EUROPEAN CENTRAL BANK

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Contents

Economic, financial and monetary developments

Overview

At its meeting on 12 September 2024, the Governing Council decided to lower the deposit facility rate – the rate through which it steers the monetary policy stance – by 25 basis points. Based on the Governing Council's updated assessment of the inflation outlook, the dynamics of underlying inflation and the strength of monetary policy transmission, it was appropriate to take another step in moderating the degree of monetary policy restriction.

Recent inflation data have come in broadly as expected, and the September 2024 ECB staff macroeconomic projections confirm the previous inflation outlook. ECB staff see headline inflation averaging 2.5% in 2024, 2.2% in 2025 and 1.9% in 2026, as in the June 2024 Eurosystem staff macroeconomic projections. Inflation is expected to rise again in the latter part of this year, partly because previous sharp falls in energy prices will drop out of the annual rates. Inflation should then decline towards the Governing Council's target over the second half of next year. For core inflation, the projections for 2024 and 2025 have been revised up slightly, as services inflation has been higher than expected. At the same time, ECB staff continue to expect a rapid decline in core inflation, from 2.9% this year to 2.3% in 2025 and 2.0% in 2026.

Domestic inflation remains high as wages are still rising at an elevated pace. However, labour cost pressures are moderating, and profits are partially buffering the impact of higher wages on inflation. Financing conditions remain restrictive, and economic activity is still subdued, reflecting weak private consumption and investment. ECB staff project that the economy will grow by 0.8% in 2024, rising to 1.3% in 2025 and 1.5% in 2026. This is a slight downward revision compared with the June projections, mainly owing to a weaker contribution from domestic demand over the next few quarters.

The Governing Council is determined to ensure that inflation returns to its 2% medium-term target in a timely manner. It will keep policy rates sufficiently restrictive for as long as necessary to achieve this aim. The Governing Council will continue to follow a data-dependent and meeting-by-meeting approach to determining the appropriate level and duration of restriction. In particular, the Governing Council's interest rate decisions will be based on its assessment of the inflation outlook in light of the incoming economic and financial data, the dynamics of underlying inflation and the strength of monetary policy transmission. The Governing Council is not pre-committing to a particular rate path.

Economic activity

The economy grew by 0.2% in the second quarter, after 0.3% in the first quarter, falling short of the June 2024 Eurosystem staff macroeconomic projections. Growth stemmed mainly from net exports and government spending. Private domestic demand weakened, as households consumed less, firms cut business investment and housing investment dropped. While services supported growth, industry and construction contributed negatively. According to survey indicators, the recovery is continuing to face some headwinds.

The labour market remains resilient. The unemployment rate was broadly unchanged in July, at 6.4%. At the same time, employment growth slowed to 0.2% in the second quarter, from 0.3% in the first. Recent survey indicators point to a further moderation in demand for labour, and the job vacancy rate has fallen closer to pre-pandemic levels.

The latest indicators suggest growth will continue in the short run but at rates lower than expected in the June 2024 Eurosystem staff macroeconomic projections. Real disposable income should continue to increase, supported by robust wage growth. This, together with gradually increasing confidence, would underpin a consumption-driven recovery. However, the impulse from consumption is somewhat weaker than foreseen in the June projections, with incoming data and recent surveys pointing to still subdued consumer confidence and elevated household saving intentions. Recent data on business investment also suggest weaker growth momentum. Domestic demand will nevertheless be supported by past monetary policy tightening effects wearing off and an assumed continued easing of financing conditions, in line with market expectations of the future path of interest rates. In addition, a projected rise in foreign demand supports the outlook for euro area exports. The labour market is seen as remaining resilient, with the unemployment rate expected to stay at historically low levels. As some of the cyclical factors that have lowered productivity growth in the recent past unwind, productivity is expected to pick up over the projection horizon. Overall, annual average real GDP growth is expected to be 0.8% in 2024 and to reach 1.3% in 2025 and 1.5% in 2026. Compared with the June 2024 Eurosystem staff macroeconomic projections, the outlook for GDP growth has been revised marginally down for each year of the projection horizon.

Fiscal and structural policies should be aimed at making the economy more productive and competitive, which would help to raise potential growth and reduce price pressures in the medium term. Mario Draghi's report on the future of European competitiveness and Enrico Letta's report on empowering the Single Market stress the urgent need for reform and provide concrete proposals to make this happen. Implementing the EU's revised economic governance framework fully, transparently and without delay will help governments bring down budget deficits and debt ratios on a sustained basis. Governments should now make a strong start in this direction in their medium-term plans for fiscal and structural policies.

Inflation

According to Eurostat's flash estimate, annual inflation dropped to 2.2% in August, from 2.6% in July. Energy prices fell at an annual rate of 3.0%, after an increase of 1.2% in the previous month. Food price inflation went up slightly, to 2.4% in August. Goods inflation and services inflation moved in opposite directions. Goods inflation declined to 0.4%, from 0.7% in July, while services inflation rose, to 4.2% from 4.0%.

Most measures of underlying inflation were broadly unchanged in July. Domestic inflation edged down only slightly, to 4.4% from 4.5% in June, with strong price pressures coming especially from wages. Negotiated wage growth will remain high and volatile over the remainder of the year, given the significant role of one-off payments in some countries and the staggered nature of wage adjustments. At the same time, the overall growth in labour costs is moderating. The growth in compensation per employee fell further to 4.3% in the second quarter, the fourth consecutive decline, and ECB staff project it to slow markedly again next year. Despite weak productivity, unit labour costs grew less strongly in the second quarter, by 4.6%, after 5.2% in the first quarter. ECB staff expect unit labour cost growth to continue declining over the projection horizon owing to lower wage growth and a recovery in productivity. Finally, profits are continuing to partially offset the inflationary effects of higher labour costs.

The disinflation process should be supported by receding labour cost pressures and the past monetary policy tightening gradually feeding through to consumer prices. Most measures of longer-term inflation expectations stand at around 2%, and the market-based measures have fallen closer to that level since the Governing Council's meeting on 18 July 2024.

Following its recent moderation, headline inflation is projected to increase somewhat in the last quarter of this year, before declining further to the inflation target by the end of 2025. The expected increase in the near term largely reflects energy base effects. Over the medium term, energy inflation should settle at low positive rates given market expectations for energy commodity and wholesale prices and planned climate change-related fiscal measures. Recent quarters have seen food price inflation decline strongly, as pipeline pressures have been easing due to lower energy and food commodity prices. Food price inflation is expected to move broadly sideways before moderating further from the end of 2025 onwards. Inflation excluding energy and food is expected to remain above headline inflation for almost all of the projection horizon, but to continue its disinflationary path. Services inflation has remained stubbornly high over recent months. However, a gradual decline is still expected later in the horizon, with wage growth and other cost pressures easing, while the lagged impact of past monetary policy tightening continues to feed through to consumer prices. In recent quarters, nominal wage growth has started to decline from elevated levels and by more than previously projected. A further gradual easing of wage growth is expected over the coming years as upward impacts from inflation compensation pressures in a tight labour market continue to fade. A recovery in productivity growth should support the moderation in labour cost pressures. Moreover, profit growth has declined notably and will partially buffer the pass-

through of labour costs to prices, especially in the near term. Overall, in the September 2024 ECB staff macroeconomic projections, annual average headline inflation is expected to decrease from 5.4% in 2023 to 2.5% in 2024, 2.2% in 2025 and 1.9% in 2026. Compared with the June 2024 Eurosystem staff macroeconomic projections, the outlook for headline inflation remains unchanged. Inflation excluding energy and food has surprised slightly on the upside in recent months, leading to small upward revisions for 2024 and 2025.

Risk assessment

The risks to economic growth remain tilted to the downside. Lower demand for euro area exports, owing for instance to a weaker world economy or an escalation in trade tensions between major economies, would weigh on euro area growth. Russia's unjustified war against Ukraine and the tragic conflict in the Middle East are major sources of geopolitical risk. This may result in firms and households becoming less confident about the future and global trade being disrupted. Growth could also be lower if the lagged effects of monetary policy tightening turn out stronger than expected. Growth could be higher if inflation comes down more quickly than expected and rising confidence and real incomes mean that spending increases by more than anticipated, or if the world economy grows more strongly than expected.

Inflation could turn out higher than anticipated if wages or profits increase by more than expected. Upside risks to inflation also stem from the heightened geopolitical tensions, which could push energy prices and freight costs higher in the near term and disrupt global trade. Moreover, extreme weather events, and the unfolding climate crisis more broadly, could drive up food prices. By contrast, inflation may surprise on the downside if monetary policy dampens demand more than expected, or if the economic environment in the rest of the world worsens unexpectedly.

Financial and monetary conditions

Market interest rates have declined markedly since the Governing Council's meeting on 18 July 2024, mostly owing to a weaker outlook for global growth and reduced concerns about inflation pressures. Tensions in global markets over the summer led to a temporary tightening of financial conditions in the riskier market segments.

Overall, financing costs remain restrictive as the Governing Council's past policy rate increases continue to work their way through the transmission chain. The average interest rates on new loans to firms and on new mortgages stayed high in July, at 5.1% and 3.8% respectively.

Credit growth remains sluggish amid weak demand. Bank lending to firms grew at an annual rate of 0.6% in July, down slightly from June, and growth in loans to households edged up to 0.5%. Broad money – as measured by M3 – grew by 2.3% in July, the same rate as in June.

Monetary policy decisions

At its meeting on 12 September 2024, the Governing Council decided to lower the deposit facility rate by 25 basis points. The deposit facility rate is the rate through which the Governing Council steers the monetary policy stance. In addition, as pre-announced on 13 March 2024 following the operational framework review, the spread between the interest rate on the main refinancing operations and the deposit facility rate was set at 15 basis points. The spread between the rate on the marginal lending facility and the rate on the main refinancing operations remained unchanged at 25 basis points. Accordingly, the deposit facility rate was decreased to 3.50%. The interest rates on the main refinancing operations and the marginal lending facility were decreased to 3.65% and 3.90% respectively. The changes took effect from 18 September 2024.

The asset purchase programme portfolio is declining at a measured and predictable pace, as the Eurosystem no longer reinvests the principal payments from maturing securities.

The Eurosystem no longer reinvests all of the principal payments from maturing securities purchased under the pandemic emergency purchase programme (PEPP), reducing the PEPP portfolio by €7.5 billion per month on average. The Governing Council intends to discontinue reinvestments under the PEPP 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.

As banks are repaying the amounts borrowed under the targeted longer-term refinancing operations, the Governing Council will regularly assess how targeted lending operations and their ongoing repayment are contributing to its monetary policy stance.

Conclusion

The Governing Council is determined to ensure that inflation returns to its 2% medium-term target in a timely manner. It will keep policy rates sufficiently restrictive for as long as necessary to achieve this aim. The Governing Council will continue to follow a data-dependent and meeting-by-meeting approach to determining the appropriate level and duration of restriction. In particular, the Governing Council's interest rate decisions will be based on its assessment of the inflation outlook in light of the incoming economic and financial data, the dynamics of underlying inflation and the strength of monetary policy transmission. The Governing Council is not pre-committing to a particular rate path.

In any case, the Governing Council stands ready to adjust all of its instruments within its mandate to ensure that inflation returns to its medium-term target and to preserve the smooth functioning of monetary policy transmission.

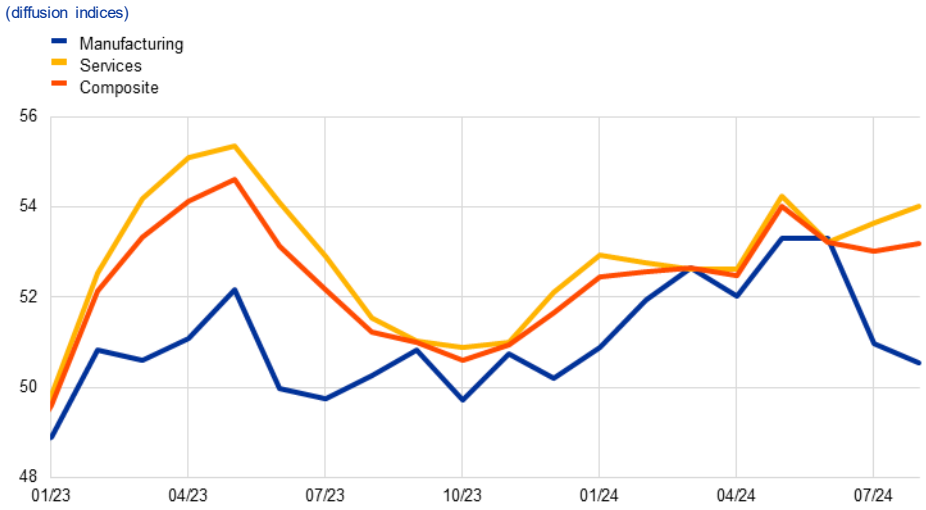
1 External environment

Global growth was resilient in the second quarter of 2024 and is projected to remain steady in the third quarter. However, incoming data suggest that manufacturing is slowing while monetary policy is still restrictive. These signals, coupled with elevated geopolitical tensions and volatility in financial markets, suggest that headwinds to growth may intensify in the near term. The outlook for global growth and inflation, as reflected in the September 2024 ECB staff macroeconomic projections for the euro area, is broadly unchanged compared with the June 2024 Eurosystem staff macroeconomic projections. Global trade is projected to recover this year and grow more in line with global activity thereafter. For 2024 global trade was revised up slightly to reflect stronger outturns in the second quarter, but the near-term outlook embedded in the September projections suggests that the strong growth seen in the second quarter will not be sustained. Inflation across major advanced and emerging market economies is expected to gradually decline over the projection horizon.

Global growth momentum remains positive, but headwinds may intensify in the near term. The global (excluding the euro area) composite output Purchasing Managers' Index (PMI) ticked up to 53.2 in August from 53.0 in July. This was supported by above-average levels of the services sector output index, whereas manufacturing sector output declined to just above the neutral threshold (Chart 1).[1] This fall reflected a pronounced slowing of manufacturing activity in the United States in August, whereas manufacturing output in China improved marginally in August after a strong decline in the previous month. Incoming hard and soft data suggest that the global manufacturing cycle is slowing amid still-restrictive monetary policies and moderating wage growth. These signals, coupled with elevated geopolitical tensions and recent volatility in global financial markets, suggest that headwinds to global growth may intensify in the near term. Global GDP is estimated to have increased by 0.7% in the second quarter, somewhat below the pace recorded in the first quarter. Nevertheless, it was still in line with the June Eurosystem staff projections and is expected to remain steady in the third quarter.

[1] Given the focus of this section on developments in the external environment of the euro area, all references to world and/or global aggregate economic indicators exclude the euro area.

Chart 1
Global PMI output



Sources: S&P Global Market Intelligence and ECB staff calculations.
Note: The latest observations are for August 2024.

Global growth is projected to expand at a moderate pace, broadly unchanged compared with the June projections. After expanding by 3.5% in 2023, global real GDP is projected to grow by 3.4% in both 2024 and 2025 and 3.3% in 2026. This mild slowdown in growth over the projection horizon reflects the impact of fading tailwinds to consumer spending in an environment of a still-restrictive monetary policy stance in the first years of the projection horizon, heightened geopolitical tensions and elevated economic policy uncertainty. Compared with the June projections, global real GDP growth has been revised up by 0.1 percentage points over the projection horizon. This reflects somewhat stronger growth in emerging markets in 2024 and higher growth in the US economy in 2025-26. The latter is linked to the positive impact of net migration being higher than previously assumed and the assumption that the 2017 tax cuts for lower income households will be extended, as this features in the electoral platforms of both presidential candidates.

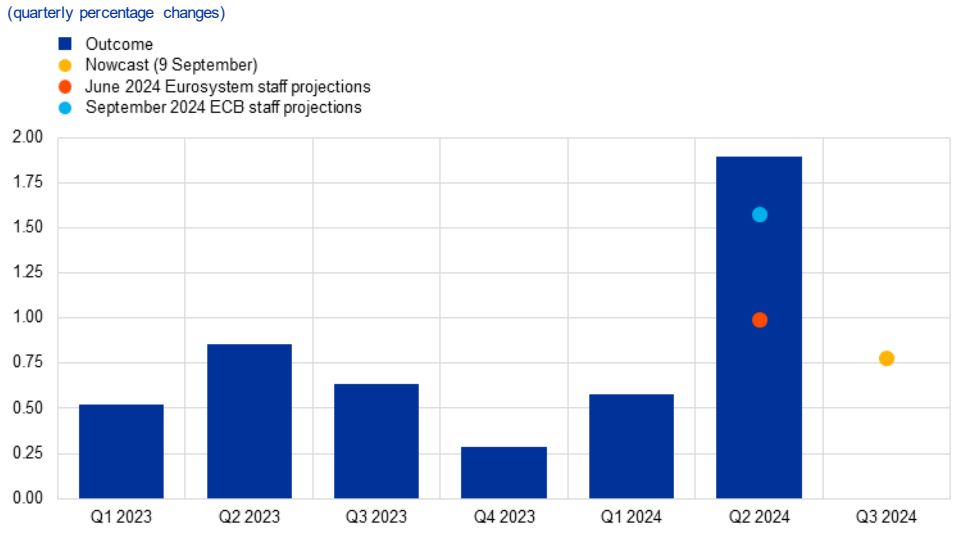
Global trade growth increased strongly in the second quarter, amid frontloading of goods imports in advanced economies. Global imports jumped by 1.9% quarter on quarter in the second quarter, more than three times the pace recorded at the beginning of this year and well above the June projections. This strong growth was supported by a frontloading of imports from China and other emerging Asian countries in advanced economies. Monthly trade data indicate that companies restocked for the Christmas season about six weeks earlier than in a typical year, likely reflecting fears over renewed supply bottlenecks and trade tensions against a background of rising geopolitical risks. While global trade data remain inherently volatile, the September projections suggest that such strong growth will not be sustained in the near term as the impact of frontloading fades.[2] This is in line with signals from the ECB's nowcasting tool, which embeds hard and soft data on global trade (Chart 2). More specifically, weak export orders indicated by

[2] Should the frontloaded purchases by companies be sufficient to satisfy consumer demand, global trade could also turn out weaker over the near term.

PMI surveys, as well as estimates for trade turnover based on vessel movements, point towards a slowdown in trade in the third quarter. Nonetheless, a normalising inventory cycle and a more favourable composition of demand should still support trade developments towards the end of the year.

Chart 2

World imports



Sources: National sources (via Haver Analytics) and ECB staff calculations.
Notes: The world aggregate excludes the euro area. The nowcast refers to a dynamic factor model which is based on 30 monthly variables covering industrial production, retail sales, trade, the labour market, surveys and housing. The latest observations are for August 2024 for the nowcast.

Global trade is projected to recover this year and to grow more in line with global activity over the rest of the projection horizon. Following a period of weak growth dynamics, amid the post-pandemic rebalancing of demand from goods to services, global trade rebounded at the turn of the year, with the frontloading of imports in advanced economies in the second quarter adding to this recovery. Overall, global import growth is projected to total 3.1% this year, which is 0.5 percentage points above the June projections. This mainly reflects stronger momentum in the second quarter, whereas quarterly growth in the second half of 2024 is set to remain unchanged. Global import growth is projected to increase to 3.4% in 2025 and 3.3% in 2026.

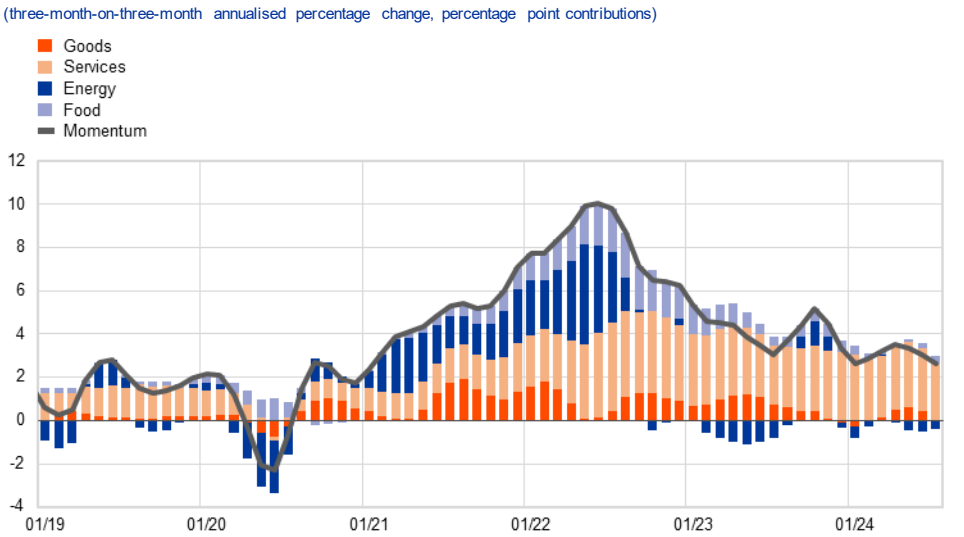
Incoming data suggest that the gradual disinflation will resume, notwithstanding a slight increase in inflation observed in July. Headline consumer price index (CPI) inflation across the member countries of the Organisation for Economic Co-operation and Development (OECD) stood at 3.0% in July, up from 2.8% in June.[3] Core inflation (excluding energy and food) also increased slightly in July, to 3.2%, up from 3.1% in June. The declining momentum in headline CPI inflation, measured as a three-month-on-three-month annualised percentage change, indicates that disinflation across OECD countries will resume in

[3] Türkiye is not included in the OECD aggregates for headline and core inflation, as its inflation level remained in the high double digits. Headline and core CPI inflation across the OECD member countries, including Türkiye, would otherwise stand at 5.4% in July 2024 (5.6% in June) and 5.4% in July 2024 (5.9% in June) respectively.

the near term (Chart 3), supported by the ongoing cooling of labour markets across major economies.

Chart 3

OECD headline CPI inflation momentum



Sources: OECD and ECB staff calculations.
Notes: Contributions from respective components of OECD headline inflation momentum reported in the chart are constructed bottom-up using available country data, which jointly account for 84% of the OECD area aggregate. Goods inflation is computed as the residual of the contribution from total goods less the contributions from energy and food. The latest observations are for July 2024.

Oil prices have decreased since the last Governing Council meeting, while European gas prices have increased. Brent crude oil prices have fallen by almost 10% compared with the levels observed at the time of the last Governing Council meeting. This is due to a combination of factors including, on the demand side, the drop in crude oil imports into China to their lowest levels in years owing to weak economic activity. A negative risk sentiment in the wake of the market sell-off in early August also contributed to lower crude oil prices, whereas supply-side news related to tensions in the Middle East and outages in Libyan oil fields were pushing crude oil prices up. European gas prices increased by 17.7% in response to geopolitical concerns. These include escalating tensions in the Middle East and the incursion of Ukrainian troops into Russian territory. The latter gave rise to investor fears over potential supply disruptions on the Ukrainian transit route for gas.

In the United States, economic activity is still robust amid an ongoing adjustment in the labour market and gradually declining inflation. Real GDP increased by 0.7% in the second quarter, supported by strong domestic demand and inventories which more than offset the drag from a large increase in imports. Robust consumption spending supported activity. High-frequency indicators point to sustained, albeit slightly declining growth in the near term, with no signs of an imminent recession. Market fears of a potential recession were heightened in August following the July US employment report, and the subsequent volatility in global financial markets which has since subsided. Both ECB staff nowcasts and those published by regional Federal Reserve Banks point to a slight deceleration in growth in the third quarter, which is consistent with the delayed effects of the Federal

Reserve's restrictive monetary policy on economic activity. The US labour market has continued to soften but remained healthy overall. An increase in non-farm employment in August was slightly below market expectations and the average monthly gain over the prior 12 months. At the same time, the unemployment rate declined marginally to 4.2%, while the participation rate held steady. Annual headline CPI inflation declined slightly more than expected in August, to 2.5%, down from 2.9% in July. This was the smallest increase in annual headline inflation since March 2021. By contrast, annual core CPI inflation stood at 3.2% in August, unchanged compared with July.

Economic activity is slowing in China, while new real estate support has yet to stabilise the housing market. Real GDP growth declined markedly in the second quarter, to 0.7% from 1.5% in the first quarter, as the property downturn acted as a drag on consumer spending and the impulse from a late 2023 stimulus programme faded. July activity data were mostly weak, despite some positive signals in some manufacturing sectors and in exports. Retail sales growth was subdued, while industrial production slowed further. In addition, fixed asset investment remained anaemic, as property investment contracted, despite relatively strong manufacturing and infrastructure investment. Exports remained the most important driver of growth, buoyed by declining export prices. Annual growth in nominal exports was still robust in July, despite moderating more than expected. Chinese producers recorded sizeable gains in export volumes across all major product categories, as falling export prices helped their competitiveness. The property market still shows no signs of bottoming out yet and thus remains a drag on growth, while the new policy package announced in mid-May and earlier measures have yet to have an effect. Given the rather disappointing growth outlook, the Chinese authorities have become increasingly concerned about missing their growth target of "around 5%" and on 30 July, the Politburo of the Chinese Communist Party called for more policy measures to support consumption. Chinese headline CPI inflation picked up slightly in August, while both core consumer price inflation and producer price inflation declined further. Sluggish domestic demand, mainly in private consumption and driven by headwinds in the property market and weak industrial prices, suggests that inflationary pressures in the Chinese economy will remain subdued.

In the United Kingdom, real GDP growth increased strongly in the second quarter, while inflation ticked up. Real GDP rose by 0.6% in the second quarter of 2024, only slightly below the 0.7% recorded in the first quarter. After a shallow technical recession last year, the UK economy witnessed a surprisingly robust rebound in the first half of this year, driven by domestic demand. Imports, particularly from emerging markets, expanded at a strong pace, possibly reflecting a frontloading that is also apparent at the global scale. Growth momentum is expected to moderate in the second half of this year. Despite the current strength in activity, growth is projected to fall in the face of continued restrictive fiscal and monetary policies. The new Labour government has committed itself to observing long-standing fiscal rules, which limits the scope it has to stimulate demand. On the monetary side, real rates have increased substantially as inflation has come down to close to the Bank of England's target in recent months. Despite these headwinds, some upside risks are emerging from the ongoing resilience among households and businesses. With the

saving ratio still climbing and real wages expanding, underpinned by robust payroll growth and only small increases in unemployment, UK households might have room to increase their spending despite restrictive policies. Headline CPI inflation increased to 2.2% in July from 2.0% in both May and June. This increase was expected and reflected the unwinding of negative base effects from energy prices. Core CPI inflation (excluding energy and food) decreased from 3.5% in June to 3.3% in July on the back of a fall in services inflation. This moderation in services inflation was larger than expected by both the markets and the Bank of England and partly reflects a gradual unwinding of second-round effects from high energy prices. However, upside risks to the disinflation process remain, as services inflation has been stickier than anticipated this year. The Bank of England started a data-dependent easing cycle in July by cutting its policy rate from 5.25% to 5.0%.

2 Economic activity

The economy grew by 0.2% in the second quarter, after 0.3% in the first quarter, falling short of the June 2024 Eurosystem staff macroeconomic projections for the euro area. Net trade contributed positively to growth in the second quarter, while domestic demand contracted. Incoming information points to continued, albeit slow, growth in the third quarter of 2024. Business survey results have somewhat weakened, exacerbated by softer sentiment in the labour market. Across sectors, services continue to lead the recovery, having received a significant boost from the Paris Olympics in the third quarter. At the same time, the industrial sector shows continued weakness, both in output and orders, in a context of high uncertainty. Looking ahead, real GDP is expected to continue to recover, as real incomes increase further, foreign demand strengthens and the dampening effects of tight monetary policy fade. The continued rise in real disposable income is expected to support private consumption, which should become the main driver of growth from the second half of 2024 onwards. The still resilient labour market, coupled with gradually increasing consumer confidence and declining uncertainty, should also support household spending.

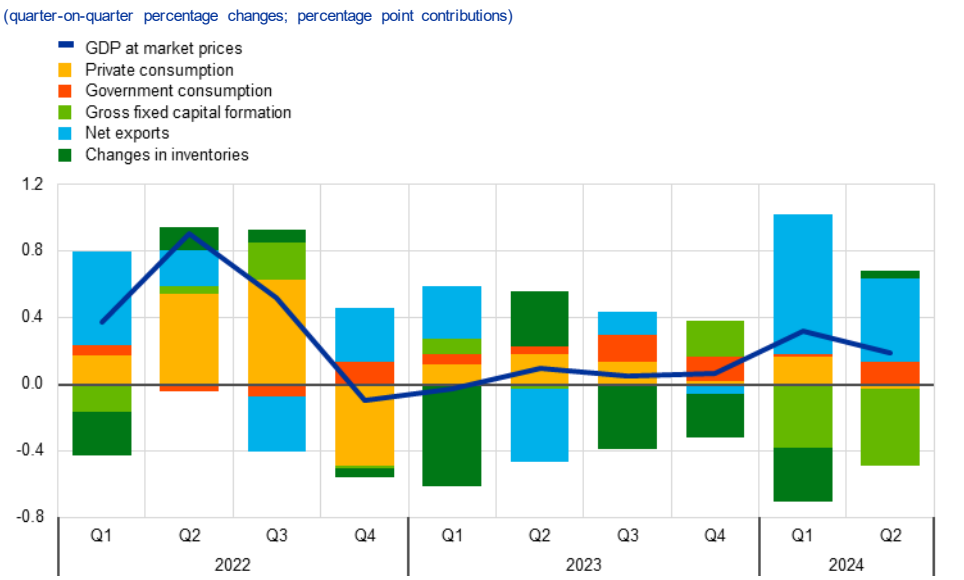
This outlook is broadly reflected in the September 2024 ECB staff macroeconomic projections for the euro area, which foresee annual real GDP growth of 0.8% in 2024, picking up to 1.3% and 1.5% in 2025 and 2026 respectively.[4]

According to Eurostat's latest estimate, real GDP increased by 0.2%, quarter on quarter, in the second quarter of 2024, having expanded by 0.3% in the previous quarter (Chart 4). Net trade contributed positively to growth in the second quarter, while domestic demand contributed negatively and the contribution from changes in inventories was neutral. The improvement in total value added was entirely driven by services, with falls in industry and construction.

[4] See "ECB staff macroeconomic projections for the euro area, September 2024", published on the ECB's website on 12 September 2024.

Chart 4

Euro area real GDP and its components

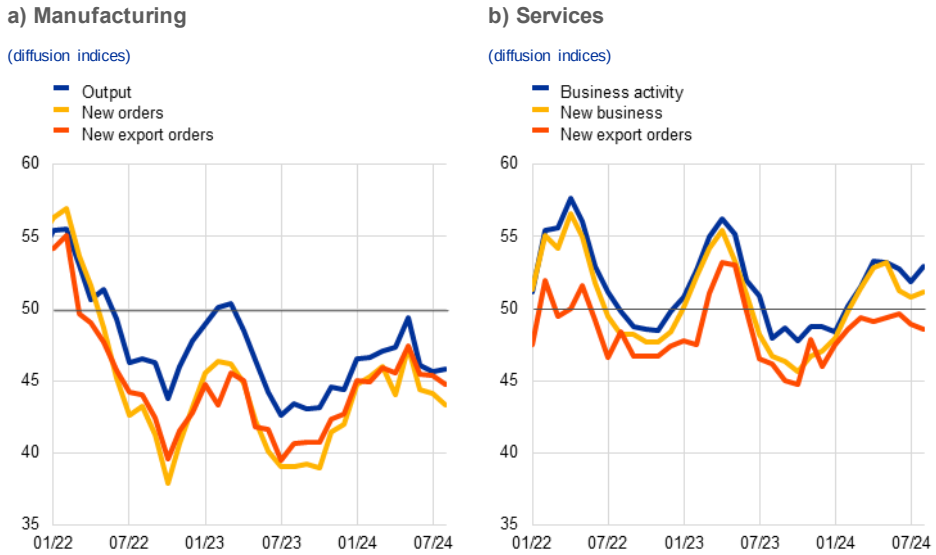


Sources: Eurostat and ECB calculations.
Note: The latest observations are for the second quarter of 2024.

Survey data point to a continued services-led expansion in the third quarter of 2024. The composite output Purchasing Managers' Index (PMI) stood at 50.6 on average in July and August, down from 51.6 in the second quarter of 2024. The index, which continues to indicate growth, has thus held up since the start of its upward movement in October 2023, despite having eased recently. Across sectors, the PMI indicator for manufacturing output remained in contractionary territory throughout July and August, discontinuing the upward movement that started in the summer of 2023 (Chart 5, panel a). The new orders index, which should be more forward looking, has shown a similar pattern. Overall, these indicators suggest continued weakness in the industrial sector going forward, amid subdued demand for goods and the impact of the past tightening of monetary policy. PMI data for the services sector, which has so far led the recovery in activity, continue to point to positive growth in both activity and new business (Chart 5, panel b). Services have also benefited from the boost in spending in contact-intensive services from the Paris Olympics. Developments in the PMI suggest that the recent sectoral divergence is likely to persist in the short term.

Chart 5

PMI indicators across sectors of the economy



Source: S&P Global Market Intelligence.
Note: The latest observations are for August 2024.

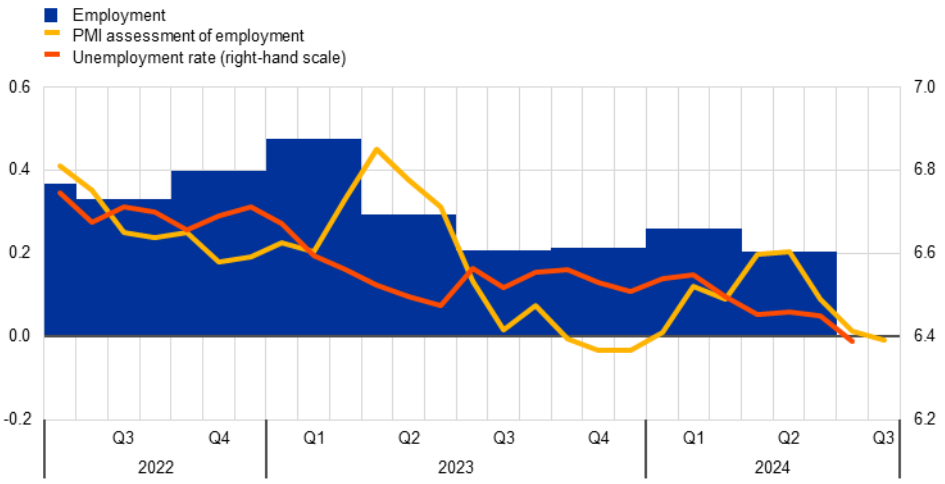
Employment growth slowed in the second quarter of 2024. Employment rose by 0.2% in the second quarter of the year (Chart 6, panel a) owing mainly to the continued, albeit slowing, expansion of the labour force. Productivity per employee and average hours worked remained stable in the second quarter of 2024. The unemployment rate declined marginally to 6.4% in July, from 6.5% in June, driven by the lower number of unemployed and slowing growth in the labour force. Labour demand has declined somewhat from the high levels seen after the pandemic, with the job vacancy rate falling to 2.6% in the second quarter, 0.3 percentage points lower than in the previous quarter and closer to its pre-pandemic peak.

Chart 6

Euro area employment, PMI assessment of employment and unemployment rate, and sectoral employment PMIs

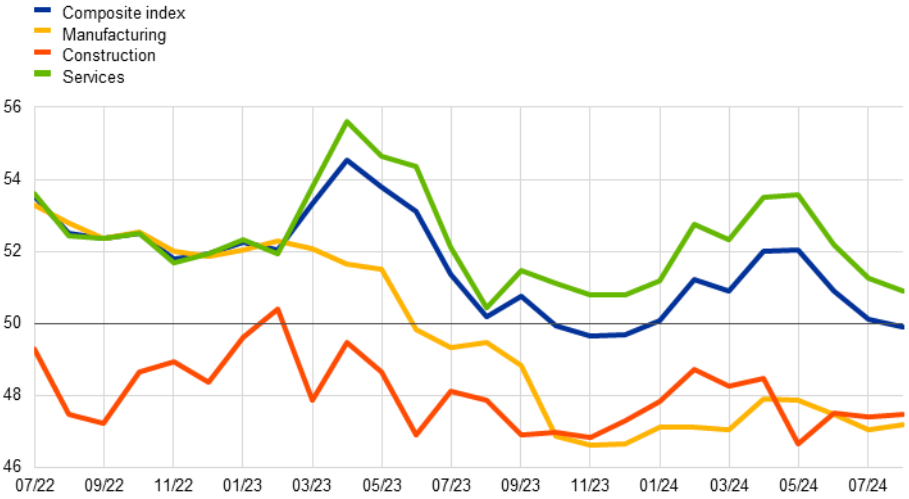
a) Employment, PMI assessment of employment and unemployment rate

(left-hand scale: quarter-on-quarter percentage changes, diffusion index; right-hand scale: percentages of the labour force)



b) Sectoral employment PMIs

(diffusion indices)



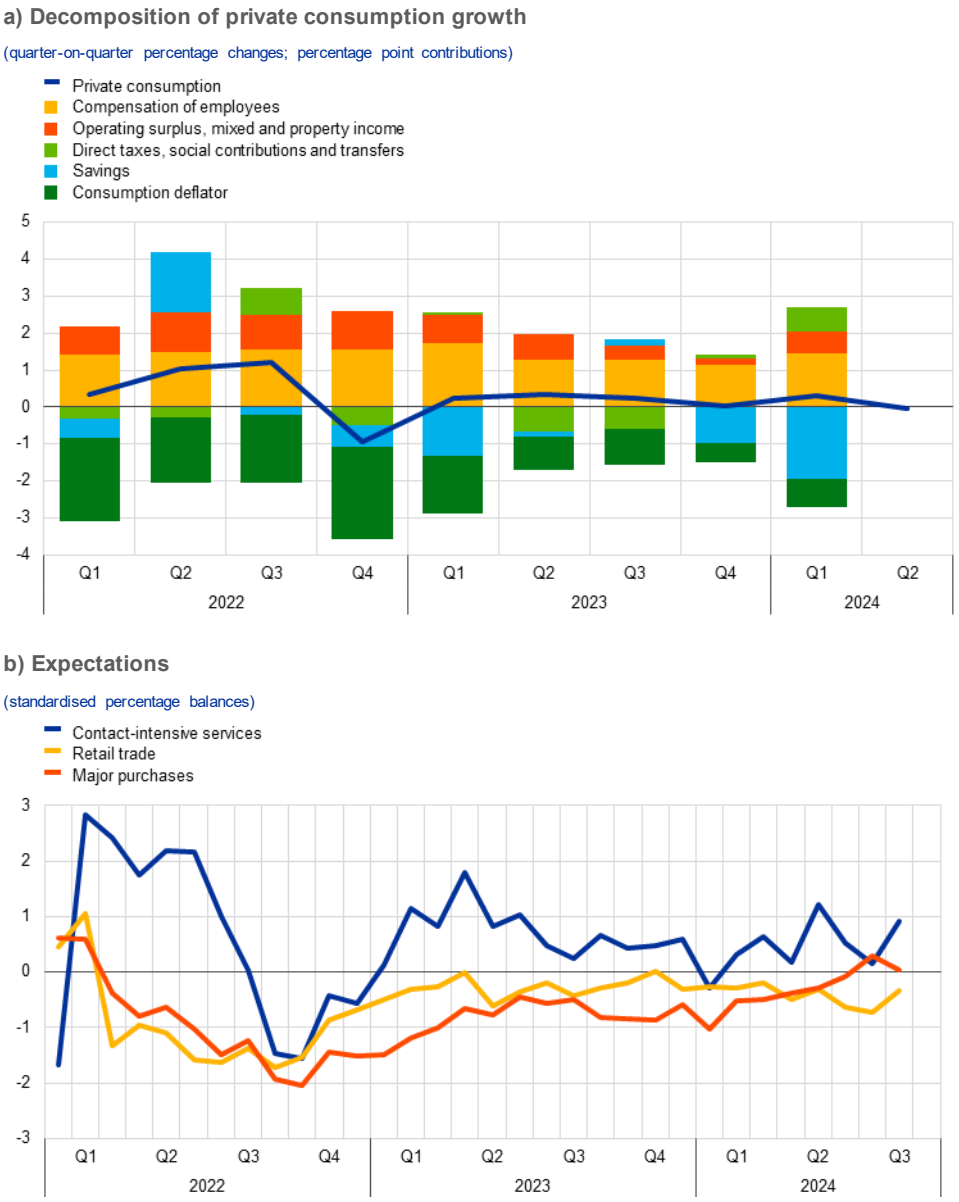
Sources: Eurostat, S&P Global Market Intelligence and ECB calculations.
Notes: In panel a), the two lines indicate monthly developments, while the bars show quarterly data. The PMI is expressed in terms of the deviation from 50, then divided by 10 to gauge the quarter-on-quarter employment growth. The latest observations are for the second quarter of 2024 for employment, August 2024 for the PMI assessment of employment and July 2024 for the unemployment rate. In panel b), the latest observations are for August 2024.

Short-term labour market indicators point to only marginal employment growth in the third quarter of 2024. The monthly composite PMI employment indicator remained broadly unchanged at 49.9 in August, slightly down from 50.1 in July, suggesting that employment growth is likely to slow further (Chart 6, panel b). The PMI services indicator decreased from 51.3 in July to 50.9 in August. By contrast, the PMI manufacturing and construction indicators increased slightly but remained in contractionary territory.

Private consumption weakened in the second quarter of 2024 but is expected to strengthen. Private consumption declined marginally in the second quarter of 2024, having shown weak average growth in the previous quarters. This muted growth path stands in contrast with the marked improvement in households' purchasing power since late 2023, reflecting lower inflation and rising labour and non-labour income (Chart 7, panel a). The rise in income has supported an increase in household savings, which appear to also reflect the tighter financing conditions (with elevated interest rates and still high consumer credit standards) and weak borrowing, as well as a reduced need to use savings buffers in the context of a resilient labour market. In addition, uncertainty still prevails and consumer confidence remains subdued (see Box 3). Incoming survey data suggest household spending will increase in the near term. The European Commission's indicators of business expectations for demand in contact-intensive services and retail trade expectations for the next three months improved in August – remaining above and drawing closer to their pre-pandemic averages respectively (Chart 7, panel b). Consumer expectations for major purchases in the next twelve months, which rose above their pre-pandemic level in July and remained close to that level in August, also indicate strengthening consumer demand. Similarly, the ECB's latest Consumer Expectations Survey showed an increasing propensity to spend on major items over the next twelve months, while expected holiday purchases remained at a high level.

Chart 7

Decomposition of private consumption growth and expectations for contact-intensive services, retail trade and major purchases



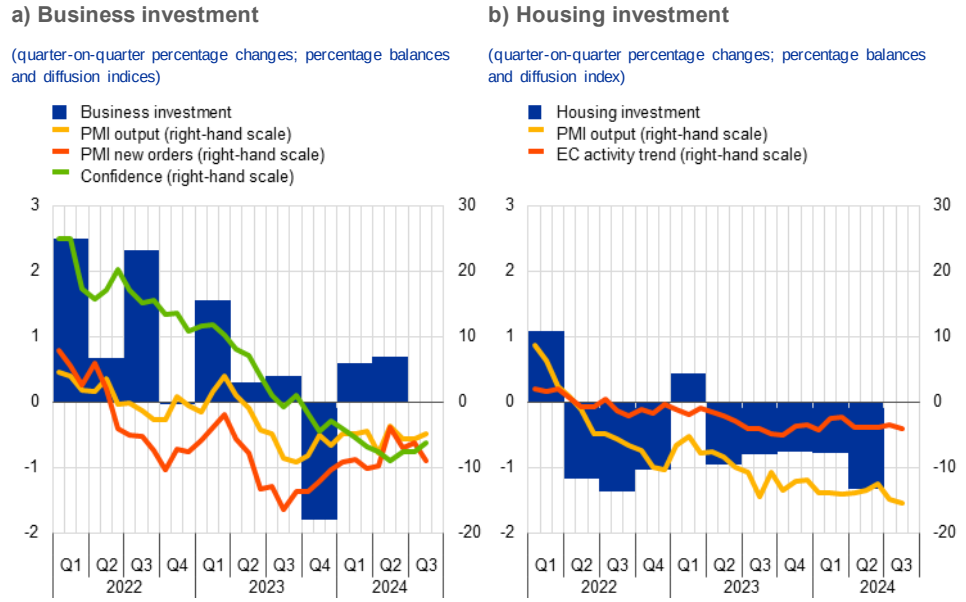
Sources: Eurostat, European Commission and ECB calculations.
Notes: In panel a), the latest observations are for the second quarter of 2024 for private consumption and the first quarter of 2024 for the contributions. In panel b), business expectations for demand in contact-intensive services and retail trade expectations refer to the next three months, while consumer expectations for major purchases refer to the next twelve months. The first series is standardised for the period January 2005-19, owing to data availability, whereas the other two series are standardised for the period 1999-2019; "contact-intensive services" include accommodation, travel and food services. The latest observations are for August 2024.

Business investment grew modestly in the second quarter of 2024 but is likely to grow less in the second half of the year. Non-construction investment excluding Irish intangibles rose by 0.7% in the second quarter of 2024 (and fell by 3.7% including Irish intangibles). Short-term indicators available up to August suggest further weakness in the capital goods sector in the third quarter (Chart 8, panel a): PMI output has moved broadly sideways this year and the European Commission's confidence indicator has edged up from a low level in recent months.

Forward-looking indicators for the sector, such as the August PMI new orders indicator, fell. Investment is expected to be held back by weak demand in the near term, amid a decline in capacity utilisation and still elevated uncertainty. According to the Commission's survey for the third quarter of 2024 published in July, demand is providing less support for production in the capital goods sector than in the past. Commission survey data – reflecting falling capacity utilisation and the perception that space and equipment considerations are limiting production in the economy to a diminishing extent – indicate that the immediate need to expand investment has also eased. Investment plans may also be delayed by elevated uncertainty, as well as geopolitical risks. Business investment is expected to continue to grow in the medium term, driven by the projected rise in demand, the fading impact of tight financing conditions and large green and digital investment needs.

Chart 8

Real investment dynamics and survey data



Sources: Eurostat, European Commission (EC), S&P Global Market Intelligence and ECB calculations.
Notes: Lines indicate monthly developments, while bars refer to quarterly data. The PMIs are expressed in terms of the deviation from 50. In panel a), business investment is measured by non-construction investment excluding Irish intangibles. PMI lines refer to responses from the capital goods sector. The latest observations are for the second quarter of 2024 for business investment and August 2024 for all other items. In panel b), the line for the European Commission's activity trend indicator refers to the weighted average of the building and specialised construction sectors' assessment of the trend in activity compared with the preceding three months, rescaled to have the same standard deviation as the PMI. The line for PMI output refers to housing activity. The latest observations are for the second quarter of 2024 for housing investment and August 2024 for PMI output and the European Commission's activity trend.

Housing investment fell significantly in the second quarter of 2024 and is expected to continue to decline in the short term, albeit at a slower pace.

Housing investment in the euro area fell by 1.3% in the second quarter of 2024, while production in building and specialised construction edged down by 0.2%. Survey-based activity indicators point to a further decline in housing investment in the third quarter of 2024, with both the PMI indicator for housing production and the European Commission's indicator for building and specialised construction activity in the last three months remaining in contractionary territory up to August (Chart 8, panel b). However, the decline in housing investment is likely to slow. According to the Commission's survey, the short-term intention of households to renovate and buy

or build a house has improved further in the third quarter of 2024. At the same time, the ECB's Consumer Expectations Survey shows that the proportion of households that consider housing as a good investment continued to increase in July, amid stabilising interest rate expectations. Moreover, in the July bank lending survey, banks expected a further increase in demand for housing loans in the third quarter of this year. All of this points to a gradual improvement in housing demand, which should eventually lead housing investment to bottom out.

Euro area export growth softened markedly in the second quarter of 2024. After rising in the first quarter, euro area export growth slowed to 0.1%, quarter on quarter, in the second quarter of 2024 (excluding Ireland, owing to the high level of data volatility). This deceleration underlines the ongoing competitiveness challenges facing euro area exporters, even amid a recovery in global demand. By contrast, services exports continued to bolster overall export performance, driven by robust demand for travel, business and ICT services. Looking ahead, the latest PMIs for export orders suggest that export performance will remain subdued in the near term. At the same time, the earlier recovery in euro area import growth appears to be losing momentum. Import growth stagnated in the second quarter (and was at zero when excluding Ireland), as euro area manufacturers cut back on input purchases in response to weaker demand. This decline was largely the result of weaker exports of goods. Net exports made a positive contribution of 0.5% to GDP in the second quarter, reflecting the stronger performance of exports over imports. However, with import prices stabilising, the improvement in the terms of trade is now stalling.

The euro area economy is expected to continue to recover in the medium term, largely on the back of strengthening private consumption. Looking ahead, real GDP is expected to recover as real incomes increase further, foreign demand strengthens and the dampening effects of tight monetary policy fade. The continued rise in real disposable income is expected to support private consumption, which should become the main driver of growth from the second half of 2024 onwards. The resilient labour market, coupled with gradually increasing consumer confidence and declining uncertainty, should also support household spending. Business investment is projected to improve later on, mostly reflecting the waning, but still present, drag from past monetary policy tightening and supported by both domestic and foreign demand.

The September 2024 ECB staff macroeconomic projections for the euro area foresee annual real GDP growth of 0.8% in 2024, 1.3% in 2025 and 1.5% in 2026. This is a slight downward revision compared with the June projections (-0.1 percentage points for all years), mainly owing to a weaker contribution from domestic demand over the next few quarters.

3 Prices and costs

Euro area headline inflation dropped to 2.2% in August 2024 from 2.6% in July, primarily reflecting a decline in energy inflation. Most measures of underlying inflation were broadly unchanged in July, with strong price pressures stemming from wages in particular. However, the overall rate of growth in labour costs is moderating, with profits in part buffering the impact of continued elevated labour cost pressures on inflation. This supports the ongoing disinflation. Over the review period, measures of longer-term inflation expectations remained broadly stable, with most measures standing at around 2%, and market-based measures falling closer to this level. The September 2024 ECB staff macroeconomic projections for the euro area foresee that headline inflation will decline gradually from 2.5% in 2024, to 2.2% in 2025 and 1.9% in 2026.[5]

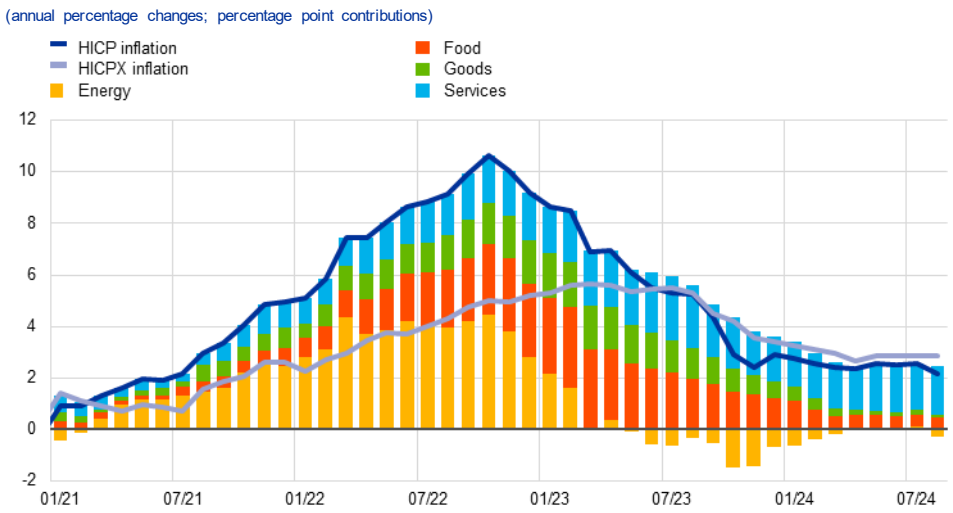
Euro area headline inflation, measured in terms of the Harmonised Index of Consumer Prices (HICP), fell to 2.2% in August 2024 from 2.6% in July (Chart 9)[6]. This decrease resulted from lower inflation rates for energy and non-energy industrial goods (NEIG), which more than offset higher inflation rates for food and services. The annual rate of change in energy inflation dropped substantially, from 1.2% in July 2024 to -3.0% in August. This decline was driven by a downward base effect, owing to a significant increase in energy prices in August 2023. Food inflation rose slightly to 2.4% in August 2024, from 2.3% in July, reflecting a higher annual rate of change in unprocessed food prices, while the annual rate of change in processed food prices remained unchanged. HICP inflation excluding energy and food (HICPX) decreased to 2.8% in August, after standing at 2.9% in July, owing to a fall in NEIG inflation (0.4% in August, down from 0.7% in July), thus outweighing the increase in services inflation (4.2% in August, up from 4.0% in July). The meanwhile largely normalised growth rates for NEIG reflect diminishing earlier pipeline price pressures, while the more persistent services inflation is linked to the stronger role of labour costs in some of its items and lagged repricing in others.

5 See "ECB staff macroeconomic projections for the euro area, September 2024", published on the ECB's website on 12 September 2024.

6 The cut-off date for data included in this issue of the Economic Bulletin was 11 September 2024. HICP inflation data released on 18 September 2024 (full estimate) confirmed that headline inflation stood at 2.2% in August 2024. However, food inflation was unchanged at 2.3% in August 2024 (same as in July), while services inflation increased from 4.0% in July to 4.1% in August.

Chart 9

Headline inflation and its main components

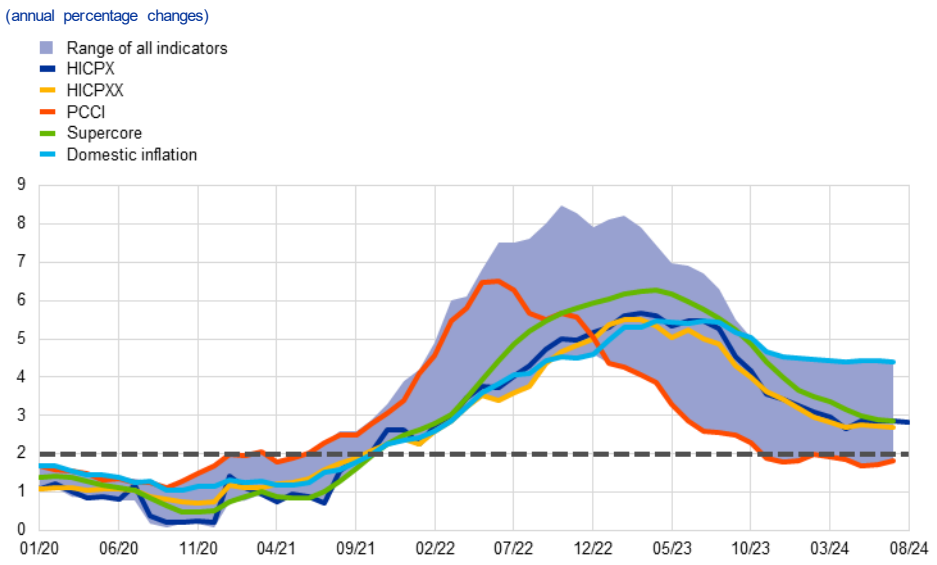


Sources: Eurostat and ECB calculations.
Notes: Goods refer to NEIG. The latest observations are for August 2024 (flash estimate).

Most underlying inflation indicators were stable in July, albeit standing at different levels (Chart 10). In July 2024 (latest available data), the indicator values ranged from 1.8% to 4.4%. The Persistent and Common Component of Inflation (PCCI) indicator is constructed to identify the common component of inflation across a comprehensive set of price movements and is currently the best barometer for medium-term inflation during the post-pandemic period. The PCCI indicator lies at the bottom of this range, while the domestic inflation indicator (which excludes HICP items with a large import content) lies at the top. The Supercore indicator, which comprises HICP items that are sensitive to the business cycle, and which stood at 2.9% in July, was unchanged from the previous month. HICPXX inflation (which refers to HICPX inflation excluding travel-related items, clothing and footwear) also remained unchanged at 2.7% in July, whereas the PCCI indicator increased slightly to 1.8% in July, from 1.7% in June. The indicator for domestic inflation fell slightly to 4.4% in July, but continued to stand at a persistently high level, reflecting the strong weight of services items such as insurance, recreation and accommodation services.

Chart 10

Indicators of underlying inflation

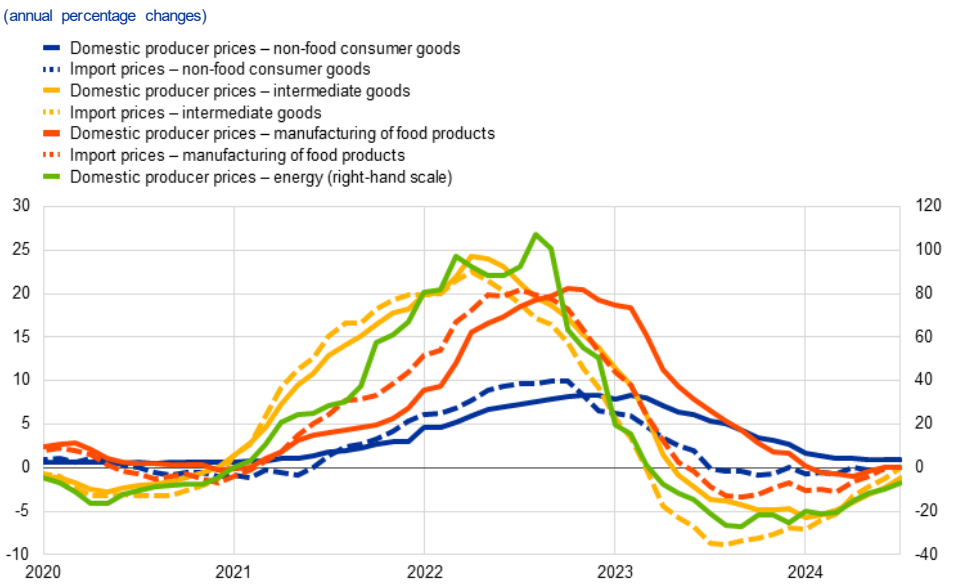


Sources: Eurostat and ECB calculations.
Notes: The range of indicators of underlying inflation includes HICP excluding energy, HICP excluding energy and unprocessed food, HICPX, HICPXX, domestic inflation, 10% and 30% trimmed means, the PCCI, the Supercore indicator and a weighted median. Only selected indicators are shown in the chart. The grey-dashed line shows the ECB's inflation target of 2% over the medium term. The latest observations are for August 2024 (flash estimate) for the HICPX and July 2024 for the other indicators.

Pipeline pressures remained moderate, albeit they now show signs of edging up from low levels (Chart 11). At the early stages of the pricing chain, producer price inflation for energy, which had been negative since March 2023, edged up to -6.9% in July 2024, from -9.6% in June. The annual growth rate of producer prices for domestic sales of intermediate goods also remained negative, albeit less so than in the previous month (-1.2% in July, up from -2.3% in June). The corresponding annual growth rate of import prices stood at zero in July, after standing at -1.3% in June. At the later stages of the pricing chain, domestic producer price inflation for non-food consumer goods was unchanged at 0.9% in July, and the same applied to the manufacturing of food products, which remained at 0.1%. Import price pressures for consumer goods edged upwards in July, partly reflecting the fact that the year-on-year rate of change in the nominal effective exchange rate of the euro had turned broadly neutral following an earlier increase. Overall, pipeline pressures broadly stabilised and now show signs of edging up from low levels, suggesting that the easing of pipeline pressures following earlier cost shocks has faded out.

Chart 11

Indicators of pipeline pressures



Sources: Eurostat and ECB calculations.
Note: The latest observations are for June 2024 for import prices for non-food consumer goods and import prices for the manufacturing of food products and for July 2024 for the other indicators.

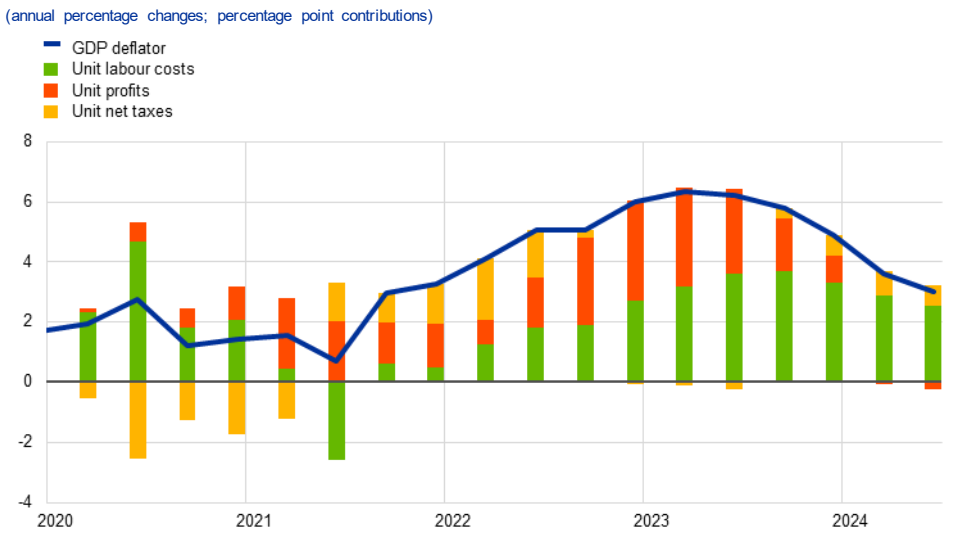
Domestic cost pressures, as measured by growth in the GDP deflator, further decreased in the second quarter of 2024, albeit remaining elevated overall (Chart 12). The annual growth rate of the GDP deflator dropped to 3.0% in the second quarter of 2024, down from 3.6% in the previous quarter. This decline reflected smaller contributions from all of the main components, but with the largest downward impact stemming from unit labour costs. The reduced impact from unit labour costs was the result of a decline in wage growth, measured in terms of compensation per employee, which fell from 4.8% in the first quarter of 2024 to 4.3% in the second quarter. Wage growth measured in terms of compensation per hour also decreased, to 4.2% in the second quarter of 2024 from 5.0% in the first quarter. Negotiated wage growth declined to 3.5% in the second quarter of 2024, from 4.7% in the first quarter, but with data on the latest wage agreements in the ECB's forward-looking wage tracker pointing to stronger growth in negotiated wages in the third quarter of 2024.[7] Overall, however, the latest wage developments point to a decreasing role of compensation for past high inflation and the corresponding real wage catch-up.[8] Annual growth in compensation per employee for 2024 is projected to stand at 4.5%, on average, and is expected to continue to moderate over the projection horizon, albeit remaining above historical levels owing to continuing tight labour markets and remaining inflation compensation.

7 See Górnicka and Koester (eds.), "A forward-looking tracker of negotiated wages in the euro area", *Occasional Paper Series*, No 338, ECB, February 2024.

8 See the box entitled "Recent developments in wages and the role of wage drift", *Economic Bulletin*, Issue 6, ECB, 2024.

Chart 12

Breakdown of the GDP deflator



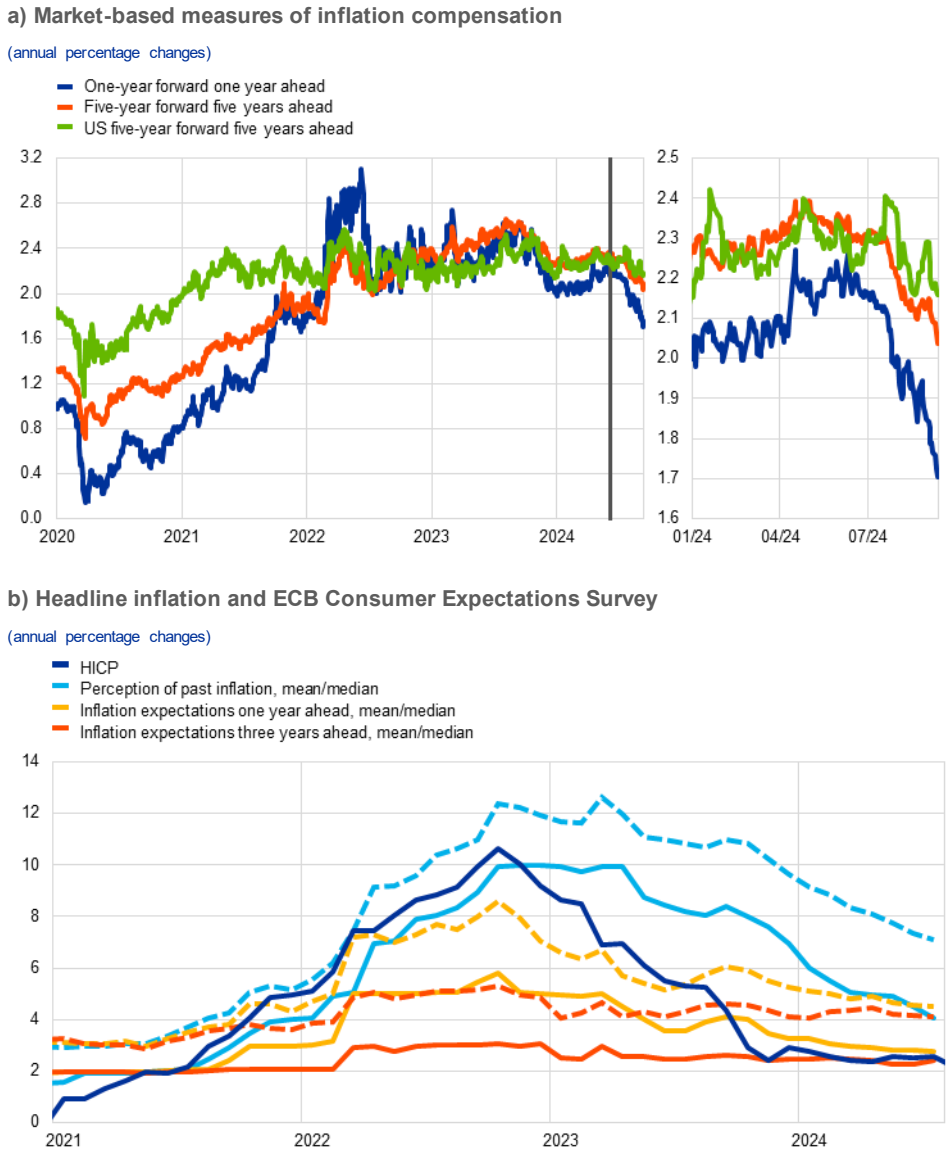
Sources: Eurostat and ECB calculations.
Notes: The latest observations are for the second quarter of 2024. Compensation per employee contributes positively to changes in unit labour costs, and labour productivity contributes negatively.

Survey-based indicators of longer-term inflation expectations remained broadly unchanged with most standing at around 2%, and market-based measures falling closer to this level over the review period (Chart 13). In both the ECB Survey of Professional Forecasters for the third quarter of 2024 and the September 2024 ECB Survey of Monetary Analysts, average and median longer-term inflation expectations (for 2029) stood at 2.0%. Market-based measures of inflation compensation (based on the HICP excluding tobacco) at the longer end of the yield curve declined by around 27 basis points, with the five-year forward inflation-linked swap rate five years ahead standing at around 2.1%. At the same time, it should be noted that these market-based measures of inflation compensation are not a direct gauge of the genuine inflation expectations of market participants, as these measures include inflation risk premia. Model-based estimates of genuine inflation expectations, excluding inflation risk premia, indicate that market participants continue to expect inflation to hover around 2% in the longer term. Market-based measures of near-term euro area inflation outcomes also dropped significantly, which suggests that investors expect inflation to fall further and to stand at around 2% for the remainder of this year, before settling below 2% in the subsequent year. The revisions to market participants expectations can be partly attributed to lower global energy prices, notably oil prices, but also to concerns about economic growth in the United States. Specifically, over the review period, the one-year forward inflation-linked swap rate one year ahead fell by 47 basis points and currently stands at 1.7%. On the consumer side, inflation expectations appear to have levelled off in recent months. According to the ECB's Consumer Expectations Survey for July 2024, the median expectations for headline inflation over the next year remained unchanged at 2.8% (for the third consecutive month), while the expectations for three years ahead edged up to 2.4%, from 2.3% in June.

Perceptions of past inflation declined in July 2024 but remain above the inflation expectations at the one-year and three-year horizons.

Chart 13

Market-based measures of inflation compensation and consumer inflation expectations



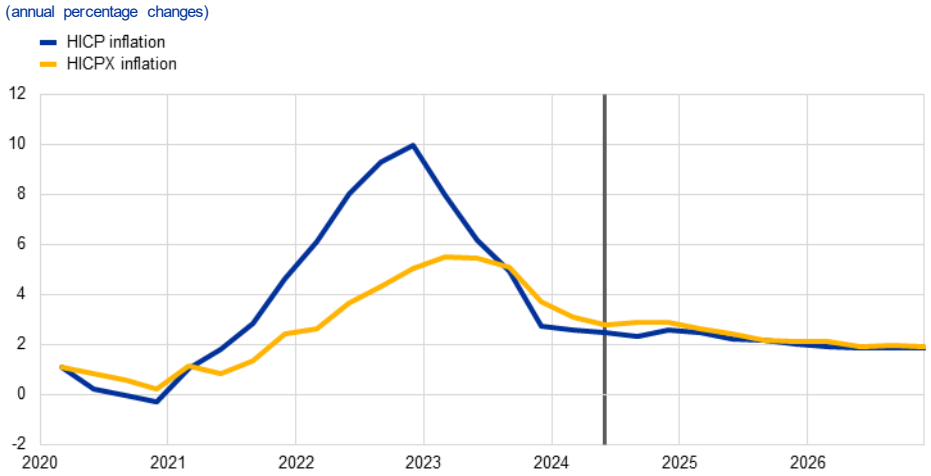
Sources: Refinitiv, Bloomberg, Eurostat, CES and ECB calculations.
Notes: Panel a) shows forward inflation-linked swap rates over different horizons for the euro area and the five-year forward break-even inflation rate five years ahead for the United States. The vertical grey line denotes the start of the review period on 6 June 2024. In panel b), the dashed lines show the mean and the solid lines the median. The latest observations are for 11 September 2024 for the forward rates, August 2024 (flash estimate) for the HICP and July 2024 for the other measures.

The September 2024 ECB staff macroeconomic projections expect headline inflation to average 2.5% in 2024 and to decline further to 2.2% in 2025 and 1.9% in 2026 (Chart 14). Headline inflation is projected to increase slightly in the last quarter of 2024, mainly owing to base effects in energy prices, before returning to a downward path. The overall decline in 2024 reflects the continued waning of pipeline pressures as well as the impact of monetary policy tightening. A gradual easing is

expected to continue over the coming years, as upward impacts from wage growth and inflation compensation pressures in a tight labour market continue to fade. Compared with the June 2024 projections, the projections for headline inflation remained unchanged. For HICPX inflation, the projections for 2024 and 2025 have been revised up slightly, by 0.1 percentage points, compared with the June 2024 projections due to higher-than-expected inflation in services. At the same time, ECB staff continue to expect a rapid decline in core inflation, from 2.9% in 2024 to 2.3% in 2025 and 2.0% in 2026.

Chart 14

Euro area HICP and HICPX inflation



Sources: Eurostat and September 2024 ECB staff macroeconomic projections.
Notes: The grey vertical line indicates the last quarter before the start of the projection horizon. The latest observations are for the second quarter of 2024 for the data and the fourth quarter of 2026 for the projections. The September 2024 ECB staff macroeconomic projections for the euro area were finalised on 29 August 2024, and the cut-off date for the technical assumptions was 16 August 2024. Both historical and actual data for HICP and HICPX inflation are reported at a quarterly frequency.

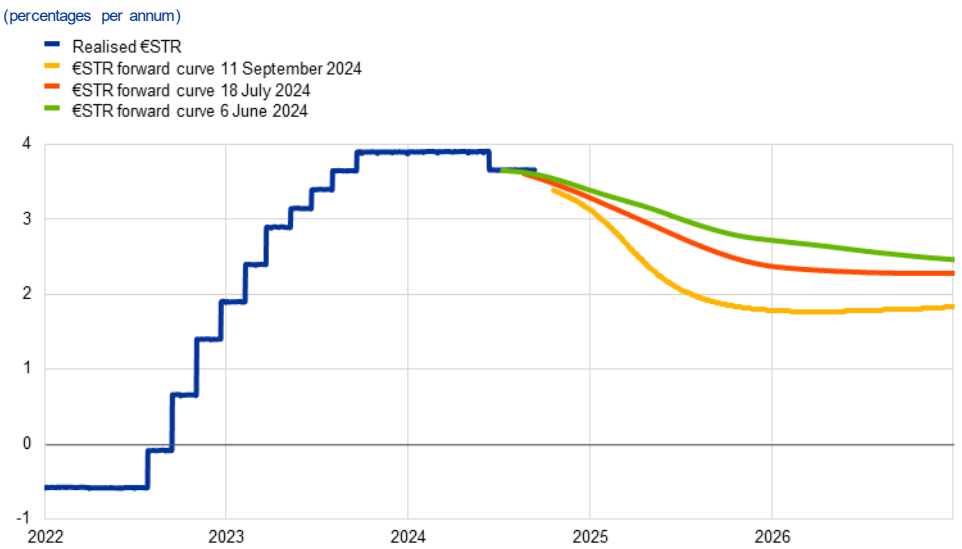
4 Financial market developments

During the review period from 6 June to 11 September 2024, a general reappraisal of the outlook for economic growth and inflation pushed risk-free interest rates down in major advanced economies. In the euro area, forward rates fell across all maturities, with market participants anticipating faster and deeper cumulative policy rate cuts. Specifically, at the end of the review period forward rates entailed around 60 basis points of cumulative interest rate cuts by the end of the year, with markets fully pricing in the rate cut of 25 basis points at the September Governing Council meeting. Euro area long-term risk-free nominal interest rates have also declined, primarily reflecting the fall in inflation compensation, with long-term real rates having edged down too. Sovereign bond yields also recorded a decline, albeit to a lesser extent than risk-free rates, with some volatility around the snap elections in France and the sell-off in global equity markets in early August. Prices of risky assets experienced substantial volatility over the review period. In early August, equity prices recorded significant losses, amid deteriorating risk appetite and weak global macroeconomic data releases. Despite regaining much of the ground lost in early August, stock prices of euro area companies are still below the levels recorded in June, owing to downgraded earnings expectations and higher risk premia. In foreign exchange markets, the euro appreciated somewhat against the US dollar but remained broadly stable in trade-weighted terms.

Since the June Governing Council meeting the overnight index swap (OIS) forward curve has shifted downwards as market participants expect faster and deeper cumulative policy rate cuts (Chart 15). The benchmark euro short-term rate (€STR) averaged 3.7% over the review period, following the Governing Council's widely anticipated decision at its June meeting to lower the key ECB interest rates by 25 basis points. Excess liquidity decreased by around €130 billion from 6 June to 11 September, to stand at €3,072 billion. This mainly reflected repayments in June of funds borrowed in the third series of targeted longer-term refinancing operations (TLTRO III) and the decline in the portfolios of securities held for monetary policy purposes, as the Eurosystem no longer reinvests the principal payments from maturing securities in the asset purchase programme (APP) portfolio and only partially reinvests principal payments in the pandemic emergency purchase programme (PEPP) portfolio. The €STR-based OIS forward curve has shifted downwards since the June Governing Council meeting, amid significant declines in market-based measures of inflation compensation and weak global macroeconomic data releases. It fully priced in a rate cut of 25 basis points at the September Governing Council meeting. Overall, the forward curve has moved from pricing in (on June 6) around 35 basis points of cumulative interest rate cuts in the course of 2024, to pricing in (on 11 September) around 60 basis points of cumulative cuts.

Chart 15

€STR forward rates

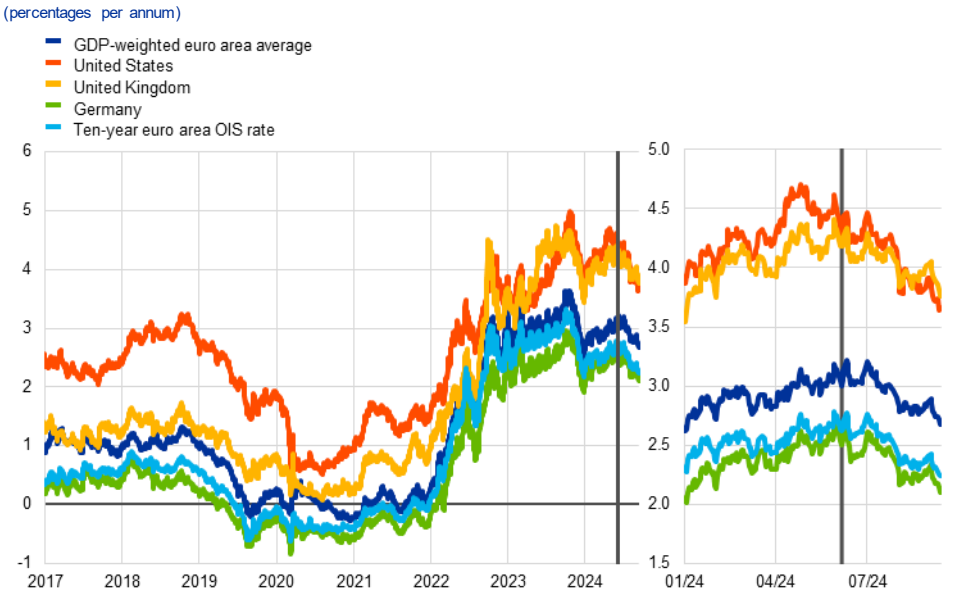


Sources: Bloomberg and ECB calculations.
Note: The forward curve is estimated using spot OIS (€STR) rates.

Euro area long-term risk-free rates have also declined since the June Governing Council meeting, albeit by less than their US counterparts (Chart 16). The ten-year euro OIS rate declined by 41 basis points and ended the review period at around 2.2%. This decline in long-term nominal risk-free rates reflected the fall in the inflation component, partly resulting from euro area macroeconomic data releases and elevated global risks, but primarily resulting from US data releases – which led to even larger declines in US long-term interest rates. Specifically, US long-term risk-free rates fluctuated more significantly and declined more noticeably during the review period, particularly on days of macroeconomic data releases. In particular, the ten-year US Treasury yield decreased by 63 basis points to 3.7%. As a result, the differential between long-term risk-free rates in the euro area and the United States has narrowed by approximately 20 basis points. The ten-year UK sovereign bond yield declined by 42 basis points to 3.8%.

Chart 16

Ten-year sovereign bond yields and the ten-year OIS rate based on the €STR

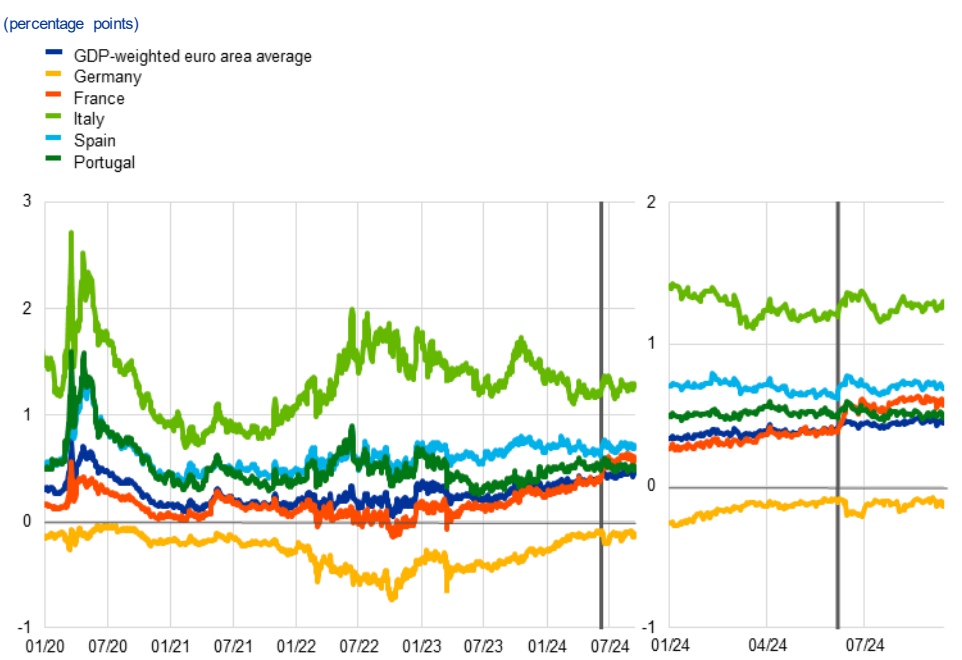


Sources: LSEG and ECB calculations.
Notes: The vertical grey line denotes the start of the review period on 6 June 2024. The latest observations are for 11 September 2024.

Euro area sovereign bond yields have also declined, albeit to a lesser extent than risk-free rates, resulting in somewhat wider spreads (Chart 17). At the end of the review period, the ten-year GDP-weighted euro area sovereign bond yield stood about 37 basis points lower, at around 2.7%, leading to an increase of 4 basis points in its spread over the OIS rate based on the €STR. More notable increases were observed for the French ten-year sovereign spread versus the ten-year OIS yield which widened markedly following the announcement on 9 June of snap parliamentary elections in France, but subsequently narrowed somewhat again. Overall, the French sovereign spread widened by 17 basis points in the review period. Widening of sovereign spreads was also observed for Greece, Spain, Italy, and Portugal, notably around the French snap elections and the global sell-off in equity markets in early August. However, by the end of the review period, with the exception of France, euro area sovereign spreads had broadly returned to the levels observed at the beginning of the period.

Chart 17

Ten-year euro area sovereign bond spreads vis-à-vis the ten-year OIS rate based on the €STR



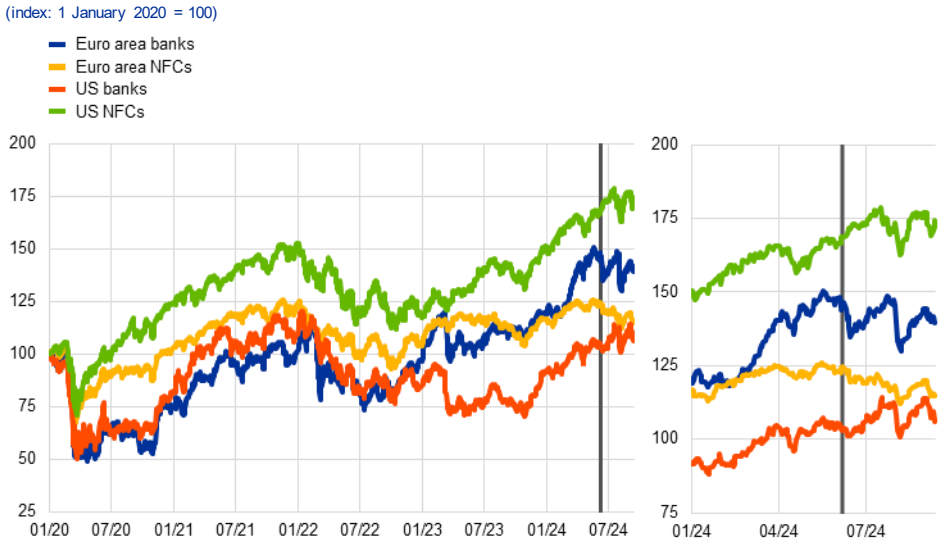
Sources: LSEG and ECB calculations.
Notes: The vertical grey line denotes the start of the review period on 6 June 2024. The latest observations are for 11 September 2024.

Spreads of corporate bonds edged up for investment-grade firms and widened significantly for high-yield firms. Spreads of investment-grade corporate bonds fluctuated moderately and stood 14 basis points higher at the end of the review period. In contrast, spreads in the high-yield segment widened by 57 basis points, driven by developments in bond spreads of both financial and non-financial corporations (NFCs), which widened by 33 and 64 basis points respectively.

Despite partially recovering from significant losses recorded in early August, euro area equity prices ended the review period lower, dragged down by worsening risk sentiment and weak macroeconomic data releases around the globe (Chart 18). Euro area equity prices experienced substantial volatility over the review period. They first weakened around the snap elections in France, affecting particularly French corporations and curbing the previously buoyant risk appetite. Then they recorded significant losses in early August as weak macroeconomic data releases triggered fears of a recession in the United States and led to a sharp drop in global risk appetite. Although equity prices on both sides of the Atlantic have regained much of the ground lost in early August, stock prices of euro area companies have underperformed US stock prices. Dragged down by lower earnings expectations and higher risk premia, broad stock market indices in the euro area weakened by 5% over the review period, albeit with some divergence across sectors. The equity prices of NFCs declined by 8%, while bank equity prices declined by 4%. In the United States, the overall equity price index increased over the review period, with both NFC and bank equity prices strengthening by around 3%.

Chart 18

Euro area and US equity price indices



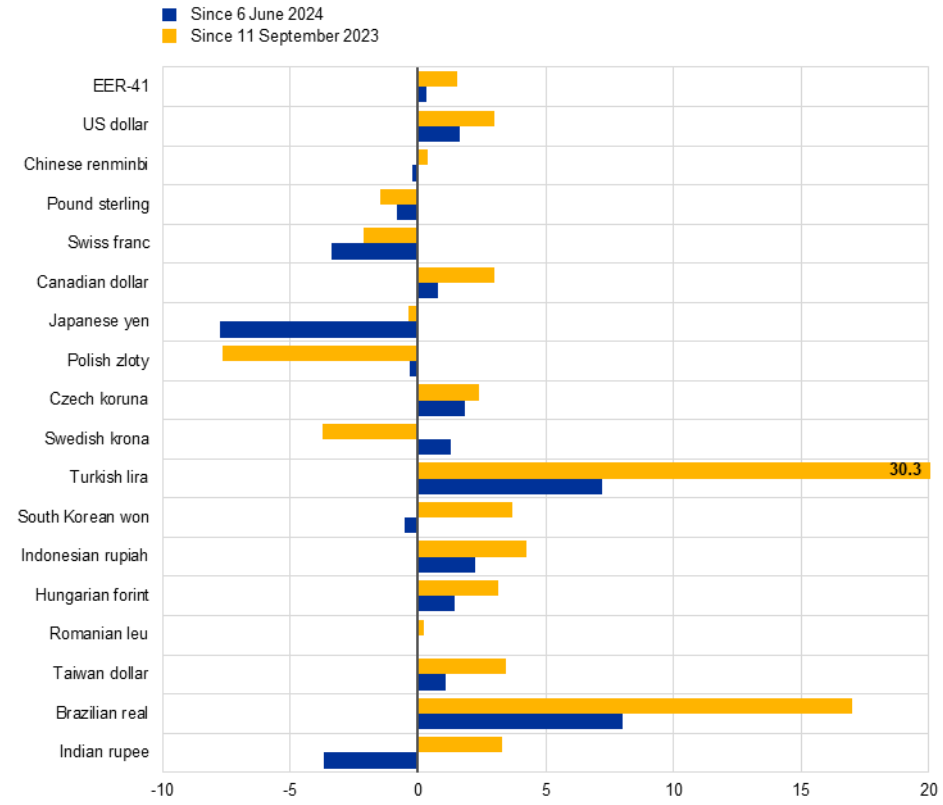
Sources: LSEG and ECB calculations.
Notes: The vertical grey line denotes the start of the review period on 6 June 2024. The latest observations are for 11 September 2024.

In foreign exchange markets, the euro appreciated by 1.6% against the US dollar but remained broadly stable in trade-weighted terms (Chart 19). During the review period, the nominal effective exchange rate of the euro – as measured against the currencies of 41 of the euro area's most important trading partners – appreciated by 0.3%. The appreciation of the euro against the US dollar (1.6%) was largely driven by a downward repricing of market participants' expectations regarding the path of the Federal Reserve System's policy rate in early August amid signs that the US labour market was cooling. The euro also appreciated against some emerging market currencies. By contrast, the euro depreciated markedly against the Japanese yen (-7.7%) and the Swiss franc (-3.4%) following the unwinding of carry trades funded by the latter two currencies during the episode of heightened financial market volatility in early August. Moreover, the euro depreciated by 0.8% against the pound sterling.

Chart 19

Changes in the exchange rate of the euro vis-à-vis selected currencies

(percentage changes)



Source: ECB calculations.
Notes: EER-41 is the nominal effective exchange rate of the euro against the currencies of 41 of the euro area's most important trading partners. A positive (negative) change corresponds to an appreciation (depreciation) of the euro. All changes have been calculated using the foreign exchange rates prevailing on 11 September 2024.

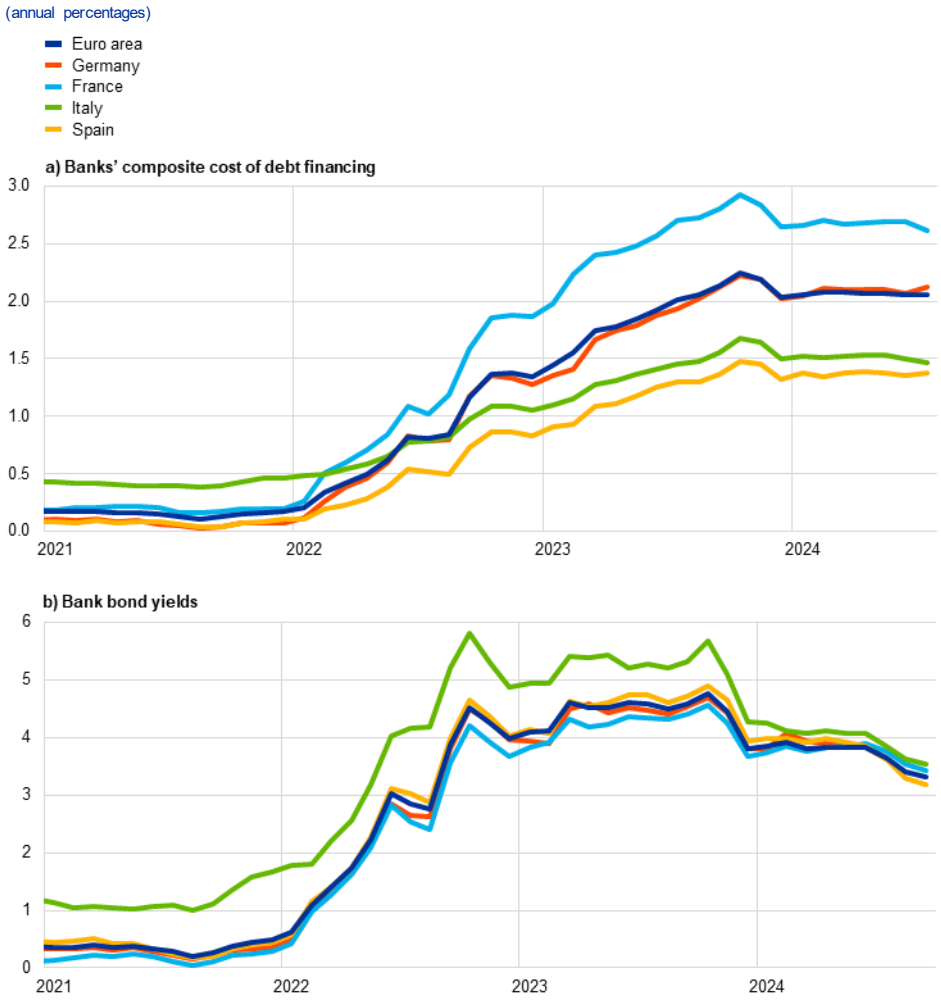
5 Financing conditions and credit developments

Financing costs have remained restrictive. In July 2024 composite euro area bank funding costs and bank lending rates remained at tight levels. Growth rates for bank loans to firms and to households continued to be subdued, reflecting high lending rates, weak economic growth and tight credit standards. Over the period from 6 June to 11 September 2024, the cost to firms of market-based debt declined significantly, owing to a fall in risk-free interest rates, while the cost of equity financing increased. The annual growth rate of broad money (M3) showed signs of stabilisation at low levels, net foreign inflows continuing to be the main contributor to growth.

Euro area bank funding costs have remained high. The composite debt financing cost for euro area banks has remained stable at high levels since January 2024 and saw no change in July (Chart 20, panel a). High bank funding costs have persisted, owing to the ongoing recomposition of funding towards more expensive sources, such as time deposits – remunerated at a higher rate than overnight deposits – and bank bond issuance, in a context of gradual phasing out of targeted longer-term refinancing operations (TLTROs) funding. Interest rates on time deposits and, to a lesser extent, on overnight deposits declined between May and June and were unchanged in July. Rates on deposits redeemable at notice remained broadly constant. Bank bond yields declined against the backdrop of the policy rate cut in June and the repricing of the risk-free rate curve, even though some volatility in bond markets in the course of the Summer prevented a larger adjustment in market-based funding costs (Chart 20, panel b).

Chart 20

Composite bank funding costs in selected euro area countries

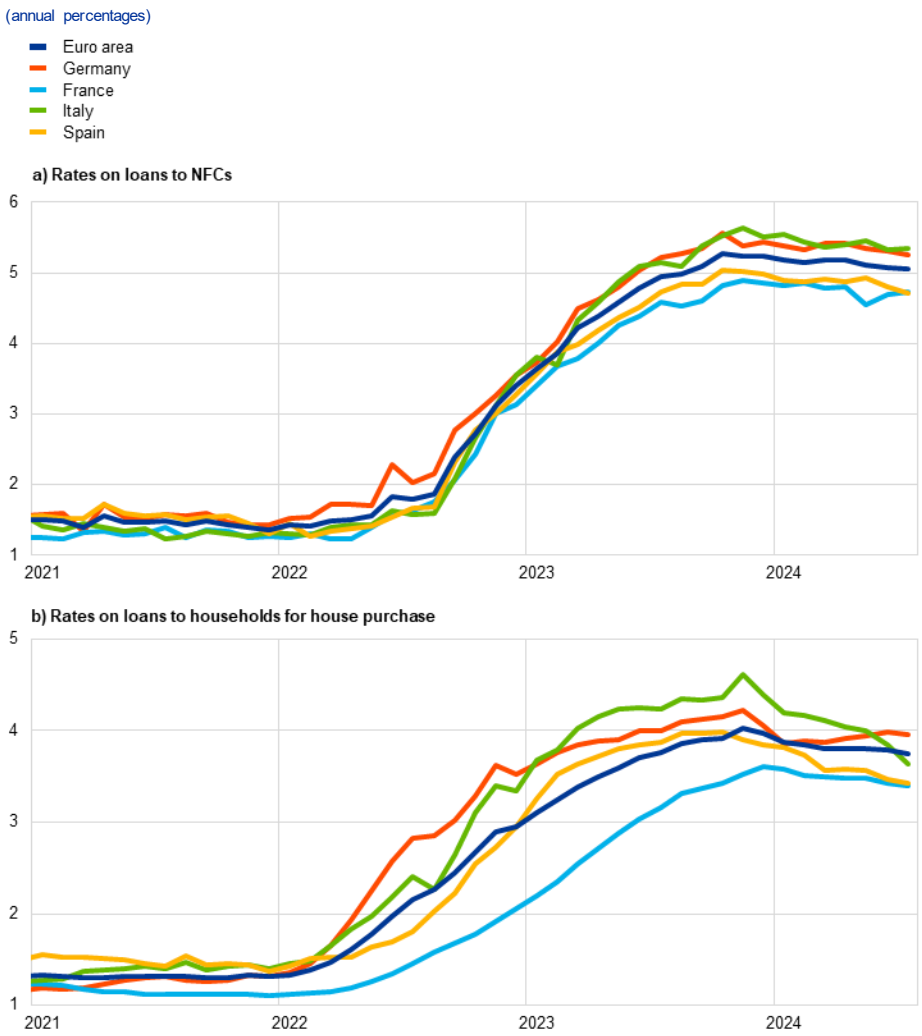


Sources: ECB, S&P Dow Jones Indices LLC and/or its affiliates, and ECB calculations.
Notes: Composite bank funding costs are a weighted average of the composite cost of deposits and unsecured market-based debt financing. The composite cost of deposits is calculated as an average of new business rates on overnight deposits, deposits with an agreed maturity and deposits redeemable at notice, weighted by their respective outstanding amounts. Bank bond yields are monthly averages for senior tranche bonds. The latest observations are for July 2024 for the composite cost of debt financing for banks (panel a) and for 11 September 2024 for bank bond yields (panel b).

Bank lending rates for firms and households edged down slightly in July compared with May, while still standing at levels close to the peaks of the past twelve years. In July lending rates for non-financial corporations (NFCs) remained broadly unchanged at 5.06%, after a marginal decline in June (Chart 21, panel a), amid heterogeneity across euro area countries and maturities. Lending rates on new loans to households for house purchase declined slightly to 3.75% in July, following four months of broad stability at around 3.80% (Chart 21, panel b), although some degree of cross-country heterogeneity was observed.

Chart 21

Composite bank lending rates for firms and households in selected countries



Sources: ECB and ECB calculations.
Notes: NFCs stands for non-financial corporations. Composite bank lending rates are calculated by aggregating short and long-term rates using a 24-month moving average of new business volumes. The latest observations are for July 2024.

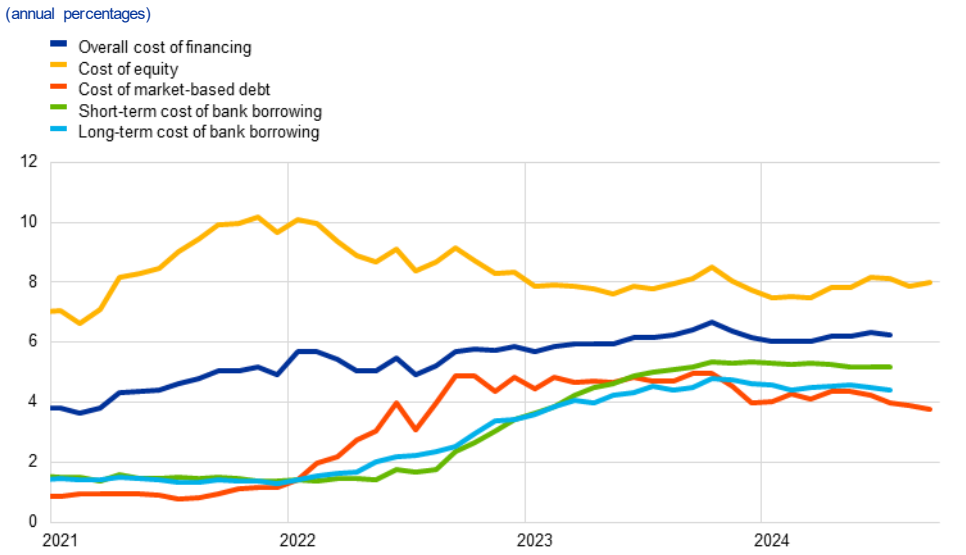
Over the period from 6 June to 11 September 2024, the cost to firms of market-based debt fell significantly owing to a decline in risk-free interest rates, while their cost of equity financing increased. Based on the available monthly data, the overall cost of financing for NFCs – i.e. the composite cost of bank borrowing, market-based debt and equity – stood at 6.2% in July, slightly lower than the level recorded in June and below the multi-year high reached in October 2023 (Chart 22).[9] This was the result of a reduction in all components of NFC financing costs, with the exception of the cost of short-term bank loans, which remained virtually unchanged. Daily data covering the period from 6 June to 11 September 2024 confirm a fall in the cost of market-based debt, owing to a marked decline in the risk-free interest rate – as approximated by the ten-year overnight index swap rate – that was only partially offset by a small widening of the spreads on bonds issued by NFCs, especially in the

[9] Owing to lags in data availability for the cost of borrowing from banks, data on the overall cost of financing for NFCs are only available up to July 2024.

high-yield segments. Notwithstanding the decline in the risk-free interest rate, the cost of equity financing increased over the same period, driven by a rising equity risk premium.

Chart 22

Nominal cost of external financing for euro area firms, broken down by component

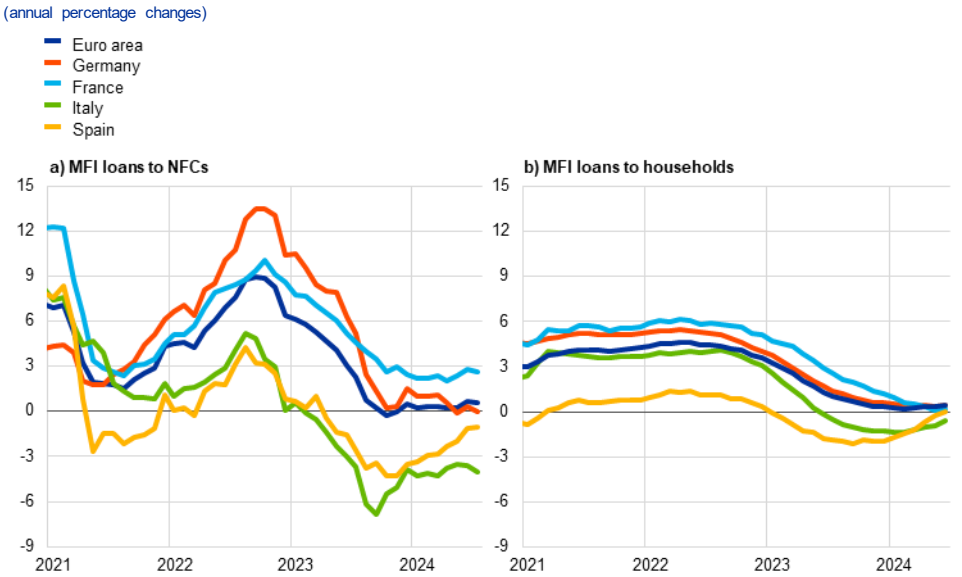


Sources: ECB, Eurostat, Dealogic, Merrill Lynch, Bloomberg, LSEG and ECB calculations.
Notes: The overall cost of financing for non-financial corporations (NFCs) is based on monthly data and is calculated as a weighted average of the long and short-term cost of bank borrowing (monthly average data), market-based debt and equity (end-of-month data), based on their respective outstanding amounts. The latest observations are for 11 September 2024 for the cost of market-based debt and the cost of equity (daily data), and for July 2024 for the overall cost of financing and the cost of borrowing from banks (monthly data).

External financing flows of firms and borrowing by households remained muted, reflecting high lending rates, weak economic growth and tight credit standards. In July, the annual growth rate of bank lending to firms decreased to 0.6%, down slightly from 0.7% in June (Chart 23). While short-term bank lending flows for firms remain volatile, lending at longer maturities has been slowing, with almost no growth, this being consistent with weak investment. The issuance of debt securities by firms was also close to nil overall from May to July, amid volatility. The annual growth rate of household lending edged up to 0.5% in July, from 0.3% in June, remaining sluggish. These subdued figures reflected weak lending for house purchases (0.5% annual growth in July) and lending for other purposes (contracting by 2.7% in annual terms in July). Consumer credit growth was, however, more resilient (recording 2.8% annual growth in July). The ECB's Consumer Expectations Survey in July 2024 confirmed a still large net percentage of survey respondents reporting that credit access had become harder over the previous 12 months and expecting it to become even more difficult over the next 12 months.

Chart 23

MFI loans in selected euro area countries



Sources: ECB and ECB calculations.
Notes: Loans from monetary financial institutions (MFIs) are adjusted for loan sales and securitisation; in the case of non-financial corporations (NFCs), loans are also adjusted for notional cash pooling. The latest observations are for July 2024.

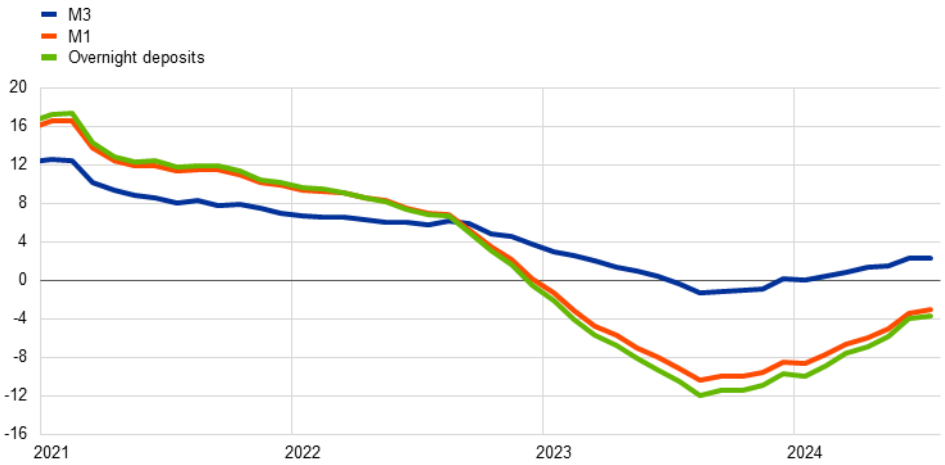
The annual growth rate of broad money (M3) in the euro area showed signs of stabilisation at low levels, net foreign inflows continuing to be the main contributor to growth.[10] M3 growth remained unchanged at 2.3% in July, amid volatility in monthly flows (Chart 24). Annual growth of narrow money (M1) – which comprises the most liquid assets of M3 – stayed in negative territory but continued to increase, rising to -3.1% in July compared with -3.4% in June. Likewise, the annual growth rate of overnight deposits rose to -3.6% in July, up from -4.0% in June. Foreign inflows remained the only consistent positive driver of money growth, amid subdued lending to households and firms, the continuing contraction of the Eurosystem balance sheet and the issuance of long-term bank bonds (which are not included in M3) in a context of ongoing repayments of TLTRO funds.

[10] See the box entitled "Money and credit dynamics in the euro area and a comparison with the United States", in this issue of the Economic Bulletin.

Chart 24

M3, M1 and overnight deposits

(annual percentage changes, adjusted for seasonal and calendar effects)



Source: ECB.
Note: The latest observations are for July 2024.

6 Fiscal developments

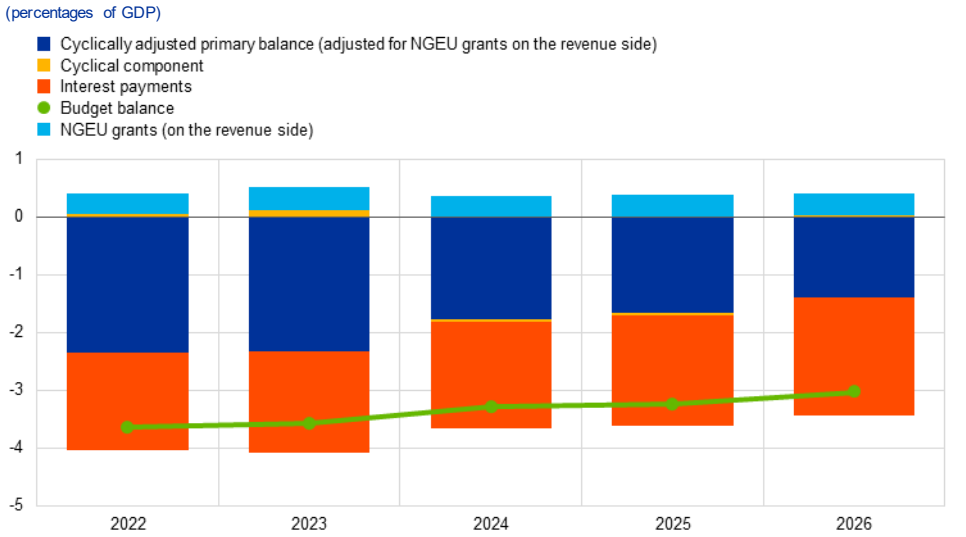
According to the September 2024 ECB staff macroeconomic projections, the euro area general government budget deficit is expected to decline from 3.6% of GDP in 2023 to 3.3% of GDP in 2024 and then further to 3.2% in 2025 and 3.0% in 2026. The euro area fiscal stance is projected to tighten significantly in 2024, and to tighten further – albeit by less – over the following two years. The tightening in 2024 mostly reflects the phasing-out of a large part of energy-related and inflation-related support measures. In 2025 and 2026, the continued tightening is due to a further scaling down of the remaining energy support measures, increases in direct taxes and social security contributions, and slower growth in fiscal transfers. Governments will soon release their medium-term fiscal-structural plans for the first time under the EU's revised economic governance framework. Implementing the revised framework fully, transparently and without delay will help governments bring down budget deficits and debt ratios on a sustained basis. Governments should now make a strong start in this direction in their medium-term plans.

According to the September 2024 ECB staff macroeconomic projections, the euro area general government budget balance will improve moderately over the projection horizon (Chart 25).[11] While the euro area budget deficit was stable at 3.6% of GDP in 2022 and 2023, it should decline gradually over the projection horizon to 3.3% of GDP in 2024 and then further to 3.2% in 2025 and 3.0% in 2026. The projected path reflects mainly a gradually shrinking but still negative cyclically adjusted primary balance over the projection horizon, with most of the reduction occurring in 2024 as the bulk of the remaining energy and inflation support measures are phased out. This impact will, however, be partly compensated by gradually increasing interest expenditures over the whole period, reflecting a slow pass-through of past interest rate increases given long residual maturities of outstanding sovereign debt.

[11] See "ECB staff macroeconomic projections for the euro area, September 2024", published on the ECB's website on 12 September 2024.

Chart 25

Budget balance and its components



Sources: ECB calculations and September 2024 ECB staff macroeconomic projections for the euro area.
Note: The data refer to the aggregate general government sector of all 20 euro area countries (including Croatia).

Compared with the June 2024 Eurosystem staff macroeconomic projections, the budget deficit is projected to be moderately higher over the whole projection horizon. This more adverse outlook is driven by enhanced discretionary fiscal policies, as consolidation plans in some countries now seem less likely to fully materialise. In addition, negative composition effects from the updated macroeconomic projections contribute to higher primary deficits reflecting downward revisions in tax-rich bases, such as compensation of employees and nominal private consumption. As a result, the budget balance as a percentage of GDP has been revised down by 0.2 percentage points in 2024 and by a further 0.4 and 0.5 percentage points in 2025 and 2026 respectively.

The euro area fiscal stance is still projected to tighten significantly in 2024 and somewhat further over the following two years.[12] The annual change in the cyclically adjusted primary balance, adjusted for grants extended to countries under the NGEU programme, points to a significant tightening (0.5 percentage points of GDP) of fiscal policies in the euro area in 2024. This mostly reflects the phasing-out of a large part of governments' energy and inflation-related support measures. The fiscal stance is projected to continue tightening – although at a much slower pace – in 2025 and 2026, owing to a further scaling down of the remaining energy support measures, combined with increases in direct taxes and social security contributions, and slower growth in fiscal transfers. These tightening factors are expected to be only partly compensated by increases in government consumption and investment.

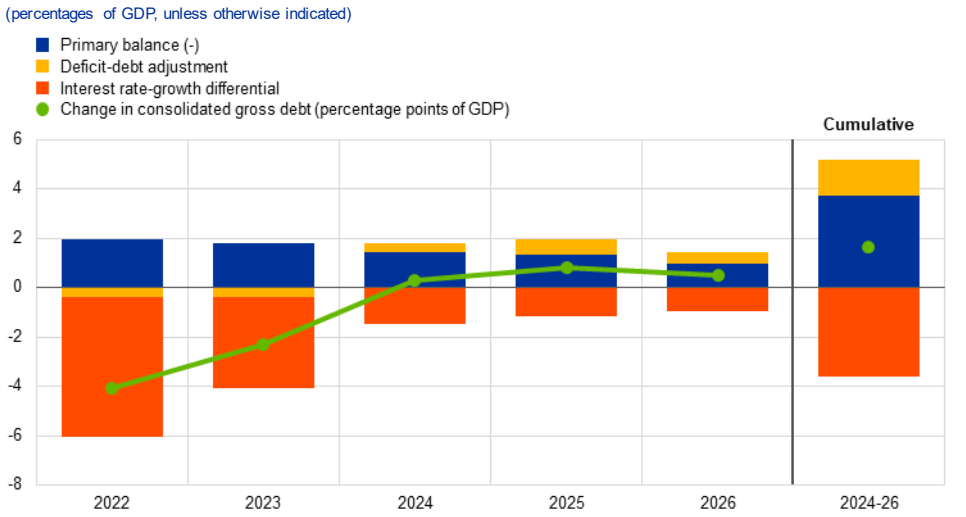
[12] The fiscal stance reflects the direction and size of the stimulus from fiscal policies to the economy beyond the automatic reaction of public finances to the business cycle. It is measured here as the change in the cyclically adjusted primary balance ratio net of government support to the financial sector. Given that the higher budget revenues related to NGEU grants from the EU budget do not have a contractionary impact on demand, the cyclically adjusted primary balance is adjusted to exclude those revenues. For more details on the euro area fiscal stance, see the article entitled "The euro area fiscal stance", *Economic Bulletin*, Issue 4, ECB, 2016.

As a result, the cumulated tightening of the fiscal stance over the 2024-26 projection horizon amounts to 0.9 percentage points of GDP.

The euro area debt-to-GDP ratio is projected to increase slowly from an already elevated level (Chart 26). The debt ratio increased significantly during the pandemic, to around 97% in 2020, although it then fell gradually. This improvement seems to have come to a halt, however. The debt ratio is now expected to increase slowly from about 88% of GDP in 2023 to close to 90% of GDP by the end of the projection horizon, driven by continued primary deficits and expected positive deficit-debt adjustments that are only partly compensated by shrinking but still negative interest rate-growth differentials.

Chart 26

Drivers of change in euro area government debt



Sources: ECB calculations and September 2024 ECB staff macroeconomic projections for the euro area.
Note: The data refer to the aggregate general government sector of all 20 euro area countries (including Croatia).

Implementing the EU's revised economic governance framework fully, transparently and without delay will help governments bring down budget deficits and debt ratios on a sustained basis. As a first step in the implementation phase of the new governance framework, Member States were required to submit their medium-term fiscal-structural plans for the first time to the European Commission by 20 September. However, several countries have signalled delays to 15 October to align with the submission of draft budgetary plans for 2025. Governments should now make a strong start in this direction in their medium-term plans. At the euro area level, a consolidation of public finances, designed in a growth-friendly manner, will be necessary over the coming years.

Boxes

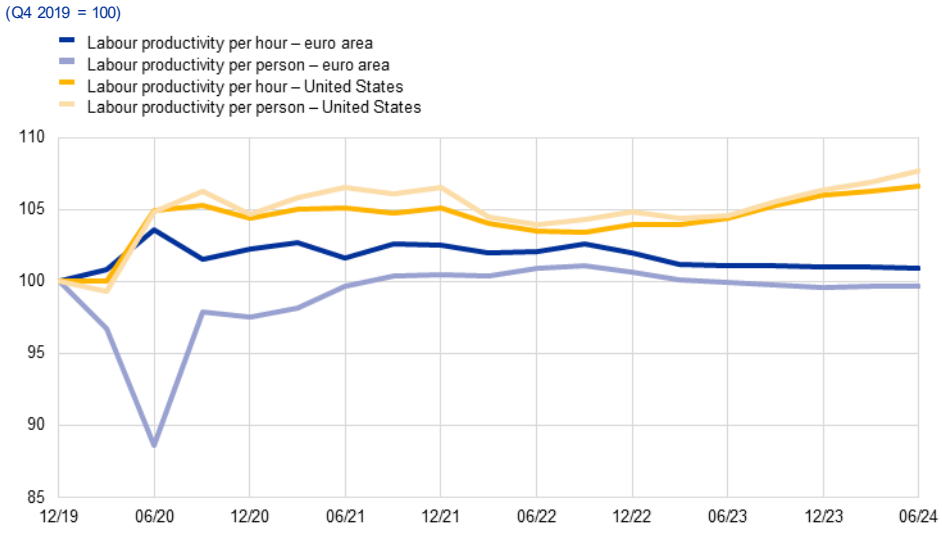
1 Labour productivity growth in the euro area and the United States: short and long-term developments

Prepared by António Dias da Silva, Paola Di Casola, Ramon Gomez-Salvador and Matthias Mohr

Between the fourth quarter of 2019 and the second quarter of 2024 labour productivity per hour worked increased by 0.9% in the euro area, whereas it increased by 6.7% in the United States. Labour productivity growth in the euro area has historically lagged behind that in the United States, but the developments in the euro area since the start of the pandemic have been particularly weak. Productivity growth started diverging in the second quarter of 2020, as total labour input as a share of GDP decreased more strongly in the United States than in the euro area, leading to a more significant rebound in productivity (Chart A). This was due in part to the implementation of job retention schemes in the euro area while unemployment was surging in the United States. After briefly narrowing, the gap in productivity growth started widening again after mid-2022, when euro area productivity growth was depressed following the large energy price shock. In this box, we address the role of sectoral productivity and historical developments in explaining the recent gap in overall productivity growth between the two regions. This gap reflects both cyclical and structural factors.

Chart A

Labour productivity in the euro area and the United States



Sources: Eurostat, Bureau of Economic Analysis and Bureau of Labour Statistics.
Note: The latest observations are for the second quarter of 2024.

The slower growth in euro area labour productivity between the fourth quarter of 2019 and the first quarter of 2024 was rather broadly based across sectors.

In the United States, hourly labour productivity in market services increased by 12.4%, whereas in the euro area it increased by just 3.8% in the same period (Chart B). Two sub-sectors experienced much stronger growth in the United States than in the euro area. In the United States, information and communications grew by 27.2% and professional services by 18.7%. By contrast, in the euro area these sub-sectors only grew by 6.5% and 5.0% respectively. As regards the industry sector, hourly labour productivity increased by 8.8% in the United States, whereas in the euro area it increased by just 0.8%. However, between the fourth quarter of 2019 and the first quarter of 2022, productivity growth in the industry sector was similar in both regions. In contrast, the rise in gas prices from 2021, which was aggravated considerably by the repercussions from the Russian war against Ukraine, was stronger and lasted longer in Europe than in the United States. It therefore had a significantly stronger impact on the industry sector in the euro area, where output growth slowed and employment remained high. Across the four sectors considered in Chart B, only the public services sector recorded higher productivity growth in the euro area than in the United States. Previous analysis has shown that higher productivity growth in the United States since the pandemic is associated with labour market churn and higher investment in digitalisation.[1] These broad-based developments highlight the contrasting cyclical nature of productivity in the two regions. While productivity in the euro area is highly procyclical, it tends to be less so in the United States, where labour is more flexibly adjusted to production.[2] Consequently, as GDP growth was weaker in the euro area compared with the United States, the stronger procyclicality in the euro area magnified the differences in productivity growth.

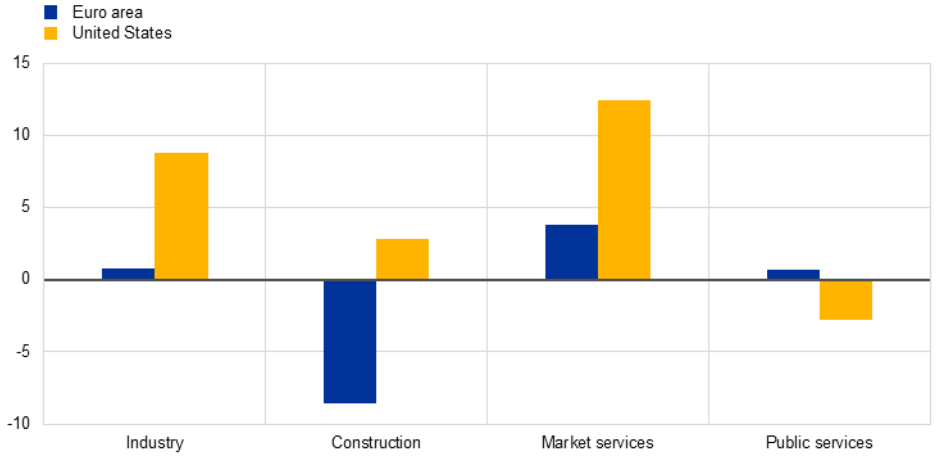
1 See Dao, M. and Platzer, J., "Post-pandemic Productivity Dynamics in the United States", *IMF Working Papers*, Vol. 2024, No 124, IMF. Relatedly, industrial policy in the United States, like the Inflation Reduction Act and the Chips and Science Act, may have been more effective in stimulating investment in key sectors, as argued by de Soyres, F., Garcia-Cabo Herrero, J., Goernemann, N., Jeon, S., Lofstrom, G. and Moore, D., "Why is the U.S. GDP recovering faster than other advanced economies?" *FEDS Notes,* Washington: Board of Governors of the Federal Reserve System, May 17, 2024. See also the box entitled "The post-pandemic recovery – why is the euro area growing more slowly than the United States?" *Economic Bulletin*, Issue 4, ECB, 2024, which shows that private investment was stronger in the United States than in the euro area.

2 See Fernald, J. G. and Wang, J. C., "Why Has the Cyclicality of Productivity Changed? What Does It Mean?", *Federal Reserve Bank of San Francisco Working Paper Series*, 2016-07; Arce, Ó. and Sondermann, D., "Low for long? Reasons for the recent decline in productivity", *The ECB Blog*, 6 May 2024; the box entitled "Drivers of employment growth in the euro area after the pandemic: a model-based perspective", *Economic Bulletin*, Issue 4, ECB, 2024; the box entitled "Higher profit margins have helped firms hoard labour", *Economic Bulletin*, Issue 4, ECB, 2024; and Arce, Ó., Consolo, A., Dias Da Silva, A. and Mohr, M., "More jobs but fewer working hours", *The ECB Blog*, 7 June, 2023.

Chart B

Hourly labour productivity growth by main sectors

(cumulative change from the fourth quarter of 2019 to the first quarter of 2024)



Sources: Eurostat, Bureau of Economic Analysis and Bureau of Labour Statistics.

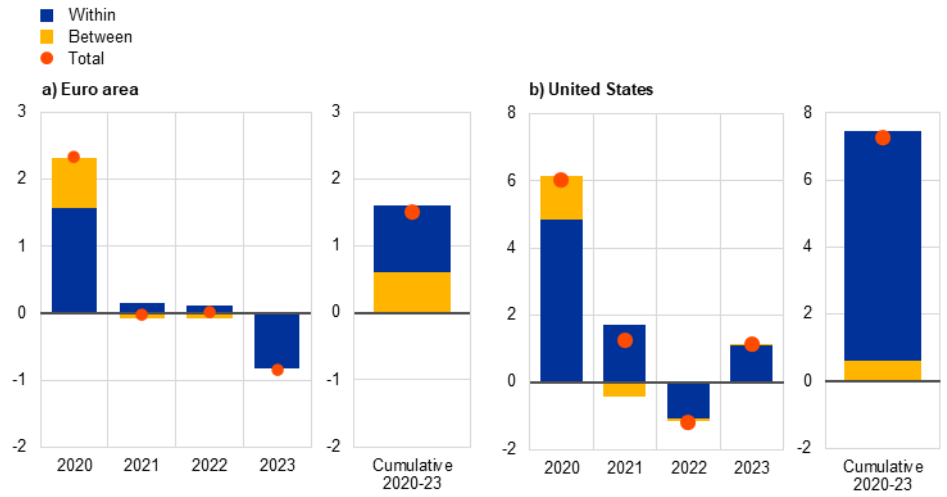
In both regions, productivity growth was primarily driven by growth within sectors rather than a change in the sectorial composition. This occurred despite abrupt shifts in production across sectors during the pandemic – initially because of lockdowns and subsequently due to disturbances in global supply chains.[3] Reallocation of labour from low to high-productivity sectors (between components) was positive in 2020 but had a limited positive impact on the cumulative change in productivity after the first quarter of 2020 in both regions (Chart C). This limited impact reflected the closing and subsequent reopening of low-productivity sectors. Overall, the positive reallocation achieved in 2020 accounts for half of the cumulative productivity growth in the euro area from 2020 to 2023. This effect was equally large in the United States, but appears more limited in relative terms due to the country's significantly higher productivity growth.

[3] See the box entitled "Recent country-specific and sectoral developments in labour productivity in the euro area", *Economic Bulletin*, Issue 5, ECB, 2024; the article entitled "The impact of recent shocks and ongoing structural changes on euro area productivity growth", *Economic Bulletin*, Issue 2, ECB, 2024; and Consolo, A. and Petroulakis, F., "Did COVID-19 induce a reallocation wave?" *Economica*, forthcoming.

Chart C

Shift-share analysis of hourly labour productivity developments

(annual and cumulative changes, 2020-23)



Sources: ECB staff calculations based on Eurostat, Bureau of Economic Analysis and Bureau of Labor Statistics data.
Note: The calculation follows the shift-share analysis in Denis, C., McMorrow, K. and Röger, W., "An analysis of EU and US productivity developments (a total economy and industry level perspective)", *European Economy – Economic Papers*, No 208, European Commission, July 2004, p. 78.

The post-pandemic developments add to the two decade-long widening of the productivity gap between the euro area and the United States, pointing to the role of structural factors. Between 1995 and 2019 the US labour productivity per hour worked increased by about 50% – or 2.1% a year. In the euro area it only increased by 28% – or 1% a year – during that time.[4] A decomposition of productivity into capital deepening and total factor productivity (TFP) shows that in the first decade of this century euro area productivity suffered from an accentuated decline in TFP (Chart D). From 2014 to 2019, TFP recovered somewhat, while the contribution of capital deepening was negative. Some authors find that the greater ability of the United States to create and to use digital technologies in the production process is one of the main drivers of the US-euro area productivity gap.[5] While the recent increase in illegal immigration could have somewhat inflated productivity growth since the pandemic, its impact is assessed as limited. In the euro area, the impact of digitalisation is very heterogeneous across sectors, and fewer firms benefit significantly from it than in the United States. This may in part be related to the relatively smaller size of firms in the euro area.[6] Our own calculations using EU KLEMS data (on capital (K), labour (L), energy (E), materials (M) and service (S) inputs) show that in the period 1995-2019 the information and communications

4 In the same period the US labour productivity per person employed increased by about 44% – or 1.8% a year, whereas in the euro area it increased by only 20% – or 0.8% a year.

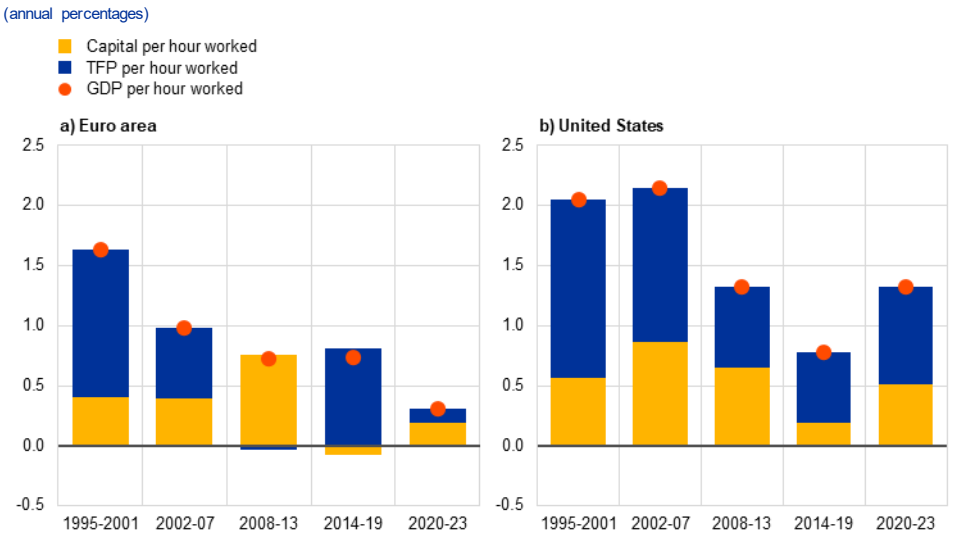
5 See Van Ark, B., O'Mahoney, M. and Timmer, M., "The Productivity Gap between Europe and the United States: Trends and Causes", *Journal of Economic Perspectives*, Vol. 22, No 1, 2008, pp. 25-44; Schivardi, F. and Schmitz, T., "The IT Revolution and Southern Europe's Two Lost Decades" *Journal of the European Economic Association*, Vol. 8, No 5, 2020, pp. 2441-2486; and Hsieh, C.-T., Klenow, P. J. and Shimizu, K., "Romer or Ricardo?", *Working Papers*, Hoover Institution, 2022.

6 See Reis, R., "Letting large European firms grow", *Think Tank*, European Parliament, 2024, and Poschke, M., "The Firm Size Distribution across Countries and Skill-Biased Change in Entrepreneurial Technology", *American Economic Journal: Macroeconomics*, Vol. 10, No 3, 2018, pp. 1-41; and Anderton, R., Botelho, V. and Reimers, P., "Digitalisation and productivity: gamechanger or sideshow?", *Working Paper Series*, No 2794, ECB, Frankfurt am Main, March 2023.

sector contributed about 20% of total hourly labour productivity growth in the United States, whereas in the euro area the contribution of this sector was only about 12%.

Chart D

Decomposition of hourly labour productivity growth



Sources: The European Commission's AMECO database and ECB staff calculations.

In summary, the divergence in productivity growth between the euro area and the United States has both cyclical and structural features. The euro area's significantly lower productivity growth over the last four years is partly explained by the more pronounced cyclical nature of productivity growth in this region, a stronger and longer-lasting suppression of production and real incomes by the increase in energy prices, and a stronger impact of the uncertainty related to the Russian war against the Ukraine. However, over the two decades preceding the pandemic, labour productivity in the United States increased around twice as fast as in the euro area. This points to the role of structural factors. Key factors have been and still are the higher productivity of the information and communications sector in the United States and the comparatively lower innovation capacity of euro area firms. These differences are potentially linked to the smaller average size of firms in the euro area. Lower contributions from capital deepening and TFP in the euro area both contributed to the divergence. Measures to spur productive investment and lift TFP growth could support productivity over the medium term.[7]

7 The historical gap in productivity with respect to the United States is also discussed at EU level in Draghi, M., "The future of European competitiveness – A competitiveness strategy for Europe", Report to the European Commission, 9 September 2024. It suggests that to increase its competitiveness Europe should take measures such as improving the conditions for breakthrough innovation.

2 Accounting for nature in euro area economic activity

Prepared by Mariana Martins Cardoso and Miles Parker

Nature contributes a range of critical services to economic production, many of which are insufficiently accounted for in standard economic statistics. Generally referred to as "ecosystem services", these inputs include crucial functions such as pollination, air and water filtration, carbon sequestration, and the provision of crops, timber and other resources. The value of these services is rarely directly measured in statistics like GDP. For example, the price of food implicitly includes the economic value of natural pollination, but in the absence of direct measurement, that value is attributed to the agricultural sector.

There are ongoing efforts to better account for nature in measures of economic activity. This box considers two: the Integrated Natural Capital Accounting (INCA) project from the European Commission's Joint Research Council (JRC), and the initiative of the Organisation for Economic Co-operation and Development (OECD) to measure pollution-adjusted GDP growth. Although these measures only partially cover nature's economic contribution, they already offer useful insights into its role in euro area economic activity.

INCA draws on a large array of geospatial data and utilises a variety of modelling tools to derive fair value for ecosystem services.[1] For example, the value of carbon sequestration is calculated by multiplying estimates of the social cost of carbon by the volume sequestered, using satellite data on vegetation coverage. In 2019, the estimated value of ecosystem services in the EU amounted to over €234 billion, broadly equal to the combined gross value added of the agriculture and forestry sectors (Table A). While these two sectors account for a large share of ecosystem services usage, other sectors were also substantial users. Households benefited from nature recreation, the highest value ecosystem service of those studied.

1 Joint Research Centre, "Accounting for ecosystems and their services in the European Union (INCA)", European Commission, 2021.

Table A

Estimated value of ecosystem services in the 28 EU Member States in 2019

(€ millions)

Ecosystem service	Valuation method	Value
Crop provision	Share of crop market price	23,145
Timber provision	Share of forestry output	16,379
Pollination	Market value of increased output	4,977
Carbon sequestration	Social cost of carbon	13,271
Flood control	Avoided damage cost	18,016
Water purification	Replacement cost approach	61,882
Nature recreation	Travel cost method	80,262
Water provision	Replacement cost approach	4,887
Air filtration of PM2.5	Healthcare costs avoided	10,446
Marine fish capture	Net profit	1,042
Total		**234,307**

Source: JRC (2021).

Incorporating nature and environmental factors enriches analysis of the drivers of economic growth.[2] The OECD calculates pollution-adjusted GDP by subtracting the estimated cost of pollution, including from carbon dioxide, nitrogen, sulphur and particulates. Those costs include climate change, ecosystem damage, illness and death.[3] Pollution-adjusted GDP is therefore lower than the GDP featured in the national accounts. In standard growth accounting analysis, there are three main contributors to economic growth: produced capital (such as machinery, buildings and infrastructure), labour and total factor productivity (TFP). TFP is usually calculated as the residual once the contributions of capital and labour have been subtracted from output. The OECD augments this exercise by also measuring the contribution to growth arising from greater exploitation of nature (for example by increased mining or logging). Environmentally adjusted TFP can then be calculated as the residual arising from subtracting these inputs from pollution-adjusted GDP.

Producing the same output from fewer inputs is value-added growth; and, equivalently, producing the same output with lower pollution is value-added growth, seen from a long-run environmental perspective. Between 1996 and 2018, pollution declined substantially in most European economies, adding more than 0.3 percentage points to annual (pollution-adjusted) GDP growth in Germany, France and Italy (Table B), which was more than double the pollution adjustment for the United States. In China and India, GDP growth came at the expense of higher pollution. In terms of contributing factors, greater exploitation of nature contributed little to average growth in OECD countries but made a small contribution in China and India.

2 Cárdenas Rodríguez, M. et al., "Environmentally adjusted multifactor productivity: Accounting for renewable natural resources and ecosystem services", *OECD Green Growth Papers*, November 2023.

3 For an example of the costs of particulates, air pollution caused 238,000 premature deaths in the EU in 2020 alone, see European Environment Agency, Health impacts of air pollution in Europe, 2022.

Table B

Nature-adjusted contributions to growth in major economies

(growth: annual percent change; contribution: percentage points)

	Measures of output growth			Contributions to output growth			
Country	GDP growth	Pollution-adjusted GDP growth	Difference	Labour contribution	Produced capital contribution	Contribution from nature exploitation	Environ. adjusted TFP growth
France	1.61	1.98	0.37	0.30	0.58	0.00	1.11
Germany	1.40	1.73	0.33	0.17	0.40	-0.01	1.17
Italy	0.60	0.95	0.36	0.17	0.41	-0.01	0.38
Netherlands	1.99	2.22	0.22	0.55	0.57	-0.02	1.12
Spain	2.14	2.25	0.11	0.87	0.76	0.00	0.62
EU27 average	1.78	2.07	0.28	0.29	0.67	-0.01	1.12
United States	2.45	2.62	0.17	0.45	0.70	0.02	1.45
China	8.67	8.09	-0.58	0.33	2.60	0.12	5.05
India	6.81	6.28	-0.53	0.54	2.50	0.05	3.19

Sources: Cárdenas Rodríguez et al. (2023) and ECB calculations.
Note: Average for the 1996-2018 period.

These environmental adjustments result in higher measured productivity growth in Europe (Chart A). Recent ECB publications have highlighted how reducing emissions during the green transition may temporarily lower measured productivity.[4] These data suggest that this process may already be occurring. Standard TFP measures show slowing average annual productivity growth in the period 2009 to 2018 relative to the period 1996 to 2008 in both a set of 12 euro area (EA12) countries (0.2% versus 0.5%) and the United States (0.6% versus 1.2%).[5] Although environmentally adjusted TFP also fell between these two periods, it paints a less pessimistic picture of recent productivity growth. On this basis, TFP growth averaged 0.6% in EA12 countries and 1% for the United States over 2009 to 2018.[6]

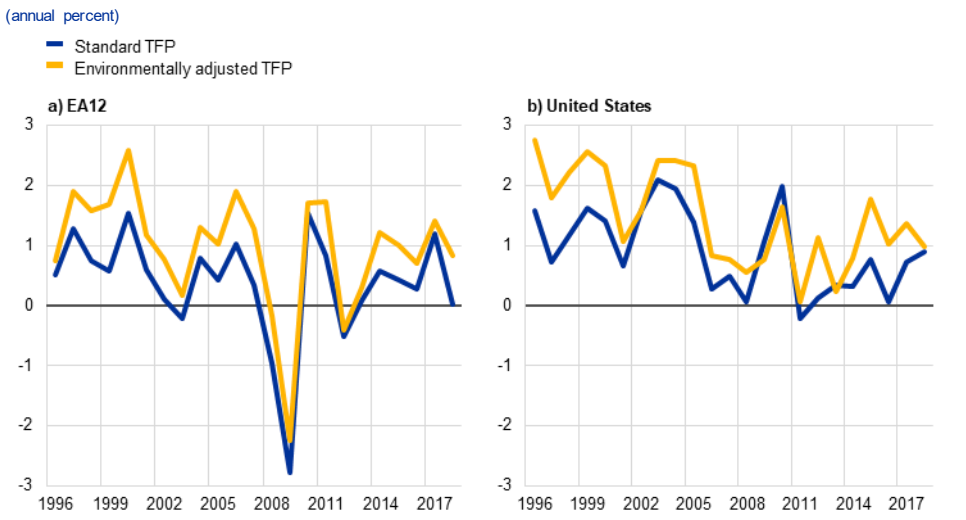
4 See the article entitled "How climate change affects potential output", *Economic Bulletin*, Issue 6/2023, European Central Bank; and Bijnens et al, 2024, "The impact of climate change and policies on productivity", *ECB Occasional Paper Series*, No. 340.

5 EA12 comprises Austria, Belgium, Finland, France, Germany Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain, weighted by 2013 GDP.

6 The 2009 EA12 figure heavily influences these averages. Over 2010 to 2018, average environmentally adjusted TFP growth in EA12 was broadly in line with the US figure.

Chart A

Difference between standard TFP and environmentally adjusted TFP growth



Sources: Cárdenas Rodríguez et al (2023), OECD and ECB calculations.
Note: EA12 comprises Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain, weighted by 2013 GDP.

The true importance of nature for economic activity likely exceeds the above estimates, so the continued degradation of nature may substantially reduce future productive capacity. [7] Many ecosystem services are not yet quantified, resulting in their value being understated. Moreover, their economic importance also depends on whether they can be substituted by other factors of production. For example, manual labour already replaces natural pollination for some high-value crops, but it would be impossible to do so for all crops. Overexploitation of natural resources can boost output in the near term but may be unsustainable over longer horizons as nature degradation ultimately reduces the flow of ecosystem services and hence economic activity.[8]

Directly measuring ecosystem services within GDP is important progress but insufficient for understanding long-run impacts. Some data improvements are already envisaged, with Eurostat planning to publish ecosystem accounts as of 2026, building on the work carried out under INCA. Initially, it will cover seven ecosystem services in physical units (for example volume of crops attributable to wild pollination or tonnes of carbon sequestered), with the feasibility of calculating the monetary value being studied.[9] Yet *Gross* Domestic Product does not capture all impacts of nature degradation since it does not include capital depreciation. Nature degradation arising from unsustainable exploitation will therefore never be included in GDP, even when ecosystem services are recognised. Fully understanding the implications for future output requires paying attention to *Net* Domestic Product,

7 See Döhring, B., et al., "Reflections on the Role of Natural Capital for Economic Activity", *European Economy Discussion Papers*, No 180, European Commission, February 2023.

8 See Kuchler, T. et al., "The economics of biodiversity loss", paper presented at the ECB Sintra Forum, 2024.

9 Crop provision, crop pollination, wood provision, air filtration, global climate regulation, local climate regulation, nature-based tourism-related services. See COM/2022/329 Regulation amending Regulation (EU) No 691/2011 as regards introducing new environmental economic accounts modules.

which does account for depreciation. Moreover, several ecosystem services reduce the impact of climate extremes, such as floods. The economic benefits can be substantial but are unobservable and can only be calculated using economic models to establish by how much activity would be lower without their protection.

Advances in economic modelling are also required to better quantify the benefits provided by ecosystem services and identify which sectors rely on them. That knowledge will help identify cases where investment in nature could provide net benefits over the medium term. It will also help clarify how ecosystem service disruptions, both domestic and overseas, propagate through the economy via supply chains. Such disruptions will dampen actual economic activity regardless of whether ecosystem services are directly measured or not. See Article 2 in this issue for a more detailed discussion of the economic and financial impacts of nature degradation and biodiversity loss.

3 Why are euro area households still gloomy and what are the implications for private consumption?

Prepared by Alina Bobasu, Dario Esposito and Johannes Gareis

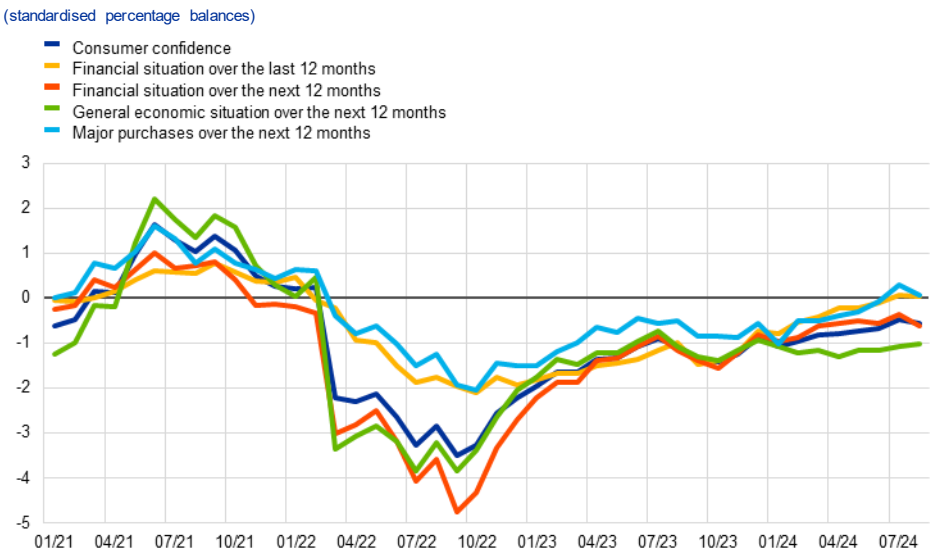
Consumer confidence in the euro area plummeted when Russia launched its full-scale invasion of Ukraine and has remained at a low level since then, despite some recovery. Consumer confidence has gradually improved from its post-invasion low of September 2022. However, it has not yet returned to its pre-pandemic average and was well below its pre-invasion levels as of August 2024 (Chart A). This box analyses the underlying factors that explain this subdued consumer confidence and assesses the implications of persistently low confidence for private consumption in the short run.

Households' expectations for the general economic situation in particular are weighing on consumer confidence. The European Commission's consumer confidence index is a composite indicator calculated as the arithmetic mean of the balance series (i.e. the percentage of positive responses minus the percentage of negative responses) for four survey questions. These questions relate to households' expectations for the next 12 months in respect of their financial situation, the general economic situation and major purchases, as well as their perceptions of their financial situation over the last 12 months.[1] Households' expectations for the general economic situation have been largely unchanged since mid-2023, hampering any further recovery in consumer confidence following the improvement seen after the post-invasion slump (Chart A). By contrast, all other components of consumer confidence have continued to improve, with households' assessments of their past financial situation and intention to make major purchases standing marginally above their pre-pandemic averages in mid-2024.

1 See "A revised consumer confidence indicator", European Commission, 2018.

Chart A

Consumer confidence and its components



Sources: European Commission and ECB staff calculations.
Notes: The data are standardised for the period from January 1999 to December 2019 and the zero line marks the pre-pandemic average. The latest observations are for August 2024.

A linear regression model captures the historical relation between consumer confidence and various determinants of private consumption.[2] The model regresses consumer confidence on a constant, two lags of consumer confidence and the contemporaneous values of the inflation rate, the unemployment rate, a measure of borrowing costs, the annual percentage change in stock prices, the annual percentage change in house prices and households' inflation and unemployment expectations for the next 12 months.[3] The lags allow for the gradual response of consumer confidence to changes in the other variables. Households' expectations for future inflation and unemployment are included as they often reflect consumer confidence better than actual outcomes, given that they shape perceptions of households' well-being.[4] They also, by definition, reflect the forward-looking nature of most components of consumer confidence.[5]

According to the model, rising actual and expected inflation was the initial cause of the decline in consumer confidence compared with the pre-invasion period, followed later by the increasingly negative effects of higher borrowing

2 See also Bolhuis, M.A., Cramer, J.N., Schulz, K.O. and Summers, L.H., "The Cost of Money is Part of the Cost of Living: New Evidence on the Consumer Sentiment Anomaly", *Working Paper*, No 32163, National Bureau of Economic Research, February 2024.

3 Households' inflation and unemployment expectations are taken from the European Commission's business and consumer survey. The former refer to the quarterly inflation expectations for the next 12 months in quantitative terms, while the latter refer to households' unemployment expectations for the next 12 months in qualitative terms.

4 For insights into the relevance of households' inflation expectations for consumer confidence in the euro area, see "European Business Cycle Indicators 2nd Quarter 2024: Low consumer confidence and the economy – Insights from the euro area", *Technical Paper*, No 074, European Commission, July 2024.

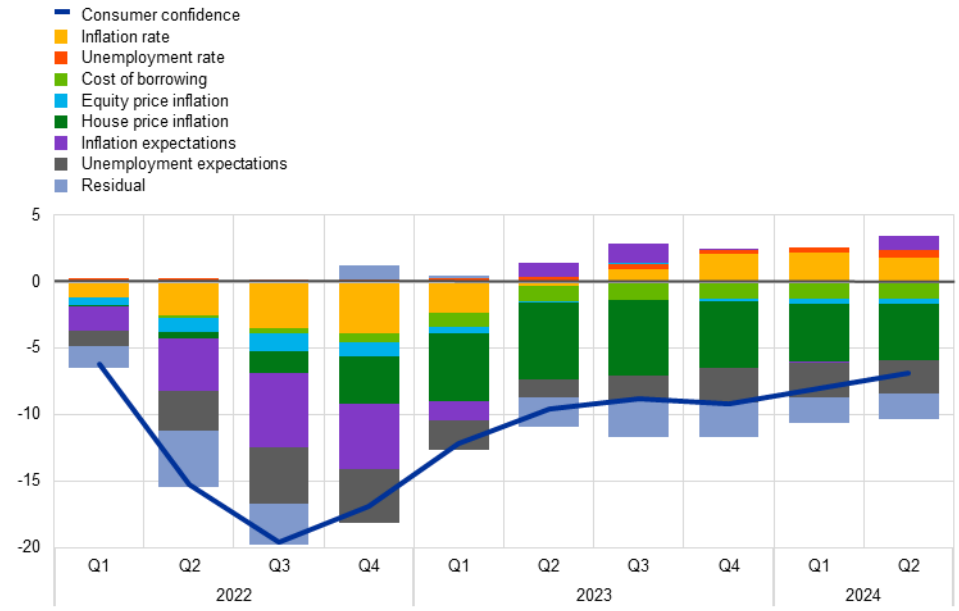
5 Nevertheless, since households' expectations for future inflation and unemployment in 2022 were collinear with the general uncertainty surrounding Russia's invasion of Ukraine, the estimated coefficients for these two variables in the model may also capture war-related factors other than inflation and unemployment effects.

costs coupled with declining house prices. The model's results show that the decline in consumer confidence in the euro area following Russia's invasion of Ukraine compared with the fourth quarter of 2021 was largely explained by rising inflation – both actual and expected (Chart B). The subsequent recovery in consumer confidence was, in turn, mainly supported by falling actual inflation and lower expected inflation. Households' unemployment expectations also declined in 2023 compared with 2022 but, as of the second quarter of 2024, remained higher than in the fourth quarter of 2021.[6] In addition, monetary policy tightening contributed to higher borrowing costs and a decline in house prices, which began to adversely affect consumer confidence from mid-2022 onwards. Finally, as indicated by the negative contribution of the regression residuals, consumer confidence remained marginally weaker compared with the fourth quarter of 2021 owing to other factors that were not captured in the model, possibly reflecting elevated geopolitical and economic policy uncertainty.[7]

Chart B

Model-based drivers of consumer confidence

(percentage balances and percentage point contributions, deviations from Q4 2021)



Sources: European Commission, Eurostat, ECB and ECB staff calculations.
Notes: The chart shows the contributions of the regressors for a regression of quarterly consumer confidence on a constant, two lags of consumer confidence and the contemporaneous values of the inflation rate, the unemployment rate, a measure of borrowing costs, the annual percentage change in stock prices, the annual percentage change in quarterly house prices and households' inflation and unemployment expectations for the next 12 months. The cost of borrowing is proxied by the interest rate on consumer loans. The model is estimated using data from the first quarter of 2004 to the second quarter of 2024 and includes a dummy variable for each quarter in 2020. The latest data points are for the second quarter of 2024, except for house price inflation, which is projected for the second quarter of 2024 using a univariate AR(2) model.

6 The elevated unemployment expectations compared with the fourth quarter of 2021 stand in contrast to the favourable labour market outcomes, with the unemployment rate declining steadily from the fourth quarter of 2021 to the second quarter of 2024, marginally supporting consumer confidence over that period. The unemployment rate and unemployment expectations supported consumer confidence in the second quarter of 2024, as both were below their respective pre-pandemic averages.

7 This is broadly in line with the European Commission's consumer uncertainty index, which fell significantly from its peak in the third quarter of 2022 to the second quarter of 2024 but remained elevated compared with its level in the fourth quarter of 2021.

Consumer confidence tends to be strongly correlated with private consumption growth. As shown above, consumer confidence is shaped by variables that are also determinants of private consumption. It thus reflects fundamental information about the current and future state of the economy.[8] In the pre-pandemic period, for instance, consumer confidence was in general highly correlated with quarterly consumption growth, especially during economic downturns.[9]

The fact that consumer confidence remains subdued suggests that private consumption will only improve moderately in the short term. A bridge equation model linking quarterly consumer confidence to quarterly private consumption growth predicts a slight increase in consumer spending in the third quarter of 2024 (Chart C).[10] However, the outlook for private consumption is clouded by uncertainty about developments in the underlying drivers of consumer confidence. Going forward, consumer confidence in the euro area is likely to continue to improve, as inflation declines further, resilient labour markets provide ongoing support and real incomes recover; however, the effects of the recent round of monetary policy tightening are likely to persist for some time, and elevated geopolitical and economic policy uncertainty could temper its recovery.

8 One obvious advantage of the consumer confidence index over the determinants of private consumption is its timeliness. See also the box entitled "Does consumer confidence predict private consumption?", *Economic Bulletin*, Issue 5, ECB, 2015.

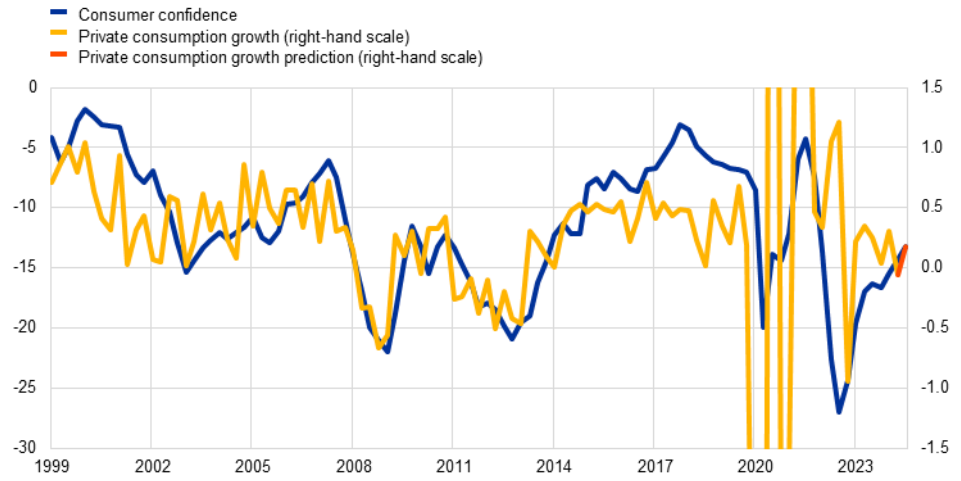
9 See also the article entitled "Confidence indicators and economic developments", *Monthly Bulletin*, ECB, January 2013.

10 An out-of-sample evaluation of the bridge equation model shows that the predictive power, as measured by the root mean squared forecast error, deteriorated significantly during the pandemic but has improved from early 2023 onwards. As for the components of consumer confidence, the evaluation shows that households' financial expectations were slightly more closely correlated with private consumption growth than overall consumer confidence before the pandemic, but the relative differences between the predictive power of the components have become marginal in the most recent period. Overall, these evaluation results should be interpreted cautiously given the small sample available for the most recent period and reviewed with new incoming data. See also the box entitled "Is the PMI a reliable indicator for nowcasting euro area real GDP?", *Economic Bulletin*, Issue 1, ECB, 2024.

Chart C

Consumer confidence and private consumption growth

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



Sources: European Commission, Eurostat and ECB staff calculations.
Notes: The latest observations are for the second quarter of 2024 for private consumption growth and August 2024 for consumer confidence. The red line reflects the private consumption growth prediction for the third quarter of 2024 based on a bridge equation model that regresses quarterly private consumption growth on a constant, its own lag and contemporaneous quarterly consumer confidence, using data from the first quarter of 1999 to the second quarter of 2024 and including a dummy variable for each quarter in 2020. The prediction for the third quarter of 2024 assumes quarterly consumer confidence at the average level of July and August.

4 Findings from a survey of leading firms on labour market trends and the adoption of generative AI

Agostino Consolo, Guzman Gonzalez-Torres Fernandez, Richard Morris and Christofer Schroeder

A recent ECB survey asked leading non-financial companies about the drivers of some key characteristics of the euro area labour market in recent years. These characteristics include an increased tendency for firms to cite recruitment difficulties; high and growing employment despite stagnating economic activity (and hence reduced labour productivity); a notable fall in average hours worked; and an increase in remote working. This part of the survey included a set of general statements with which respondents could agree, agree strongly, disagree, disagree strongly, or neither agree nor disagree. Respondents were asked to take a medium-term perspective, comparing the current environment with that of five to ten years ago. If they agreed or strongly agreed with a general statement, they were also asked to reply to a set of sub-statements exploring the reasons why.

The firms were also asked about the take-up of generative artificial intelligence (generative AI). Generative AI is the latest advancement in a phase of rapid technological development and has the potential to have a profound impact on the labour market and on productivity. The survey asked the firms: (i) whether they used generative AI operationally; and, if so, (ii) since when; (iii) what share of employees used generative AI for work at least once a week; and (iv) what were the main motivations for its adoption. The survey was sent to companies with which the ECB maintains regular contacts to gather information about the outlook for activity, prices and employment.[1] It ran from late May to end-June 2024 and received 46 responses.

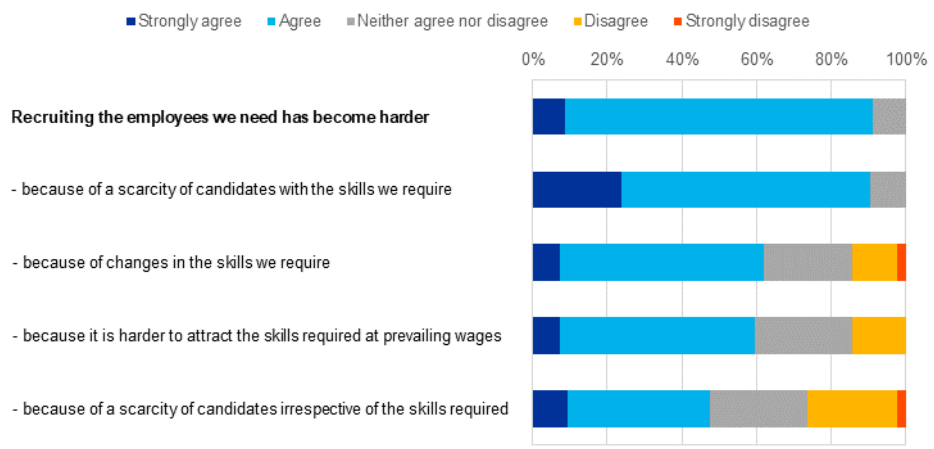
Respondents overwhelmingly agreed that recruitment had become harder in recent years, emphasising a scarcity of workers with the required skills (Chart A). More than 90% agreed or strongly agreed with the statement that recruiting the employees they needed had become harder than five to ten years ago, which is indicative of widespread labour shortages. Of these, 90% agreed that there was a scarcity of candidates with the skills they required, suggesting shortages of skilled labour. A somewhat smaller – albeit significant – share (slightly below 50%) said that there was a general scarcity of candidates, irrespective of the skills needed. Firms seeing a general scarcity of candidates were mostly those active in labour-intensive service industries or with significant production in Germany. As regards demand factors, around two-thirds agreed that changes in the skills they asked for had led to increased hiring difficulties, while almost 60% said that prevailing wage rates made it harder to attract employees with the necessary skills.

[1] For further information on the nature and purpose of these contacts, see the article entitled "The ECB's dialogue with non-financial companies", *Economic Bulletin*, Issue 1, ECB, 2021.

Chart A

Summary of responses in relation to labour shortages

(percentages of responses)



Source: ECB.
Notes: Bars indicate the percentages of respondents that gave each of the five possible responses. All respondents were asked to reply to the general statement in bold. If they agreed or strongly agreed, they were also asked to respond to the sub-statements. Shares for the sub-statements refer to the subset of respondents that agreed or strongly agreed with the general statement.

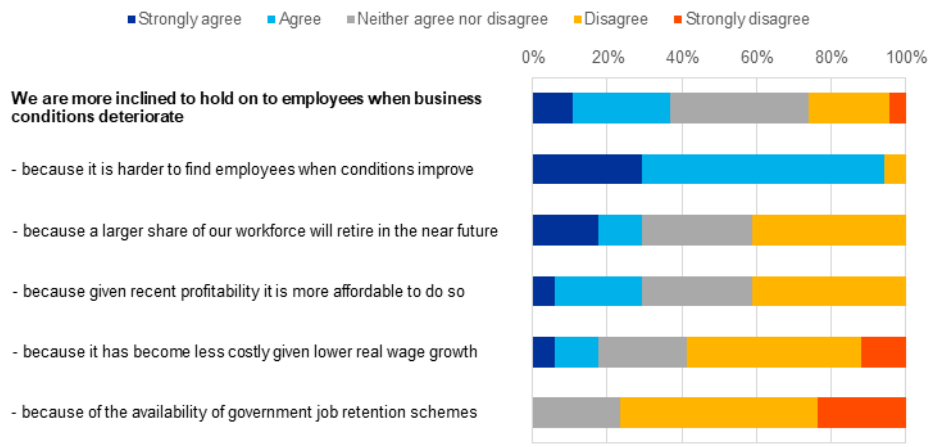
Slightly more than a third of the respondents agreed that their firms were more inclined to retain employees when business conditions deteriorated, with almost all linking this to the anticipated difficulty of recruiting when conditions improved (Chart B). This points to a strong link between labour hoarding and labour shortages. There was more disagreement than agreement with each of the other sub-statements, although around half of the firms that were more inclined to retain staff did agree that at least one other factor was relevant. Around one-third said that an expected increase in retirements in the near future was a factor. A similar share agreed that recent profitability had made holding on to labour more affordable, and around 20% agreed that lower real wage growth was a motivation. This lends some, albeit limited, support to earlier analyses of the importance of these factors for the resilience of employment since the end of 2022.[2] No respondents agreed with the statement that government job retention schemes were a contributing factor.

[2] See the boxes entitled "Higher profit margins have helped firms hoard labour" and "Drivers of employment growth in the euro area after the pandemic – a model-based perspective", *Economic Bulletin*, Issue 4, ECB, 2024.

Chart B

Summary of responses in relation to labour hoarding

(percentages of responses)



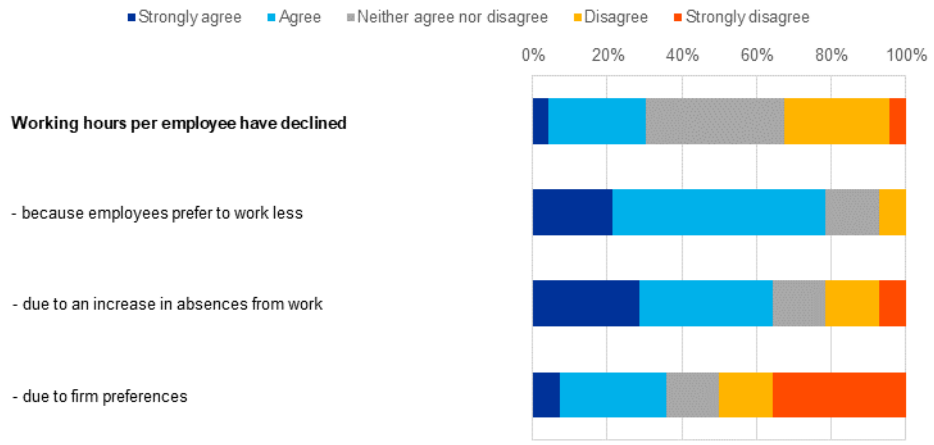
Source: ECB.
Note: See the notes to Chart A.

Among the respondents agreeing that working hours per employee had declined, the most important reason given was employees' preference for working less (Chart C). 80% of those who agreed that working hours had declined said this was (at least in part) because employees preferred to work less, and two-thirds perceived an increase in absences from work as a factor. By contrast, only a third said it reflected the firm's preferences (while more than half disagreed with this sub-statement, including one-third who strongly disagreed).

Chart C

Summary of responses in relation to hours worked

(percentages of responses)



Source: ECB.
Note: See the notes to Chart A.

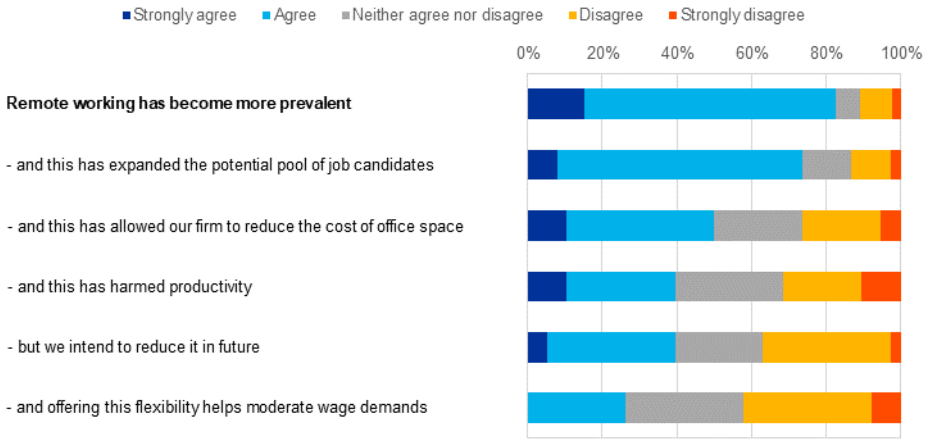
Respondents confirmed the widespread increase in remote working, with most agreeing that this expanded the potential pool of job candidates (Chart D). Of

the slightly more than 80% who said remote working had become more prevalent, three-quarters agreed this had expanded the potential pool of job candidates. Around a half said it had allowed their firm to reduce office space and associated fixed costs. By contrast, only a quarter agreed that it had helped to moderate wage demands, whereas almost half disagreed. Around 40% agreed with the statement that the increase in remote working had harmed productivity (with a similar share saying they intended to reduce remote working in future), while just over 30% disagreed.

Chart D

Summary of responses in relation to remote working

(percentages of responses)



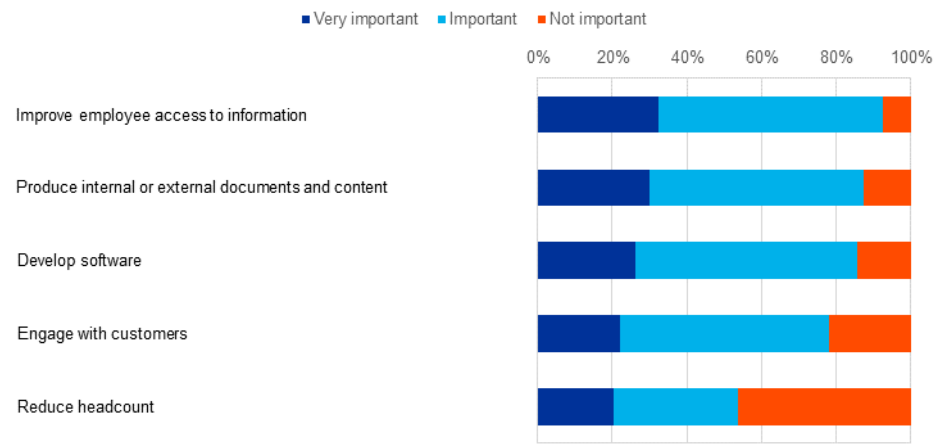
Source: ECB.
Note: See the notes to Chart A.

Turning to the questions on the use of generative AI, almost three-quarters of respondents said their firms were already using this technology, and the motivations for doing so were broad-based (Chart E). Among those already using generative AI operationally, most had started relatively recently, with a significant take-up during 2023. About half estimated that not more than 10% of their workforce used generative AI at least once a week, while only 6% put the share of their workforce regularly using the technology at above 25%. As regards the main motivations for adopting generative AI, improving employees' access to information ranked first, being considered important or very important by more than 90% of respondents. This was very closely followed by the use of generative AI to produce content, develop software and engage with customers. Around half of those using the technology agreed that reducing headcount was also an important motivation. Additionally, several respondents emphasised that the use of generative AI was still in an experimental phase, with businesses learning and seeking to identify use cases to raise productivity, quality and efficiency.

Chart E

Summary of responses in relation to the main motivations for adopting generative AI

(percentages of responses)



Source: ECB.
Note: Bars indicate the percentages of respondents that gave each of the three possible responses.

5 Recent developments in wages and the role of wage drift

Prepared by Colm Bates, Katalin Bodnár and Kathinka Schlieker

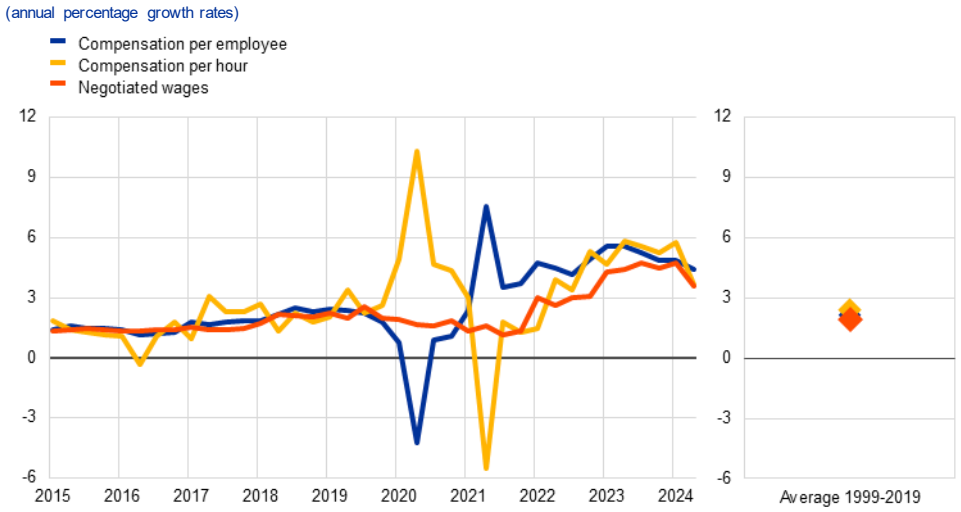
Monitoring wages is a key element in the ECB's approach to analysing the inflation outlook. This reflects the prominent role of wages in the dynamics of underlying inflation, in particular in the services component, which has remained persistent. The outlook for further disinflation in the September 2024 ECB staff macroeconomic projections is predicated inter alia on the expectation of moderating wage growth.

Euro area wage growth has been elevated since the post-pandemic reopening, also reflecting the inflationary shock following the outbreak of Russia's unjustified war against Ukraine, but it is now showing signs of easing. A key indicator in the assessment of wage growth in the euro area is the annual growth rate of compensation per employee. This had strengthened successively to the elevated level of 5.5% in the second quarter of 2023 but eased to 4.8% in the first quarter of 2024 and further to 4.3% in the second quarter, representing a somewhat stronger moderation than expected in the September ECB staff projections. Other wage measures, such as compensation per hour, also show signs of easing. Despite this moderation, growth rates for the different indicators have remained elevated at around double their historical averages (of around 2.1% for all indicators). The long-term average also incorporates periods of low wage growth, and so should not be taken to indicate a target. Accordingly, the growth rates also remain above the wage growth consistent with the 2% inflation target and 1% productivity growth. This primarily reflects the strong impact of compensation for past high inflation and corresponding real wage catch-up (Chart A). Differences between growth in compensation per employee and growth in negotiated wages point to a role for "wage drift" in explaining wage dynamics.[1]

[1] See also the box entitled "Recent developments in the wage drift in the euro area", *Economic Bulletin*, Issue 8, ECB, 2018.

Chart A

Euro area labour cost indicators



Sources: Eurostat, ECB and ECB staff calculations.
Notes: The latest observations are for the second quarter of 2024.

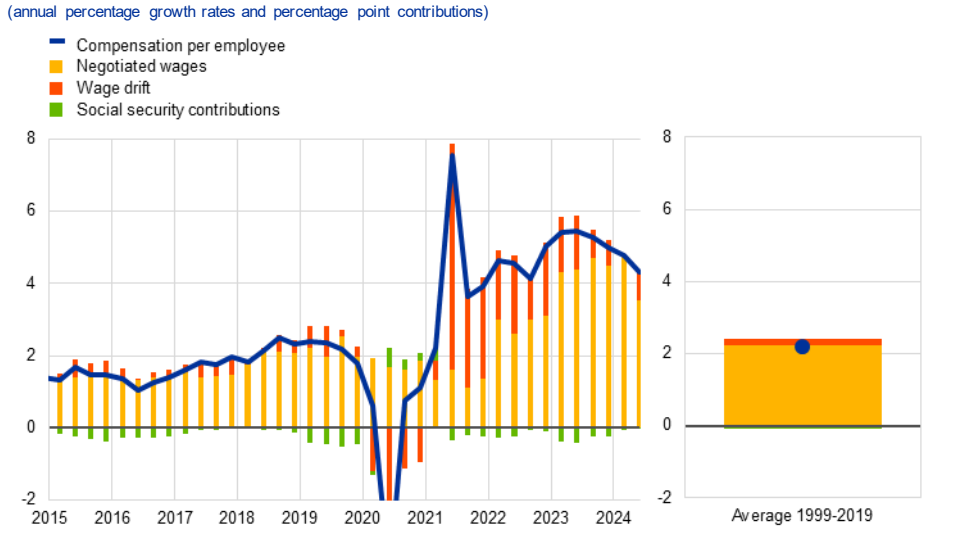
By definition, wage drift captures all elements of actually paid wages and salaries per employee which are not covered by collectively negotiated wages, such as individual bonus payments and overtime. Growth in compensation per employee can be decomposed into contributions from wages and salaries and employers' social security contributions. Growth in wages and salaries per employee, in turn, consists of growth in negotiated wages and wage drift, the latter being calculated as the difference between the growth in wages and salaries per employee and the growth in negotiated wages. The euro area negotiated wage series captures the outcome of collective bargaining processes in terms of changes in an average or representative employee's pay in the sectors covered. It also includes one-off payments where these are covered by the collective agreements. Wages and salaries, however, have other components that are not covered by collective agreements, including individual bonus payments and pay rises due to promotions. These are captured in the actual growth in wages and salaries per employee and consequently in wage drift. At the aggregate level, wage drift also reflects elements such as differences between the growth in individually as opposed to collectively negotiated wages, the importance of which increases as the number of workers covered by collective bargaining falls (and vice versa). Finally, as negotiated wages reflect the pay of a representative or average full-time employee, wage drift also captures changes in average hours worked (for example, through overtime or as a result of switching between full-time and part-time working) that determine actual pay. Some of these factors imply that wage drift can reflect short-term changes in economic conditions faster than negotiated wages, which are typically fixed for some time ahead. This makes wage drift an important element in the analysis of actual growth in employee compensation.

The recent moderation of the growth in compensation per employee has been driven by an easing of wage drift. Wage drift was a strong driver of growth in compensation per employee following the surge in inflation, which may reflect

compensation for this surge being implemented earlier for individually negotiated contracts or coming ahead of time (possibly on a voluntary basis) for collectively negotiated contracts. Negotiated wages took over from wage drift in sustaining the upward pressure on growth in compensation per employee in 2023 and continued to do so into the second quarter of 2024 (Chart B). This shift in relative importance is in line with the notion that inflation compensation has, over time, been "reallocated" from the wage drift component to negotiated wages, both in the form of base wage increases and in one-off payments. The contribution of wage drift to growth in compensation per employee was on average 1.5 percentage points in 2022-2023, well above the contribution seen before the pandemic, and, despite some volatility, recent levels are still above the pre-pandemic average (0.2 percentage points between 1999 and 2019).

Chart B

Decomposition of growth in compensation per employee



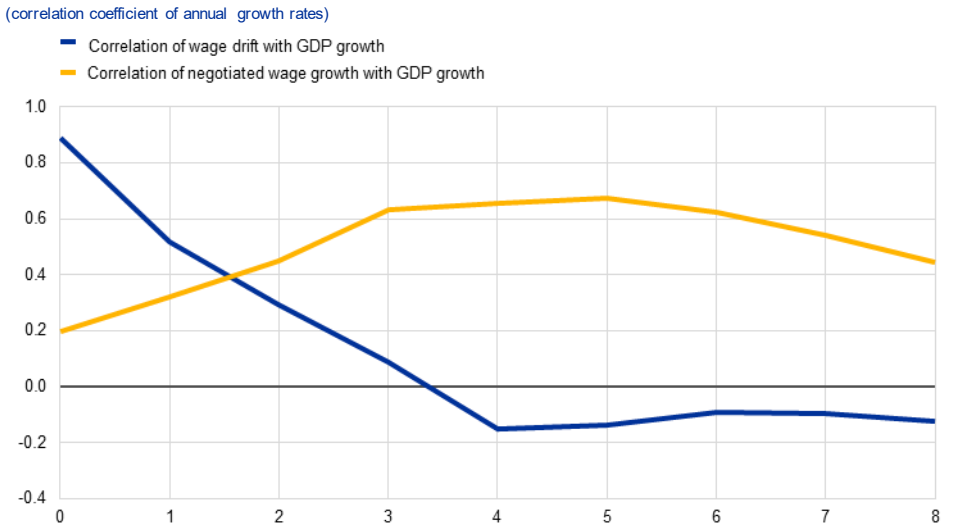
Sources: Eurostat and ECB staff calculations.
Notes: In the left panel, the scale has been truncated on the downside for readability reasons. The value of growth in compensation per employee in the second quarter of 2020 was -4.2%. The latest observations are for the second quarter of 2024.

The recent period is thus an example of how economic conditions are more rapidly reflected in wage drift than in negotiated wage growth. In general, in a tight labour market in which employers wish to retain and reward employees, firms might offer pay to newly hired or incumbent employees at scales that are higher than those under the prevailing collective agreements, promote employees to higher bands within collectively agreed pay scales, or simply pay bonuses on top of agreed wages. In addition, employees not covered by collective agreements may be able to negotiate wage adjustments faster than trade unions that are bound by contract length. Both these factors would push up wage drift. The likelihood of all these happening increases in a situation where tight labour markets co-exist with substantial real wage losses due to high inflation. But as negotiated wage growth adjusts to the demand for inflation compensation, the contribution of wage drift moderates, eventually leading to opposite movements in the two main components of wage growth. Simple correlation analysis captures this in an earlier reaction of wage drift to the business cycle compared to negotiated wages. Chart C shows that

wage drift has a high positive contemporaneous correlation with GDP growth which then declines, while negotiated wage growth reacts with a lag of several quarters.

Chart C

Correlation of wage drift and negotiated wages with real GDP growth

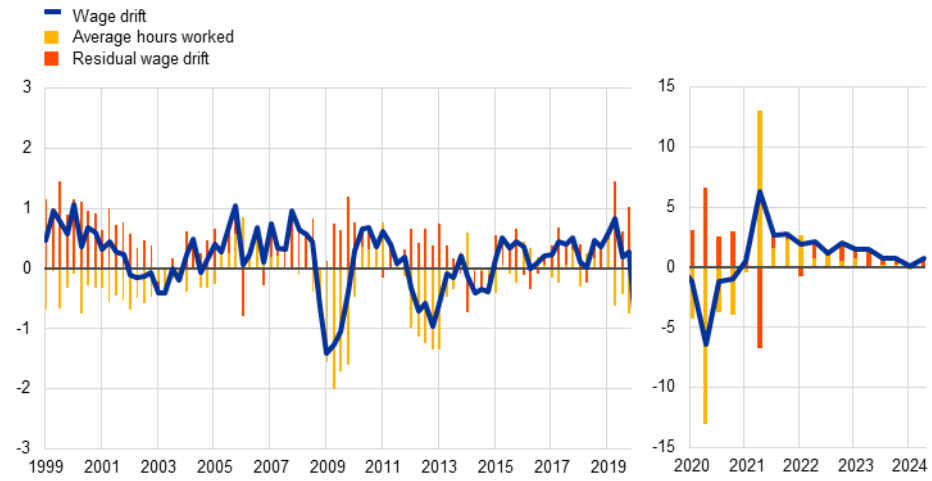


Sources: Eurostat, ECB and ECB staff calculations.
Notes: The x-axis shows the number of quarters by which wage drift and negotiated wage growth are lagged compared to GDP growth. The calculations are based on data from 1999 to the second quarter of 2024. The results do not change fundamentally if only the pre-pandemic period (from the first quarter of 1999 to the fourth quarter of 2019) is considered.

One channel through which the business cycle affects wage drift is average hours worked. When firms experience an increase in demand, the initial response is normally to ask employees to work more hours. Paid overtime is then reflected in wage drift. The strong contribution of average hours worked to wage drift immediately after the pandemic is, however, explained not by this cyclical effect but by the recovery in average hours worked as participation in job retention schemes declined (Chart D). This impact has moderated recently, contributing to an easing of wage drift. But the difference between wage drift and the growth in average hours worked was also somewhat larger recently, pointing to the role of inflation compensation.

Chart D

Decomposition of wage drift into growth in average hours worked and other factors



Sources: Eurostat, ECB and ECB staff calculations.
Note: The latest observations are for the second quarter of 2024.

When interpreting developments in wage drift, some technical factors also need to be borne in mind. Average wages and salaries – and thus wage drift – can change when sectors or skill levels are associated with different pay rates and the composition of employment across these categories is changing. For example, during the pandemic, employment in tourism-related sectors, which typically have relatively low wage rates, was negatively affected and this is likely to have had an upward impact on growth in compensation per employee, which is then reflected in wage drift, making it somewhat countercyclical and partially offsetting other procyclical factors. Furthermore, the calculation of wage drift relies on the difference between two indicators with different country coverage: the negotiated wages series is aggregated from non-harmonised national data and does not cover all euro area countries, whereas compensation per employee is derived from the European System of Accounts, which covers all countries in a harmonised manner.[2] Owing to this difference in coverage, wage drift includes some aggregation bias, reflecting, for example, the fact that the Baltic States do not have data on collectively agreed wages but have had very high growth in compensation per employee.[3] This bias is normally very small, but it has been somewhat larger in recent quarters (0.2 percentage points on average between the first quarter of 2022 and the second quarter of 2024) than before the pandemic (0.1 percentage points between 1999 and 2019). Finally, as already discussed above, the effect of job retention schemes

2 The euro area negotiated wage series is compiled by the ECB on the basis of nine countries (Austria, Belgium, Germany, Spain, Finland, France, Italy, the Netherlands and Portugal) and covers approximately 94% of compensation of employees in the euro area.

3 Although in most euro area countries a majority of workers are covered by sectoral collective wage agreements, in a few countries a majority of employees are covered by firm-level bargaining. See also Górnicka, L. and Koester, G. (eds.), "A forward-looking tracker of negotiated wages in the euro area", *Occasional Paper Series*, No 338, ECB, February 2024.

during the pandemic on compensation per employee was primarily reflected in wage drift, as negotiated wages were not affected by these distortions.[4]

To summarise, growth in compensation per employee can be divided broadly into negotiated wage growth and wage drift, with the latter leading the former through the economic cycle. While the euro area is still experiencing historically high levels of growth in compensation per employee, we are now at a point in the disinflation process where the upward pressure coming from wage drift is easing. Instead, as inflation compensation is increasingly embedded in collective wage bargaining, high negotiated wage growth has been sustaining the current levels of growth in compensation per employee. As the inflation surge has passed, there may be some residual real wage catch-up, but the upward pressure on negotiated wage growth is likely to subside.

[4] Revisions to compensation per employee growth are also primarily reflected in wage drift, as negotiated wage growth data are revised to a smaller degree.

6 Liquidity conditions and monetary policy operations from 17 April to 23 July 2024

Prepared by Samuel Bieber and Christian Lizarazo

This box describes liquidity conditions and the Eurosystem monetary policy operations during the third and fourth reserve maintenance periods of 2024. Together, these two maintenance periods ran from 17 April to 23 July 2024 (the "review period").

Average excess liquidity in the euro area banking system continued to decline to €3,176.5 billion over the review period. This was due to the maturing of the eighth operation under the third series of targeted longer-term refinancing operations (TLTRO III.8) and early repayments by banks of outstanding amounts under other TLTRO III operations on 26 June 2024. Liquidity provision also diminished owing to lower holdings under the asset purchase programmes (APPs), driven by the discontinuation of reinvestments under the APP from the beginning of July 2023. Pandemic emergency purchasing programme (PEPP) holdings also began to decrease from the beginning of July, with principal payments from maturing securities now being only partially reinvested. The lower liquidity provision was partly offset by the continuing decline in net autonomous factors.

Liquidity needs

The average daily liquidity needs of the banking system, defined as the sum of net autonomous factors and reserve requirements, decreased by €47.1 billion to €1,484.0 billion over the review period. This was due almost entirely to a €47.2 billion decline in net autonomous factors to €1,322.5 billion (see the section of Table A entitled "Other liquidity-based information"), driven by an increase in liquidity-providing autonomous factors that was not fully offset by a rise in liquidity-absorbing autonomous factors. Minimum reserve requirements edged up marginally by €0.1 billion to €161.6 billion.

Liquidity-absorbing autonomous factors increased by €20.8 billion to €2,640.6 billion over the review period, owing mainly to a rise in other autonomous factors. On average, net other autonomous factors grew by €47.5 billion. This was primarily due to an increase in the revaluation accounts of €66.4 billion linked to rising gold prices, the liquidity impact of which was largely offset by higher net foreign assets. Government deposits, which fell by an average of €36.9 billion over the review period to €117.7 billion, were therefore the primary driver of the decline in net autonomous factors (see the section of Table A entitled "Other liquidity-based information"). This decrease reflected the continued normalisation of the overall

volume of deposits held by national treasuries with the Eurosystem that was also spurred by the changes in remuneration that came into effect on 1 May 2023 and that were subsequently confirmed by the Governing Council on 16 April 2024 (see Economic Bulletin, Issue 4, 2024). The average value of banknotes in circulation increased by €10.3 billion over the review period to €1,554.9 billion. Banknote demand has stabilised at lower levels after peaking at just over €1,600 billion in July 2022.

Liquidity-providing autonomous factors rose by €68.3 billion to stand at €1,318.6 billion, owing primarily to an increase in net foreign assets of €65.8 billion. The rise in net foreign assets was driven by an average increase in the value of gold reserves of €61.4 billion attributable to higher gold prices. Net assets denominated in euro increased slightly, by €2.5 billion, over the review period.

Table A

Eurosystem liquidity conditions

Liabilities

(averages; EUR billions)

	Current review period: 17 April-23 July 2024						Previous review period: 31 January-16 April 2024	
	Third and fourth maintenance periods		Third maintenance period: 17 April-11 June 2024		Fourth maintenance period: 12 June-23 July 2024		First and second maintenance periods	
Liquidity-absorbing autonomous factors	2,640.6	(+20.8)	2,632.4	(+14.1)	2,651.5	(+19.1)	2,619.7	(-33.7)
Banknotes in circulation	1,554.9	(+10.3)	1,551.5	(+5.2)	1,559.5	(+8.0)	1,544.6	(-9.1)
Government deposits	117.7	(-36.9)	119.5	(-18.3)	115.2	(-4.3)	154.6	(-27.7)
Other autonomous factors (net)[1]	968.0	(+47.5)	961.4	(+27.2)	976.8	(+15.4)	920.6	(+3.1)
Current accounts above minimum reserve requirements	5.7	(-1.3)	5.4	(-1.4)	6.2	(+0.8)	7.0	(-1.1)
Minimum reserve requirements[2]	161.6	(+0.1)	161.3	(-0.3)	161.9	(+0.7)	161.5	(-1.7)
Deposit facility	3,170.8	(-250.6)	3,214.0	(-124.0)	3,113.2	(-100.7)	3,421.3	(-99.1)
Liquidity-absorbing fine-tuning operations	0.0	(+0.0)	0.0	(+0.0)	0.0	(+0.0)	0.0	(+0.0)

Source: ECB.
Notes: All figures in the table are rounded to the nearest €0.1 billion. Figures in brackets denote the change from the previous review or maintenance period.
1) Computed as the sum of the revaluation accounts, other claims and liabilities of euro area residents, and capital and reserves.
2) Memo item that does not appear on the Eurosystem balance sheet and should therefore not be included in the calculation of total liabilities.

Assets

(averages; EUR billions)

	Current review period: 17 April-23 July 2024						Previous review period: 31 January-16 April 2024	
	Third and fourth maintenance periods		Third maintenance period: 17 April-11 June 2024		Fourth maintenance period: 12 June-23 July 2024		First and second maintenance periods	
Liquidity-providing autonomous factors	1,318.6	(+68.3)	1,311.3	(+39.1)	1,328.3	(+17.1)	1,250.3	(+64.1)
Net foreign assets	1,045.4	(+65.8)	1,031.7	(+36.2)	1,063.7	(+32.1)	979.6	(+34.8)
Net assets denominated in euro	273.2	(+2.5)	279.6	(+2.9)	264.6	(-15.0)	270.7	(+29.3)
Monetary policy instruments	4,660.5	(-299.0)	4,702.3	(-150.3)	4,604.9	(-97.4)	4,959.5	(-199.9)
Open market operations	4,660.5	(-299.0)	4,702.3	(-150.3)	4,604.9	(-97.4)	4,959.5	(-199.9)
Credit operations	134.0	(-199.9)	151.6	(-100.6)	110.6	(-40.9)	334.0	(-123.5)
MROs	3.9	(-0.0)	2.5	(-0.3)	5.7	(+3.2)	3.9	(-3.7)
Three-month LTROs	7.7	(+1.3)	8.1	(+0.2)	7.0	(-1.2)	6.4	(+2.0)
TLTRO III	122.5	(-201.2)	140.9	(-100.5)	97.9	(-43.0)	323.7	(-121.8)
Outright portfolios[1)]	4,526.5	(-99.0)	4,550.7	(-49.7)	4,494.3	(-56.5)	4,625.5	(-76.5)
Marginal lending facility	0.0	(-0.0)	0.0	(-0.0)	0.0	(+0.0)	0.0	(-0.0)

Source: ECB.
Notes: All figures in the table are rounded to the nearest €0.1 billion. Figures in brackets denote the change from the previous review or maintenance period. MROs stands for main refinancing operations, LTROs for longer-term refinancing operations and TLTRO III for the third series of targeted longer-term refinancing operations.
1) With the discontinuation of net asset purchases, the individual breakdown of outright portfolios is no longer shown.

Other liquidity-based information

(averages; EUR billions)

	Current review period: 17 April-23 July 2024						Previous review period: 31 January-16 April 2024	
	Third and fourth maintenance periods		Third maintenance period: 17 April-11 June 2024		Fourth maintenance period: 12 June-23 July 2024		First and second maintenance periods	
Aggregate liquidity needs[1)]	1,484.0	(-47.1)	1,482.9	(-25.1)	1,485.5	(+2.6)	1,531.2	(-99.7)
Net autonomous factors[2)]	1,322.5	(-47.2)	1,321.6	(-24.8)	1,323.6	(+1.9)	1,369.7	(-98.0)
Excess liquidity[3)]	3,176.5	(-251.8)	3,219.3	(-125.3)	3,119.4	(-100.0)	3,428.3	(-100.2)

Source: ECB.
Notes: All figures in the table are rounded to the nearest €0.1 billion. Figures in brackets denote the change from the previous review or maintenance period.
1) Computed as the sum of net autonomous factors and minimum reserve requirements.
2) Computed as the difference between autonomous liquidity factors on the liabilities side and autonomous liquidity factors on the assets side. For the purposes of this table, items in the course of settlement are also added to net autonomous factors.
3) Computed as the sum of current accounts above minimum reserve requirements and the recourse to the deposit facility minus the recourse to the marginal lending facility.

Interest rate developments

(averages; percentages and percentage points)

	Current review period: 17 April-23 July 2024				Previous review period: 31 January-16 April 2024			
	Third maintenance period: 17 April-11 June 2024		Fourth maintenance period: 12 June-23 July 2024		First maintenance period: 31 January-12 March 2024		Second maintenance period: 13 March-16 April 2024	
MROs	4.50	(+0.00)	4.25	(-0.25)	4.50	(+0.00)	4.50	(+0.00)
Marginal lending facility	4.75	(+0.00)	4.50	(-0.25)	4.75	(+0.00)	4.75	(+0.00)
Deposit facility	4.00	(+0.00)	3.75	(-0.25)	4.00	(+0.00)	4.00	(+0.00)
€STR	3.907	(-0.000)	3.663	(-0.244)	3.907	(+0.01)	3.907	(+0.000)
RepoFunds Rate Euro	3.953	(+0.007)	3.714	(-0.239)	3.955	(+0.049)	3.947	(-0.008)

Sources: ECB, CME Group and Bloomberg.
Notes: Figures in brackets denote the change in percentage points from the previous review or maintenance period. MROs stands for main refinancing operations and €STR for euro short-term rate.

Liquidity provided through monetary policy instruments

The average amount of liquidity provided through monetary policy instruments decreased by €299.0 billion to €4,660.5 billion over the review period (Chart A). The reduction in liquidity supply was driven primarily by a decline in credit operations and, to a lesser extent, by a reduction in outright portfolios.

The average amount of liquidity provided through credit operations fell by €199.9 billion to €134.0 billion over the review period. This largely reflects the decline in outstanding TLTRO III amounts owing to the maturing of TLTRO III.8 (€47.4 billion), together with early repayments of other TLTRO III funds (€17.1 billion) on 26 June 2024. The average outstanding amount of Eurosystem three-month long-term refinancing operations (LTROs) increased marginally, by €1.3 billion, while the stock of main refinancing operations (MROs) remained broadly unchanged. The limited participation of banks in these regular operations and their ability to repay sizeable TLTRO funds without switching to regular refinancing operations reflect the comfortable liquidity positions of banks, on aggregate, and the availability of alternative funding sources at attractive rates.

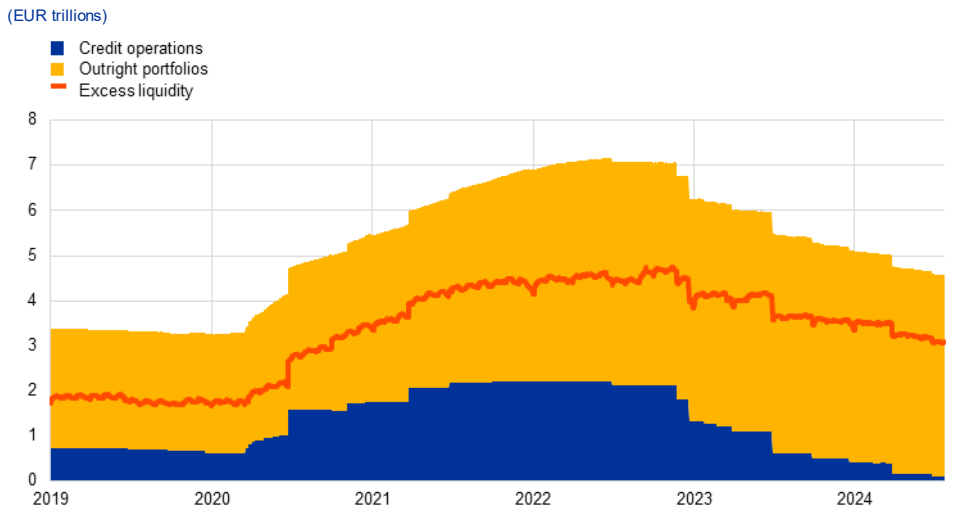
The average amount of liquidity provided through holdings of outright portfolios decreased by €99.0 billion to €4,526.5 billion over the review period. This was due to the discontinuation of reinvestments under the APP from 1 July 2023 and, to a minor extent, to partial reinvestments under the PEPP since 1 July 2024.[1, 2]

1 Securities held in the outright portfolios are carried at amortised cost and revalued at the end of each quarter, which also has an impact on the total averages and the changes in the outright portfolios.

2 In June 2024 the Governing Council confirmed that the ECB will only partially reinvest principal payments from maturing securities under the PEPP over the second half of 2024 and will discontinue reinvestments altogether at the end of 2024.

Chart A

Changes in liquidity provided through open market operations and excess liquidity



Source: ECB.
Note: The latest observations are for 23 July 2024.

Excess liquidity

Average excess liquidity decreased by €251.8 billion over the review period to stand at €3,176.5 billion (Chart A). Excess liquidity is the sum of bank reserves above minimum reserve requirements and the recourse to the deposit facility net of the recourse to the marginal lending facility. It reflects the difference between the total liquidity provided to the banking system and the liquidity needs of banks to cover minimum reserves. After peaking at €4,748 billion in November 2022, excess liquidity has steadily declined.

Interest rate developments

The Governing Council cut each of the three key ECB interest rates by 25 basis points, with effect from 12 June 2024. The rates on the deposit facility, MROs and the marginal lending facility stood at 3.75%, 4.25% and 4.50% respectively at the end of the review period.

The average euro short-term rate (€STR) reflected the policy rate cuts, while maintaining a stable spread with the ECB's deposit facility rate. On average, the €STR traded 9.0 basis points below the deposit facility rate throughout the review period, compared with the 9.3 basis points average for the first two maintenance periods in 2024.

The average euro area repo rate, as measured by the RepoFunds Rate Euro index, continued to trade close to the deposit facility rate. On average, the repo rate was 4.2 basis points below the deposit facility rate over the review period, compared with the 4.9 basis points average in the first two maintenance periods of

2024. This reflects the ongoing reversal of factors that exert downward pressure on repo rates, such as the higher net issuance since the beginning of the year, the release of mobilised collateral pledged against maturing/repaid TLTROs and the increased availability of public securities as a consequence of the decline in outstanding APP and PEPP holdings.

7 Money and credit dynamics in the euro area and a comparison with the United States

Prepared by Ramón Adalid, Lucía Kazarian, Davide Malacrino and Silvia Scopel

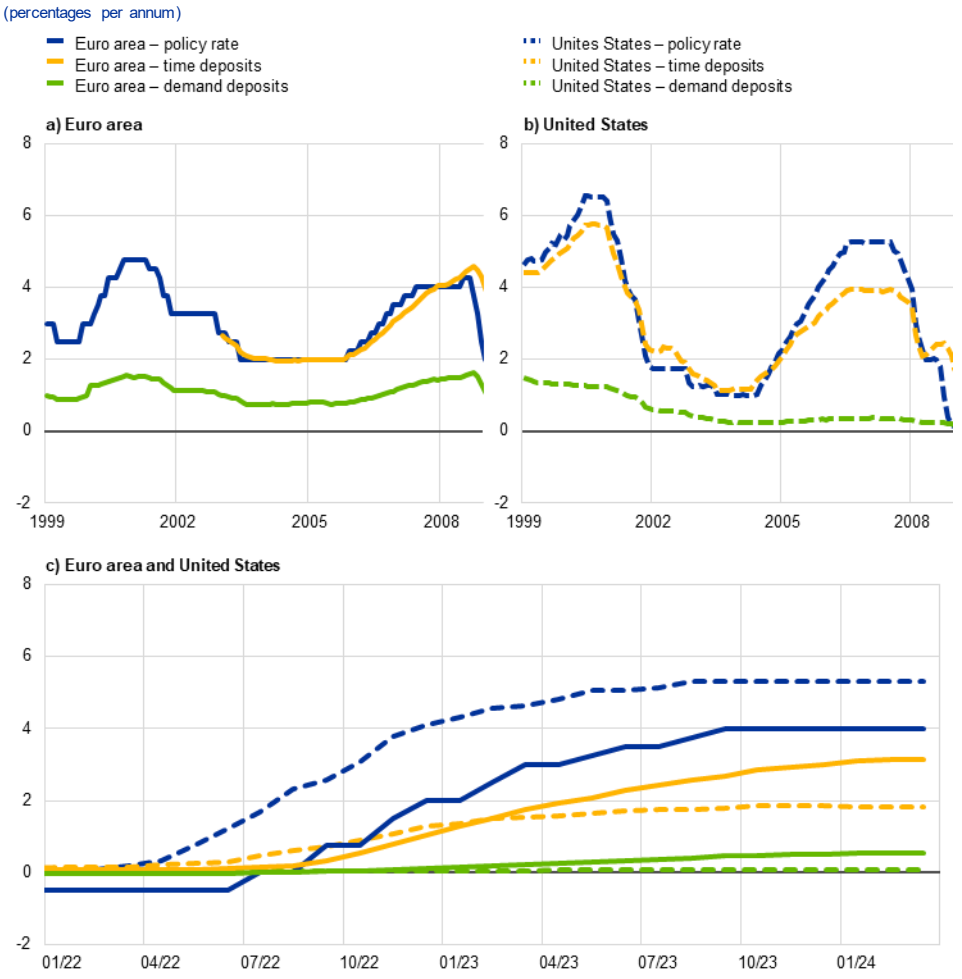
This box examines the recent transmission of monetary policy to money and credit volumes and interest rates in the euro area and compares it with that in the United States, highlighting key differences and similarities during the pandemic period. First, interest rates on deposits have reached higher levels in the euro area than in the United States (the US), despite a smaller increase in the policy rate and a lower starting point. Second, since the start of monetary policy tightening, credit growth has declined more sharply in the euro area, possibly owing to stronger demand and more abundant deposits in the US. Third, the moderation in US broad money growth from its pandemic peak appears much greater, as asset purchases by the US Federal Reserve System (the Fed) during the pandemic were almost double those by the Eurosystem, expressed in terms of GDP.

Interest rates on customer deposits have reached higher levels in the euro area despite a smaller increase in the policy rate and a lower starting point. As monetary policy tightened, deposit rates increased in both the euro area and the US.[1] Time deposits reacted faster and stronger than overnight deposits in both economies – as in the 2000s, when policy rates were well into positive territory (Chart A, panels a) and b). However, transmission was considerably stronger in the euro area than in the US. Despite a lower policy rate (4% in the euro area compared with a range between 5.25% and 5.50% in the US), in March 2024 the weighted average remuneration of short-term time deposits was above 3% in the euro area, while in the US it had not reached 2%. Overnight deposits reveal a similar picture, at slightly above 0.5% in the euro area while falling short of 0.1% in the US (Chart A, panel c).

[1] Owing to the availability of comparable data, the analysis is based on interest rates on outstanding amounts. At least for the euro area, the dynamics of interest rates on outstanding deposits are broadly similar to those on newly created deposits.

Chart A

Interest rates on outstanding amounts of customer deposits



Sources: ECB (MFI Interest Rate Statistics, financial market data), RateWatch, Federal Deposit Insurance Corporation and ECB calculations.
Notes: "Demand deposits" refers to overnight deposits for the euro area and checkable deposits for the US. "Time deposits" refers to deposits with an agreed maturity of up to two years in the euro area and 12-month certificates of deposit in the US. The latest observations are for March 2024.

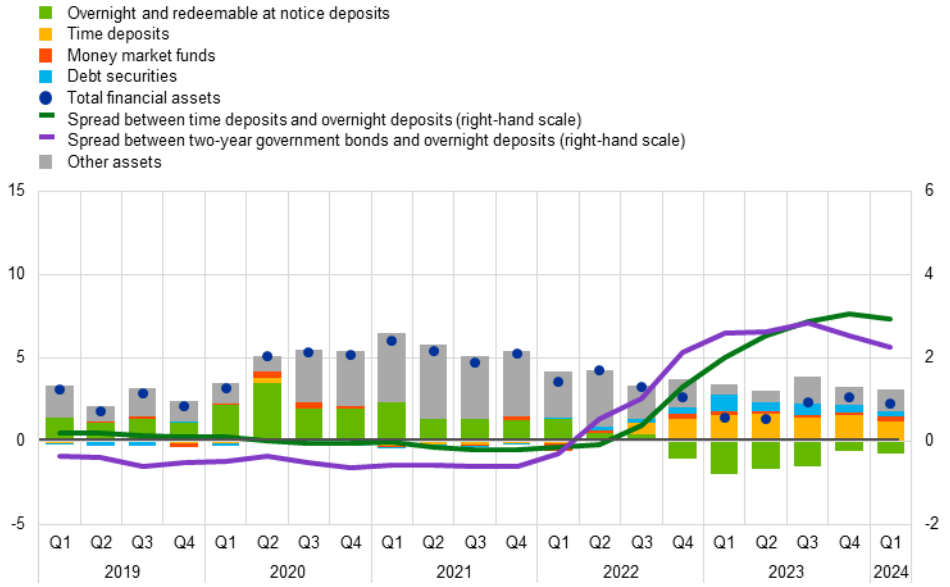
Having accumulated more deposits during the pandemic, US banks saw larger shifts away from deposits during the tightening cycle, partly owing to higher returns from bonds and competition from money market funds, which traditionally account for a larger share of portfolios in the US than in the euro area. Overnight deposits surged in both economies during the pandemic period, in a context of low interest rates, monetary expansion and forced savings. As monetary policy tightened, returns on other saving instruments increased and funds started to shift away from the most liquid deposits. During the tightening cycle, liquid deposits recorded outflows of 11% of GDP in the US, compared with less than 8% in the euro area, bringing M1 growth into deeply negative territory in both economies. The volume of deposits accumulated prior to the tightening cycle, which was more striking in the US than in the euro area, may have reduced banks' incentives to increase deposit rates, at least initially. This has likely contributed to keeping the spread between government bond yields and deposit rates consistently wider in the US than in the euro area since the second quarter of 2022 and also helps to explain

the larger deposit outflows in the US (Chart B). Accordingly, US money holders shifted more funds into bonds (about 10% of GDP) than into time deposits (about 8%), while in the euro area time deposits received most of the inflows (almost 9% of GDP compared with just above 3% shifted into bonds). Inflows into money market funds were also considerably larger in the US (5% of GDP) than in the euro area (1%), although this is in part attributable to the period of turbulence surrounding the failure of Silicon Valley Bank, which was triggered by concerns about the solvency of US regional banks. About half of the US inflows into money market funds were recorded around that period. More recently, as the tightening cycle has matured, inflows into time deposits, bonds and money market funds have moderated in both economies.

Chart B
Portfolio rebalancing

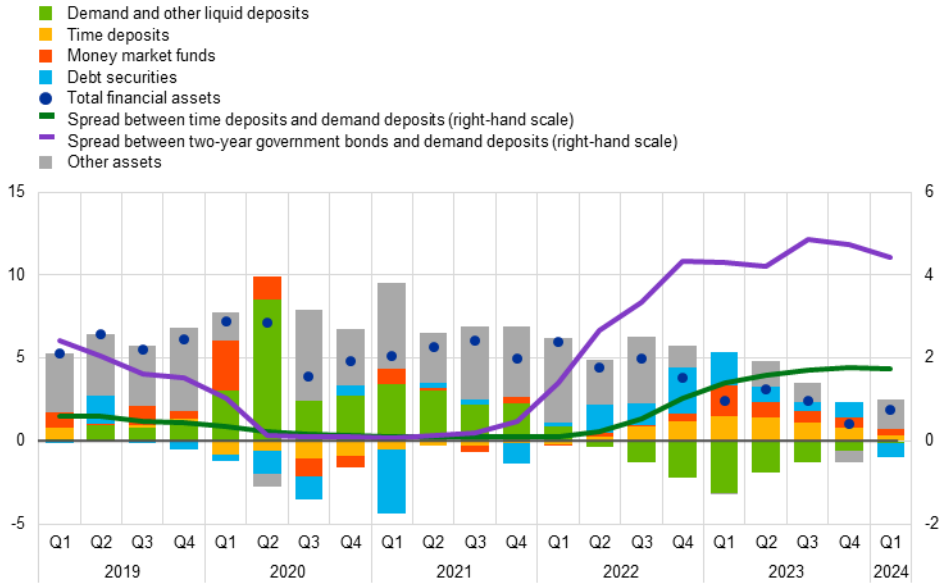
a) Euro area

(left-hand scale: percentages of annual GDP; right-hand scale: percentage points)



b) United States

(left-hand scale: percentages of annual GDP; right-hand scale: percentage points)



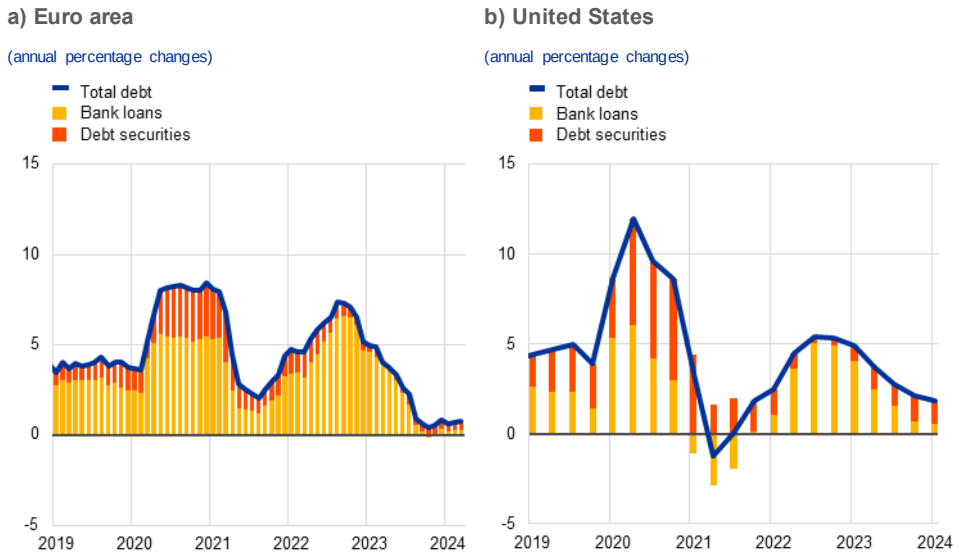
Sources: For panel a), ECB (MFI balance sheet items, Quarterly Sector Accounts, MFI Interest Rate Statistics, financial market data), Eurostat and ECB calculations; for panel b), US flow-of-funds data, Federal Reserve Board/Haver Analytics, RateWatch, Federal Deposit Insurance Corporation, IDCM dataset, Bloomberg and ECB calculations.
Note: The latest observations are for the first quarter of 2024.

As policy rates increased, credit to firms fell more sharply in the euro area than in the United States, while the pass-through to lending rates was similar. After the large swings in credit growth between 2020 and 2021, firms' external debt financing began to contract soon after the ECB and the Fed started their hiking cycles. The annual growth rate of firm credit (bank loans and corporate bonds) fell

more in the euro area, dropping from a peak of 7.4% in August 2022 to 0.7% in the span of 12 months. US firms saw a smaller decline, as the growth rate fell from the peak of 5.4% in the third quarter of 2022 to 2.2% in the fourth quarter of 2023 (Chart C). Including non-bank loans, the differences remain but become somewhat smaller. The smaller decline in US firm credit growth may reflect stronger credit demand in the more resilient economy and the still greater abundance of deposits in the US following the stronger quantitative easing in response to the pandemic. Moreover, it likely reflects a slightly weaker pass-through of monetary policy to firm lending rates. Indeed, although the Fed raised its main policy rate by 525 basis points between February 2022 and August 2023 – 75 basis points more than the ECB did during its tightening cycle – the lending rates on new loans to firms increased by about 3.8 percentage points, only 20 basis points more than in the euro area (Chart D). The ratio of the change in lending rates to the change in the policy rate was 72% in the US, slightly below the figure of 79% for the euro area. Yet, the change in the average rates on outstanding amounts was close to 50% of the policy rates in both economies. Nevertheless, given the higher starting levels, lending rates are substantially higher in the US than in the euro area.

Chart C

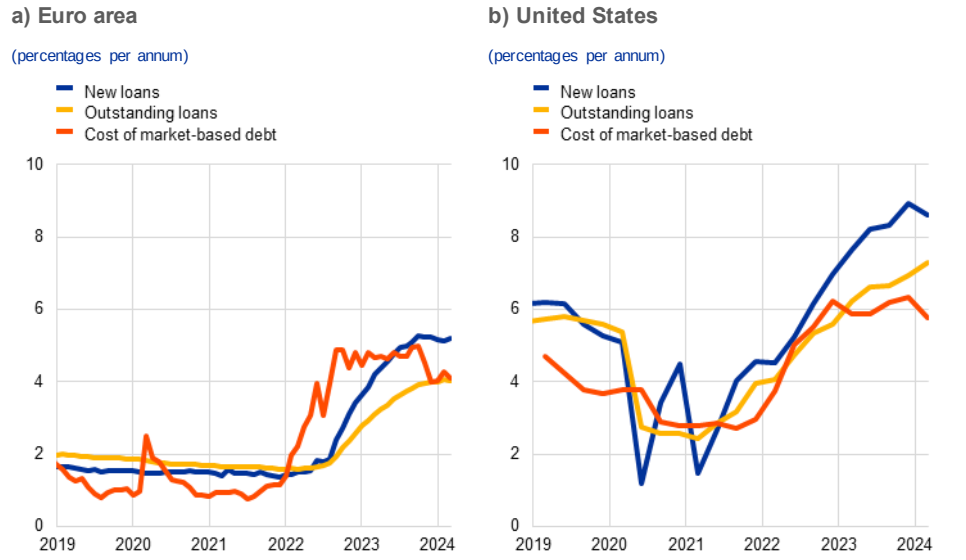
Total credit to firms excluding non-bank loans



Sources: ECB and US flow-of-funds data.
Notes: In the euro area, bank loans are adjusted for sales, securitisation and cash pooling. Data for the euro area are monthly, while data for the US are quarterly due to different frequencies in the sources. The latest observations are for March 2024 for the euro area and the first quarter of 2024 for the US.

Chart D

Cost of debt financing for firms

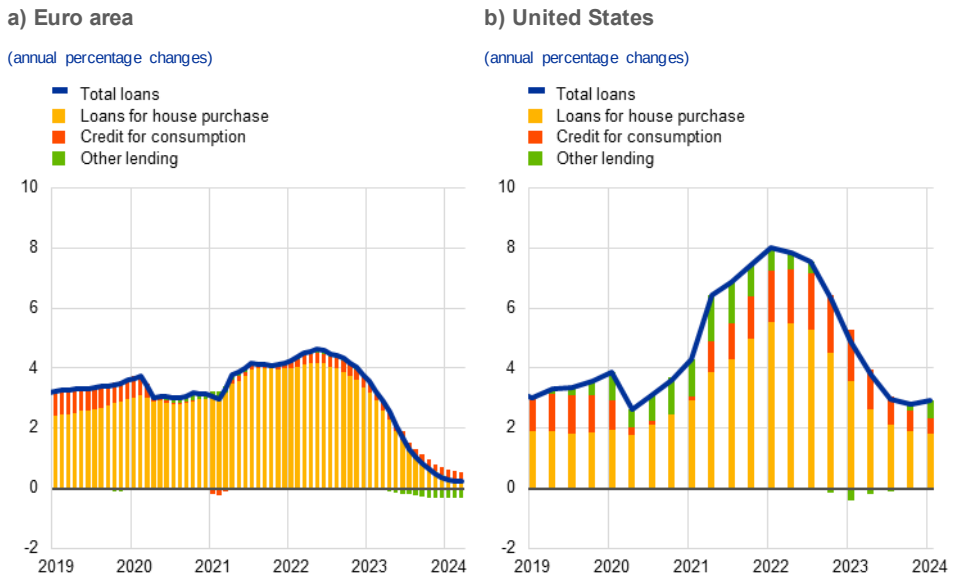


Sources: ECB (MFI Interest Rate Statistics), Federal Reserve Economic Data, Merrill Lynch, Small Business Lending Survey by the Federal Reserve Bank of Kansas City and ECB calculations.
Note: The latest observations are for March 2024 for the euro area and the first quarter of 2024 for the US.

Household credit dynamics have been weaker in the euro area, with falling mortgage growth and quicker transmission to rates on existing mortgages, despite lower interest rates on new loans than in the US. In the euro area, the annual growth rate of loans to households has declined from its peak of 4.6% in May 2022 to about 0.2% in recent months. The US has seen a larger drop of 5.5 percentage points between the first quarter of 2022 and the fourth quarter of 2023, but the decline began from a much higher level owing to record high mortgage issuance during the pandemic. Hence, the growth rate in the US still stood at 2.7% at the end of 2023, with the contribution of lending for house purchase standing close to its pre-pandemic level (Chart E). The rate on new mortgages increased more robustly in the US than in the euro area. US mortgage rates (on both five-year adjustable and fixed rate mortgages) grew by about 4 percentage points, i.e. around 75% of the policy rate increase, compared with a 2.1 percentage point increase in the composite cost of borrowing in the euro area, i.e. close to 47%. But transmission to interest rates on outstanding amounts was significantly slower in the US. Owing to the greater prevalence of fixed rate mortgages in the US, these rates increased by only 43 basis points, compared with 74 basis points in the euro area (Chart F).

Chart E

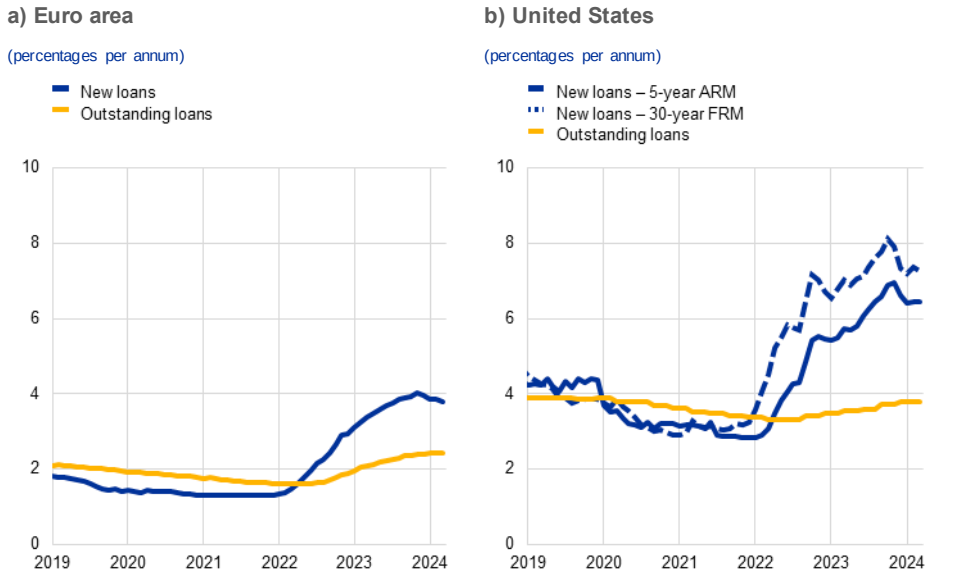
Loans to households



Sources: ECB and US flow-of-funds data.
Notes: In the euro area, loans to households comprise only bank loans; in the US, they include all loans. The latest observations are for March 2024 for the euro area and the first quarter of 2024 for the US.

Chart F

Mortgage rates



Sources: ECB and Wall Street Journal.
Notes: For the US, a five-year adjustable rate mortgage (ARM) is a mortgage with an interest rate which remains fixed for five years and then resets. A 30-year fixed rate mortgage (FRM) is a mortgage that matures in 30 years with a fixed rate throughout. The latest observations are for March 2024.

These developments were mirrored in broad money growth, with high US deposit volumes reflecting the much larger pandemic-related asset purchases by the Fed. Just before the outbreak of the pandemic, the dynamics in broad money growth were similar in both economies. M3 in the euro area and M2 in the US are the key and most comparable monetary aggregates. While there are some

differences in scope and definition, this should not affect the major trends under consideration. The policy response to the pandemic emergency was similar in qualitative terms on both sides of the Atlantic, with strong support provided by the central bank via asset purchases complemented by regulatory and monetary policy easing measures to facilitate the flow of credit to the real economy. This boosted money growth. The size of these purchases (and of the fiscal expansion) was, however, much larger in the US (one year after the outbreak of the pandemic, it totalled about 15% of 2019 GDP in the US, compared with less than 9% in the euro area). This translated into much larger money growth in the US, peaking at 26.8% compared with 12.6% in the euro area.

During the policy rate hiking cycle, the weakening of money creation in the euro area was driven by bank lending, whereas in the US, other sources were the initial drivers, with bank lending only contributing later. In August 2022, just after the first policy rate hike, euro area M3 growth was around 6%, with bank loans to firms and households contributing over 4.5 percentage points (Chart G). Eurosystem asset purchases added over 3 percentage points but were offset by external monetary outflows and bank sales of government bonds, both influenced by the Eurosystem purchases. By September 2023, the contribution of bank lending had become virtually nil and annual M3 had dropped to around -1%. While US M2 growth also turned negative during the hiking cycle, counterparts other than lending (namely bank purchases of securities, external monetary flows, banks' wholesale funding and quantitative tightening) played the dominant role. It was only from March 2023 that bank loans in the US started to contribute less to annual M2 growth.

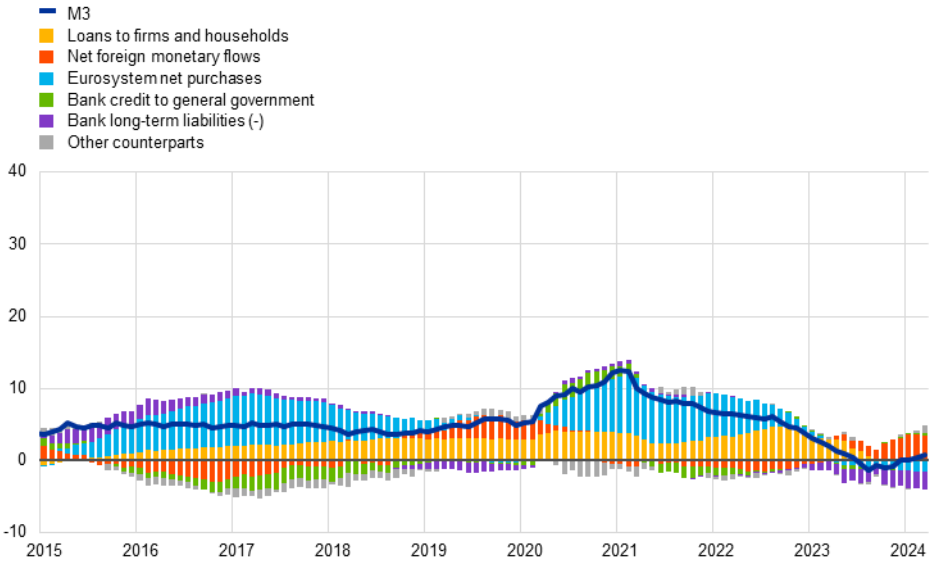
The moderate turnaround in US M2 growth reflects reduced bank wholesale funding and, to a lesser extent, banks' purchases of bonds and foreign flows, whereas foreign inflows are the main factor behind the turnaround in euro area M3 growth. US M2 growth reached a trough of -4.5% in April 2023, dragged down by the Fed's quantitative tightening and all other sources of money creation except bank lending. Since then, the reduction in the Fed's securities portfolio has strengthened contractionary effect of quantitative tightening, but other counterparts except bank lending have pulled M2 growth back towards zero. While US net foreign flows were supported by portfolio investment as in the euro area, the persistent current account deficit in the US has dampened overall monetary inflows from abroad.

Chart G

Sources of money creation

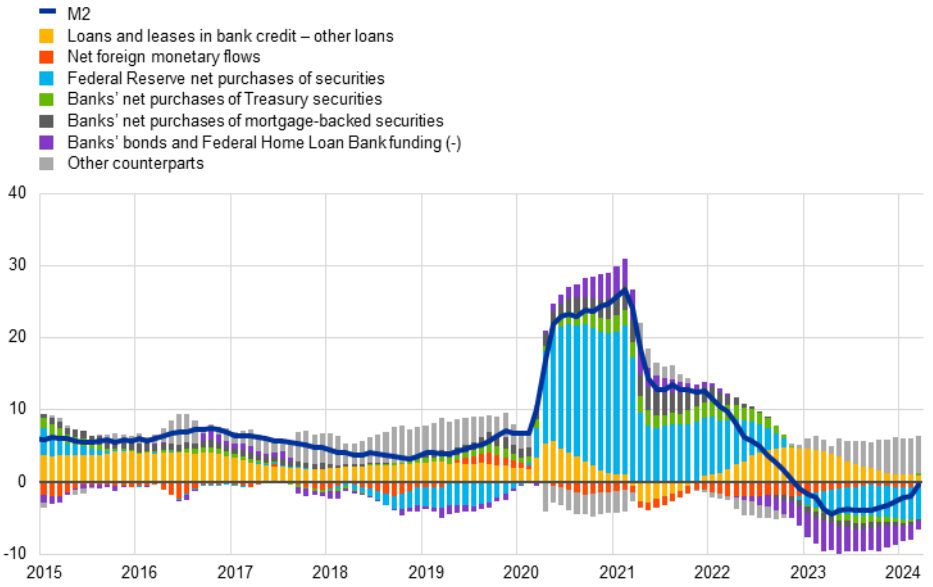
a) Euro area

(annual percentage changes)



b) United States

(annual percentage changes)



Sources: For panel a), ECB (MFI balance sheet items) and ECB calculations; for panel b), Federal Reserve Board/Haver Analytics, Bureau of Economic Analysis and ECB calculations.
Notes: In panel b), "Net foreign monetary flows" (which are the exchanges between the non-MFI sector and the rest of the world) are obtained by subtracting the contribution of deposit-taking institutions and central bank (where available) to the US balance of payments. The latest observations are for March 2024.

Articles

1 Past and future challenges for the external competitiveness of the euro area

Prepared by Michael Fidora and Vanessa Gunnella

1 Introduction

Euro area exporters have been going through a difficult period since the pandemic and have lost competitiveness in global trade. Over the past two decades, the euro area has experienced a gradual decline in its market share in global trade. This downward trend is not unique to the euro area: other advanced economies have also been losing market shares as emerging economies become more integrated in global trade. While decreasing market shares do not necessarily reflect a decrease in competitiveness, the decline in the euro area's role in trade has accelerated more sharply than in other regions since the pandemic, suggesting that the euro area is facing particular challenges to its external competitiveness.

This article analyses the long-term trends contributing to the decline in the euro area's market share in the last two decades and relates more recent declines to a series of global shocks that had an asymmetric effect on the region, exposing important vulnerabilities in its external competitiveness. The article describes the longer-term trends in relative euro area export performance before discussing the drivers of the euro area's weak export performance since the pandemic. These drivers include the energy shock following Russia's invasion of Ukraine, supply disruptions, other factors affecting price and non-price competitiveness, and the role of trade in services since the pandemic. The article concludes by outlining some of the challenges that lie ahead, which relate to the persistence of the energy shock, risks associated with geo-economic fragmentation and the ongoing structural transformation of the European and global economies.

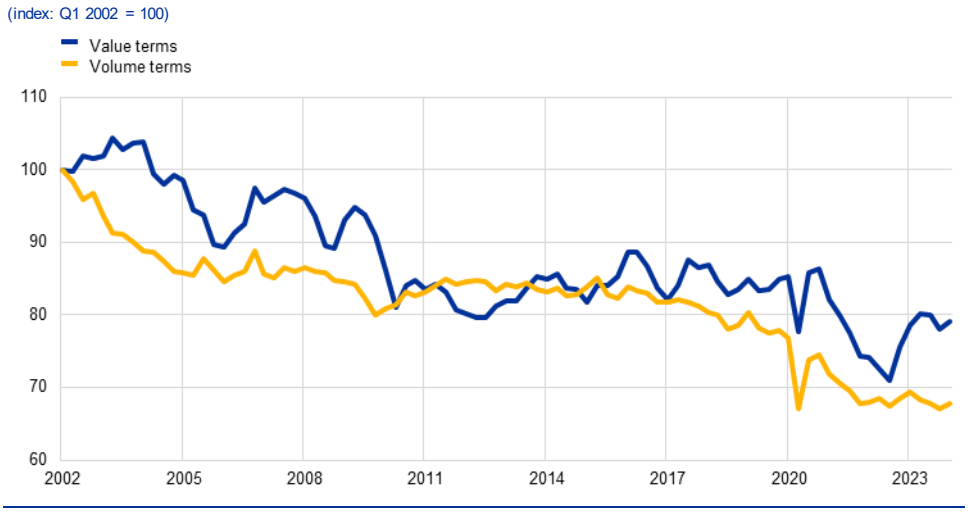
2 Longer-term trends in relative euro area export performance

Over the past two decades the euro area has gradually lost market share in global exports of manufacturing goods. The euro area's share in the volume of global goods exports, as well as that of other advanced economies, has followed a declining trend (Chart 1). This has largely been due to the growing integration of major emerging economies such as China in the global economy. Yet the decline in market share has been less pronounced in value terms, and market shares actually stabilised after 2012, reflecting higher export prices for euro area goods sold in

pricier market segments. However, the last four years have seen renewed falls in the market share of the euro area.[1]

Chart 1

Euro area export market shares in goods



Sources: CPB Netherlands Bureau for Economic Policy Analysis, ECB, IMF World Economic Outlook and ECB staff calculations.
Notes: Export market shares are calculated in value and volume terms. Export market shares in value terms are calculated by dividing the value of extra-euro exports by the value of world imports excluding the euro area. Similarly, export market shares in volume terms are calculated by dividing the volume of extra-euro exports by the volume of world imports excluding the euro area.

The evolution of the market share of the euro area reflects the euro area's positioning and specialisation in key markets in terms of geography, as well as other factors affecting its competitiveness. The global export market share of an economy typically increases if that economy has established strong links with fast-growing trading partners that are outperforming the global economy or if it has acquired market power in product segments for which global import demand is expanding faster than average global imports. In this respect, a shift-share analysis provides a framework for decomposing changes in total market share into changes owing to (i) the growth of destination countries (geographical effect), (ii) the growth of specific product markets (sectoral effect), and (iii) other factors capturing changes in exporters' price and non-price competitiveness (performance effect).[2]

Before the pandemic, exporters in the euro area benefited from the growth of its key trading partners and product segments. In the two decades up to the pandemic, geographical and sectoral effects supported the euro area's market share. In fact, had the geographical and sectoral composition of euro area exports

1 Long-run trends in export market shares in volume terms should be interpreted with caution. Euro area export volumes and world import volumes are not fully consistent, as each statistical office employs specific methodologies for deflating and outlier cleaning. These methodologies may differ in terms of outlier detection and replacement and quality adjustment.

2 See Cheptea, A., Fontagné, L., and Zignago, S., "European export performance", *Review of World Economics*, Vol. 150, 2014, pp. 25-58. The geographical, sectoral, and performance effects are estimated using bilateral product-level non-energy goods export data from Trade Data Monitor:

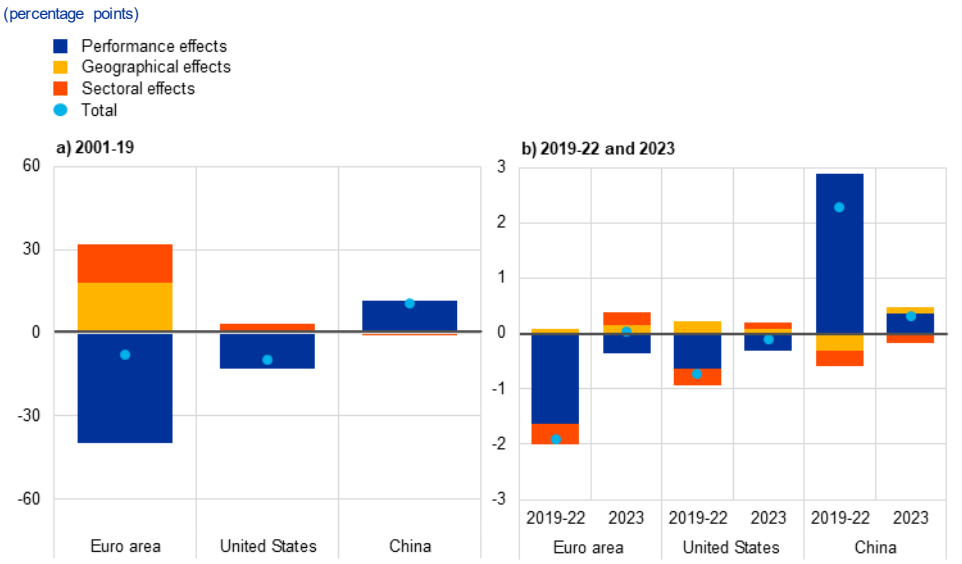
$$\ln\left(\frac{X_{ijk}^{t}}{X_{ijk}^{t-1}}\right) = FE_{i}^{t} + FE_{j}^{t} + FE_{k}^{t} + \varepsilon_{ijk}^{t}$$

The growth rate of each individual export flow (X) is estimated by a fixed-effects (FE) regression in which the geographical, sectoral and performance effects correspond to the fixed effects on importer j, product segment k and exporter i. In a second step, those are aggregated to the exporter level and translated into market share growth.

been less favourable, the losses in market share would have been almost twice as large as those observed between 2001 and 2019 (Chart 2). This pattern is not unique to the euro area – it can also be seen for other advanced economies such as the United States, albeit to a lesser extent. Performance-related losses in competitiveness in the United States may have been mitigated by more favourable developments in energy and labour costs and productivity compared with the euro area.[3] Emerging economies, notably China, recorded limited negative sectoral or geographical effects. As documented in the literature, this largely reflects differences in the technology intensity of exports between advanced and emerging economies. Higher technology intensity tends to support compositional effects in advanced economies, while price and cost factors strengthen the performance of emerging economies.[4]

Chart 2

Euro area goods export market shares and contributions



Sources: Trade Data Monitor and ECB staff calculations.
Notes: Figures are expressed in terms of percentage changes in market shares with respect to 2001 in panel a) and with respect to 2019 and 2022 in the two columns in panel b), respectively. Market shares consider only the intensive margin and exclude energy and other specific and non-classified products (two-digit Harmonised System codes 25, 26, 27, 97, 98, 99).

During the pandemic, the composition of euro area exports temporarily caused the decline in market share to accelerate. Between 2019 and 2022 the beneficial compositional effect of euro area exports reversed, mainly reflecting low growth in the euro area's main product segments. The low growth was partly due to lower demand for capital goods and industrial inputs as lockdown measures and supply disruptions fed through the value chain and curtailed production in the euro area's trading partners. At the same time, households shifted their spending away from services towards at-home consumption, increasing global demand for consumer goods and electronic equipment primarily produced outside the euro area. Moreover,

3 See the box entitled "Key factors behind productivity trends in euro area countries", *Economic Bulletin*, Issue 7, ECB, 2021.

4 See, for example, Beltramello, A., De Backer, K. and Moussiegt, L., "The export performance of countries within global value chains (GVCs)", *OECD Science, Technology and Industry Working Papers*, No 2012/2, OECD Publishing, Paris, 2012.

the literature finds that containment measures had a greater effect on production in industries that are located more downstream (such as the automotive, pharmaceutical, food and beverage and consumer electronics industries). These industries are more prevalent in the euro area than in its main trading partners.[5]

Although key markets in the euro area recovered to some extent in 2023, export performance was still rather anaemic. After the post-pandemic recovery, euro area exporters again benefited from some more favourable sectoral and geographical factors, but export growth remained weak. The following section provides an overview of the shocks that have contributed to the recent weakness in euro area exports.

3 Drivers of the recent weakness in euro area exports

This section looks at the main factors behind the euro area's weak export performance since the pandemic. The previous section summarised broad trends in the deterioration of the euro area's market share and isolated the impact of sectoral and geographical compositional effects over the past two decades. This section identifies the main drivers of export performance after the pandemic and during the subsequent period of surging energy prices. Specifically, it disentangles common elements, such as changes in price and non-price competitiveness, as well as new challenges posed by supply chain disruptions and the energy crisis.

Mobility restrictions during the pandemic and the related persistent supply disruptions depressed euro area exports of goods and, to a greater extent, services; since then, services exports have strongly recovered but goods exports remain weak. Pandemic-induced demand shifts and supply chain disruptions were one of the main drivers of the deterioration in euro area export performance. Lockdowns, mobility restrictions and the ensuing transport and supply disruptions impeded the flow of goods globally. This had a particularly strong effect on the euro area as it is more deeply integrated in regional and global supply chains than other economies.[6] Global goods trade rebounded swiftly after the pandemic in 2021. However, it fell below historical trends towards the end of 2022, which was also reflected in weak euro area goods export growth (Chart 3). In addition, from 2022 euro area goods exports were held back by the energy price shock, recording negative growth from the second quarter of 2023. By contrast, services exports – which were a significant drag on euro area exports during the pandemic, especially in high-contact categories such as travel – became a driver of the recovery as mobility restrictions were gradually lifted and economies reopened. Box 1 discusses the resilience of the services export sector in recent years and the factors contributing to its unusual divergence from the goods sector.

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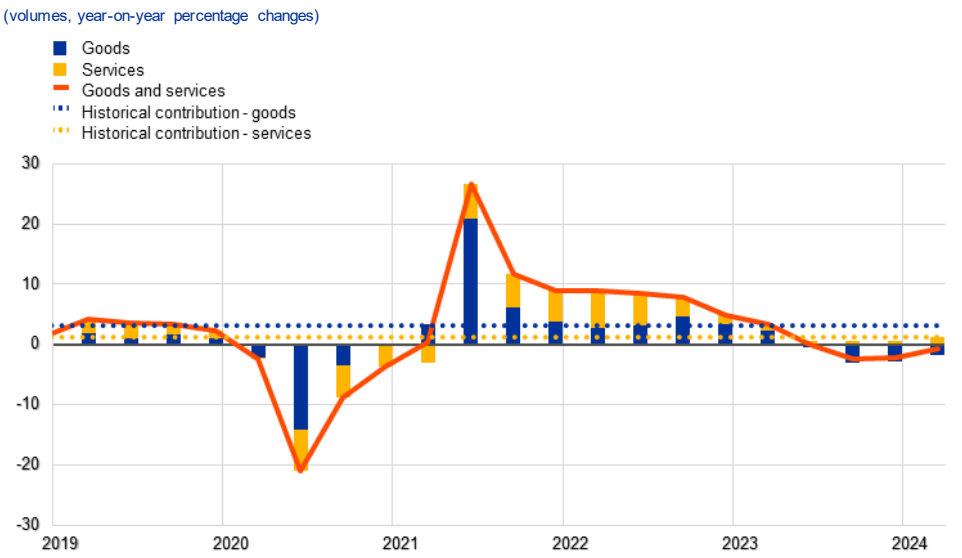
5 See, for example, "Global Trade and Value Chains during the Pandemic", *World Economic Outlook: War Sets Back the Global Recovery*, IMF, Washington DC, April 2022.

6 See the box entitled "Global value chains and the pandemic: the impact of supply bottlenecks", *Economic Bulletin*, Issue 2, ECB, 2023.

Chart 3

Euro area exports of goods and services



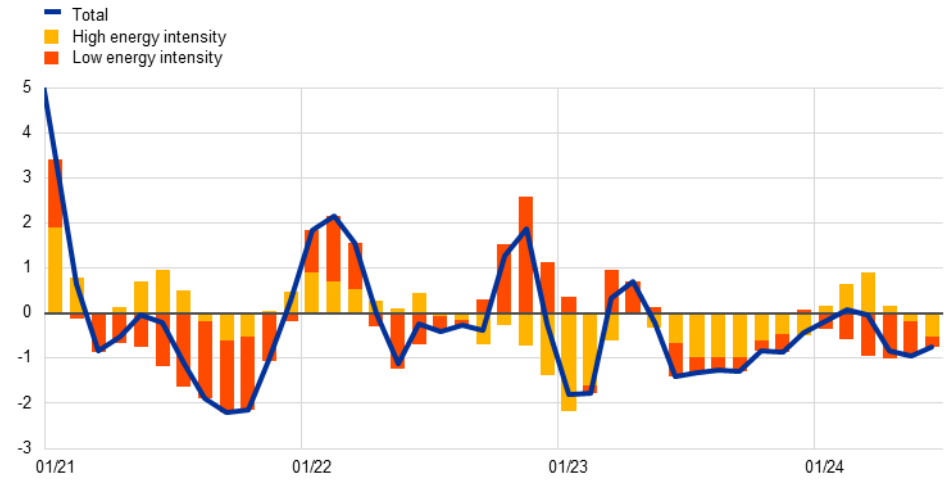
Sources: Eurostat and ECB staff calculations.
Note: Historical contribution refers to the average contribution over the period from the first quarter of 1995 to the first quarter of 2024.

The key driver of the continued weakness in euro area goods exports was the energy shock following Russia's invasion of Ukraine, as exports in energy-intensive sectors declined substantially. Energy prices began to rise from late 2021 as Europe experienced a particularly cold winter and Russia gradually reduced gas supplies to Europe. Gas prices then spiralled following Russia's full-scale invasion of Ukraine in February 2022. Production costs rose to such an extent that some energy-intensive industries were forced to cut back or pause production. As a result, the exports of energy-intensive sectors decreased strongly, accounting for almost the entire decline in total exports in 2023 (Chart 4).[7]

[7] For the effects of high energy costs on production, see the box entitled "How have higher energy prices affected industrial production and imports?", *Economic Bulletin*, Issue 1, ECB, 2023.

Chart 4

Contributions of sectors to euro area goods export growth by energy intensity



Sources: Eurostat and ECB staff calculations.
Notes: Seasonally adjusted volume indices of manufactured goods exports. Low (high) energy-intensity sectors have energy intensity below (above) the median. Energy intensity is the share of energy (direct and indirect use) in total inputs. The latest observations are for June 2024.

The recent gas price shock hit the euro area more than other regions and substantially worsened its competitiveness relative to its main trading partners. The gas price shock following Russia's invasion of Ukraine was different from past energy crises – which were caused by oil price shocks – because of its regional nature, with cuts in gas supplies from Russia primarily affecting Europe.[8] In the third quarter of 2022, at the peak of the European gas crisis, the EU benchmark gas price index was 20 times its historical average, ten times the US benchmark and well above Asian benchmarks, highlighting the exceptional nature of the European gas shock. The asymmetric nature of the energy shock hit euro area export market shares as input costs of euro area exporters rose relative to those of their competitors in the euro area's main trading partners (see Box 2).

Losses of price and cost competitiveness owing to the asymmetric energy shock were to some extent – but far from completely – buffered by exchange rate movements. The impact of rising costs in the euro area was cushioned by the depreciation of the exchange rate of the euro during the early phase of the energy crisis. The euro weakened significantly in nominal effective terms in 2021 and early 2022, which helped to buffer the euro area's competitive position.[9] In real effective terms, this was further supported by relatively contained increases in unit labour costs compared with competitors.[10] However, unit labour costs primarily capture domestic cost pressures, whereas external cost pressures from higher-input import prices are better reflected in the producer price index (PPI). PPI-based real effective

8 See the box entitled "The energy shock, price competitiveness and euro area export performance", *Economic Bulletin*, Issue 3, ECB, 2023.

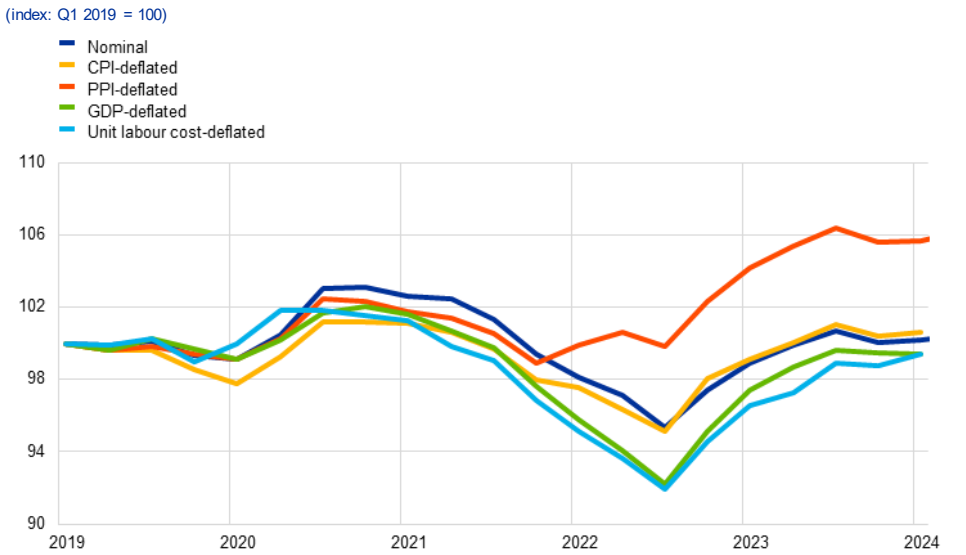
9 See also "Relative energy price rise hurting, euro depreciation supporting Germany's international price competitiveness", *Deutsche Bundesbank Monthly Report*, December 2022.

10 For a comparison of labour costs in the euro area and the United States, see the box entitled "Inflation developments in the euro area and the United States", *Economic Bulletin*, Issue 8, ECB, 2022.

exchange rates, which summarise relative price pressures for tradable goods, point to a deterioration in export price competitiveness and suggest that the energy shock had a bigger impact on euro area competitiveness (Chart 5). Moreover, the previous gains in competitiveness from the nominal depreciation of the euro started to unwind from mid-2022 owing to a strengthening euro and rising price and cost pressures relative to competitors.[11]

Chart 5

Euro area effective exchange rate



Source: ECB.
Note: CPI refers to consumer price index.

A model-based analysis confirms that, while pandemic-related supply bottlenecks were the main initial driver of weak export performance, energy costs and other price competitiveness factors have since become the main drag on euro area competitiveness. Results from a Bayesian structural vector autoregression (SVAR) analysis with sign restrictions illustrate the relative importance of four specific shocks: supply disruptions, energy price shocks, other price competitiveness shocks and non-price competitiveness shocks. Non-energy price competitiveness shocks encompass all factors that affect export shares through relative prices, such as input prices, labour costs and exchange rate conditions. Shocks to non-price competitiveness include all other conditions that affect demand for euro area products, sectoral demand growth, productivity gains and other idiosyncratic factors enhancing market presence (Chart 6). Supply chain disruptions and losses in non-price competitiveness explain about two-thirds of the deterioration in export market shares following the outbreak of the pandemic, given the euro area's high degree of integration in regional and global supply chains.[12] The

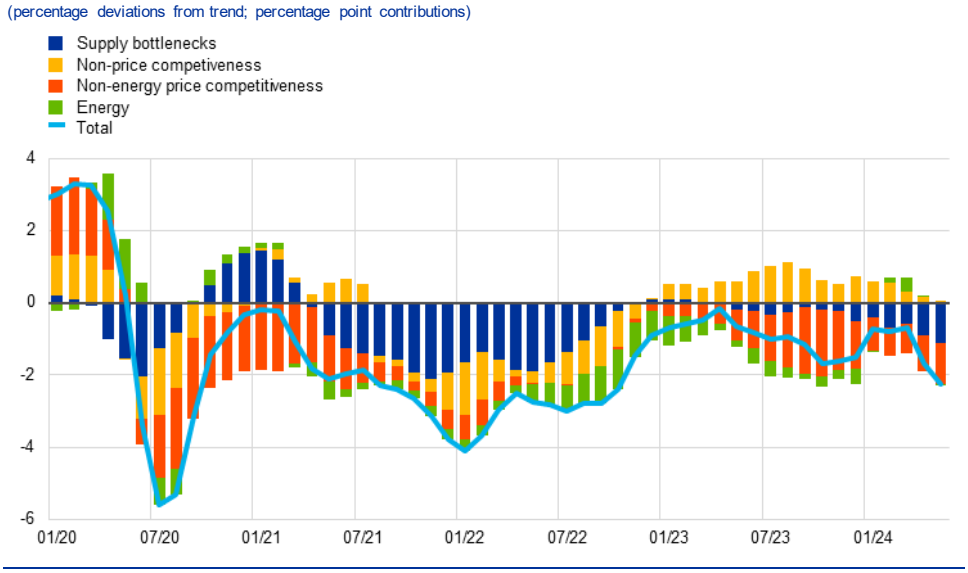
11 With regard to competitiveness factors, at the end of 2023 unit labour cost growth remained strong in the euro area whereas it had already started to decelerate in other countries (e.g. the United States), albeit remaining at higher levels. Higher unit labour costs reflect relatively higher wages and lower productivity in the euro area. See the box entitled "Recent inflation developments and wage pressures in the euro area and the United States", *Economic Bulletin*, Issue 3, ECB, 2024.

12 For more details, see the box entitled "The impact of supply bottlenecks on trade", *Economic Bulletin*, Issue 6, ECB, 2021. See also Lebastard, L. and Serafini, R., "Understanding the impact of COVID-19 supply disruptions on exporters in global value chains", *Research Bulletin*, No 105, ECB, March 2023.

negative contribution of non-price competitiveness reflects a shift in global consumer demand away from goods traded by the euro area – such as investment-related goods – towards other items such as computer equipment and home improvement products, which are more extensively exported by competitors. They could also partly reflect the breakdown of trade relations with Russia. Following the invasion of Ukraine and the imposition of sanctions on Russia, euro area exports to Russia halved within months and have continued to decline since then. Since mid-2022, as supply disruptions faded and global demand patterns began to normalise, these factors no longer weighed on, or even buffered, euro area market shares.[13] At the same time, energy costs and other price competitiveness factors became a major drag on the euro area's export performance relative to its competitors.

Chart 6

Structural drivers of euro area goods exports market shares



Source: Eurostat and ECB staff calculations.
Notes: The SVAR is estimated at a monthly frequency over the period from January 2004 to May 2024 and includes the following variables: extra-euro area export market shares (de-trended), euro area nominal effective exchange rate (increase = appreciation), euro area relative export prices, and the ratio of energy-intensive to non-energy-intensive industrial production. The assumed sign restrictions on impact are: a non-price competitiveness shock implies extra-euro area export market shares (+), euro area relative export prices (+); a price competitiveness shock implies extra-euro area export market shares (+), euro area nominal effective exchange rate (-), euro area relative export prices (-); a supply bottleneck shock implies extra-euro area export market shares (-), euro area nominal effective exchange rate (-), euro area relative export prices (+), energy-intensive to non-energy-intensive industrial production (+); an energy shock implies extra-euro area export market shares (-), euro area nominal effective exchange rate (-), euro area relative export prices (+), energy-intensive to non-energy-intensive industrial production (-).[14]

13 Some of the negative contributions of supply bottlenecks from mid-2023 may be related to a deterioration in supplier delivery times as activity recovered and to disruptions in the Red Sea following attacks by Houthi rebels. See Attinasi M.G., Boeckelmann L., Emter L., Ferrari M.M., Gerinovics R., Gunnella V., Meunier B. and Serafini R., "Sailing through storms: The fallout of Red Sea disruptions for global trade and inflation", *VoxEU Column*, April 2024.

14 A positive sign of supply bottlenecks for energy-intensive to non-energy intensive industrial production is motivated by the fact that highly energy-intensive sectors rely more on commodity inputs that are not disrupted by supply bottlenecks.

Box 1

Will trade in services continue to act as a buffer for euro area export growth?

Prepared by Camilla Altieri, Nina Furbach and Tobias Schuler

In recent years, exports of services have majorly supported euro area trade, significantly outperforming exports of goods. This box examines whether this unusual decoupling of growth in services exports and goods exports can be expected to continue.

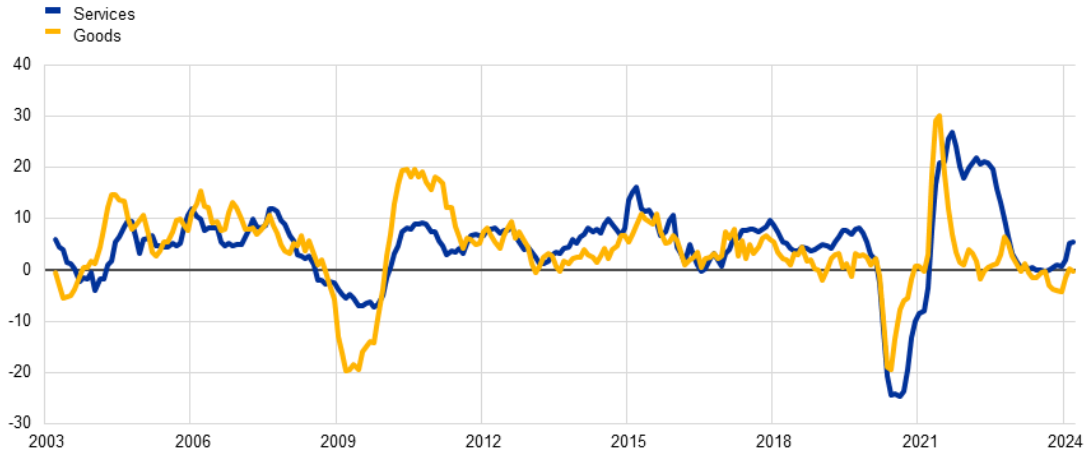
Services exports have grown at a faster pace than goods exports over the past 20 years as technological progress has made it possible for many services to be delivered and consumed in locations different from their origin, making them more tradable across borders. The share of services in the total value of euro area exports increased from 24% in 2000 to around 31% in 2023.

However, the recent stronger performance of services exports has been particularly notable. Services rebounded substantially after the pandemic and have continued to grow even as goods exports have contracted (Chart A). In 2022 services exports accounted for two-thirds of the annual growth in total euro area export volumes. This divergence has continued since September 2023, with goods exports falling and services exports continuing to expand.

Chart A

Euro area goods and services export growth

(three-month moving average of year-on-year percentage changes, constant prices)



Sources: Eurostat and ECB calculations.
Notes: Extra-euro area exports from the balance of payments are deflated using prices of intra-euro area plus extra-euro area exports from the main national accounts. The latest observations are for March 2024.

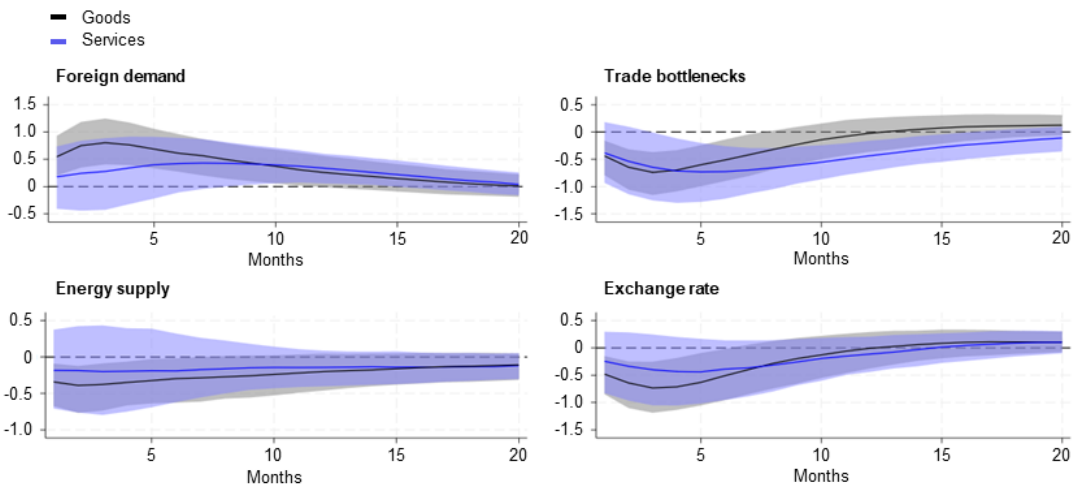
Services and goods exports have co-moved closely in the past. Over the past 15 years the correlation between the year-on-year growth rates of services and goods export volumes is roughly 0.6. Empirical evidence from an SVAR model suggests that goods and services exports react

similarly to a variety of shocks (Chart B).[15] Indeed, the main macroeconomic drivers of services and goods exports are similar, with the bulk of the cyclical fluctuation (74% of goods and 66% of services exports) explained by foreign demand, supply bottlenecks, energy supply and the exchange rate.

Chart B

Impulse responses of goods and services exports volumes

(response to a one-standard-deviation shock; percentage point deviation from steady state)



Source: Eurostat, CPB Netherlands Bureau for Economic Policy Analysis, Federal Reserve of New York and ECB calculations.
Notes: Shaded blue and grey areas are confidence intervals for services and goods exports (both 68%). For details on the estimation, see footnote 15.

The historical similarity in the cyclical dynamics of goods and services exports reflect the close links between the two sectors. First, a large share of services exports are used as intermediates for goods production – just under half of the euro area's value added in services exports are used as intermediate inputs for goods production in other countries.[16] Second, many services exports are directly related to goods exports. Sectors such as transport, trade-related services and freight insurance account for more than 20% of euro area services exports.[17] Finally, an important share of services are exported by manufacturers that bundle goods and services products together.[18]

The recent episode of pronounced decoupling was unusual and stemmed from the pandemic and large swings in travel services. The sectoral decomposition highlights the after-effects of the pandemic, including a strong rebound in exports of travel services (Chart C). In 2021 travel

15 The model extends the SVAR with sign restrictions used to analyse goods exports – see the box entitled "The energy shock, price competitiveness and euro area export performance", op. cit. The analysis imposes no restrictions on the response of services exports to identified shocks, which ensures that co-movement in the responses is not driven by assumptions. The following variables are included: synthetic energy price index, ratio of energy-intensive to non-energy-intensive industrial production, world imports, Harmonised Index of Consumer Prices, global supply chain pressure index, extra-euro area goods exports, euro area nominal effective exchange rate, extra-euro area services exports. Note that confidence intervals for services exports are somewhat wider than those for goods exports (Chart B), potentially owing to their more diverse composition, with services exports in different sub-sectors likely showing heterogenous responses to shocks.

16 Based on ECB staff calculations using multiregional input-output data from the Asian Development Bank.

17 The analysis applies the classification of the United Nations Statistics Division for goods-related services sub-sectors to euro area export data.

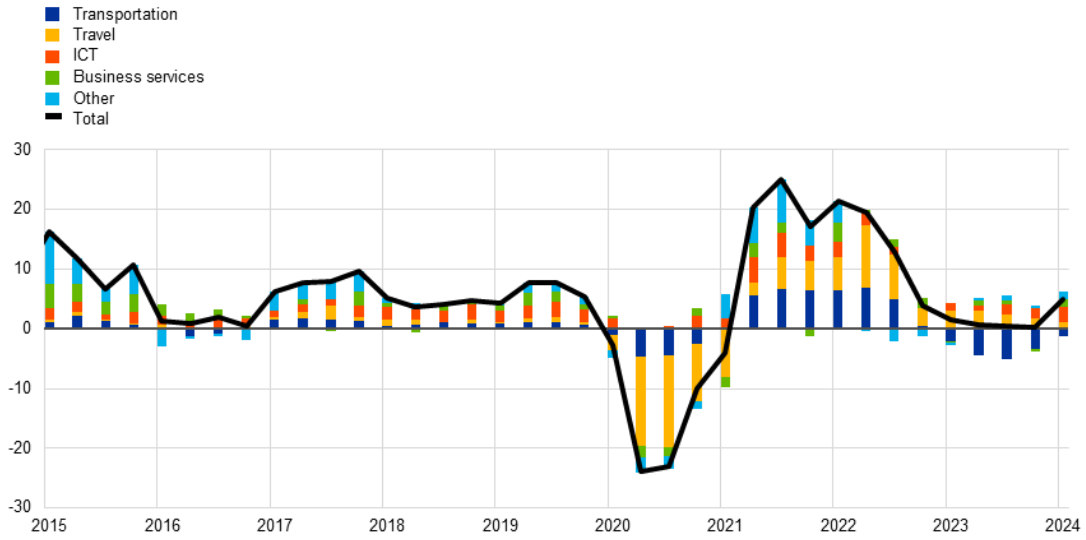
18 Ariu, A. et al. document that 23% of services exports from Belgium are bundled together with exports of goods. See Ariu, A., Mayneris, F. and Parenti, M., "One way to the top: How services boost the demand for goods", *Journal of International Economics*, Vol. 123, March 2020.

contributed around 30% to the growth in services exports, although it accounted for only 12% of total services export volumes. Services exports have held up thanks to the positive contribution of travel exports in 2023.[19] By contrast, transport exports, which had recovered from the pandemic by 2021, have been declining since 2022 owing to a period of restocking coming to an end and the impact of the energy shock on manufacturing firms.

Chart C

Sectoral decomposition of growth in euro area services export volumes

(year-on-year percentage changes; percentage point contributions)



Sources: Eurostat and ECB calculations.
Notes: Volumes are calculated by applying the overall services exports deflator. ICT refers to information and communications technology. The latest observations are for the first quarter of 2024.

Over longer periods, services exports are likely to grow at a faster pace than goods exports, consistent with their stronger long-run trend. However, in the near-term that stronger performance may be boosted by the ongoing strength of travel services exports, which are yet to recover to their pre-pandemic level (Chart D, panel a). Tourism sector surveys remain more buoyant than those of broader services (and goods) export sectors, which suggests near-term strength (Chart D, panel b).

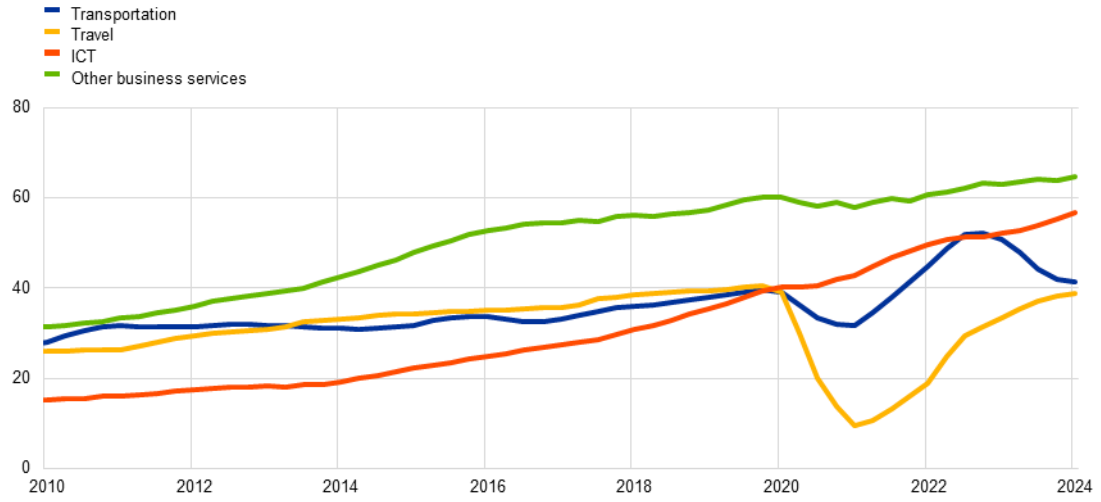
[19] The share of business in total travel exports has declined from 18% in 2019 to 12% in 2022. For more on the performance of the travel sector during the pandemic, see the box entitled "Developments in the tourism sector during the COVID-19 pandemic", *Economic Bulletin*, Issue 8, ECB, 2020.

Chart D

Euro area services exports volumes by sub-sector and PMI orders

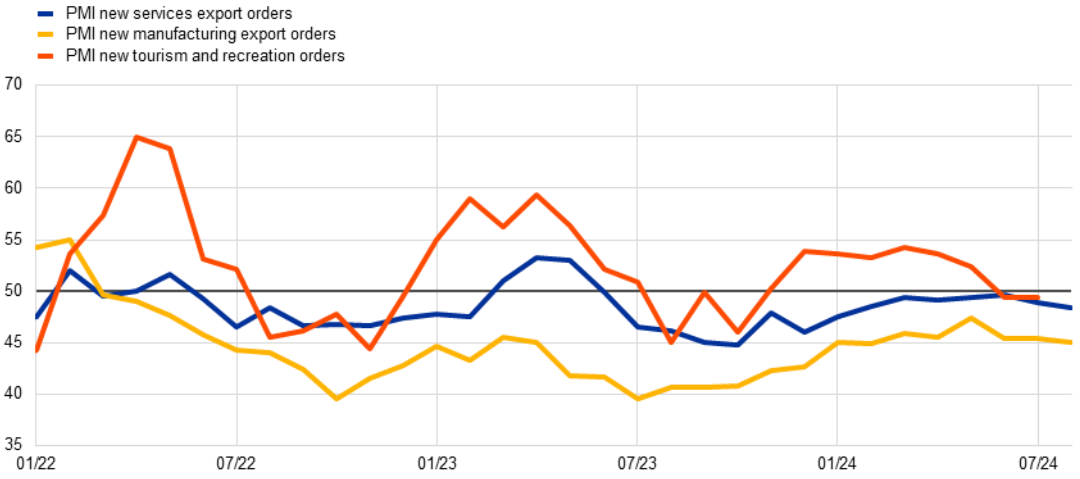
a) Euro area services exports volumes by sub-sector

(EUR billions; four-quarter moving average)



b) PMI manufacturing, services and tourism orders

(diffusion index)



Sources: Eurostat, S&P Global and ECB calculations.
Notes: Volumes in panel a) are calculated by applying the overall services exports deflator. PMIs shown in panel b) are for the EU. A number above 50 indicates an expansion and a number below 50 indicates a contraction. The latest observations are the first quarter of 2024 for panel a), and August 2024 for manufacturing and services export orders and July 2024 for tourism orders in panel b).

Box 2

Energy cost differentials and euro area competitiveness

Prepared by Virginia Di Nino and Marta Salazar Rodríguez

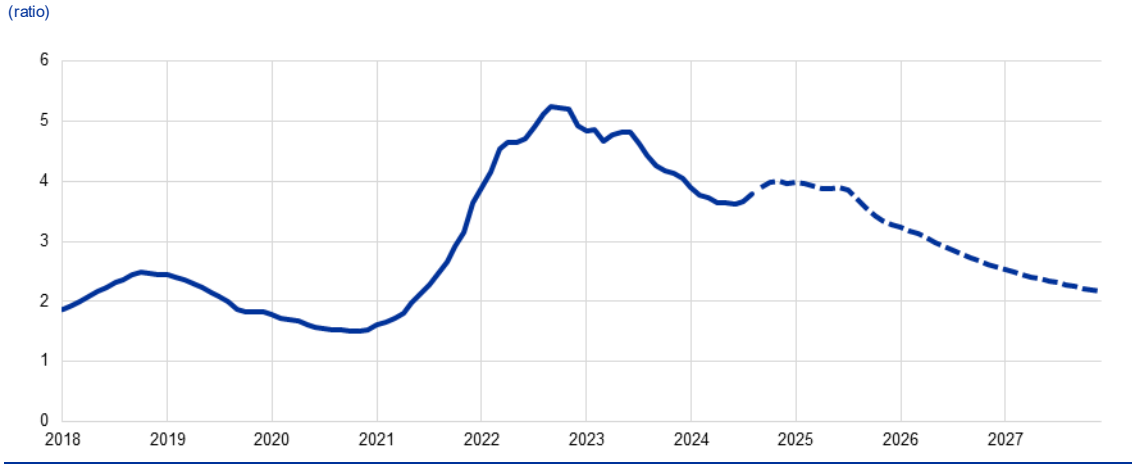
During the energy crisis the price differential for gas and electricity in Europe relative to other regions reached unprecedented highs.[20] Euro area producer prices for energy were twice as high

[20] The cost differential remained contained for oil, whose quotations rose in tandem across regions.

as those of its main competitors.[21] The differential relative to the United States was even wider (Chart A). This box assesses the impact of the energy shock on the competitiveness of euro area exporters and illustrates the shock's heterogeneous effects on firms.[22]

Chart A

Energy prices in the euro area relative to the United States



Sources: ADB MRIO, IMF, Bloomberg, Trade Data Monitor and ECB staff calculations.
Notes: The relative energy price is computed as a weighted average of the relative natural gas price and the relative oil price The solid line represents historical data up to August 2024. The dashed line shows the estimated evolution of the relative energy price based on future prices for crude oil and natural gas in Europe and in the United States. The last estimate is for December 2027.

Exposure to the energy shock varied substantially across industries depending on the energy intensity of production processes and the share of natural gas in total energy consumption. However, the impact of an energy shock on an industry's export prices and market share does not only depend on an industry's input costs. It also depends on its position in the production chain. At industry level, the position of production processes in the chain can be determined by two coordinates, the distance from final demand ("upstreamness") and the distance from primary inputs ("downstreamness"). Positioning can influence the transmission of energy shocks in several ways. Upstream industries generally operate on tighter margins and thus tend to pass on the entire shock. In addition, since energy is often a key input for upstream industries, it may not be as easy for them to substitute domestic inputs with outsourced inputs as it is for downstream industries. At the same time, the more downstream a firm is in a production chain, the more likely it is for part of the energy shock to have been absorbed by the profit margins of producers positioned earlier in the chain. Thus, while upstreamness could magnify the effect of energy shocks, downstreamness may temper the effect as shocks move down the production chain.[23]

We test these arguments in a panel setting, which enables us to measure how the impact of the energy shock varies across industries and economies and to differentiate industries according to their position in the production chain. It also makes it possible to control for those factors which are difficult to observe or measure but are correlated with energy cost differentials, such as government

21 The producer price index for energy in the euro area is compared with the weighted average of the PPI for energy of its main competitors (United States, United Kingdom, China and Japan), with weights assigned based on the share of each competitor in the competitors' total sum of exports.

22 See also the box entitled "The energy shock, price competitiveness and euro area export performance", op. cit.

23 For computation of upstreamness and downstreamness metrics, see Mancini, M., Montalbano, P., Nenci, S. and Vurchio, D., "Positioning in Global Value Chains: World Map and Indicators, a New Dataset Available for GVC Analyses", *The World Bank Economic Review*, 2024.

measures.[24] This box shows the results of a panel study of euro area export market shares. The study uses quarterly data spanning from the beginning of 2007 to the end of 2022 for 17 manufacturing industries in 20 euro area countries. It proxies the energy shock for the euro area by including a variable that measures the energy cost differential relative to a key competitor, the United States. The equation is specified as a logarithmic dynamic panel with fixed effects:

$$XMS_{sct} = \rho XMS_{sct-1} + \delta P_{sct} + \gamma IP_{sct} + \beta_1 \mathrm{E}_{sct} + \beta_2 \mathrm{E}_{sct} \times \mathrm{Up}_{sct} + \beta_3 \mathrm{E}_{sct} \times \mathrm{Down}_{sct} + \mu_1 \mathrm{Up}_{sct} + \mu_2 \mathrm{Down}_{sct} + FE_{sc} + FE_{ct} + \varepsilon_{sct} \quad (1)$$

XMS (P) are exports (export prices) of a sector (s) in a euro area country (c) relative to exports (export prices) for the same sector (s) in non-euro area countries at a time (t).[25] The energy shock (E) in a sector (s) of a euro area country (c) at a time (t) is defined by the energy cost differential scaled by the energy intensity of production. Heterogeneity in the exposure to the energy crisis is allowed to differ across industry-country pairs by relating the energy cost shock (E) to a measure of an industry's position in the chain, that is the number of links with upstream (Up) and downstream (Down) industries. Finally, the analysis controls for unobserved effects by including sector-country fixed effects (FE_{sc}) and country-time fixed effects (FE_{ct}). The estimated coefficients $(\beta_1, \beta_2, \beta_3)$ are historical elasticities of euro area external competitiveness to energy cost differentials depending on energy intensity and upstream and downstream positioning.

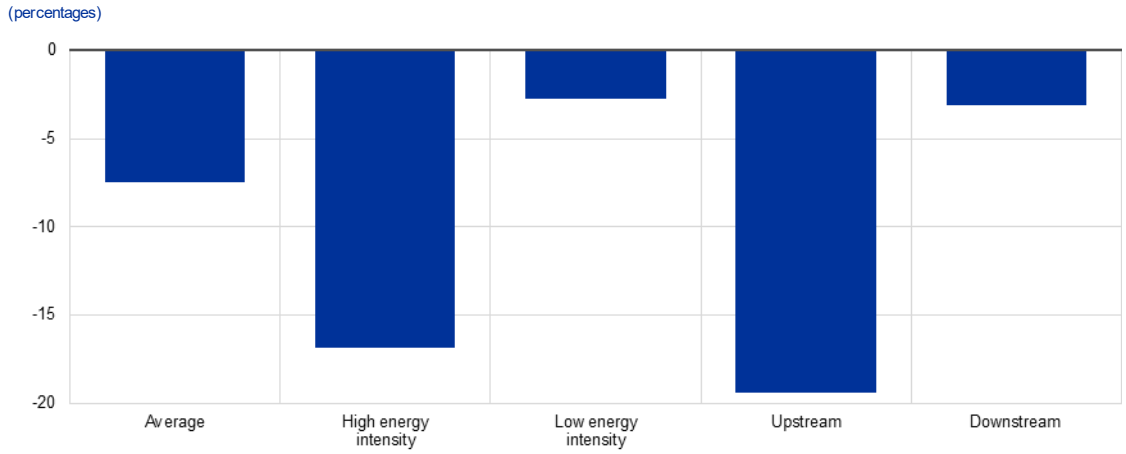
The panel estimates indicate that, at the peak of the European gas crisis, the average adverse impact on euro area export market shares was -7%. However, the estimates show marked heterogeneity. The impact on industries with the highest energy intensity was a decline of more than 15% in export market shares; this can grow to almost 20% for industries located very upstream in the chain and fall to around 3% for industries at the very end of the supply chain.

[24] Governments reacted to the energy shock by implementing measures to limit the impact on businesses and consumers. Failing to control for these measures could result in an underestimation of the potential impact of a widening in the energy cost differential vis-à-vis competitors for euro area external competitiveness. Similar attenuation biases could stem from exchange rate repricing dynamics and expenditure shifting away from expensive energy-intensive items.

[25] Relative export prices in equation (1) are instrumented with their four lags and other exogeneous determinants to remove the simultaneity bias of P and XMS, under the assumption that past values of P (XMS) are predetermined to future XMS (P) developments.

Chart B

The impact on export market shares of the energy cost differential at the peak of the gas crisis in the third quarter of 2022 by type of industry



Sources: Trade Data Monitor, IMF, MRIO, TiVA, Mancini, M. et al. (2024) and ECB staff calculations.
Notes: Changes in export market shares evaluated at the highest/lowest energy intensity. Most upstream/downstream industries are based on coefficients estimated in equation (1). The effect of one determinant is evaluated at a time, setting the others to zero. This simplification helps us to isolate the effect of each determinant. As positioning in the chain for each industry-country pair is mapped by two coordinates (upstream and downstream) the total effect of positioning in the supply chain is given by the weighted average of the effect implied by the two coordinates.

4 Challenges ahead

Looking ahead, some of the factors that have affected euro area export market shares in the recent past should fade away. The supply disruptions and shifts in global demand preferences that hindered euro area exports during the pandemic are gradually diminishing. Price competitiveness challenges in the medium term should also fade as comparatively higher costs in the euro area subside.[26] Nonetheless, euro area exporters could continue to face a challenging environment.

At the same time, competitiveness challenges could persist as energy costs will likely remain elevated, and the euro area is still vulnerable to changes in global market conditions owing to its continued dependence on energy imports. The energy shock was a major driver of the deterioration in euro area market shares. Meanwhile, elevated energy costs for the foreseeable future pose a significant challenge to the competitiveness of the euro area, especially as energy prices in the euro area are still substantially higher than those of its main competitors and – based on futures prices – are expected to remain twice as high as those in the United States in the coming years.

The recent crises have also exposed the euro area's vulnerability to input supply and cost shocks more generally, which may be further compounded by geo-economic fragmentation. Recent evidence on the incidence of geo-economic fragmentation, notably with respect to trade and foreign direct investment flows,

[26] See Lane, P. R. and Milesi-Ferretti, G.M., "External Wealth, the Trade Balance, and the Real Exchange Rate", *European Economic Review*, Vol. 46, No 6, 2002, pp. 1049-1071, and Bobeica E., Christodoulopoulou, S. and Tkačevs, O., "The role of price and cost competitiveness for intra-and extra-euro area trade of euro area countries", *Working Paper Series*, No 1941, ECB, Frankfurt am Main, July 2016.

shows how economic linkages are increasingly influenced by geopolitical considerations.[27] For the euro area, there is evidence that firms progressively seek to diversify their supply of strategic goods to source these from producers in geopolitically aligned countries.[28] Such strategic diversification, while potentially increasing the resilience of supply chains, could lead to cost increases and have important implications for the competitiveness of euro area exporters. At the same time, fragmentation patterns may also affect the demand for euro area exports. Moreover, increasing geopolitical tensions may lead to new waves of tariffs and other trade restrictions that would weigh on global trade, with significant consequences for the euro area export sector.

Looking ahead, the structural transformation of the European and global economies could present challenges and opportunities for euro area exporters. The transformation of the EU's energy market and supplies and the green transition will have important implications for the competitiveness of the euro area.[29] Likewise, the shift of global trade towards services and the potential opportunities emerging from advances in information technology and artificial intelligence are expected to significantly affect euro area exporters' competitiveness in the future.[30] In particular, euro area exporters are increasingly confronted with growing competitive pressures from emerging economies, which are becoming suppliers of high value-added content and competing in some of the euro area's key markets. Euro area exporters are currently facing competition from Chinese manufacturers that benefit from vast capacity, partly owing to sizeable subsidies. This capacity well exceeds domestic demand in China, leading to downward pressure on Chinese export prices and ultimately translating into significant losses of price competitiveness for the euro area.[31] Nevertheless, euro area exporters can maintain their market presence in value terms by specialising in higher-value segments such as services, for which the euro area is the world's leading exporter. This would allow them to charge premium prices and improve the euro area terms of trade.

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27 See, for example, Aiyar, S. et al., "Geoeconomic Fragmentation and the Future of Multilateralism", *Staff Discussion Notes*, No 2023/001, International Monetary Fund, Washington DC, January 2023.

28 See the box entitled "How geopolitics is changing trade", *Economic Bulletin*, Issue 2, ECB, 2024

29 See, for example the box entitled "Will the euro area car sector recover?", *Economic Bulletin*, Issue 4, ECB, 2024, which includes a discussion of competitive challenges emerging from the greening of the car sector.

30 On the increasing relevance of services and automation, see Baldwin, R., "Globotics and macroeconomics: Globalisation and automation of the service sector", *Working Paper Series*, No. 30317, National Bureau of Economic Research, August 2022.

31 See Emter, L., Gunnella, V., Ordoñez Martínez, I., Schuler, T., Al-Haschimi, A. and Spital, T., "Export markets: why China and the euro area are competing more than ever", *The ECB Blog*, ECB, September 2024 and the article entitled "The evolution of China's growth model: challenges and long-term prospects", *Economic Bulletin*, Issue 5, ECB, 2024.

2 Economic and financial impacts of nature degradation and biodiversity loss

Prepared by Andrej Ceglar, Miles Parker, Carlo Pasqua, Simone Boldrini, Marie Gabet and Sjoerd van der Zwaag

1 Introduction

Nature is crucial to human wellbeing and provides essential ecosystem services that support economic activity. Nature encompasses all living and non-living elements on our planet, forming ecosystems such as forests, lakes and wetlands.[1] These ecosystems provide habitats for numerous species and tangible goods like food, freshwater, timber and medicinal resources. These also maintain environmental balance, for example by regulating air quality, controlling climate and mitigating floods. Key processes facilitated by ecosystems include soil formation, nutrient cycling and pollination. Nature also offers intangible benefits such as recreation and tourism. These benefits are greatly at risk from the current unprecedented rate of nature degradation and biodiversity loss.

Businesses, the financial sector and policymakers have long underestimated, or even disregarded, the economic significance of ecosystem services, many of which are neither traded in markets nor directly assigned a monetary value. For example, wetlands act as natural water filtration systems and storm barriers, saving billions in water treatment and disaster mitigation costs. Forests absorb carbon dioxide, playing a vital role in climate regulation and reducing the economic impacts of climate change. Healthy soils and pollinators are essential for crop production. Without pollinators, crop yields would decrease, leading to higher production costs, increased consumer prices and potential food shortages. Many of the services provided by ecosystems are public goods and are either undervalued in markets or not currently priced in at all. As a result, they are often overlooked in economic decisions, which has significant consequences for the natural world. The Integrated Natural Capital Accounting (INCA) project, an integrated system of ecosystem accounts for the EU, estimated that in 2019, ten ecosystem services in the EU28 generated a total annual flow of benefits worth €234 billion.[2] Box 2 in this issue of the Economic Bulletin sets out in more detail the challenges of incorporating ecosystem services into measures of economic activity.

Recent research has demonstrated the highly non-linear nature of biodiversity loss.[3] While financial losses identified so far may seem limited, it is important to recognise that even seemingly minor events – such as the loss of a single species of bee – may have knock-on effects that have a substantial economic impact. Species

1 United Nations, System of Environmental Economic Accounting.

2 Eurostat, *Accounting for ecosystems and their services in the European Union* (INCA), 2021.

3 Giglio, S., Kuchler, T., Stroebel, J. and Wang, O., "The economics of biodiversity loss", paper presented at the ECB Forum on Central Banking "Monetary policy in an era of transformation", Sintra, Portugal, 2024.

loss can hold back economic productivity and make the provision of ecosystem services more fragile. This fragility can compromise economic resilience, lower growth opportunities and exacerbate our vulnerability to future biodiversity loss. So nature degradation can have important economic effects that central banks should be aware of to maintain price and financial stability. Indeed, negative news about biodiversity already increases financial market measures of risk, especially in countries where ecosystems are more depleted.[4]

Central banks can only achieve their objectives for price and financial stability if they understand and forecast how economic shocks and trends affect inflation, the broader economy and the financial system. Given the potential of climate change and nature degradation to cause significant economic disruptions, these environmental crises should be integrated into policy frameworks alongside factors such as globalisation, demographics and financial innovation. They pose severe risks that can affect the business cycle and there is an urgent need for thorough analysis and decisive policy action. During Hurricane Sandy, for example, coastal wetlands in the northeastern United States prevented USD 625 million in flood damages.[5] This illustrates how reduced capacity of ecosystems to protect against floods increases the likelihood that future extreme rainfall events will cause flooding, disrupting economic activity at the business cycle frequency. The loss of such ecosystem services can lead to greater damage, with long-lasting effects on the economy, infrastructure and financial stability of the region concerned.

This article discusses the implications of nature degradation and biodiversity loss for the economy and financial stability. It explores the drivers of biodiversity loss, its interconnection with climate change, and the material impact of these risks in the euro area. The article also highlights progress in quantifying nature-related risks, featuring a box with assessments by Dutch and French financial institutions. Finally, it outlines the next steps for managing these risks and their implications from a central bank perspective.

2 Drivers of biodiversity loss and the interconnection with climate change

Human activity impoverishes biodiversity and threatens the continued provision of crucial ecosystem services. Human demands have exceeded the planet's ability to sustainably provide ecosystem services, resulting in unprecedented rates of nature degradation and biodiversity loss.[6] Monitored wildlife populations across the world have declined by an average of 69% since 1970.[7] The global rate of species extinction is currently tens to hundreds of times higher than the average

4 ibid.

5 Narayan, S. et al., "The Value of Coastal Wetlands for Flood Damage Reduction in the Northeastern USA", *Scientific Reports*, 7, 9463, 2017.

6 United Nations, Kunming-Montreal Global Biodiversity Framework (CBD/COP/DEC/15/4), December 2022.

7 WWF – *World Wide Fund for Nature*, *Living Planet Report 2022 – Building a nature-positive society*, 2022.

over the past ten million years.[8] Europe is no exception, with over 80% of habitats now deteriorating.[9] The conservation status and habitat trends are worse for pollinators than for other species.

The primary drivers of biodiversity loss and ecosystem change are land and sea use, climate change, overexploitation of natural resources (living and non-living), pollution and invasive species.[10] Land and sea use includes the conversion of pristine habitats such as forests and wetlands to other purposes, including agricultural land and urban areas. Nearly 420 million hectares of forests have been lost worldwide since 1990, an area the size of the European Union. Climate change is a rising threat for biodiversity, already endangering one in six species globally. It also jeopardises ecosystems that serve as vital carbon stores and are crucial for meeting climate mitigation targets. Invasive species, introduced by human activity, can disrupt local ecosystems, displace native species and significantly affect the economy, the environment and public health. They play a key role in 60% of global plant and animal extinctions, leading to global economic costs exceeding $423 billion annually in 2019.[11]

Biodiversity loss can also amplify climate change and related risks, particularly when ecosystems that store carbon or provide adaptation benefits are degraded or lost. Restoring ecosystems can reduce climate-related risks. But the reverse is not always true: measures to combat climate change can benefit nature but may also contribute to its degradation. Examples include inadequately planned reforestation initiatives, such as monocultures, or the mining of minerals critical to the energy transition in biodiversity hotspots. These situations highlight the reinforcement of risks and potential trade-offs, necessitating an integrated approach to addressing climate and broader nature-related risks.[12]

With the scale of nature degradation becoming clearer by the day, efforts to halt and reverse nature loss are accelerating, which in turn also requires financial institutions to manage related economic and financial risks. In December 2022 the EU and 195 countries adopted the Kunming-Montreal Global Biodiversity Framework (GBF), which is seen as being as important for nature and biodiversity as the 2015 Paris Agreement has been for galvanising action against climate change. The GBF incorporates targets such as the protection of at least 30% of the world's land and water by 2030 and the reduction of harmful government subsidies by at least USD 500 billion per year. Additionally, it aims to mobilise at least USD 200 billion annually by 2030, from both public and private sources, to effectively support biodiversity strategies, such as encouraging private investments

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8 United Nations, "Species Extinction Rate Hundreds of Times Higher Than in Past 10 Million Years, Warns Secretary-General Observance Message, Urging Action to End Biodiversity Loss by 2030", press release, 22 May 2022.

9 European Environment Agency, "Conservation status of habitats under the EU Habitats Directive", 2021.

10 Brondízio, E.S., Settele, J., Díaz, S. and Ngo, H.T. (eds.), *Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*, IPBES secretariat, Bonn, Germany, 2019.

11 IPBES, *Thematic Assessment Report on Invasive Alien Species and their Control*, 2023.

12 Network for Greening the Financial System, *Nature-related Financial Risks: a Conceptual Framework to guide Action by Central Banks and Supervisors*, NGFS, July 2024.

and promoting innovative financial mechanisms. Importantly, it requires signatories to act to ensure that financial institutions "regularly monitor, assess, and transparently disclose their risks, dependencies and impacts on biodiversity including […] along their operations, supply and value chains and portfolios."[13]

To address the concerning rate of ecosystem degradation, the EU, under the umbrella of the European Green Deal, is implementing a range of targeted policies and legislation. Examples include the EU's biodiversity strategy for 2030, plans to enhance the EU Birds and Habitats Directives, and the EU Pollinators Initiative. In June 2024 the EU adopted the Nature Restoration Law, a regulation focusing on actions such as restoring degraded ecosystems, enhancing biodiversity, increasing green urban spaces and improving the resilience of natural habitats to climate change.[14] EU countries are required to submit their National Restoration Plans to the Commission within two years of the law coming into effect. These plans must outline their strategies for meeting the established targets. The Nature Restoration Law introduces transition risks as businesses will need to adapt to new regulations, but it also offers long-term benefits for financial stability through the preservation of ecosystems and their services.

3 Nature degradation and biodiversity loss pose material economic and financial risks

Nature-related risks can affect price and financial stability through multiple transmission channels. As in the case of the more familiar climate-related impacts, the physical risks from the threat that nature degradation poses to economic activities dependent on ecosystems can be distinguished from the transition risks arising from changes in policy, legal precedent, consumer preferences and market sentiment, etc. Litigation risk, as a subset of physical and transition risk, can arise from a variety of factors, including liability claims, policy and regulatory changes and misconduct.[15]

Physical risks occur in both acute and chronic forms and particularly affect sectors that are more dependent on specific ecosystem services (Figure 1). Acute degradation is abrupt, arising for instance from forest fires, oil spills and pests. Chronic degradation, such as land degradation that eventually renders cropland unsuitable for cultivation, accumulates over time. Distinguishing between acute and chronic impacts can be difficult, since the various elements in nature are strongly interconnected, leading to compounding effects and tipping points which are hard to

13 GBF Target 15: Businesses Assess, Disclose and Reduce Biodiversity-Related Risks and Negative Impacts.

14 European Commission, "Nature Restoration Law: A Regulation supporting the restoration of ecosystems for people, the climate and the planet".

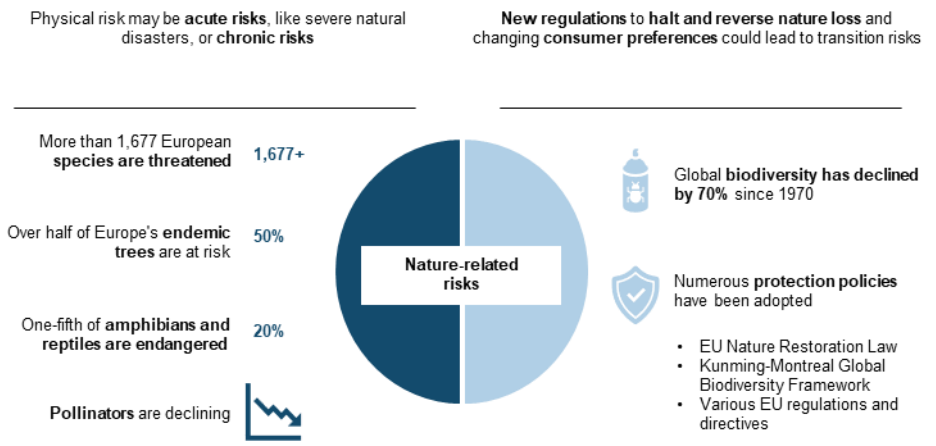
15 O'Connell, M., "Birth of a naturalist? Nature-related risks and biodiversity loss: legal implications for the ECB", *Legal Working Paper Series*, No 22, ECB, June 2024.

anticipate.[16] In this way, chronic degradation can result in a sudden major deterioration in ecosystem services at a particular point in time.

Transition risks particularly affect activities that cause nature degradation and are hence responsive to efforts aimed at protecting and restoring nature (Figure 1). Governments are stepping up their efforts to protect nature and biodiversity by strengthening regulations and policies that limit the exploitation of natural resources or ban certain products that trigger degradation. Technological innovation, new business models and changes in consumer or investor sentiment could similarly result in transition risks and costs as firms are forced to adapt.

Figure 1

Nature degradation, including biodiversity loss, leads to physical and transition risk for the European economy and the financial system



Source: ECB.

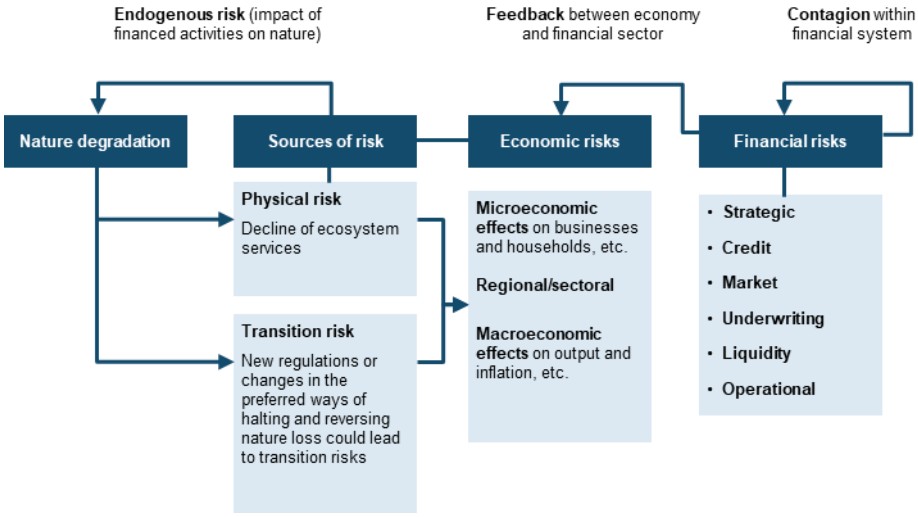
The materialisation of both physical and transition risks can have major implications for the European System of Central Bank's (ESCB's) price stability objective under the Treaty on the Functioning of the European Union and trigger losses that can threaten financial stability (Figure 2). These impacts can be direct, for example soil erosion and loss of pollinators impairing agricultural productivity and pushing up food prices, while also reducing land values and farmers' income. The impacts may also be indirect, as value chains transmit impacts occurring elsewhere in the world through to the domestic economy. For individual financial institutions or financial systems, economic impacts can subsequently translate into financial risks (including credit risks, market risks and underwriting risks) through financed activities. Such risks can be amplified by the compounding of individual risks or through financial contagion, and may well be endogenous, arising from the damage to nature caused by economic activity financed by these institutions. The macroeconomic effects of these nature-related risks could affect

16 Compound impacts in interconnected ecosystems occur when multiple environmental stresses interact, leading to more severe consequences than any single stressor would cause alone. See Lenton, T.M. et al. (eds.), *The Global Tipping Points Report 2023*, University of Exeter, United Kingdom, for evidence of tipping points in a variety of ecosystems, including forest dieback, dryland desertification, lake eutrophication, coral reef die-off and fishery collapse.

monetary policy implementation, including through disruption to financial stability. In addition, the even transmission of monetary policy impulses across the euro area could be impaired if nature-related risks crystallise differently across countries.

Figure 2

Transmission channels in the nature-related risk assessment framework



Note: This graph has been adapted from NGFS, "Nature-related Financial Risks: a Conceptual Framework to guide Action by Central Banks and Supervisors", July 2024.

Beyond the direct impact on the primary objective, the ESCB must also consider further Treaty provisions. Where nature protection directly contributes to climate crisis mitigation, it can be considered consistent with the ESCB's obligation to support the general economic policies in the EU.[17] Moreover, under Articles 7 and 11 of the Treaty, the ESCB must ensure consistency with Union law, integrate environmental protection requirements into its policies and activities, and refrain from making decisions that counter these requirements.

4 Progress in quantifying nature-related risks

Recent ECB analysis revealed that the euro area economy and financial system are critically dependent on nature and the ecosystem services it provides.[18] Out of 4.2 million non-financial corporations (NFCs) in the euro area, 72% are critically dependent on ecosystem services and would experience significant economic problems as a result of ecosystem degradation. For example, vegetation cover reduces soil erosion, prevents avalanches and landslides and provides flood and storm protection. Some 75% of all corporate loans in the euro area are granted to NFCs that are critically dependent on at least one ecosystem service (Chart 1). Loan portfolios may be significantly affected if environmental

17 O'Connell, M., op. cit.

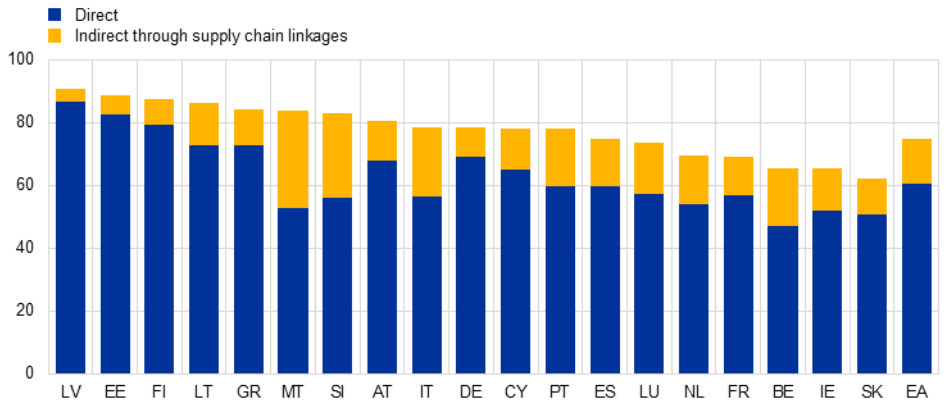
18 Boldrini, S., Ceglar, A., Lelli, C., Parisi, L. and Heemskerk, I., "Living in a world of disappearing nature: physical risk and the implications for financial stability", *Occasional Paper Series*, No 333, ECB, 2023.

degradation continues to follow current trends, with stronger vulnerabilities concentrated in certain regions and economic sectors.

Chart 1

Exposure of euro area banks' loan portfolios to nature-related risks

(December 2021, y-axis: percentages; share of loans with high dependency scores)



Sources: EXIOBASE, ENCORE, AnaCredit and ECB calculations.
Notes: The chart shows shares of loans with a high dependency score (greater than 0.7) for at least one ecosystem service. A loan is classified as highly dependent when the borrowing company has a sufficiently high direct dependency score (blue bar) or sufficiently high dependency when possible supply chain linkages are taken into account (yellow bar).

Further ECB analysis explores how the euro area economy is affecting nature and its ecosystem services and demonstrates the double materiality of nature-related risks. The euro area economy has significantly affected nature and biodiversity through two principal drivers: land use and climate change.[19] In total, euro area NFCs generate a local impact equivalent to the loss of around 365 million hectares of natural habitat in the euro area alone. This measure covers the loss of biodiversity resulting from (i) land conversion that has already been observed, and (ii) potential biodiversity loss in the next 100 years due to the global warming potential of greenhouse gas emissions in 2021.

Nature-related risks have a global reach, with euro area NFCs' supply chain demands extending their environmental impact worldwide. Euro area NFCs depend on raw materials sourced from outside Europe, promoting activities such as mining that contribute to nature degradation. Asia and Africa are the areas most affected, owing to high dependency of euro area NFCs on the supply of agricultural, mining and manufacturing products from these continents. In total, euro area NFCs cause around 217 million hectares of natural habitat loss outside the euro area. The combined European and global impact is equivalent to the loss of 582 million hectares of pristine natural areas worldwide (an area nearly 60% of the size of continental Europe). Given that this calculation excludes some other important drivers of biodiversity loss, such as unsustainable exploitation of natural resources and pollution, it is likely to underestimate the real figure for biodiversity loss.

The negative impact on biodiversity financed by euro area banks is highly concentrated (Chart 2). The ten banks with the greatest impact on nature are

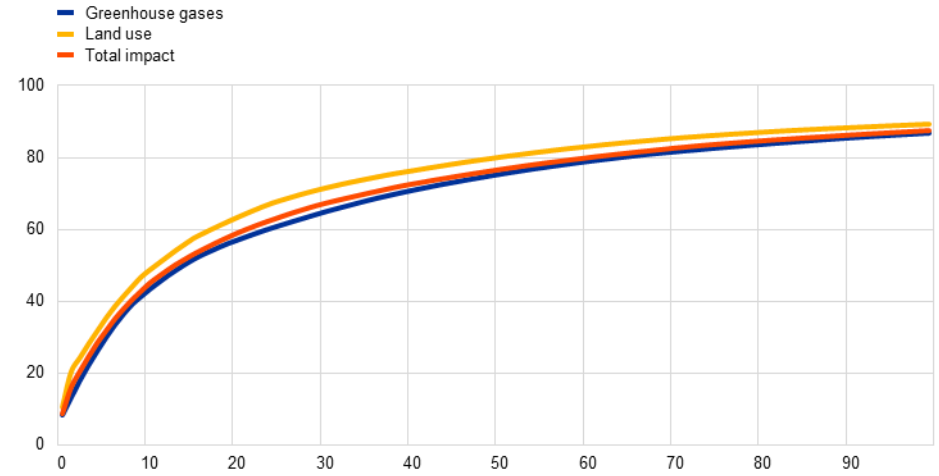
[19] Ceglar, A., Boldrini, S., Lelli, C., Parisi, L. and Heemskerk, I., "The impact of euro area economy and banks on biodiversity", *Occasional Paper Series*, No 335, ECB.

responsible for financing approximately 40% of the estimated worldwide global biodiversity loss caused by euro area NFCs. This share reaches around 90% for the 100 banks with the greatest impact – out of 2,500 included in the study – indicating a high concentration of financing activities with a negative impact on biodiversity and, in turn, transition risk. Legislation aimed at reversing nature degradation could bring financial repercussions for these financial institutions.

Chart 2

Concentration of impact on biodiversity financed by euro area banks

(December 2021, y-axis: percentages, x-axis: number of banks)



Sources: AnaCredit, EXIOBASE, BvD Electronic Publishing GmbH – a Moody's Analytics company, iBACH and Schipper et al.*.
Notes: Concentration of euro area biodiversity impact financed by the 100 banks with the greatest impact by type of pressure. Impacts are attributed from the borrower to banks according to the bank's share of the borrower's total indebtedness. Biodiversity losses are computed by summing the impact on mean species abundance of a borrower stemming from greenhouse gas emissions and the area of land used in the production of goods.
*) Schipper, A.M. et al., "Projecting terrestrial biodiversity intactness with GLOBIO 4", *Global Change Biology*, Vol. 26, No 2, 2019, pp. 760-771.

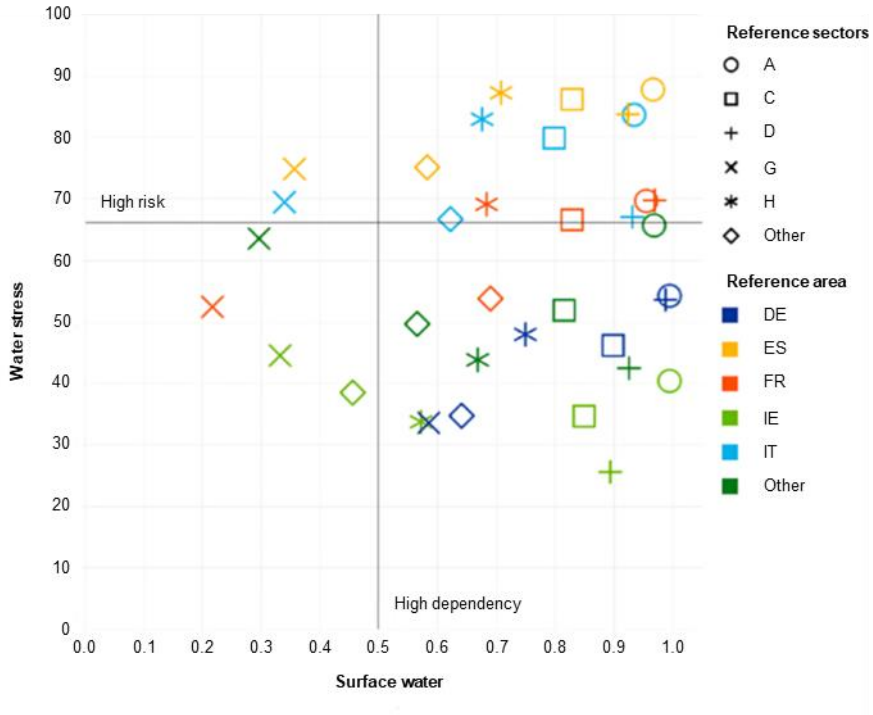
It is essential to understand how banks and the financial system at large are exposed to the amplification of climate-related risks due to degradation of ecosystem services. The highest risk for euro area banks is likely to materialise as a compound effect of both climate and nature. Chart 3, panel a) illustrates sectoral dependency on surface water provision and projected exposure to drought risk between 2030 and 2040. An economic sector's greater dependency on surface water provision can be compounded with a high risk of drought, which may amplify the impact on NFCs in those sectors and on the banks that lend to them. A large share of loans in southern Europe are granted to NFCs in sectors that are exposed to both risks (Chart 3, panel b).

Chart 3

Physical risk in climate and nature space

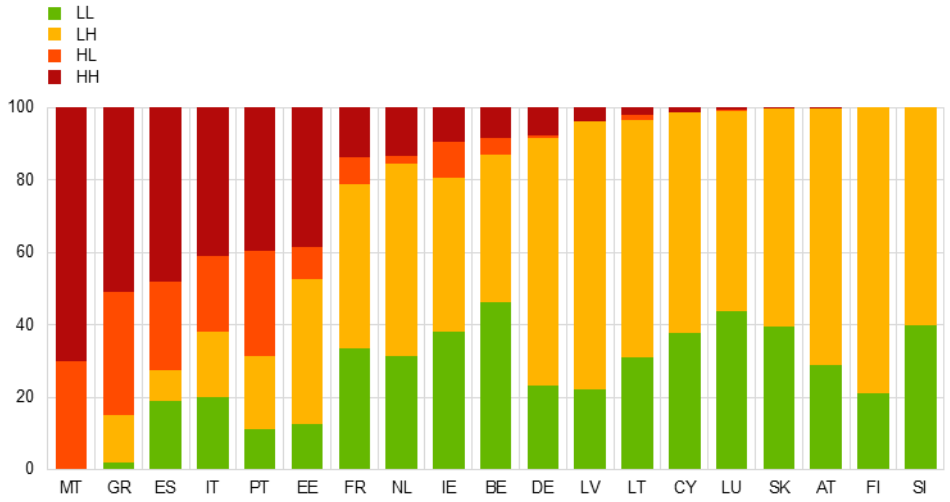
a) Average level of risk by country-sector

(y-axis: average level of water stress index for 2031-40, x-axis: average dependency score)



b) Share of loans by country of residence and level of risk of NFCs

(December 2021, y-axis: percentages; share of loans by level of risk)



Sources: AnaCredit, EXIOBASE, BvD Electronic Publishing GmbH – a Moody's Analytics company, iBACH and Alogoskoufis et al.*.
Notes: Panel a) shows the average level of water stress risk for 2031-40 (y-axis) and the average dependency score on surface water (x-axis) by country-sector (NACE level), with the following level of granularity: A (agriculture, forestry and fishing), C (manufacturing), D (electricity supply), G (wholesale and retail trade), H (transport and storage) and Other for the reference sectors. The water stress score measures the projected changes in drought-like patterns over time. Panel b) illustrates, for each euro area country, the share of loans to euro area NFCs based on their combined climate and nature risk levels. LL stands for low climate risk, low nature dependency, LH for low climate risk, high nature dependency, HL for high climate risk, low nature dependency and HH for high climate risk, high nature dependency.
*)Alogoskoufis, S. et al., "ECB economy-wide climate stress test", Occasional Paper Series, No 281, 2021.

ECB analysis takes a forward-looking perspective and identifies euro area banks' vulnerabilities to future biodiversity losses (Chart 4). If the world follows its current emission pathway and continues to exert significant pressure on biodiversity (adverse scenario), losses for euro area banks could be on average almost three times higher than they would be under a Paris-aligned, resource-efficient future scenario (sustainability scenario). The analysis shows that the biggest losses would occur in Germany, given how dependent the country's strongest economic sectors, such as manufacturing, are on biodiversity levels. Additional findings of the analysis show that banks with lower capital are more exposed to biodiversity risk. Smaller banks tend to have more concentrated portfolios and focus on smaller regions, while larger banks are better able to diversify.[20]

Non-bank financial institutions (NBFIs) are also exposed to the economic consequences of nature degradation and biodiversity loss. The European Insurance and Occupational Pensions Authority (EIOPA) reports that approximately 30% of insurers' investments are critically dependent on nature and the ecosystem services it provides.[21] The IPBES Global Assessment[22] and the Dasgupta Review[23] emphasise that by incorporating biodiversity considerations into their investment decisions, NBFIs can play a pivotal role in mitigating the risks associated with nature degradation while promoting the conservation of ecosystems.

Other Eurosystem research highlights the growing recognition among central banks and supervisors of the significant macroeconomic and financial stability risks posed by nature degradation. De Nederlandsche Bank (DNB) revealed that a total of €510 billion of investments by Dutch banks, pension funds and insurers (representing 36% of the portfolio of more than €1,400 billion under review) are critically dependent on ecosystem services.[24] DNB also assessed potential transition risks, finding significant exposures to nitrogen-emitting sectors and global ecosystem protection policies. Similarly, the Banque de France found that 42% of the value of securities held by French financial institutions comes from issuers that are critically dependent on ecosystem services, with a biodiversity footprint comparable to the loss of 13 million hectares of pristine nature.[25] Assessments for the Irish and Lithuanian financial sectors have reported similar findings, underscoring the widespread relevance of nature-related financial risks.[26] Box 1 explores the ongoing research in more detail.

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20 Boldrini, S. et al., op. cit. See Chapter 4.2, Chart 18.

21 "EIOPA Staff paper on nature-related risks and impacts for insurance", EIOPA-23/247, 2023.

22 Brondízio, E.S. et al., op. cit.

23 Dasgupta, P., "The Economics of Biodiversity: The Dasgupta Review", HM Treasury, 2021.

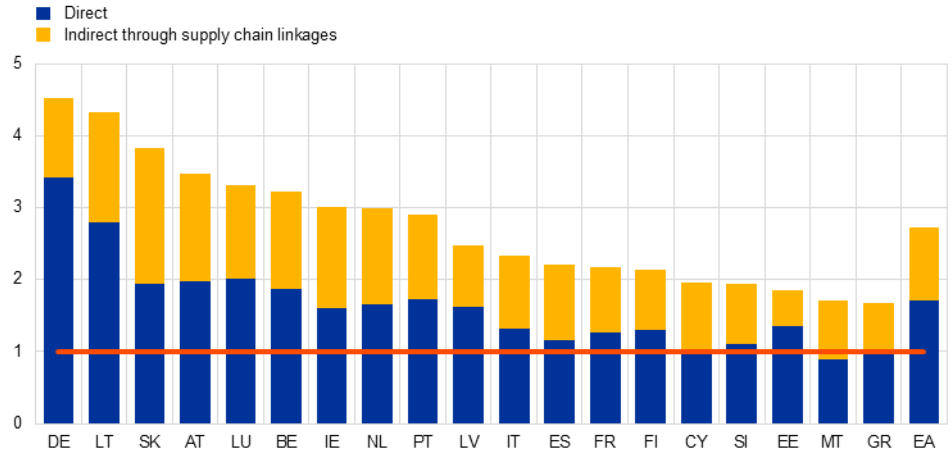
24 van Toor, J., Piljic, D., Schellekens, G., van Oorschot, M. and Kok, M., *Indebted to nature: Exploring biodiversity risks for the Dutch financial sector,* De Nederlandsche Bank/ Planbureau voor de Leefomgeving, 2020.

25 Svartzman, R., Espagne, E., Gauthey, J., Hadji-Lazaro, P., Salin, M., Allen, T., Berger, J., Calas, J., Godin, A. and Vallier, A., "A 'Silent Spring' for the Financial System? Exploring Biodiversity-Related Financial Risks in France", *Working Paper Series*, No 826, Banque de France, August 2021.

26 KPMG, "The Nature of Finance. Assessing the nature-related risks and opportunities for the Irish Financial Sector*", 2023; Borges, S. and Lau*rinaityte, N.M., "Assessing Nature-Related Financial Risks: The Case of Lithuania", *Occasional Paper Series*, No 48, Lietuvos bankas, 2023.

Chart 4

Ratio of changes in expected losses of banks' credit portfolios between adverse biodiversity and sustainability scenarios by 2050



Sources: EXIOBASE, ENCORE, AnaCredit and ECB calculations.
Notes: Ratio of changes in banks' expected losses between the adverse biodiversity scenario (based on the Intergovernmental Panel on Climate Change scenario SSP5 x RCP8.5) and the sustainability scenario (based on SSP1 x RCP2.6). The adverse scenario is characterised by strong economic growth, a consumption-oriented and energy-intensive society and highly intensive agricultural practices, and is linked with a high level of climate change. On the other hand, the sustainability scenario is characterised by relatively low population growth, minimal consumption growth due to less resource-intensive lifestyles (e.g. reduced meat consumption) and more resource-efficient technologies, stricter regulation of land-use changes through the expansion of protected areas and substantial improvements in agricultural productivity, which facilitate reforestation. This scenario is linked to low level of climate change. Expected losses are initially computed at borrower-lender level using mean species abundance changes as a shock. The shock is then multiplied by the dependency score on ecosystem services of the borrower computed using EXIOBASE and ENCORE and the uncovered amount of loan issued to the borrower. The results are aggregated at country level using the amount of loans as weights.

Box 1

Nature-related risk assessment for Dutch and French financial institutions

Prepared by Marie Gabet and Sjoerd van der Zwaag

Phase 1: identifying sources of risk

Both De Nederlandsche Bank (DNB) and the Banque de France have analysed the exposure of their national financial systems to ecosystem services in order to better understand their impacts and dependencies.

DNB's study finds that 36% of the portfolios of Dutch financial institutions examined have a critical dependency on ecosystem services, but this only reflects direct dependencies on nature.[27] The Banque de France's study of securities held by French financial institutions improves on this analysis by including indirect dependencies.[28] It provides estimates based on data from the ECB's Securities Holding Statistics by Sector (SHSS) dataset, focusing on listed shares and debt securities issued by non-financial corporations and held by French financial institutions at the end of 2019. It finds that 42% of value comes from issuers that are critically dependent on one or more ecosystem services, such as water provision, erosion control or flood and storm protection.[29]

27 van Toor, J. et al., op. cit.

28 Svartzman, R. et al., op. cit.

29 ibid.

Disruption of these ecosystem services would likely result in substantial disruption to production, indicating that the portfolio could be highly vulnerable to potential shocks.

The study also finds that the economic activities financed by French financial institutions have a substantial impact on nature, comparable to the estimated loss of at least 13 million hectares of pristine nature – equivalent to the complete degradation of land covering a quarter of mainland France. This impact comes mainly from pressure exerted by changes to land use. Several economic sectors contribute to this footprint, including the production of chemicals, processing of dairy products and manufacture and distribution of gas.

DNB also conducted a pilot study using an integrated LEAP (locate, evaluate, assess and prepare) approach developed by the Taskforce on Nature-related Financial Disclosures [30] on two of its own-account equity portfolios.[31] The study focuses on the electric utilities sector, combining asset-level location data and individual financial risk scores to gain insights into nature-related risks at company and portfolio levels. It finds that while the energy production mix in its Paris-aligned mandate is less carbon-intensive than the passively managed broad market portfolio, this does not substantially lower its associated nature-related financial risks. This is mainly because the energy production mix has a higher exposure to hydroelectric power, which has low carbon intensity but relatively high impacts and dependencies on water. Instead of carbon intensity, differences in risk are mainly driven by the location of power plants (for example, being close to important ecosystems).

Phase 2: assessing economic and financial risks

Moving beyond these initial studies, more recent work has aimed to better quantify the potential economic impact of nature-related financial risks. A study of a French transition policy aiming for "no net land take" by 2050 and a halved rate of land take by 2031 finds differences in vulnerability across sectors.[32] Some of the sectors contributing most significantly to land take, such as wholesale and retail trade, have a relatively higher adaptive capacity and are therefore less vulnerable. By contrast, sectors like agriculture and accommodation and food services would be hardest hit. Some sectors producing public goods (waste and water treatment) could also face financial difficulties.

The impact of nature-related risks depends on the speed of further nature degradation and policies enacted to reverse it or slow it down. Analysis by DNB explores the economic and financial stability risks associated with five nature scenarios (Figure).[33] The global scenario of ending all explicit and implicit fossil fuel subsidies suddenly and fully, and without considering the offsetting effect of fiscal stimulus, has a significant peak impact on GDP of a 3% decline in year two. In the Dutch nitrogen scenario, in which insufficient measures are taken to reduce the nitrogen footprint, the peak impact on Dutch GDP is a decline of 1.4% in the second year after the shock. By contrast, the scenario of reducing agricultural production sufficiently to tackle the nitrogen problem entails a peak GDP decline of 0.7%. Preliminary estimations of the credit losses for Dutch banks under the two

30 TNFD, *Guidance on the identification and assessment of nature-related issues: The LEAP approach*, September 2023.

31 Tiems, I., Smid, V. and Ginther, C., *Nature-related financial risks in our own account investments: An exploratory case study and deep dive in electric utilities*, DNB, February 2024.

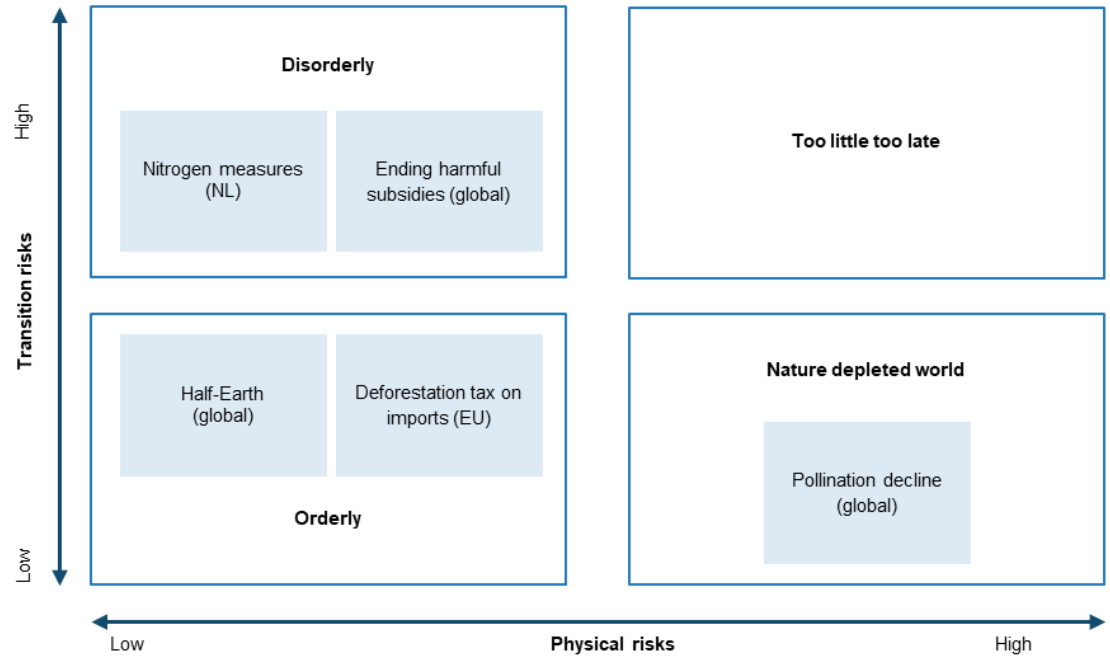
32 L'Estoile, E., Salin, M., Who Takes the Land? Quantifying the Use of Built-Up Land by French Economic Sectors to Assess Their Vulnerability to the 'No Net Land Take' Policy. Banque de France Working Paper 941, 2024.

33 Prodani, J. et al., "The economic and financial stability repercussions of nature degradation for the Netherlands: Exploring scenarios with transition shocks. A first exploration", *Occasional Studies*, Vol. 21-2, De Nederlandsche Bank, 2023.

scenarios associated with the largest economic impact find limited system-wide capital depletions of between 5 and 30 basis points. These preliminary results suggest that it should be possible to enact nature conservation policies without substantially affecting the Dutch economy and financial stability.

Figure

Taxonomy of nature-related scenarios



Source: Prodani et al., op. cit.
Note: The Half-Earth scenario involves preserving half the Earth for nature conservation.

The modelling of the economic impacts of nature-related risks is currently in its infancy, and the DNB study[34] has several limitations, including (i) studying policy measures in isolation, whereas more realistic scenarios would account for multiple shocks at the same time; (ii) the use of a computable general equilibrium model is likely to underestimate short-term stresses; (iii) many interdependencies are not yet captured, including interactions with climate; and (iv) heterogeneity of effects across sectors is not always captured in economic models and is never captured in the stress-testing models used. Taken together, the uncertainty associated with nature-related risks and the exploratory methodologies applied in this study point to an underestimation of impacts on the real economy and on financial stability.

5 Managing nature-related risks: next steps

A systematic, proactive and comprehensive approach to quantifying and assessing the impact of escalating nature-related economic and financial risks on price and financial stability is required. Integrating climate and nature

[34] ibid.

considerations into the ESCB's functions involves capturing a complex set of dynamic interactions between biodiversity, ecosystem functioning, the economy and the financial system. The steps for developing these approaches should be (i) identifying the most material sources of physical and transition risk from a macroeconomic, microprudential and macroprudential perspective; (ii) evaluating economic risks; and (iii) assessing risks to, from and within the financial system.

Economic and financial models currently employed to assess climate change impacts do not fully capture all nature-related issues and therefore underestimate the likely cumulative impact and subsequent risks. Given the multidimensionality of nature-related risks, a broader spectrum of nature-related challenges needs to be assessed alongside climate concerns. Such enhanced assessment will require (i) gaps in nature-related data to be addressed and financial data disclosures to be improved; (ii) integrated climate and nature scenarios to be developed to enable forward-looking risk assessment; (iii) modelling capabilities to be enhanced to evaluate the localised impacts of nature loss on both regional and global scales; and (iv) quantitative risk assessment frameworks, such as integrated climate and nature stress tests, to be created.

Advancing from exposure analysis to risk assessment will be essential for a more nuanced understanding of the implications for the ESCB's mandated objectives. To achieve this, data-driven methods and modelling tools need to be further developed. Spatial data granularity is very important in order to accurately assess specific biomes, regions and sectors. The inclusion in scenarios and assessment frameworks of more sectoral and geographical granularity, as well as multiple metrics, in order to capture non-linear and indirect impacts is key to evaluating indirect and cascading impacts throughout global value chains. Furthermore, a joint research effort from the legal and financial perspective is required to understand the repercussions of legislative changes for financial institutions, while acknowledging the global nature of these risks and the need for international cooperation. The Network for Greening the Financial System (NGFS) Taskforce on Biodiversity Loss and Nature-related risks is making significant progress on integrating nature-related risks into the operations of central banks and financial supervisors.[35]

Banking supervisors are already taking nature-related risks into consideration, and banks themselves are increasingly concluding that nature degradation and biodiversity loss pose material risks.[36] The precautionary approach calls for proactive measures, even when faced with imperfect data and methodologies. As with climate-related risks, nature-related risks can lead to the impairment of assets and collateral, lower corporate profitability and impair insurability, affecting traditional financial risk categories. The increasing availability of data, coupled with the development of knowledge alongside scientists and regulators, provides a solid foundation for supervisors to take timely action to integrate nature-related risks into

35 NGFS publishes two complementary reports on nature-related risks, press release, NGFS, 2 July 2024.

36 ECB Banking Supervision, "Guide on climate-related and environmental risks. Supervisory expectations relating to risk management and disclosure", 2020; Elderson, F., "The economy and banks need nature to survive", *The ECB Blog*, 8 June 2023.

their policy frameworks.[37] This is especially critical in addressing sectors such as agriculture, forestry, mining and energy which already have the most detrimental impact on nature and biodiversity and for which data and methodologies are relatively advanced and can facilitate further action.

Furthermore, central banks might consider incorporating nature-related considerations into their corporate sustainability plans and actions. This could involve integrating nature into reserve management strategies and using indicators to monitor identified risks. Given the significant interplay between climate change and nature degradation, aligning climate action plans with nature conservation principles, consistent with the Global Biodiversity Framework, could be beneficial. This holistic strategy highlights the potential role of central banks in managing nature-related financial risks, balancing immediate actions with long-term strategic planning. ECB Banking Supervision and Eurosystem central banks have already launched some initiatives (Box 1).

A key focus in the ECB's climate and nature plan for 2024-2025 is to further explore the impact of nature-related risks on our economy, in addition to better understanding the physical impacts of climate change.[38] The complexity of environmental challenges and the potential risks they pose to both the ECB and national central banks highlight the need for a collaborative effort with the banking system while fostering coordinated initiatives with the scientific community. Various stakeholders, including policymakers and researchers, will need to be brought together to ensure the comprehensive and effective integration of nature considerations into the central banking framework.

6 Conclusions

The risks arising from nature degradation and biodiversity loss pose potentially significant challenges to the ESCB's Treaty-based objective of maintaining price and financial stability. Addressing these challenges requires a systematic, proactive and comprehensive approach to quantifying and assessing the escalating nature-related economic and financial risks. The accelerating rate of nature degradation underscores the urgency of these considerations, and neglecting them could jeopardise critical ecological stability and economic resilience. If we are to avoid the unpredictable knock-on effects of biodiversity loss, policymakers and financial institutions should fully incorporate the costs of nature degradation in their decision-making processes.

37 European Commission, op. cit.

38 ECB, Climate and nature plan 2024-2025 at a glance.

Statistics

Contents

Further information

Data published by the ECB can be accessed from the ECB Data Portal:	https://data.ecb.europa.eu/
Detailed tables are available in the ”Publications” section of the ECB Data Portal:	https://data.ecb.europa.eu/publications
Methodological definitions, general notes and technical notes to statistical tables can be found in the ”Methodology” section of the ECB Data Portal:	https://data.ecb.europa.eu/methodology
Explanations of terms and abbreviations can be found in the ECB’s statistics glossary:	https://www.ecb.europa.eu/home/glossary/html/glossa.en.html

Conventions used in the tables

-	data do not exist/data are not applicable
.	data are not yet available
...	nil or negligible
(p)	provisional
s.a.	seasonally adjusted
n.s.a.	non-seasonally adjusted

1 External environment

1.1 Main trading partners, GDP and CPI

	GDP [1] (period-on-period percentage changes)						CPI (annual percentage changes)						
							OECD countries						
	G20	United States	United Kingdom	Japan	China	Memo item: euro area	Total	excluding food and energy	United States	United Kingdom (HICP)	Japan	China	Memo item: euro area [2] (HICP)
	1	2	3	4	5	6	7	8	9	10	11	12	13
2021	6.6	5.8	8.7	2.7	8.4	6.2	4.0	3.0	4.7	2.6	-0.2	0.9	2.6
2022	3.2	1.9	4.3	1.2	3.0	3.3	9.5	6.8	8.0	9.1	2.5	2.0	8.4
2023	3.2	2.6	0.1	1.7	5.2	0.4	6.9	7.0	4.1	7.4	3.2	0.2	5.4
2023 Q3	0.9	1.2	-0.1	-1.1	1.8	0.0	6.4	7.0	3.5	6.7	3.2	-0.1	5.0
Q4	0.7	0.8	-0.3	0.1	1.2	0.1	5.9	6.8	3.2	4.2	2.9	-0.3	2.7
2024 Q1	0.9	0.4	0.7	-0.6	1.6	0.3	5.7	6.5	3.2	3.5	2.6	0.0	2.6
Q2	.	0.7	0.6	0.7	.	0.2	5.8	6.1	3.2	2.1	2.7	0.3	2.5
2024 Mar.	-	-	-	-	-	-	5.8	6.4	3.5	3.2	2.7	0.1	2.4
Apr.	-	-	-	-	-	-	5.7	6.2	3.4	2.3	2.5	0.3	2.4
May	-	-	-	-	-	-	5.9	6.1	3.3	2.0	2.8	0.3	2.6
June	-	-	-	-	-	-	5.6	5.9	3.0	2.0	2.8	0.2	2.5
July	-	-	-	-	-	-	5.4	5.5	2.9	2.2	2.8	0.5	2.6
Aug.	-	-	-	-	-	-	.	.	.	.	.	.	2.2

Sources: Eurostat (col. 6, 13); BIS (col. 9, 10, 11, 12); OECD (col. 1, 2, 3, 4, 5, 7, 8).
1) Quarterly data seasonally adjusted; annual data unadjusted.
2) Data refer to the changing composition of the euro area.

1.2 Main trading partners, Purchasing Managers' Index and world trade

	Purchasing Managers' Surveys (diffusion indices; s.a.)									Merchandise imports [1]		
	Composite Purchasing Managers' Index						Global Purchasing Managers' Index [2]					
	Global [2]	United States	United Kingdom	Japan	China	Memo item: euro area	Manufacturing	Services	New export orders	Global	Advanced economies	Emerging market economies
	1	2	3	4	5	6	7	8	9	10	11	12
2021	-	-	-	-	-	-	-	-	-	11.1	9.3	12.9
2022	-	-	-	-	-	-	-	-	-	3.1	4.6	1.6
2023	52.0	51.2	51.2	51.8	52.5	49.7	49.8	52.3	47.6	-0.5	-3.8	2.7
2023 Q3	51.5	50.8	49.3	52.3	51.5	47.5	49.3	51.4	47.0	0.3	-0.2	0.8
Q4	51.1	50.8	50.5	50.0	51.4	47.2	49.4	50.9	47.9	0.7	0.8	0.6
2024 Q1	52.6	52.2	52.9	51.3	52.6	49.2	51.1	52.4	49.2	-0.2	0.4	-0.7
Q2	53.2	53.5	53.1	51.5	53.2	51.6	52.1	53.3	50.1	1.5	2.1	1.1
2024 Mar.	52.6	52.1	52.8	51.7	52.7	50.3	51.9	52.4	49.5	-0.2	0.4	-0.7
Apr.	52.5	51.3	54.1	52.3	52.8	51.7	51.4	52.7	50.4	1.9	1.9	1.8
May	54.0	54.5	53.0	52.6	54.1	52.2	52.7	54.0	50.4	1.3	1.4	1.2
June	53.2	54.8	52.3	49.7	52.8	50.9	52.3	53.1	49.3	1.5	2.1	1.1
July	53.0	54.3	52.8	52.5	51.2	50.2	50.2	53.3	49.3	.	.	.
Aug.	53.2	54.6	53.8	52.9	51.2	51.0	49.9	53.8	48.4	.	.	.

Sources: S&P Global Market Intelligence (col. 1-9); CPB Netherlands Bureau for Economic Policy Analysis and ECB calculations (col. 10-12)
1) Global and advanced economies exclude the euro area. Annual and quarterly data are period-on-period percentages; monthly data are 3-month-on-3-month percentages. All data are seasonally adjusted.
2) Excluding the euro area.

2 Economic activity

2.1 GDP and expenditure components

(quarterly data seasonally adjusted; annual data unadjusted)

	GDP											
	Total	Domestic demand								External balance [1]		
		Total	Private consumption	Government consumption	Gross fixed capital formation				Changes in inventories [2]	Total	Exports [1]	Imports [1]
					Total	Total construction	Total machinery	Intellectual property products				
	1	2	3	4	5	6	7	8	9	10	11	12
Current prices (EUR billions)												
2021	12,577.5	12,070.1	6,439.2	2,777.5	2,715.2	1,396.8	773.4	538.1	138.2	494.1	6,113.5	5,606.2
2022	13,652.2	13,363.9	7,219.6	2,940.7	2,986.7	1,547.6	855.5	576.2	216.9	241.3	7,402.6	7,114.3
2023	14,499.9	13,979.2	7,721.2	3,086.3	3,130.9	1,605.3	903.4	614.6	40.9	530.8	7,388.5	6,867.8
2023 Q3	3,638.1	3,500.2	1,946.1	776.7	780.3	401.0	227.4	150.0	-3.0	141.2	1,830.1	1,692.2
Q4	3,680.5	3,544.0	1,956.7	788.8	795.0	401.5	223.5	168.2	3.5	134.3	1,843.3	1,706.8
2024 Q1	3,716.8	3,533.6	1,978.0	795.8	781.0	403.7	220.7	154.6	-21.3	182.2	1,865.1	1,681.8
Q2	3,739.6	3,541.1	1,984.3	803.2	765.3	402.5	221.1	139.7	-11.6	.	1,903.0	1,704.5
as percentage of GDP												
2023	100.0	96.4	53.2	21.3	21.6	11.1	6.2	4.2	0.3	3.7	-	-
Chain-linked volumes (prices for the previous year)												
quarter-on-quarter percentage changes												
2023 Q3	0.0	-0.1	0.3	0.7	0.0	-0.5	0.2	1.0	-	-	-1.2	-1.5
Q4	0.1	0.1	0.0	0.7	1.0	-0.6	-2.8	10.7	-	-	0.3	0.5
2024 Q1	0.3	-0.5	0.3	0.1	-1.8	0.1	-0.4	-8.0	-	-	1.1	-0.6
Q2	0.2	-0.3	-0.1	0.6	-2.2	-0.5	0.1	-9.8	-	-	1.4	0.5
annual percentage changes												
2021	6.2	5.0	4.7	4.3	3.5	5.7	8.0	-6.6	-	-	11.4	8.9
2022	3.3	3.5	4.9	1.1	1.9	0.2	4.0	3.5	-	-	7.3	8.1
2023	0.4	0.2	0.7	1.2	0.9	-1.3	2.1	4.7	-	-	-0.5	-0.9
2023 Q3	0.0	-0.3	-0.1	1.9	0.2	-0.6	1.4	0.8	-	-	-2.4	-3.1
Q4	0.2	0.2	0.9	1.9	1.3	-0.9	-1.0	10.4	-	-	-2.3	-2.4
2024 Q1	0.5	0.0	0.9	1.7	-1.0	-1.7	-3.0	4.0	-	-	-0.8	-1.9
Q2	0.6	-0.8	0.5	2.1	-3.0	-1.6	-2.9	-7.1	-	-	1.7	-1.1
contributions to quarter-on-quarter percentage changes in GDP; percentage points												
2023 Q3	0.0	-0.1	0.1	0.2	0.0	-0.1	0.0	0.0	-0.4	0.1	-	-
Q4	0.1	0.1	0.0	0.1	0.2	-0.1	-0.2	0.5	-0.3	-0.1	-	-
2024 Q1	0.3	-0.5	0.2	0.0	-0.4	0.0	0.0	-0.4	-0.3	0.8	-	-
Q2	0.2	-0.3	0.0	0.1	-0.5	-0.1	0.0	-0.4	0.0	0.5	-	-
contributions to annual percentage changes in GDP; percentage points												
2021	6.2	5.0	2.5	1.0	0.9	0.7	0.5	-0.3	0.6	1.4	-	-
2022	3.3	3.4	2.6	0.3	0.4	0.0	0.2	0.2	0.2	-0.1	-	-
2023	0.4	0.2	0.4	0.3	0.2	-0.1	0.1	0.2	-0.6	0.2	-	-
2023 Q3	0.0	-0.3	-0.1	0.4	0.0	-0.1	0.1	0.0	-0.7	0.4	-	-
Q4	0.2	0.2	0.5	0.4	0.3	-0.1	-0.1	0.4	-0.9	0.0	-	-
2024 Q1	0.5	0.0	0.5	0.4	-0.2	-0.2	-0.2	0.2	-0.6	0.5	-	-
Q2	0.6	-0.8	0.3	0.5	-0.6	-0.2	-0.2	-0.3	-0.9	1.4	-	-

Sources: Eurostat and ECB calculations.
1) Exports and imports cover goods and services and include cross-border intra-euro area trade.
2) Including acquisitions less disposals of valuables.

2 Economic activity

2.2 Value added by economic activity

(quarterly data seasonally adjusted; annual data unadjusted)

	Gross value added (basic prices)											
	Total	Agriculture, forestry and fishing	Manufacturing energy and utilities	Construction	Trade, transport, accommodation and food services	Information and communication	Finance and insurance	Real estate	Professional, business and support services	Public administration, education, health and social work	Arts, entertainment and other services	Taxes less subsidies on products
	1	2	3	4	5	6	7	8	9	10	11	12
Current prices (EUR billions)												
2021	11,232.0	185.8	2,173.4	589.7	2,014.9	601.8	518.3	1,267.8	1,353.6	2,195.9	330.7	1,345.5
2022	12,273.1	217.3	2,432.8	632.7	2,345.7	629.0	535.8	1,323.1	1,462.5	2,315.2	378.9	1,379.1
2023	13,117.8	224.3	2,593.3	702.2	2,445.5	676.4	602.2	1,450.0	1,570.4	2,442.2	411.3	1,382.1
2023 Q3	3,284.8	55.4	643.5	176.5	611.1	169.9	152.2	363.6	395.0	614.0	103.5	353.3
Q4	3,325.3	55.1	648.3	178.6	618.7	171.8	154.0	368.6	402.0	624.6	103.7	355.1
2024 Q1	3,350.5	56.3	636.8	181.4	624.6	173.8	159.0	373.3	406.7	632.8	105.6	366.3
Q2	3,370.5	56.5	632.3	181.1	633.4	176.0	160.9	376.7	411.6	635.8	106.1	369.1
as percentage of value added												
2023	100.0	1.7	19.8	5.4	18.6	5.2	4.6	11.1	12.0	18.6	3.1	-
Chain-linked volumes (prices for the previous year)												
quarter-on-quarter percentage changes												
2023 Q3	0.0	-1.2	-1.0	-0.3	0.0	0.6	-0.2	0.2	0.4	0.4	1.8	0.5
Q4	0.4	0.3	0.2	0.2	0.1	1.7	-0.5	0.5	1.0	0.6	-1.6	-2.9
2024 Q1	0.2	0.8	-0.6	0.4	0.6	0.2	1.1	0.5	0.4	0.1	1.0	1.2
Q2	0.2	-0.9	-0.1	-1.0	0.5	0.4	0.3	0.3	0.4	0.4	-0.2	0.5
annual percentage changes												
2021	6.1	2.1	8.3	3.5	8.0	10.1	5.5	2.2	8.7	3.4	4.8	7.3
2022	3.6	-1.2	0.4	-1.4	8.7	5.5	-2.0	2.2	5.0	2.7	15.9	1.2
2023	0.7	0.3	-1.6	1.1	0.1	4.7	0.1	1.5	1.8	1.0	4.5	-2.4
2023 Q3	0.2	-0.5	-2.2	1.7	-1.0	3.5	0.6	1.3	1.6	0.6	3.4	-1.6
Q4	0.6	-0.6	-2.4	2.1	0.0	5.0	-0.3	1.5	2.2	1.2	3.4	-3.5
2024 Q1	0.7	-0.2	-1.8	-0.2	1.0	3.6	0.7	1.1	2.4	1.3	1.8	-1.4
Q2	0.8	-1.0	-1.5	-0.7	1.2	2.8	0.6	1.5	2.3	1.4	1.0	-0.8
contributions to quarter-on-quarter percentage changes in value added; percentage points												
2023 Q3	0.0	0.0	-0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	-
Q4	0.4	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	-0.1	-
2024 Q1	0.2	0.0	-0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	-
Q2	0.2	0.0	0.0	-0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	-
contributions to annual percentage changes in value added; percentage points												
2021	6.1	0.0	1.6	0.2	1.4	0.5	0.3	0.3	1.0	0.7	0.2	-
2022	3.6	0.0	0.1	-0.1	1.6	0.3	-0.1	0.2	0.6	0.5	0.5	-
2023	0.7	0.0	-0.3	0.1	0.0	0.2	0.0	0.2	0.2	0.2	0.1	-
2023 Q3	0.2	0.0	-0.4	0.1	-0.2	0.2	0.0	0.1	0.2	0.1	0.1	-
Q4	0.6	0.0	-0.5	0.1	0.0	0.3	0.0	0.2	0.3	0.2	0.1	-
2024 Q1	0.7	0.0	-0.4	0.0	0.2	0.2	0.0	0.1	0.3	0.2	0.1	-
Q2	0.8	0.0	-0.3	0.0	0.2	0.1	0.0	0.2	0.3	0.3	0.0	-

Sources: Eurostat and ECB calculations.

2 Economic activity

2.3 Employment [1)]

(quarterly data seasonally adjusted; annual data unadjusted)

	Total	By employment status		By economic activity									
		Employees	Self-employed	Agriculture forestry and fishing	Manufacturing, energy and utilities	Construction	Trade, transport, accommodation and food services	Information and communication	Finance and insurance	Real estate	Professional, business and support services	Public administration, education, health and social work	Arts, entertainment and other services
	1	2	3	4	5	6	7	8	9	10	11	12	13
Persons employed													
as a percentage of total persons employed													
2021	100.0	86.2	13.8	3.0	14.3	6.4	24.0	3.2	2.4	1.0	13.9	25.1	6.7
2022	100.0	86.3	13.7	2.9	14.2	6.4	24.2	3.3	2.3	1.0	14.0	25.0	6.7
2023	100.0	86.4	13.6	2.8	14.1	6.4	24.3	3.4	2.3	1.0	14.0	25.0	6.6
annual percentage changes													
2021	1.4	1.6	0.4	0.3	0.0	3.3	0.2	4.4	0.5	0.9	2.9	2.1	1.1
2022	2.2	2.4	1.2	-1.0	1.2	3.3	3.2	5.9	-0.2	3.6	2.9	1.6	1.6
2023	1.4	1.5	1.0	-1.2	0.9	1.4	1.8	3.5	0.9	2.1	1.7	1.4	1.1
2023 Q3	1.4	1.5	0.9	-0.9	0.7	1.3	2.1	2.5	1.1	1.4	1.5	1.4	0.7
Q4	1.2	1.2	1.1	-0.5	0.4	1.6	1.2	2.7	0.9	1.3	1.2	1.5	1.3
2024 Q1	1.0	1.0	0.6	-0.5	0.1	1.2	1.2	2.2	0.7	0.0	1.0	1.5	0.3
Q2	0.9	0.9	0.7	-1.0	0.6	1.1	0.5	1.7	0.2	-1.4	0.7	1.6	1.1
Hours worked													
as a percentage of total hours worked													
2021	100.0	81.6	18.4	4.1	15.0	7.4	24.1	3.5	2.5	1.1	13.9	22.6	5.9
2022	100.0	81.6	18.4	3.9	14.6	7.4	25.1	3.5	2.4	1.1	14.0	22.0	6.0
2023	100.0	81.8	18.2	3.8	14.5	7.4	25.1	3.6	2.4	1.1	14.0	22.0	6.0
annual percentage changes													
2021	5.9	5.7	7.1	1.5	4.9	9.8	6.6	7.6	2.7	6.5	8.3	4.0	6.8
2022	3.4	3.4	3.0	-1.5	0.9	3.4	7.4	5.6	-0.5	5.5	3.9	0.5	5.7
2023	1.2	1.5	0.2	-1.7	0.5	1.0	1.6	3.1	0.5	1.7	1.6	1.4	1.5
2023 Q3	1.5	1.7	0.6	-1.5	0.6	1.5	2.0	2.1	1.0	1.6	1.7	1.9	1.6
Q4	1.2	1.5	0.3	-1.0	0.5	1.3	1.3	3.0	0.4	0.9	1.4	1.8	1.1
2024 Q1	0.7	0.8	0.3	-1.8	-0.5	0.9	1.1	2.0	-0.3	-0.6	1.3	1.2	0.3
Q2	0.8	1.0	-0.1	-1.5	0.6	0.7	0.3	1.9	-0.2	-1.4	1.1	1.6	1.6
Hours worked per person employed													
annual percentage changes													
2021	4.4	4.0	6.7	1.2	4.9	6.3	6.4	3.1	2.2	5.6	5.3	1.8	5.6
2022	1.1	1.0	1.8	-0.5	-0.3	0.2	4.1	-0.3	-0.3	1.9	0.9	-1.0	4.1
2023	-0.2	0.0	-0.7	-0.5	-0.3	-0.4	-0.2	-0.4	-0.5	-0.4	-0.1	0.0	0.4
2023 Q3	0.1	0.2	-0.2	-0.5	-0.1	0.2	-0.1	-0.4	-0.1	0.2	0.2	0.5	0.9
Q4	0.0	0.2	-0.8	-0.5	0.1	-0.3	0.0	0.3	-0.4	-0.4	0.2	0.3	-0.2
2024 Q1	-0.3	-0.2	-0.3	-1.3	-0.6	-0.3	-0.1	-0.2	-1.0	-0.6	0.3	-0.3	0.0
Q2	-0.1	0.1	-0.8	-0.5	0.0	-0.4	-0.2	0.2	-0.4	0.0	0.4	0.0	0.4

Sources: Eurostat and ECB calculations.
1) Data for employment are based on the ESA 2010.

2 Economic activity

2.4 Labour force, unemployment and job vacancies

(seasonally adjusted, unless otherwise indicated)

	Labour force, millions	Under-employment, % of labour force	Unemployment [1]												Job vacancy rate [3]
			Total		Long-term unemploy-ment, % of labour force [2]	By age				By gender					
						Adult		Youth		Male		Female			
			Millions	% of labour force		Millions	% of labour force	Millions	% of labour force	Millions	% of labour force	Millions	% of labour force		
	1	2	3	4	5	6	7	8	9	10	11	12	13		14
% of total in 2020			100.0			80.1		19.9		51.3		48.7			
2021	165.154	3.4	12.831	7.8	3.2	10.347	6.9	2.484	16.9	6.549	7.4	6.283	8.2		2.5
2022	167.998	3.1	11.408	6.8	2.7	9.150	6.0	2.257	14.6	5.733	6.4	5.675	7.2		3.2
2023	170.162	2.9	11.178	6.6	2.4	8.881	5.8	2.297	14.5	5.644	6.2	5.535	6.9		3.0
2023 Q3	170.226	2.9	11.215	6.6	2.3	8.885	5.8	2.330	14.6	5.674	6.3	5.540	7.0		3.0
Q4	170.948	2.9	11.172	6.5	2.3	8.807	5.7	2.366	14.8	5.653	6.2	5.520	6.9		2.9
2024 Q1	171.509	2.9	11.213	6.5	2.3	8.884	5.7	2.328	14.5	5.661	6.2	5.552	6.9		2.9
Q2	.	.	.	6.5	.	.	5.6	.	14.5	.	6.2	.	6.8		2.6
2024 Feb.	-	-	11.236	6.6	-	8.887	5.7	2.349	14.7	5.726	6.3	5.510	6.9		-
Mar.	-	-	11.152	6.5	-	8.829	5.7	2.323	14.5	5.643	6.2	5.510	6.9		-
Apr.	-	-	11.092	6.5	-	8.772	5.6	2.320	14.5	5.632	6.2	5.459	6.8		-
May	-	-	11.107	6.5	-	8.780	5.6	2.327	14.6	5.660	6.2	5.447	6.8		-
June	-	-	11.104	6.5	-	8.803	5.6	2.300	14.4	5.680	6.2	5.424	6.7		-
July	-	-	10.990	6.4	-	8.727	5.6	2.263	14.2	5.679	6.2	5.311	6.6		-

Sources: Eurostat and ECB calculations.
1) Where annual and quarterly Labour Force Survey data have not yet been published, they are estimated as simple averages of the monthly data. There is a break in series from the first quarter of 2021 due to the implementation of the Integrated European Social Statistics Regulation. Owing to technical issues with the introduction of the new German system of integrated household surveys, including the Labour Force Survey, the figures for the euro area include data from Germany, starting in the first quarter of 2020, which are not direct estimates from Labour Force Survey microdata, but based on a larger sample including data from other integrated household surveys.
2) Not seasonally adjusted.
3) The job vacancy rate is equal to the number of job vacancies divided by the sum of the number of occupied posts and the number of job vacancies, expressed as a percentage. Data are non-seasonally adjusted and cover industry, construction and services (excluding households as employers and extra-territorial organisations and bodies).

2.5 Short-term business statistics

	Industrial production						Construc-tion production	Retail sales				Services produc-tion [1]	New passenger car regis-trations
	Total (excluding construction)		Main Industrial Groupings										
	Total	Manu-facturing	Inter-mediate goods	Capital goods	Consumer goods	Energy		Total	Food, beverages, tobacco	Non-food	Fuel		
	1	2	3	4	5	6	7	8	9	10	11	12	13
% of total in 2021	100.0	88.7	32.4	33.2	22.5	11.9	100.0	100.0	38.1	54.4	7.5	100.0	100.0
	annual percentage changes												
2021	8.8	9.8	9.6	9.4	8.1	0.7	5.7	5.4	0.9	8.7	9.1	7.9	-2.9
2022	2.3	3.0	-1.5	5.1	6.3	-2.9	2.9	1.0	-2.7	3.4	4.5	9.8	-4.3
2023	-2.3	-1.8	-5.6	2.4	-1.7	-5.9	1.4	-2.0	-2.7	-1.0	-1.7	2.6	14.5
2023 Q3	-4.9	-4.4	-5.6	-2.5	-3.2	-7.7	1.6	-2.2	-1.9	-1.6	-3.8	1.8	15.4
Q4	-4.0	-4.3	-4.7	-2.5	-6.6	-1.1	1.1	-0.7	-0.6	0.0	-4.0	1.7	4.1
2024 Q1	-4.7	-4.9	-2.8	-6.0	-5.6	-1.4	-0.1	-0.2	-0.5	0.2	-0.6	3.1	4.6
Q2	-3.5	-3.7	-2.3	-6.8	0.4	0.3	-0.7	0.3	-0.2	0.7	0.6	2.6	4.2
2024 Feb.	-6.3	-6.4	-2.8	-9.1	-4.9	-3.3	-1.5	-0.3	-1.2	0.6	-1.4	4.3	4.5
Mar.	-1.2	-1.0	-2.7	1.7	-7.3	-2.0	0.0	0.6	0.9	0.8	-1.0	2.0	2.1
Apr.	-3.1	-3.1	-2.1	-5.1	-0.2	-1.9	-1.1	0.7	-0.2	1.2	1.5	4.3	4.5
May	-3.3	-3.7	-3.3	-7.3	1.5	0.4	-2.1	0.5	0.5	0.8	0.7	2.5	-3.6
June	-3.9	-4.4	-1.5	-7.8	-0.2	2.6	1.0	-0.4	-0.9	0.2	-0.2	1.2	11.7
July	.	.	.	.	.	.	.	-0.1	-0.7	0.2	0.0	.	-8.2
	month-on-month percentage changes (s.a.)												
2024 Feb.	0.0	0.9	0.4	1.3	-0.1	-3.1	0.1	-0.1	-0.2	0.5	-1.1	1.1	0.2
Mar.	0.5	0.9	-0.2	0.6	-1.9	-0.1	-0.3	0.6	1.1	-0.2	0.8	-0.3	-1.8
Apr.	-0.1	-0.4	-0.3	0.0	3.2	-0.2	-0.3	0.0	-0.9	0.7	-0.4	1.0	0.4
May	-0.9	-0.8	-0.9	-2.6	1.1	0.4	-0.9	0.1	0.9	-0.2	0.4	-0.1	-6.6
June	-0.1	-0.1	0.7	0.9	-1.5	1.9	1.7	-0.4	-0.7	-0.2	-0.6	-0.8	14.0
July	.	.	.	.	.	.	.	0.1	0.4	0.1	-1.0	.	-12.4

Sources: Eurostat, ECB calculations and European Automobile Manufacturers Association (col. 13).
1) Excluding trade and financial services.

2 Economic activity

2.6 Opinion surveys
(seasonally adjusted)

	European Commission Business and Consumer Surveys (percentage balances, unless otherwise indicated)								Purchasing Managers' Surveys (diffusion indices)			
	Economic sentiment indicator (long-term average = 100)	Manufacturing industry		Consumer confidence indicator	Construction confidence indicator	Retail trade confidence indicator	Service industries		Purchasing Managers' Index (PMI) for manufacturing	Manufacturing output	Business activity for services	Composite output
		Industrial confidence indicator	Capacity utilisation (%)				Services confidence indicator	Capacity utilisation (%)				
	1	2	3	4	5	6	7	8	9	10	11	12
1999-20	99.5	-4.3	80.1	-11.1	-12.5	-6.6	6.4	.	-	-	-	-
2021	111.2	9.6	80.9	-7.5	4.1	-1.5	8.5	87.3	-	-	-	-
2022	102.1	5.0	82.4	-21.9	5.2	-3.5	9.2	89.9	-	-	-	-
2023	96.4	-5.6	80.9	-17.4	-2.0	-4.0	6.7	90.5	45.0	45.8	51.2	49.7
2023 Q4	94.8	-9.1	79.9	-16.7	-4.2	-6.6	6.2	90.5	43.9	44.0	48.4	47.2
2024 Q1	96.0	-9.2	79.4	-15.5	-5.2	-6.2	7.0	90.1	46.4	46.7	50.0	49.2
Q2	95.9	-10.1	79.0	-14.4	-6.3	-7.2	6.4	90.0	46.2	47.6	53.1	51.6
Q3	.	.	78.3	.	.	.	.	90.3	.	.	.	.
2024 Mar.	96.3	-8.8	.	-14.8	-5.6	-6.1	6.4	.	46.1	47.1	51.5	50.3
Apr.	95.6	-10.4	79.0	-14.7	-6.0	-6.9	6.1	90.0	45.7	47.3	53.3	51.7
May	96.2	-9.8	.	-14.3	-6.1	-6.8	6.8	.	47.3	49.3	53.2	52.2
June	96.0	-10.1	.	-14.0	-6.8	-7.9	6.4	.	45.8	46.1	52.8	50.9
July	96.0	-10.4	78.3	-13.0	-6.4	-9.1	5.0	90.3	45.8	45.6	51.9	50.2
Aug.	96.6	-9.7	.	-13.5	-6.5	-8.1	6.3	.	45.8	45.8	52.9	51.0

Sources: European Commission (Directorate-General for Economic and Financial Affairs) (col. 1-8) and S&P Global Market Intelligence (col. 9-12).

2.7 Summary accounts for households and non-financial corporations
(current prices, unless otherwise indicated; not seasonally adjusted)

	Households							Non-financial corporations					
	Saving rate (gross)	Debt ratio	Real gross disposable income	Financial investment	Non-financial investment (gross)	Net worth[2]	Housing wealth	Profit rate[3]	Saving rate (gross)	Debt ratio[4]	Financial investment	Non-financial investment (gross)	Financing
	Percentage of gross disposable income (adjusted)[1]		Annual percentage changes					Percentage of gross value added		Percentage of GDP	Annual percentage changes		
	1	2	3	4	5	6	7	8	9	10	11	12	13
2021	17.1	95.2	2.0	3.6	19.1	8.6	8.8	36.2	7.3	77.2	5.5	10.5	3.3
2022	13.1	92.8	-0.2	2.4	12.3	2.3	8.1	37.1	5.4	72.4	3.3	9.2	2.2
2023	13.7	86.9	1.2	2.0	2.5	2.0	-0.8	35.2	5.6	68.0	1.7	1.2	0.7
2023 Q2	13.2	89.4	1.2	2.1	1.4	2.9	1.7	36.3	5.7	69.6	1.8	18.5	0.9
Q3	13.4	88.1	0.5	1.9	0.8	1.8	-0.1	35.9	5.8	68.7	1.6	-12.7	0.5
Q4	13.7	86.9	1.8	2.0	1.7	2.0	-0.8	35.2	5.6	68.0	1.7	2.9	0.7
2024 Q1	14.2	85.7	2.9	2.0	-2.2	2.1	-0.4	34.6	5.2	67.6	1.9	-4.6	0.8

Sources: ECB and Eurostat.
1) Based on four-quarter cumulated sums of saving, debt and gross disposable income (adjusted for the change in pension entitlements).
2) Financial assets (net of financial liabilities) and non-financial assets. Non-financial assets consist mainly of housing wealth (residential structures and land). They also include non-financial assets of unincorporated enterprises classified within the household sector.
3) The profit rate is gross entrepreneurial income (broadly equivalent to cash flow) divided by gross value added.
4) Defined as consolidated loans and debt securities liabilities.

2 Economic activity

2.8 Euro area balance of payments, current and capital accounts

(EUR billions; seasonally adjusted unless otherwise indicated; transactions)

	Current account											Capital account [1]	
	Total			Goods		Services		Primary income		Secondary income			
	Credit	Debit	Balance	Credit	Debit	Credit	Debit	Credit	Debit	Credit	Debit	Credit	Debit
	1	2	3	4	5	6	7	8	9	10	11	12	13
2023 Q3	1,432.2	1,371.0	61.2	725.7	646.9	337.8	304.7	325.9	330.7	42.7	88.7	28.9	18.5
Q4	1,408.3	1,336.1	72.2	714.1	647.0	335.9	304.5	311.3	293.4	46.9	91.1	61.6	40.7
2024 Q1	1,433.5	1,321.3	112.2	726.6	623.0	362.9	331.2	299.6	289.1	44.3	78.1	19.3	31.0
Q2	1,466.2	1,341.2	124.9	742.6	632.9	359.5	321.7	318.3	300.1	45.7	86.5	22.1	16.3
2024 Jan.	471.6	429.6	42.0	242.0	198.8	119.2	109.3	96.0	95.6	14.4	25.9	4.0	13.3
Feb.	481.9	446.6	35.3	240.7	210.2	125.1	112.4	101.4	98.8	14.7	25.2	4.5	7.9
Mar.	480.0	445.1	34.9	244.0	214.0	118.5	109.4	102.2	94.7	15.3	27.0	10.8	9.7
Apr.	486.8	450.0	36.8	249.1	212.3	118.8	107.1	102.5	101.7	16.4	28.9	6.3	6.8
May	489.3	451.7	37.6	246.4	212.0	119.9	105.5	109.0	106.0	14.0	28.1	7.2	5.7
June	490.1	439.5	50.5	247.1	208.6	120.8	109.1	106.8	92.4	15.3	29.5	8.7	3.8
12-month cumulated transactions													
2024 June	5,740.1	5,369.7	370.4	2,909.0	2,549.9	1,396.2	1,262.1	1,255.2	1,213.4	179.7	344.3	132.0	106.5
12-month cumulated transactions as a percentage of GDP													
2024 June	38.9	36.3	2.5	19.7	17.3	9.4	8.5	8.5	8.2	1.2	2.3	0.9	0.7

1) The capital account is not seasonally adjusted.

2.9 Euro area external trade in goods [1], values and volumes by product group [2]

(seasonally adjusted, unless otherwise indicated)

	Total (n.s.a.)		Exports (f.o.b.)					Imports (c.i.f.)					
			Total				Memo item:	Total				Memo items:	
	Exports	Imports	Total	Intermediate goods	Capital goods	Consumption goods	Manufacturing	Total	Intermediate goods	Capital goods	Consumption goods	Manufacturing	Oil
	1	2	3	4	5	6	7	8	9	10	11	12	13
Values (EUR billions; annual percentage changes for columns 1 and 2)													
2023 Q3	-5.2	-22.1	703.6	331.6	141.9	214.5	586.2	678.6	390.7	111.7	158.4	489.6	82.2
Q4	-4.8	-16.6	708.3	333.3	144.1	214.8	588.6	669.3	383.2	107.6	157.9	477.2	81.1
2024 Q1	-3.0	-12.0	714.4	336.3	142.4	219.1	589.6	653.9	370.9	105.1	158.2	462.7	75.8
Q2	1.6	-4.6	716.1	.	.	.	589.3	667.9	.	.	.	471.1	.
2024 Jan.	1.3	-16.0	239.3	113.3	48.2	72.1	197.2	212.0	121.4	33.8	51.4	150.2	25.2
Feb.	0.3	-8.0	238.0	111.1	47.6	73.0	197.0	221.2	124.6	35.7	52.6	154.6	24.8
Mar.	-9.4	-11.6	237.0	111.9	46.6	73.9	195.4	220.7	124.9	35.6	54.2	157.9	25.7
Apr.	13.4	1.8	243.4	113.8	46.3	76.4	199.0	225.1	129.8	36.1	54.7	158.6	27.9
May	-0.9	-6.9	236.5	112.4	44.5	73.7	196.6	224.1	128.0	35.6	53.7	157.8	27.0
June	-6.3	-8.6	236.2	.	.	.	193.7	218.7	.	.	.	154.7	.
Volume indices (2000 = 100; annual percentage changes for columns 1 and 2)													
2023 Q2	-3.7	-6.7	97.2	92.7	100.0	105.2	97.2	109.5	107.3	112.2	112.0	110.7	158.7
Q3	-4.2	-10.1	96.3	93.8	96.0	102.4	96.0	106.7	104.6	111.4	109.5	108.6	171.6
Q4	-3.6	-8.6	96.3	93.1	96.1	103.0	95.5	104.5	101.8	104.7	108.3	105.6	164.5
2024 Q1	-4.0	-7.1	96.7	94.0	93.4	104.1	95.5	103.4	100.9	101.3	107.4	102.9	164.5
2023 Dec.	-7.3	-11.0	96.7	93.1	96.1	104.6	95.4	105.0	101.9	105.3	107.0	105.2	168.6
2024 Jan.	0.8	-9.6	97.8	96.2	95.5	102.3	96.7	101.5	99.8	97.3	104.6	100.7	161.0
Feb.	-0.8	-3.4	96.4	92.6	92.3	104.9	95.0	103.7	101.3	103.0	106.9	103.0	166.8
Mar.	-10.7	-8.1	96.0	93.2	92.3	105.2	94.8	105.1	101.6	103.7	110.8	104.9	165.8
Apr.	10.8	2.8	96.9	94.1	90.3	107.4	95.7	104.9	102.8	103.8	108.7	105.4	172.4
May	-3.6	-7.3	94.9	93.0	87.3	104.4	93.9	102.8	101.0	101.7	106.8	102.7	171.8

Sources: ECB and Eurostat.
1) Differences between ECB's b.o.p. goods (Table 2.8) and Eurostat's trade in goods (Table 2.9) are mainly due to different definitions.
2) Product groups as classified in the Broad Economic Categories.

3 Prices and costs

3.1 Harmonised Index of Consumer Prices [1)]

(annual percentage changes, unless otherwise indicated)

	Total					Total (s.a.; percentage change vis-à-vis previous period) [2)]						Administered prices	
	Index: 2015 = 100	Total		Goods	Services	Total	Processed food	Unprocessed food	Non-energy industrial goods	Energy (n.s.a.)	Services	Total HICP excluding administered prices	Administered prices
		Total	Total excluding food and energy										
	1	2	3	4	5	6	7	8	9	10	11	12	13
% of total in 2024	100.0	100.0	70.6	55.1	44.9	100.0	15.1	4.3	25.7	9.9	44.9	88.5	11.5
2021	107.8	2.6	1.5	3.4	1.5	-	-	-	-	-	-	2.5	3.1
2022	116.8	8.4	3.9	11.9	3.5	-	-	-	-	-	-	8.5	7.8
2023	123.2	5.4	4.9	5.7	4.9	-	-	-	-	-	-	5.5	4.9
2023 Q3	123.9	5.0	5.1	4.5	5.3	0.9	1.1	1.1	0.6	1.3	0.9	5.0	4.5
Q4	124.1	2.7	3.7	1.7	4.2	0.3	0.6	1.0	0.0	-1.1	0.7	3.0	1.3
2024 Q1	124.4	2.6	3.1	1.5	4.0	0.7	0.7	-0.2	0.2	0.2	1.1	2.7	2.3
Q2	126.3	2.5	2.8	1.3	4.0	0.6	0.5	-0.4	0.0	-0.5	1.2	2.5	2.8
2024 Mar.	125.3	2.4	2.9	1.2	4.0	0.2	0.1	-0.4	-0.1	-0.2	0.5	2.4	2.5
Apr.	126.0	2.4	2.7	1.3	3.7	0.2	0.1	0.0	0.0	0.3	0.3	2.4	2.1
May	126.3	2.6	2.9	1.3	4.1	0.2	0.1	0.1	0.0	-1.2	0.6	2.5	2.8
June	126.6	2.5	2.9	1.2	4.1	0.1	0.3	0.3	0.1	-0.8	0.3	2.4	3.4
July	126.5	2.6	2.9	1.4	4.0	0.3	0.3	0.3	0.2	0.8	0.3	2.4	4.1
Aug. [3)]	126.7	2.2	2.8	.	4.2	0.2	0.4	0.1	0.0	-1.0	0.4	.	.

	Goods						Services					
	Food (including alcoholic beverages and tobacco)			Industrial goods			Housing		Transport	Communication	Recreation and personal care	Miscellaneous
	Total	Processed food	Unprocessed food	Total	Non-energy industrial goods	Energy	Total	Rents				
	14	15	16	17	18	19	20	21	22	23	24	25
% of total in 2024	19.5	15.1	4.3	35.6	25.7	9.9	9.6	5.6	7.4	2.2	16.4	9.3
2021	1.5	1.5	1.6	4.5	1.5	13.0	1.4	1.2	2.1	0.3	1.5	1.6
2022	9.0	8.6	10.4	13.6	4.6	37.0	2.4	1.7	4.4	-0.2	6.1	2.1
2023	10.9	11.4	9.1	2.9	5.0	-2.0	3.6	2.7	5.2	0.2	6.9	4.0
2023 Q3	9.8	10.3	7.9	1.7	4.6	-4.6	3.7	2.7	5.7	0.0	7.2	4.2
Q4	6.8	7.1	5.9	-1.1	2.9	-9.8	3.5	2.7	3.2	0.4	5.9	4.0
2024 Q1	4.0	4.4	2.8	0.1	1.6	-3.9	3.4	2.8	3.6	-0.2	5.3	3.8
Q2	2.6	2.9	1.4	0.6	0.7	0.0	3.3	2.8	3.7	-0.5	5.1	4.0
2024 Mar.	2.6	3.5	-0.5	0.4	1.1	-1.8	3.4	2.8	3.9	-0.4	5.2	3.8
Apr.	2.8	3.2	1.2	0.5	0.9	-0.6	3.4	2.8	2.7	-0.5	4.8	3.9
May	2.6	2.8	1.8	0.6	0.7	0.3	3.3	2.8	4.2	-0.7	5.3	4.0
June	2.4	2.7	1.3	0.6	0.7	0.2	3.3	2.8	4.3	-0.4	5.1	4.1
July	2.3	2.7	1.0	0.9	0.7	1.2	3.4	3.0	4.0	-0.4	4.8	4.0
Aug. [3)]	2.4	2.7	1.1	.	0.4	-3.0	.	.	.	.	.	.

Sources: Eurostat and ECB calculations.
1) Data refer to the changing composition of the euro area.
2) In May 2016 the ECB started publishing enhanced seasonally adjusted HICP series for the euro area, following a review of the seasonal adjustment approach as described in Box 1, Economic Bulletin, Issue 3, ECB, 2016 (https://www.ecb.europa.eu/pub/pdf/ecbu/eb201603.en.pdf).
3) Flash Estimate.

3 Prices and costs

3.2 Industry, construction and property prices

(annual percentage changes, unless otherwise indicated)

	Industrial producer prices excluding construction [1]										Construction [2]	Residential property prices	Experimental indicator of commercial property prices [3]
		Total		Industry excluding construction and energy						Energy			
							Consumer goods						
	Total (index: 2021 = 100)	Total	Manufacturing	Total	Intermediate goods	Capital goods	Total	Food, beverages and tobacco	Non-food				
	1	2	3	4	5	6	7	8	9	10	11	12	13
% of total in 2021	100.0	100.0	77.8	72.3	30.9	19.3	22.2	15.7	6.5	27.7			
2021	100.0	12.2	7.5	5.7	10.9	2.6	2.2	3.3	1.7	30.3	5.8	7.9	0.6
2022	132.8	32.8	17.0	13.8	19.8	7.1	12.2	16.5	6.8	81.1	11.9	7.1	0.6
2023	130.0	-2.1	1.9	3.8	-0.2	5.2	8.3	8.3	5.6	-13.3	6.9	-1.1	-8.2
2023 Q3	127.8	-8.6	-0.3	1.5	-3.9	4.5	6.4	5.4	4.9	-25.1	5.1	-2.2	-9.3
Q4	128.1	-8.4	-1.1	-0.1	-4.8	3.3	3.6	2.1	3.1	-22.9	4.5	-1.2	-9.1
2024 Q1	124.9	-8.0	-1.6	-1.3	-5.3	2.0	1.5	-0.3	1.4	-20.5	3.7	-0.4	.
Q2	122.9	-4.4	-0.2	-0.6	-3.1	1.6	1.1	-0.4	1.0	-12.1	2.8	.	.
2024 Feb.	124.7	-8.3	-1.5	-1.3	-5.4	2.0	1.4	-0.5	1.3	-21.3	-	-	-
Mar.	124.0	-7.7	-1.2	-1.3	-4.9	1.9	1.2	-0.7	1.1	-20.4	-	-	-
Apr.	122.9	-5.6	-0.6	-1.0	-3.9	1.5	1.1	-0.9	1.1	-15.0	-	-	-
May	122.6	-4.2	-0.1	-0.5	-3.1	1.7	1.1	-0.5	1.0	-11.6	-	-	-
June	123.3	-3.3	0.1	-0.2	-2.3	1.6	1.2	0.1	0.9	-9.6	-	-	-
July	124.3	-2.1	0.3	0.2	-1.2	1.4	1.2	0.1	0.9	-6.9	-	-	-

Sources: Eurostat, ECB calculations, and ECB calculations based on MSCI data and national sources (col. 13).
1) Domestic sales only.
2) Input prices for residential buildings.
3) Experimental data based on non-harmonised sources (see https://www.ecb.europa.eu/stats/ecb_statistics/governance_and_quality_framework/html/experimental-data.en.html for further details).

3.3 Commodity prices and GDP deflators

(annual percentage changes, unless otherwise indicated)

	GDP deflators								Oil prices (EUR per barrel)	Non-energy commodity prices (EUR)					
			Domestic demand				Exports [1]	Imports [1]		Import-weighted [2]			Use-weighted [2]		
	Total (s.a.; index: 2015 = 100)	Total	Total	Private consumption	Government consumption	Gross fixed capital formation				Total	Food	Non-food	Total	Food	Non-food
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
% of total										100.0	45.5	54.6	100.0	50.4	49.6
2021	109.6	2.1	2.8	2.2	1.9	4.0	5.9	8.0	59.8	29.5	21.4	37.1	29.0	22.0	37.0
2022	115.1	5.1	7.0	6.9	4.7	7.9	12.9	17.5	95.0	18.3	28.8	9.6	19.4	27.7	10.9
2023	121.8	5.8	4.4	6.2	3.7	4.0	0.4	-2.5	76.4	-12.8	-11.6	-14.0	-13.7	-12.5	-15.0
2023 Q3	122.2	5.8	3.5	6.1	3.5	2.9	-2.0	-6.4	79.8	-13.4	-14.5	-12.2	-14.5	-15.2	-13.7
Q4	123.6	4.9	3.7	4.0	2.7	2.5	-1.9	-4.5	78.5	-8.8	-9.3	-8.3	-9.8	-10.4	-9.0
2024 Q1	124.4	3.6	2.7	3.2	3.5	2.2	-0.6	-2.8	76.5	-2.3	3.1	-7.5	-2.7	1.8	-7.8
Q2	124.9	3.0	2.8	2.7	2.7	1.7	0.6	0.0	85.0	13.0	16.5	9.4	11.4	13.1	9.4
2024 Mar.	-	-	-	-	-	-	-	-	78.6	1.2	8.3	-5.7	0.7	6.6	-6.2
Apr.	-	-	-	-	-	-	-	-	85.0	12.7	20.3	5.0	10.5	15.1	5.0
May	-	-	-	-	-	-	-	-	.	13.1	13.5	12.6	11.8	11.4	12.2
June	-	-	-	-	-	-	-	-	.	13.2	15.6	10.7	12.0	12.7	11.2
July	-	-	-	-	-	-	-	-	.	11.3	12.6	10.0	11.8	12.7	10.8
Aug.	-	-	-	-	-	-	-	-	.	9.8	10.3	9.2	11.2	12.2	10.1

Sources: Eurostat, ECB calculations and Bloomberg (col. 9).
1) Deflators for exports and imports refer to goods and services and include cross-border trade within the euro area.
2) Import-weighted: weighted according to 2009-11 average import structure; use-weighted: weighted according to 2009-11 average domestic demand structure.

3 Prices and costs

3.4 Price-related opinion surveys
(seasonally adjusted)

	European Commission Business and Consumer Surveys (percentage balance)					Purchasing Managers' Surveys (diffusion indices)			
	Selling price expectations (for next three months)				Consumer price trends over past 12 months	Input prices		Prices charged	
	Manu-facturing	Retail trade	Services	Construction		Manu-facturing	Services	Manu-facturing	Services
	1	2	3	4	5	6	7	8	9
1999-20	4.7	5.7	4.0	-3.4	28.9	-	-	-	-
2021	31.7	23.9	10.3	19.7	30.4	-	-	-	-
2022	48.5	52.9	27.4	42.4	71.6	-	-	-	-
2023	9.5	28.5	19.2	13.9	74.5	43.7	64.6	50.0	57.4
2023 Q3	3.5	21.9	15.4	6.5	73.3	39.1	62.0	45.7	55.5
Q4	3.7	18.8	17.6	9.8	69.5	42.8	62.0	47.5	54.8
2024 Q1	4.7	16.7	17.5	5.1	64.5	44.9	62.3	48.2	56.0
Q2	6.1	13.8	13.7	3.4	56.7	49.9	60.5	48.6	54.6
2024 Mar.	5.6	14.5	15.1	1.6	62.1	46.5	61.5	47.7	55.1
Apr.	5.6	14.1	13.9	2.4	58.3	49.0	61.7	47.9	55.9
May	6.5	13.9	13.3	3.4	56.9	49.2	60.5	48.3	54.2
June	6.1	13.5	13.9	4.3	54.7	51.4	59.3	49.5	53.5
July	6.7	14.5	12.3	1.9	53.0	53.6	60.0	49.9	52.9
Aug.	6.1	12.6	12.4	1.6	50.6	53.4	57.8	51.1	53.7

Sources: European Commission (Directorate-General for Economic and Financial Affairs) and S&P Global Market Intelligence.

3.5 Labour cost indices
(annual percentage changes, unless otherwise indicated)

			By component		For selected economic activities		
	Total (index: 2020=100)	Total	Wages and salaries	Employers' social contributions	Business economy	Mainly non-business economy	Memo item: Indicator of negotiated wages [1]
	1	2	3	4	5	6	7
% of total in 2020	100.0	100.0	75.3	24.7	69.0	31.0	
2021	101.0	1.0	1.1	0.7	1.0	1.1	1.4
2022	105.7	4.6	3.9	7.1	5.0	3.9	2.9
2023	110.4	4.4	4.3	4.7	4.9	3.4	4.5
2023 Q3	106.9	5.0	5.1	4.7	5.6	3.7	4.7
Q4	117.9	3.4	3.3	3.8	4.1	2.0	4.5
2024 Q1	107.9	4.9	5.1	4.4	4.7	5.4	4.7
Q2	118.5	4.1	4.0	4.5	4.0	5.2	3.5

Sources: Eurostat and ECB calculations.
1) Experimental data based on non-harmonised sources (see https://www.ecb.europa.eu/stats/ecb_statistics/governance_and_quality_framework/html/experimental-data.en.html for further details).

3 Prices and costs

3.6 Unit labour costs, compensation per labour input and labour productivity

(annual percentage changes, unless otherwise indicated; quarterly data seasonally adjusted; annual data unadjusted)

			By economic activity									
	Total (index: 2015 =100)	Total	Agriculture, forestry andfishing	Manu-facturing, energy and utilities	Con-struction	Trade, transport, accom-modation and food services	Information and commu-nication	Finance and insurance	Real estate	Professional, business and support services	Public ad-ministration, education, health and social work	Arts, enter-tainment and other services
	1	2	3	4	5	6	7	8	9	10	11	12
Unit labor costs												
2021	110.1	-0.4	0.8	-3.2	5.0	-2.2	0.4	-1.3	5.3	-0.9	1.2	-0.4
2022	113.9	3.5	4.6	4.7	9.0	0.8	3.2	5.5	5.8	3.5	2.7	-5.9
2023	121.1	6.4	4.0	8.0	5.1	7.7	3.9	6.1	4.6	6.0	4.9	1.9
2023 Q3	121.8	6.7	5.0	8.9	4.3	8.5	4.3	5.3	3.5	6.1	5.4	2.9
Q4	123.6	6.0	5.0	8.6	4.4	6.7	2.7	6.8	4.7	4.2	4.5	3.2
2024 Q1	125.0	5.2	3.1	6.7	5.8	4.1	3.2	4.9	3.3	3.6	5.4	4.8
Q2	125.6	4.6	3.7	6.8	5.6	3.9	2.7	4.6	0.9	3.0	4.3	4.7
Compensation per employee												
2021	111.8	4.3	2.6	4.8	5.2	5.4	5.8	3.6	6.7	4.7	2.5	3.3
2022	116.9	4.6	4.5	3.8	4.1	6.1	2.7	3.5	4.3	5.5	3.8	7.4
2023	123.1	5.3	5.6	5.4	4.8	5.9	5.1	5.2	3.9	6.1	4.5	5.4
2023 Q3	123.8	5.3	5.5	5.7	4.8	5.3	5.4	4.8	3.3	6.2	4.7	5.6
Q4	125.4	5.0	4.9	5.5	4.8	5.4	5.0	5.5	4.9	5.3	4.1	5.3
2024 Q1	126.9	4.8	3.4	4.7	4.4	3.9	4.6	4.9	4.5	5.0	5.3	6.4
Q2	127.5	4.3	3.7	4.5	3.6	4.6	3.8	5.1	3.9	4.6	4.0	4.5
Labour productivity per person employed												
2021	101.6	4.7	1.8	8.3	0.2	7.7	5.4	5.0	1.4	5.6	1.3	3.7
2022	102.7	1.1	-0.1	-0.8	-4.5	5.3	-0.4	-1.8	-1.4	2.0	1.1	14.1
2023	101.6	-1.0	1.6	-2.4	-0.3	-1.7	1.2	-0.8	-0.6	0.1	-0.4	3.4
2023 Q3	101.6	-1.3	0.5	-2.9	0.4	-3.0	1.0	-0.4	-0.2	0.1	-0.7	2.7
Q4	101.4	-1.0	-0.1	-2.9	0.5	-1.2	2.3	-1.1	0.2	1.0	-0.3	2.0
2024 Q1	101.5	-0.4	0.3	-1.9	-1.3	-0.2	1.3	-0.1	1.1	1.4	-0.2	1.5
Q2	101.5	-0.3	0.0	-2.1	-1.8	0.7	1.1	0.4	3.0	1.6	-0.2	-0.2
Compensation per hour worked												
2021	114.5	0.3	0.2	0.2	-0.4	-0.7	2.9	1.7	2.1	0.2	1.0	-1.3
2022	118.5	3.5	5.6	4.2	4.3	1.6	3.3	3.8	3.1	4.3	4.9	4.0
2023	124.8	5.3	5.4	5.7	5.0	5.9	5.4	5.8	4.5	6.1	4.4	4.6
2023 Q3	125.2	5.0	5.1	5.8	4.7	5.3	5.5	5.1	4.4	6.0	4.1	4.2
Q4	126.9	4.7	4.9	5.4	4.7	5.1	4.5	5.8	4.2	4.8	3.8	5.1
2024 Q1	128.4	5.0	3.8	5.1	4.6	4.1	4.9	5.8	4.7	4.8	5.6	6.5
Q2	128.6	4.2	2.6	4.5	4.0	4.5	3.6	5.4	4.1	4.1	4.1	3.8
Hourly labour productivity												
2021	104.9	0.3	0.6	3.2	-5.7	1.3	2.3	2.7	-4.0	0.3	-0.5	-1.8
2022	104.8	0.0	0.4	-0.5	-4.6	1.2	-0.1	-1.6	-3.2	1.1	2.1	9.6
2023	104.0	-0.8	2.1	-2.1	0.1	-1.5	1.6	-0.3	-0.2	0.2	-0.4	2.9
2023 Q3	103.7	-1.5	1.0	-2.8	0.3	-2.9	1.4	-0.3	-0.4	-0.1	-1.2	1.8
Q4	103.6	-1.0	0.4	-2.9	0.8	-1.3	2.0	-0.7	0.6	0.7	-0.6	2.2
2024 Q1	103.6	-0.2	1.6	-1.4	-1.0	-0.1	1.6	0.9	1.7	1.1	0.1	1.5
Q2	103.6	-0.2	0.5	-2.1	-1.4	0.9	0.9	0.8	2.9	1.1	-0.2	-0.6

Sources: Eurostat and ECB calculations.

4 Financial market developments

4.1 Money market interest rates
(percentages per annum, period averages)

	Euro area [1]					United States	Japan
	Euro short-term rate (€STR)	1-month deposits (EURIBOR)	3-month deposits (EURIBOR)	6-month deposits (EURIBOR)	12-month deposity (EURIBOR)	Secured overnight financing rate (SOFR)	Tokyo overnight average rate (TONAR)
	1	2	3	4	5	6	7
2021	-0.57	-0.56	-0.55	-0.52	-0.49	0.04	-0.02
2022	-0.01	0.09	0.35	0.68	1.10	1.63	-0.03
2023	3.21	3.25	3.43	3.69	3.86	5.00	-0.04
2024 Mar.	3.91	3.85	3.92	3.89	3.72	5.31	0.02
Apr.	3.91	3.85	3.89	3.84	3.70	5.32	0.08
May	3.91	3.82	3.81	3.79	3.68	5.31	0.08
June	3.75	3.63	3.72	3.71	3.65	5.33	0.08
July	3.66	3.62	3.68	3.64	3.53	5.34	0.08
Aug.	3.66	3.60	3.55	3.42	3.17	5.33	0.23

Source: LSEG and ECB calculations.
1) Data refer to the changing composition of the euro area.

4.2 Yield curves
(End of period; rates in percentages per annum; spreads in percentage points)

	Spot rates					Spreads			Instantaneous forward rates			
	Euro area [1]					Euro area [1] [2]	United States	United Kingdom	Euro area [1] [2]			
	3 months	1 year	2 years	5 years	10 years	10 years - 1 year	10 years - 1 year	10 years - 1 year	1 year	2 years	5 years	10 years
	1	2	3	4	5	6	7	8	9	10	11	12
2021	-0.73	-0.72	-0.68	-0.48	-0.19	0.53	1.12	0.45	-0.69	-0.58	-0.12	0.24
2022	1.71	2.46	2.57	2.45	2.56	0.09	-0.84	-0.24	2.85	2.48	2.47	2.76
2023	3.78	3.05	2.44	1.88	2.08	-0.96	-0.92	-1.20	2.25	1.54	1.76	2.64
2024 Mar.	3.78	3.26	2.80	2.30	2.36	-0.90	-0.83	-0.55	2.68	2.09	2.07	2.70
Apr.	3.74	3.35	3.00	2.58	2.64	-0.72	-0.57	-0.42	2.91	2.44	2.37	2.96
May	3.67	3.33	3.02	2.64	2.70	-0.63	-0.69	-0.47	2.95	2.52	2.45	3.03
June	3.41	3.10	2.80	2.42	2.50	-0.60	-0.73	-0.51	2.74	2.31	2.22	2.91
July	3.29	2.92	2.58	2.19	2.33	-0.59	-0.72	-0.49	2.50	2.04	2.03	2.86
Aug.	3.26	2.74	2.36	2.14	2.39	-0.35	-0.51	-0.46	2.21	1.85	2.27	2.87

Source: ECB calculations.
1) Data refer to the changing composition of the euro area.
2) ECB calculations based on underlying data provided by Euro MTS Ltd and ratings provided by Fitch Ratings.

4.3 Stock market indices
(index levels in points; period averages)

	Dow Jones EURO STOXX Indices												United States	Japan
	Benchmark		Main industry indices											
	Broad index	50	Basic materials	Consumer services	Consumer goods	Oil and gas	Financials	Industrials	Technology	Utilities	Telecoms	Health care	Standard & Poor's 500	Nikkei 225
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2021	448.3	4,023.6	962.9	289.8	183.0	95.4	164.4	819.0	874.3	377.7	279.6	886.3	4,277.6	28,836.5
2022	414.6	3,757.0	937.3	253.4	171.3	110.0	160.6	731.7	748.4	353.4	283.2	825.8	4,098.5	27,257.8
2023	452.0	4,272.0	968.5	292.7	169.2	119.2	186.7	809.8	861.5	367.8	283.1	803.6	4,285.6	30,716.6
2024 Mar.	509.8	4,989.6	1,046.7	330.6	161.5	123.1	223.8	965.1	1,114.6	358.1	283.7	764.4	5,170.6	39,844.3
Apr.	511.2	4,981.4	1,049.5	325.4	160.1	132.7	232.6	960.6	1,086.7	361.3	281.0	757.2	5,112.5	38,750.5
May	519.5	5,022.6	1,031.6	318.8	165.9	131.8	239.2	987.8	1,105.0	382.4	286.9	779.5	5,235.2	38,557.9
June	510.0	4,952.0	997.7	309.2	160.7	125.2	231.2	951.1	1,159.0	377.0	288.9	772.9	5,415.1	38,858.9
July	506.3	4,913.9	978.1	296.9	159.0	125.6	235.8	943.7	1,138.0	374.7	295.7	780.5	5,538.0	40,102.9
Aug.	494.1	4,788.5	958.1	283.8	159.7	122.8	229.2	922.6	1,055.6	380.0	303.8	819.4	5,478.2	36,873.3

Source: LSEG.

4 Financial market developments

4.4 MFI interest rates on loans to and deposits from households (new business) [1), 2)]

(percentages per annum, period average, unless otherwise indicated)

	Deposits				Revolving loans and overdrafts	Extended credit card credit	Loans for consumption			Loans to sole proprietors and unincorporated partnerships	Loans for house purchase					
			With an agreed maturity of:				By initial period of rate fixation				By initial period of rate fixation					
	Overnight	Redeemable at notice of up to 3 months	Up tp 2 years	Over 2 years			Floating rate and up to 1 year	Over 1 year	APRC [3)]		Floating rate and up to 1 year	Over 1 and up to 5 years	Over 5 and up to 10 years	Over 10 years	APRC [3)]	Composite cost-of-borrowing indicator
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2023 Aug.	0.31	1.50	3.04	3.11	7.60	16.47	8.78	7.84	8.50	5.36	4.71	4.22	3.79	3.51	4.16	3.86
Sep.	0.33	1.54	3.08	3.12	7.78	16.55	8.51	7.83	8.56	5.40	4.74	4.25	3.86	3.57	4.25	3.89
Oct.	0.35	1.60	3.27	3.31	7.98	16.55	8.26	7.87	8.54	5.58	4.83	4.29	3.78	3.61	4.27	3.92
Nov.	0.36	1.62	3.32	3.41	7.98	16.66	7.29	7.91	8.54	5.56	4.91	4.32	3.90	3.70	4.35	4.02
Dec.	0.37	1.66	3.28	3.46	8.04	16.79	7.55	7.71	8.43	5.38	4.90	4.24	3.81	3.63	4.33	3.97
2024 Jan.	0.39	1.69	3.20	3.15	8.14	16.93	7.99	8.02	8.73	5.38	4.85	4.08	3.67	3.52	4.15	3.88
Feb.	0.38	1.70	3.17	3.07	8.18	16.89	7.66	7.94	8.63	5.31	4.83	4.01	3.64	3.49	4.11	3.84
Mar.	0.39	1.72	3.18	2.91	8.18	16.99	8.08	7.79	8.54	5.15	4.79	4.00	3.57	3.44	4.04	3.80
Apr.	0.39	1.73	3.13	2.89	8.14	17.00	8.09	7.85	8.58	5.20	4.82	3.99	3.59	3.42	4.04	3.80
May	0.39	1.73	3.10	2.81	8.20	17.07	7.56	7.95	8.69	5.26	4.79	3.97	3.62	3.41	4.03	3.80
June	0.38	1.74	3.03	2.84	8.19	17.04	7.38	7.72	8.45	5.15	4.82	3.96	3.64	3.39	4.03	3.79
July	0.38	1.74	3.01	2.77	8.16	17.03	7.54	7.79	8.49	5.02	4.76	3.93	3.64	3.38	4.00	3.75

Source: ECB.
1) Data refer to the changing composition of the euro area.
2) Including non-profit institutions serving households.
3) Annual percentage rate of charge (APRC).

4.5 MFI interest rates on loans to and deposits from non-financial corporations (new business) [1), 2)]

(Percentages per annum; period average, unless otherwise indicated)

	Deposits			Revolving loans and overdrafts	Other loans by size and initial period of rate fixation									Composite cost-of-borrowing indicator
		With an agreed maturity of:			Up to EUR 0.25 million			over EUR 0.25 and up to 1 million			over EUR 1 million			
	Overnight	Up tp 2 years	Over 2 years		Floating rate and up to 3 months	Over 3 months and up to 1 year	Over 1 year	Floating rate and up to 3 months	Over 3 months and up to 1 year	Over 1 year	Floating rate and up to 3 months	Over 3 months and up to 1 year	Over 1 year	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2023 Aug.	0.66	3.42	3.53	5.02	5.47	5.65	5.55	5.24	5.16	4.38	5.00	4.89	4.01	4.99
Sep.	0.75	3.59	3.79	5.19	5.59	5.72	5.64	5.40	5.22	4.40	5.04	4.99	4.20	5.09
Oct.	0.80	3.70	3.81	5.31	5.67	5.87	5.73	5.49	5.29	4.52	5.23	5.08	4.54	5.27
Nov.	0.83	3.71	3.92	5.33	5.71	5.91	5.79	5.50	5.30	4.55	5.12	5.17	4.40	5.23
Dec.	0.84	3.71	4.08	5.38	5.49	5.72	5.68	5.41	5.10	4.51	5.25	5.09	4.37	5.23
2024 Jan.	0.89	3.69	3.37	5.37	5.29	5.69	5.65	5.45	5.23	4.43	5.15	5.00	4.20	5.18
Feb.	0.89	3.63	3.50	5.36	5.44	5.72	5.60	5.46	5.14	4.38	5.10	4.83	3.97	5.14
Mar.	0.91	3.68	3.60	5.35	5.40	5.70	5.53	5.41	5.17	4.34	5.18	5.16	4.16	5.19
Apr.	0.91	3.66	3.34	5.36	5.20	5.61	5.63	5.35	5.09	4.30	5.19	5.00	4.15	5.18
May	0.91	3.64	3.61	5.32	5.28	5.75	5.68	5.38	5.07	4.29	4.99	4.96	4.18	5.11
June	0.87	3.54	3.54	5.23	5.26	5.69	5.67	5.22	4.99	4.23	5.02	5.04	4.16	5.07
July	0.87	3.48	3.28	5.19	5.04	5.43	5.51	5.27	4.92	4.18	5.08	5.00	4.12	5.06

Source: ECB.
1) Data refer to the changing composition of the euro area.
2) In accordance with the ESA 2010, in December 2014 holding companies of non-financial groups were reclassified from the non-financial corporations sector to the financial corporations sector.

4 Financial market developments

4.6 Debt securities issued by euro area residents, by sector of the issuer and original maturity

(EUR billions; transactions during the month and end-of-period outstanding amounts; market values)

	Outstanding amounts							Gross issues [1]						
	Total	MFIs	Non-MFI corporations			General government		Total	MFIs	Non-MFI corporations			General government	
			Financial corporations other than MFIs		Non-financial corporations	Total	of which central government			Financial corporations other than MFIs		Non-financial corporations	Total	of which central government
			Total	FVCs						Total	FVCs			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Short-term														
2021	1,411.7	428.9	128.4	52.5	89.7	764.7	674.9	386.6	137.9	79.0	26.4	32.1	137.6	104.8
2022	1,380.5	476.2	142.7	52.0	94.6	667.0	621.7	480.4	182.5	115.9	48.3	48.1	133.9	97.1
2023	1,550.8	611.1	151.7	63.9	86.2	701.8	659.1	502.4	212.7	113.4	39.4	48.9	127.5	103.8
2024 Feb.	1,556.9	609.4	170.0	62.4	93.2	684.2	643.6	460.1	183.3	113.9	37.8	39.6	123.3	101.1
Mar.	1,572.8	617.4	179.6	71.6	82.1	693.7	646.1	478.1	182.9	124.6	47.2	38.5	132.2	103.7
Apr.	1,535.0	576.3	169.3	62.6	91.3	697.9	648.1	454.7	170.5	101.3	38.7	48.9	134.0	106.2
May	1,507.8	555.0	166.8	58.1	93.5	692.6	638.8	451.3	171.5	105.5	40.5	41.7	132.6	101.9
June	1,575.7	564.1	211.4	56.6	89.1	711.1	657.0	427.5	165.0	91.4	39.0	39.8	131.2	94.0
July	1,569.2	558.4	210.8	52.3	92.8	707.2	651.3	469.3	174.6	112.6	38.7	47.3	134.7	112.0
Long-term														
2021	19,918.5	4,168.6	3,364.7	1,376.9	1,621.5	10,763.7	9,942.7	317.1	68.7	83.5	34.1	23.3	141.6	128.1
2022	17,884.2	3,955.3	3,226.4	1,369.8	1,431.9	9,270.6	8,558.6	298.9	79.4	71.0	29.6	17.8	130.6	121.2
2023	19,555.2	4,490.5	3,398.3	1,379.3	1,565.6	10,100.9	9,361.1	326.9	94.6	72.7	28.2	21.2	138.4	130.0
2024 Feb.	19,656.9	4,547.8	3,472.4	1,381.8	1,573.5	10,063.2	9,311.2	370.3	99.8	64.7	10.5	19.3	186.5	168.2
Mar.	19,943.2	4,629.9	3,502.7	1,380.9	1,602.3	10,208.3	9,446.5	438.5	127.0	97.6	29.0	34.9	179.1	164.4
Apr.	19,841.1	4,647.1	3,497.4	1,374.5	1,591.8	10,104.8	9,355.0	345.2	100.4	66.2	12.9	34.6	144.0	138.1
May	19,890.3	4,662.6	3,525.5	1,371.0	1,610.9	10,091.3	9,341.1	398.6	77.1	108.5	21.0	34.7	178.3	160.1
June	20,054.1	4,665.0	3,590.9	1,384.5	1,617.9	10,180.3	9,425.6	319.3	71.0	81.4	29.5	27.3	139.7	131.4
July	20,283.4	4,706.3	3,601.8	1,367.6	1,625.8	10,349.5	9,585.9	290.6	78.5	77.8	16.4	14.7	119.6	115.2

Source: ECB.
1) In order to facilitate comparison, annual data are averages of the relevant monthly data.

4.7 Annual growth rates and outstanding amounts of debt securities and listed shares

(EUR billions and percentage changes; market values)

	Debt securities							Listed shares			
	Total	MFIs	Non-MFI corporations			General government		Total	MFIs	Financial corporations other than MFIs	Non-financial corporations
			Financial corporations other than MFIs		Non-financial corporations	Total	of which central government				
			Total	FVCs							
	1	2	3	4	5	6	7	8	9	10	11
Outstanding amount											
2021	21,330.2	4,597.6	3,493.0	1,429.4	1,711.1	11,528.4	10,617.5	10,366.3	600.3	1,486.7	8,278.3
2022	19,264.7	4,431.5	3,369.1	1,421.8	1,526.5	9,937.6	9,180.3	8,711.0	525.2	1,290.2	6,895.0
2023	21,106.0	5,101.6	3,550.0	1,443.2	1,651.8	10,802.6	10,020.3	9,684.0	621.8	1,414.7	7,647.0
2024 Feb.	21,213.8	5,157.2	3,642.4	1,444.3	1,666.7	10,747.5	9,954.9	10,159.4	652.5	1,506.4	8,000.0
Mar.	21,516.1	5,247.3	3,682.3	1,452.5	1,684.4	10,902.0	10,092.6	10,515.3	727.8	1,595.4	8,191.6
Apr.	21,376.1	5,223.4	3,666.8	1,437.1	1,683.1	10,802.8	10,003.1	10,242.2	729.5	1,533.5	7,978.7
May	21,398.1	5,217.5	3,692.2	1,429.1	1,704.4	10,783.9	9,979.9	10,376.2	750.6	1,561.4	8,063.7
June	21,629.9	5,229.0	3,802.3	1,441.1	1,707.0	10,891.5	10,082.6	10,068.2	697.9	1,507.9	7,862.0
July	21,852.6	5,264.7	3,812.6	1,419.9	1,718.6	11,056.8	10,237.2	10,109.0	734.9	1,526.3	7,847.4
Growth rate [1]											
2023 Dec.	5.9	12.2	3.1	1.5	2.3	4.6	5.0	-1.5	-3.1	0.7	-1.7
2024 Jan.	6.0	11.2	5.0	3.4	2.1	4.7	5.1	-1.5	-3.0	0.7	-1.8
Feb.	5.8	10.7	4.8	2.6	2.0	4.5	4.8	-1.5	-3.0	0.7	-1.7
Mar.	5.9	11.4	4.9	2.7	2.3	4.3	4.6	-1.3	-3.0	1.0	-1.6
Apr.	5.7	10.3	4.4	0.9	2.9	4.4	4.6	-1.4	-3.1	0.6	-1.6
May	5.4	8.8	3.7	-2.4	2.7	4.8	4.8	-1.2	-3.2	0.6	-1.3
June	4.7	7.4	3.4	-3.1	3.0	4.2	4.1	-0.6	-3.3	-1.0	-0.3
July	4.1	5.4	3.4	-4.4	2.0	4.1	4.1	-0.5	-3.5	-0.8	-0.2

Source: ECB.
1) For details on the calculation of growth rates, see the Technical Notes.

4 Financial market developments

4.8 Effective exchange rates [1)]

(period averages; index: 1999 Q1=100)

	EER-19						EER-42	
	Nominal	Real CPI	Real PPI	Real GDP deflator	Real ULCM	Real ULCT	Nominal	Real CPI
	1	2	3	4	5	6	7	8
2021	99.6	93.7	93.7	88.9	67.1	87.4	120.5	94.3
2022	95.3	90.8	93.7	84.1	62.2	82.5	116.1	90.9
2023	98.1	94.0	98.1	88.5	64.5	86.3	121.8	94.7
2023 Q3	98.9	94.9	99.0	89.4	64.9	87.2	123.5	95.9
Q4	98.3	94.2	98.3	89.2	65.0	86.9	123.0	95.1
2024 Q1	98.4	94.4	98.4	89.5	65.0	87.4	123.7	95.2
Q2	98.7	94.6	98.4	.	.	.	124.1	95.2
2024 Mar.	98.8	94.8	98.7	-	-	-	124.2	95.5
Apr.	98.6	94.5	98.5	-	-	-	124.0	95.2
May	98.9	94.8	98.6	-	-	-	124.4	95.3
June	98.5	94.5	98.3	-	-	-	124.0	95.0
July	99.0	95.1	98.8	-	-	-	124.8	95.5
Aug.	99.0	94.9	98.7	-	-	-	125.2	95.7
Percentage change versus previous month								
2024 Aug.	0.0	-0.1	-0.1	-	-	-	0.4	0.2
Percentage change versus previous year								
2024 Aug.	0.0	-0.1	-0.4	-	-	-	1.2	-0.4

Source: ECB.
1) For a definition of the trading partner groups and other information see the General Notes to the Statistics Bulletin.

4.9 Bilateral exchange rates

(period averages; units of national currency per euro)

	Chinese renminbi	Croatian kuna	Czech koruna	Danish krone	Hungarian forint	Japanese yen	Polish zloty	Pound sterling	Romanian leu	Swedish krona	Swiss franc	US Dollar
	1	2	3	4	5	6	7	8	9	10	11	12
2021	7.628	7.528	25.640	7.437	358.516	129.877	4.565	0.860	4.9215	10.146	1.081	1.183
2022	7.079	7.535	24.566	7.440	391.286	138.027	4.686	0.853	4.9313	10.630	1.005	1.053
2023	7.660	.	24.004	7.451	381.853	151.990	4.542	0.870	4.9467	11.479	0.972	1.081
2023 Q3	7.886	.	24.126	7.453	383.551	157.254	4.499	0.860	4.9490	11.764	0.962	1.088
Q4	7.771	.	24.517	7.458	382.125	159.118	4.420	0.867	4.9697	11.478	0.955	1.075
2024 Q1	7.805	.	25.071	7.456	388.182	161.150	4.333	0.856	4.9735	11.279	0.949	1.086
Q2	7.797	.	24.959	7.460	391.332	167.773	4.300	0.853	4.9750	11.504	0.974	1.077
2024 Mar.	7.830	.	25.292	7.457	395.087	162.773	4.307	0.855	4.9708	11.305	0.966	1.087
Apr.	7.766	.	25.278	7.460	392.411	165.030	4.303	0.857	4.9730	11.591	0.976	1.073
May	7.821	.	24.818	7.461	387.183	168.536	4.280	0.856	4.9754	11.619	0.983	1.081
June	7.805	.	24.779	7.459	394.763	169.813	4.321	0.846	4.9767	11.285	0.962	1.076
July	7.875	.	25.299	7.461	392.836	171.171	4.282	0.843	4.9730	11.532	0.968	1.084
Aug.	7.874	.	25.179	7.461	394.695	161.055	4.292	0.852	4.9766	11.456	0.945	1.101
Percentage change versus previous month												
2024 Aug.	0.0	0.0	-0.5	0.0	0.5	-5.9	0.2	1.0	0.1	-0.7	-2.3	1.6
Percentage change versus previous year												
2024 Aug.	-0.5	.	4.4	0.1	2.5	2.0	-3.8	-0.9	0.7	-3.0	-1.4	0.9

Source: ECB.

4 Financial market developments

4.10 Euro area balance of payments, financial account

(EUR billions, unless otherwise indicated; outstanding amounts at end of period; transactions during period)

	Total [1]			Direct investment		Portfolio investment		Net financial derivatives	Other investment		Reserve assets	Memo: Gross external debt
	Assets	Liabilities	Net	Assets	Liabilities	Assets	Liabilities		Assets	Liabilities		
	1	2	3	4	5	6	7	8	9	10	11	12
Outstanding amounts (international investment position)												
2023 Q2	32,071.3	31,998.5	72.8	12,218.1	10,028.3	11,962.3	14,119.1	-9.0	6,794.7	7,851.1	1,105.2	16,375.9
Q3	32,250.2	31,983.3	266.9	12,318.8	10,109.6	12,006.9	14,111.2	-31.2	6,842.1	7,762.5	1,113.6	16,374.8
Q4	32,190.1	31,841.7	348.4	11,939.7	9,696.9	12,447.1	14,682.9	-15.3	6,670.8	7,461.9	1,147.7	16,048.3
2024 Q1	33,581.1	32,989.2	591.9	12,255.9	9,806.9	13,142.9	15,446.3	-15.8	6,983.1	7,736.1	1,215.1	16,537.5
Outstanding amounts as percentage of GDP												
2024 Q1	229.4	225.4	4.0	83.7	67.0	89.8	105.5	-0.1	47.7	52.9	8.3	113.0
Transactions												
2023 Q3	129.6	35.4	94.2	4.4	14.8	98.5	111.0	-1.1	29.9	-90.4	-2.2	-
Q4	-304.0	-424.3	120.3	-308.1	-300.2	44.0	84.3	23.0	-69.3	-208.4	6.4	-
2024 Q1	563.9	451.9	112.0	118.3	50.0	174.4	190.0	11.4	258.6	211.9	1.2	-
Q2	195.0	64.7	130.3	49.2	-32.6	160.6	226.5	2.3	-20.9	-129.2	3.8	-
2024 Jan.	214.8	174.8	39.9	25.6	16.0	71.3	91.2	12.0	105.0	67.7	0.8	-
Feb.	208.8	193.9	14.9	52.4	3.0	59.1	72.6	11.4	85.1	118.3	0.9	-
Mar.	140.3	83.1	57.2	40.3	31.1	44.0	26.2	-11.9	68.4	25.8	-0.5	-
Apr.	68.7	55.4	13.3	25.6	-7.0	23.1	45.2	6.6	12.7	17.2	0.8	-
May	138.9	108.5	30.4	22.0	4.0	63.5	63.7	-2.8	54.5	40.8	1.6	-
June	-12.6	-99.2	86.6	1.6	-29.6	74.0	117.6	-1.5	-88.0	-187.2	1.3	-
12-month cumulated transactions												
2024 June	584.5	127.7	456.8	-136.1	-268.0	477.6	611.8	35.7	198.2	-216.1	9.1	-
12-month cumulated transactions as percentage of GDP												
2024 June	4.0	0.9	3.1	-0.9	-1.8	3.2	4.1	0.2	1.3	-1.5	0.1	-

Source: ECB.
1) Net financial derivatives are included in total assets.

5 Financing conditions and credit developments

5.1 Monetary aggregates [1)]

(EUR billions and annual growth rates; seasonally adjusted; outstanding amounts and growth rates at end of period; transactions during period)

	M3											
	M2							M3-M2				Total
	M1			M2-M1			Total					
	Currency in circulation	Overnight deposits	Total	Deposits with an agreed maturity of up to 2 years	Deposits redeemable at notice of up to 3 months	Total		Repos	Money market fund shares	Debt securities with a maturity of up to 2 years	Total	
	1	2	3	4	5	6	7	8	9	10	11	12
Outstanding amounts												
2021	1,469.3	9,822.6	11,291.8	918.8	2,504.9	3,423.7	14,715.5	118.7	644.1	25.3	788.1	15,503.7
2022	1,539.5	9,763.0	11,302.6	1,382.1	2,563.9	3,946.1	15,248.7	124.2	646.1	49.5	819.7	16,068.4
2023	1,536.0	8,834.3	10,370.3	2,309.8	2,458.5	4,768.3	15,138.6	186.8	739.5	70.1	996.4	16,135.0
2023 Q3	1,535.7	8,985.8	10,521.5	2,085.9	2,465.8	4,551.6	15,073.1	131.0	714.4	75.7	921.1	15,994.2
Q4	1,536.0	8,834.3	10,370.3	2,309.8	2,458.5	4,768.3	15,138.6	186.8	739.5	70.1	996.4	16,135.0
2024 Q1	1,522.8	8,735.8	10,258.6	2,447.5	2,431.0	4,878.5	15,137.1	192.7	787.1	72.5	1,052.3	16,189.5
Q2 (p)	1,533.6	8,809.0	10,342.6	2,530.1	2,428.7	4,958.8	15,301.3	206.7	814.7	58.7	1,080.1	16,381.4
2024 Feb.	1,533.0	8,711.8	10,244.8	2,423.9	2,433.7	4,857.6	15,102.4	178.6	769.2	69.2	1,016.9	16,119.3
Mar.	1,522.8	8,735.8	10,258.6	2,447.5	2,431.0	4,878.5	15,137.1	192.7	787.1	72.5	1,052.3	16,189.5
Apr.	1,531.8	8,722.6	10,254.4	2,460.1	2,431.5	4,891.6	15,146.0	205.1	797.2	73.3	1,075.6	16,221.6
May	1,529.0	8,725.9	10,254.9	2,505.8	2,430.8	4,936.6	15,191.5	205.2	791.0	67.4	1,063.6	16,255.1
June	1,533.6	8,809.0	10,342.6	2,530.1	2,428.7	4,958.8	15,301.3	206.7	814.7	58.7	1,080.1	16,381.4
July (p)	1,536.7	8,748.4	10,285.1	2,526.6	2,423.9	4,950.5	15,235.6	226.9	823.4	54.2	1,104.4	16,340.1
Transactions												
2021	106.6	908.1	1,014.7	-121.0	65.7	-55.3	959.4	12.3	20.3	13.2	45.7	1,005.1
2022	70.3	-47.4	23.0	429.5	54.9	484.4	507.4	3.9	2.4	76.6	82.8	590.2
2023	-5.0	-954.4	-959.3	925.5	-100.1	825.4	-133.9	40.9	93.8	23.3	157.9	24.0
2023 Q3	0.3	-202.7	-202.4	224.0	-52.1	171.9	-30.5	16.4	18.2	-8.8	25.8	-4.7
Q4	0.3	-129.5	-129.2	228.9	-6.8	222.1	92.9	35.0	26.0	-6.2	54.8	147.7
2024 Q1	-12.6	-104.1	-116.6	135.8	-27.0	108.9	-7.8	8.3	47.4	7.6	63.3	55.5
Q2 (p)	10.7	72.4	83.2	58.3	-2.3	56.0	139.1	13.6	24.6	-13.5	24.7	163.8
2024 Feb.	0.2	-17.8	-17.6	65.7	-13.3	52.4	34.8	-4.6	15.1	-15.1	-4.6	30.2
Mar.	-10.2	24.0	13.8	23.5	-2.7	20.8	34.6	14.2	17.9	1.6	33.7	68.3
Apr.	9.0	-14.8	-5.8	10.8	0.5	11.3	5.5	12.2	9.9	1.8	23.9	29.4
May	-2.8	6.4	3.6	35.8	-0.6	35.2	38.8	0.3	-7.7	-4.9	-12.2	26.6
June	4.5	80.8	85.4	11.7	-2.2	9.5	94.9	1.1	22.3	-10.4	13.0	107.9
July (p)	3.1	-58.6	-55.5	-2.8	-4.8	-7.6	-63.2	20.4	7.3	-5.4	22.2	-40.9
Growth rates												
2021	7.8	10.2	9.9	-11.7	2.7	-1.6	7.0	12.1	3.2	158.5	6.2	6.9
2022	4.8	-0.5	0.2	45.8	2.2	14.1	3.4	3.1	0.4	458.1	11.1	3.8
2023	-0.3	-9.7	-8.5	66.6	-3.9	20.9	-0.9	32.9	14.5	43.7	19.3	0.2
2023 Q3	-0.2	-11.4	-9.9	76.3	-3.3	21.9	-2.2	10.3	18.4	65.0	19.9	-1.2
Q4	-0.3	-9.7	-8.5	66.6	-3.9	20.9	-0.9	32.9	14.5	43.7	19.3	0.2
2024 Q1	-1.2	-7.5	-6.6	49.8	-4.6	16.7	-0.2	68.6	16.3	-17.0	19.3	0.9
Q2 (p)	-0.1	-4.0	-3.4	34.8	-3.5	12.8	1.3	62.1	16.7	-28.5	18.7	2.3
2024 Feb.	-0.4	-8.9	-7.7	57.9	-4.7	18.8	-0.6	29.6	17.8	-0.1	18.2	0.4
Mar.	-1.2	-7.5	-6.6	49.8	-4.6	16.7	-0.2	68.6	16.3	-17.0	19.3	0.9
Apr.	-0.3	-6.8	-5.9	45.4	-4.2	15.6	0.1	78.5	17.8	-9.7	22.7	1.3
May	-0.5	-5.8	-5.0	41.3	-3.8	14.7	0.6	64.6	14.4	-20.4	17.6	1.5
June	-0.1	-4.0	-3.4	34.8	-3.5	12.8	1.3	62.1	16.7	-28.5	18.7	2.3
July (p)	0.2	-3.6	-3.1	30.5	-3.3	11.4	1.2	66.9	18.0	-30.7	21.0	2.3

Sources: ECB.
1) Data refer to the changing composition of the euro area.

5 Financing conditions and credit developments

5.2 Deposits in M3 [1)]

(EUR billions and annual growth rates; seasonally adjusted; outstanding amounts and growth rates at end of period; transactions during period)

	Non-financial corporations [2)]					Households [3)]							
	Total	Overnight	With an agreed maturity of up to 2 years	Redeemable at notice of up to 3 months	Repos	Total	Overnight	With an agreed maturity of up to 2 years	Redeemable at notice of up to 3 months	Repos	Financial corporations other than MFIs and ICPFs [2)]	Insurance corporations and pension funds	Other general government [4)]
	1	2	3	4	5	6	7	8	9	10	11	12	13
Outstanding amounts													
2021	3,228.3	2,802.7	289.7	128.4	7.4	8,088.0	5,380.9	374.1	2,332.3	0.7	1,272.7	229.0	546.9
2022	3,360.4	2,721.4	497.6	135.0	6.4	8,373.4	5,536.6	444.9	2,391.1	0.9	1,302.3	236.3	560.8
2023	3,335.4	2,424.0	767.7	131.6	12.1	8,425.1	5,111.0	1,021.7	2,290.9	1.4	1,252.4	234.8	541.7
2023 Q3	3,322.7	2,438.8	737.1	131.9	14.8	8,350.5	5,205.0	847.5	2,297.1	0.8	1,217.0	212.6	565.7
Q4	3,335.4	2,424.0	767.7	131.6	12.1	8,425.1	5,111.0	1,021.7	2,290.9	1.4	1,252.4	234.8	541.7
2024 Q1	3,332.7	2,380.0	814.3	127.6	10.8	8,460.1	5,056.1	1,135.9	2,267.0	1.0	1,244.0	227.2	543.1
Q2 (p)	3,394.9	2,421.6	836.8	127.5	9.1	8,530.0	5,063.6	1,198.4	2,266.7	1.3	1,286.0	226.0	537.5
2024 Feb.	3,316.4	2,366.9	810.0	127.9	11.5	8,452.6	5,065.7	1,114.0	2,271.9	1.0	1,214.0	223.4	541.6
Mar.	3,332.7	2,380.0	814.3	127.6	10.8	8,460.1	5,056.1	1,135.9	2,267.0	1.0	1,244.0	227.2	543.1
Apr.	3,346.3	2,384.2	824.6	126.8	10.7	8,487.9	5,058.9	1,160.6	2,267.4	1.0	1,248.8	209.9	526.4
May	3,371.8	2,389.1	847.0	127.0	8.7	8,496.2	5,047.0	1,180.4	2,267.7	1.0	1,262.1	214.8	522.8
June	3,394.9	2,421.6	836.8	127.5	9.1	8,530.0	5,063.6	1,198.4	2,266.7	1.3	1,286.0	226.0	537.5
July (p)	3,368.0	2,402.1	828.4	127.0	10.5	8,544.2	5,058.3	1,221.9	2,263.2	0.9	1,266.0	210.7	537.0
Transactions													
2021	248.2	272.8	-21.3	-6.9	3.6	422.0	411.1	-65.0	76.1	-0.2	159.2	-10.4	46.0
2022	121.9	-89.2	206.5	5.9	-1.4	296.1	167.5	75.2	53.3	0.1	1.2	7.7	14.0
2023	-29.1	-302.9	269.3	-1.4	5.9	22.5	-458.3	575.4	-95.1	0.6	-55.5	0.0	-25.9
2023 Q3	-13.7	-65.7	48.3	-0.1	3.7	-14.2	-110.6	149.3	-52.9	0.0	30.2	-17.3	0.6
Q4	21.2	-8.7	32.4	-0.1	-2.5	76.6	-93.0	175.0	-6.0	0.6	30.9	23.0	-24.1
2024 Q1	-4.0	-46.0	45.7	-3.5	-0.2	32.1	-55.7	112.2	-24.0	-0.4	-8.2	-8.0	1.3
Q2 (p)	59.9	41.6	20.1	0.0	-1.8	69.3	7.2	62.1	-0.2	0.2	21.2	-1.5	-6.8
2024 Feb.	-9.1	-16.9	7.3	0.1	0.4	10.8	-17.7	40.6	-11.9	-0.1	8.2	1.3	18.7
Mar.	16.0	12.9	4.1	-0.3	-0.7	7.7	-9.4	21.9	-4.9	0.1	29.9	3.9	1.5
Apr.	13.2	3.7	10.3	-0.7	-0.2	27.5	2.6	24.6	0.4	-0.1	3.2	-17.6	-17.7
May	28.1	6.4	23.3	0.2	-1.9	8.9	-11.5	20.0	0.3	0.0	3.6	5.1	-3.7
June	18.6	31.4	-13.6	0.5	0.3	32.8	16.1	17.5	-1.0	0.2	14.4	11.0	14.6
July (p)	-25.5	-18.5	-7.9	-0.6	1.6	14.6	-5.2	23.6	-3.5	-0.3	-19.1	-15.2	-0.7
Growth rates													
2021	8.4	10.8	-6.9	-5.0	103.4	5.5	8.3	-14.8	3.4	-18.4	14.2	-4.3	9.3
2022	3.8	-3.2	70.1	4.6	-16.4	3.7	3.1	20.3	2.3	19.9	0.4	3.4	2.6
2023	-0.9	-11.1	54.0	-1.0	91.8	0.3	-8.2	128.2	-4.0	67.4	-4.1	0.0	-4.6
2023 Q3	-1.2	-14.0	90.6	0.2	83.5	-0.3	-7.4	127.8	-3.4	-14.5	-16.4	-12.3	1.8
Q4	-0.9	-11.1	54.0	-1.0	91.8	0.3	-8.2	128.2	-4.0	67.4	-4.1	0.0	-4.6
2024 Q1	0.1	-8.2	36.4	-3.2	39.0	0.9	-7.1	101.2	-4.6	12.1	1.4	-1.6	-5.7
Q2 (p)	1.9	-3.2	21.3	-2.8	-9.2	2.0	-4.7	71.3	-3.5	47.9	6.4	-1.7	-5.1
2024 Feb.	-1.2	-10.5	42.3	-3.1	45.7	0.6	-7.9	114.3	-4.7	28.9	-1.7	-1.3	-6.0
Mar.	0.1	-8.2	36.4	-3.2	39.0	0.9	-7.1	101.2	-4.6	12.1	1.4	-1.6	-5.7
Apr.	0.6	-7.0	32.6	-3.2	16.1	1.4	-6.2	91.8	-4.3	9.0	2.0	-8.6	-6.8
May	1.9	-5.4	31.8	-3.1	-11.9	1.6	-5.7	81.1	-3.9	11.2	2.7	-5.7	-6.9
June	1.9	-3.2	21.3	-2.8	-9.2	2.0	-4.7	71.3	-3.5	47.9	6.4	-1.7	-5.1
July (p)	1.8	-2.6	17.9	-3.0	8.5	2.2	-4.0	62.3	-3.2	10.2	4.9	-3.1	-5.2

Sources: ECB.
1) Data refer to the changing composition of the euro area.
2) In accordance with the ESA 2010, in December 2014 holding companies of non-financial groups were reclassified from the non-financial corporations sector to the financial corporations sector. These entities are included in MFI balance sheet statistics with financial corporations other than MFIs and insurance corporations and pension funds (ICPFs).
3) Including non-profit institutions serving households.
4) Refers to the general government sector excluding central government.

5 Financing conditions and credit developments

5.3 Credit to euro area residents [1)]

(EUR billions and annual growth rates; seasonally adjusted; outstanding amounts and growth rates at end of period; transactions during period)

	Credit to general government			Credit to other euro area residents								
	Total	Loans	Debt securities	Total	Loans						Debt securities	Equity and non-money market fund investment fund shares
					Total		To non-financial corporations [3)]	To households [4)]	To financial coprorations other than MFIs and ICPFs [3)]	To insurance corporations and pension funds		
					Total	Adjusted loans [2)]						
	1	2	3	4	5	6	7	8	9	10	11	12
Outstanding amounts												
2021	6,531.5	994.3	5,535.4	14,805.5	12,340.5	12,722.7	4,864.8	6,372.6	941.9	161.1	1,576.9	888.1
2022	6,362.0	1,004.7	5,332.2	15,390.5	12,990.1	13,177.9	5,129.8	6,632.2	1,080.6	147.6	1,564.4	836.0
2023	6,316.9	994.7	5,296.9	15,493.9	13,037.0	13,256.8	5,126.7	6,648.6	1,122.8	139.0	1,559.2	897.7
2023 Q3	6,212.5	989.2	5,198.3	15,435.5	12,984.0	13,192.8	5,114.7	6,635.7	1,096.5	137.2	1,576.9	874.6
Q4	6,316.9	994.7	5,296.9	15,493.9	13,037.0	13,256.8	5,126.7	6,648.6	1,122.8	139.0	1,559.2	897.7
2024 Q1	6,218.1	976.8	5,215.7	15,547.5	13,044.7	13,275.8	5,115.6	6,644.2	1,145.1	139.8	1,571.4	931.4
Q2	6,194.3	978.8	5,189.7	15,573.3	13,102.5	13,341.6	5,128.6	6,644.0	1,199.7	130.1	1,554.1	916.7
2024 Feb.	6,211.5	982.6	5,203.3	15,527.8	13,028.1	13,262.5	5,113.2	6,638.2	1,140.6	136.1	1,582.2	917.5
Mar.	6,218.1	976.8	5,215.7	15,547.5	13,044.7	13,275.8	5,115.6	6,644.2	1,145.1	139.8	1,571.4	931.4
Apr.	6,210.8	972.8	5,212.4	15,534.2	13,058.4	13,292.5	5,111.5	6,642.2	1,167.6	137.0	1,556.0	919.8
May	6,177.7	972.8	5,179.2	15,530.7	13,066.5	13,299.9	5,115.9	6,641.0	1,179.7	129.9	1,542.2	922.1
June	6,194.3	978.8	5,189.7	15,573.3	13,102.5	13,341.6	5,128.6	6,644.0	1,199.7	130.1	1,554.1	916.7
July	6,216.5	972.0	5,218.8	15,590.0	13,132.6	13,365.0	5,123.7	6,643.1	1,234.1	131.8	1,532.4	924.9
Transactions												
2021	663.1	-0.9	673.6	562.7	475.8	509.2	176.9	261.7	47.4	-10.1	77.7	9.2
2022	175.9	9.6	165.0	636.0	624.1	680.7	269.4	241.9	126.1	-13.4	18.2	-6.3
2023	-159.5	-16.8	-142.9	55.5	25.1	72.6	-5.4	7.8	30.7	-8.1	-15.3	45.7
2023 Q3	-18.1	1.6	-19.4	10.1	2.2	-9.3	-8.6	2.1	14.0	-5.3	2.1	5.8
Q4	6.8	7.8	-1.3	39.1	46.6	69.4	10.0	17.6	16.7	2.2	-23.8	16.3
2024 Q1	-75.6	-16.4	-59.4	60.7	24.8	37.4	-5.5	-0.8	30.4	0.8	12.2	23.7
Q2	-3.0	2.4	-5.7	19.2	41.5	52.7	15.2	2.5	33.6	-9.8	-16.3	-6.1
2024 Feb.	-22.2	-2.0	-20.2	36.3	32.9	33.2	5.7	4.7	20.4	2.0	-1.3	4.7
Mar.	-9.3	-5.6	-3.7	17.2	20.0	15.9	3.0	7.6	5.8	3.6	-13.4	10.6
Apr.	14.6	-3.3	17.9	-7.4	13.4	16.8	-4.3	-1.2	21.6	-2.8	-14.7	-6.1
May	-29.0	-0.1	-28.9	-9.0	2.3	2.3	6.9	-1.0	3.5	-7.1	-13.3	2.0
June	11.3	5.9	5.3	35.5	25.8	33.5	12.7	4.6	8.4	0.1	11.6	-2.0
July	-13.5	-6.9	-6.5	14.8	34.7	28.0	-2.1	0.1	34.9	1.7	-24.7	4.8
Growth rates												
2021	11.3	-0.1	13.8	3.9	4.0	4.2	3.8	4.3	5.2	-4.6	5.1	1.0
2022	2.7	1.0	3.0	4.3	5.0	5.4	5.5	3.8	13.4	-7.9	1.2	-0.6
2023	-2.5	-1.7	-2.7	0.4	0.2	0.6	-0.1	0.1	2.8	-5.4	-1.0	5.4
2023 Q3	-2.1	-2.1	-2.1	0.2	-0.2	0.3	-0.4	0.3	-0.2	-13.9	1.6	5.0
Q4	-2.5	-1.7	-2.7	0.4	0.2	0.6	-0.1	0.1	2.8	-5.4	-1.0	5.4
2024 Q1	-2.5	-1.6	-2.8	0.8	0.4	0.8	-0.2	-0.1	6.3	-1.2	0.5	7.2
Q2	-1.4	-0.5	-1.6	0.8	0.9	1.1	0.2	0.3	8.7	-8.6	-1.6	4.6
2024 Feb.	-2.8	-1.3	-3.1	0.7	0.2	0.7	-0.3	-0.2	5.8	-7.7	1.6	6.2
Mar.	-2.5	-1.6	-2.8	0.8	0.4	0.8	-0.2	-0.1	6.3	-1.2	0.5	7.2
Apr.	-1.9	-0.7	-2.1	0.7	0.5	0.9	-0.2	-0.2	8.7	-4.5	-0.6	5.7
May	-1.4	-1.4	-1.5	0.6	0.6	0.8	-0.1	0.3	7.0	-7.7	-2.5	5.2
June	-1.4	-0.5	-1.6	0.8	0.9	1.1	0.2	0.3	8.7	-8.6	-1.6	4.6
July	-1.1	-0.9	-1.2	0.8	1.1	1.3	0.2	0.4	9.6	-2.5	-3.1	4.3

Source: ECB.
1) Data refer to the changing composition of the euro area.
2) Adjusted for loan sales and securitisation (resulting in derecognition from the MFI statistical balance sheet) as well as for positions arising from notional cash pooling services provided by MFIs.
3) In accordance with the ESA 2010, in December 2014 holding companies of non-financial groups were reclassified from the non-financial corporations sector to the financial corporations sector. These entities are included in MFI balance sheet statistics with financial corporations other than MFIs and insurance corporations and pension funds (ICPFs).
4) Including non-profit institutions serving households.

5 Financing conditions and credit developments

5.4 MFI loans to euro area non-financial corporations and households [1)]

(EUR billions and annual growth rates; seasonally adjusted; outstanding amounts and growth rates at end of period; transactions during period)

	Non-financial corporations [2)]					Households [3)]				
	Total		Up to 1 year	Over 1 and up to 5 years	Over 5 years	Total		Loans for consumption	Loans for house purchase	Other loans
	Total	Adjusted loans [4)]				Total	Adjusted loans [4)]			
	1	2	3	4	5	6	7	8	9	10
Outstanding amounts										
2021	4,864.8	4,995.5	885.0	1,005.2	2,974.6	6,372.6	6,637.5	698.3	4,970.8	703.5
2022	5,129.8	5,130.8	962.6	1,077.6	3,089.6	6,632.2	6,832.8	717.3	5,214.6	700.2
2023	5,126.7	5,143.4	910.2	1,091.1	3,125.5	6,648.6	6,865.8	733.5	5,229.2	685.9
2023 Q3	5,114.7	5,123.3	911.5	1,085.4	3,117.8	6,635.7	6,867.1	731.6	5,212.7	691.3
Q4	5,126.7	5,143.4	910.2	1,091.1	3,125.5	6,648.6	6,865.8	733.5	5,229.2	685.9
2024 Q1	5,115.6	5,132.7	888.0	1,088.5	3,139.1	6,644.2	6,873.5	742.0	5,222.6	679.6
Q2	5,128.6	5,146.7	901.5	1,087.5	3,139.7	6,644.0	6,879.8	740.4	5,226.1	677.5
2024 Feb.	5,113.2	5,130.4	890.9	1,090.6	3,131.7	6,638.2	6,871.8	736.8	5,220.3	681.1
Mar.	5,115.6	5,132.7	888.0	1,088.5	3,139.1	6,644.2	6,873.5	742.0	5,222.6	679.6
Apr.	5,111.5	5,127.4	877.3	1,087.4	3,146.8	6,642.2	6,876.2	741.4	5,223.9	676.9
May	5,115.9	5,128.9	886.8	1,086.4	3,142.7	6,641.0	6,877.9	742.0	5,222.2	676.7
June	5,128.6	5,146.7	901.5	1,087.5	3,139.7	6,644.0	6,879.8	740.4	5,226.1	677.5
July	5,123.7	5,140.0	899.9	1,085.9	3,137.9	6,643.1	6,882.8	741.3	5,228.6	673.2
Transactions										
2021	176.9	208.3	0.2	2.3	174.4	261.7	267.3	10.7	254.9	-3.9
2022	269.4	309.2	77.9	77.5	114.1	241.9	250.3	23.3	217.7	0.9
2023	-5.4	24.9	-43.6	10.3	27.8	7.8	25.7	18.9	10.0	-21.1
2023 Q3	-8.6	-10.3	-10.8	-3.3	5.6	2.1	0.6	6.7	3.1	-7.6
Q4	10.0	30.3	4.1	5.2	0.7	17.6	3.4	3.8	17.6	-3.8
2024 Q1	-5.5	-3.3	-20.1	-1.4	16.0	-0.8	9.8	9.4	-5.3	-5.0
Q2	15.2	17.7	17.4	-1.8	-0.4	2.5	10.3	0.2	4.0	-1.7
2024 Feb.	5.7	6.2	2.1	-2.3	5.9	4.7	4.0	2.6	4.5	-2.3
Mar.	3.0	3.4	-3.3	-0.9	7.2	7.6	2.3	5.7	2.7	-0.8
Apr.	-4.3	-5.1	-7.0	-2.7	5.3	-1.2	3.3	-0.2	1.4	-2.3
May	6.9	3.7	10.4	-0.4	-3.2	-1.0	3.0	1.1	-1.5	-0.6
June	12.7	19.1	14.0	1.2	-2.5	4.6	4.0	-0.6	4.0	1.2
July	-2.1	-3.7	-0.6	-1.3	-0.3	0.1	3.9	1.8	2.2	-3.9
Growth rates										
2021	3.8	4.3	0.0	0.2	6.2	4.3	4.2	1.5	5.4	-0.6
2022	5.5	6.4	8.8	7.7	3.8	3.8	3.8	3.3	4.4	0.1
2023	-0.1	0.5	-4.5	1.0	0.9	0.1	0.4	2.6	0.2	-3.0
2023 Q3	-0.4	0.2	-8.8	2.2	1.4	0.3	0.8	2.8	0.3	-2.5
Q4	-0.1	0.5	-4.5	1.0	0.9	0.1	0.4	2.6	0.2	-3.0
2024 Q1	-0.2	0.3	-3.9	-0.2	1.0	-0.1	0.2	3.3	-0.2	-3.0
Q2	0.2	0.7	-1.0	-0.1	0.7	0.3	0.3	2.8	0.4	-2.6
2024 Feb.	-0.3	0.3	-4.5	0.1	0.8	-0.2	0.3	2.8	-0.2	-3.1
Mar.	-0.2	0.3	-3.9	-0.2	1.0	-0.1	0.2	3.3	-0.2	-3.0
Apr.	-0.2	0.2	-3.7	-0.7	1.1	-0.2	0.2	3.0	-0.2	-3.1
May	-0.1	0.3	-2.5	-0.8	0.9	0.3	0.3	2.9	0.4	-2.9
June	0.2	0.7	-1.0	-0.1	0.7	0.3	0.3	2.8	0.4	-2.6
July	0.2	0.6	-0.8	-0.3	0.6	0.4	0.5	2.8	0.5	-2.7

Source: ECB.
1) Data refer to the changing composition of the euro area.
2) In accordance with the ESA 2010, in December 2014 holding companies of non-financial groups were reclassified from the non-financial corporations sector to the financial corporations sector. These entities are included in MFI balance sheet statistics with financial corporations other than MFIs and insurance corporations and pension funds (ICPFs).
3) Including non-profit institutions serving households.
4) Adjusted for loan sales and securitisation (resulting in derecognition from the MFI statistical balance sheet) as well as for positions arising from notional cash pooling services provided by MFIs.

5 Financing conditions and credit developments

5.5 Counterparts to M3 other than credit to euro area residents [1)]

(EUR billions and annual growth rates; seasonally adjusted; outstanding amounts and growth rates at end of period; transactions during period)

	MFI liabilities						MFI assets			
		Longer-term financial liabilities vis-à-vis other euro area residents						Other		
	Central government holdings [2)]	Total	Deposits with an agreed maturity of over 2 years	Deposits redeemable at notice of over 3 months	Debt securities with a maturity of over 2 years	Capital and reserves	Net external assets	Total	Repos with central counter-parties [3)]	Reverse repos to central counter-parties [3)]
	1	2	3	4	5	6	7	8	9	10
Outstanding amounts										
2021	736.1	6,884.3	1,838.9	37.1	1,999.0	3,009.3	1,376.4	410.6	128.5	136.8
2022	648.6	6,744.4	1,783.1	45.9	2,110.6	2,804.8	1,333.6	375.4	137.2	147.2
2023	461.3	7,319.8	1,826.4	90.5	2,416.6	2,986.2	1,859.3	246.0	155.0	152.6
2023 Q3	455.9	7,123.0	1,824.6	72.9	2,355.9	2,869.6	1,633.6	291.6	153.8	163.3
Q4	461.3	7,319.8	1,826.4	90.5	2,416.6	2,986.2	1,859.3	246.0	155.0	152.6
2024 Q1	399.4	7,454.3	1,828.5	105.2	2,496.5	3,024.1	2,044.8	232.8	178.0	174.2
Q2 [p]	413.7	7,534.2	1,830.7	109.8	2,528.9	3,064.9	2,230.8	330.9	182.6	176.5
2024 Feb.	438.6	7,354.4	1,828.1	101.7	2,457.3	2,967.4	1,941.7	231.5	165.4	173.4
Mar.	399.4	7,454.3	1,828.5	105.2	2,496.5	3,024.1	2,044.8	232.8	178.0	174.2
Apr.	438.2	7,490.3	1,826.4	107.9	2,524.7	3,031.3	2,174.1	231.0	163.6	177.4
May	445.1	7,490.7	1,824.7	109.0	2,520.9	3,036.1	2,234.2	248.2	159.1	165.0
June	413.7	7,534.2	1,830.7	109.8	2,528.9	3,064.9	2,230.8	330.9	182.6	176.5
July [p]	394.0	7,577.4	1,821.8	111.0	2,526.1	3,118.5	2,341.2	163.7	166.9	154.9
Transactions										
2021	25.4	-38.7	-74.9	-5.0	-39.7	81.0	-112.2	-121.7	-8.3	-4.3
2022	-83.4	46.8	-89.0	-4.4	0.5	139.8	-68.3	-190.1	10.4	18.0
2023	-193.6	323.1	24.7	40.1	231.1	27.1	459.0	-201.6	19.7	9.0
2023 Q3	-29.1	91.4	16.9	11.4	44.5	18.7	130.5	-64.9	-13.3	-6.0
Q4	5.4	62.5	-11.3	17.6	65.7	-9.4	176.2	-6.5	1.2	-10.7
2024 Q1	-61.5	117.0	4.9	14.7	93.7	3.7	132.7	-6.9	25.6	21.5
Q2 [p]	14.9	54.8	2.1	4.6	27.2	21.0	142.8	74.5	4.6	2.3
2024 Feb.	-18.6	12.0	1.8	4.7	13.8	-8.2	-12.2	21.8	2.3	13.7
Mar.	-39.2	34.3	0.4	3.5	42.0	-11.7	39.1	16.4	12.5	0.8
Apr.	39.5	16.6	-2.1	2.6	22.4	-6.3	102.3	-24.0	-14.4	3.2
May	6.8	11.4	-1.1	1.2	3.2	8.1	62.0	20.8	-4.5	-12.4
June	-31.5	26.7	5.2	0.8	1.6	19.2	-21.5	77.8	23.5	11.4
July [p]	-19.7	-0.2	-8.2	1.2	4.7	2.1	77.5	-139.5	-15.7	-21.6
Growth rates										
2021	3.6	-0.6	-3.9	-11.9	-2.0	2.7	-	-	-6.0	-3.0
2022	-11.4	0.7	-4.8	-13.0	-0.1	4.9	-	-	7.8	12.7
2023	-29.7	4.7	1.4	80.2	10.8	0.9	-	-	14.3	6.0
2023 Q3	-30.2	4.7	1.4	48.8	10.5	1.9	-	-	5.6	14.2
Q4	-29.7	4.7	1.4	80.2	10.8	0.9	-	-	14.3	6.0
2024 Q1	-30.3	5.2	1.3	89.9	12.0	0.8	-	-	20.3	7.1
Q2 [p]	-14.5	4.6	0.7	78.4	10.1	1.1	-	-	11.1	4.3
2024 Feb.	-21.4	5.0	1.7	88.6	10.7	1.2	-	-	10.0	11.0
Mar.	-30.3	5.2	1.3	89.9	12.0	0.8	-	-	20.3	7.1
Apr.	-23.2	5.0	0.4	89.7	12.6	0.4	-	-	9.6	11.8
May	-10.4	4.7	0.6	85.0	11.2	0.5	-	-	-6.1	-8.6
June	-14.5	4.6	0.7	78.4	10.1	1.1	-	-	11.1	4.3
July [p]	-14.9	4.2	0.2	72.1	9.3	1.1	-	-	11.3	1.0

Sources: ECB.
1) Data refer to the changing composition of the euro area.
2) Comprises central government holdings of deposits with the MFI sector and of securities issued by the MFI sector.
3) Not adjusted for seasonal effects.

6 Fiscal developments

6.1 Deficit/surplus

(as a percentage of GDP; flows during one-year period)

	Deficit (-)/surplus (+)					Memo item:
	Total	Central government	State government	Local government	Social security funds	Primary deficit (-)/ surplus (+)
	1	2	3	4	5	6
2020	-7.0	-5.7	-0.4	0.0	-0.9	-5.5
2021	-5.2	-5.2	0.0	0.1	0.0	-3.8
2022	-3.6	-3.9	0.0	0.0	0.3	-2.0
2023	-3.6	-3.6	-0.2	-0.2	0.4	-1.8
2023 Q2	-4.0	.	.	.	.	-2.3
Q3	-3.9	.	.	.	.	-2.1
Q4	-3.6	.	.	.	.	-1.8
2024 Q1	-3.5	.	.	.	.	-1.7

Sources: ECB for annual data; Eurostat for quarterly data.

6.2 Revenue and expenditure

(as a percentage of GDP; flows during one-year period)

	Revenue						Expenditure						
		Current revenue						Current expenditure					
	Total	Total	Direct taxes	Indirect taxes	Net social contribu-tions	Capital revenue	Total	Total	Compen-sation of employ-ees	Inter-mediate consump-tion	Interest	Social benefits	Capital expenditure
	1	2	3	4	5	6	7	8	9	10	11	12	13
2020	46.5	46.0	12.8	12.7	15.5	0.5	53.5	48.8	10.7	6.0	1.5	25.3	4.7
2021	47.1	46.3	13.1	13.1	15.1	0.8	52.3	47.1	10.2	6.0	1.5	24.0	5.2
2022	46.9	46.1	13.5	12.9	14.8	0.8	50.5	45.2	9.9	5.9	1.7	22.7	5.3
2023	46.4	45.6	13.3	12.5	14.7	0.8	50.0	44.5	9.8	5.9	1.8	22.6	5.4
2023 Q2	46.3	45.6	13.3	12.7	14.7	0.8	50.3	44.9	9.8	5.9	1.7	22.6	5.4
Q3	46.3	45.5	13.3	12.6	14.7	0.8	50.1	44.7	9.8	5.9	1.8	22.5	5.4
Q4	46.4	45.6	13.3	12.5	14.7	0.8	50.0	44.5	9.8	5.9	1.8	22.6	5.4
2024 Q1	46.4	45.6	13.3	12.5	14.7	0.8	49.9	44.6	9.9	6.0	1.8	22.7	5.3

Sources: ECB for annual data; Eurostat for quarterly data.

6.3 Government debt-to-GDP ratio

(as a percentage of GDP; outstanding amounts at end of period)

	Total	Financial instrument			Holder			Original maturity		Residual maturity			Currency	
		Currency and de-posits	Loans	Debt securi-ties	Resident creditors		Non-resident credi-tors	Up to 1 year	Over 1 year	Up to 1 year	Over 1 and up to 5 years	Over 5 years	Euro or participating currencies	Other curren-cies
					Total	MFIs								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2020	97.0	3.2	14.5	79.4	54.2	39.0	42.8	11.1	85.9	18.7	30.9	47.4	95.4	1.7
2021	94.6	2.9	13.8	77.8	54.8	41.2	39.8	9.8	84.7	17.3	30.2	47.1	93.1	1.4
2022	90.5	2.7	13.2	74.6	52.9	40.1	37.6	8.7	81.7	16.2	28.7	45.6	89.5	1.0
2023	88.2	2.4	12.2	73.6	49.7	36.5	38.5	8.0	80.3	15.4	28.3	44.6	87.4	0.8
2023 Q2	89.7	2.5	12.4	74.8	.	.	.	.	.	.	.	.	.	.
Q3	89.2	2.5	12.1	74.6	.	.	.	.	.	.	.	.	.	.
Q4	88.2	2.4	12.2	73.6	.	.	.	.	.	.	.	.	.	.
2024 Q1	88.7	2.3	12.0	74.4	.	.	.	.	.	.	.	.	.	.

Sources: ECB for annual data; Eurostat for quarterly data.

6 Fiscal developments

6.4 Annual change in the government debt-to-GDP ratio and underlying factors [1)]

(as a percentage of GDP; flows during one-year period)

	Change in debt-to-GDP ratio [2)]	Primary deficit (+)/ surplus (-)	Deficit-debt adjustment								Interest-growth differential	Memo item: Borrowing requirement
			Total	Transactions in main financial assets					Revaluation effects and other changes in volume	Other		
				Total	Currency and deposits	Loans	Debt securities	Equity and investment fund shares				
	1	2	3	4	5	6	7	8	9	10	11	12
2020	13.0	5.5	2.2	2.5	2.1	0.4	-0.1	0.1	-0.3	0.1	5.3	9.5
2021	-2.5	3.8	-0.2	0.6	0.4	0.1	0.0	0.1	-0.1	-0.7	-6.0	5.1
2022	-4.1	2.0	-0.3	-0.2	-0.7	0.2	0.1	0.1	0.6	-0.7	-5.7	2.7
2023	-2.2	1.8	-0.3	-0.5	-0.5	-0.2	0.1	0.1	0.6	-0.4	-3.7	2.7
2023 Q2	-3.4	2.3	-0.9	-1.1	-1.5	0.1	0.1	0.1	0.7	-0.5	-4.7	2.3
Q3	-2.5	2.1	-0.4	-0.6	-0.8	-0.2	0.2	0.1	0.7	-0.5	-4.2	2.8
Q4	-2.2	1.8	-0.3	-0.5	-0.5	-0.2	0.1	0.1	0.6	-0.5	-3.6	2.7
2024 Q1	-1.4	1.7	-0.4	-0.7	-0.8	-0.1	0.1	0.1	0.4	-0.1	-2.7	2.7

Sources: ECB for annual data; Eurostat for quarterly data.
1) Intergovernmental lending in the context of the financial crisis is consolidated except in quarterly data on the deficit-debt adjustment.
2) Calculated as the difference between the government debt-to-GDP ratios at the end of the reference period and a year earlier.

6.5 Government debt securities [1)]

(debt service as a percentage of GDP; flows during debt service period; average nominal yields in percentages per annum)

	Debt service due within 1 year [2)]					Average residual maturity in years [3)]	Average nominal yields [4)]						
	Total	Principal		Interest			Outstanding amounts					Transactions	
										Fixed rate			
		Total	Maturities of up to 3 months	Total	Maturities of up to 3 months		Total	Floating rate	Zero coupon	Total	Maturities of up to 1 year	Issuance	Redemption
	1	2	3	4	5	6	7	8	9	10	11	12	13
2021	14.0	12.7	4.2	1.2	0.3	7.9	1.6	1.1	-0.4	1.9	1.9	-0.1	0.5
2022	13.0	11.9	4.2	1.2	0.3	8.0	1.6	1.2	0.4	1.9	2.0	1.1	0.5
2023	13.1	11.7	4.2	1.4	0.3	8.1	2.0	1.2	1.9	2.0	1.6	3.6	1.9
2023 Q3	13.0	11.7	3.5	1.3	0.3	8.1	1.9	1.1	1.8	2.0	1.7	3.3	1.5
Q4	13.1	11.7	4.2	1.4	0.3	8.1	2.0	1.2	1.9	2.0	1.6	3.6	1.9
2024 Q1	12.9	11.5	3.8	1.4	0.3	8.3	2.1	1.3	2.3	2.0	1.6	3.7	2.5
Q2	13.2	11.8	3.6	1.4	0.4	8.3	2.1	1.3	2.1	2.1	1.6	3.7	2.7
2024 Feb.	12.5	11.2	4.3	1.3	0.3	8.2	2.0	1.2	2.1	2.0	1.6	3.7	2.3
Mar.	12.9	11.5	3.8	1.4	0.3	8.3	2.1	1.3	2.3	2.0	1.6	3.7	2.5
Apr.	12.9	11.5	3.9	1.4	0.4	8.3	2.1	1.3	2.1	2.1	1.4	3.7	2.6
May	12.8	11.4	3.3	1.4	0.4	8.3	2.1	1.3	2.1	2.1	1.4	3.7	2.6
June	13.2	11.8	3.6	1.4	0.4	8.3	2.1	1.3	2.1	2.1	1.6	3.7	2.7
July	13.0	11.6	3.7	1.4	0.4	8.3	2.1	1.3	2.3	2.1	1.6	3.7	2.8

Source: ECB.
1) At face value and not consolidated within the general government sector.
2) Excludes future payments on debt securities not yet outstanding and early redemptions.
3) Residual maturity at the end of the period.
4) Outstanding amounts at the end of the period; transactions as 12-month average.

6 Fiscal developments

6.6 Fiscal developments in euro area countries

(as a percentage of GDP; flows during one-year period and outstanding amounts at end of period)

	Belgium	Germany	Estonia	Ireland	Greece	Spain	France	Croatia	Italy	Cyprus
	1	2	3	4	5	6	7	8	9	10
	Government deficit (-)/surplus (+)									
2020	-9.0	-4.3	-5.4	-5.0	-9.8	-10.1	-8.9	-7.2	-9.4	-5.7
2021	-5.4	-3.6	-2.5	-1.5	-7.0	-6.7	-6.6	-2.5	-8.7	-1.8
2022	-3.6	-2.5	-1.0	1.7	-2.5	-4.7	-4.8	0.1	-8.6	2.7
2023	-4.4	-2.5	-3.4	1.7	-1.6	-3.6	-5.5	-0.7	-7.4	3.1
2023 Q2	-3.8	-3.3	-1.8	1.8	-2.7	-4.6	-5.1	-0.5	-8.3	3.0
Q3	-3.9	-3.1	-2.3	1.4	-1.4	-4.5	-5.4	-0.3	-7.7	3.1
Q4	-4.4	-2.4	-3.5	1.5	-1.6	-3.6	-5.5	-0.8	-7.4	3.1
2024 Q1	-4.8	-2.5	-3.5	1.5	-0.5	-3.8	-5.6	-0.8	-6.7	3.8
	Government debt									
2020	111.9	68.8	18.6	58.1	207.0	120.3	114.9	86.1	155.0	114.9
2021	107.9	69.0	17.8	54.4	195.0	116.8	113.0	77.5	147.1	99.3
2022	104.3	66.1	18.5	44.4	172.7	111.6	111.9	67.8	140.5	85.6
2023	105.2	63.6	19.6	43.7	161.9	107.7	110.6	63.0	137.3	77.3
2023 Q2	105.6	64.6	18.5	42.4	167.2	111.2	111.2	65.9	140.1	84.9
Q3	107.6	64.6	18.2	43.0	165.6	109.8	111.3	64.0	137.9	79.0
Q4	105.2	63.6	19.6	43.3	161.9	107.7	109.9	63.1	137.3	77.3
2024 Q1	108.2	63.4	23.6	42.5	159.8	108.9	110.8	63.3	137.7	76.1

	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Austria	Portugal	Slovenia	Slovakia	Finland
	11	12	13	14	15	16	17	18	19	20
	Government deficit (-)/surplus (+)									
2020	-4.4	-6.5	-3.4	-9.4	-3.7	-8.0	-5.8	-7.6	-5.3	-5.6
2021	-7.2	-1.1	0.5	-7.6	-2.2	-5.8	-2.9	-4.6	-5.2	-2.8
2022	-4.6	-0.6	-0.3	-5.5	-0.1	-3.3	-0.3	-3.0	-1.7	-0.4
2023	-2.2	-0.8	-1.3	-4.9	-0.3	-2.7	1.2	-2.5	-4.9	-2.7
2023 Q2	-3.0	-1.1	-1.1	-4.3	-0.7	-3.3	0.0	-2.8	-2.8	-1.4
Q3	-3.3	-0.9	-1.2	-3.7	-0.6	-3.1	0.4	-2.8	-3.4	-2.1
Q4	-2.2	-0.8	-1.2	-4.9	-0.4	-2.6	1.2	-2.5	-4.9	-2.9
2024 Q1	-1.9	-0.6	-0.9	-3.9	-0.3	-2.9	0.9	-2.2	-5.0	-3.4
	Government debt									
2020	42.7	46.2	24.6	52.2	54.7	82.9	134.9	79.6	58.8	74.7
2021	44.4	43.4	24.5	53.9	51.7	82.5	124.5	74.4	61.1	72.6
2022	41.8	38.1	24.7	51.6	50.1	78.4	112.4	72.5	57.7	73.5
2023	43.6	38.3	25.7	50.4	46.5	77.8	99.1	69.2	56.0	75.8
2023 Q2	40.1	38.1	28.3	49.8	45.4	78.4	110.1	70.7	59.5	74.5
Q3	42.0	37.4	25.8	49.5	44.4	78.1	107.6	71.8	58.4	74.3
Q4	43.6	38.3	25.7	50.3	45.1	77.6	99.1	69.2	56.0	76.6
2024 Q1	44.5	40.1	27.2	50.4	43.9	79.7	100.4	70.7	60.7	77.5

Source: Eurostat.

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For specific terminology please refer to the ECB glossary (available in English only).

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