ECB's website.

€24.4 billion
Decrease in the ECB's balance sheet

In 2023 the **ECB's balance sheet** decreased by €24.4 billion to €674.5 billion, mainly owing to the gradual decline of APP holdings as a result of the only partial reinvestment of principal payments from maturing securities in this portfolio between March and June 2023 and the complete discontinuation of such reinvestments as of July 2023.

63%
Share of securities held for monetary policy purposes in total assets

Euro-denominated securities held for monetary policy purposes made up 63% of the ECB's total assets at the end of 2023. Under this balance sheet item, the ECB holds securities acquired in the context of the Securities Markets Programme (SMP), the CBPP3, the ABSPP, the PSPP and the PEPP. The securities purchased under these programmes are valued on an amortised cost basis subject to impairment.

€31.9 billion
Decrease in securities held for monetary policy purposes

Based on the relevant Governing Council decisions, the Eurosystem continued reinvesting, in full, the principal payments from maturing securities under the PEPP throughout the year, and under the APP until the end of February 2023. From the beginning of March until the end of June 2023, the Eurosystem reinvested only partially the principal payments from maturing securities under the APP and as of July 2023 discontinued these reinvestments. As a result of these decisions, the portfolio of securities held by the ECB for monetary policy purposes decreased by €31.9 billion to €425.3 billion (Chart 2) with the PSPP, ABSPP and CBPP3 holdings under the APP decreasing by €18.0 billion, €9.5 billion and €1.6 billion respectively, driven by redemptions. The PEPP portfolio decreased by €2.6 billion, mainly owing to the net impact of the amortisation of premiums and discounts[8] on securities held in the portfolio.

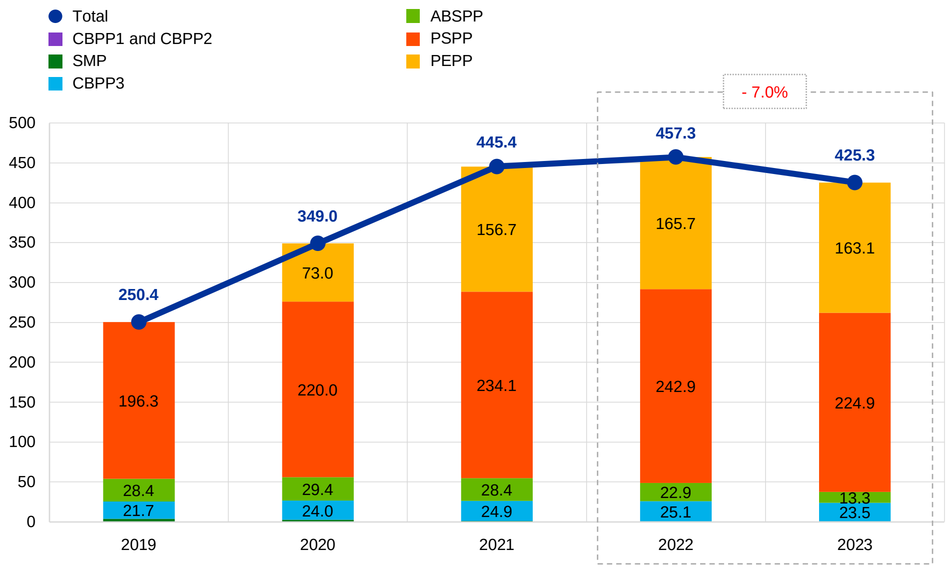
The Governing Council intends[9] to continue to reinvest, in full, the principal payments from maturing securities purchased under the PEPP during the first half of 2024. It then intends to reduce the PEPP portfolio at Eurosystem level by €7.5 billion per month on average over the second half of the year and to discontinue reinvestments at the end of 2024. The Governing Council will continue applying flexibility in reinvesting redemptions coming due in the PEPP portfolio, with a view to countering risks to the monetary policy transmission mechanism related to the pandemic.

8 Amortisation arises from the accounting principle that requires securities to be revalued upwards or downwards over time towards their maturity date depending on whether they have been purchased at prices below or above their face value.

9 For further details, see the press release of 14 December 2023 on the Governing Council's decisions.

Chart 2
Securities held for monetary policy purposes

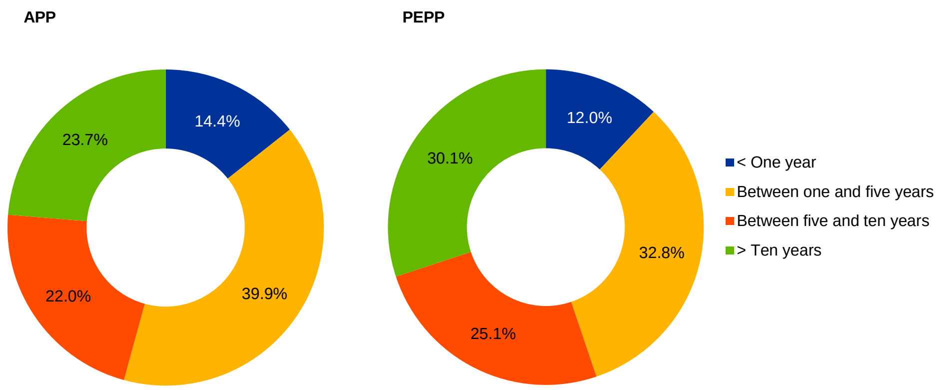
(EUR billions)



Source: ECB.

For the active programmes of securities held for monetary policy purposes, namely the APP and the PEPP, securities held by the ECB at the end of 2023 had a diversified maturity profile[10] (Chart 3).

Chart 3
Maturity profile of the APP and the PEPP



Source: ECB.
Note: For asset-backed securities, the maturity profile is based on the weighted average life of the securities rather than the legal maturity date.

In 2023 the total euro equivalent value of the **ECB's foreign reserve assets**, which consist of gold, special drawing rights, US dollars, Japanese yen and Chinese renminbi, increased by €3.3 billion to €87.7 billion.

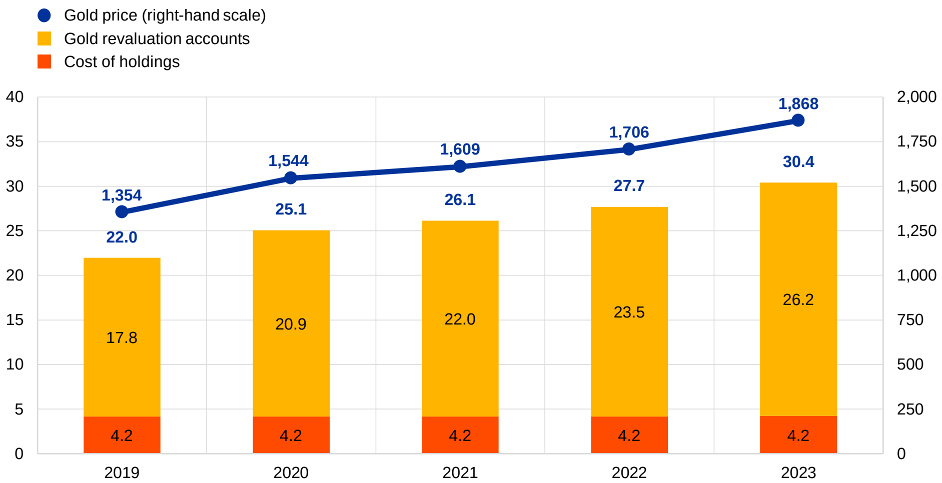
10 More information about maturity restrictions for both the APP and the PEPP can be found on the ECB's website.

The value of the ECB's holdings of gold and gold receivables increased owing, primarily, to the increase in the market price of gold in euro terms

The euro equivalent value of the ECB's holdings of gold and gold receivables increased by €2.7 billion to €30.4 billion in 2023 (Chart 4) owing, primarily, to an increase in the market price of gold in euro terms. This increase also led to an equivalent rise in the ECB's gold revaluation accounts (see Section 1.3.2 "Net equity"). In addition, upon the adoption of the single currency by Croatia with effect from 1 January 2023, Hrvatska narodna banka transferred to the ECB gold with a value of €96 million.

Chart 4
Gold holdings and gold prices

(left-hand scale: EUR billions; right-hand scale: euro per fine ounce of gold)



Source: ECB.
Note: "Gold revaluation accounts" does not include the contributions of the central banks of the Members States that joined the euro area after 1 January 1999 to the accumulated gold revaluation accounts of the ECB as at the day prior to their entry into the Eurosystem.

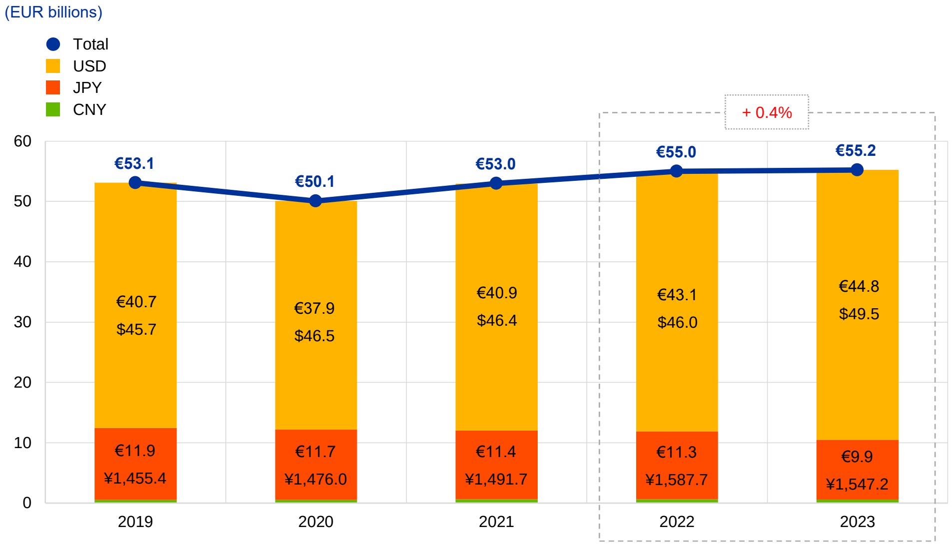
Increase in the ECB's foreign currency holdings, mainly owing to the income earned on the US dollar portfolio

The ECB's foreign currency holdings[11] of US dollars, Japanese yen and Chinese renminbi increased in euro terms by €0.2 billion to €55.2 billion (Chart 5), mainly owing to the income earned during the year, primarily on the US dollar portfolio. In addition, upon the adoption of the single currency by Croatia with effect from 1 January 2023, Hrvatska narodna banka transferred to the ECB foreign reserve assets denominated in US dollars with a value of €544 million. The increase in the total value of foreign currency holdings was partially offset, mainly by the depreciation of the US dollar and the Japanese yen against the euro.

[11] These holdings comprise assets included under the balance sheet items "Claims on non-euro area residents denominated in foreign currency – Balances with banks and security investments, external loans and other external assets" and "Claims on euro area residents denominated in foreign currency".

Chart 5

Foreign currency holdings



Source: ECB.

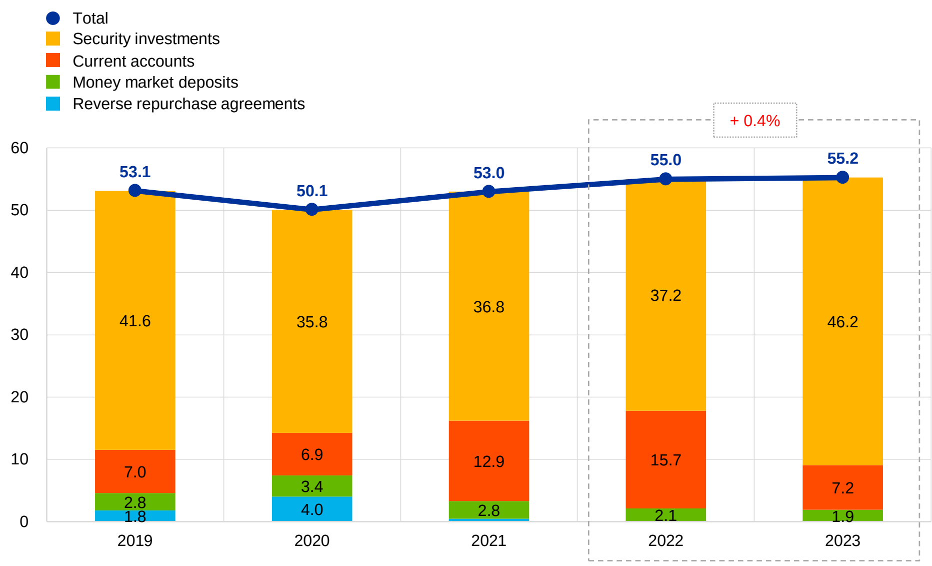
The US dollar is the main component of the ECB's foreign currency holdings, accounting for 81% of the total at the end of 2023.

The ECB manages the investment of its foreign currency holdings using a three-step approach. First, a strategic benchmark portfolio is designed by the ECB's risk managers and approved by the Governing Council. Second, the ECB's portfolio managers design the tactical benchmark portfolio, which is approved by the Executive Board. Third, investment operations are conducted in a decentralised manner by the NCBs on a day-to-day basis.

The ECB's foreign currency holdings are mainly invested in securities and money market deposits or are held in current accounts (Chart 6). Securities in this portfolio are valued at year-end market prices.

Chart 6
Composition of foreign currency investments

(EUR billions)

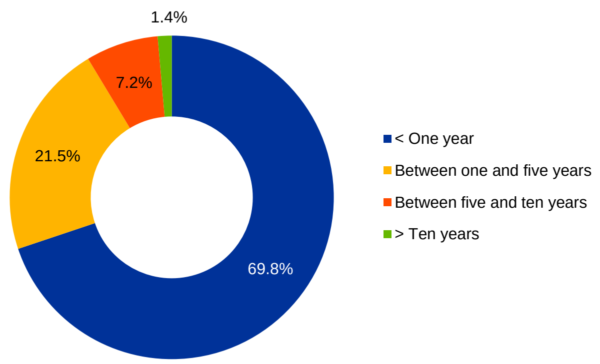


Source: ECB.

70%
Foreign currency-denominated securities with a maturity of less than one year

The purpose of the ECB's foreign currency holdings is to finance potential interventions in the foreign exchange market. For this reason, the ECB's foreign currency holdings are managed in accordance with three objectives (in order of priority): liquidity, safety and return. Therefore, this portfolio mainly comprises securities with short maturities (Chart 7).

Chart 7
Maturity profile of foreign currency-denominated securities



Source: ECB.

The value of the **own funds portfolio** increased by €1.0 billion to €22.1 billion (Chart 8), primarily owing to (i) the reinvestment of interest income generated on this portfolio and (ii) the increase in the market value of euro-denominated securities held in this portfolio as a result of the decline in euro area bond yields at the year-end (Chart 17).

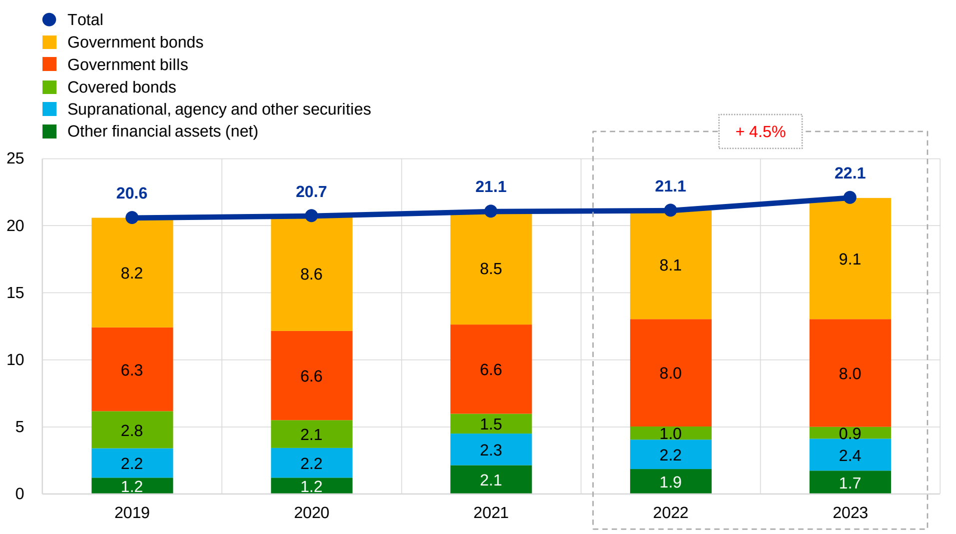
The portfolio mainly consists of euro-denominated securities which are valued at year-end market prices. In 2023 government debt securities accounted for 77% of the total portfolio.

20%
Share of sustainable and responsible investments in the ECB's own funds portfolio

The share of green investments in the own funds portfolio continued to increase, rising from 13% at the end of 2022 to 20% at the end of 2023. The ECB plans to further increase this share over the coming years.[12] Since 2021 purchases of green bonds in secondary markets are complemented by investments in the euro-denominated green bond investment fund for central banks launched by the Bank for International Settlements in January 2021.

Chart 8
The ECB's own funds portfolio

(EUR billions)



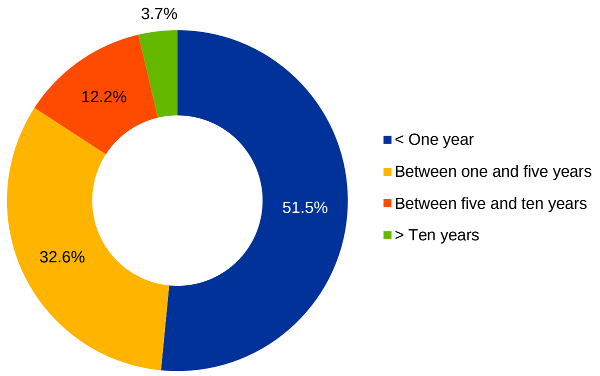
Source: ECB.

The ECB's own funds portfolio predominantly consists of investments of its paid-up capital and amounts set aside in the general reserve fund and in the provision for financial risks. The purpose of this portfolio is to provide income to help fund those ECB operating expenses that are not related to the delivery of its supervisory tasks.[13] It is invested in euro-denominated assets, subject to the limits imposed by its risk control framework. This results in a more diversified maturity structure (Chart 9) than in the foreign reserves portfolio.

[12] In accordance with the recommendations of the Task Force on Climate-related Financial Disclosures, the ECB published its first climate-related financial disclosures with regard to its own funds and pension portfolios on the ECB's website in March 2023 and announced that it will disclose climate-related information on these portfolios every year.

[13] The expenses incurred by the ECB in the performance of its supervisory tasks are recovered via annual fees levied on supervised entities. Further details can be found on the ECB's banking supervision website.

Chart 9
Maturity profile of the ECB's own funds securities



Source: ECB.

At the end of 2023 the total value of euro **banknotes in circulation** was €1,567.7 billion, virtually the same as at the end of 2022. The ECB has been allocated an 8% share of the total value of euro banknotes in circulation, which amounted to €125.4 billion at the end of the year. Since the ECB does not issue banknotes itself, it holds **intra-Eurosystem claims** vis-à-vis the euro area NCBs for a value equivalent to the value of the banknotes in circulation allocated to it.

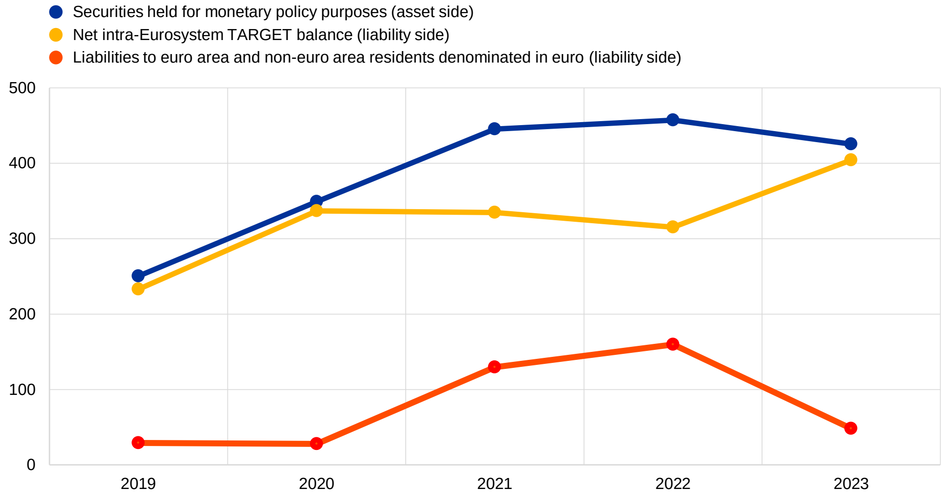
The ECB's **intra-Eurosystem liabilities**, which mainly comprise the net TARGET balance of euro area NCBs vis-à-vis the ECB and the ECB's liabilities with regard to the foreign reserve assets transferred to it by the euro area NCBs when they joined the Eurosystem, increased by €89.6 billion to €445.0 billion in 2023.

The development of the intra-Eurosystem liabilities is mainly driven by the evolution of the net TARGET liability. The main factors contributing to the changes in the net TARGET liability during the period 2019-2023 were purchases and redemptions of monetary policy securities, which are settled via TARGET accounts, and changes in liabilities to euro area and non-euro area residents denominated in euro (Chart 10). In 2023 the cash inflows from redemptions of monetary policy securities were lower than the cash outflows related to the decrease in liabilities to euro area and non-euro area residents denominated in euro, leading to an overall increase in the net TARGET liability.

Chart 10

Net intra-Eurosystem TARGET balance, liabilities to euro area and non-euro area residents denominated in euro and securities held for monetary policy purposes

(EUR billions)



Source: ECB.
Note: For the purpose of this chart, "Liabilities to euro area and non-euro area residents denominated in euro" consists of "Other liabilities to euro area credit institutions denominated in euro", "Liabilities to other euro area residents denominated in euro" and "Liabilities to non-euro area residents denominated in euro".

In 2023 the ECB's **other liabilities** fell by €107.7 billion to €58.0 billion owing to the decrease in liabilities to euro area and non-euro area residents denominated in euro. Specifically, there were reductions in (i) deposits accepted by the ECB in its role as fiscal agent[14], (ii) balances of non-euro area ancillary systems connected to TARGET through the TARGET-ECB component and (iii) cash received as collateral against the lending of PSPP and public sector PEPP securities.

1.3.2 Net equity

€44.5 billion
The ECB's net equity

The ECB's net equity consists of its capital, any amounts held in the provision for financial risks and the general reserve fund, the revaluation accounts[15], any accumulated losses from previous years and any profit/loss for the year.[16]

At the end of 2023 the **ECB's net equity** totalled €44.5 billion (Chart 11), which was €7.0 billion lower than at the end of 2022 owing to the losses incurred during 2023. The provision for financial risks was fully used to cover part of these losses, reducing the loss for the year to €1.3 billion. The decrease in the ECB's net equity arising from the 2023 losses was partially offset by (i) the increase in the revaluation accounts, mainly as a result of the rise in the market price of gold in euro terms in 2023, and (ii) the contributions from Hrvatska narodna banka to the paid-up capital, the revaluation

[14] In accordance with Article 21 of the Statute of the ESCB, the ECB may act as fiscal agent for Union institutions, bodies, offices or agencies, central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of Member States.

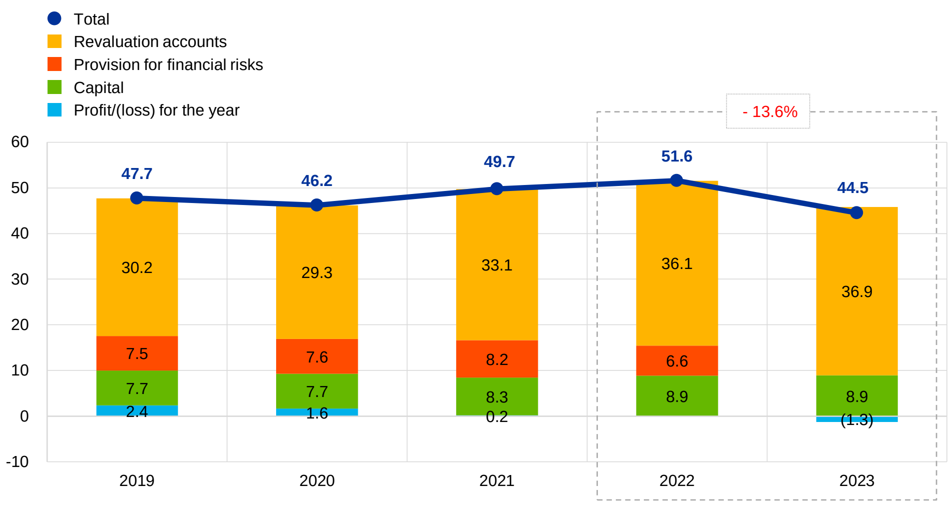
[15] In this section, "Revaluation accounts" includes total revaluation gains on gold, foreign currency and securities holdings, but excludes the revaluation account for post-employment benefits.

[16] This definition is solely used for the purpose of preparing the ECB's Annual Accounts.

accounts and the provision for financial risks following the adoption of the single currency by Croatia with effect from 1 January 2023.

Chart 11
The ECB's net equity

(EUR billions)



Source: ECB.
Note: "Revaluation accounts" includes total revaluation gains on gold, foreign currency and securities holdings, but excludes the revaluation account for post-employment benefits.

Changes in the ECB's net equity during the year are presented in Table 2.

Table 2
Changes in the ECB's net equity

(EUR millions)

	Capital	Provision for financial risks	Revaluation accounts	Profit/(loss) for the year	Total net equity
Balance as at 31 December 2022	**8,880**	**6,566**	**36,118**	**-**	**51,564**
Payment of the remainder of the capital subscription by Hrvatska narodna banka	69				69
Contribution to the provision for financial risks by Hrvatska narodna banka		53			53
Revaluation accounts					743
Gold			*2,634*		
Foreign currency			*(2,562)*		
Securities and other instruments			*378*		
Contribution to the revaluation accounts by Hrvatska narodna banka[1]			*293*		
Release from provision for financial risks		(6,620)			(6,620)
Loss for the year				(1,266)	(1,266)
Balance as at 31 December 2023	**8,948**	**-**	**36,861**	**(1,266)**	**44,543**

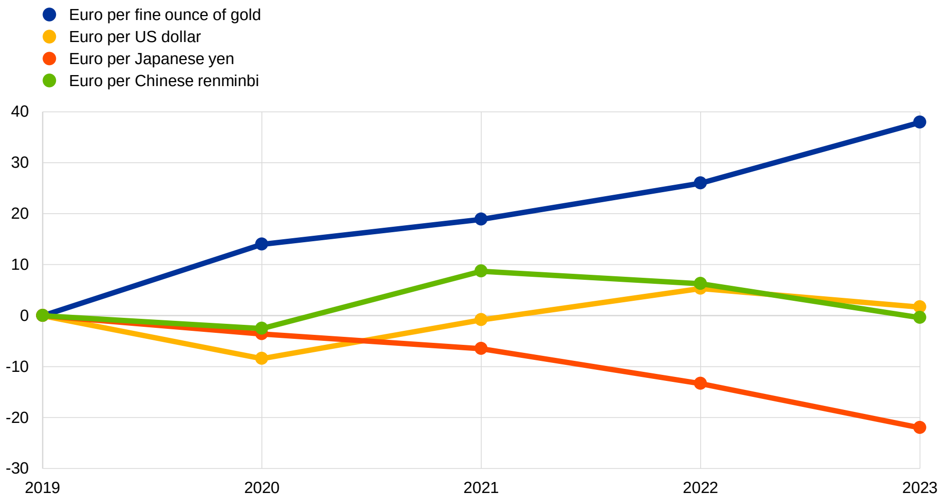
1) Upon the adoption of the single currency by Croatia, Hrvatska narodna banka contributed to the balances of all the revaluation accounts of the ECB as at 31 December 2022. The figure in this table excludes the contribution to the revaluation account for post-employment benefits, in line with the definition of "Revaluation accounts" in this section.

3%
Depreciation of the US dollar against the euro

Unrealised gains on gold and foreign currencies and unrealised gains on securities that are subject to price revaluation are not recognised as income in the profit and loss account but are recorded directly in **revaluation accounts** shown on the liability side of the ECB's balance sheet. The balances in these accounts can be used to absorb the impact of any future unfavourable movement in the respective prices and/or exchange rates and thus strengthen the ECB's resilience against the underlying risks. In 2023 the revaluation accounts for gold, foreign currencies and securities increased by €0.7 billion to €36.9 billion, mainly owing to higher revaluation balances for gold as a result of the rise in the market price of gold in euro terms. The revaluation balances for foreign currencies decreased, mainly owing to the depreciation of the US dollar and the Japanese yen against the euro (Chart 12).

Chart 12
The main foreign exchange rates and gold price over the period 2019-23

(percentage changes vis-à-vis 2019; year-end data)



Source: ECB.

€6,620 million
Full release of the provision for financial risks

In view of its exposure to financial risks (see Section 1.4.1 "Financial risks"), the ECB may set aside a **provision for financial risks** to be used to the extent deemed necessary by the Governing Council to offset losses that arise as a result of this exposure. The size of this provision is reviewed annually, taking a range of factors into account, including the level of holdings of risk-bearing assets, the projected results for the coming year and a risk assessment. The provision for financial risks, together with any amount held in the ECB's general reserve fund, may not exceed the value of the capital paid up by the euro area NCBs. At the end of 2022 this provision amounted to €6,566 million. Upon the adoption of the single currency by Croatia, Hrvatska narodna banka contributed €53 million to the provision for financial risks with effect from 1 January 2023, increasing its size to €6,620 million. At the end of 2023, following the annual review, the Governing Council decided to release this provision in full to partially offset losses incurred in 2023. The Governing Council may decide to replenish the provision for financial risks, in the context of its annual review, once the ECB returns to making a profit.

The **ECB’s loss for the year**, after the release of the provision for financial risks, was €1.3 billion (see Section 1.3.3 “Profit and loss account”). The Governing Council decided to carry forward this loss on the ECB’s balance sheet to be offset against future profits.

1.3.3 Profit and loss account

The ECB’s result has gradually fallen since 2019 (Chart 13). In 2020 and 2021 this decrease was mainly driven by lower income generated on foreign reserve assets and on securities held for monetary policy purposes. In 2022 and 2023 the reduction in the ECB’s result was primarily due to the materialisation of interest rate risk, as the rise in interest rates in the euro area led to an immediate increase in the interest expense paid by the ECB on its net TARGET liability, while the income earned on the ECB’s assets did not increase to the same extent or at the same pace (see Section 1.4.1 “Financial risks”).

Profits or losses are side effects of the ECB’s primary goal of price stability

The ECB’s loss for 2023, which followed a long period of substantial profits, reflects the role and necessary policy actions of the Eurosystem in fulfilling its primary mandate of maintaining price stability and has no impact on its ability to conduct effective monetary policy. In the previous years the ECB’s balance sheet expanded significantly, mainly driven by the purchase of securities under the asset purchase programmes. On the asset side, most monetary policy securities currently held were purchased during a period of low interest rates and have long maturities and fixed coupons. These will continue to generate relatively low interest income, not immediately affected by changes in key ECB interest rates. At the same time, the cash settlement of these purchases via TARGET led to a rise in the ECB’s net TARGET liability, which is remunerated at the rate on the main refinancing operations (MRO rate). In order to combat inflation in the euro area, this rate began to be raised in 2022, resulting in an immediate increase in the ECB’s interest expense.

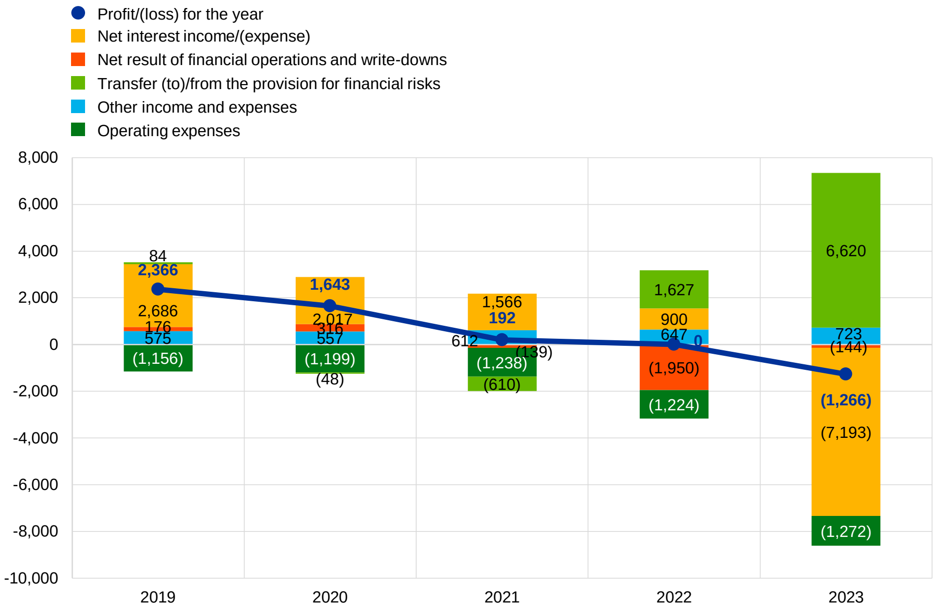
Materialisation of interest rate risk expected to lead to further losses over the next few years

The ECB is likely to incur further losses over the next few years as a result of the materialisation of interest rate risk, before returning to making sustained profits. The occurrence and magnitude of these losses are uncertain and will largely depend on the future evolution of key ECB interest rates and the size and composition of the ECB’s balance sheet. However, the ECB’s capital and its substantial revaluation accounts, which together amounted to €45.8 billion at the end of 2023 (see Section 1.3.2 “Net equity”), underline its financial strength, and, in any case, the ECB can operate effectively and fulfil its primary mandate of maintaining price stability regardless of any losses.

Chart 13

Main components of the ECB's profit and loss account

(EUR millions)



Source: ECB.
Note: "Other income and expenses" consists of "Net income/expense from fees and commissions", "Income from equity shares and participating interests", "Other income" and "Other expenses".

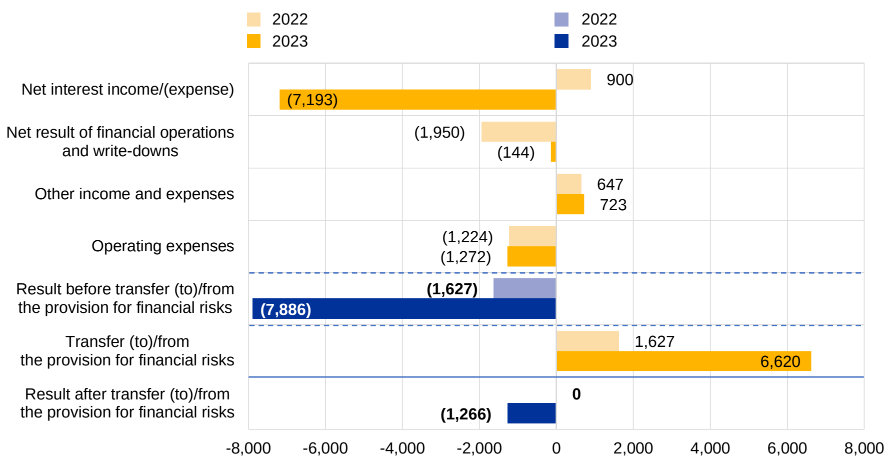
€1,266 million
ECB's loss after the release of the provision for financial risks

In 2023 the ECB used the full amount of €6,620 million set aside in the provision for financial risks to partially offset losses incurred during the year. After the release of this provision, the **ECB's loss** stood at €1,266 million (2022: zero). The main driver of this loss was the significant net interest expense (Chart 14).

Chart 14

Drivers of the ECB's result for 2022 and 2023

(EUR millions)



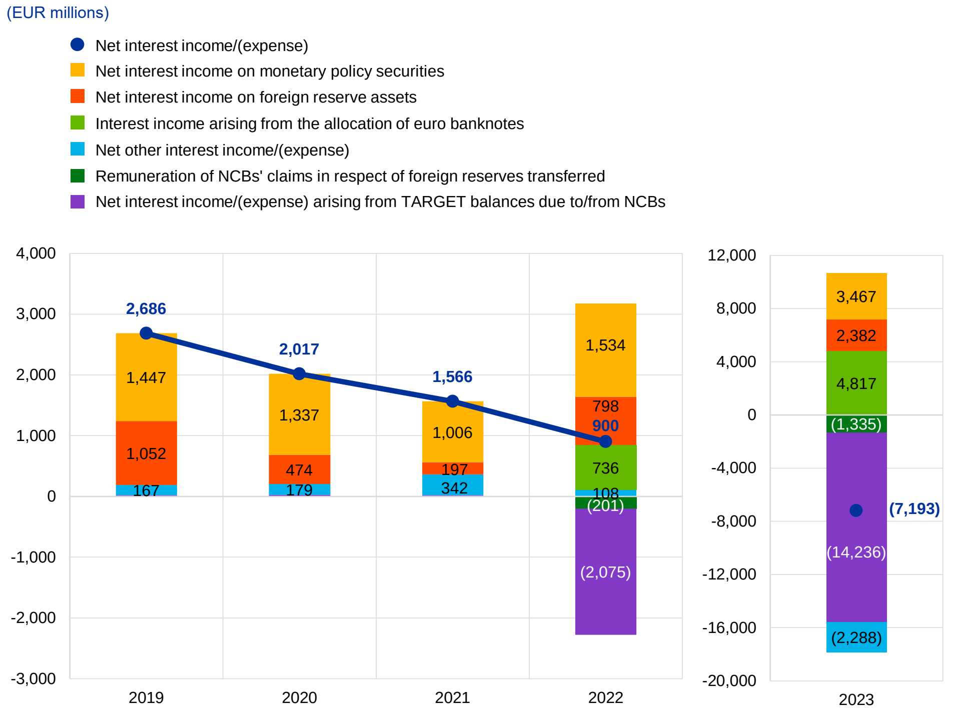
Source: ECB.

Net interest expense mainly resulted from the ECB's net TARGET liability

The ECB's **net interest expense** amounted to €7,193 million in 2023, compared to net interest income of €900 million in 2022 (Chart 15). This was mainly due to the interest expense arising from the ECB's net TARGET liability. The net other interest expense and the interest expense related to the remuneration of euro area NCBs' claims in respect of foreign reserves transferred to the ECB also contributed to this decrease. These expenses were partially offset by higher interest income arising from (i) the ECB's claims related to the allocation of euro banknotes within the Eurosystem, (ii) securities held for monetary policy purposes and (iii) foreign reserve assets.

Chart 15

Net interest income/(expense)



Source: ECB.

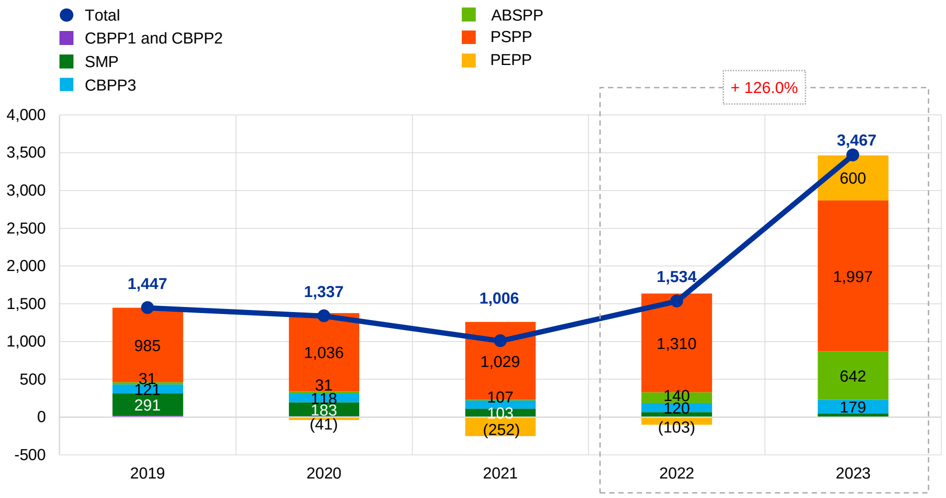
Higher interest income, mainly on securities held under the ABSPP and on public sector securities in the APP and PEPP

Net interest income generated on securities held for monetary policy purposes increased by €1,933 million to €3,467 million in 2023 (Chart 16) owing to higher net interest income from securities held under the APP (under the CBPP3, ABSPP and PSPP) and the PEPP. Net interest income from the APP holdings rose by €1,247 million to €2,818 million in 2023, while the PEPP portfolio generated net interest income of €600 million in 2023, compared to a net interest expense of €103 million the year before. These developments were mainly driven by the significant increase in euro area interest rates and bond yields which began in 2022 (Chart 17) and which (i) allowed reinvestments under the APP and the PEPP at higher yields than the historical yields of the respective portfolios and (ii) had a positive impact on the coupon on securities with variable interest rates (mainly held under the ABSPP). Lower premium amortisation, particularly on public sector securities acquired in the past, also contributed to the increase. Net interest income on the SMP decreased by €16 million to €49 million owing to the decline in the size of the portfolio as a result of maturing securities.

Chart 16

Net interest income/(expense) on securities held for monetary policy purposes

(EUR millions)

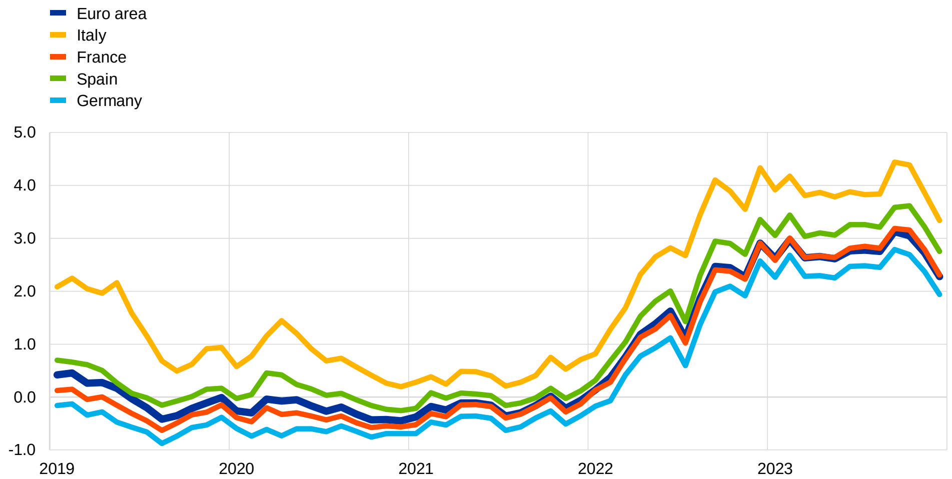


Source: ECB.

Chart 17

Seven-year sovereign bond yields in the euro area

(percentages per annum; month-end data)



Source: ECB.

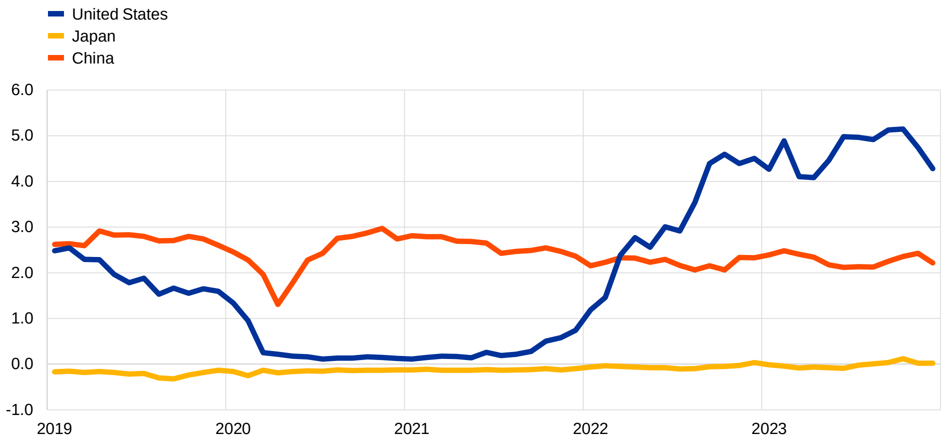
Increase in interest income on the US dollar portfolio

Net interest income on foreign reserve assets increased by €1,583 million to €2,382 million, predominantly as a result of higher interest income from securities denominated in US dollars. The average interest rate earned on the ECB's US dollar portfolio increased in 2023 compared to the previous year owing to (i) sales and redemptions of lower-yield bonds purchased in the past and (ii) purchases of securities with higher yields following the increase in US dollar bond yields since the end of 2021 (Chart 18).

Chart 18

Two-year sovereign bond yields in the United States, Japan and China

(percentages per annum; month-end data)



Source: LSEG.

3.8%
Average MRO rate in 2023; gradual increase during the year from 2.5% to 4.5% at year-end

Interest income arising from the allocation of euro banknotes to the ECB and **interest expense stemming from the remuneration of NCBs' claims in respect of foreign reserves transferred** increased by €4,081 million to €4,817 million and by €1,133 million to €1,335 million respectively in 2023. The changes were the result of increases in the MRO rate, which is the rate used for the calculation of interest on these balances. The MRO rate reached 4.5% at the end of 2023, while the annual average rate increased from 0.6% in 2022 to 3.8% in 2023.

€14,236 million
Interest expense resulting from the ECB's net TARGET liability, mainly driven by the gradual increase in the MRO rate

The **net interest expense arising from TARGET balances due to/from NCBs** increased by €12,161 million to €14,236 million in 2023. The increase was mainly driven by the higher average MRO rate in 2023, which is used for the remuneration of the ECB's intra-Eurosystem TARGET balances.

The **net other interest expense** of €2,288 million in 2023 compares with net other interest income of €108 million in the previous year. This change was mainly due to the remuneration of deposits accepted by the ECB in its role as fiscal agent and the remuneration of balances of euro area ancillary systems. In the second half of 2022, once the applicable remuneration rates turned positive, the ECB started to pay interest on these items. In 2023 the remuneration rates and average balance of these items rose further, leading to an increase in the interest expense. This interest expense was partially offset by the higher interest income earned on the own funds portfolio as a result of rising yields in the euro area (Chart 17).

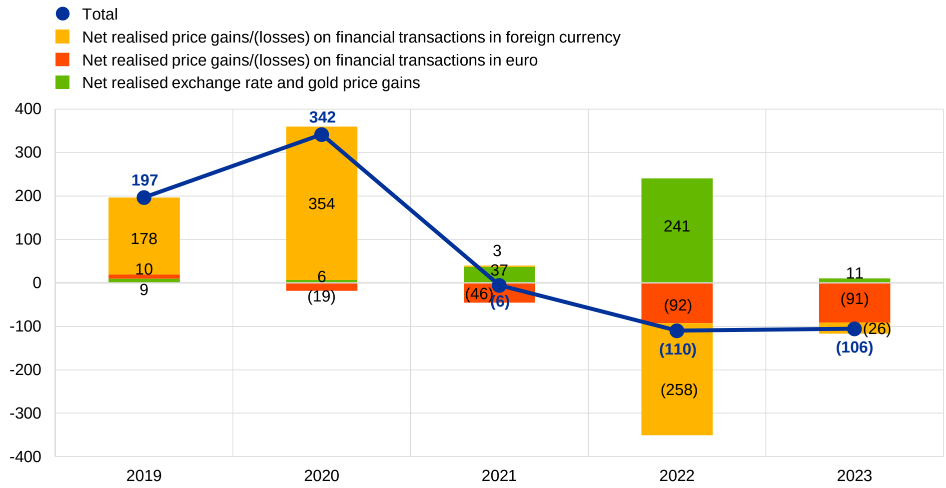
Net realised price losses were mainly driven by outstanding premiums on ABSPP securities repaid before maturity

Net realised losses arising from financial operations decreased by €4 million to €106 million in 2023 (Chart 19). These losses mainly resulted from (i) outstanding premiums on securities held in the ABSPP that were repaid before maturity and (ii) net realised price losses on sales of US dollar-denominated securities in the second half of 2023 (Chart 20) whose market value was negatively affected by the increase in US dollar bond yields during this period (Chart 18).

Chart 19

Realised gains/losses arising from financial operations

(EUR millions)

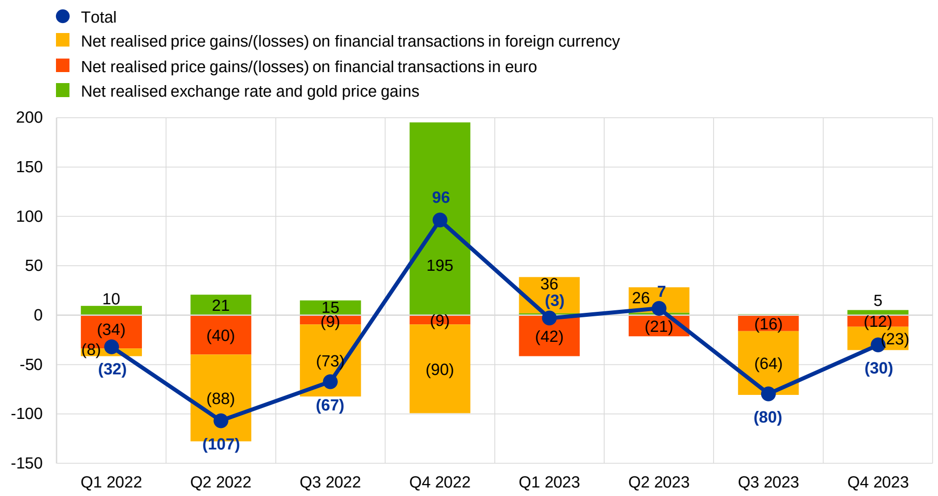


Source: ECB.

Chart 20

Quarterly realised gains/losses arising from financial operations in 2022 and 2023

(EUR millions)

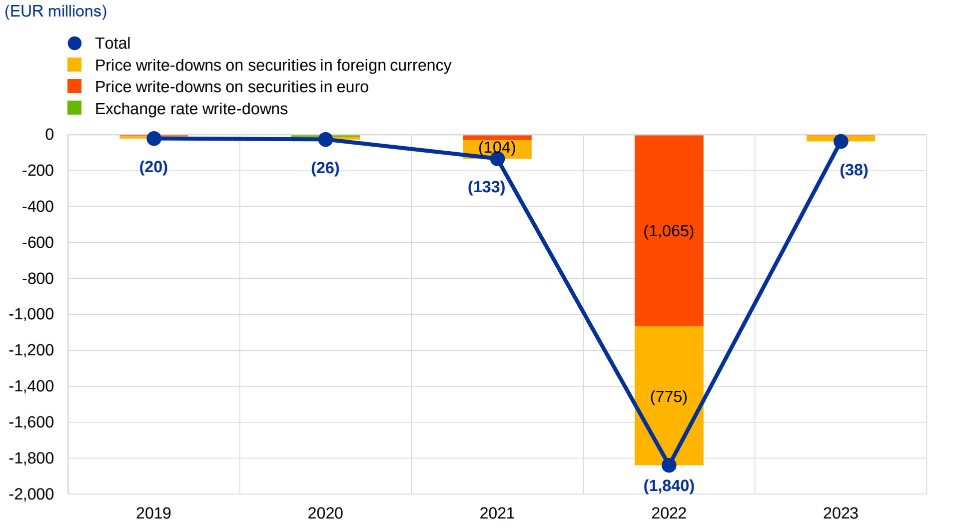


Source: ECB.

€38 million
Price write-downs on securities, mainly in the US dollar and own funds portfolios

Unrealised revaluation losses are expensed in the form of **write-downs** at the year-end in the ECB's profit and loss account. In 2023 these write-downs amounted to €38 million, mainly stemming from unrealised price losses on a number of securities held in the US dollar and own funds portfolios. In 2022 these losses were substantially higher at €1,840 million (Chart 21), as the corresponding yields had increased significantly, resulting in a large reduction in the market value of the majority of securities held in the own funds and US dollar portfolios at the end of that year.

Chart 21
Write-downs on financial assets and positions



Source: ECB.

The **total operating expenses** of the ECB, including depreciation and banknote production services, increased by €48 million to €1,272 million (Chart 22). The increase compared to 2022 was mainly due to higher staff costs resulting from the higher average number of staff in 2023, predominantly in banking supervision, as well as salary adjustments. This increase was partially offset by lower costs in relation to post-employment benefits, mainly as a result of a lower current service cost following the annual actuarial valuation. Administrative expenses increased, mainly owing to higher expenses for external consultancy support and the return to full levels of activity following the pandemic, in particular in banking supervision, while also reflecting the impact of inflation.

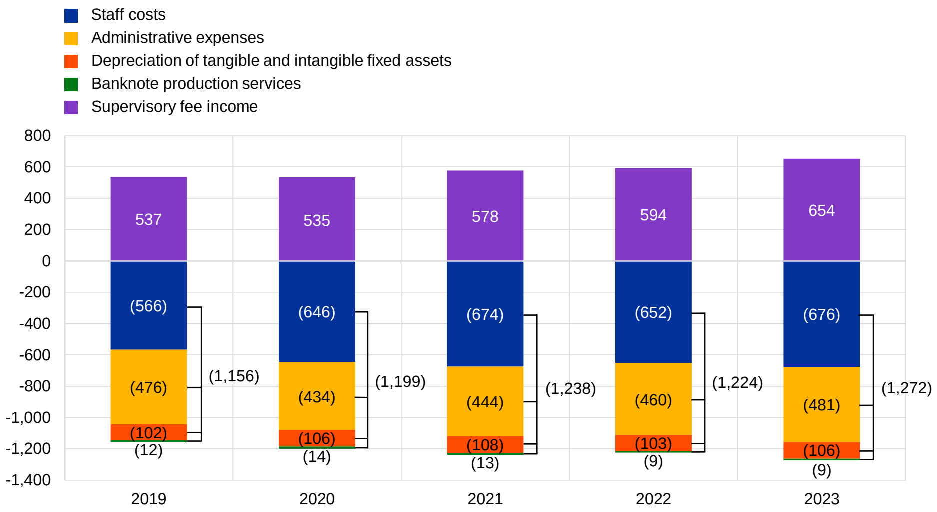
€654 million
Supervisory fee income

Banking supervision-related expenses are fully covered by fees levied on the supervised entities. Based on the actual expenses incurred by the ECB in the performance of its banking supervision tasks, supervisory fee income for 2023 stood at €654 million.[17]

[17] Supervisory fee income is included under "Other income and expenses" (Chart 13).

Chart 22
Operating expenses and supervisory fee income

(EUR millions)

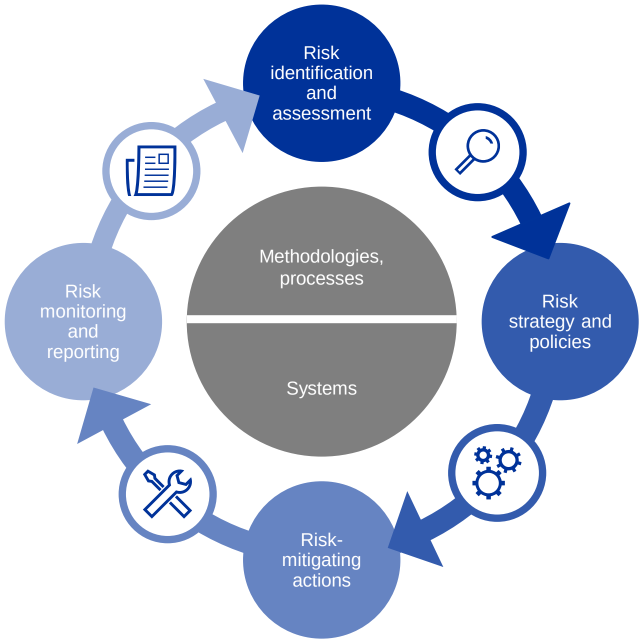


Source: ECB.

1.4 Risk management

Risk management is a critical part of the ECB's activities and is conducted through a continuous process of (i) risk identification and assessment, (ii) review of the risk strategy and policies, (iii) implementation of risk-mitigating actions and (iv) risk monitoring and reporting, all of which are supported by effective methodologies, processes and systems.

Figure 2
Risk management cycle



The following sections focus on the risks, their sources and the applicable risk control frameworks.

1.4.1 Financial risks

The Executive Board proposes policies and procedures that ensure an appropriate level of protection against the financial risks to which the ECB is exposed. The Risk Management Committee (RMC), which comprises experts from Eurosystem central banks, contributes to the monitoring, measuring and reporting of financial risks related to the balance sheet of the Eurosystem and defines and reviews the associated methodologies and frameworks. In this way, the RMC helps the decision-making bodies to ensure an appropriate level of protection for the Eurosystem.

Financial risks arise from the ECB's operations and associated exposures. The risk control frameworks and limits that the ECB uses to manage its risk profile differ across types of operation, reflecting the policy or investment objectives of the different portfolios and the risk characteristics of the underlying assets.

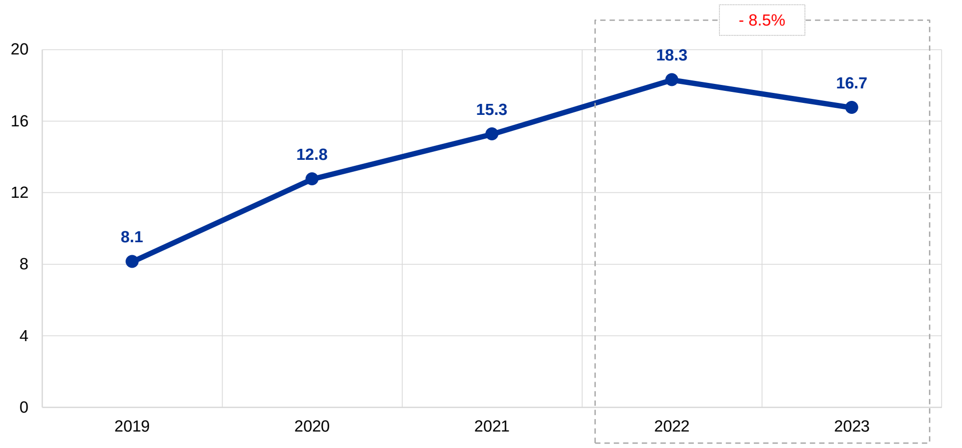
To monitor and assess the risks, the ECB relies on a number of risk estimation techniques developed by its experts. These techniques are based on a joint market and credit risk simulation framework. The core modelling concepts, techniques and assumptions underlying the risk measures draw on industry standards and available market data. The risks are typically quantified as the expected shortfall (ES)[18], estimated at the 99% confidence level over a one-year horizon. Two approaches are used to calculate risks: (i) the accounting approach, under which the ECB's revaluation accounts are considered as a buffer in the calculation of risk estimates in line with applicable accounting rules; and (ii) the financial approach, under which the revaluation accounts are not considered as a buffer in the risk calculation. The ECB also calculates other risk measures at different confidence levels, performs sensitivity and stress scenario analyses and assesses longer-term projections of exposures and income to maintain a comprehensive picture of the risks.[19]

€16.7 billion
Total risk (ES 99%, accounting approach)

The total risks of the ECB decreased during the year. At the end of 2023 the total financial risks of the ECB's balance sheet, as measured by the ES at the 99% confidence level over a one-year horizon under the accounting approach, stood at €16.7 billion, which was €1.6 billion lower than the risks estimated as at the end of 2022 (Chart 23). The decrease in risk reflects the reduction in the ECB's holdings under the APP, initially through the only partial reinvestment of principal payments from maturing securities between March and June 2023, followed by the complete discontinuation of reinvestments as of July 2023.

Chart 23
Total financial risks (ES 99%, accounting approach)

(EUR billions)



Source: ECB.
Note: The total financial risks as at the end of 2023 were calculated following methodological advances whereby interest rate risk arising from mismatches between the interest rate earned on assets and the interest rate paid on liabilities was also included as a risk contributor in the ES 99% measurement in addition to the regular monitoring of net income projections. The 2022 estimate was recalculated to ensure comparability.

Credit risk

Credit risk arises from the ECB's monetary policy portfolios, its euro-denominated own funds portfolio and its foreign reserve holdings. While securities held for monetary policy purposes are valued at amortised cost subject to impairment and are therefore, in the absence of sales, not subject to price changes

18 The ES is defined as a probability-weighted average loss that occurs in the worst *(1-p)%* of scenarios, where *p* denotes the confidence level.

19 Further details on the risk modelling approach can be found in The financial risk management of the Eurosystem's monetary policy operations, ECB, July 2015.

associated with credit migrations, they are still subject to credit default risk. Euro-denominated own funds and foreign reserves are valued at market prices and, as such, are subject to credit migration risk and credit default risk. Credit risk remained largely stable relative to 2022.

Credit risk is mitigated mainly through the application of eligibility criteria, due diligence procedures and limits that differ across portfolios.

Currency and commodity risks

Currency and commodity risks arise from the ECB's foreign currency and gold holdings. The currency risk remained broadly stable compared with 2022.

In view of the policy role of these assets, the ECB does not hedge the related currency and commodity risks. Instead, these risks are mitigated through the existence of revaluation accounts and the diversification of the holdings across different currencies and gold.

Interest rate risk

The ECB's foreign reserves and euro-denominated own funds are mainly invested in fixed income securities and are subject to mark-to-market interest rate risk, given that they are valued at market prices. The ECB's foreign reserves are mainly invested in assets with relatively short maturities (see Chart 7 in Section 1.3.1 "Balance sheet"), while the assets in the own funds portfolio generally have longer maturities (see Chart 9 in Section 1.3.1 "Balance sheet"). The interest rate risk of these portfolios, as measured under the accounting approach, decreased compared to 2022, reflecting developments in market conditions.

The mark-to-market interest rate risk of the ECB is mitigated through asset allocation policies and the revaluation accounts.

The ECB is also subject to interest rate risk arising from mismatches between the interest rate earned on its assets and the interest rate paid on its liabilities, which has an impact on its net interest income. This risk is not directly linked to any particular portfolio but rather to the structure of the ECB's balance sheet as a whole and, in particular, the existence of maturity and yield mismatches between assets and liabilities. In addition to its inclusion in the regular total financial risk measurement over a one-year horizon, this risk is monitored by means of projections of the ECB's profitability over a medium to long-term horizon.

This type of risk is managed through asset allocation policies and is further mitigated by the existence of unremunerated liabilities on the ECB's balance sheet.

This notwithstanding, this risk materialised in 2023, resulting in financial losses being projected over the next few years, after which the ECB is expected to return to making sustained profits. The projected losses are mostly driven by a reduction in the net interest income of the ECB. A large share of the medium to long-term assets with fixed rate coupons were acquired when interest rates were very low or even zero, and funded mainly by short-term liabilities, which are remunerated at the MRO rate. As interest rates started rising in mid-2022, the cost of the liabilities rose above the interest earned on the assets. Consequently, the previous year's net interest income turned into a net interest expense.

Climate change risk

The risks associated with climate change are gradually being incorporated into the ECB's risk management framework. In 2022 the Eurosystem conducted the first climate stress test of the Eurosystem balance sheet[20], which allowed a preliminary estimate of the impact of this risk on the ECB's balance sheet to be obtained. In the coming years climate stress testing will be performed on a regular basis, with the next exercise envisaged for 2024.

1.4.2 Operational risk

The Executive Board is responsible for and approves the ECB's operational risk[21] management (ORM) policy and framework. The Operational Risk Committee (ORC) supports the Executive Board in the performance of its role in overseeing the management of operational risks. **ORM is an integral part of the ECB's governance structure**[22] **and management processes.**

The main objective of the ECB's ORM framework is to **contribute to ensuring that the ECB achieves its mission and objectives, while protecting its reputation and assets against loss, misuse and damage**. Under the ORM framework, each business area is responsible for identifying, assessing, responding to, reporting on and monitoring its operational risks, incidents and controls. In this context, the ECB's risk tolerance policy provides guidance with regard to risk response strategies and risk acceptance procedures. It is linked to a five-by-five risk matrix based on impact and likelihood grading scales using quantitative and qualitative criteria.

The environment in which the ECB operates is exposed to increasingly complex and interconnected threats and there are a wide range of operational risks associated with the ECB's day-to-day activities. The main areas of concern for the ECB include a wide spectrum of non-financial risks resulting from people, systems, processes and external events. Consequently, the ECB has put in place processes to facilitate ongoing and effective management of its operational risks and to integrate risk information into the decision-making process. Moreover, the ECB is continuing to focus on enhancing its resilience, taking a broad view of risks and opportunities from an end-to-end perspective, including sustainability aspects. Response structures and contingency plans have been established to ensure the continuity of critical business functions in the event of any disruption or crisis.

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20 The results of the stress test for corporate bond holdings were incorporated into climate-related disclosures on corporate bond holdings of euro area NCBs under the CSPP and the PEPP, which the ECB started to publish annually from March 2023 onwards. For more details, see Climate-related financial disclosures of the Eurosystem's corporate sector holdings for monetary policy purposes, ECB, March 2023.
In addition, the general qualitative results of this stress test were published in the ECB's Economic Bulletin. For more details, see "Results of the 2022 climate risk stress test of the Eurosystem balance sheet", *Economic Bulletin*, Issue 2, ECB, 2023.

21 Operational risk encompasses all non-financial risks and is defined as the risk of a negative business, reputational and/or financial impact on the ECB resulting from people, the inadequate implementation or failure of internal governance and business processes, the failure of systems on which processes rely, or external events (e.g. natural disasters or external attacks).

22 Further information about the ECB's governance structure can be found on the ECB's website.

1.4.3 Conduct risk

The ECB has a dedicated **Compliance and Governance Office as a key risk management function to strengthen the ECB's governance framework** in order to address conduct risk.[23] Its purpose is to support the Executive Board in protecting the integrity and reputation of the ECB, to promote ethical standards of behaviour and to strengthen the ECB's accountability and transparency. An independent Ethics Committee provides advice and guidance to high-level ECB officials on integrity and conduct matters and supports the Governing Council in managing risks at executive level appropriately and coherently. At the level of the Eurosystem and the Single Supervisory Mechanism (SSM), the Ethics and Compliance Committee (ECC) works towards achieving coherent implementation of the conduct frameworks for NCBs and national competent authorities (NCAs).

In 2023 the ECC set up a Conduct Risk Task Force to compare the existing conduct rules and the monitoring and reporting processes in place at the ECB, NCBs and NCAs. The aim of the task force is to define minimum common standards and to provide a simple conduct risk framework which can be extended and strengthened over the years.

23 Conduct risk management has gained increasing attention in the corporate and public sector. It complements financial and operational risk management and for the ECB can be defined as the exposure of the institution to reputational damage, but also to financial or other types of harm that negatively affect its interests, as a result of intentional or negligent actions carried out by its high-level officials, employees or contractors that are not in conformance with the institution's ethics, legal and integrity rules or good governance and good administration standards.

2 Financial statements of the ECB

2.1 Balance sheet as at 31 December 2023

ASSETS	Note number	2023 € millions	2022 € millions
Gold and gold receivables	1	**30,419**	**27,689**
Claims on non-euro area residents denominated in foreign currency	2	**55,876**	**55,603**
Receivables from the IMF	2.1	2,083	1,759
Balances with banks and security investments, external loans and other external assets	2.2	53,793	53,844
Claims on euro area residents denominated in foreign currency	2.2	**1,450**	**1,159**
Other claims on euro area credit institutions denominated in euro	3	**17**	**12**
Securities of euro area residents denominated in euro	4	**425,349**	**457,271**
Securities held for monetary policy purposes	4.1	425,349	457,271
Intra-Eurosystem claims	5	**125,378**	**125,763**
Claims related to the allocation of euro banknotes within the Eurosystem	5.1	125,378	125,763
Other assets	6	**34,739**	**31,355**
Tangible and intangible fixed assets	6.1	1,023	1,105
Other financial assets	6.2	22,172	21,213
Off-balance-sheet instruments revaluation differences	6.3	552	783
Accruals and prepaid expenses	6.4	10,905	7,815
Sundry	6.5	88	438
Loss for the year		**1,266**	**-**
Total assets		**674,496**	**698,853**

Note: Totals in the financial statements and in the tables included in the notes may not add up due to rounding. The figures 0 and (0) indicate positive or negative amounts rounded to zero, while a dash (-) indicates zero.

LIABILITIES	Note number	2023 € millions	2022 € millions
Banknotes in circulation	7	**125,378**	**125,763**
Other liabilities to euro area credit institutions denominated in euro	8	**4,699**	**17,734**
Liabilities to other euro area residents denominated in euro	9	**20,622**	**63,863**
General government	9.1	143	48,520
Other liabilities	9.2	20,479	15,343
Liabilities to non-euro area residents denominated in euro	10	**23,111**	**78,108**
Liabilities to non-euro area residents denominated in foreign currency	11	**24**	**-**
Deposits, balances and other liabilities	11.1	24	-
Intra-Eurosystem liabilities	12	**445,048**	**355,474**
Liabilities equivalent to the transfer of foreign reserves	12.1	40,671	40,344
Other liabilities within the Eurosystem (net)	12.2	404,377	315,130
Other liabilities	13	**9,498**	**5,908**
Off-balance-sheet instruments revaluation differences	13.1	68	430
Accruals and income collected in advance	13.2	8,030	3,915
Sundry	13.3	1,401	1,562
Provisions	14	**67**	**6,636**
Revaluation accounts	15	**37,099**	**36,487**
Capital and reserves	16	**8,948**	**8,880**
Capital	16.1	8,948	8,880
Total liabilities		**674,496**	**698,853**

2.2 Profit and loss account for the year ending 31 December 2023

	Note number	2023 € millions	2022 € millions
Interest income on foreign reserve assets	23.1	2,382	798
Interest income arising from the allocation of euro banknotes within the Eurosystem	23.2	4,817	736
Other interest income	23.4	56,552	11,001
Interest income		63,751	12,536
Remuneration of NCBs' claims in respect of foreign reserves transferred	23.3	(1,335)	(201)
Other interest expense	23.4	(69,609)	(11,434)
Interest expense		(70,944)	(11,636)
Net interest income	23	**(7,193)**	**900**
Realised gains/losses arising from financial operations	24	(106)	(110)
Write-downs on financial assets and positions	25	(38)	(1,840)
Transfer to/from provisions for financial risks		6,620	1,627
Net result of financial operations, write-downs and risk provisions		**6,476**	**(322)**
Net income/expense from fees and commissions	26	**650**	**585**
Income from equity shares and participating interests	27	**1**	**1**
Other income	28	**72**	**61**
Total net income		**6**	**1,224**
Staff costs	29	(676)	(652)
Administrative expenses	30	(481)	(460)
Depreciation of tangible and intangible fixed assets		(106)	(103)
Banknote production services	31	(9)	(9)
Profit/(loss) for the year		**(1,266)**	-

Frankfurt am Main, 13 February 2024
European Central Bank

Christine Lagarde
President

2.3 Accounting policies

Form and presentation of the financial statements

The financial statements of the ECB have been drawn up in accordance with the following accounting policies,[24] which, in the view of the Governing Council of the ECB, achieve a fair presentation of the financial statements, reflecting at the same time the nature of central bank activities.

Accounting principles

The following accounting principles have been applied: economic reality and transparency, prudence, recognition of post-balance-sheet events, materiality, going concern, the accruals principle, consistency and comparability.

Recognition of assets and liabilities

An asset or liability is only recognised in the balance sheet when it is probable that any associated future economic benefit will flow to or from the ECB, substantially all of the associated risks and rewards have been transferred to the ECB, and the cost or value of the asset or the amount of the obligation can be measured reliably.

Basis of accounting

The accounts have been prepared on a historical cost basis, modified to include the market valuation of marketable securities (other than securities currently held for monetary policy purposes), gold and all other on-balance-sheet and off-balance-sheet assets and liabilities denominated in foreign currency.

Transactions in financial assets and liabilities are reflected in the accounts on the basis of the date on which they were settled.

With the exception of spot transactions in securities, transactions in financial instruments denominated in foreign currency are recorded in off-balance-sheet accounts on the trade date. At the settlement date, the off-balance-sheet entries are reversed, and transactions are booked on-balance-sheet. Purchases and sales of

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[24] The detailed accounting policies of the ECB are laid down in Decision (EU) 2016/2247 of the ECB of 3 November 2016 on the annual accounts of the ECB (ECB/2016/35) (OJ L 347, 20.12.2016, p. 1), as amended. The unofficial consolidated text with the list of amendments can be found here.
In order to ensure the harmonised accounting and financial reporting of Eurosystem operations, the above-mentioned Decision is based on Guideline (EU) 2016/2249 of the ECB of 3 November 2016 on the legal framework for accounting and financial reporting in the European System of Central Banks (ECB/2016/34) (OJ L 347, 20.12.2016, p. 37), as amended. The unofficial consolidated text with the list of amendments can be found here.
These policies, which are reviewed and updated regularly as deemed appropriate, are consistent with the provisions of Article 26.4 of the Statute of the ESCB, which require a harmonised approach to the rules governing the accounting and financial reporting of Eurosystem operations.

foreign currency affect the net foreign currency position on the trade date, and realised results arising from sales are also calculated on that date. Accrued interest, premiums and discounts related to financial instruments denominated in foreign currency are calculated and recorded daily, and the foreign currency position is also affected daily by these accruals.

Gold and foreign currency assets and liabilities

Assets and liabilities denominated in foreign currency are converted into euro at the exchange rate prevailing on the balance sheet date. Income and expenses are converted at the exchange rate prevailing on the recording date. The revaluation of foreign exchange assets and liabilities, including on-balance-sheet and off-balance-sheet instruments, is performed on a currency-by-currency basis.

Revaluation to the market price for assets and liabilities denominated in foreign currency is treated separately from the exchange rate revaluation.

Gold is valued at the market price prevailing at the balance sheet date. No distinction is made between the price and currency revaluation differences for gold. Instead, a single gold valuation is accounted for on the basis of the price in euro per fine ounce of gold, which, for the year ending 31 December 2023, was derived from the exchange rate of the euro against the US dollar on 29 December 2023.

The special drawing right (SDR) is defined in terms of a basket of currencies and its value is determined by the weighted sum of the exchange rates of five major currencies (the US dollar, euro, Chinese renminbi, Japanese yen and pound sterling). The ECB’s holdings of SDRs were converted into euro using the exchange rate of the euro against the SDR as at 29 December 2023.

Securities

Securities held for monetary policy purposes

Securities currently held for monetary policy purposes are accounted for at amortised cost subject to impairment.

Other securities

Marketable securities (other than securities currently held for monetary policy purposes) and similar assets are valued either at the mid-market prices or on the basis of the relevant yield curve prevailing on the balance sheet date, on a security-by-security basis. Options embedded in securities are not separated for valuation purposes. For the year ending 31 December 2023, mid-market prices on 29 December 2023 were used.

Marketable investment funds are revalued on a net basis at fund level, using their net asset value. No netting is applied between unrealised gains and losses in different investment funds.

Illiquid equity shares and any other equity instruments held as permanent investments are valued at cost subject to impairment.

Income recognition

Income and expenses are recognised in the period in which they are earned or incurred.[25] Realised gains and losses resulting from the sale of foreign currency, gold and securities are recorded in the profit and loss account. Such realised gains and losses are calculated by reference to the average cost of the respective asset.

Unrealised gains are not recognised as income and are transferred directly to a revaluation account.

Unrealised losses are recorded in the profit and loss account if, at the year-end, they exceed previous revaluation gains accumulated in the corresponding revaluation account. Such unrealised losses on any one security or currency or on gold are not netted against unrealised gains on other securities or currencies or gold. In the event of such unrealised losses on any item recorded in the profit and loss account, the average cost of that item is reduced to the year-end exchange rate or market price.

Impairment losses are recorded in the profit and loss account and are not reversed in subsequent years unless the impairment decreases and the decrease can be related to an observable event that occurred after the impairment was first recorded.

Premiums or discounts arising on securities are amortised over the securities' remaining contractual life.

Reverse transactions

Reverse transactions are operations whereby the ECB buys or sells assets under a repurchase agreement or conducts credit operations against collateral.

Under a repurchase agreement, securities are sold for cash with a simultaneous agreement to repurchase them from the counterparty at an agreed price on a set future date. Repurchase agreements are recorded as collateralised deposits on the liability side of the balance sheet. Securities sold under such an agreement remain on the balance sheet of the ECB.

Under a reverse repurchase agreement, securities are bought for cash with a simultaneous agreement to sell them back to the counterparty at an agreed price on a set future date. Reverse repurchase agreements are recorded as collateralised loans on the asset side of the balance sheet, but are not included in the ECB's security holdings.

Reverse transactions (including securities lending transactions) conducted under a programme offered by a specialised institution are recorded on the balance sheet

25 A minimum threshold of €100,000 applies for administrative accruals and provisions.

only where collateral has been provided in the form of cash and this cash remains uninvested.

Off-balance-sheet instruments

Currency instruments, namely foreign exchange forward transactions, forward legs of foreign exchange swaps and other currency instruments involving an exchange of one currency for another at a future date, are included in the net foreign currency position for the purpose of calculating foreign exchange gains and losses.

Interest rate instruments are revalued on an item-by-item basis. Daily changes in the variation margin of open interest rate futures contracts are recorded in the profit and loss account. The valuation of forward transactions in securities is carried out by the ECB based on generally accepted valuation methods using observable market prices and rates, as well as discount factors from the settlement dates to the valuation date.

Fixed assets

Fixed assets, including intangible assets, but excluding land and works of art, are valued at cost less depreciation. Land and works of art are valued at cost. The ECB’s main building is valued at cost less depreciation subject to impairment. For the depreciation of the ECB’s main building, costs are assigned to the appropriate asset components, which are depreciated in accordance with their estimated useful lives. Depreciation is calculated on a straight-line basis over the expected useful life of the asset, beginning in the quarter after the asset is available for use. The useful lives applied for the main asset classes are as follows:

Buildings	20, 25 or 50 years
Plant in building	10 or 15 years
Technical equipment	4, 10 or 15 years
Computers, related hardware and software, and motor vehicles	4 years
Furniture	10 years

The depreciation period for capitalised refurbishment expenditure relating to the ECB’s existing rented premises is adjusted to take account of any events that have an impact on the expected useful life of the affected asset.

The ECB performs an annual impairment test of its main building and right-of-use assets relating to office buildings (see “Leases” below). If an impairment indicator is identified, and it is assessed that the asset may be impaired, the recoverable amount is estimated. An impairment loss is recorded in the profit and loss account if the recoverable amount is less than the net book value.

Fixed assets costing less than €10,000 are written off in the year of acquisition.

Fixed assets that comply with the capitalisation criteria, but are still under construction or development, are recorded under the heading “Assets under construction”. The related costs are transferred to the relevant fixed asset headings once the assets are available for use.

Leases

The ECB acts both as a lessee and a sub-lessor.

The ECB as a lessee

For all leases for which the ECB is a lessee and which involve a tangible asset, the related right-of-use asset and lease liability are recognised on the balance sheet at the lease commencement date, i.e. once the asset is available for use, and are included under the relevant fixed asset headings of “Tangible and intangible fixed assets” and under “Sundry” (liabilities) respectively. Where leases comply with the capitalisation criteria, but the asset involved is still under construction or adaptation, the incurred costs before the lease commencement date are recorded under the heading “Assets under construction”.

Right-of-use assets are valued at cost less depreciation. In addition, right-of-use assets relating to office buildings are subject to impairment (regarding the annual impairment test, see “Fixed assets” above). Depreciation is calculated on a straight-line basis from the commencement date to either the end of the useful life of the right-of-use asset or the end of the lease term, whichever is earlier.

The lease liability is initially measured at the present value of the future lease payments (comprising only lease components), discounted using the ECB's incremental borrowing rate. Subsequently, the lease liability is measured at amortised cost using the effective interest method. The related interest expense is recorded in the profit and loss account under “Other interest expense”. When there is a change in future lease payments arising from a change in an index or other reassessment of the existing contract, the lease liability is remeasured. Any such remeasurement results in a corresponding adjustment to the carrying amount of the right-of-use asset.

Short-term leases with a duration of 12 months or less and leases of low-value assets below €10,000 (consistent with the threshold used for the recognition of fixed assets) are recorded as an expense in the profit and loss account.

The ECB as a sub-lessor

For all leases for which the ECB is a sub-lessor, the ECB grants to third parties the right to use the underlying asset (or a part of such asset), while the lease between the original lessor and the ECB (head lease) remains in effect. The sub-lease is classified as a finance or operating lease[26] by reference to the right-of-use asset arising from the head lease, rather than by reference to the underlying asset.

The sub-leases for which the ECB is a sub-lessor are classified as a finance lease and the ECB derecognises from “Tangible and intangible fixed assets” the right-of-use asset relating to the head lease (or a part of such asset) that is transferred to the sub-lessee, and recognises under “Sundry” (assets) a sub-lease receivable. The lease liability relating to the head lease remains unaffected by the sub-lease.

At the commencement date, the sub-lease receivable is initially measured at the present value of the future lease payments accruing to the ECB, discounted using the discount rate used for the head lease. Subsequently, the sub-lease receivable is measured at amortised cost using the effective interest method. The related interest income is recorded in the profit and loss account under “Other interest income”.

The ECB’s post-employment benefits, other long-term benefits and termination benefits

The ECB operates defined benefit plans for its staff and the members of the Executive Board, as well as for the members of the Supervisory Board employed by the ECB.

The staff pension plan is funded by assets held in a long-term employee benefit fund. The compulsory contributions made by the ECB and the staff are reflected in the defined benefit pillar of the plan. Staff can make additional contributions on a voluntary basis in a defined contribution pillar that can be used to provide additional benefits.[27] These additional benefits are determined by the amount of voluntary contributions together with the investment returns arising from those contributions.

Unfunded arrangements are in place for the post-employment and other long-term benefits of members of the Executive Board and members of the Supervisory Board employed by the ECB. For staff, unfunded arrangements are in place for post-employment benefits other than pensions and for other long-term benefits.

Net defined benefit liability

The liability recognised in the balance sheet under “Sundry” (liabilities) in respect of the defined benefit plans, including other long-term benefits and termination benefits[28], is the present value of the defined benefit obligation at the balance sheet date, less the fair value of plan assets used to fund the related obligation.

[26] A lease is classified as a finance lease if it transfers substantially all the risks and rewards incidental to ownership of an underlying asset, otherwise it is classified as an operating lease.

[27] The funds accumulated by a staff member through voluntary contributions can be used at retirement to purchase an additional pension. This pension is included in the defined benefit obligation from that point on.

[28] All remaining termination benefits related to the temporary Career Transition Support scheme introduced by the ECB in 2017 were paid during 2023 and therefore the ECB had no related liabilities as at 31 December 2023.

The defined benefit obligation is calculated annually by independent actuaries using the projected unit credit method. The present value of the defined benefit obligation is calculated by discounting the estimated future cash flows using a rate which is determined by reference to market yields at the balance sheet date on high-quality euro-denominated corporate bonds that have similar terms to maturity to the related obligation.

Actuarial gains and losses can arise from experience adjustments (where actual outcomes are different from the actuarial assumptions previously made) and changes in actuarial assumptions.

Net defined benefit cost

The net defined benefit cost is split into components reported in the profit and loss account and remeasurements in respect of post-employment benefits shown in the balance sheet under “Revaluation accounts”.

The net amount charged to the profit and loss account comprises:

1. the current service cost of the defined benefits accruing for the year;
2. the past service cost of the defined benefits resulting from a plan amendment;
3. net interest at the discount rate on the net defined benefit liability;
4. remeasurements in respect of other long-term benefits and termination benefits of a long-term nature[29], if any, in their entirety.

The net amount shown under “Revaluation accounts” comprises the following items:

1. actuarial gains and losses on the defined benefit obligation;
2. the actual return on plan assets, excluding amounts included in the net interest on the net defined benefit liability;
3. any change in the effect of the asset ceiling, excluding amounts included in the net interest on the net defined benefit liability.

These amounts are valued annually by independent actuaries to establish the appropriate liability in the financial statements.

Intra-ESCB balances/intra-Eurosystem balances

Intra-ESCB balances result primarily from cross-border payments in the European Union (EU) that are settled in central bank money in euro. These transactions are for the most part initiated by private entities (i.e. credit institutions, corporations and individuals). They are settled in TARGET – the Trans-European Automated Real-time Gross settlement Express Transfer system – and give rise to bilateral balances in the TARGET accounts of EU central banks. Payments conducted by the ECB and

[29] Since the ECB had no liabilities related to the Career Transition Scheme as at 31 December 2023, no related remeasurements were charged in 2023.

the national central banks (NCBs) also affect these accounts. All settlements are automatically aggregated and adjusted to form part of a single position for each NCB vis-à-vis the ECB. These positions in the books of the ECB represent the net claim or liability of each NCB against the rest of the European System of Central Banks (ESCB). The movements in TARGET accounts are reflected in the accounting records of the ECB and the NCBs on a daily basis.

Intra-Eurosystem balances of euro area NCBs vis-à-vis the ECB arising from TARGET, as well as other intra-Eurosystem balances denominated in euro (e.g. the ECB's interim profit distribution to NCBs, if any), are presented on the balance sheet of the ECB as a single net asset or liability position under either "Other claims within the Eurosystem (net)" or "Other liabilities within the Eurosystem (net)". Intra-ESCB balances of non-euro area NCBs vis-à-vis the ECB, arising from their participation in TARGET,[30] are disclosed under "Liabilities to non-euro area residents denominated in euro".

Intra-Eurosystem balances arising from the allocation of euro banknotes within the Eurosystem are included as a single net asset under "Claims related to the allocation of euro banknotes within the Eurosystem" (see "Banknotes in circulation" below).

Intra-Eurosystem balances arising from the transfer of foreign reserve assets to the ECB by NCBs joining the Eurosystem are denominated in euro and reported under "Liabilities equivalent to the transfer of foreign reserves".

Banknotes in circulation

The ECB and the euro area NCBs, which together constitute the Eurosystem, issue euro banknotes.[31] The total value of euro banknotes in circulation is allocated to the Eurosystem central banks on the last working day of each month in accordance with the banknote allocation key.[32]

The ECB has been allocated an 8% share of the total value of euro banknotes in circulation, which is disclosed in the balance sheet under the liability item "Banknotes in circulation". The ECB's share of the total euro banknote issue is backed by claims on the NCBs. These claims, which bear interest,[33] are disclosed under the item "Claims related to the allocation of euro banknotes within the Eurosystem" (see "Intra-ESCB balances/intra-Eurosystem balances" above). Interest income on these

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30 As at 31 December 2023 the non-euro area NCBs participating in TARGET were Българска народна банка (Bulgarian National Bank), Danmarks Nationalbank, Narodowy Bank Polski and Banca Naţională a României.

31 Decision of the ECB of 13 December 2010 on the issue of euro banknotes (ECB/2010/29) (2011/67/EU) (OJ L 35, 9.2.2011, p. 26), as amended. The unofficial consolidated text with the list of amendments can be found here.

32 "Banknote allocation key" means the percentages that result from taking into account the ECB's share in the total euro banknote issue and applying the subscribed capital key to the NCBs' share in that total.

33 Decision (EU) 2016/2248 of the ECB of 3 November 2016 on the allocation of monetary income of the national central banks of Member States whose currency is the euro (ECB/2016/36) (OJ L 347, 20.12.2016, p. 26), as amended. The unofficial consolidated text with the list of amendments can be found here.

claims is included in the profit and loss account under the item "Interest income arising from the allocation of euro banknotes within the Eurosystem".

Interim profit distribution

An amount that is equal to the sum of the ECB's income on euro banknotes in circulation and income arising from the securities held for monetary policy purposes purchased under (i) the Securities Markets Programme; (ii) the third covered bond purchase programme; (iii) the asset-backed securities purchase programme; (iv) the public sector purchase programme; and (v) the pandemic emergency purchase programme is distributed in January of the following year by means of an interim profit distribution, unless otherwise decided by the Governing Council.[34] Any such decision shall be taken where, on the basis of a reasoned estimate prepared by the Executive Board, the Governing Council expects that the ECB will have an overall annual loss or will make an annual profit that is less than this income. The Governing Council may also decide to transfer all or part of this income to a provision for financial risks. Furthermore, the Governing Council may decide to reduce the amount of the income on euro banknotes in circulation to be distributed in January by the amount of the costs incurred by the ECB in connection with the issue and handling of euro banknotes.

Post-balance-sheet events

The values of assets and liabilities are adjusted for events that occur between the annual balance sheet date and the date on which the Executive Board authorises the submission of the ECB's Annual Accounts to the Governing Council for approval, if such events materially affect the condition of assets and liabilities at the balance sheet date.

Important post-balance-sheet events that do not affect the condition of assets and liabilities at the balance sheet date are disclosed in the notes.

Changes to accounting policies

In 2023 there were no changes to the accounting policies applied by the ECB.

Other issues

In accordance with Article 27 of the Statute of the ESCB, and on the basis of a recommendation of the Governing Council, the Council of the EU initially approved the appointment of Baker Tilly GmbH & Co. KG Wirtschaftsprüfungsgesellschaft,

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34 Decision (EU) 2015/298 of the ECB of 15 December 2014 on the interim distribution of the income of the ECB (ECB/2014/57) (OJ L 53, 25.2.2015, p. 24), as amended. The unofficial consolidated text with the list of amendments can be found here.

Düsseldorf (Federal Republic of Germany) as the external auditors of the ECB for a five-year period up to the end of the financial year 2022. In 2023 the Council of the EU, based on a recommendation by the Governing Council, approved an extension of this period by two additional years until the end of the financial year 2024.

2.4 Notes on the balance sheet

Note 1 - Gold and gold receivables

This item comprised the ECB's holdings of gold:

	2023	2022
Quantity		
Ounces of fine gold[1]	16,285,778	16,229,522
Price		
US dollar per fine ounce of gold	2,063.950	1,819.700
US dollar per euro	1.1050	1.0666
Market value (€ millions)	**30,419**	**27,689**

1) This corresponds to 506.5 and 504.8 tonnes in 2023 and 2022 respectively.

The increase in the euro equivalent value of ECB's gold holdings was primarily due to the rise in the market price of gold in euro terms (see "Gold and foreign currency assets and liabilities" in Section 2.3 "Accounting policies" and note 15 "Revaluation accounts"). Additionally, upon the adoption of the single currency by Croatia with effect from 1 January 2023, Hrvatska narodna banka transferred to the ECB 56,256 ounces of fine gold with a value of €96 million.

Note 2 - Claims on non-euro area and euro area residents denominated in foreign currency

Note 2.1 - Receivables from the IMF

This asset represents the ECB's holdings of SDRs and amounted to €2,083 million as at 31 December 2023 (2022: €1,759 million). It arises as the result of a two-way SDR buying and selling voluntary trading arrangement with the International Monetary Fund (IMF), whereby the IMF is authorised to arrange sales or purchases of SDRs against euro, on behalf of the ECB, within minimum and maximum holding levels. For accounting purposes, SDRs are treated as a foreign currency (see "Gold and foreign currency assets and liabilities" in Section 2.3 "Accounting policies"). The ECB's holdings of SDRs increased in 2023, predominantly as a result of a transaction that took place in the context of the above-mentioned voluntary trading arrangement.

Note 2.2 - Balances with banks and security investments, external loans and other external assets; and claims on euro area residents denominated in foreign currency

These two items consist of balances with banks and loans denominated in foreign currency, and investments in securities denominated in US dollars, Japanese yen and Chinese renminbi.

	2023 € millions	2022 € millions	Change € millions
Claims on non-euro area residents			
Current accounts	7,161	15,687	(8,526)
Money market deposits	474	985	(512)
Security investments	46,158	37,172	8,986
Total claims on non-euro area residents	**53,793**	**53,844**	**(52)**
Claims on euro area residents			
Current accounts	25	34	(10)
Money market deposits	1,426	1,125	301
Total claims on euro area residents	**1,450**	**1,159**	**291**
Total	**55,243**	**55,004**	**239**

The total value of these items increased in 2023, mainly owing to the income earned during the year, primarily on the US dollar portfolio. Additionally, upon the adoption of the single currency by Croatia with effect from 1 January 2023, Hrvatska narodna banka transferred to the ECB foreign reserve assets denominated in US dollars with a value of €544 million. However, the total increase was almost entirely offset by the depreciation of the US dollar and the Japanese yen against the euro.

The ECB's net foreign currency holdings[35] were as follows:

[35] These holdings comprise assets minus liabilities denominated in the given foreign currency that are subject to foreign currency revaluation. They are included under the headings "Claims on non-euro area residents denominated in foreign currency", "Claims on euro area residents denominated in foreign currency", "Accruals and prepaid expenses", "Liabilities to non-euro area residents denominated in foreign currency", "Off-balance-sheet instruments revaluation differences" (liabilities side) and "Accruals and income collected in advance" and take into account foreign exchange forward and swap transactions included in off-balance-sheet items. Price gains on financial instruments denominated in foreign currency arising as a result of revaluations are not included.

	2023 Foreign currency in millions	2022 Foreign currency in millions
US dollars	52,590	49,590
Japanese yen	1,089,844	1,090,312
Chinese renminbi	4,545	4,440

No foreign exchange interventions took place during 2023.

Note 3 - Other claims on euro area credit institutions denominated in euro

As at 31 December 2023 this item consisted of current account balances with euro area residents amounting to €17 million (2022: €12 million).

Note 4 - Securities of euro area residents denominated in euro

Note 4.1 - Securities held for monetary policy purposes

As at 31 December 2023 this item consisted of securities acquired by the ECB within the scope of the Securities Markets Programme (SMP), the third covered bond purchase programme (CBPP3), the asset-backed securities purchase programme (ABSPP), the public sector purchase programme (PSPP) and the pandemic emergency purchase programme (PEPP).

	Start date	End date	Decision	Universe of eligible securities[1]
Completed/Terminated programmes				
CBPP1[2]	July 2009	June 2010	ECB/2009/16	Covered bonds of euro area residents
CBPP2[2]	November 2011	October 2012	ECB/2011/17	Covered bonds of euro area residents
SMP	May 2010	September 2012	ECB/2010/5	Public and private debt securities issued in the euro area[3]
Asset purchase programme (APP)[4]				
CBPP3	October 2014	active	ECB/2020/8, as amended	Covered bonds of euro area residents
ABSPP	November 2014	active	ECB/2014/45, as amended	Senior and guaranteed mezzanine tranches of asset-backed securities of euro area residents
PSPP	March 2015	active	ECB/2020/9	Bonds issued by euro area central, regional or local governments or recognised agencies as well as by international organisations and multilateral development banks located in the euro area
CSPP[5]	June 2016	active	ECB/2016/16, as amended	Bonds and commercial paper issued by non-bank corporations established in the euro area
Pandemic emergency purchase programme (PEPP)				
PEPP	March 2020	active	ECB/2020/17, as amended	All asset categories eligible under the APP

1) Further eligibility criteria for the specific programmes can be found in the Governing Council's decisions.
2) At the end of 2022 and the end of 2023, the ECB did not have any holdings of securities under the first and second covered bond purchase programmes (CBPP1 and CBPP2). However, in 2022 the ECB still recorded interest income from these portfolios, since the last holdings under the CBPP1 and the CBPP2 matured in July 2022 and September 2022 respectively.
3) Only public debt securities issued by five euro area treasuries were purchased under the SMP.
4) The reinvestments under the asset purchase programme (APP) were discontinued as of 1 July 2023.
5) The ECB does not acquire securities under the corporate sector purchase programme (CSPP).

Until the end of February 2023[36], the Eurosystem continued reinvesting, in full, the principal payments from maturing securities purchased under the asset purchase programme (APP)[37]. Subsequently, the APP portfolio declined at a measured and predictable pace. Until the end of June 2023, the decline amounted to €15 billion per month on average, as the Eurosystem did not reinvest all of the principal payments from maturing securities. In June 2023 the Governing Council decided[38] to discontinue the reinvestments under the APP as of July 2023. Thereafter, the APP portfolio declined due to maturing securities.

With regard to the PEPP[39], the Eurosystem continued reinvesting, in full, the principal payments from maturing securities purchased throughout the year. The Governing Council intends[40] to continue to reinvest, in full, the principal payments from maturing securities purchased under the PEPP during the first half of 2024. It also intends to reduce the PEPP portfolio by €7.5 billion per month on average over the second half of 2024 and to discontinue reinvestments at the end of the same year. In addition, the Governing Council will continue applying flexibility in reinvesting redemptions coming due in the PEPP portfolio, with a view to countering risks to the monetary policy transmission mechanism related to the pandemic.

36 See the press release of 15 December 2022 on the Governing Council's decisions.
37 Further details on the APP can be found on the ECB's website.
38 See the press release of 15 June 2023 on the Governing Council's decisions.
39 Further details on the PEPP can be found on the ECB's website.
40 See the press release of 14 December 2023 on the Governing Council's decisions.

The securities purchased under these programmes are valued on an amortised cost basis subject to impairment (see “Securities” in Section 2.3 “Accounting policies”).

The amortised cost of the securities held by the ECB and their market value[41] (which is not recorded on the balance sheet or in the profit and loss account and is provided for comparison purposes only) were as follows:

	2023 € millions		2022 € millions		Change € millions	
	Amortised cost	Market value	Amortised cost	Market value	Amortised cost	Market value
Completed/Terminated programmes						
SMP	496	522	718	766	(222)	(244)
APP						
CBPP3	23,530	21,490	25,116	22,136	(1,587)	(647)
ABSPP	13,348	13,225	22,895	22,605	(9,547)	(9,379)
PSPP – government/agency securities	224,867	205,847	242,857	213,750	(17,991)	(7,903)
Total APP	**261,744**	**240,562**	**290,868**	**258,491**	**(29,124)**	**(17,930)**
PEPP						
PEPP – covered bonds	839	736	769	628	70	108
PEPP – government/agency securities	162,270	143,669	164,916	138,072	(2,646)	5,597
Total PEPP	**163,109**	**144,405**	**165,685**	**138,700**	**(2,576)**	**5,705**
Total	**425,349**	**385,489**	**457,271**	**397,957**	**(31,922)**	**(12,468)**

The amortised cost value of the securities held by the ECB changed during the year as follows:

	2022 € millions	Gross purchases € millions	Redemptions € millions	Net discount/ (premium)[1] € millions	2023 € millions
SMP	718	-	(235)	13	496
CBPP3	25,116	1,512	(3,057)	(42)	23,530
ABSPP	22,895	690	(10,142)	(95)	13,348
PSPP – government/agency securities	242,857	10,141	(26,160)	(1,971)	224,867
PEPP – covered bonds	769	85	(15)	(1)	839
PEPP – government/agency securities	164,916	17,220	(17,922)	(1,945)	162,270
Total	**457,271**	**29,649**	**(57,530)**	**(4,041)**	**425,349**

1) "Net discount/(premium)" includes net realised gains/(losses), if any.

41 Market values are indicative and are derived on the basis of market quotes. When market quotes are not available, market prices are estimated using internal Eurosystem models.

The Governing Council assesses on a regular basis the financial risks associated with the securities held under these programmes.

In this context, impairment tests are conducted on an annual basis, using data as at the year-end, and are approved by the Governing Council. In these tests, impairment indicators are assessed separately for each programme. In cases where impairment indicators are observed, further analysis is performed to confirm that the cash flows of the underlying securities have not been affected by an impairment event. Based on the results of this year's impairment tests, no losses have been recorded by the ECB for the securities held in its monetary policy portfolios in 2023.

The amortised cost value of the securities held by the Eurosystem was as follows:

	2023 € millions			2022 € millions		
	ECB	Euro area NCBs	Total Eurosystem	ECB	Euro area NCBs	Total Eurosystem
Completed/Terminated programmes						
SMP	496	1,901	2,397	718	2,143	2,860
APP						
CBPP3	23,530	262,090	285,620	25,116	276,857	301,973
ABSPP	13,348	-	13,348	22,895	-	22,895
PSPP – government/agency securities	224,867	1,922,907	2,147,774	242,857	2,066,581	2,309,438
PSPP – supranational securities	-	255,261	255,261	-	275,228	275,228
CSPP	-	323,921	323,921	-	344,119	344,119
Total APP	**261,744**	**2,764,180**	**3,025,924**	**290,868**	**2,962,785**	**3,253,653**
PEPP						
PEPP – covered bonds	839	5,197	6,036	769	5,283	6,052
PEPP – government/agency securities	162,270	1,297,397	1,459,667	164,916	1,317,937	1,482,853
PEPP – supranational securities	-	154,332	154,332	-	145,687	145,687
PEPP – corporate sector securities	-	45,989	45,989	-	46,074	46,074
Total PEPP	**163,109**	**1,502,915**	**1,666,024**	**165,685**	**1,514,981**	**1,680,666**
Total	**425,349**	**4,268,996**	**4,694,345**	**457,271**	**4,479,908**	**4,937,179**

Note: "Euro area NCBs" figures are preliminary and may be subject to revision, which would also result in an equivalent change in the "Total Eurosystem" figures.

Note 5 - Intra-Eurosystem claims

Note 5.1 - Claims related to the allocation of euro banknotes within the Eurosystem

This item consists of the claims of the ECB vis-à-vis the euro area NCBs relating to the allocation of euro banknotes within the Eurosystem (see “Banknotes in circulation” in Section 2.3 “Accounting policies”) and as at 31 December 2023 amounted to €125,378 million (2022: €125,763 million). The remuneration of these claims is calculated daily at the latest available interest rate used by the Eurosystem in its tenders for main refinancing operations (see note 23.2 “Interest income arising from the allocation of euro banknotes within the Eurosystem”).

Note 6 - Other assets

Note 6.1 - Tangible and intangible fixed assets

These assets comprised the following items:

	2023 € millions	2022 € millions	Change € millions
Cost			
Land and buildings	1,014	1,007	7
Right-of-use buildings	315	296	19
Plant in building	222	222	-
Computer hardware and software	142	140	1
Equipment, furniture and motor vehicles	111	110	1
Right-of-use equipment	2	3	(1)
Assets under construction	0	5	(5)
Other fixed assets	11	11	(0)
Total cost	**1,818**	**1,796**	**22**
Accumulated depreciation			
Land and buildings	(227)	(204)	(23)
Right-of-use buildings	(197)	(152)	(45)
Plant in building	(144)	(128)	(16)
Computer hardware and software	(129)	(120)	(9)
Equipment, furniture and motor vehicles	(92)	(82)	(11)
Right-of-use equipment	(2)	(2)	(0)
Other fixed assets	(3)	(3)	(0)
Total accumulated depreciation	**(795)**	**(690)**	**(104)**
Total net book value	**1,023**	**1,105**	**(82)**

In respect of the ECB's main building and right-of-use office buildings, an impairment test was conducted at the end of the year and no impairment loss was recorded.

Note 6.2 - Other financial assets

This item consists mainly of the ECB's own funds portfolio, which predominantly consists of investments of the ECB's paid-up capital as well as of amounts set aside in the general reserve fund and in the provision for financial risks. It also includes 3,211 shares in the Bank for International Settlements (BIS) at the acquisition cost of €42 million and other current accounts denominated in euro.

The components of this item were as follows:

	2023 € millions	2022 € millions	Change € millions
Current accounts in euro	46	38	8
Securities denominated in euro	20,355	19,280	1,075
Reverse repurchase agreements in euro	1,730	1,854	(124)
Other financial assets	42	42	(0)
Total	**22,172**	**21,213**	**959**

The net increase in this item in 2023 was primarily due to (i) the reinvestment of interest income generated on the ECB's own funds portfolio and (ii) the increase in the market value of euro-denominated securities held in this portfolio.

Note 6.3 - Off-balance-sheet instruments revaluation differences

This item is composed primarily of valuation changes in swap and forward transactions in foreign currency that were outstanding on 31 December 2023 (see note 20 "Foreign exchange swap and forward transactions"). These valuation changes amounted to €552 million (2022: €783 million) and are the result of the conversion of such transactions into their euro equivalents at the exchange rates prevailing on the balance sheet date, compared with the euro values resulting from the conversion of the transactions at the average cost of the respective foreign currency on that date (see "Off-balance-sheet instruments" and "Gold and foreign currency assets and liabilities" in Section 2.3 "Accounting policies").

Note 6.4 - Accruals and prepaid expenses

This item comprised the following components:

	2023 € millions	2022 € millions	Change € millions
Accrued interest on TARGET balances due from NCBs	4,955	2,856	2,099
Accrued interest on claims related to the allocation of euro banknotes	1,429	575	855
Accrued interest on securities	3,709	3,640	69
Accrued income related to supervisory tasks	654	594	60
Other accruals and prepaid expenses	158	151	7
Total	**10,905**	**7,815**	**3,090**

As at 31 December 2023 this item included accrued interest receivable on TARGET balances due from euro area NCBs for December 2023 (see note 12.2 "Other liabilities within the Eurosystem (net)") and accrued interest receivable from euro area NCBs for the final quarter of 2023 in respect of the ECB's claims related to the allocation of euro banknotes within the Eurosystem (see note 5.1 "Claims related to the allocation of euro banknotes within the Eurosystem”). These amounts were settled in January 2024.

It also included accrued coupon interest on securities, including outstanding interest paid at acquisition (see note 2.2 “Balances with banks and security investments, external loans and other external assets; and claims on euro area residents denominated in foreign currency”, note 4 “Securities of euro area residents denominated in euro” and note 6.2 “Other financial assets”).

Accrued income related to supervisory tasks corresponds to the supervisory fees to be received for the fee period 2023 that will be collected in 2024 (see note 26 “Net income/expense from fees and commissions”).[42]

The remainder of this item mainly comprised (i) accrued interest income on other financial instruments; (ii) accrued income from ESCB projects and services in operation (see note 28 “Other income”); and (iii) miscellaneous prepayments.

Note 6.5 - Sundry

On 31 December 2023 this item amounted to €88 million (2022: €438 million). It included miscellaneous balances amounting to €60 million (2022: €90 million), comprising mainly receivables in relation to ESCB projects and services in operation (see note 28 “Other income”) and balances in respect of recoverable value added tax.

It also included balances with a value of €28 million (2022: €349 million) related to swap and forward transactions in foreign currency outstanding on 31 December 2023 (see note 20 “Foreign exchange swap and forward transactions”). These balances arose from the conversion of such transactions into their euro equivalents at the respective currency’s average cost on the balance sheet date, compared with the euro values at which the transactions were initially recorded (see “Off-balance-sheet instruments” in Section 2.3 “Accounting policies”).

Note 7 - Banknotes in circulation

This item consists of the ECB’s share (8%) of total euro banknotes in circulation (see “Banknotes in circulation” in Section 2.3 “Accounting policies”), which as at 31 December 2023 amounted to €125,378 million (2022: €125,763 million).

Note 8 - Other liabilities to euro area credit institutions denominated in euro

The Eurosystem central banks have the possibility of accepting cash as collateral in their PSPP and public sector PEPP securities lending facilities without having to

[42] Further details can be found on the ECB's banking supervision website.

reinvest it. In the case of the ECB, these operations are conducted via a specialised institution.

As at 31 December 2023 the outstanding value of such lending transactions against cash collateral conducted with euro area credit institutions was €4,699 million (2022: €17,734 million). Cash received as collateral was transferred to TARGET accounts. As the cash remained uninvested at the year-end, these transactions were recorded on the balance sheet (see “Reverse transactions” in Section 2.3 “Accounting policies”).[43]

Note 9 - Liabilities to other euro area residents denominated in euro

Note 9.1 - General government

As at 31 December 2023 this item amounted to €143 million (2022: €48,520 million) and included deposits of the European Financial Stability Facility (EFSF) and the European Stability Mechanism (ESM). In accordance with Article 21 of the Statute of the ESCB, the ECB may act as fiscal agent for Union institutions, bodies, offices or agencies, central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of Member States.

Note 9.2 - Other liabilities

This item consists of balances of the euro area ancillary systems[44] connected to TARGET through the TARGET-ECB component, which as at 31 December 2023 amounted to €20,479 million (2022: €15,343 million).

Note 10 - Liabilities to non-euro area residents denominated in euro

This item comprised the following components:

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43 Securities lending transactions that do not result in uninvested cash collateral at the year-end are recorded in off-balance-sheet accounts (see note 17 “Securities lending programmes”).

44 Ancillary systems are financial market infrastructures that have been granted access to the TARGET-ECB component by the Governing Council, provided they fulfil the requirements defined in Decision (EU) 2022/911 of the ECB of 19 April 2022 concerning the terms and conditions of TARGET-ECB and repealing Decision ECB/2007/7 (ECB/2022/22) (OJ L 163, 17.6.2022, p. 1), as amended. The unofficial consolidated text with the list of amendments can be found here. Depending on the managing entity, the ancillary systems are considered either euro area residents (see note 9.2 “Other liabilities”) or non-euro area residents (see note 10 “Liabilities to non-euro area residents denominated in euro”). Further details on ancillary systems can be found on the ECB’s website.

	2023 € millions	2022 € millions	Change € millions
TARGET balances	3,854	42,808	(38,954)
Cash received as collateral in securities lending transactions	5,637	15,008	(9,372)
Deposits accepted by the ECB in its role as fiscal agent	12,383	19,904	(7,522)
Liquidity-providing swap arrangements	1,237	388	850
Total	**23,111**	**78,108**	**(54,997)**

As at 31 December 2023 the largest component of this item was deposits accepted by the ECB in its role as fiscal agent for the European Commission, relating to the administration of EU borrowing and lending activities (see note 21 “Administration of borrowing and lending operations”).

This item also included balances arising from outstanding PSPP and public sector PEPP securities lending transactions conducted with non-euro area credit institutions in which cash was received as collateral and transferred to TARGET accounts (see note 8 “Other liabilities to euro area credit institutions denominated in euro”).

Furthermore, it included TARGET balances, consisting of TARGET balances of non-euro area NCBs vis-à-vis the ECB (see “Intra-ESCB balances/intra-Eurosystem balances” in Section 2.3 “Accounting policies”) and of the non-euro area ancillary systems connected to TARGET through the TARGET-ECB component. The decrease in these balances in 2023 corresponds to lower balances of the non-euro area ancillary systems.

The remainder of this item consists of a balance arising from the standing reciprocal currency arrangement with the Federal Reserve System. Under this arrangement, US dollars are provided by the Federal Reserve Bank of New York to the ECB by means of swap transactions, with the aim of offering short-term US dollar funding to Eurosystem counterparties. The ECB simultaneously enters into back-to-back swap transactions with euro area NCBs, which use the resulting funds to conduct US dollar liquidity-providing operations with Eurosystem counterparties in the form of reverse transactions. The back-to-back swap transactions result in intra-Eurosystem balances between the ECB and the euro area NCBs. Furthermore, the swap transactions conducted with the Federal Reserve Bank of New York and the euro area NCBs result in forward claims and liabilities that are recorded in off-balance-sheet accounts (see note 20 “Foreign exchange swap and forward transactions”).

Note 11 - Liabilities to non-euro area residents denominated in foreign currency

Note 11.1 - Deposits, balances and other liabilities

As at 31 December 2023 this item consisted of a liability in foreign currency vis-à-vis a non-euro area resident amounting to €24 million (2022: zero), which arose in the context of the management of the ECB's foreign reserves.

Note 12 - Intra-Eurosystem liabilities

Note 12.1 - Liabilities equivalent to the transfer of foreign reserves

These represent the liabilities to euro area NCBs that arose from the transfer of foreign reserve assets to the ECB when they joined the Eurosystem. In line with Article 30.2 of the Statute of the ESCB, these contributions are fixed in proportion to the NCBs' shares in the subscribed capital of the ECB. Hrvatska narodna banka's transfer of foreign reserve assets upon Croatia's adoption of the single currency led to an increase in these liabilities.

	Since 1 January 2023 € millions	As at 31 December 2022 € millions
Nationale Bank van België/Banque Nationale de Belgique (Belgium)	1,470	1,470
Deutsche Bundesbank (Germany)	10,635	10,635
Eesti Pank (Estonia)	114	114
Central Bank of Ireland (Ireland)	683	683
Bank of Greece (Greece)	998	998
Banco de España (Spain)	4,811	4,811
Banque de France (France)	8,240	8,240
Hrvatska narodna banka (Croatia)	327	-
Banca d'Italia (Italy)	6,854	6,854
Central Bank of Cyprus (Cyprus)	87	87
Latvijas Banka (Latvia)	157	157
Lietuvos bankas (Lithuania)	233	233
Banque centrale du Luxembourg (Luxembourg)	133	133
Central Bank of Malta (Malta)	42	42
De Nederlandsche Bank (The Netherlands)	2,364	2,364
Oesterreichische Nationalbank (Austria)	1,181	1,181
Banco de Portugal (Portugal)	944	944
Banka Slovenije (Slovenia)	194	194
Národná banka Slovenska (Slovakia)	462	462
Suomen Pankki – Finlands Bank (Finland)	741	741
Total	**40,671**	**40,344**

Hrvatska narodna banka's claim was set at €327 million in order to ensure that the ratio between this claim and the aggregate claim credited to the other NCBs of Member States whose currency is the euro would be equal to the ratio between Hrvatska narodna banka's weighting in the ECB's capital key and the other euro area NCBs' aggregate weighting in this key. The difference between the claim and the value of the assets transferred (see note 1 "Gold and gold receivables" and note 2.2 "Balances with banks and security investments, external loans and other external assets; and claims on euro area residents denominated in foreign currency") was treated as part of the contributions from Hrvatska narodna banka, due under Article 48.2 of the Statute of the ESCB, to the reserves and provisions equivalent to the reserves of the ECB as at 31 December 2022 (see note 14 "Provisions" and note 15 "Revaluation accounts").

The remuneration of these liabilities is calculated daily at the latest available interest rate used by the Eurosystem in its tenders for main refinancing operations, adjusted to reflect a zero return on the gold component (see note 23.3 "Remuneration of NCBs' claims in respect of foreign reserves transferred").

Note 12.2 - Other liabilities within the Eurosystem (net)

In 2023 this item consisted predominantly of the TARGET balances of euro area NCBs vis-à-vis the ECB (see "Intra-ESCB balances/intra-Eurosystem balances" in Section 2.3 "Accounting policies").

	2023 € millions	2022 € millions
Net TARGET liability	404,336	315,090
Due to euro area NCBs in respect of TARGET	*1,616,387*	*1,830,483*
Due from euro area NCBs in respect of TARGET	*(1,212,050)*	*(1,515,393)*
Other liabilities within the Eurosystem	40	41
Total	**404,377**	**315,130**

The increase in the net TARGET liability was mainly attributable to the cash outflows as a result of (i) lower deposits of the ESM and the EFSF (see note 9.1 "General government"); (ii) lower balances of the non-euro area ancillary systems connected to TARGET through the TARGET-ECB component (see note 10 "Liabilities to non-euro area residents denominated in euro"); and (iii) the decrease in cash received as collateral against the lending of PSPP and public sector PEPP securities (see note 8 "Other liabilities to euro area credit institutions denominated in euro" and note 10 "Liabilities to non-euro area residents denominated in euro"). The impact of these factors was partially offset mainly by the cash inflows as a result of the maturing of securities under the APP and the PEPP, which were settled via TARGET accounts (see note 4 "Securities of euro area residents denominated in euro").

The remuneration of TARGET positions held by euro area NCBs vis-à-vis the ECB, with the exception of balances arising from back-to-back swap transactions in connection with US dollar liquidity-providing operations, is calculated daily at the latest available interest rate used by the Eurosystem in its tenders for main refinancing operations.

Other liabilities within the Eurosystem comprised predominantly deposits accepted by the ECB in its role as fiscal agent for the European Commission, relating to the administration of EU borrowing and lending activities (see note 21 "Administration of borrowing and lending operations").

Note 13 - Other liabilities

Note 13.1 - Off-balance-sheet instruments revaluation differences

This item is composed primarily of valuation changes in swap and forward transactions in foreign currency that were outstanding on 31 December 2023 (see note 20 "Foreign exchange swap and forward transactions"). These valuation changes amounted to €68 million (2022: €430 million) and are the result of the conversion of such transactions into their euro equivalents at the exchange rates prevailing on the balance sheet date, compared with the euro values resulting from the conversion of the transactions at the average cost of the respective foreign currency on that date (see “Off-balance-sheet instruments” and “Gold and foreign currency assets and liabilities” in Section 2.3 “Accounting policies”).

Note 13.2 - Accruals and income collected in advance

This item comprised the following components:

	2023 € millions	2022 € millions	Change € millions
Accrued interest on TARGET balances due to NCBs	6,390	3,530	2,860
Accrued interest on NCBs’ claims in respect of foreign reserves transferred to the ECB	1,335	201	1,133
Accrued interest on deposits accepted by the ECB in its role as fiscal agent	172	94	78
Other accruals and deferred income	134	90	43
Total	**8,030**	**3,915**	**4,114**

As at 31 December 2023 the two main components under this heading were accrued interest payable on TARGET balances due to NCBs for December 2023 (see note 10 “Liabilities to non-euro area residents denominated in euro” and note 12.2 “Other liabilities within the Eurosystem (net)”) and accrued interest payable to euro area NCBs for 2023 in respect of their claims relating to foreign reserves transferred to the ECB (see note 12.1 “Liabilities equivalent to the transfer of foreign reserves”). These amounts were settled in January 2024.

This item also included accrued interest payable on deposits accepted by the ECB in its role as fiscal agent (see note 9.1 “General government”, note 10 “Liabilities to non-euro area residents denominated in euro” and note 12.2 “Other liabilities within the Eurosystem (net)”).

The remainder of this item included mainly (i) accrued interest payable on balances of the euro area ancillary systems connected to TARGET through the TARGET-ECB component (see note 9.2 “Other liabilities”); (ii) miscellaneous accruals and deferred income; and (iii) accrued interest payable on cash received as collateral in the context of the ECB’s securities lending operations (note 8 “Other liabilities to euro area credit institutions denominated in euro” and note 10 “Liabilities to non-euro area residents denominated in euro”).

Note 13.3 - Sundry

On 31 December 2023 this item stood at €1,401 million (2022: €1,562 million). It included balances amounting to €635 million (2022: €974 million) related to swap and forward transactions in foreign currency that were outstanding on 31 December 2023 (see note 20 “Foreign exchange swap and forward transactions”). These balances arose from the conversion of such transactions into their euro equivalents at the respective currency’s average cost on the balance sheet date, compared with the euro values at which the transactions were initially recorded (see “Off-balance-sheet instruments” in Section 2.3 “Accounting policies”).

The item also includes a lease liability of €117 million (2022: €141 million) (see “Leases” in Section 2.3 “Accounting policies”).

In addition, this item includes the ECB’s net defined benefit liability in respect of the post-employment and other long-term benefits of its staff[45] and the members of the Executive Board, as well as the members of the Supervisory Board employed by the ECB. The termination benefits of ECB staff are also included.

The ECB’s post-employment benefits, other long-term benefits and termination benefits

Balance sheet

The amounts recognised in the balance sheet under the item “Sundry” (liabilities) in respect of post-employment, other long-term and staff termination benefits[46] were as follows:

	2023 € millions			2022 € millions		
	Staff	Boards	Total	Staff	Boards	Total
Defined benefit obligation	2,458	35	2,493	1,947	31	1,978
Fair value of plan assets	(1,983)	-	(1,983)	(1,638)	-	(1,638)
Net defined benefit liability included under “Sundry” (liabilities)	**475**	**35**	**510**	**309**	**31**	**340**

Note: The columns labelled “Boards” report amounts in respect of both the Executive Board and the Supervisory Board.

In 2023 the present value of the defined benefit obligation vis-à-vis staff of €2,458 million (2022: €1,947 million) included unfunded benefits amounting to €278 million (2022: €233 million) relating to post-employment benefits other than pensions and to other long-term benefits. The present value of the defined benefit obligation vis-à-vis the members of the Executive Board and the members of the Supervisory Board of

45 The defined benefit pillar of the plan reflects only the compulsory contributions made by the ECB and staff. Voluntary contributions made by staff in a defined contribution pillar in 2023 amounted to €228 million (2022: €189 million). These contributions are invested in the plan assets and give rise to a corresponding obligation of equal value.

46 All remaining termination benefits related to the temporary Career Transition Support scheme introduced by the ECB in 2017 were paid during 2023 and therefore the ECB had no related liabilities as at 31 December 2023.

€35 million (2022: €31 million) relates solely to unfunded arrangements in place for post-employment and other long-term benefits.

Remeasurements of the ECB's net defined benefit liability in respect of post-employment benefits are recognised in the balance sheet under the liability item "Revaluation accounts". In 2023 remeasurement gains under that liability item amounted to €238 million (2022: €369 million) (see note 15 "Revaluation accounts").

Changes in the defined benefit obligation, plan assets and remeasurement results

Changes in the present value of the defined benefit obligation were as follows:

	2023 € millions			2022 € millions		
	Staff	Boards	Total	Staff	Boards	Total
Opening defined benefit obligation	1,947	31	1,978	3,165	43	3,209
Current service cost	101	2	103	164	4	168
Interest cost on the obligation	77	1	79	42	1	42
Contributions paid by plan participants[1]	36	0	36	40	0	41
Benefits paid	(30)	(3)	(33)	(38)	(2)	(40)
Remeasurement (gains)/losses	327	4	331	(1,426)	(16)	(1,441)
Closing defined benefit obligation	**2,458**	**35**	**2,493**	**1,947**	**31**	**1,978**

Note: The columns labelled "Boards" report amounts in respect of both the Executive Board and the Supervisory Board.
1) Net figure including compulsory contributions and transfers into/out of the plans. The compulsory contributions paid by staff are 7.4%, whilst those paid by the ECB are 20.7% of the basic salary.

The total remeasurement losses of €331 million on the defined benefit obligation in 2023 arose mainly as a result of the decrease in the discount rate used for the actuarial valuation from 3.9% in 2022 to 3.4% in 2023.

Changes in the fair value of plan assets in the defined benefit pillar relating to staff were as follows:

	2023 € millions	2022 € millions
Opening fair value of plan assets	1,638	1,749
Interest income on plan assets	66	23
Remeasurement gains/(losses)	189	(228)
Contributions paid by employer	75	71
Contributions paid by plan participants	36	40
Benefits paid	(20)	(18)
Closing fair value of plan assets	**1,983**	**1,638**

The remeasurement gains on plan assets in 2023 reflected the fact that the actual return on the fund units was higher than the assumed interest income on plan assets, which was based on the discount rate assumption of 3.9%.

Changes in the remeasurement results were as follows:

	2023 € millions	2022 € millions
Opening remeasurement gains/(losses)	369	(799)
Contributions by NCBs joining the Eurosystem[1]	3	-
Gains/(losses) on plan assets	189	(228)
Gains/(losses) on obligation	(331)	1,441
(Gains)/losses recognised in the profit and loss account	8	(45)
Closing remeasurement gains included under "Revaluation accounts"	**238**	**369**

1) Upon the adoption of the single currency by Croatia, Hrvatska narodna banka contributed to the balances of all the revaluation accounts of the ECB as at 31 December 2022, which also included the remeasurement gains outstanding as of that date.

Profit and loss account

The amounts recognised in the profit and loss account were as follows:

	2023 € millions			2022 € millions		
	Staff	**Boards**	**Total**	**Staff**	**Boards**	**Total**
Current service cost	101	2	103	164	4	168
Net interest on the net defined benefit liability	12	1	13	19	1	19
Interest cost on the obligation	*77*	*1*	*79*	*42*	*1*	*42*
Interest income on plan assets	*(66)*	*-*	*(66)*	*(23)*	*-*	*(23)*
Remeasurement (gains)/losses on other long-term and termination benefits	8	(0)	8	(44)	(0)	(45)
Total included in "Staff costs"	**121**	**3**	**124**	**138**	**5**	**142**

Note: The columns labelled "Boards" report amounts in respect of both the Executive Board and the Supervisory Board.

The amounts recognised in the profit and loss account for the current service cost, interest cost on the obligation and interest income on plan assets are estimated using the rates that applied in the preceding year. The discount rate used for the actuarial valuation rose from 1.3% in 2021 to 3.9% in 2022, resulting in 2023 in (i) lower current service cost, (ii) higher interest cost on the obligation, and (iii) higher interest income on plan assets.

The remeasurements on other long-term and termination benefits are recognised in the profit and loss account of the current year, reflecting the rates applicable to the valuation. Therefore, the lower discount rate of 3.4% used for the actuarial valuation at the end of 2023 resulted in a remeasurement loss recognised in that year.

Key assumptions

In preparing the valuations referred to in this note, the independent actuaries have used assumptions which the Executive Board has accepted for the purposes of accounting and disclosure. The principal assumptions used for the purposes of calculating the liability for post-employment benefits and other long-term benefits were as follows:

	2023 %	2022 %
Discount rate	3.40	3.90
Expected return on plan assets[1]	5.30	4.90
General future salary increases[2]	2.00	2.00
Future pension increases[3]	1.70	1.70

1) These assumptions were used for calculating the part of the ECB's defined benefit obligation which is funded by assets with an underlying capital guarantee.
2) In addition, allowance is made for prospective individual salary increases of up to 1.8% per annum, depending on the age of the plan participants.
3) In accordance with the ECB's pension plan rules, pensions will be increased annually. If general salary adjustments for ECB employees are below price inflation, any increase in pensions will be in line with the general salary adjustments. If the general salary adjustments exceed price inflation, they will be applied to determine the increase in pensions, provided that the financial position of the ECB's pension plans permits such an increase.

Note 14 - Provisions

As at 31 December 2023 this item included administrative provisions amounting to €67 million (2022: €69 million). At the end of 2022 this item also included a provision for financial risks amounting to €6,566 million. Upon Croatia's adoption of the single currency, Hrvatska narodna banka contributed €53 million to this provision with effect from 1 January 2023[47], increasing its size to €6,620 million.

The size of and continuing requirement for the provision for financial risks is reviewed annually, based on the ECB's assessment of its exposure to these risks and taking a range of factors into account. Its size, together with any amount held in the general reserve fund, may not exceed the value of the ECB's capital paid up by the euro area NCBs. The purpose of this provision is to be used to the extent deemed necessary by the Governing Council to offset losses that arise as a result of exposures to financial risks. At the end of 2023 this provision was released in full to cover losses that arose from exposures to financial risks, bringing the ECB's loss for the year to €1,266 million. The losses resulted mainly from the increase in the interest rate used by the Eurosystem in its tenders for main refinancing operations, which led to a significant interest expense arising from the ECB's net TARGET liability (see note 23.4 "Other interest income; and other interest expense").

As a result of the full release of this provision for financial risks, its size stood at zero as at 31 December 2023. The Governing Council, in the context of its annual review, may decide to replenish this provision, once the ECB returns to making a profit.

Note 15 - Revaluation accounts

This item consists mainly of revaluation balances arising from unrealised gains on assets, liabilities and off-balance-sheet instruments (see "Income recognition", "Gold and foreign currency assets and liabilities", "Securities" and "Off-balance-sheet instruments" in Section 2.3 "Accounting policies"). It also includes remeasurements

47 This contribution was paid in accordance with Article 48.2 of the Statute of the ESCB.

of the ECB's net defined benefit liability in respect of post-employment benefits (see "The ECB's post-employment benefits, other long-term benefits and termination benefits" in Section 2.3 "Accounting policies" and note 13.3 "Sundry").

	2023 € millions	2022 € millions	Change € millions
Gold	26,622	23,794	2,827
Foreign currency	9,842	12,305	(2,462)
US dollars	*9,624*	*11,225*	*(1,601)*
Japanese yen	*206*	*977*	*(771)*
Chinese renminbi	*9*	*47*	*(38)*
SDR	*4*	*56*	*(52)*
Others	*0*	*-*	*0*
Securities and other instruments	397	19	378
Net defined benefit liability in respect of post-employment benefits	238	369	(131)
Total	**37,099**	**36,487**	**611**

The revaluation accounts increased in 2023 predominantly due to the rise in the market price of gold in euro terms. Additionally, upon Croatia's adoption of the single currency, Hrvatska narodna banka contributed €296 million to these balances with effect from 1 January 2023. This increase was partially offset by a decrease in the size of the foreign currency revaluation accounts, mainly owing to the depreciation of the US dollar and the Japanese yen against the euro.

The foreign exchange rates used for the year-end revaluation were as follows:

Exchange rates	2023	2022
US dollar per euro	1.1050	1.0666
Japanese yen per euro	156.33	140.66
Chinese renminbi per euro	7.8509	7.3582
Euro per SDR	1.2157	1.2517
Euro per fine ounce of gold	1,867.828	1,706.075

Note 16 - Capital and reserves

Note 16.1 - Capital

The subscribed capital of the ECB is €10,825 million.

Croatia adopted the single currency on 1 January 2023. In accordance with Article 48.1 of the Statute of the ESCB, Hrvatska narodna banka paid up €69 million as at 1

January 2023[48], representing the remainder of its capital subscription to the ECB. As a consequence, the ECB's total paid-up capital increased from €8,880 million on 31 December 2022 to €8,948 million on 1 January 2023, as shown in the table below.

	Since 1 January 2023			As at 31 December 2022		
	Capital key %	Subscribed capital € millions	Paid-up capital € millions	Capital key %	Subscribed capital € millions	Paid-up capital € millions
Nationale Bank van België/ Banque Nationale de Belgique (Belgium)	2.9630	321	321	2.9630	321	321
Deutsche Bundesbank (Germany)	21.4394	2,321	2,321	21.4394	2,321	2,321
Eesti Pank (Estonia)	0.2291	25	25	0.2291	25	25
Central Bank of Ireland (Ireland)	1.3772	149	149	1.3772	149	149
Bank of Greece (Greece)	2.0117	218	218	2.0117	218	218
Banco de España (Spain)	9.6981	1,050	1,050	9.6981	1,050	1,050
Banque de France (France)	16.6108	1,798	1,798	16.6108	1,798	1,798
Hrvatska narodna banka (Croatia)	0.6595	71	71	-	-	-
Banca d'Italia (Italy)	13.8165	1,496	1,496	13.8165	1,496	1,496
Central Bank of Cyprus (Cyprus)	0.1750	19	19	0.1750	19	19
Latvijas Banka (Latvia)	0.3169	34	34	0.3169	34	34
Lietuvos bankas (Lithuania)	0.4707	51	51	0.4707	51	51
Banque centrale du Luxembourg (Luxembourg)	0.2679	29	29	0.2679	29	29
Central Bank of Malta (Malta)	0.0853	9	9	0.0853	9	9
De Nederlandsche Bank (The Netherlands)	4.7662	516	516	4.7662	516	516
Oesterreichische Nationalbank (Austria)	2.3804	258	258	2.3804	258	258
Banco de Portugal (Portugal)	1.9035	206	206	1.9035	206	206
Banka Slovenije (Slovenia)	0.3916	42	42	0.3916	42	42
Národná banka Slovenska (Slovakia)	0.9314	101	101	0.9314	101	101
Suomen Pankki – Finlands Bank (Finland)	1.4939	162	162	1.4939	162	162
Subtotal for euro area NCBs	**81.9881**	**8,875**	**8,875**	**81.3286**	**8,804**	**8,804**
Българска народна банка (Bulgarian National Bank) (Bulgaria)	0.9832	106	4	0.9832	106	4
Česká národní banka (Czech Republic)	1.8794	203	8	1.8794	203	8
Danmarks Nationalbank (Denmark)	1.7591	190	7	1.7591	190	7
Hrvatska narodna banka (Croatia)	-	-	-	0.6595	71	3
Magyar Nemzeti Bank (Hungary)	1.5488	168	6	1.5488	168	6
Narodowy Bank Polski (Poland)	6.0335	653	24	6.0335	653	24
Banca Naţională a României (Romania)	2.8289	306	11	2.8289	306	11
Sveriges Riksbank (Sweden)	2.9790	322	12	2.9790	322	12
Subtotal for non-euro area NCBs	**18.0119**	**1,950**	**73**	**18.6714**	**2,021**	**76**
Total	**100.0000**	**10,825**	**8,948**	**100.0000**	**10,825**	**8,880**

48 Decision (EU) 2023/135 of the ECB of 30 December 2022 on the paying-up of capital, transfer of foreign reserve assets and contributions by Hrvatska narodna banka to the European Central Bank's reserves and provisions (ECB/2022/51) (OJ L 17, 19.1.2023, p. 94).

The euro area NCBs have fully paid up their share of subscribed capital.

The non-euro area NCBs are required to pay up 3.75% of their subscribed capital as a contribution to the operational costs of the ECB. Non-euro area NCBs are not entitled to receive any share of the distributable profits of the ECB, nor are they liable to cover any loss of the ECB.

2.5 Off-balance-sheet instruments

Note 17 - Securities lending programmes

As part of the management of the ECB's own funds, the ECB has a securities lending programme agreement in place under which a specialised institution enters into securities lending transactions on behalf of the ECB.

In addition, in accordance with the Governing Council's decisions, the ECB has made available for lending securities held for monetary policy purposes.[49]

Unless these securities lending operations are conducted against cash collateral that remains uninvested at the end of the year, they are recorded in off-balance-sheet accounts.[50] Such securities lending operations with a value of €32,791 million (2022: €11,569 million) were outstanding as at 31 December 2023. Of this amount, €26,577 million (2022: €6,637 million) related to the lending of securities held for monetary policy purposes.

Note 18 - Interest rate futures

The following transactions, presented at year-end foreign exchange rates, were outstanding:

Foreign currency interest rate futures	2023 Contract value € millions	2022 Contract value € millions	Change € millions
Purchases	2,207	692	1,515
Sales	4,142	1,401	2,741

These transactions were conducted in the context of the management of the ECB's foreign reserves.

Note 19 - Forward transactions in securities

The following transactions, presented at year-end foreign exchange rates, were outstanding:

49 Further details on securities lending can be found on the ECB's website.

50 If cash collateral remains uninvested at the year-end, these transactions are recorded in on-balance-sheet accounts (see note 8 "Other liabilities to euro area credit institutions denominated in euro" and note 10 "Liabilities to non-euro area residents denominated in euro").

Forward transactions in securities	2023 € millions	2022 € millions	Change € millions
Purchases	45	-	45
Sales	45	-	45

These transactions were conducted in the context of the management of the ECB's foreign reserves.

Note 20 - Foreign exchange swap and forward transactions

Management of foreign reserves

Foreign exchange swap and forward transactions were conducted in the context of the management of the ECB's foreign reserves. The outstanding claims and liabilities resulting from these transactions, presented at year-end foreign exchange rates, were as follows:

Foreign exchange swap and forward transactions	2023 € millions	2022 € millions	Change € millions
Claims	2,778	3,269	(491)
Liabilities	2,901	3,541	(639)

Liquidity-providing swap arrangements

The ECB is part of a swap-line network of central banks and has in place reciprocal swap arrangements with the Bank of Canada, the Bank of England, the Bank of Japan, the Federal Reserve System and the Swiss National Bank. It also holds a reciprocal swap-line with the People's Bank of China. These swap arrangements allow for the provision of (i) liquidity in any of the respective currencies of the above-mentioned central banks to euro area banks; or (ii) euro liquidity to financial institutions in the jurisdictions of the above central banks. Furthermore, swap agreements are also in place with Danmarks Nationalbank, Narodowy Bank Polski and Sveriges Riksbank for the provision of euro liquidity to financial institutions in their jurisdictions. The above arrangements are aimed at addressing possible liquidity needs to counter potential market dysfunction and thereby minimise the risk of adverse spillover effects to euro area financial markets and economies.[51]

US dollar-denominated claims and liabilities with a maturity date in 2024 arose in connection with the provision of US dollar liquidity to Eurosystem counterparties (see note 10 "Liabilities to non-euro area residents denominated in euro").

51 Further details on liquidity-providing swap arrangements can be found on the ECB's website.

Note 21 - Administration of borrowing and lending operations

In 2023 the ECB continued to be responsible for the administration of accounts and processing of payments relating to the borrowing and lending operations of the EU under the medium-term financial assistance facility, the European Financial Stabilisation Mechanism and the loan facility agreement for Greece.

In response to the COVID-19 pandemic, the EU granted loans to the Member States under its instrument for temporary Support to mitigate Unemployment Risks in an Emergency (SURE). The availability of this instrument ended on 31 December 2022, but the relevant issuances consisted of bonds ranging from 5 to 30 years maturity. In 2023 the EU also continued to provide financing in the form of non-repayable financial support and loan support to Member States under the Next Generation EU (NGEU) programme, which was established to support the economic recovery in the EU, while facilitating the green and digital transition of the Union's economy. In 2023 the EU also provided support to Ukraine in the form of loans through a new macro-financial assistance instrument (MFA +). The ECB supported the European Commission in the administration of the operations related to the above-mentioned instruments.

In 2023 the ECB processed payments related to all the above-mentioned operations.

Note 22 - Contingent liabilities from pending lawsuits

Lawsuits have been filed against the ECB relating to the exercise of its supervisory functions over Banca Carige S.p.A. (Banca Carige). In one of these lawsuits, Banca Carige's shareholders are seeking financial compensation from the ECB for the harm allegedly sustained as a result of various actions by the ECB in the exercise of its supervisory functions in respect of Banca Carige, consisting both of alleged failures to act and harmful actions. This case will be decided taking into account, among other factors, the final outcome of other related cases. In one of them, the General Court of the EU deemed, in its judgment of 12 October 2022, that the ECB's decision to place Banca Carige under temporary administration lacked an appropriate legal basis under Italian law. Accordingly, the General Court annulled the ECB's decision to place Banca Carige under temporary administration as well as the first extension of the duration of temporary administration in 2019. However, the General Court's judgment was appealed by the ECB before the Court of Justice of the EU, which may still overturn that judgment. Moreover, two further ECB decisions extending the temporary administration are currently being contested in an action for annulment, which is still pending.

2.6 Notes on the profit and loss account

Note 23 - Net interest income

	2023 € millions	2022 € millions	Change € millions
Net interest income on foreign reserve assets	2,382	798	1,583
Interest income arising from the allocation of euro banknotes within the Eurosystem	4,817	736	4,081
Remuneration of NCBs' claims in respect of foreign reserves transferred	(1,335)	(201)	(1,133)
Net other interest expense	(13,057)	(433)	(12,624)
Net interest income	**(7,193)**	**900**	**(8,093)**

Note 23.1 - Interest income on foreign reserve assets

This item includes interest income, net of interest expense, in respect of the ECB's net foreign reserve assets.

The net interest income/expense per instrument type is shown below:

	2023 € millions	2022 € millions	Change € millions
Current accounts	82	22	60
Money market deposits	129	51	78
Repurchase agreements	-	(0)	0
Reverse repurchase agreements	271	148	122
Securities	1,745	513	1,232
Forward and swap transactions in foreign currencies	155	64	91
Net interest income on foreign reserve assets	**2,382**	**798**	**1,583**

The net interest income/expense per foreign currency was as follows:

	2023 € millions	2022 € millions	Change € millions
US dollars	2,298	771	1,527
Japanese yen	(2)	(4)	2
Chinese renminbi	13	14	(0)
SDR	73	18	54
Net interest income on foreign reserve assets	**2,382**	**798**	**1,583**

Note 23.2 - Interest income arising from the allocation of euro banknotes within the Eurosystem

This item consists of the interest income relating to the ECB's 8% share of the total euro banknote issue (see "Banknotes in circulation" in Section 2.3 "Accounting policies" and note 5.1 "Claims related to the allocation of euro banknotes within the Eurosystem"). The interest income in 2023 amounted to €4,817 million (2022: €736 million). The increase in this income resulted from the higher average rate on the main refinancing operations in 2023 compared with the previous year (3.8% in 2023, compared with 0.6% in 2022).

Note 23.3 - Remuneration of NCBs' claims in respect of foreign reserves transferred

Remuneration paid to euro area NCBs on their claims in respect of the foreign reserve assets transferred to the ECB (see note 12.1 "Liabilities equivalent to the transfer of foreign reserves") is disclosed under this heading. The interest expense in 2023 amounted to €1,335 million (2022: €201 million). The increase in this remuneration was due to the higher average rate on the main refinancing operations in 2023 compared with the previous year (3.8% in 2023, compared with 0.6% in 2022).

Note 23.4 - Other interest income; and other interest expense

Other interest income and other interest expense were as follows:

	2023 € millions	2022 € millions	Change € millions
Net interest expense arising from TARGET balances due from/to NCBs	(14,236)	(2,075)	(12,161)
Net interest income/(expense) on monetary policy securities	3,467	1,534	1,933
CBPP1 and CBPP2	*-*	*2*	*(2)*
SMP[1]	*49*	*65*	*(16)*
CBPP3	*179*	*120*	*59*
ABSPP	*642*	*140*	*502*
PSPP	*1,997*	*1,310*	*686*
PEPP	*600*	*(103)*	*703*
Net interest income/(expense) on monetary policy security lending[2]	(308)	80	(388)
Net interest income on own funds	627	57	571
Net interest expense on deposits accepted by the ECB in its role as fiscal agent	(1,953)	(150)	(1,803)
Net interest income/(expense) on other assets/liabilities	(655)	121	(776)
Net other interest expense	**(13,057)**	**(433)**	**(12,624)**

1) The ECB's net interest income on SMP holdings of Greek government bonds amounted to €31 million (2022: €43 million).
2) Net interest income/(expense) on monetary policy security lending also includes the interest income/(expense) on cash received as collateral.

Note 24 - Realised gains/losses arising from financial operations

Realised gains and losses arising from financial operations were as follows:

	2023 € millions	2022 € millions	Change € millions
Net realised price losses	(117)	(351)	234
Net realised exchange rate and gold price gains	11	241	(230)
Net realised losses arising from financial operations	**(106)**	**(110)**	**4**

Net realised price losses include realised gains and losses on securities and interest rate futures. The net realised price losses in 2023 mainly arose from the accounting treatment of premium and discount amortisation related to repayments of securities held in the ABSPP.[52]

Realised gains and losses arising from financial operations per currency and per quarter are shown below:

	2023 € millions					2022 € millions				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
Net realised price gains/(losses)										
US dollars	41	22	(64)	(20)	(21)	(9)	(87)	(76)	(88)	(260)
Japanese yen	(5)	4	(1)	(4)	(5)	(1)	(3)	1	(2)	(4)
Chinese renminbi	0	0	0	(0)	0	2	2	2	0	6
Euro	(42)	(21)	(16)	(12)	(91)	(34)	(40)	(9)	(9)	(92)
Subtotal	**(5)**	**4**	**(81)**	**(35)**	**(117)**	**(42)**	**(128)**	**(82)**	**(99)**	**(351)**
Net realised exchange rate and gold price gains/(losses)										
US dollars	0	2	1	5	8	9	20	15	192	236
Japanese yen	2	0	0	0	2	1	1	0	3	4
Chinese renminbi	0	(0)	0	(0)	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	(0)	0	0
Subtotal	**2**	**3**	**1**	**5**	**11**	**10**	**21**	**15**	**195**	**241**
Total	**(3)**	**7**	**(80)**	**(30)**	**(106)**	**(32)**	**(107)**	**(67)**	**96**	**(110)**

52 Where the actual repayment date differs from the legal maturity date (which is usually the case for the ABSPP), the amount of the premium or discount that has not yet been amortised is considered realised in proportion to the value of the principal repaid.

Note 25 - Write-downs on financial assets and positions

Write-downs on financial assets and positions were as follows:

	2023 € millions	2022 € millions	Change € millions
Unrealised price losses on securities	(38)	(1,840)	1,802
Unrealised exchange rate losses	-	(0)	0
Write-downs on financial assets and positions	**(38)**	**(1,840)**	**1,802**

The market value of a number of securities held in the US dollar and own funds portfolios declined, alongside an increase in the corresponding yields in 2023. This resulted in unrealised price losses at the year-end. In 2022 these losses were substantially higher, because the corresponding yields had increased significantly, resulting in a large reduction in the market value of the majority of securities held in these portfolios at the end of that year.

Note 26 - Net income/expense from fees and commissions

	2023 € millions	2022 € millions	Change € millions
Income from fees and commissions	672	606	66
Expenses relating to fees and commissions	(22)	(21)	(1)
Net income from fees and commissions	**650**	**585**	**65**

Income under this heading consists primarily of supervisory fees. Expenses comprise predominantly custody fees.

Income and expenses related to supervisory tasks

Banking supervision-related income mainly comprises supervisory fee income. The ECB levies annual fees on supervised entities in order to recover expenditure incurred in the performance of its supervisory tasks. Based on the ECB’s actual annual expenses incurred in the performance of its banking supervision tasks, the supervisory fee income for 2023 stood at €654 million (2022: €594 million).

In order to determine the amount of supervisory fees to be levied, the actual annual expenditure is adjusted for amounts reimbursed to/received from individual banks for previous fee periods and other adjustments, including interest received on late payments.[53] Taking into account an adjustment corresponding to interest received on late payments as well as net reimbursements to individual banks for previous fee

[53] See Article 5(3) of Regulation (EU) No 1163/2014 of the ECB of 22 October 2014 on supervisory fees (ECB/2014/41) (OJ L 311, 31.10.2014, p. 23), as amended. The unofficial consolidated text with the list of amendments can be found here.

periods, the annual supervisory fees to be levied on the supervised entities for the fee period 2023 correspond to an amount almost equal to the actual annual expenses of €654 million[54] (see note 6.4 “Accruals and prepaid expenses”). The individual supervisory fees will be invoiced in the second quarter of 2024.[55]

The ECB is also entitled to impose administrative penalties on supervised entities for failure to comply with applicable EU banking law on prudential requirements (including ECB supervisory decisions). The related income is not considered in the calculation of the annual supervisory fees, nor are reimbursements of such penalties in the event that previous sanction decisions are amended or annulled. Instead, the related amounts are recorded in the ECB’s profit and loss account. In 2023 the income arising from penalties on supervised entities amounted to €18 million (2022: €12 million).

Thus, the income of the ECB for supervisory tasks was as follows:

	2023 € millions	2022 € millions	Change € millions
Income from supervisory fees	654	594	60
Fee income from significant entities or significant groups	*626*	*567*	*59*
Fee income from less significant entities or less significant groups	*27*	*27*	*0*
Imposed administrative penalties	18	12	6
Income related to banking supervision tasks	**671**	**606**	**65**

Banking supervision-related expenses result from the direct supervision of significant entities, the oversight of the supervision of less significant entities and the performance of horizontal tasks and specialised services. They consist of the direct expenses of the ECB’s supervisory function and the relevant expenses arising from support areas needed to fulfil the ECB’s supervisory responsibilities, reflecting their services in relation to premises and facilities; human resources; information technology (IT); legal, audit and administration; communication and translation; as well as other activities.

The actual expenses relating to the ECB’s supervisory tasks, which are recovered via the annual supervisory fees for 2023, amounted to €654 million (2022: €594 million). The overall increase was driven by higher staff costs in 2023. In the previous year, the staff costs were lessened by actuarial gains considered in relation to other long-term benefits owing to the significantly higher discount rate used for the actuarial valuation at the end of 2022[56]. In 2023 the higher average number of staff working for ECB Banking Supervision as well as salary adjustments also contributed to the rise in staff costs. Besides the higher staff costs, the return to full levels of

54 The ECB decision on the total amount of annual supervisory fees for 2023 will be adopted and subsequently published in mid-March 2024.

55 Further details can be found on the ECB’s banking supervision website.

56 The discount rate used for the actuarial valuation at the end of 2022 was 3.9%, as compared to 1.3% in 2021.

activity in banking supervision following the pandemic also contributed to the overall increase in expenses relating to supervisory tasks.

Note 27 - Income from equity shares and participating interests

The dividend of €1 million in 2023 (2022: €1 million) received on shares which the ECB holds in the BIS (see note 6.2 “Other financial assets”) is shown under this heading.

Note 28 - Other income

Other miscellaneous income in 2023 stood at €72 million (2022: €61 million) and arose mainly from contributions of participating NCBs to costs incurred by the ECB in connection with ESCB projects and services in operation.

Note 29 - Staff costs

Staff costs were as follows:

	2023 € millions	2022 € millions	Change € millions
Salaries and allowances[1]	528	487	41
Staff insurance	25	23	2
Post-employment, other long-term and termination benefits	124	142	(19)
Staff costs	**676**	**652**	**25**

1) Salaries and allowances are, in essence, modelled on, and comparable with, the remuneration scheme of the EU.

The average number of employees, expressed in full-time equivalents (FTEs)[57], amounted to 4,222 (2022: 4,136), of which 380 were managerial staff (2022: 373).

Salaries and allowances increased as a result of the higher average number of staff employed by the ECB, predominantly in banking supervision, as well as the salary adjustments. This increase was partially offset by lower costs in relation to post-employment benefits, resulting mainly from a higher discount rate used in the actuarial valuation to derive the current service cost for 2023[58] (see note 13.3 “Sundry”).

Remuneration of the Executive and Supervisory Boards

Members of the Executive Board and the members of the Supervisory Board employed by the ECB receive a basic salary and a residence allowance. In the case

57 A full-time equivalent (FTE) is a unit equivalent to one employee working full-time for one year. Staff with permanent, fixed or short-term contracts and participants in the ECB’s Graduate Programme are included in proportion to their hours worked. Staff on maternity or long-term leave are also included, while staff on unpaid leave are excluded.

58 The current service cost is estimated using the rates that applied in the preceding year.

of the President, a residence is provided in lieu of a residence allowance. Members of the Executive Board and the Chair of the Supervisory Board also receive a representation allowance. Subject to the Conditions of Employment for Staff of the European Central Bank, members of both boards may be entitled to household, child, education and other allowances, depending on their individual circumstances. Salaries are subject to a tax for the benefit of the EU, as well as to deductions in respect of contributions to the pension, medical, long-term care and accident insurance schemes. Allowances are non-taxable and non-pensionable.

In 2023 the basic salaries of the members of the Executive Board and members of the Supervisory Board employed by the ECB (i.e. excluding representatives of national supervisors) were as follows:[59]

	2023 €	2022 €
Christine Lagarde (President)	444,984	427,560
Luis de Guindos Jurado (Vice-President)	381,444	366,504
Philip R. Lane (Board Member)	317,856	305,400
Fabio Panetta (Board Member until 31 October 2023)	264,880	305,400
Isabel Schnabel (Board Member)	317,856	305,400
Frank Elderson (Board Member)	317,856	305,400
Piero Cipollone (Board Member since 1 November 2023)	52,976	-
Total Executive Board	**2,097,852**	**2,015,664**
Total Supervisory Board (members employed by the ECB)[1]	**1,374,853**	**1,225,887**
of which:		
Andrea Enria (Chair of the Supervisory Board)	*317,856*	*305,400*
Total	**3,472,705**	**3,241,551**

1) The total figure includes the remuneration of the Chair of the Supervisory Board and of four ECB representatives. Frank Elderson does not receive any additional remuneration in his role as Vice-Chair of the Supervisory Board. The totals for 2022 were affected by a time gap between the end and start, respectively, of the terms of office of Pentti Hakkarainen and his successor Anneli Tuominen, whereas in 2023 all ECB members of the Supervisory Board were in office throughout the year.

Total allowances paid to members of both boards and the ECB's contributions to medical, long-term care and accident insurance schemes on their behalf amounted to €1,169,703 (2022: €1,110,618).

Transitional payments may be made to former members of both boards for a limited period after the end of their terms of office. In 2023 these payments, the related allowances and the ECB's contributions to the medical, long-term care and accident insurance schemes of former members of both boards amounted to €365,864 (2022: €742,892). The decrease in these payments was mainly due to fewer former board members being in receipt of them in 2023 compared with 2022.

Pension-related payments, including post-employment allowances, and contributions to the medical, long-term care and accident insurance schemes for former board

59 Amounts are presented gross, i.e. before any tax deductions for the benefit of the EU.

members and their dependants amounted to €2,670,313 (2022: €1,095,737)[60]. In 2023 this amount included a lump sum payment on retirement to a former board member in lieu of future pension payments.

Note 30 - Administrative expenses

Administrative expenses were as follows:

	2023 € millions	2022 € millions	Change € millions
Rent, property maintenance and utilities	52	54	(2)
Staff-related expenses	67	60	7
IT-related expenses	137	138	(2)
External services	161	151	10
Other expenses	64	57	7
Administrative expenses	**481**	**460**	**20**

The overall increase in administrative expenses in 2023 was mainly due to (i) higher expenses for external consultancy support in relation to IT maintenance activities and Eurosystem projects (“External services”); (ii) the return to full levels of activity following the pandemic, in particular in banking supervision; and (iii) the impact of inflation. The last two drivers affected various expenses recorded under this item.

Note 31 - Banknote production services

In 2023 this expense amounted to €9 million (2022: €9 million). It arose predominantly from the cross-border transportation of euro banknotes between banknote printing works and NCBs, for the delivery of new banknotes, and between NCBs, for the compensation of shortages with surplus stocks. These costs are borne centrally by the ECB.

60 These pension-related payments decreased the defined benefit obligation recognised in the balance sheet. For the net amount charged to the profit and loss account in relation to the pension arrangements for current members of the Executive Board and current members of the Supervisory Board employed by the ECB, see note 13.3 “Sundry”.

2.7 Post-balance-sheet events

Note 32 - Five-yearly adjustment of the ECB's capital key

Pursuant to Article 29 of the Statute of the ESCB, the weightings assigned to the NCBs in the key for subscription to the ECB's capital are adjusted every five years[61]. The fifth such adjustment following the establishment of the ECB was made on 1 January 2024, as follows:

	Capital key since 1 January 2024 %	Capital key as at 31 December 2023 %
Nationale Bank van België/Banque Nationale de Belgique (Belgium)	3.0005	2.9630
Deutsche Bundesbank (Germany)	21.7749	21.4394
Eesti Pank (Estonia)	0.2437	0.2291
Central Bank of Ireland (Ireland)	1.7811	1.3772
Bank of Greece (Greece)	1.8474	2.0117
Banco de España (Spain)	9.6690	9.6981
Banque de France (France)	16.3575	16.6108
Hrvatska narodna banka (Croatia)	0.6329	0.6595
Banca d'Italia (Italy)	13.0993	13.8165
Central Bank of Cyprus (Cyprus)	0.1802	0.1750
Latvijas Banka (Latvia)	0.3169	0.3169
Lietuvos bankas (Lithuania)	0.4826	0.4707
Banque centrale du Luxembourg (Luxembourg)	0.2976	0.2679
Central Bank of Malta (Malta)	0.1053	0.0853
De Nederlandsche Bank (The Netherlands)	4.8306	4.7662
Oesterreichische Nationalbank (Austria)	2.4175	2.3804
Banco de Portugal (Portugal)	1.9014	1.9035
Banka Slovenije (Slovenia)	0.4041	0.3916
Národná banka Slovenska (Slovakia)	0.9403	0.9314
Suomen Pankki – Finlands Bank (Finland)	1.4853	1.4939
Subtotal for euro area NCBs	**81.7681**	**81.9881**
Българска народна банка (Bulgarian National Bank) (Bulgaria)	0.9783	0.9832
Česká národní banka (Czech Republic)	1.9623	1.8794
Danmarks Nationalbank (Denmark)	1.7797	1.7591
Magyar Nemzeti Bank (Hungary)	1.5819	1.5488
Narodowy Bank Polski (Poland)	6.0968	6.0335
Banca Naţională a României (Romania)	2.8888	2.8289
Sveriges Riksbank (Sweden)	2.9441	2.9790
Subtotal for non-euro area NCBs	**18.2319**	**18.0119**
Total	**100.0000**	**100.0000**

61 These weights are also adjusted whenever there is a change in the number of NCBs that contribute to the ECB's capital. These are the NCBs of EU Member States.

Impact on the ECB’s paid-up capital

Due to the overall reduction by 0.2200 percentage points in the weighting of the euro area NCBs (with fully paid-up subscriptions) in the ECB’s subscribed capital of €10,825 million, and the equivalent increase in that of the non-euro area NCBs (which only pay up 3.75% of their subscriptions), the ECB’s paid-up capital decreased by €23 million on 1 January 2024.

Impact on NCBs’ claims equivalent to the foreign reserve assets transferred to the ECB

Pursuant to Article 30.2 of the Statute of the ESCB, the contributions of the NCBs to the transfer of foreign reserve assets to the ECB are fixed in proportion to their share in the ECB’s subscribed capital. Given the decrease in the weighting of the euro area NCBs (which transferred foreign reserve assets to the ECB) in the ECB’s subscribed capital, the claim equivalent to this transfer was also adjusted accordingly. This resulted in a reduction of €109 million on 1 January 2024, which was repaid to the euro area NCBs.

2.8 Financial statements 2019-23

2.8.1 Balance sheet

ASSETS	2019 € millions	2020 € millions	2021 € millions	2022 € millions	2023 € millions
Gold and gold receivables	**21,976**	**25,056**	**26,121**	**27,689**	**30,419**
Claims on non-euro area residents denominated in foreign currency	**51,188**	**45,971**	**51,433**	**55,603**	**55,876**
Receivables from the IMF	710	680	1,234	1,759	2,083
Balances with banks and security investments, external loans and other external assets	50,478	45,291	50,199	53,844	53,793
Claims on euro area residents denominated in foreign currency	**2,637**	**4,788**	**2,776**	**1,159**	**1,450**
Claims on non-euro area residents denominated in euro	**-**	**1,830**	**3,070**	**-**	**-**
Balances with banks, security investments and loans	-	1,830	3,070	-	-
Other claims on euro area credit institutions denominated in euro	**109**	**81**	**38**	**12**	**17**
Securities of euro area residents denominated in euro	**250,377**	**349,008**	**445,384**	**457,271**	**425,349**
Securities held for monetary policy purposes	250,377	349,008	445,384	457,271	425,349
Intra-Eurosystem claims	**103,420**	**114,761**	**123,551**	**125,763**	**125,378**
Claims related to the allocation of euro banknotes within the Eurosystem	103,420	114,761	123,551	125,763	125,378
Other assets	**27,375**	**27,797**	**27,765**	**31,355**	**34,739**
Tangible and intangible fixed assets	1,330	1,262	1,189	1,105	1,023
Other financial assets	20,633	20,785	21,152	21,213	22,172
Off-balance-sheet instruments revaluation differences	619	388	620	783	552
Accruals and prepaid expenses	2,572	3,390	4,055	7,815	10,905
Sundry	2,221	1,970	749	438	88
Loss for the year	**-**	**-**	**-**	**-**	**1,266**
Total assets	**457,082**	**569,292**	**680,140**	**698,853**	**674,496**

LIABILITIES	2019 € millions	2020 € millions	2021 € millions	2022 € millions	2023 € millions
Banknotes in circulation	**103,420**	**114,761**	**123,551**	**125,763**	**125,378**
Other liabilities to euro area credit institutions denominated in euro	**1,325**	**2,559**	**9,473**	**17,734**	**4,699**
Liabilities to other euro area residents denominated in euro	**20,466**	**13,700**	**7,604**	**63,863**	**20,622**
General government	18,198	10,012	3,200	48,520	143
Other liabilities	2,268	3,688	4,404	15,343	20,479
Liabilities to non-euro area residents denominated in euro	**7,245**	**11,567**	**112,492**	**78,108**	**23,111**
Liabilities to non-euro area residents denominated in foreign currency	**-**	**-**	**-**	**-**	**24**
Deposits, balances and other liabilities	-	-	-	-	24
Intra-Eurosystem liabilities	**274,632**	**378,432**	**375,136**	**355,474**	**445,048**
Liabilities equivalent to the transfer of foreign reserves	40,344	40,344	40,344	40,344	40,671
Other liabilities within the Eurosystem (net)	234,288	338,088	334,792	315,130	404,377
Other liabilities	**2,962**	**3,095**	**2,877**	**5,908**	**9,498**
Off-balance-sheet instruments revaluation differences	709	636	568	430	68
Accruals and income collected in advance	66	40	32	3,915	8,030
Sundry	2,188	2,419	2,277	1,562	1,401
Provisions	**7,586**	**7,641**	**8,268**	**6,636**	**67**
Revaluation accounts	**29,420**	**28,235**	**32,277**	**36,487**	**37,099**
Capital and reserves	**7,659**	**7,659**	**8,270**	**8,880**	**8,948**
Capital	7,659	7,659	8,270	8,880	8,948
Profit for the year	**2,366**	**1,643**	**192**	**-**	**-**
Total liabilities	**457,082**	**569,292**	**680,140**	**698,853**	**674,496**

Note: In order to ensure comparability, the amounts shown under sub-items “General government” and “Other liabilities” under the item “Liabilities to other euro area residents denominated in euro” were adjusted for 2019 in line with the approach applied since 2020. Further details on this change can be found under “Reclassifications” in Section 2.3 “Accounting policies” of the ECB’s Annual Accounts 2020.

2.8.2 Profit and loss account

	2019 € millions	2020 € millions	2021 € millions	2022 € millions	2023 € millions
Interest income on foreign reserve assets	1,052	474	197	798	2,382
Interest income arising from the allocation of euro banknotes within the Eurosystem	-	-	-	736	4,817
Other interest income	1,828	1,844	1,531	11,001	56,552
Interest income	2,879	2,318	1,728	12,536	63,751
Remuneration of NCBs' claims in respect of foreign reserves transferred	-	-	-	(201)	(1,335)
Other interest expense	(193)	(301)	(162)	(11,434)	(69,609)
Interest expense	(193)	(301)	(162)	(11,636)	(70,944)
Net interest income	**2,686**	**2,017**	**1,566**	**900**	**(7,193)**
Realised gains/losses arising from financial operations	197	342	(6)	(110)	(106)
Write-downs on financial assets and positions	(20)	(26)	(133)	(1,840)	(38)
Transfer to/from provisions for financial risks	84	(48)	(610)	1,627	6,620
Net result of financial operations, write-downs and risk provisions	**260**	**268**	**(749)**	**(322)**	**6,476**
Net income/expense from fees and commissions	**531**	**520**	**559**	**585**	**650**
Income from equity shares and participating interests	**1**	**-**	**2**	**1**	**1**
Other income	**43**	**37**	**56**	**61**	**72**
Total net income	**3,522**	**2,842**	**1,435**	**1,224**	**6**
Staff costs	(566)	(646)	(674)	(652)	(676)
Administrative expenses	(476)	(434)	(444)	(460)	(481)
Depreciation of tangible and intangible fixed assets	(102)	(106)	(108)	(103)	(106)
Banknote production services	(12)	(14)	(13)	(9)	(9)
Other expenses	-	-	(5)	-	-
Profit/(loss) for the year	**2,366**	**1,643**	**192**	**-**	**(1,266)**
Profit distribution	**2,366**	**1,643**	**192**	**-**	**-**

3 Independent auditor’s report

To the President and Governing Council
of the European Central Bank
Frankfurt am Main

Report on the Audit of the ECB’s Financial Statements 2023

Opinion

We have audited the Financial Statements of the European Central Bank (ECB) for the year ended 31 December 2023 – included in the ECB’s Annual Accounts – which comprise the balance sheet, the profit and loss account, and a summary of significant accounting policies and other explanatory notes.

In our opinion, the accompanying Financial Statements give a true and fair view of the financial position of the ECB as at 31 December 2023 and of the results of its financial operations for the year then ended in accordance with the principles established by the Governing Council, which are laid down in Decision (EU) 2016/2247 of the ECB of 3 November 2016 on the annual accounts of the ECB (ECB/2016/35), as amended, which is based on Guideline (EU) 2016/2249 of the ECB of 3 November 2016 on the legal framework for accounting and financial reporting in the European System of Central Banks (ECB/2016/34), as amended.

Basis for Opinion

We conducted our audit in accordance with International Standards on Auditing (“ISAs”). Our responsibilities under those standards are further described in the Auditor’s Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the ECB in accordance with the German ethical requirements that are relevant to our audit of the Financial Statements, which are consistent with the International Ethics Standards Board for Accountants’ Code of Ethics for Professional Accountants (“IESBA Code”) and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other Information

The ECB's Executive Board ("Executive Board") is responsible for the other information included in the ECB's Annual Accounts. The other information comprises all the information included in the ECB's Annual Accounts except the Financial Statements of the ECB and our auditor's report.

Our opinion on the Financial Statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the Financial Statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the Financial Statements or our knowledge obtained in the audit or otherwise appears to be materially misstated.

Responsibilities of the Executive Board and those charged with Governance for the Financial Statements

The Executive Board is responsible for the preparation and fair presentation of the Financial Statements in accordance with the principles established by the Governing Council, which are laid down in Decision (EU) 2016/2247 of the ECB of 3 November 2016 on the annual accounts of the ECB (ECB/2016/35), as amended, which is based on Guideline (EU) 2016/2249 of the ECB of 3 November 2016 on the legal framework for accounting and financial reporting in the European System of Central Banks (ECB/2016/34), as amended, and for such internal control as the Executive Board determines is necessary to enable the preparation of Financial Statements that are free from material misstatement, whether due to fraud or error.

In preparing the Financial Statements, the Executive Board is responsible for assessing the ECB's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting.

Those charged with governance are responsible for overseeing the ECB's financial reporting process.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the Financial Statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these Financial Statements.

As part of an audit in accordance with ISAs, we exercise professional judgment and maintain professional scepticism throughout the planning and performance of the audit. We also:

- Identify and assess the risks of material misstatement of the Financial Statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the ECB's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the ECB's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the Financial Statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report.

- Evaluate the overall presentation, structure and content of the Financial Statements, including the disclosures, and whether the Financial Statements represent the underlying transactions and events in a manner that achieves fair presentation.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Frankfurt am Main, 14 February 2024

Baker Tilly GmbH & Co. KG
Wirtschaftsprüfungsgesellschaft
(Düsseldorf)

Brück

Dr. Stefan Wolfgang Fischer
Wirtschaftsprüfer

Maria Brück
Wirtschaftsprüferin

4 Note on profit distribution/allocation of losses

This note is not part of the financial statements of the ECB for the year 2023.

Pursuant to Article 33 of the Statute of the ESCB, the net profit of the ECB shall be transferred in the following order:

1. an amount to be determined by the Governing Council, which may not exceed 20% of the net profit, shall be transferred to the general reserve fund, subject to a limit equal to 100% of the capital; and

2. the remaining net profit shall be distributed to the shareholders of the ECB in proportion to their paid-up shares.[62]

In the event of a loss incurred by the ECB, the shortfall may be offset against the general reserve fund of the ECB and, if necessary, following a decision by the Governing Council, against the monetary income of the relevant financial year in proportion and up to the amounts allocated to the NCBs in accordance with Article 32.5 of the Statute of the ESCB.[63]

The ECB's loss for 2023, after the full release of the provision for financial risks, was €1,266 million (2022: zero). Following a decision by the Governing Council, this loss will be carried forward on the ECB's balance sheet and offset against future profits.

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62 Non-euro area NCBs are not entitled to receive any share of the ECB's distributable profits, nor are they liable to cover any loss of the ECB.

63 Under Article 32.5 of the Statute of the ESCB, the sum of the NCBs' monetary income shall be allocated to the NCBs in proportion to their paid-up shares in the capital of the ECB.

Consolidated balance sheet of the Eurosystem as at 31 December 2023

Assets

(EUR millions)

		31 December 2023	31 December 2022
1	**Gold and gold receivables**	**649,110**	**592,898**
2	**Claims on non-euro area residents denominated in foreign currency**	**499,583**	**523,240**
2.1	Receivables from the IMF	229,003	228,488
2.2	Balances with banks and security investments, external loans and other external assets	270,581	294,752
3	**Claims on euro area residents denominated in foreign currency**	**13,876**	**20,417**
4	**Claims on non-euro area residents denominated in euro**	**20,097**	**14,224**
4.1	Balances with banks, security investments and loans	20,097	14,224
4.2	Claims arising from the credit facility under ERM II	0	0
5	**Lending to euro area credit institutions related to monetary policy operations denominated in euro**	**410,290**	**1,324,347**
5.1	Main refinancing operations	14,085	2,406
5.2	Longer-term refinancing operations	396,196	1,321,422
5.3	Fine-tuning reverse operations	0	0
5.4	Structural reverse operations	0	0
5.5	Marginal lending facility	10	519
5.6	Credits related to margin calls	0	0
6	**Other claims on euro area credit institutions denominated in euro**	**28,707**	**31,035**
7	**Securities of euro area residents denominated in euro**	**4,898,966**	**5,102,068**
7.1	Securities held for monetary policy purposes	4,694,345	4,937,179
7.2	Other securities	204,621	164,888
8	**General government debt denominated in euro**	**20,917**	**21,589**
9	**Other assets**	**393,943**	**321,222**
Total assets		**6,935,489**	**7,951,039**

Liabilities

(EUR millions)

		31 December 2023	31 December 2022
1	**Banknotes in circulation**	**1,567,711**	**1,572,033**
2	**Liabilities to euro area credit institutions related to monetary policy operations denominated in euro**	**3,508,865**	**3,998,940**
2.1	Current accounts (covering the minimum reserve system)	174,019	218,933
2.2	Deposit facility	3,334,822	3,778,787
2.3	Fixed-term deposits	0	0
2.4	Fine-tuning reverse operations	0	0
2.5	Deposits related to margin calls	24	1,219
3	**Other liabilities to euro area credit institutions denominated in euro**	**58,873**	**78,335**
4	**Debt certificates issued**	**0**	**0**
5	**Liabilities to other euro area residents denominated in euro**	**303,864**	**564,582**
5.1	General government	212,791	436,541
5.2	Other liabilities	91,073	128,041
6	**Liabilities to non-euro area residents denominated in euro**	**281,940**	**540,725**
7	**Liabilities to euro area residents denominated in foreign currency**	**16,382**	**11,683**
8	**Liabilities to non-euro area residents denominated in foreign currency**	**4,474**	**4,753**
8.1	Deposits, balances and other liabilities	4,474	4,753
8.2	Liabilities arising from the credit facility under ERM II	0	0
9	**Counterpart of special drawing rights allocated by the IMF**	**177,116**	**181,121**
10	**Other liabilities**	**260,877**	**290,578**
11	**Revaluation accounts**	**635,144**	**588,053**
12	**Capital and reserves**	**120,242**	**120,237**
Total liabilities		**6,935,489**	**7,951,039**

Notes: Based on provisional unaudited data. The annual accounts of all the Eurosystem national central banks will be finalised by the end of May 2024, and the final annual consolidated balance sheet of the Eurosystem will be published thereafter.
Totals/sub-totals may not add up due to rounding.

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The cut-off date for the data included in this report was 22 March 2024 (exceptions are explicitly indicated).

For specific terminology please refer to the ECB glossary (available in English only).

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