EUROPEAN CENTRAL BANK

EUROSYSTEM

Economic Bulletin

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Contents

Economic, financial and monetary developments

Overview

At its meeting on 6 June 2024, the Governing Council decided to lower the three key ECB interest rates by 25 basis points. Based on an updated assessment of the inflation outlook, the dynamics of underlying inflation and the strength of monetary policy transmission, it was appropriate to moderate the degree of monetary policy restriction after nine months of holding rates steady. Since the Governing Council meeting in September 2023, inflation has fallen by more than 2.5 percentage points and the inflation outlook has improved markedly. Underlying inflation has also eased, reinforcing the signs that price pressures have weakened, and inflation expectations have declined at all horizons. Monetary policy has kept financing conditions restrictive. By dampening demand and keeping inflation expectations well anchored, this has made a major contribution to bringing inflation back down.

At the same time, despite the progress over recent quarters, domestic price pressures remain strong as wage growth is elevated, and inflation is likely to stay above target well into next year. The latest Eurosystem staff projections for both headline and core inflation have been revised up for 2024 and 2025 compared with the March projections. Staff now see headline inflation averaging 2.5% in 2024, 2.2% in 2025 and 1.9% in 2026. For inflation excluding energy and food, staff project an average of 2.8% in 2024, 2.2% in 2025 and 2.0% in 2026. Economic growth is expected to pick up to 0.9% in 2024, 1.4% in 2025 and 1.6% in 2026.

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, its 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.

The Governing Council also confirmed that it will reduce the Eurosystem’s holdings of securities under the pandemic emergency purchase programme (PEPP) by €7.5 billion per month on average over the second half of the year. The modalities for reducing the PEPP holdings will be broadly in line with those followed under the asset purchase programme (APP).

Economic activity

After five quarters of stagnation, the euro area economy grew by 0.3% over the first quarter of 2024. The services sector is expanding, and manufacturing is showing signs of stabilisation at low levels.

Employment rose by 0.3% in the first quarter of this year, with around 500,000 new jobs created, and surveys point to continued job growth in the near term. The unemployment rate edged down to 6.4% in April, its lowest level since the start of the euro. Companies are still posting many job vacancies, though slightly fewer than before.

The euro area economy recovered at the start of 2024 by more than expected in the March 2024 ECB staff projections, with a boost from net trade and rising household spending. Incoming information suggests continued growth in the short run, at a higher pace than previously foreseen. Real disposable income should continue to increase amid robust wage growth, gradually increasing confidence and improving terms of trade, giving rise to a consumption-driven recovery in the course of 2024. The boost from net trade at the start of the year partly reflects volatility following a temporary decline at the end of 2023. However, foreign demand is expected to continue to expand, supporting euro area export growth. Over the medium term, the negative impact of the past monetary policy tightening is seen to gradually fade, with activity supported by an assumed easing of financing conditions in line with market expectations for the future path of interest rates. Growth will also benefit from a resilient labour market, with the unemployment rate declining to historically low levels later on in the projection horizon. 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 0.9% in 2024, and to strengthen to 1.4% in 2025 and 1.6% in 2026. Compared with the March 2024 projections, the outlook for GDP growth has been revised up for 2024 owing to the positive surprise at the start of the year and improved incoming information. The GDP growth outlook has been revised down marginally for 2025 and remains unchanged for 2026.

National 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. An effective, speedy and full implementation of the Next Generation EU programme, progress towards a capital markets union and the completion of the banking union, and a strengthening of the Single Market would help foster innovation and increase investment in the green and digital transitions. Implementing the EU’s revised economic governance framework fully and without delay will help governments bring down budget deficits and debt ratios on a sustained basis.

Inflation

Annual inflation rose to 2.6% in May, from 2.4% in April, according to Eurostat's flash estimate. Food price inflation declined to 2.6%. Energy price inflation increased to 0.3%, after recording negative annual rates for a year. Goods price inflation continued to decrease in May, to 0.8%. By contrast, services price inflation rose markedly, to 4.1% from 3.7% in April.

Most measures of underlying inflation declined further in April, the last month for which data were available, confirming the picture of gradually diminishing price pressures. However, domestic inflation remains high. Wages are still rising at an elevated pace, making up for the past inflation surge. Owing to the staggered nature of the wage adjustment process and the important role of one-off payments, labour costs will likely fluctuate over the near term, as seen in the pick-up in negotiated wages in the first quarter. At the same time, forward-looking indicators signal that wage growth will moderate over the course of the year. Profits are absorbing part of the pronounced rise in unit labour costs, which reduces its inflationary effects. Measures of longer-term inflation expectations have remained broadly stable, with most standing at around 2%.

Headline inflation is projected to moderate further to levels close to target in the course of 2025. This reflects an easing of cost pressures, including from the labour side, and the lagged impact of past monetary policy tightening gradually feeding through to consumer prices. Headline inflation as measured by the Harmonised Index of Consumer Prices (HICP) is expected to show some volatility over the remainder of 2024 owing to base effects and higher energy commodity prices. Over the medium term, energy inflation should settle at low positive rates, given market expectations for the future paths of oil and gas prices and planned climate change-related fiscal measures. Recent quarters have seen food price inflation decline strongly, as pipeline pressures have eased with lower energy and food commodity prices. Looking ahead, food price inflation is expected to fluctuate around its current levels before moderating further from the end of 2025. HICP inflation excluding energy and food (HICPX) should remain above headline inflation for most of the projection horizon but is expected to continue its disinflationary path, although at a slow pace and mainly in 2025 and 2026. A central element in the June projections is the expected gradual easing of nominal wage growth from initially still elevated levels as upward impacts from inflation compensation pressures in a tight labour market fade. The expected recovery in productivity growth should support the moderation in labour cost pressures. Moreover, profit growth is set to weaken and partially buffer the pass-through of labour costs to prices, especially in 2024. Overall, annual average headline HICP inflation is expected to decline from 5.4% in 2023 to 2.5% in 2024, 2.2% in 2025 and 1.9% in 2026. Compared with the March 2024 projections, HICP inflation has been revised up by 0.2 percentage points in 2024 and 2025. This is mainly due to higher energy commodity prices and slightly higher than expected incoming data for HICPX inflation. In addition, labour cost pressures are expected to be somewhat stronger on account of higher wage growth coupled with a slightly more cautious outlook for productivity growth. The outlook for both headline inflation and HICPX inflation for 2026 is unrevised.

Risk assessment

The risks to economic growth are balanced in the near term but remain tilted to the downside over the medium term. 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 effects of monetary policy 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 risen since the Governing Council's meeting on 11 April 2024. Financing costs have plateaued at restrictive levels as the past policy rate increases have worked their way through the financial system. The average interest rates on new loans to firms and on new mortgages were unchanged in April, at 5.2% and 3.8% respectively.

Credit dynamics remain weak. Bank lending to firms grew at an annual rate of 0.3% in April, down slightly from the previous month. Loans to households continued to grow at 0.2% on an annual basis. The annual growth in broad money – as measured by M3 – rose to 1.3% in April, from 0.9% in March.

In line with its monetary policy strategy, the Governing Council thoroughly assessed the links between monetary policy and financial stability. Euro area banks remain resilient. The improving economic outlook has fostered financial stability, but heightened geopolitical risks cloud the horizon. An unexpected tightening of global financing conditions could prompt a repricing of financial and non-financial assets, with negative effects on the wider economy. Macroprudential policy remains the first line of defence against the build-up of financial vulnerabilities. The measures that are currently in place or will soon take effect are helping to keep the financial system resilient.

Monetary policy decisions

The interest rate on the main refinancing operations and the interest rates on the marginal lending facility and the deposit facility were decreased to 4.25%, 4.50% and 3.75% respectively, with effect from 12 June 2024.

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

The Governing Council will continue to reinvest, in full, the principal payments from maturing securities purchased under the PEPP until the end of June 2024. Over the second half of the year, it will reduce 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 decided at its meeting on 6 June 2024 to lower the three key ECB interest rates by 25 basis points. 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 interest rate decisions will be based on the Governing Council's 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.

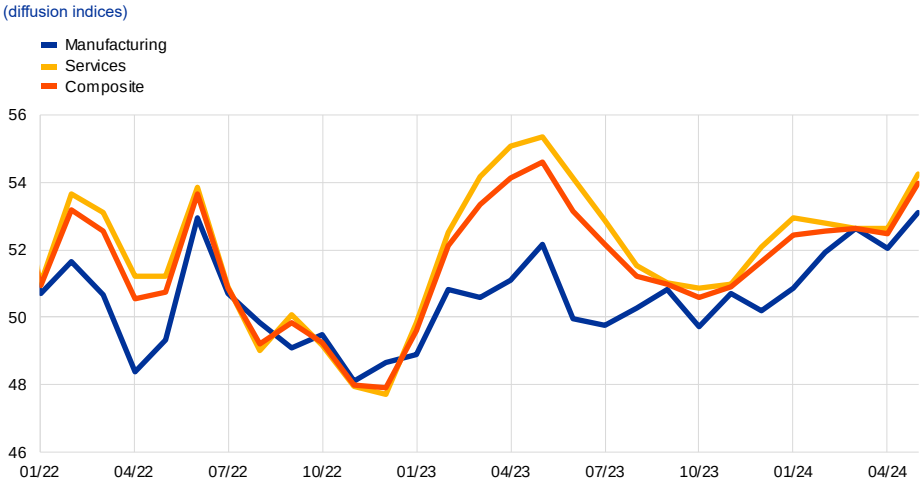
1 External environment

Global economic activity is showing signs of strengthening, although headwinds to growth remain. Incoming data on global activity (excluding the euro area) confirm a very gradual improvement since the beginning of the year, with hard data aligning increasingly with positive signals from soft data. The outlook for global growth, as reflected in the June 2024 Eurosystem staff macroeconomic projections for the euro area, is broadly unchanged compared with the March 2024 ECB staff macroeconomic projections for the euro area, with a slight decrease in global growth projected for this year. Global trade is projected to recover this year and grow more in line with global activity thereafter, albeit remaining below its historical trend level over the projection horizon and broadly unchanged compared with the March 2024 ECB staff macroeconomic projections. Inflation at the global level is projected to gradually decline over the projection horizon.

Incoming data confirm an upward momentum in global activity as signals from survey and hard data align more closely. The global (excluding the euro area) composite output Purchasing Managers' Index (PMI) increased in May 2024 as output improved in the manufacturing and services sectors (Chart 1).[1] This aligns with evidence from the ECB's global activity tracker, which points to improved momentum underpinned by positive readings in both soft and hard data. This tracker has indicated a gradual improvement in global activity since the start of this year, with recent hard data becoming increasingly aligned with positive signals from soft data. Nonetheless, headwinds to global growth remain, including the diminished stock of excess savings in advanced economies and subdued domestic demand in China against the backdrop of a troubled residential real estate sector. Moreover, labour markets in key advanced economies are gradually cooling and nominal wage growth is moderating, providing less support to growth in disposable incomes. As a result, global consumer spending, which underpinned the recovery in economic activity following the COVID-19 pandemic, remains subdued. Growth in global real GDP is estimated to have slowed slightly to 0.8% in the first quarter of 2024, down from 0.9% in the fourth quarter of 2023.

[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



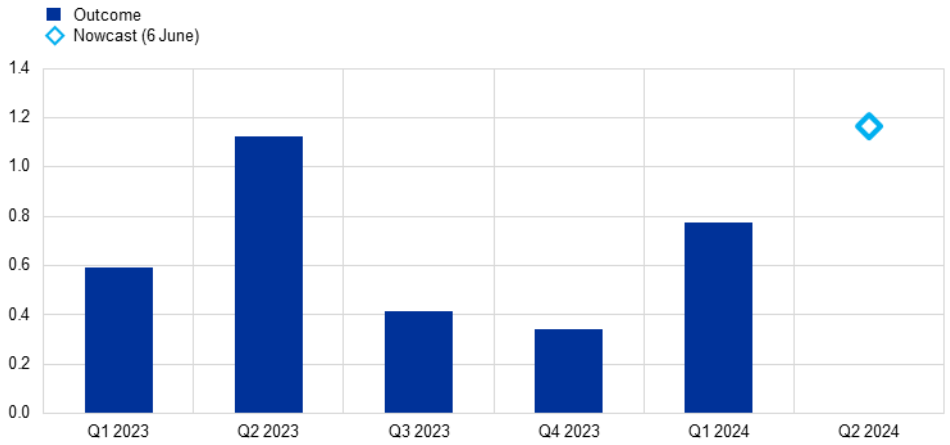
Sources: S&P Global Market Intelligence and ECB staff calculations.
Note: The latest observations are for May 2024.

The projected outlook for global growth remains broadly unchanged compared with the March 2024 ECB staff macroeconomic projections. A modest decrease in growth this year reflects the impact of the aforementioned headwinds, continued restrictive monetary policies and elevated uncertainty amid geopolitical tensions. Overall, global real GDP growth is projected to stand at 3.3% this year compared with 3.5% in 2023. Global real GDP growth is projected to stand at 3.3% in 2025 and 3.2% in 2026, slightly below the average global growth rate for the past decade.

Global trade is expected to gradually recover as post-pandemic demand patterns normalise. In the first quarter of 2024, world trade growth accelerated as post-pandemic compositional effects started to dissipate. The buoyant demand for services observed at the global level throughout last year is now shifting towards stronger goods demand. Looking ahead, global import growth is expected to rise further, in line with signals from the ECB's nowcasting tool which embeds hard and soft data on global trade (Chart 2). In particular, the global PMI new export orders indicate that growth momentum will pick up gradually. Moreover, sectoral survey data point to a more dynamic recovery in trade-intensive sectors such as tourism and technology equipment. Finally, the impact of the Red Sea disruptions on global trade remains contained and in line with the March 2024 projections, although a potential escalation in these disruptions continues to pose a downside risk to global trade in the near term.

Chart 2
World imports

(quarterly percentage changes)



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 May 2024 for the nowcast.

Beyond the near term, global trade is projected to continue recovering gradually over the projection horizon and to grow more in line with global activity. Overall, global import growth is projected to increase to 2.6% this year, up from 1.0% in 2023, before gradually rising to 3.3% annually over 2025-26, broadly in line with the previous round of projections. Recovering imports in emerging markets and major advanced economies, particularly the United States, are expected to contribute to trade recovery this year. However, global trade levels are expected to remain below the 2012-19 trend level, owing to subdued real GDP growth and to ongoing structural changes in trade relations caused by rising geopolitical tensions. The recovery in euro area foreign demand this year is expected to be less dynamic, standing at 2.1%. This largely reflects weaker imports by some of the euro area's key trading partners, such as the United Kingdom and central and eastern European countries, in the second half of 2023 and in the first quarter of 2024. Over the projection horizon, euro area foreign demand is expected to increase by 3.4% in 2025 and 3.3% in 2026, aligning more closely with the growth dynamics of global imports.

Inflation across the member countries of the Organisation for Economic Co-operation and Development is projected to decline gradually over the projection horizon. Headline consumer price index (CPI) inflation across the member countries of the Organisation for Economic Co-operation and Development (OECD) stood at 3.4% in April 2024, slightly below readings observed since the beginning of this year.[2] Core inflation (excluding food and energy) declined in April, to 3.8% from 4.0% in March. The slowing pace of disinflation in the OECD countries

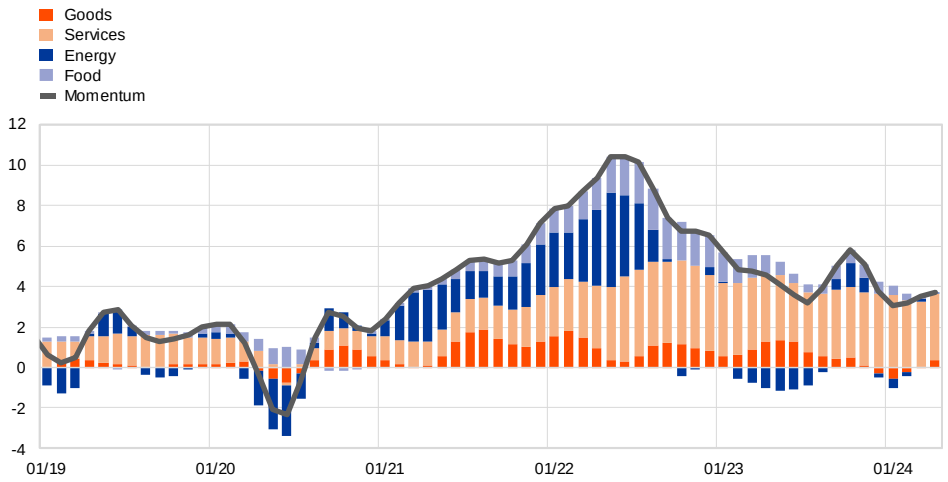
2 Türkiye is not included in the OECD aggregates for headline and core inflation, as its inflation level remained in the high double digits. Headline and core CPI inflation across the OECD member countries, including Türkiye, would otherwise stand at 5.8% in March 2024 (5.7% in February) and 6.4% in March 2024 (6.4% in February) respectively.

appears to be mainly due to persistent services inflation in an environment where tight labour markets across major economies are only very gradually adjusting. The higher momentum in headline CPI inflation, measured as a three-month-on-three-month annualised percentage change, indicates that inflation across OECD countries could increase over the near term (Chart 3). This is corroborated by the latest signals from survey data. Manufacturing input price PMIs indicate that goods inflation could rebound from its currently very low levels over the near term, while services input price PMIs suggest that services inflation, which accounts for almost two-thirds of the core CPI measure, could continue moderating gradually towards its historical average. With regard to external price pressures, growth in euro area competitors' export prices, in national currency and in annual terms, is expected to turn positive this year and remain close to its estimated long-term average over the rest of the projection horizon. This outlook has been revised downwards slightly compared with the March 2024 ECB staff macroeconomic projections owing to weaker than previously expected export price inflation outturns, which outweigh the impact of higher commodity price assumptions in the current projection round.

Chart 3

OECD headline consumer price inflation momentum

(three-month-on-three-month annualised percentage change, percentage point contributions)



Sources: OECD and ECB 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 April 2024.

As for commodity prices, European gas and food prices have increased since the last Governing Council meeting, while oil prices have declined. Although European gas prices have increased, these remain low compared with the levels observed after Russia's invasion of Ukraine. Higher gas prices reflect supply disruptions relating to liquefied natural gas exports from the United States and Qatar, extended pipeline maintenance in Norway and to Russian attacks on Ukrainian gas storage facilities. Crude oil prices declined, as the tensions in the Middle East continued to have only short-lived effects on oil prices, with the global oil supply remaining largely unaffected. Moreover, lower-than-expected global oil demand counteracted the impact of the reduced oil supply and the supply risks on prices. The International Energy Agency forecasts a modest global oil supply deficit in 2024 and

2025, but the buffers needed to absorb further shocks seem to be larger than they were before Russia's invasion of Ukraine. Risks to oil prices remain tilted to the upside, particularly if tensions in the Middle East were to escalate. Food commodity prices increased significantly, largely reflecting developments in cocoa prices amid severe supply disruptions in West Africa. Cocoa prices have recently declined from the peaks observed in late April 2024 but remain volatile. Grains prices increased due to adverse supply developments.

In the United States, continued robust economic activity and persistent inflation led the Federal Open Market Committee to delay its first rate cut. Real GDP growth slowed in the first quarter of 2024 to 0.3%, down from 0.5% in the fourth quarter of last year. However, domestic demand remained solid, as the negative net trade contribution reflected a large increase in imports. Real disposable income growth slowed and the savings rate fell further in the first quarter. Available estimates based on high-frequency data suggest that real GDP growth may increase slightly in the second quarter of 2024 but remain below the pace of growth recorded in the second half of 2023. Although remaining very tight, the US labour market continues to show some signs of cooling. While non-farm employment increased in April, it was markedly below the average observed in the first quarter of 2024 and the unemployment rate increased slightly. Both the vacancy-to-unemployed ratio and wage growth remain high but they are declining, albeit only slowly. Consumer price inflation declined slightly in April, with its headline and core inflation measures standing at 3.4% and 3.6% respectively.[3] Looking ahead, inflation is expected to slowly decline further but remain above the Federal Reserve's target of 2% for an extended period. Against this macroeconomic backdrop, the Federal Open Market Committee has recently emphasised in its communications that interest rates will remain "high for longer".

Domestic demand remains subdued in China, although growth in the first quarter of 2024 turned out stronger than expected. Quarterly real GDP growth increased to 1.6% in the first quarter, up from 1.2% in the previous quarter. This reflects rising public investment from fiscal stimulus carried over from a budget revision in late 2023, while private sources of domestic demand, notably consumption, remained weak and slowed down in April 2024. By contrast, high growth resumed in industrial production and investment continues to improve steadily, driven by stimulus in infrastructure projects. The property market appears to be showing some tentative signs of stabilisation. While the overall housing market is still rather stagnant, housing sales and investment showed a recent uptick, accompanied by a slowing decline in construction starts. On the policy front, authorities' statements in April 2024 signalled an increase in government support to the housing market through the direct acquisition of unfinished housing projects from developers, sparking some optimism among market participants. Annual headline CPI inflation increased to 0.3% in April from 0.1% in the previous month, while core CPI also rose slightly to 0.7% from 0.6% over the same period. The continued

[3] Consumer price inflation in May 2024, released after the cut-off date for this issue of the Economic Bulletin, declined more than expected. Annual headline consumer price inflation declined to 3.3%, down from 3.4% in April 2024. Annual core inflation declined to 3.4%, down from 3.6% in April 2024.

weakness in producer price developments, together with sluggish domestic demand, suggests that inflationary pressures in the Chinese economy remain subdued.

Economic growth in the United Kingdom rebounded once again in the first quarter of 2024 and the labour market is showing signs of easing. Following the technical recession in the second half of 2023, real GDP grew by 0.6% quarter on quarter in the first quarter of 2024, well above the official and market expectations. The net trade contribution was positive owing to a large contraction in imports which more than compensated for the decline in exports. While incoming data indicate a solid start to the second quarter, economic activity is expected to grow at a more moderate pace for the rest of the year. Furthermore, private consumption remains relatively subdued in line with suppressed real wages, high interest rates, and restrictive monetary and fiscal policies. Headline inflation has decreased further, but services price pressures persist. Headline CPI inflation continued to decline in April 2024, dropping to 2.3% from 3.2% in March. However, services inflation surprised to the upside, standing at 5.9% in April, only marginally easing from 6.0% in the previous month and reflecting elevated wage growth, as well as persisting labour shortages. Labour market tightness remains above its pre-pandemic average. Nominal wage growth – a key factor behind stubborn services inflation – continued to decline in the first quarter of this year but remains at very high levels. The Bank of England projects that wage pressures will continue to diminish in the coming months.

2 Economic activity

Euro area real GDP rose by 0.3%, quarter on quarter, in the first quarter of 2024. This pick-up in growth, which follows five quarters of broadly stagnant activity, reflected a positive contribution from net trade and domestic demand and a negative contribution from changes in inventories. Survey results point to continued growth in the second quarter. While production in industry is still affected by weak demand, especially in energy-intensive sectors, the services sector shows clearer signs of a broad-based improvement. On the supply side, the recovery in the first quarter was entirely driven by employment, while productivity stagnated. The euro area economy is expected to continue to recover over the course of this year on the back of rising real incomes, resulting from lower inflation, increased wages and improved terms of trade, in addition to the gradually fading impact of the monetary policy tightening. Furthermore, exports should continue to grow in line with global demand in the coming quarters, although external competitiveness challenges remain a downward risk.

This outlook is broadly reflected in the June 2024 Eurosystem staff macroeconomic projections for the euro area, which foresee annual real GDP growth of 0.9% in 2024, picking up to 1.4% and 1.6% in 2025 and 2026 respectively.[4]

Euro area output picked up at the beginning of 2024, following more than a year of stagnation. According to Eurostat's flash estimate, real GDP increased by 0.3%, quarter on quarter, in the first quarter of 2024: its largest quarterly rise since the third quarter of 2022 (Chart 4).[5] Short-term indicators and available country data point to positive contributions from domestic demand and net trade, alongside a negative contribution from changes in inventories.[6] The improvement in aggregate demand appears to have been mostly driven by services. This is confirmed by the available value-added country data, as well as by monthly production data.

4 See "Eurosystem staff macroeconomic projections for the euro area, June 2024", published on the ECB's website on 6 June 2024.

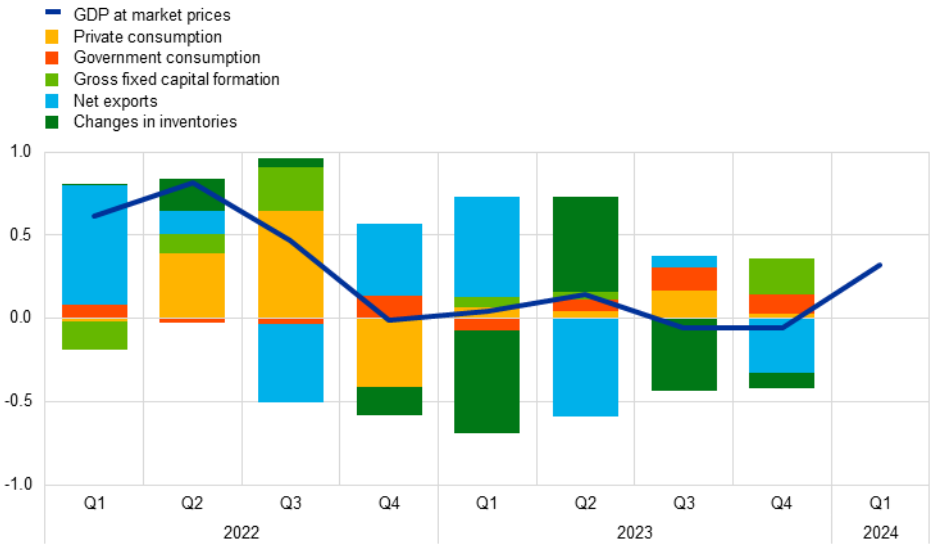
5 See the box entitled "The post-pandemic recovery – why is the euro area growing more slowly than the United States?" in this issue of the Economic Bulletin.

6 The expenditure breakdown of GDP for the first quarter of 2024 was published on 7 June, after the cut-off date (5 June) for the data included in this issue of the Economic Bulletin.

Chart 4

Euro area real GDP and its components

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

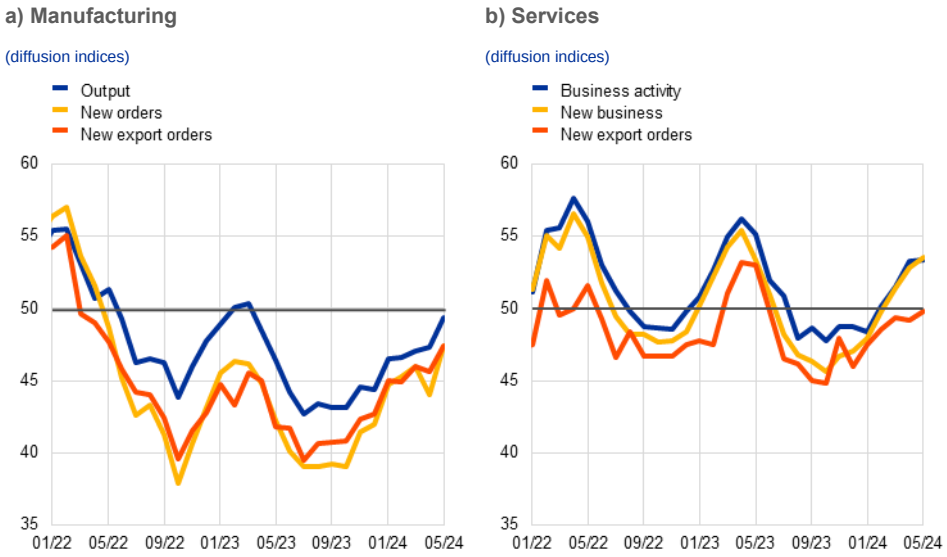


Sources: Eurostat and ECB calculations.
Note: The latest observations are for the first quarter of 2024 for GDP and the fourth quarter of 2023 for all other items.

Survey data point to a continued services-led expansion in the second quarter of 2024. The composite output Purchasing Managers' Index (PMI) stood at 51.9 on average in April and May, up from 49.2 in the first quarter of 2024. The index, which is now indicating positive growth, is thus continuing its upward movement that started in October 2023. Across sectors, the PMI for manufacturing output remained in contractionary territory in May, having increased steadily from the summer of 2023 (Chart 5, panel a). The new orders index, which should be more forward looking, has shown a similar, albeit somewhat stronger, improvement. Overall, these indicators suggest that the fall in activity in the manufacturing sector is bottoming out. The recovery of activity in the services sector has been more pronounced, suggesting that the second-quarter outcome will also be characterised by a services-led expansion (Chart 5, panel b). The assessment for the second quarter is corroborated by the evidence provided in Box 2, which shows that demand and supply sentiment have largely normalised since 2022, based on corporate earnings calls. At the same time, risk sentiment has receded somewhat, while remaining elevated by historical standards.

Chart 5

PMI indicators across sectors of the economy



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

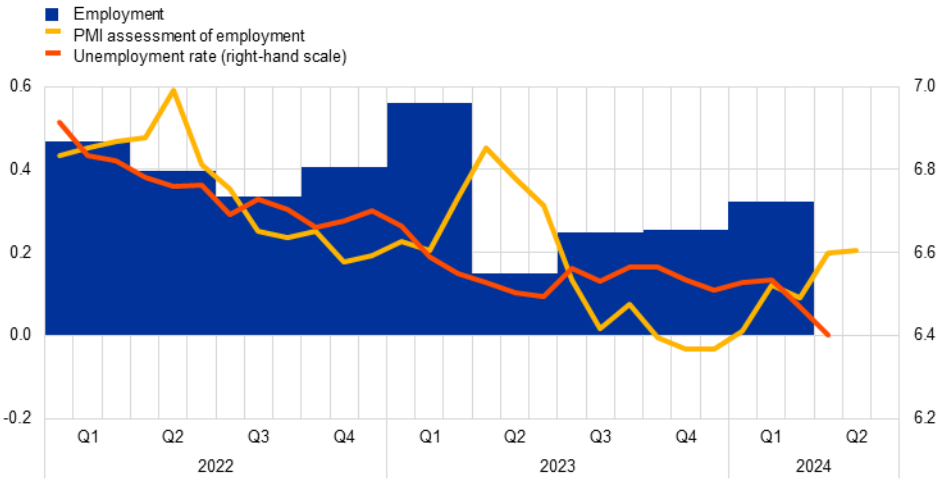
Employment growth was in line with economic activity in the first quarter of 2024. Employment rose by 0.3% in the first quarter of the year (Chart 6, panel a) driven mainly by the continued growth of the labour force. The implicit labour force, inferred from the unemployment rate and the number of unemployed, also increased by 0.3%. Productivity per employee remained unchanged in the first quarter of the year, given the similar growth in GDP and employment. In terms of the intensive margin, preliminary data suggest an increase in hours worked in the first quarter of 2024. The unemployment rate declined marginally to 6.4% in April, from 6.5% in March, reaching its lowest level since the euro was introduced. Labour demand remains at high levels, although the job vacancy rate fell slightly in the first quarter of 2024, to 2.8%, 0.1 percentage points lower than in the previous quarter.

Chart 6

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

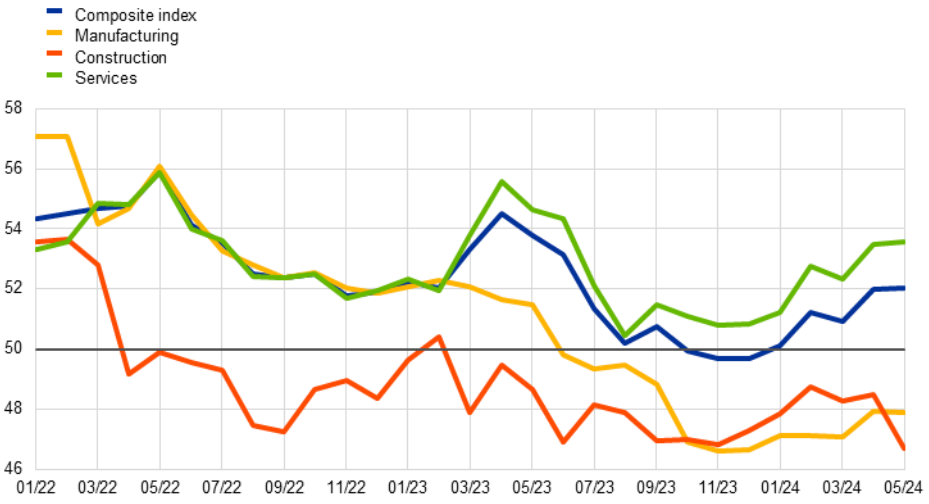
a) Employment, PMI assessment of employment and unemployment rate

(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 first quarter of 2024 for employment, May 2024 for the PMI assessment of employment and April 2024 for the unemployment rate. In panel b), the latest observations are for May 2024 for all items.

Short-term labour market indicators continue to point to employment growth in the second quarter of 2024. The monthly composite PMI employment indicator rose from 52.0 in April to 52.1 in May, suggesting an increase in employment. This indicator had declined substantially from its peak of April 2023, but has edged up again in the last few months, driven by the services sector (Chart 6, panel b). The PMI services indicator increased from 53.5 in April to 53.6 in May. By contrast, the PMI manufacturing indicator remained in contractionary territory.

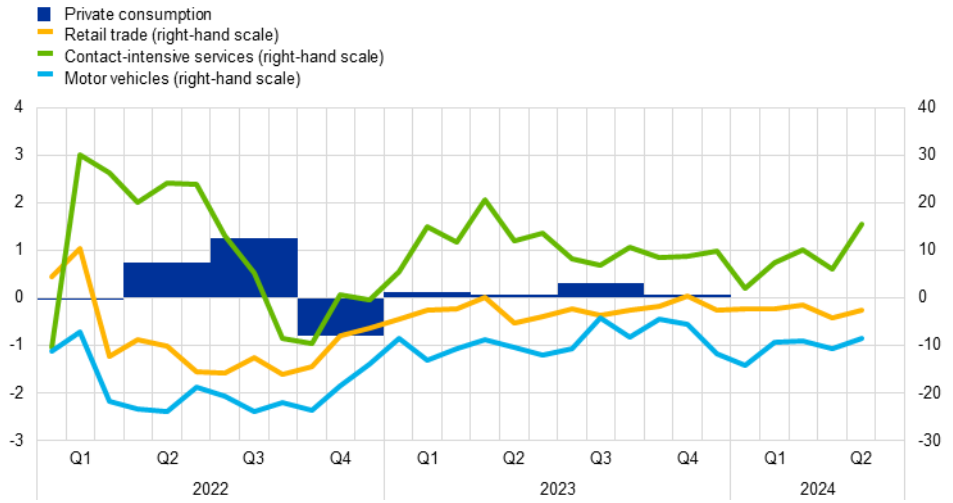
Private consumption is estimated to have increased in the first quarter of 2024 and should strengthen further in the short term. The aggregation of country data

available at the time of the June Governing Council meeting points to a small rise in the first quarter of the year, with the consumption of goods likely to have remained subdued and that of services dynamic.[7] The subdued spending on goods is reflected in the ongoing weakness of retail sales volumes, which in the first quarter of 2024 stood at just 0.1% above the level seen in the fourth quarter of 2023. With regard to spending on services, services production in January and February was, on average, 1.6% above the level seen in the fourth quarter of 2023. While incoming survey data suggest that spending on goods might remain weak in the near term, there are some signs of a gradual recovery. The European Commission's consumer confidence indicator continued to increase in May. At the same time, the Commission's indicators for business expectations for retail trade and motor vehicle sales improved, while still remaining below their long-term averages. Business expectations for contact-intensive services remained in growth territory and rose strongly in May (Chart 7). Overall, the ongoing divergence between the consumption of goods and services is supported by the ECB's latest Consumer Expectations Survey, which indicates resilient expected demand for holiday bookings and only a gradual improvement in the propensity to spend on major items.

Chart 7

Private consumption and business expectations for retail trade, contact-intensive services and motor vehicles

(quarter-on-quarter percentage changes; net percentage balances)



Sources: Eurostat, European Commission and ECB calculations.
Notes: Business expectations for retail trade (excluding motor vehicles), expected demand for contact-intensive services and expected sales of motor vehicles for the next three months refer to net percentage balances; "contact-intensive services" refers to accommodation, travel and food services. The latest observations are for the fourth quarter of 2023 for private consumption and May 2024 for business expectations for retail trade, contact-intensive services and motor vehicles.

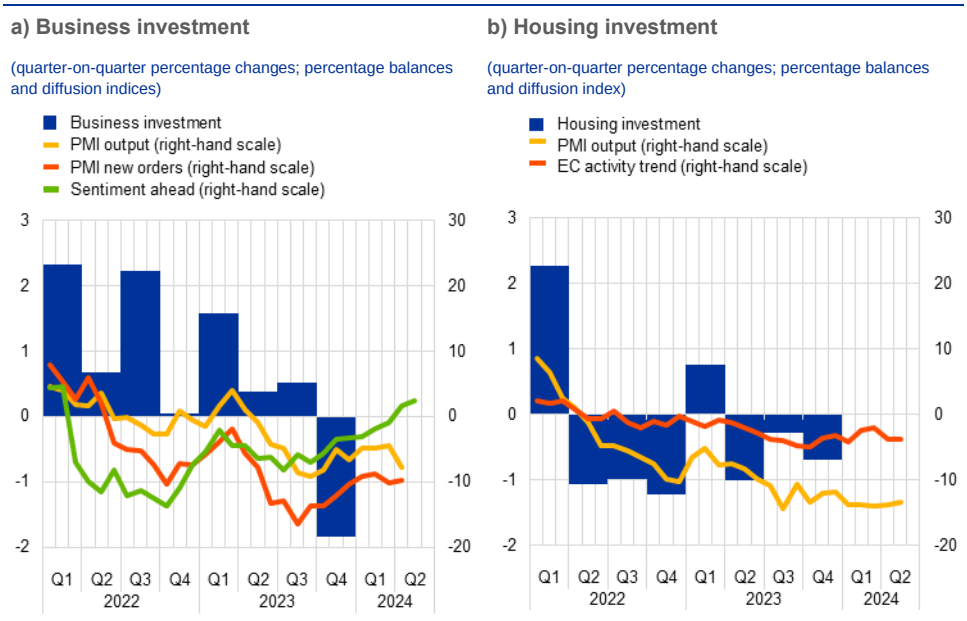
Business investment is estimated to have picked up at the start of 2024, after contracting sharply at the end of 2023, with the recovery expected to continue further ahead. According to the aggregation of available national accounts data, non-construction investment (excluding Irish intangibles) is expected to have returned to growth in the first quarter of 2024, only partially reversing the deep

7 The country coverage of the available data for computing the GDP expenditure breakdown is around 85%.

contraction seen at the end of last year. The pick-up in the first quarter was broadly in line with survey data, which showed an improvement after bottoming out at the start of the fourth quarter of 2023. However, the improvement in the PMI for the capital goods sector came to a standstill in the first quarter of this year. PMI data point to further muted growth for business investment in the near term, as confidence was weak in April and May, with renewed falls in output and new orders still deep in negative territory (Chart 8, panel a). European Commission surveys also suggest a further increase in the number of capital goods producers citing low demand as a limit to production in the sector. The March/April biannual investment survey carried out by the Directorate General for Economic and Financial Affairs of the European Commission suggests a slowdown in the annual rate of business investment in 2024, which fell to a level consistent with stabilisation in annual terms, albeit with intentions typically more positive in those countries benefitting most from newly-disbursed Next Generation EU funds.[8] Preliminary data from earnings calls point to improving profit and investment sentiment for the second half of 2024, indicating a recovery of investment further ahead. On a similar note, the Sentix six-month ahead euro area investor confidence indicator moved into growth territory in April for the first time since February 2022 and strengthened further in May, which also implies greater investment appetite in the second half of the year.

Chart 8

Real investment dynamics and survey data



Sources: Eurostat, European Commission (EC), S&P Global Market Intelligence, Sentix 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. "Sentiment ahead" refers to the six-month ahead sub-index of the euro area Sentix Investor sentiment indicator (rescaled by a factor of three). The latest observations are for the fourth quarter of 2023 for business investment, May 2024 for the Sentix index and April 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 fourth quarter of 2023 for housing investment, and May 2024 for PMI output and the European Commission's activity trend.

[8] See also European Commission, "European Economic Forecast – Spring 2024", *Institutional Paper*, No 286, May 2024, pp. 31-32.

Housing investment likely increased in the first quarter of 2024 despite the weak underlying momentum, which should persist in the short term. According to the aggregation of available national accounts data, housing investment in the euro area rose markedly in the first quarter of 2024 compared with the previous quarter. This outcome was largely driven by exceptionally mild weather in Germany and the strong, albeit diminishing, effects of past fiscal incentives in Italy. It was also broadly in line with output for building and specialised construction in the euro area, which rose by 0.8% in the first quarter of 2024 compared with the previous quarter. However, recent survey-based indicators point to a decline in housing investment in the second quarter, with the PMI output for housing activity and the European Commission's indicator for activity in building and specialised construction both remaining in contractionary territory in the first months of the second quarter (Chart 8, panel b). Overall, the downward trend in housing investment reflects the significant rise in mortgage interest rates and the moderation in house price growth resulting from the past monetary policy tightening, which had a negative impact on the affordability and profitability of housing. The persistently elevated level of interest rates is likely to cause housing affordability and profitability to remain low and continue to weigh on the momentum of housing investment.

Growth in euro area exports started to normalise in the first quarter of 2024, after lagging growth in global imports for almost a year. Extra-euro area goods export volumes recovered slightly in the first quarter, expanding by 0.1% as subdued global demand continued to hold back exports. Exports of goods are likely to have underperformed exports of services, still reflecting some drag on competitiveness stemming from the European gas crisis. High energy prices seem to have played an important role in the weak performance of euro area exports in recent years, as the changes in export market shares across sectors since 2019 appear to be negatively correlated with sectoral energy intensity. The correlation is stronger for China, where losses of euro area export market share have been substantial. Looking ahead, exports should continue to perform in line with foreign demand. However, survey-based indicators point to continued weakness in exports in the near term. New export orders for both manufactured goods and services improved in May 2024 but remain below the expansion threshold (Chart 5). Despite the stronger domestic spending in the euro area, the recovery in imports was small and goods volumes continued to decline, falling by 1.7% in the first quarter of 2024. In the first quarter of the year net exports made a positive contribution to GDP, reflecting a better performance from exports than imports. The combined effect of falling import prices and a pick-up in export prices is likely to lead to a renewed improvement in terms of trade.

The euro area economy is expected to recover over the course of 2024, largely on the back of private consumption. This will be facilitated by rising real incomes, resulting from lower inflation, increased wages and improved terms of trade. While the boost from net trade at the start of 2024 largely reflects volatility following the temporary decline at the end of 2023, foreign demand is expected to continue to expand and support growth in euro area exports. Over the medium term the recovery is also expected to be supported by the gradually fading negative impact of the past monetary policy tightening and an assumed easing of financial conditions, in line with

market expectations for the future path of interest rates. Additionally, growth will be supported by a resilient labour market, with unemployment declining further later along the projection horizon to reach historically low levels.

The June 2024 Eurosystem staff macroeconomic projections for the euro area foresee annual real GDP growth of 0.9% in 2024, 1.4% in 2025 and 1.6% in 2026. Compared with the March 2024 projections, the outlook for GDP growth has been revised up for 2024, owing to the positive surprise at the start of the year and improved incoming information. The GDP growth outlook has been revised down marginally for 2025 and remains unchanged for 2026.

3 Prices and costs

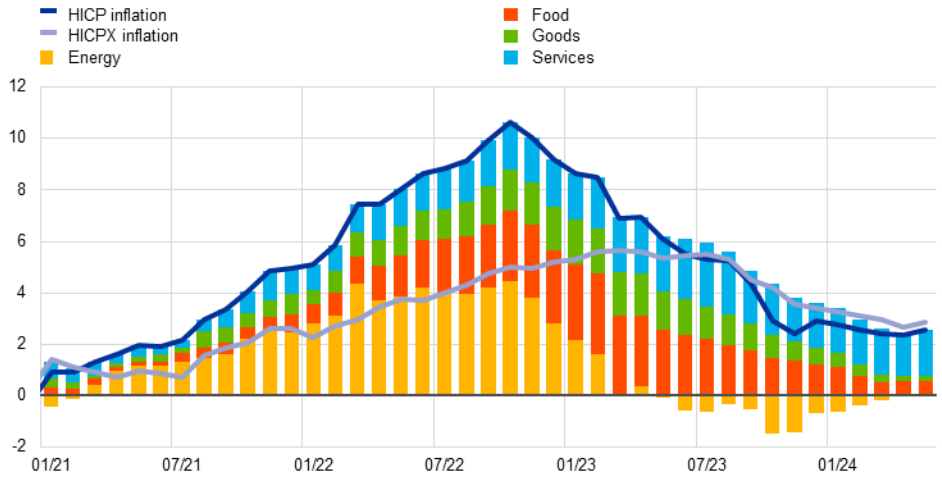
Euro area headline inflation edged up to 2.6% in May 2024, after standing at 2.4% in March and April. Most measures of underlying inflation declined further in April. Domestic price pressures decreased in the first quarter of the year, reflecting weakening profits. Measures of longer-term inflation expectations remained broadly stable, with most standing at around 2%. The June 2024 Eurosystem 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.

Euro area headline inflation increased to 2.6% in May (according to Eurostat's flash estimate) from 2.4% in April (Chart 9).[9] This uptick resulted from higher inflation rates for energy and services inflation, while food inflation and non-energy industrial goods (NEIG) inflation eased. The annual rate of change of energy inflation increased to 0.3% in May, after recording negative rates in the previous twelve months. This rise reflects an upward base effect, owing to a significant decline in May 2023. Food inflation continued to ease, falling from 2.8% in April to 2.6% in May. This decrease reflected a lower annual rate of change in processed food prices, while the annual rate for unprocessed food prices increased. HICP inflation excluding energy and food (HICPX) rose to 2.9% in May, up from 2.7% in April, owing to an increase in services inflation (4.1% in May, after 3.7% in April). The declining growth rates for processed food and NEIG reflect the continued easing of pipeline price pressures, while more persistent services inflation is related to the stronger role of labour costs in some of its items, among other factors.

Chart 9

Headline inflation and its main components

(annual percentage changes; percentage point contributions)



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

Most indicators of underlying inflation have continued to decline, reflecting the fading effects of previous large shocks, as well as weaker demand amid tight

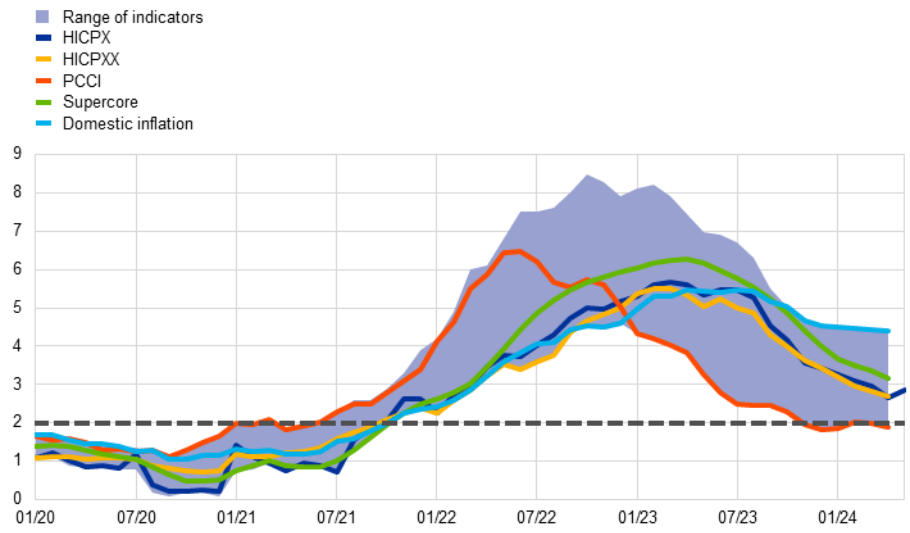
9 Headline inflation is measured in terms of the Harmonised Index of Consumer Prices (HICP).

monetary policy (Chart 10). The indicator values ranged from 1.9% to 4.4% in April, with the Persistent and Common Component of Inflation (PCCI) at the bottom of the range and the domestic inflation indicator (excluding HICP items with a large import content) at the top. HICPXX inflation (which refers to HICPX inflation excluding travel-related items, clothing and footwear) decreased from 2.8% in March to 2.7% in April. The Supercore indicator, which comprises HICP items that are sensitive to the business cycle, declined from 3.4% in March to 3.1% in April, while the model-based PCCI measure ticked downwards to 1.9% from 2.0% over the same period. The indicator for domestic inflation has been the highest and most persistent measure, standing at 4.4% in March and April 2024, reflecting the strong weight of services items such as insurance or health in its calculation. The prices of these items typically adjust less frequently and saw a delayed reaction to the earlier cost surges.

Chart 10

Indicators of underlying inflation

(annual percentage changes)



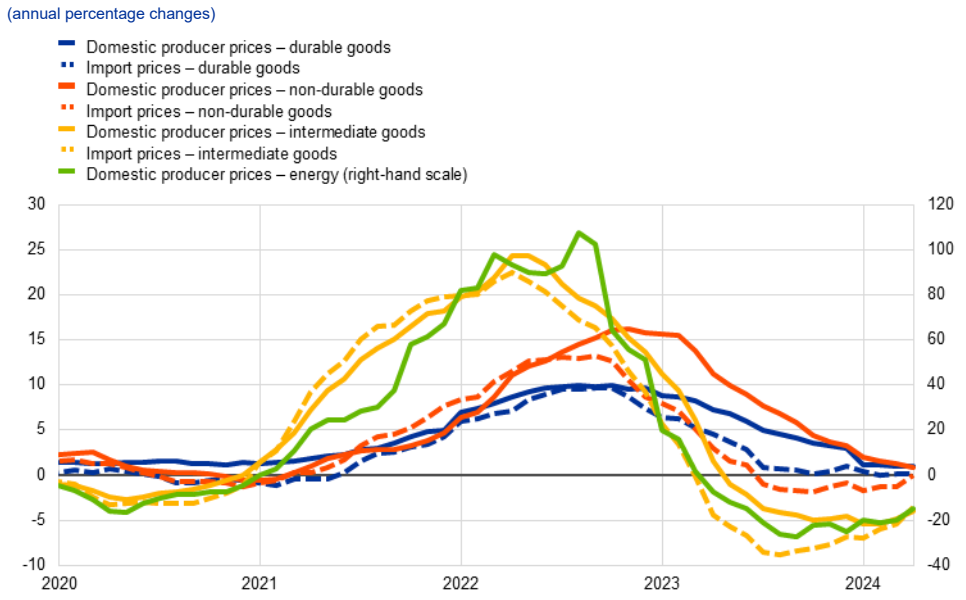
Sources: Eurostat and ECB calculations.
Notes: The range of indicators of underlying inflation includes HICP excluding energy, HICP excluding energy and unprocessed food, HICPX, HICPXX, domestic inflation, 10% and 30% trimmed means, PCCI, the Supercore indicator and a weighted median. The grey dashed line represents the ECB's inflation target of 2% over the medium term. The latest observations are for May 2024 (flash estimate) for HICPX, and April 2024 for the rest.

Most indicators of pipeline pressures continued to ease as the cumulative effects of past shocks dissipated further (Chart 11). At the early stages of the pricing chain, producer price inflation for energy, which has been negative since March 2023, edged up to -14.7% in April from -20.3% in March. The annual growth rate of producer prices for domestic sales of intermediate goods also remained negative (-3.9% in April, up from -4.8% in March). The same holds for import price inflation for intermediate goods (-3.5% in April, after -5.4% in March). Meanwhile, at the later stages of the pricing chain, domestic producer price inflation for durable consumer goods stabilised to 1.0% in March and April, after 1.1% in February. The corresponding annual growth rate of import prices stood at 0.2% in April and March, following zero growth in February. Further easing of accumulated pipeline pressures was also observed for producer price inflation for non-durable goods, which declined

further in April to 0.9%. The annual growth rate of import prices for non-durable goods showed zero growth in April, after -1.3% in March. Non-durable consumer goods include food products, which initially recorded a faster decline in their annual rates of producer price change than non-food goods. More recently, however, food product prices have converged towards non-food goods in terms of the speed of unwinding.

Chart 11

Indicators of pipeline pressures



Sources: Eurostat and ECB calculations.
Note: The latest observations are for April 2024.

The latest data available at the time of the review suggest that domestic cost pressures, as measured by growth in the GDP deflator, have started to ease. The annual growth rate of the GDP deflator decreased to 5.1% in the fourth quarter of 2023, down from 6.0% in the previous quarter, owing to a smaller contribution from unit profits and labour costs (Chart 12). The reduced impact from unit labour costs stemmed from slightly less negative growth in labour productivity and a decline in wage growth, measured in terms of compensation per employee, which fell from 5.3% in the third quarter to 4.9% in the last quarter of 2023.[10] Similarly, wage growth measured in terms of compensation per hour decreased to 4.7% in the fourth quarter from 5.1% in the third quarter. These downward pressures from unit profits and labour costs were partly offset by a larger contribution from unit net taxes, owing to an increase in unit taxes and a more negative growth rate for unit subsidies. Meanwhile, negotiated wage growth increased to 4.7% in the first quarter of the year, after having decreased slightly to 4.5% in the fourth quarter of 2023. This increase reflected both the gradual adjustment of wages to past inflation shocks and tight

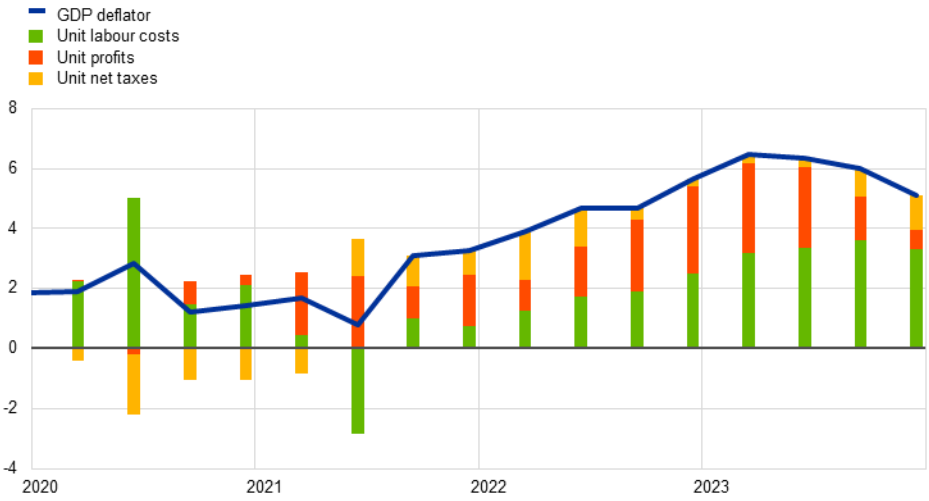
[10] The cut-off date for data included in this issue of the Economic Bulletin was 5 June 2024. National accounts data released on 7 June 2024 saw stronger annual growth in compensation per employee in the first quarter of 2024 (5.0% after 4.9% in the fourth quarter) and lower annual growth in unit labour costs (5.7% after 6.0% in the fourth quarter). The annual growth rate of the GDP deflator decreased further to 3.6% in the first quarter of 2024, down from 5.1% in the fourth quarter of 2023.

labour markets. Nevertheless, data on the latest wage agreements point to an ongoing gradual easing of wage pressures, though these are likely to remain at relatively high levels for the remainder of 2024.[11] Annual growth in compensation per employee for 2024 is projected to stand at 4.8% on average. However, it is then expected to continue to moderate over the projection horizon, albeit remaining above historical levels owing to still tight labour markets, inflation compensation and increases in minimum wages.

Chart 12

Breakdown of the GDP deflator

(annual percentage changes; percentage point contributions)



Sources: Eurostat and ECB calculations.
Notes: The latest observations are for the fourth quarter of 2023. Compensation per employee contributes positively to changes in unit labour costs, and labour productivity contributes negatively.

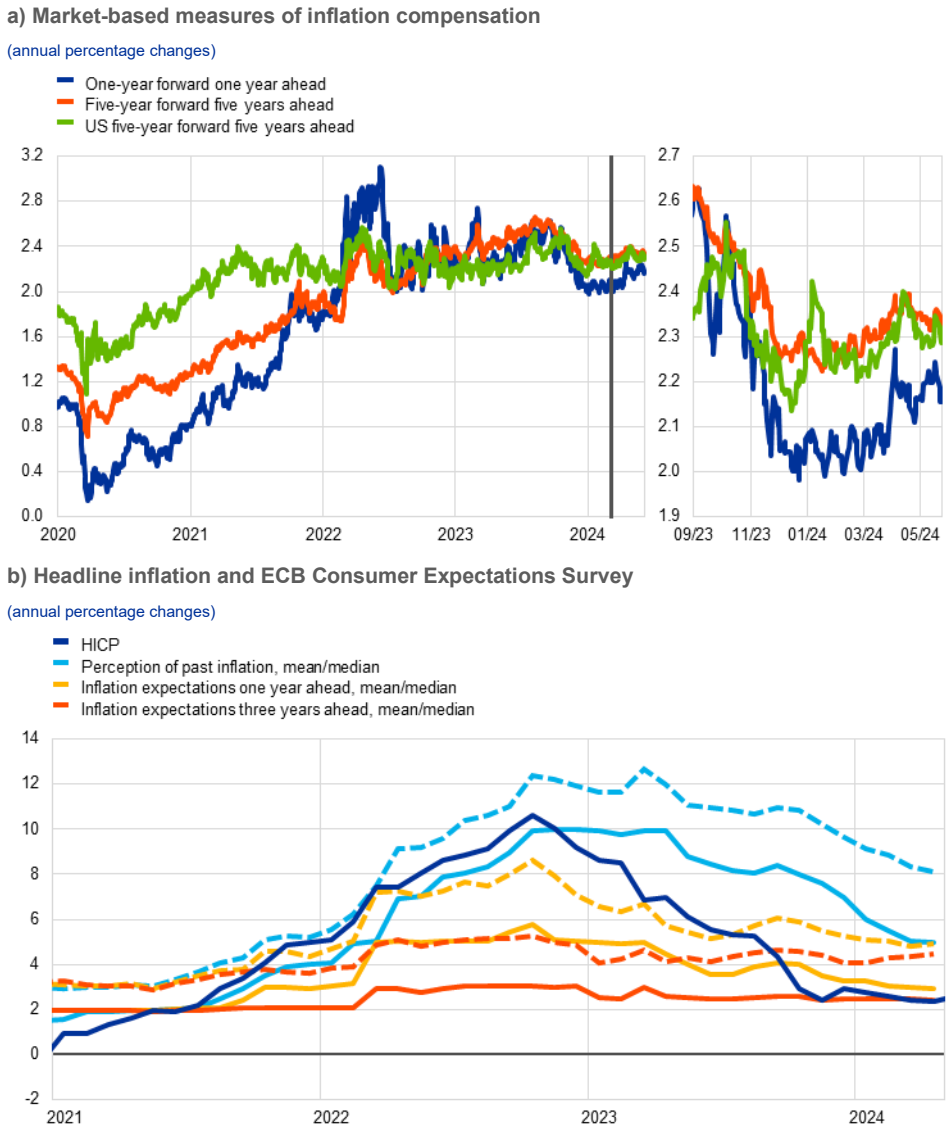
Survey-based indicators of longer-term inflation expectations and market-based measures of inflation compensation remained broadly unchanged, with most standing at around 2% (Chart 13). In both the ECB Survey of Professional Forecasters for the second quarter of 2024 and the June 2024 ECB Survey of Monetary Analysts, average longer-term inflation expectations (for 2028) stood at 2.0%. Market-based measures of inflation compensation (based on the HICP excluding tobacco) at the longer end of the yield curve remained broadly unchanged, with the five-year forward inflation-linked swap rate five years ahead standing at around 2.3%, markedly lower than the multi-year peak reached in early August 2023. It should, however, 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 expect inflation to be around 2% in the longer term. Market-based measures of near-term euro area inflation outcomes suggest that investors expect inflation to decline further in 2024, standing on average at 2.1% in the second half of the year. The one-year forward inflation-linked swap rate one year ahead was

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

broadly unchanged over the review period, standing at 2.2%. On the consumer side, inflation expectations have moderated slightly overall. The ECB's Consumer Expectations Survey for April 2024 reported that median expectations for headline inflation over the next year stand at 2.9%, compared with 3.0% in March, while inflation expectations for three years ahead decreased to 2.4% from 2.5% in March.

Chart 13

Market-based measures of inflation compensation and consumer inflation expectations



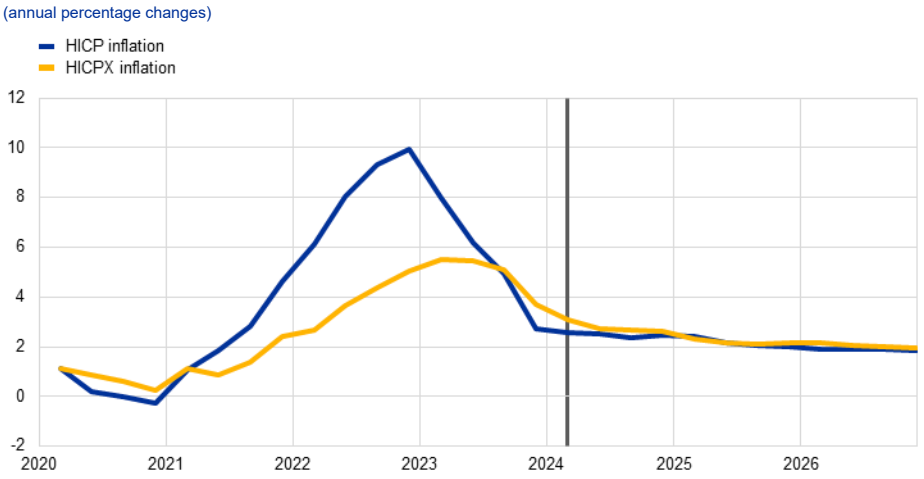
Sources: Refinitiv, Bloomberg, Eurostat, CES and ECB calculations.
Notes: Panel a) shows forward inflation-linked swap rates over different horizons for the euro area and the five-year forward break-even inflation rate five years ahead for the United States. The vertical grey line denotes the start of the review period on 7 March 2024. In panel b), dashed lines represent the mean and solid lines the median. The latest observations are for 5 June 2024 for the forward rates, May 2024 (flash estimate) for the HICP and April 2024 for the rest.

The June 2024 Eurosystem staff macroeconomic projections expect headline inflation to moderate further, from 2.5% in 2024 to 2.2% in 2025 and 1.9% in

2026 (Chart 14).[12] This moderation reflects the continued fading of pipeline pressures as well as the impact of monetary policy tightening. This is supported by weaker growth of labour costs and the fading effects of the energy crisis. Compared with the March 2024 projections, the projections for headline inflation have been revised upwards for 2024 and 2025, by 0.2 percentage points for both years, mainly owing to base effects arising from energy inflation and the withdrawal of the energy-related fiscal measures. HICPX inflation is projected to ease further in the coming years and to average 2.8% in 2024, 2.2% in 2025 and 2.0% in 2026. Compared with the March 2024 projections, HICPX inflation has been revised upwards for 2024 and 2025, by 0.2 and 0.1 percentage points respectively.

Chart 14

Euro area HICP and HICPX inflation



Sources: Eurostat and June 2024 Eurosystem 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 first quarter of 2024 for the data and the fourth quarter of 2026 for the projections. The June 2024 Eurosystem staff macroeconomic projections for the euro area were finalised on 22 May 2024, and the cut-off date for the technical assumptions was 15 May 2024. Both historical and actual data for HICP and HICPX inflation are reported at a quarterly frequency.

[12] See "Eurosystem staff macroeconomic projections for the euro area, June 2024" for more details.

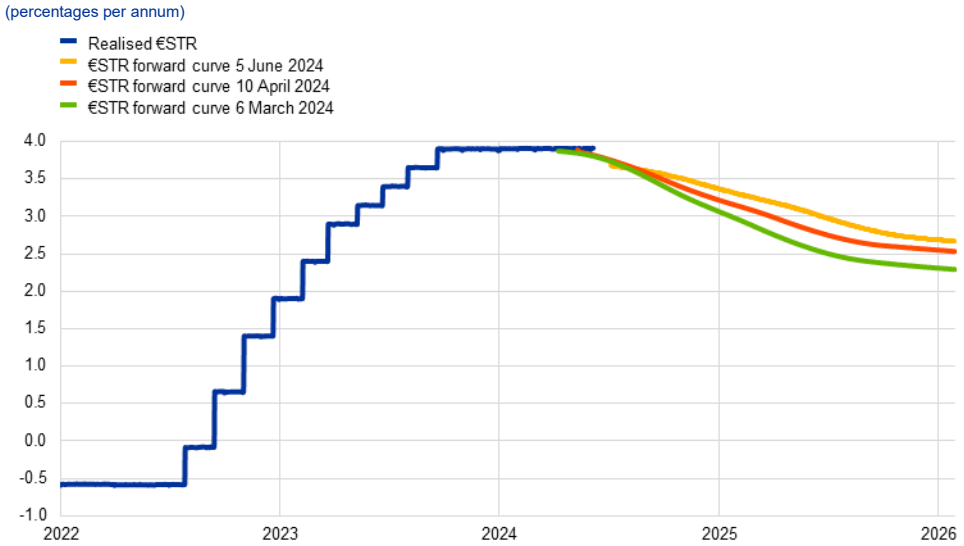
4 Financial market developments

During the review period from 7 March to 5 June 2024 the focus in euro area financial markets remained on the pace of disinflation and its implications for the timing and extent of possible monetary policy rate cuts. Short-term risk-free rates shifted upwards for all but the most near-term maturities as market participants internalised macroeconomic surprises on both sides of the Atlantic, which resulted in a moderation in their expectations of monetary policy easing. The short end of the euro short-term rate (€STR) forward curve was little changed, almost fully pricing in an initial interest rate cut of 25 basis points at the June Governing Council meeting. By contrast, market pricing of rate cuts in the remainder of the year declined to 65 basis points of cumulative cuts. The forward curve signals that the easing cycle is priced to level off at between 2% and 2.5% by the end of 2026. Longer-term risk-free rates also moved slightly higher, with sovereign bond yields moving broadly in line with risk-free rates. There was also little change in sovereign spreads over the overnight index swap (OIS) rate as strong bond issuances continued to be well absorbed by investors. Euro area stock prices rose further, supported by improved earnings expectations and strong risk appetite, despite still-elevated geopolitical tensions. Finally, in foreign exchange markets the euro appreciated slightly in trade-weighted terms but was broadly stable against the US dollar.

The OIS forward curve has shifted upwards since the March Governing Council meeting in the context of a moderation in market participants' expectations of rate cuts for 2024 (Chart 15). The benchmark euro short-term rate (€STR) remained stable at 3.9% over the review period, reflecting the unchanged deposit facility rate, which the Governing Council has kept at 4% since the monetary policy meeting in September 2023. Excess liquidity decreased by around €302 billion from 7 March to 4 June to stand at €3,198 billion. This mainly reflected repayments in March of the third series of targeted longer-term refinancing operations (TLTRO III) and, to a lesser degree, the decline in the asset purchase programme (APP) portfolio, as the Eurosystem no longer reinvests the principal payments from maturing securities in this portfolio. The short end of the €STR-based OIS forward curve was almost fully pricing in an initial rate cut of 25 basis points at the June meeting. By contrast, forward rates associated with subsequent Governing Council meetings have increased since the March meeting. This movement indicates that market participants expect subsequent policy rate cuts over the remainder of the year to be fewer and later than previously expected. Overall, the forward curve moved from pricing in, in March, around 100 basis points of cumulative cuts in the course of 2024, to pricing in around 65 basis points of cumulative cuts.

Chart 15

€STR forward rates



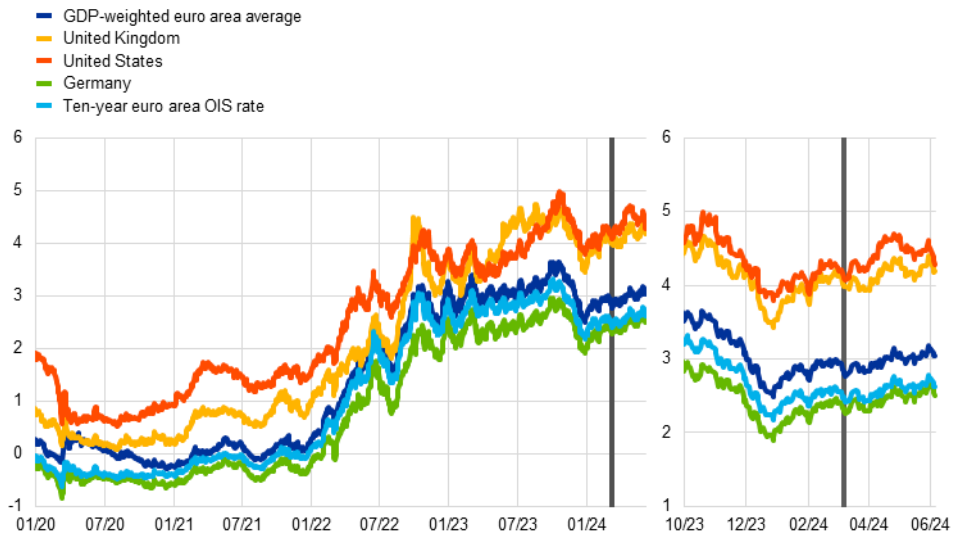
Sources: Bloomberg and ECB calculations.
Note: The forward curve is estimated using spot OIS (€STR) rates.

Euro area long-term risk-free rates edged up, albeit by less than their US counterparts (Chart 16). Long-term risk-free rates rose substantially in the first half of the review period, mainly driven by the reassessment of the US interest rate outlook, before declining moderately. The ten-year euro OIS rate increased by 30 basis points up to the end of April and ended the review period at around 2.6%, 16 basis points above the level at the time of the March meeting. In the United States, long-term risk-free rates generally fluctuated more significantly and rose more noticeably during the review period, particularly on days of releases of consumer price index (CPI) data. The ten-year US Treasury yield increased by 19 basis points to 4.3%, leaving the differential between long-term risk-free rates in the euro area and the United States approximately unchanged. The UK sovereign bond yield rose by 19 basis points to 4.2%.

Chart 16

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

(percentages per annum)

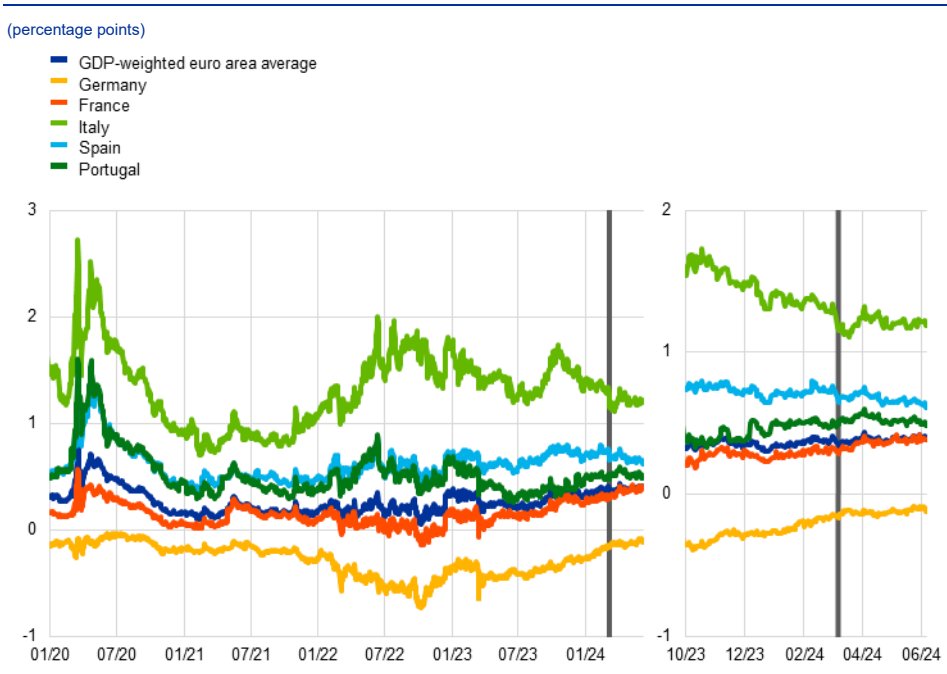


Sources: LSEG and ECB calculations.
Notes: The vertical grey line denotes the start of the review period on 7 March 2024. The latest observations are for 5 June 2024.

Euro area sovereign bond yields moved broadly in line with risk-free rates, leaving sovereign spreads little changed (Chart 17). At the end of the review period, the ten-year GDP-weighted euro area sovereign bond yield stood about 24 basis points higher at around 3.04%, leading to only a slight increase of 5 basis points in its spread over the OIS rate based on the €STR. Sovereign spreads across countries, including those for lower-rated euro area countries, moved little over the review period. The review period was marked by resilience in the sovereign bond market, where exceptionally strong issuances were well absorbed by the buoyant demand of investors seeking to lock in yields in anticipation of an impending cycle of policy rate cuts.

Chart 17

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



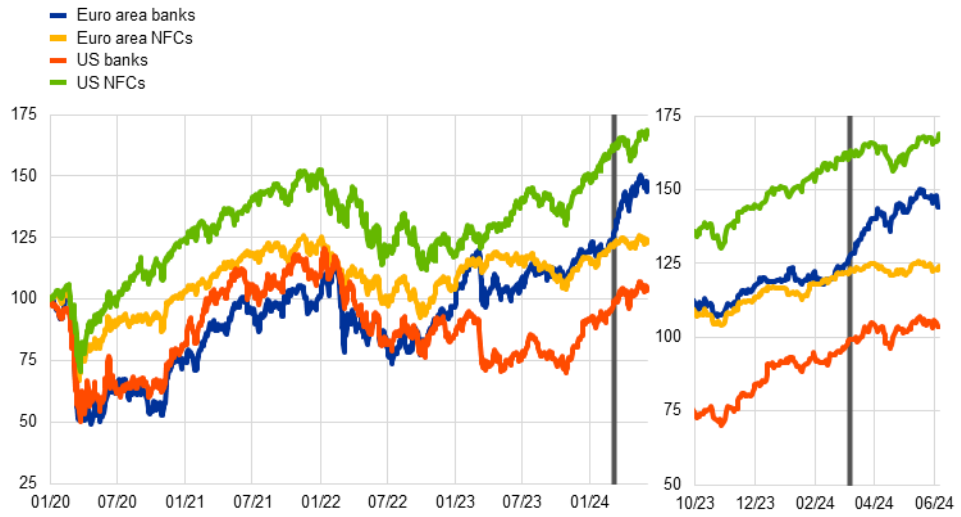
Sources: LSEG and ECB calculations.
Notes: The vertical grey line denotes the start of the review period on 7 March 2024. The latest observations are for 5 June 2024.

Spreads of high-yield corporate bonds showed some modest decreases amid strong overall risk appetite. Over the review period, spreads on high-yield corporate bonds declined by 14 basis points, with the spreads of financial corporations decreasing by 23 basis points, while spreads of non-financial corporations (NFCs) declined by 12 basis points. Spreads on investment-grade corporate bonds fluctuated moderately, standing 8 basis points lower at the end of the review period. Spreads on the better-rated part of the high-yield segment (B-BB) continue to stand well below their historical median, despite a rise in expected default frequencies in this market segment in recent months. The resilience of the euro area corporate sector has helped to contain bond funding costs.

Euro area equity prices increased somewhat further despite elevated macroeconomic uncertainty and higher discount rates (Chart 18). Broad stock market indices in both the euro area and the United States increased further over the review period, even though geopolitical tensions remained elevated. The euro area and US indices increased by around 2.5% and 3.8% respectively. Euro area equity prices were supported by lower equity risk premia and higher short and long-term earnings expectations, which more than offset the impact of higher discount rates. NFC equity prices in the euro area and the United States increased over the review period by 0.9% and 3.6% respectively. Euro area bank equity prices, which increased by 12.4%, continued to outperform their US counterparts, which recorded a 4.5% increase.

Chart 18

Euro area and US equity price indices



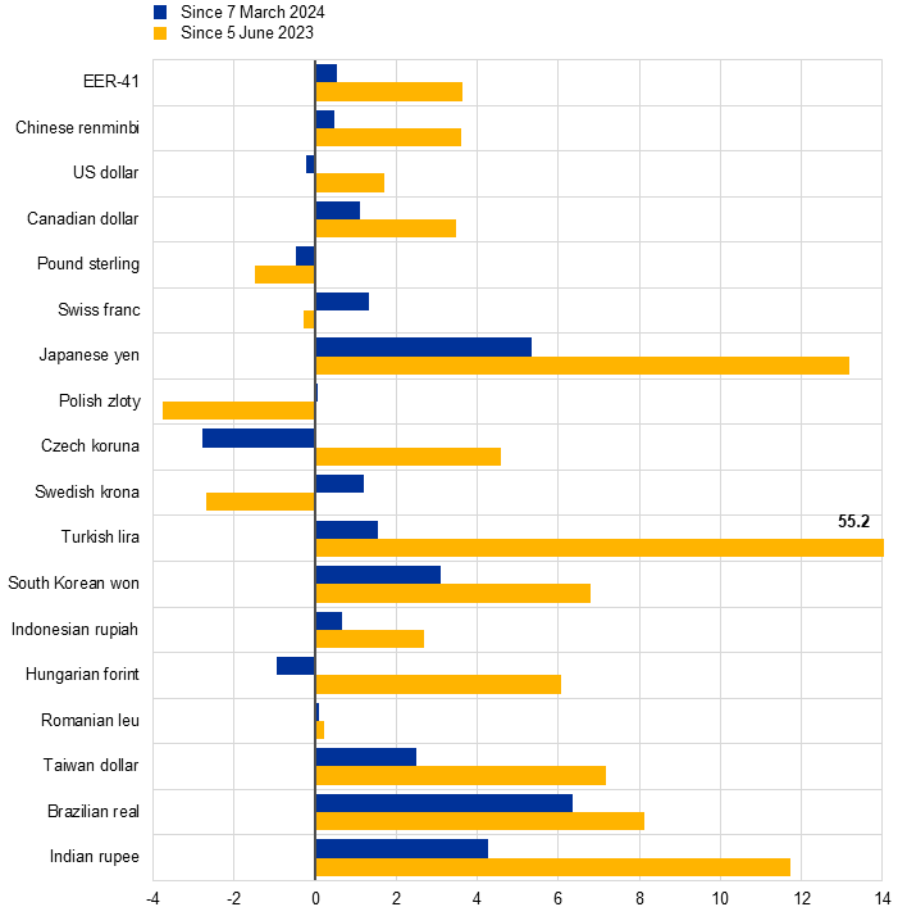
Sources: LSEG and ECB calculations.
Notes: The vertical grey line denotes the start of the review period on 7 March 2024. The latest observations are for 5 June 2024.

In foreign exchange markets, the euro appreciated slightly in trade-weighted terms but was broadly stable against the US dollar (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 0.5%. The slight appreciation of the euro was mostly driven by gains against the currencies of several advanced economies. It appreciated by 5.2% against the Japanese yen, 1.3% against the Swiss franc, 1.2% against the Swedish krona and 1.1% against the Canadian dollar. These developments mainly reflected heterogeneous monetary policy developments. For example, the Swiss National Bank cut interest rates by 25 basis points to 1.5% in March, the Sveriges Riksbank cut its key interest rate from 4.00% to 3.75% at its May meeting, and the Bank of Canada cut its interest rate by 25 basis points to 4.75% on 5 June. The euro depreciated by 0.4% against the pound sterling as market participants pushed back their expectations regarding the timing of potential policy rate cuts by the Bank of England. The euro remained relatively stable against the US dollar (-0.2%), despite some intra-period fluctuations.

Chart 19

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

(percentage changes)



Source: ECB.
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 5 June 2024.

5 Financing conditions and credit developments

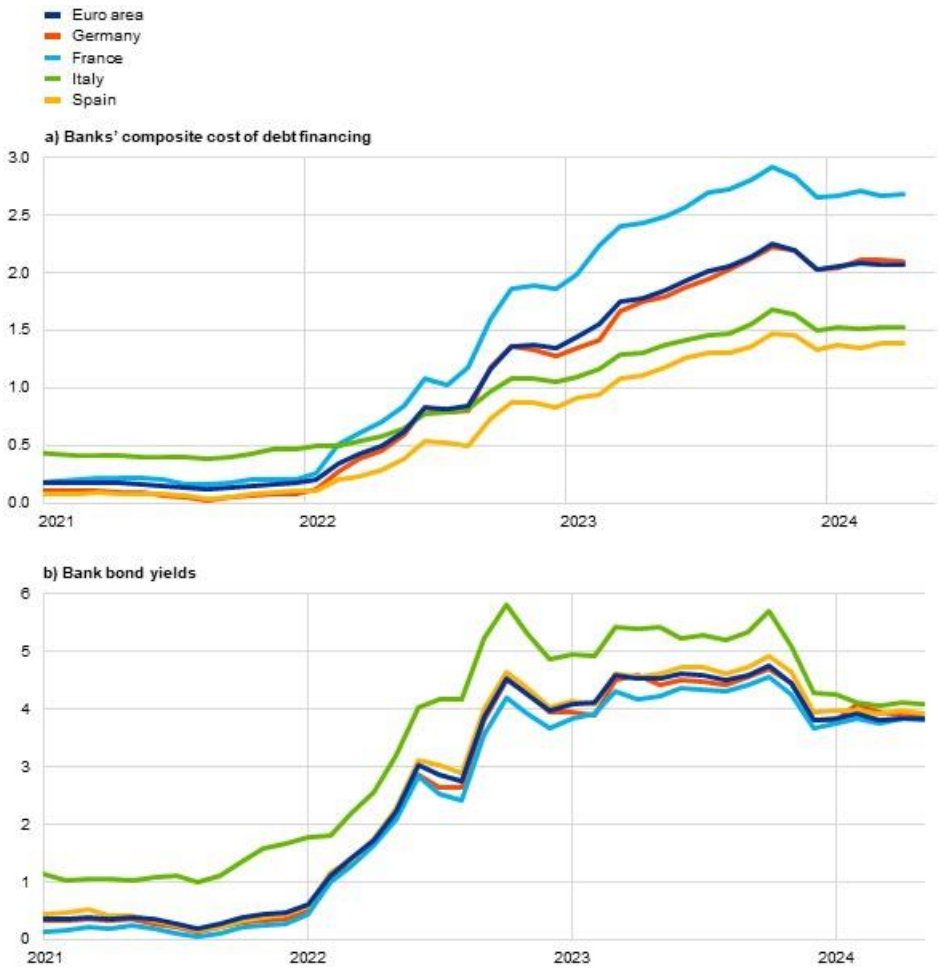
In April 2024 composite euro area bank funding costs and bank lending rates remained stable at high levels. The cost to non-financial corporations (NFCs) of market-based debt and equity financing increased over the period from 7 March to 5 June 2024. In April bank lending to firms and households stabilised at low levels, reflecting high lending rates, weak economic growth, and tight credit standards. The annual growth rate of broad money (M3) continued its gradual recovery, driven by sizeable net foreign inflows.

Euro area bank funding costs remained high by historical standards. As the funding composition continued to shift to more expensive sources, bank funding costs remained elevated. In April 2024 the composite funding cost of debt financing for euro area banks was unchanged from March, standing at 2.07% (Chart 20, panel a). Bank bond yields increased slightly in April and aggregate deposit rates, which account for the largest share of bank funding costs, saw no change (Chart 20, panel b). This development masks considerable cross-country heterogeneity and variation across instruments and sectors. Rates on overnight deposits remained stable in April, while rates on time deposits up to 2 years fell, resulting in a slight narrowing of the large spread between the two. Rates on deposits redeemable at a period of notice of up to three months edged up, however.

Chart 20

Composite bank funding costs in selected euro area countries

(annual percentages)



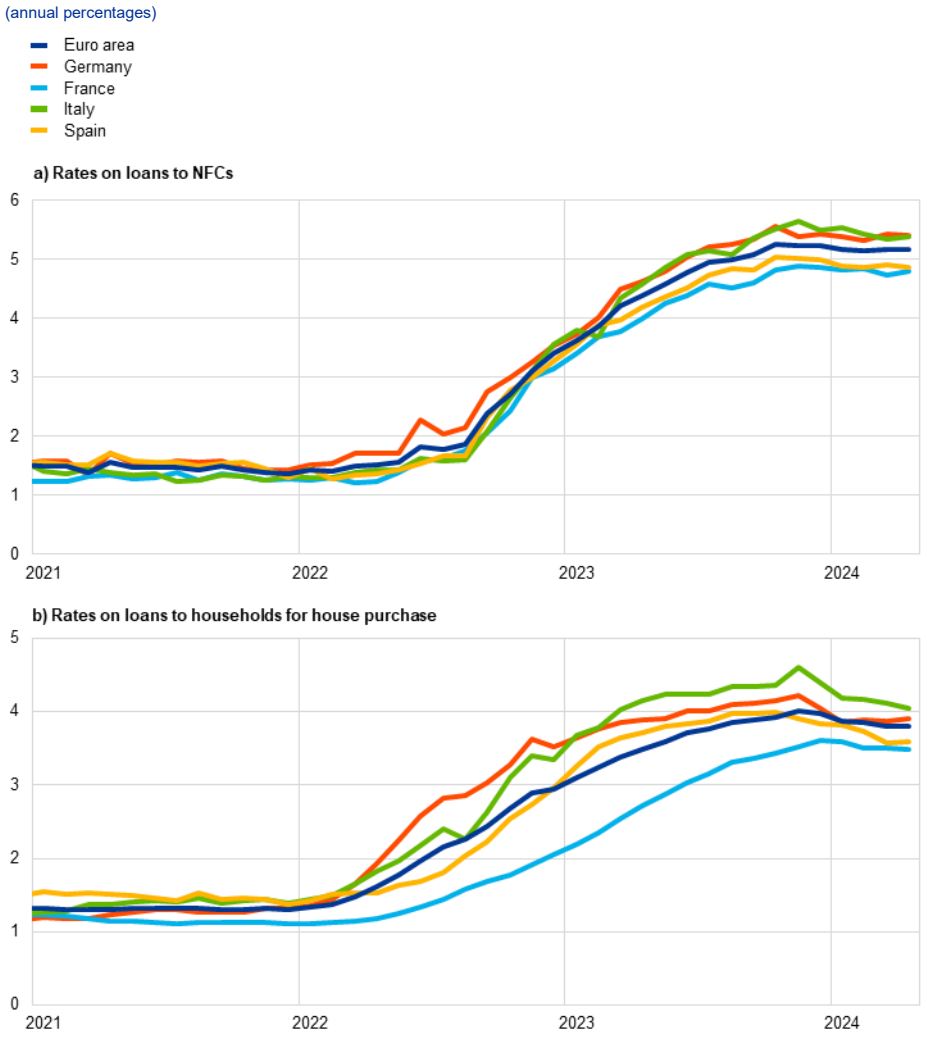
Sources: ECB, S&P Dow Jones Indices LLC and/or its affiliates, and ECB calculations.
Notes: Composite bank funding costs are a weighted average of the composite cost of deposits and unsecured market-based debt financing. The composite cost of deposits is calculated as an average of new business rates 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 April 2024 for the composite cost of debt financing for banks and for 5 June 2024 for bank bond yields.

In April 2024 lending rates for firms and for housing loans remained stable at high levels. In April lending rates for firms saw no change, standing at 5.18%, and were only slightly below the peak of 5.27% reached in October 2023 (Chart 21), amid heterogeneity across euro area countries and maturities. On the back of the inverted yield curve, rates on loans with longer interest rate fixation periods continued to be lower than those with short fixation periods. The spread between interest rates on small and large loans to euro area firms narrowed further in April to 0.23 percentage points, which is the lowest level since the pandemic, reflecting lower rates on small loans and unchanged rates on large loans. After four consecutive declines, lending rates on new loans to households for house purchase saw no change, standing at 3.80% in April and below the high of 4.02% seen in November 2023 (Chart 21). This stabilisation was broad-based across maturity segments. In April bank rates on new loans to households for consumption increased slightly from

their March level and amid volatility, while there was a small decrease for loans to sole proprietors.

Chart 21

Composite bank lending rates for NFCs and households in selected countries



Sources: ECB and ECB calculations.
Notes: 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 April 2024.

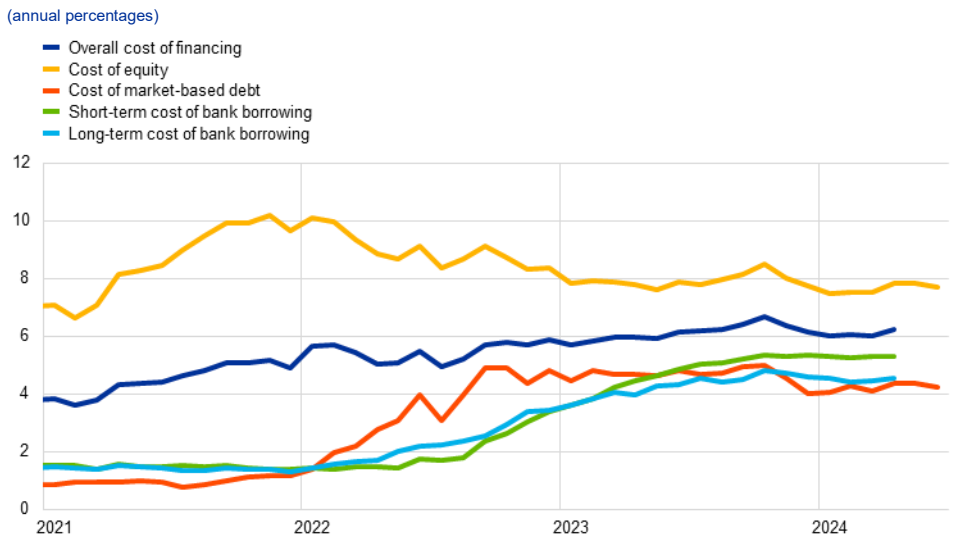
Over the period from 7 March to 5 June 2024, the cost of market-based debt and equity financing to NFCs increased. Based on the available monthly data, the overall cost of financing for NFCs – i.e. the composite cost of bank borrowing, market-based debt and equity – stood at 6.2% in April, 20 basis points higher than the level in March but still lower than the multi-year high reached in October 2023 (Chart 22).[13] All components contributed to the increase in the overall cost index, other than the cost of short-term loans, which remained broadly unchanged. The daily data on the cost of market-based debt and equity financing show an increase in both indicators over the period from 7 March to 5 June 2024. The cost of market-

[13] 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 April 2024.

based debt edged up, given that the rise in the risk-free interest rate – as approximated by the ten-year overnight index swap rate – was not offset by the compression of spreads on bonds issued by NFCs in both the investment grade and high yield segments. Likewise, the cost of equity financing increased over the same period, reflecting the higher risk-free rate that outweighed the marginally lower equity risk premium (Section 4).

Chart 22

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



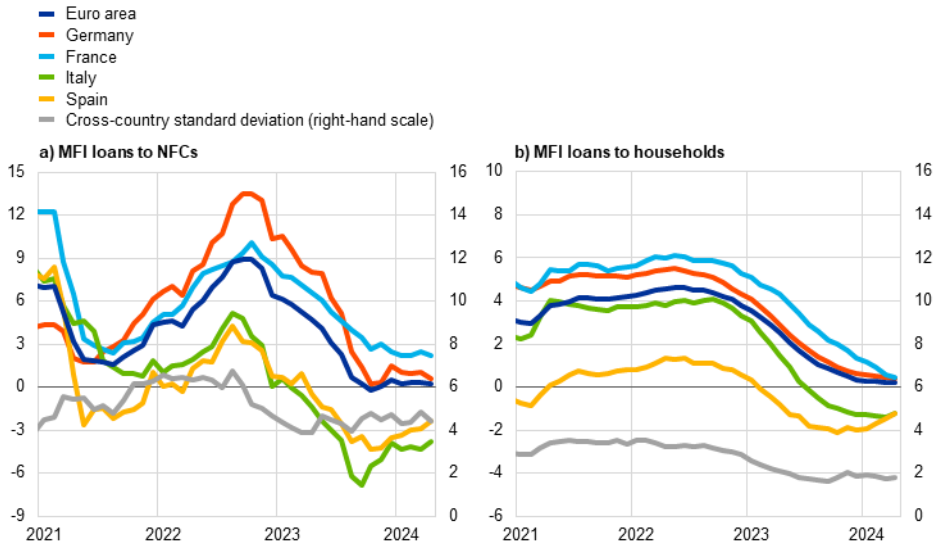
Sources: ECB, Eurostat, Dealogic, Merrill Lynch, Bloomberg, Thomson Reuters and ECB calculations.
Notes: The overall cost of financing for non-financial corporations (NFCs) is based on monthly data and is calculated as a weighted average of the cost of borrowing from banks (monthly average data), market-based debt and equity (end-of-month data), based on their respective outstanding amounts. The latest observations are for 5 June 2024 for the cost of market-based debt and the cost of equity (daily data), and for April 2024 for the overall cost of financing and the long and short-term cost of bank borrowing (monthly data).

In April 2024 the annual growth rate of bank lending to firms and households remained virtually at zero, reflecting high lending rates, weak economic growth and tight credit standards. Annual growth in loans to NFCs saw a slight decline to 0.3% in April, down from 0.4% in March (Chart 23, panel a). The annual growth rate of loans to households remained unchanged at 0.2% in April (Chart 23, panel b). While consumer loans remained resilient, housing loans showed slightly positive growth and loans to sole proprietors continued to have negative growth rates. The ECB's Consumer Expectations Survey in April 2024 showed that a still large, but declining, net percentage of survey respondents had the impression that credit access had become harder over the previous 12 months and expected it to become even more difficult over the next 12 months. The ongoing weakness in loan growth reflects the stagnant lending dynamics observed since the beginning of 2023, on the back of weak aggregate demand, tight credit standards and the impact of restrictive monetary policy on lending rates.

Chart 23

MFI loans in selected euro area countries

(annual percentage changes; standard deviation)

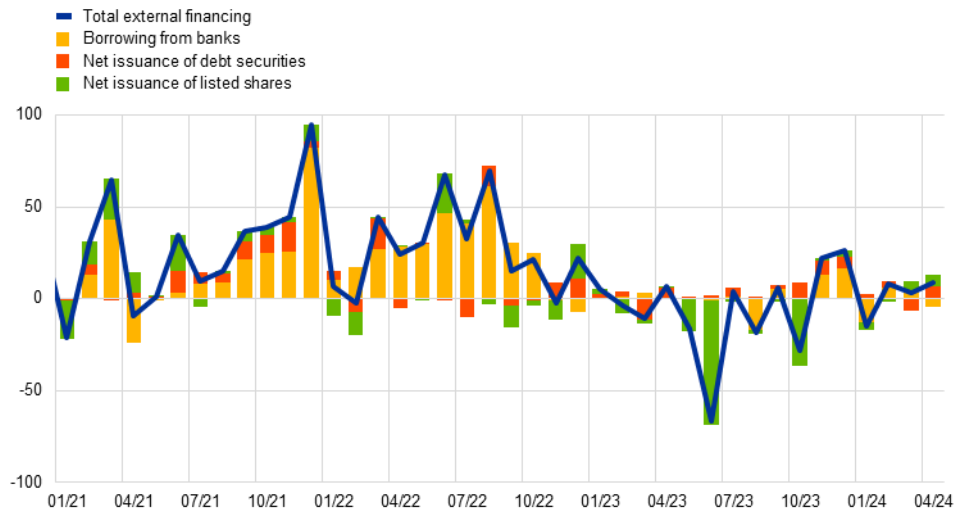


Sources: ECB and ECB calculations.
Notes: Loans from monetary financial institutions (MFIs) are adjusted for loan sales and securitisation; in the case of non-financial corporations (NFCs), loans are also adjusted for notional cash pooling. The cross-country standard deviation is calculated using a fixed sample of 12 euro area countries. The latest observations are for April 2024.

Net external financing of euro area firms was subdued in the first quarter of 2024 and in April. Net external financing flows continued to be small compared with historical averages (Chart 24). This development is explained by the low levels of debt securities issuance by firms and of borrowing from banks, given that economic activity remained weak and policy rates are restrictive. The strong decline in the volume of short-term loans was consistent with lower working capital needs and with the increase in the stock of finished products seen in mid-2023, while loan flows for longer-term maturities also remained weak, amid muted demand for investment. At the same time, the issuance of listed shares picked up slightly in March and April, but remained low overall.

Chart 24

Net external financing flows for euro area NFCs



Sources: ECB, Eurostat, Dealogic and ECB calculations.
Notes: Net external financing is the sum of borrowing from banks (MFI loans), net issuance of debt securities and net issuance of listed shares. MFI loans are adjusted for loan sales, securitisation and cash-pooling activities. The latest observations are for April 2024.

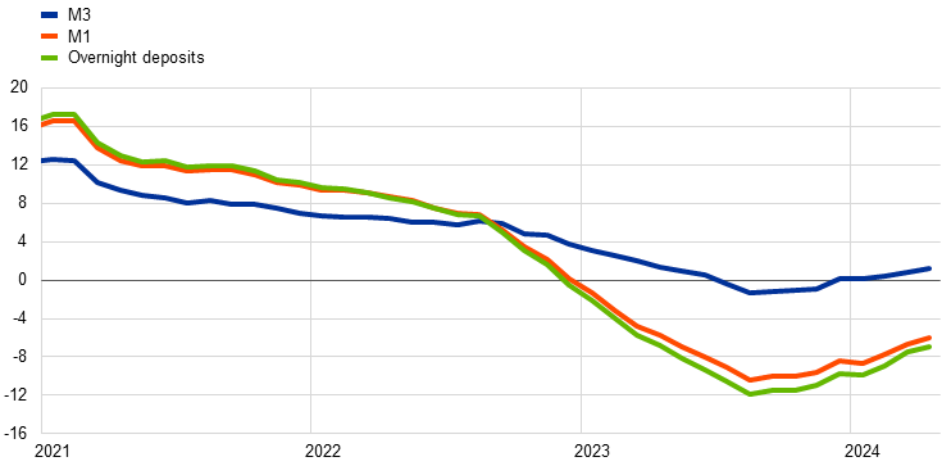
Firms and households recorded a further increase in time deposits, amid signs of a slowing of the ongoing reallocation to time deposits in April 2024. The annual growth rate of overnight deposits contracted at a slowing pace of -7.0% in April, after having fallen to -7.5% in March (Chart 25). The ongoing preference among firms and households for holding time deposits and marketable instruments is still explained by the remuneration being higher than on overnight deposits.[14] While deposit flows are still significantly more tilted towards time deposits than in the past, this reallocation is losing steam, with the spread between the returns on both instruments stabilising. Firms' deposit allocation is moving closer to a level that is more in line with historical patterns, and household overnight deposits saw the first positive monthly inflow since September 2022. High short-term interest rates continued to support strong growth of money market funds.

[14] As in previous tightening cycles, interest rates on overnight deposits have adjusted to policy rate changes more slowly than those on time deposits. See also the box entitled "Monetary dynamics during the tightening cycle", *Economic Bulletin*, Issue 8, ECB, 2023.

Chart 25

M3, M1 and overnight deposits

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



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

The annual growth rate of broad money (M3) continued its gradual recovery in April 2024, driven by another sizeable net foreign inflow. Money growth has been gradually increasing over recent months, even though loans to households and firms remained weak. In April M3 growth in the euro area increased to 1.3%, up from 0.9% in March (Chart 20). Annual growth of narrow money (M1) – which comprises the most liquid assets of M3 – stayed in negative territory, but increased further, rising to -6.0% in April compared with -6.6% in March. In April money creation was driven by a large foreign inflow, amid the ongoing current account surplus from weak imports, and was supported by a large net issuance of euro area governments bonds. These inflows were partially offset by the continuing contraction of the Eurosystem balance sheet, while the contribution of lending to firms and households continued to be muted.

6 Fiscal developments

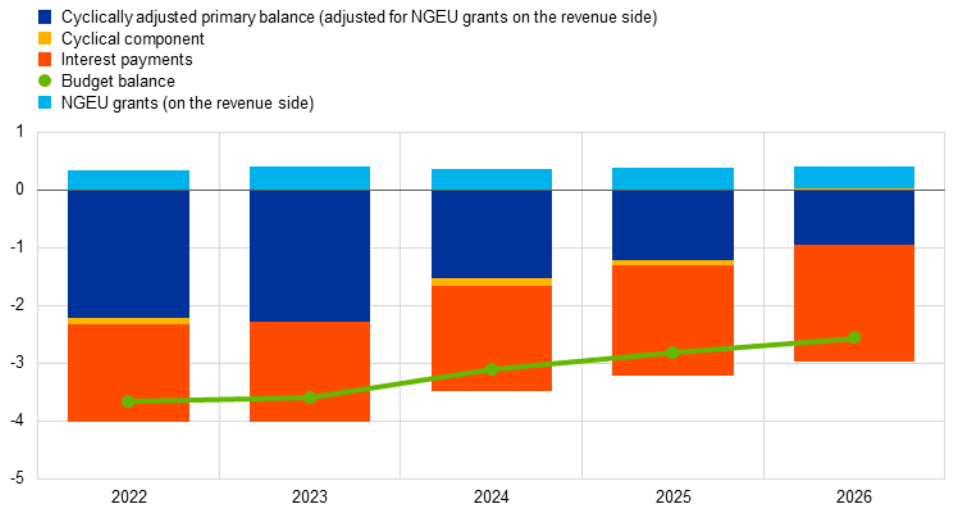
According to the June 2024 Eurosystem staff macroeconomic projections, the euro area general government budget deficit, which stood at 3.6% of GDP in 2023, should decline to 3.1% of GDP in 2024 and then fall gradually to 2.8 in 2025 and 2.6% in 2026. The euro area fiscal stance is projected to tighten significantly in 2024 and somewhat further in the subsequent two years. The tightening in 2024 mostly reflects expectations that governments will largely phase out their energy and inflation-related support measures. This factor will also marginally contribute to the tightening of the fiscal stance in 2025, while somewhat slower expenditure growth and additional consolidation measures on the revenue side in some countries add to the projected slight additional tightening over 2025-2026. The euro area debt-to-GDP ratio is projected to broadly stabilise at an elevated level of around 89% as a result of continued primary deficits and positive deficit-debt adjustments compensated by shrinking but still negative interest rate-growth differentials*. It will now be important for governments to implement the EU's revised economic governance framework fully and without delay to bring down budget deficits and debt ratios on a sustained basis. At the same time, an effective and rapid implementation of the Next Generation EU (NGEU) programme is crucial in fostering innovation and increasing investment in the green and digital transitions.*

According to the June 2024 Eurosystem staff macroeconomic projections, the euro area general government budget balance will improve moderately over the projection horizon (Chart 26).[15] Looking back, the euro area budget deficit declined very marginally from 3.7% in 2022 to 3.6% of GDP in 2023. Looking forward, the deficit should decline more significantly to 3.1% of GDP in 2024 and then further to 2.8% of GDP in 2025 and to 2.6% of GDP in 2026. The projected path mainly reflects a gradually shrinking but still negative cyclically adjusted primary balance over the forecast horizon, with the largest reduction occurring in 2024. 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 sovereign debt residual maturities. The significant fall in the cyclically adjusted primary deficit in 2024 is largely driven by the significant scaling back of government fiscal support measures as the energy shock and high overall consumer price inflation fades.

[15] See "Eurosystem staff macroeconomic projections for the euro area, June 2024", published on the ECB's website on 6 June 2024.

Chart 26

Budget balance and its components



Source: ECB calculations and June 2024 Eurosystem 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 March 2024 ECB staff macroeconomic projections, the budget deficit in 2023 turned out to be 0.4 percentage points higher. This surprise was, at the euro area level, driven mainly by higher-than-anticipated primary expenditure growth. Moreover, it is estimated that the more adverse outcome will also spill over into 2024, with a downward revision of the budget balance of 0.2 percentage points on account of a lower primary balance. While revisions to the budget balance and its components are negligible for 2025, an upward revision of 0.2 percentage points is foreseen for 2026 owing to an improving primary balance.

The euro area fiscal stance is projected to tighten significantly in 2024 and somewhat more in the subsequent two years.[16] The annual change in the cyclically adjusted primary balance, adjusted for grants extended to countries under the NGEU programme, points to a significant tightening of fiscal policies in the euro area in 2024 (of 0.7 percentage points of GDP). This mostly reflects expectations that governments will largely phase out energy and inflation-related support measures. This effect will also marginally contribute to the tightening of the stance in 2025 in conjunction with an increase in tax and social security contributions as well as slower growth in fiscal transfers. This tightening is projected to be only partly offset by weak government investment growth. A further tightening of the fiscal stance in 2026 is mostly on account of declining subsidies and other fiscal transfers. The total tightening of the fiscal stance over the 2024 – 2026 horizon amounts to 1.3 percentage points of GDP.

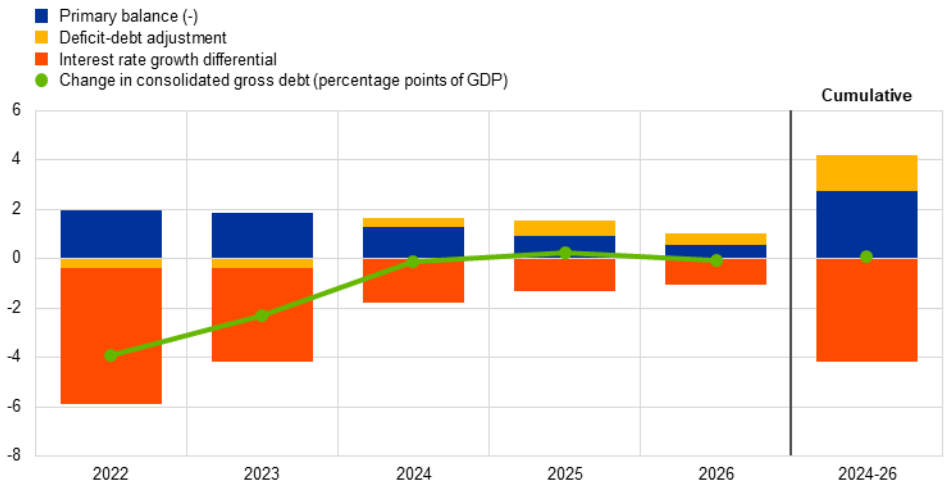
[16] The fiscal stance reflects the direction and size of the stimulus from fiscal policies to the economy beyond the automatic reaction of public finances to the business cycle. It is measured here as the change in the cyclically adjusted primary balance ratio net of government support to the financial 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.

The euro area debt-to-GDP ratio is projected to remain elevated and stable at around 88.5% over the whole projection horizon (Chart 27). During the pandemic, the debt ratio increased significantly to around 97% in 2020 but has gradually fallen since. However, this improving trend seems to have ceased. Instead, the debt ratio is expected to remain rather stable over the forecast horizon, with a marginal increase in 2025 driven by primary deficits and expected positive deficit-debt adjustments, which are compensated by shrinking but still negative interest rate-growth differentials.

Chart 27

Drivers of change in euro area government debt

(percentages of GDP, unless otherwise indicated)



Source: ECB calculations and June 2024 Eurosystem 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 and without delay will be crucial to help governments bring down budget deficits and debt ratios on a sustained basis. Such a consolidation of public finances, designed in a growth-friendly manner, will be necessary over the coming years against the background of a period when fiscal policies had to counter repeated economic shocks. At the same time, an effective and speedy implementation of the NGEU programme is crucial in fostering innovation, boosting potential growth, and increasing investment in the green and digital transitions. This is because, as was highlighted by the Commission in its mid-term evaluation of the Recovery and Resilience Facility (RRF), there have to date been delays in disbursements and investments under the programme, leading to a significantly lower positive growth impact than anticipated at the outset.

Boxes

1 The post-pandemic recovery – why is the euro area growing more slowly than the United States?

Prepared by Malin Andersson, Cristina Checherita-Westphal, António Dias Da Silva and Michel Soudan

Real GDP growth has been notably weaker in the euro area than in the United States since the start of the pandemic.[1] Between the fourth quarter of 2019 and the fourth quarter of 2023, the euro area economy grew by around 3% in cumulative terms, while real GDP in the United States rose by more than 8% (Chart A), resulting in a cumulative growth differential of around 5 percentage points.[2] This gap is primarily attributable to weaker private consumption in the euro area than in the United States, where direct income support and a relatively larger reduction in excess savings provided a particularly strong boost. The euro area suffered a substantial terms-of-trade shock after the invasion of Ukraine sparked an energy crisis. While there is mixed evidence of the relative size of monetary policy impacts across these two regions, fiscal policy support may have been stronger in the United States relative to the intensity of the various shocks, albeit different reporting conventions make comparisons harder to draw. This box examines these and other contributing factors; it does not assess the diverging underlying structural growth trends prior to the pandemic.[3]

A breakdown by expenditure component shows that buoyant private consumption growth in the United States accounts for most of the growth gap (Chart A). Private consumption contributed around 7 percentage points to the difference in growth between the euro area and the United States from the onset of the pandemic until the fourth quarter of 2023. Particularly volatile investment and trade in intangibles in Ireland notably affected the euro area, weighing on investment and boosting net exports in the euro area over this period. At the same time, private investment was stronger in the United States than in the euro area – even when adjusted for Irish intangibles and despite a fall in US housing investment. By contrast, the contribution from net trade to growth was still more negative in the United States than in the euro area after adjusting for intangible-intensive Irish trade, owing to strong demand-driven imports to the United States. Public investment grew

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1 See also 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*, Board of Governors of the Federal Reserve System, Washington, 17 May 2024.

2 Excluding data on volatile Irish intangibles – see the box entitled "Intangible assets of multinational enterprises in Ireland and their impact on euro area GDP", *Economic Bulletin*, Issue 3, ECB, 2023 – the growth differential between the euro area and the United States in the same period is.5.7 percentage points.

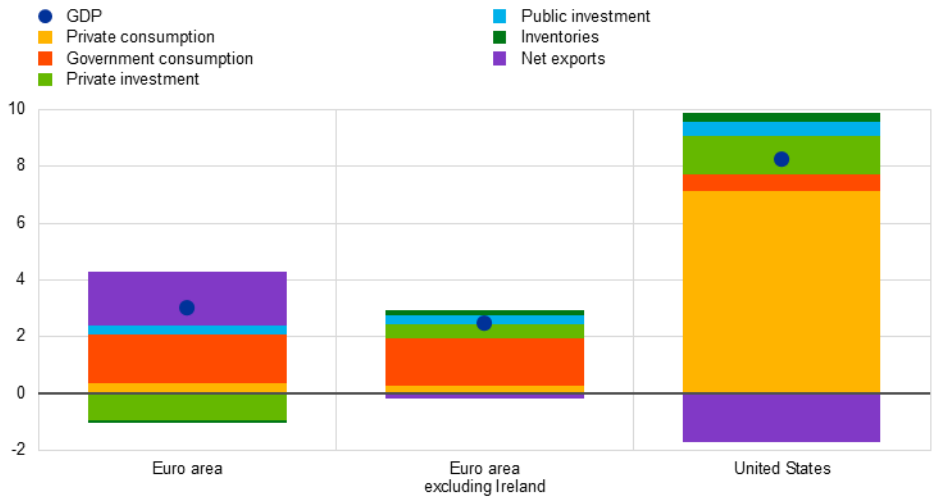
3 An analysis of the structural factors behind the US-euro area growth differentials over past decades − such as the less favourable economic structures for the euro area (i.e. structures of production and consumption, and sectoral regulations and policies that determine the incentives of economic actors to invest, consume and trade within and across borders), lower R&D spending, less innovation and adoption of digital technologies, lower growth potential, higher government funding costs and harder access to credit − is outside the scope of this box.

marginally less in the euro area, although levels were much higher than in previous years thanks to support from the Next Generation EU programme. Meanwhile, government consumption contributed more to GDP growth in the euro area than in the United States.

Chart A

Euro area and US real GDP growth

(cumulative percentage changes and contributions, Q4 2019-Q4 2023)



Sources: Eurostat, Bureau of Economic Analysis and ECB calculations.
Notes: Euro area public investment is proxied as total real investment minus the sum of the four-quarter moving averages of non-seasonally adjusted nominal investment by non-financial corporations, financial corporations and households from the ECB and Eurostat's quarterly sector accounts dataset, deflated by the total investment deflator. The latest observations are for the fourth quarter of 2023.

The pandemic shock seems to have had a greater impact on euro area real growth than US real growth in recent years.[4] Since the start of the pandemic, consumer spending has proved stronger in the United States than in the euro area. Among other factors, this reflects the fiscal policy response to the pandemic in 2020 coupled with a robust labour market thereafter, which served to boost disposable income more sharply in the United States (Chart B). Excess savings – compared with pre-pandemic trends – built up in both regions. While remaining elevated in the euro area, the faster unwinding of excess savings in the United States provided strong support to US private consumption in 2022 and 2023 (Chart B). The composition of assets reflected in excess savings discouraged spending in the euro area as, in contrast to US consumers, euro area households had accumulated relatively small holdings of liquid assets.[5] Had these households reduced their savings rate by the same amount as their US counterparts in the post-pandemic period, all else equal, the cumulative consumption growth differential would have been around 3 percentage points instead of the 10 percentage points actually recorded since the fourth quarter of 2019.

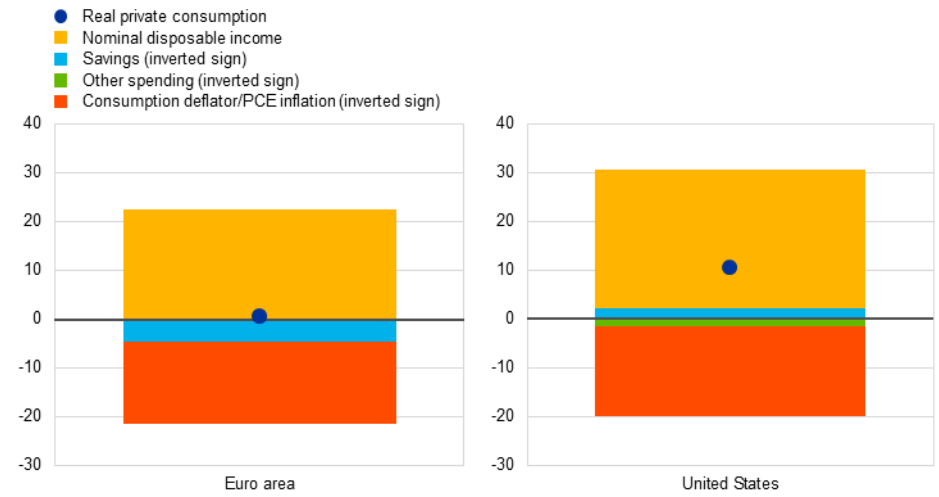
4 See the box entitled "Economic developments in the euro area and the United States in 2020", *Economic Bulletin*, Issue 2, ECB, 2021.

5 See the box entitled "The consumption impulse from pandemic savings – does the composition matter?", *Economic Bulletin*, Issue 4, ECB, 2023.

Chart B

Euro area and US private consumption, income and savings

(cumulative percentage changes and contributions, Q4 2019-Q4 2023)



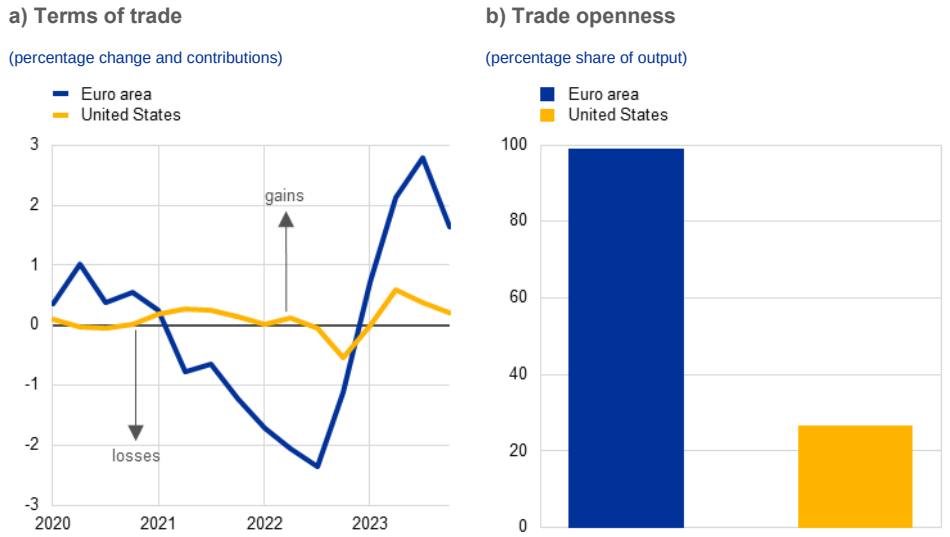
Sources: Eurostat, Bureau of Economic Analysis and ECB calculations.
Notes: Other spending refers to interest and transfer payments. PCE stands for the Personal Consumption Expenditures price index.

The euro area economy has also been more heavily affected by the fallout from Russia's war against Ukraine. The economic impact of Russia's invasion of Ukraine in early 2022 as well as the ensuing energy crisis and food inflation spikes had a particularly severe impact on the euro area economy. This can be attributed to geographical proximity, the level of dependence on energy and food imports from this region and the adverse impact on euro area consumer confidence. The substantial terms-of-trade losses intensified as the euro depreciated both against the US dollar and in effective terms, i.e. relative to a basket of currencies (Chart C, panel a).[6] By contrast, the terms of trade in the United States were much more stable, mainly reflecting its greater degree of energy independence. In the euro area, the sizeable terms-of-trade shock resulted in lower real incomes and weaker competitiveness, in a context of declining confidence and rising uncertainty. This served to dampen private consumption, particularly of goods. While services activity was spurred by reopening effects in both regions, services output growth was stronger in the United States. Moreover, the euro area's greater trade openness meant that its manufacturing sector was particularly exposed to supply bottlenecks and the global slowdown (Chart C, panel b).

6 See the box entitled "Implications of the terms-of-trade deterioration for real income and the current account", *Economic Bulletin*, Issue 3, ECB, 2022.

Chart C

Euro area and US terms of trade and trade openness



Sources: Eurostat and Bureau of Economic Analysis.
Notes: Panel b) shows the sum of real extra euro area exports and imports as a share of real output in 2023, reflecting larger euro area engagement in the global trading system and hence a higher sensitivity of activity to trade in the euro area than in the United States. The latest observations in panel a) are for the fourth quarter of 2023, whereas the observations in panel b) are for 2023.

The United States has experienced significantly stronger labour productivity growth than the euro area since the pandemic. A decomposition of GDP growth into labour productivity, labour market outcomes and demographic trends shows a particularly large difference in labour productivity (Chart D). In the period since the pandemic first emerged, labour productivity per hour worked has increased by just 0.6% in the euro area against 6.0% in the United States. This divergent path in productivity growth began in the second quarter of 2020, as total labour input as a share of GDP adjusted more strongly in the United States than in the euro area. This was due in part to the implementation of job retention schemes in the euro area as opposed to surging unemployment in the United States. After briefly narrowing, this gap in productivity growth started widening again after mid-2022 as euro area productivity growth was depressed by the energy shock. Sectoral developments played an important role in productivity growth in the euro area, with the construction sector in particular making a negative contribution to hourly productivity growth. At the same time, ICT and professional services contributed strongly to productivity growth in the United States. In addition, labour productivity tends to be much more cyclical in the euro area than in the United States. This leads to lower productivity growth in times of low output growth (as is currently the case in the euro area) and higher productivity growth when the economy rebounds.[7] Strong population growth in the United States, mainly reflecting rising immigration, was partly offset by a fall in the overall participation rate. In terms of contributions to GDP growth in the euro area in this period, the expanding labour force, driven by a larger increase in participation rates and an influx of migrant workers, was partly offset by a decline in

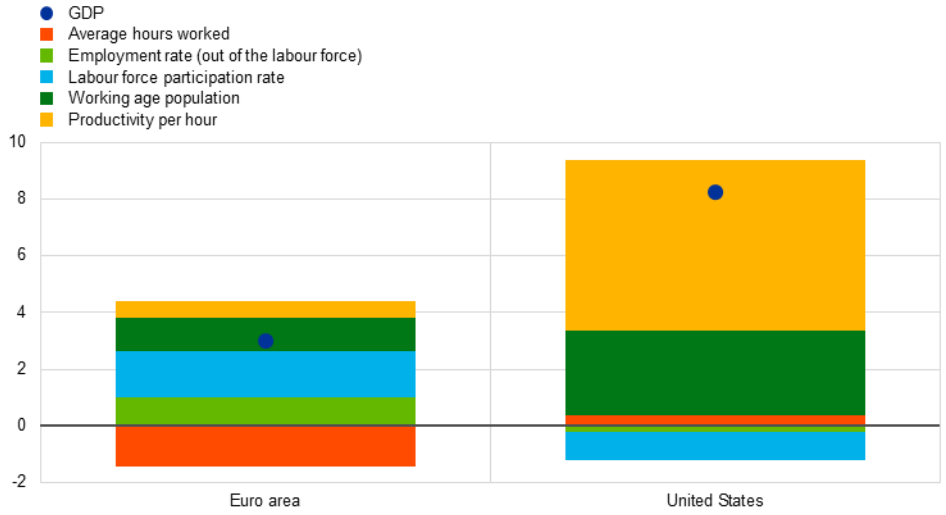
7 See Arce, O. and Sondermann, D., "Low for long? Reasons for the recent decline in productivity", The ECB Blog, ECB, 6 May 2024.

average hours worked. In the euro area, the increase in the labour force was paralleled by a higher employment rate, which also contributed to GDP growth.

Chart D

Real GDP growth and the labour market

(cumulative percentage changes and contributions, Q4 2019-Q4 2023)



Sources: Eurostat and Bureau of Economic Analysis.

Compared with a scenario of no fiscal policy support, discretionary fiscal policy is estimated to have contributed positively to growth in both regions overall, although it is hard to draw accurate comparisons.[8] At the peak of the pandemic in 2020, the discretionary policy response helped to dampen the effects of the pandemic shock. The stimulus (as proxied by the change in the cyclically adjusted primary balance in 2020 compared with 2019) was substantial in both regions, albeit stronger in the United States at over 5% of GDP compared with 4% of GDP in the euro area (Chart E). In terms of composition, broad-based and relatively large household income measures in the United States supported private consumption, while fiscal stimulus in the euro area was more targeted towards supporting employment, including through job retention schemes.[9] The fiscal stance tightened in both regions in 2021 and 2022, but more so in the United States than in the euro area.[10] In 2022, as the energy crisis started to unfold in the euro area, governments adopted significant measures to lower energy prices and support

8 Comparable estimates for the size and composition of discretionary measures (beyond the fiscal stance), as well as their impact on growth, are not readily available. For the euro area, see the box entitled "The impact of discretionary fiscal policy measures on real GDP growth from 2020 to 2022" in the article "The role of supply and demand in the post-pandemic recovery in the euro area", *Economic Bulletin*, Issue 4, ECB, 2023. For 2023 the impact of discretionary fiscal policy measures on growth is estimated to be moderately negative.

9 See the box entitled "Economic developments in the euro area and in the United States in 2020", *Economic Bulletin*, Issue 2, ECB, 2021. For an analysis of the euro area, see also the box entitled "Short-time work schemes and their effects on wages and disposable income", *Economic Bulletin*, Issue 4, ECB, 2020.

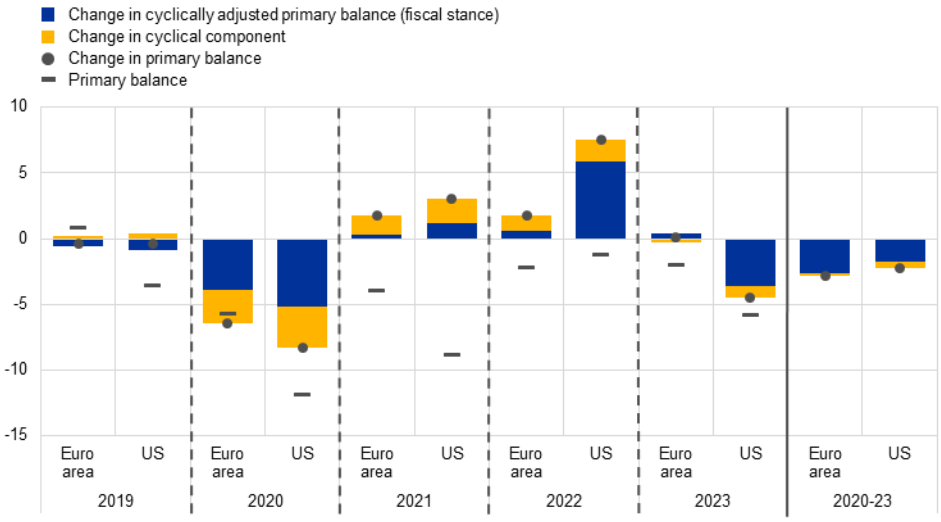
10 Discretionary stimulus measures continued in the euro area in 2021, particularly for government consumption (including healthcare spending) and subsidies (job retention schemes and other support to firms). Significant non-discretionary factors, mostly revenue windfalls, contributed to the tightening of the fiscal stance shown in Chart E.

incomes, amounting to close to 2% of GDP; at the same time, the fiscal position consolidated significantly more in the United States, reflecting the unwinding of pandemic-era support measures, among other factors. In 2023, the fiscal position loosened again in the United States, driven by shortfalls in capital gains tax receipts as well as discretionary measures, including those measures under the Inflation Reduction Act that support manufacturing investment. All in all, while the cumulative fiscal impulse over 2020-23 was similar across the two regions, it was in response to shocks that were more significant in the euro area. Moreover, given a significantly higher primary deficit in the United States prior to the pandemic (and inertia in spending), the United States accumulated much larger primary deficits (and debt) over this period than the euro area, particularly during 2020-21 and in 2023.[11]

Chart E

Fiscal impulse – contributions from fiscal stance and cyclical conditions – and overall primary balances

(percentage points of GDP, percentages of GDP)



Source: IMF April 2024 World Economic Outlook.
Notes: Fiscal stance is a proxy for the discretionary fiscal policy response. Fiscal impulse (change in the primary balance) additionally includes the automatic stabilisers (change in the cyclical component). Negative (positive) changes denote fiscal loosening (tightening). The last panel shows cumulative changes over the period 2020-23. The primary balance is expressed as a percentage of GDP. The outcome for 2023 is preliminary and subject to revisions.

Turning to monetary policy, there is mixed evidence of its relative impact in the two regions. Both regions saw a broadly similar degree of monetary policy tightening and a strong transmission to lending rates in the private sector. However, the impact across expenditure components was mixed.[12] The transmission of monetary policy changes is surrounded by high levels of uncertainty[13] and depends heavily on the financial structures in place, with, for example, a lower share of fixed-

11 According to the IMF's April 2024 World Economic Outlook, the cumulative primary deficits over 2020-23 were 28% of GDP in the United States compared with 14% of GDP in the euro area. Over the same period, the government debt-to-GDP ratio increased in the United States by 14 percentage points (to 122.1% in 2023) compared with 5 percentage points in the euro area (to 88.6% in 2023). Data for 2023 are still preliminary and subject to revisions.

12 See "The analytics of the monetary policy tightening cycle", guest lecture by Philip R. Lane, Member of the Executive Board of the ECB, Stanford, 2 May 2024.

13 See "The transmission of monetary policy", speech by Philip R. Lane, Member of the Executive Board of the ECB, New York, 11 October 2022.

rate mortgages and corporate debt, less important wealth effects,[14] as well as a higher reliance on the banking system, in the euro area than in the United States. For instance, there is some evidence that the pass-through was more significant to business investment in the euro area, while the impact on housing investment was larger in the United States.[15] In addition, US monetary policy shocks tend to have a significant adverse impact on euro area financial conditions and real activity, whereas euro area monetary policy shocks do not have a similar effect on the United States.[16]

Looking ahead, the latest Eurosystem staff macroeconomic projections point to a smaller growth differential between the euro area and the United States over the next two years. In contrast to the United States, real GDP growth in the euro area is expected to accelerate on the back of relatively stronger consumption.[17] The productivity growth gap is also projected to shrink, with a stronger recovery in labour productivity in the euro area, due in part to some cyclical unwinding of labour hoarding.

14 Sectoral accounts data show a higher share of financial wealth, and a higher propensity to consume such wealth, in the United States than in the euro area. See also the box entitled "The consumption impulse from pandemic savings – does the composition matter?", *Economic Bulletin*, Issue 4, ECB, 2023.

15 See the box entitled "Monetary policy and housing investment in the euro area and the United States", *Economic Bulletin*, Issue 3, ECB, 2023.

16 See Ca' Zorzi, M. et al., "Making Waves: Monetary Policy and Its Asymmetric Transmission in a Globalized World", *International Journal of Central Banking*, June 2023.

17 See "Eurosystem staff macroeconomic projections for the euro area, June 2024", published on the ECB's website on 6 June 2024.

2 Insights from earnings calls – what can we learn from corporate risk perceptions and sentiment?

Prepared by Malin Andersson, Juliette Guillotin and Pedro Neves

This box evaluates perceived risks and sentiment using evidence from corporate earnings calls.[1] Using textual analysis of earnings calls conducted by large euro area firms, this box derives timely measures of corporate perceptions of specific risks, as well as indices of demand and supply sentiment. Such analysis is particularly informative when assessing how firms perceive the repercussions of severe global shocks.

In the textual searches, words from a cluster of synonyms are matched to the transcripts of earnings calls, enabling the construction of risk and sentiment indices at a quarterly frequency.[2] More specifically, the selected risks relate to the COVID-19 pandemic, geopolitics, inflation, monetary policy, financial conditions and supply constraints. The resulting aggregate euro area risk index correlates well with the European Commission's Economic Uncertainty Indicator (in its monthly business and consumer surveys), while the demand and supply sentiment indices co-move, respectively, with demand and equipment as factors limiting production (in its quarterly business and consumer surveys).[3]

According to the earnings calls, risk perceptions of firms remain more elevated in the euro area than in other countries. The euro area has been particularly exposed to the large shocks that have hit the global economy in recent years and has felt the associated strong economic repercussions. Aggregate risk perceptions among larger firms – captured in risk indices derived from earnings calls – spiked simultaneously in the euro area and in other advanced economies at the time of both the first wave of the pandemic and Russia's unjustified invasion of Ukraine. However, except at the height of the pandemic, risks were perceived to be more prominent in the euro area than elsewhere (Chart A). For instance, the pandemic led to unprecedented supply bottlenecks in the euro area manufacturing

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1 An earnings call is a conference call (typically once a quarter) between the board of a publicly listed company, investors, analysts and the press to discuss the company's financial results. The analysis results for the first quarter of 2024 cover a total of 6,072 firms, of which 563 are headquartered in the euro area. Further information is available on the NL Analytics website. See also the box entitled "Earnings calls: new evidence on corporate profits, investment and financing conditions", *Economic Bulletin*, Issue 4, 2023; and Hassan, T.A., Schreger, J., Schwedeler, M. and Tahoun A., "Sources and Transmission of Country Risk", *NBER Working Paper*, No 29526, November 2021.

2 The risk index shows the number of sentences in which a word from a specific cluster of words, together with keywords such as "risk" or similar notions, are mentioned, expressed as a percentage of the total number of risk sentences. The sentiment index reflects the net number of sentences in which the chosen topic implies positive versus negative news, as a share of all sentences and is derived for both demand and supply conditions.

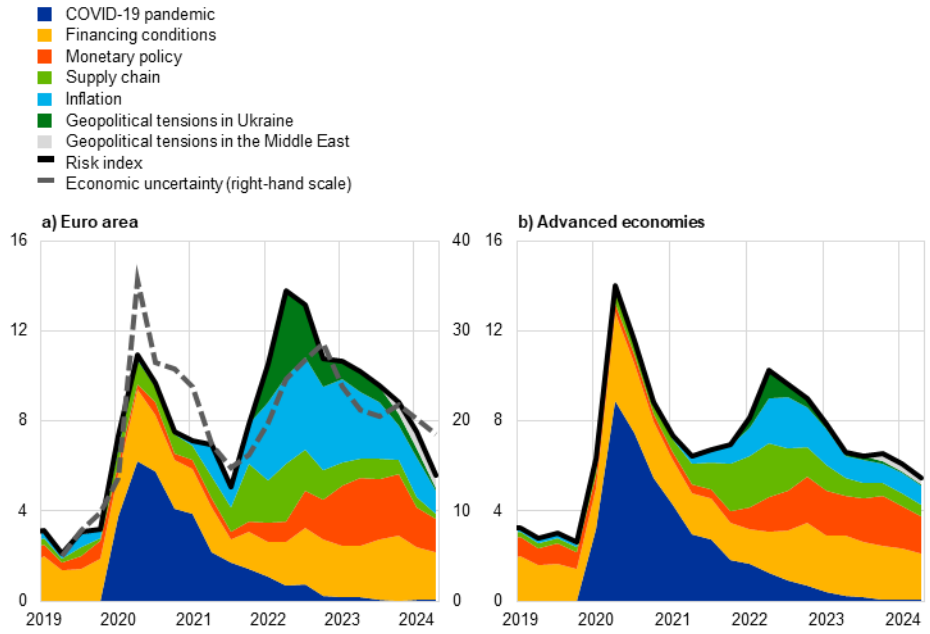
3 Despite this co-movement, "uncertainty" differs from "risk" in the sense that uncertainty occurs when the information necessary for predicting and forecasting developments is either insufficient or unavailable. Instead, risk is associated with an economic probability that a specific economic phenomenon will occur. Risk can be seen as a result of uncertainty, i.e. all risks contain uncertainty, while not all uncertain situations are characterised as risk situations, see Park, K. F. and Shapira, Z., "Risk and Uncertainty", in Augier, M. and Teece, D.J. (eds.), *The Palgrave Encyclopaedia of Strategic Management*, 2017; and the box entitled "The impact of the recent spike in uncertainty on economic activity in the euro area", *Economic Bulletin*, Issue 6, ECB, 2020.

industry, and Russia's invasion of Ukraine fuelled commodity price inflation and headline inflation. The risks associated with the monetary policy tightening in the course of 2022 were also perceived to be greater in the euro area. In the first half of 2024 the risk index was well above its level in 2019, albeit still lower than previous peak levels (Chart A). Euro area firms currently see the risks associated with inflation and monetary policy as elevated but decreasing. Risk perceptions related to the supply side and to Russia's war against Ukraine have abated but are still present. The perceived risks from the tensions in the Middle East are so far marginal. Financing conditions (different from monetary policy) seem to be an ever-present risk for firms, which was thus also evident prior to the pandemic, although it is currently somewhat greater.

Chart A

Risk indices – firms' perceptions of some major macroeconomic risks

(percentage of all risk sentences; net percentage balances)



Sources: NL Analytics, European Commission (DG ECFIN) and ECB staff calculations.
Notes: Risk reflects the frequency of the occurrence in firms' earnings calls of words such as "risk" or similar, together with synonyms for *COVID-19 pandemic* (coronavirus, COVID-19, COVID-19 risk, COVID crisis); *financing conditions* (financial AND (crisis OR instability OR volatility), default, bankrupt*, sovereign, debt, liquidity, loan, lend*, funding cost*, financing cost*, credit capacity, credit availability, financing conditions, borrowing*); *monetary policy* (interest rate*, monetary, Federal Reserve, Fed, European Central Bank, ECB, FOMC, Bank of China, central bank, monetary authority); *supply chain* (supply chain, supply chain bottleneck, bottleneck, supply disruption, supply shortage, supply bottleneck, supply shock, supply constraint, supply tightness, supply chain risk); *inflation* (inflation); *geopolitical tensions in Ukraine* ((Ukrain* OR Russia*) AND (war OR invasion OR conflict OR geopoliti* OR violence OR crisis OR military OR tension*), Russia* AND gas); *geopolitical tensions in the Middle East* (Gaza, Israel, Hamas, Palestine, Palestinians, Israeli, Leban*, Houthi*, Iran, Yemen, Middle East AND (conflict OR war OR violence OR tension* OR crisis OR invasion OR military OR geopoliti*), Red Sea, Suez Canal). Euro area firms constitute around 8% of the entire sample. Among other advanced economies, US firms constitute 61% of the sample, UK firms 3% and firms from other advanced economies 15% (including Canada, Australia, New Zealand, Japan, South Korea, Norway, Switzerland and non-euro area EU Member States). The latest observations are for the second quarter of 2024 for earnings calls (conducted up to 31 May) and May for the uncertainty index.

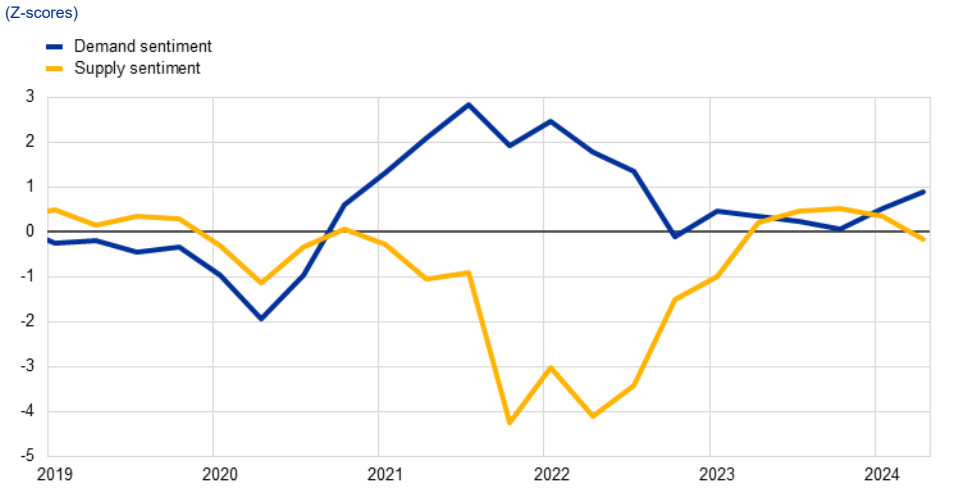
Transcripts from earnings calls can also be used to derive indices of sentiment among firms. Such indices give a combined nowcast and near-term view of the euro area business cycle, as executives often convey not only their views on the company's prospects, but also their assessment of the business cycle and its outlook at both the sector and the macro level. The sentiment indices for demand and supply therefore help to detect shifts in the euro area business cycle in a timely manner. The method provides a complementary approach – as well as a consistent

message – to other ways of identifying supply and demand shocks driving GDP, such as those based on structural vector autoregression models.[4]

Demand sentiment and supply sentiment have broadly normalised (Chart B). Demand conditions in the euro area – as illustrated by a demand sentiment index based on earnings calls – returned to their historical average in 2023. Demand sentiment was particularly high in 2021 and 2022 as the economy reopened after the pandemic. In the second half of 2022 it started to decline and deteriorated somewhat further in the course of 2023, in line with real GDP growth being close to zero. Thus far, the first half of 2024 has seen demand sentiment improve again, which is consistent with the pick-up in activity in the first quarter of 2024. As for supply, the sentiment index declined significantly in 2021 and 2022, owing to the emergence of severe supply bottlenecks and supply chain disruptions in the context of greater demand linked to the reopening of the economy. In early 2023 it rose significantly, exceeding its historical average at the end of the year, in line with the resolution of the supply bottlenecks. In the first half of 2024 it has declined slightly, but remained close to its historical average, which suggests that the tensions in the Middle East have not weighed significantly on firms' perceived supply conditions. This picture tallies with the results of the European Commission's business and consumer survey for the second quarter of 2024, which show that the perception of equipment as a factor limiting production has increased slightly and that demand is perceived as generally supporting production.

Chart B

Euro area demand and supply sentiment indices



Sources: NL Analytics and ECB staff calculations.
Notes: Net sentiment reflects the frequency of the occurrence of words for *demand* (demand) and *supply* (supply chain, supply chain bottleneck, bottleneck, supply disruption, supply shortage, supply bottleneck, supply shock, supply constraint, supply tightness, supply chain risk) in firms' earnings calls. The Z-score is computed by subtracting the historical average from each data point and dividing this demeaned series by the standard deviation. The latest observations are for the second quarter of 2024 (for calls conducted up to 31 May).

[4] See Box 3 in the article entitled "The role of supply and demand in the post-pandemic recovery in the euro area", *Economic Bulletin*, Issue 4, 2023; and Ruch, F.U. and Taskin, T., "Global Demand and Supply Sentiment: Evidence From Earnings Calls", *Oxford Bulletin of Economics and Statistics*, Vol. 86, No 2, April 2024.

3 Higher profit margins have helped firms hoard labour

Prepared by Vasco Botelho

The ECB's labour hoarding indicator measures the share of firms that have not reduced their workforce despite a worsening of their firm-specific outlook. This indicator is constructed for the first time using the ECB and European Commission Survey on the Access to Finance of Enterprises (SAFE) in the euro area. The labour hoarding indicator can be decomposed into two margins: an "activity margin", which captures the share of firms that have faced a deterioration in their specific outlook, and an "employment margin", indicating the share of firms that have not reduced their workforce despite reporting a deterioration in their outlook. The activity margin depicts to what extent adverse shocks affect the outlook of firms in the euro area, while the employment margin reflects firms' ability to hold on to their workforce while facing an adverse shock.[1]

In the first quarter of 2024, the share of firms hoarding labour remained above pre-pandemic levels (Chart A).[2] The labour hoarding indicator stood at 22.2% in the first quarter of 2024, at relatively high levels compared with the pre-pandemic average of 12.7% (for the period from the third quarter of 2014 to the third quarter of 2019). This indicator reveals that a significant share of firms (30.2%) have been facing a worsening of their own economic outlook over the previous six months. Of these firms, 73.5% avoided reducing their workforce during that period. The ability of firms to retain workers decreased slightly in the first quarter of 2024, from 76.1% in the third quarter of 2023, but it remains around the average level recorded before the pandemic. Hence, the activity margin grew considerably with respect to the pre-pandemic period, while the employment margin remained broadly unchanged.

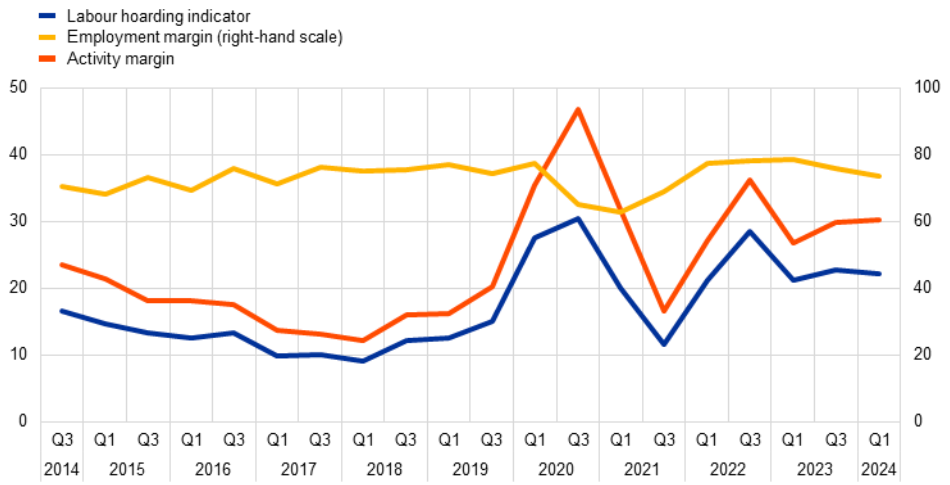
1 The firm-specific outlook is assessed in response to the question "For each of the following factors, would you say that [your enterprise's experiences and views] have improved, remained unchanged or deteriorated over the past six months?" and on the basis of the factor "Your enterprise-specific outlook with respect to your sales and profitability or business plan". The question is qualitative. As such, it might imply that the firm's outlook has remained favourable.

2 Complementing the increase in labour hoarding, employment developments have been supported by a decline in real wages. This factor is discussed in more detail in the box entitled "Drivers of employment growth in the euro area after the pandemic: a model-based perspective" in this issue of the Economic Bulletin.

Chart A

Labour hoarding indicator

(share of firms, percentages)



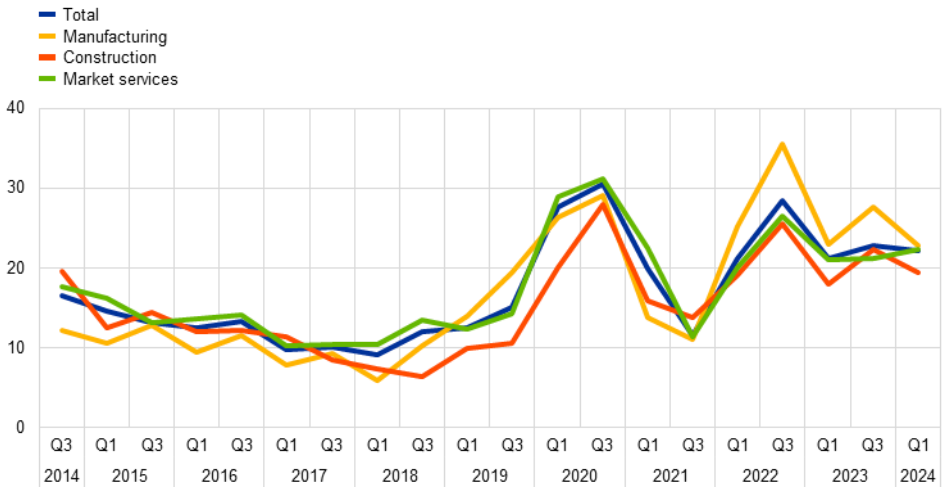
Sources: ECB and European Commission Survey on the Access to Finance of Enterprises (SAFE).
Notes: The labour hoarding indicator is the share of firms that have not reduced their workforce while facing a worsening of their firm-specific outlook. The activity margin captures the share of firms that have faced a deterioration in their specific outlook over the previous six-month period, while the employment margin refers to the share of firms that have not reduced their workforce of all those that reported a deterioration in their outlook over the same period. First quarter waves cover October-March; third quarter waves cover April-September.

The labour hoarding indicator has broadly increased from levels seen prior to the onset of the pandemic, most prominently for manufacturing (Chart B). In the first quarter of 2024, the labour hoarding indicator stood at 22.8% for manufacturing, 19.6% for construction and 22.4% for market services. Labour hoarding remained considerably high in all sectors compared with the period before the pandemic, when these three sectors had average levels of 11.2%, 11.4% and 13.3% respectively. More recently, following the surge in energy prices, the increase in labour hoarding was most salient in the manufacturing sector, where it peaked at 35.6% in the third quarter of 2022. Firms in other sectors also undertook labour hoarding in response to deteriorating business conditions, with 25.6% of firms in construction and 26.5% of firms in market services reporting not reducing their workforce following a worsening in their own economic outlook.

Chart B

Labour hoarding indicator across sectors

(share of firms, percentages)



Sources: ECB and European Commission Survey on the Access to Finance of Enterprises (SAFE).
Notes: The sectoral labour hoarding indicator is the share of firms that have not reduced their workforce while facing a worsening of their firm-specific outlook among all the firms in a given sector of economic activity.

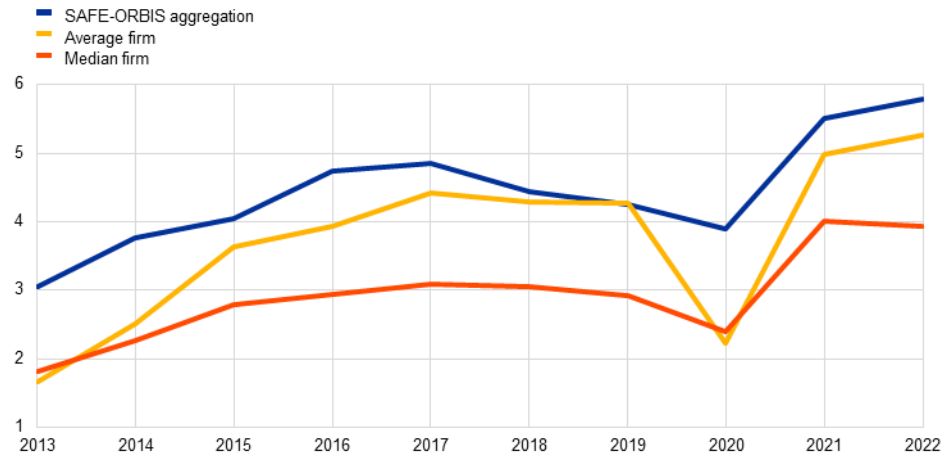
The profit margins of firms increased substantially with the recovery after the pandemic and, in 2022, were at their highest levels in a decade (Chart C).[3] Firms' profit margins (before taxes) rose from an average of 4.3% of operating revenues in the period 2014-19 to around 5.8% in 2022. At the firm level, a similar increase was observed for the average and median firms. For the average firm, profit margins rose from 3.8% in 2014-19 to 5.3% in 2022, while for the median firm they went from 2.8% in 2014-19 to 3.9% in 2022.

[3] We complement the information obtained from the SAFE with balance sheet information for firms for the preceding year, taken from ORBIS. Profit margins are defined as the ratio of a firm's profits before taxes to its operating revenues. The growth in profit margins for 2021-22 in the SAFE-ORBIS dataset is consistent, although not directly comparable, with the increase in unit profits recorded at the macro level. There is a time lag before the balance sheet records become available in ORBIS, with the latest available year for SAFE-ORBIS profit margins in our analysis being 2022.

Chart C

Firms' profit margins over time

(percentages)



Sources: ECB and European Commission Survey on the Access to Finance of Enterprises (SAFE), and Moody's ORBIS.
Notes: The SAFE-ORBIS aggregate profit margin is calculated by summing the profits before taxes and revenues of all the firms in each ORBIS balance sheet year before calculating the profit margin ratio. There is a time lag before the balance sheet records become available in ORBIS; the latest available year for the profit margins in our analysis is 2022.

Higher profit margins are estimated to have improved the ability of firms to hoard labour in the event of an adverse shock to their economic outlook (Chart D). Firm-level regressions are performed to estimate the relationship between profit margins and labour hoarding.[4] A 1 percentage point increase in the profit margin of a firm is estimated to add around 0.2 percentage points to the share of firms hoarding labour in response to a worsening outlook. The rise in labour hoarding is driven by the employment margin, which is estimated to expand by roughly 0.4 percentage points, while the activity margin is estimated to remain broadly unaffected by the higher profit margin.[5] This implies that the growth in profit margins helped firms avoid having to reduce their workforce after being hit by shocks that worsened their economic outlook following the pandemic.

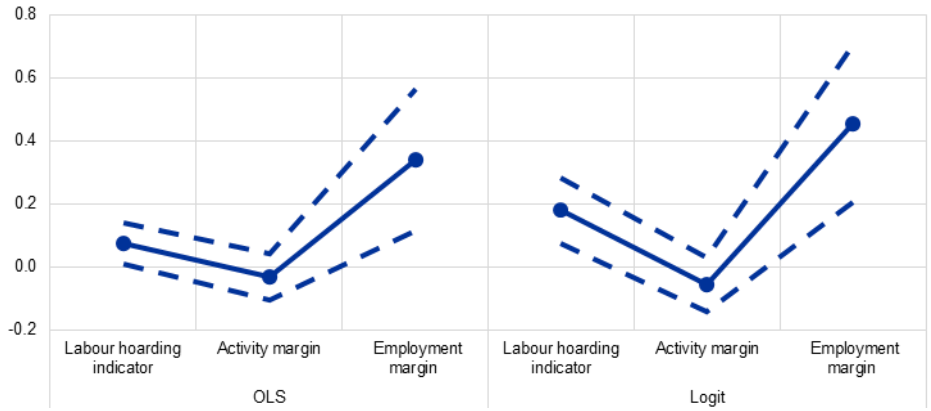
4 These regressions include firm-level fixed effects to account for a firm's unobservable characteristics, as well as time-fixed effects that cater for changes in the business cycle and for the shifting composition of firms in each SAFE wave.

5 It should be emphasised that the decision of firms to undertake labour hoarding is rational and coherent with long-term profit maximisation goals. Profit-maximising firms choose to undertake labour hoarding when the costs of redundancies, re-employment and training exceed the costs of employee retention.

Chart D

Labour hoarding impact from a 1 percentage point increase in a firm's profit margin

(percentage points)



Sources: ECB and European Commission Survey on the Access to Finance of Enterprises (SAFE), and Moody's ORBIS.
Notes: The impact of a change in a firm's profit margin is estimated using panel data methods by regressing the firm's labour hoarding indicator on: (i) the firm's profit margin for the preceding accounting year, (ii) a time effect to cater for changes in the business cycle, and (iii) firm-specific fixed effects. The ordinary least-squares (OLS) model has time-varying firm weights. The logit model has fixed firm-level weights.

The impact of higher profit margins on labour hoarding was broadly based across sectors but strongest for construction. The estimated impact of a higher profit margin on the labour hoarding indicator stands at 0.1 percentage points for the industrial sector, 0.5 percentage points for construction and 0.2 percentage points for market services. While overall shifts in labour hoarding were mostly driven in all sectors by external shocks that worsened the economic outlook of firms, the observed high profit margins remained an important factor in helping firms keep their ability to hoard labour elevated.

A tightening of profit margins may have implications for employment growth in the period ahead.[6] The high profit margins of 2021-22 are starting to normalise towards their pre-pandemic levels. Thus, declining profit margins are likely to be one possible factor reducing the scope for firms to undertake labour hoarding. Looking ahead, they are expected to provide less support to employment growth than previously.

[6] The recent developments in labour hoarding have also had an impact on labour productivity, as discussed in Arce, O. and Sondermann, D., "Low for long? Reasons for the recent decline in productivity", *The ECB Blog*, 6 May 2024.

4 Drivers of employment growth in the euro area after the pandemic – a model-based perspective

Prepared by Agostino Consolo and Claudia Foroni

The adjustment in real wages has been key in supporting post-pandemic employment growth in the euro area. This box looks at developments in employment growth after the end of the pandemic, focusing on the period since early 2022. The strong growth of employment compared with economic activity has been remarkable in an economic environment characterised by very high energy prices. The adjustment mechanism was different from that seen following the 1970s energy crisis, when real wages increased substantially and outpaced productivity growth. By contrast, since early 2022, real wages have fallen more than productivity, providing firms with leeway in their margins and thus helping to sustain job creation amid a scarcity of skilled labour. The following empirical analysis sheds light on the key drivers behind recent employment growth.

Since the end of the pandemic, employment dynamics in the euro area have been significantly stronger than economic activity (Chart A, panel a).[1] Employment growth since the first quarter of 2022 has been exceptionally strong from a historical perspective. One way to examine employment dynamics is through the lens of the "Okun's law" relation between employment growth and economic growth.[2] According to empirical estimates of this relation for the euro area, employment would be expected to grow at around half the rate of real GDP in both the short term and the long term[3] (simple estimates of Okun elasticities range between 0.2 and 0.5). Instead, employment growth has undergone a strong adjustment since the first quarter of 2022, recently overtaking real GDP growth. This cannot be solely attributed to the pandemic recovery, as the realignment had already happened towards the end of 2021.

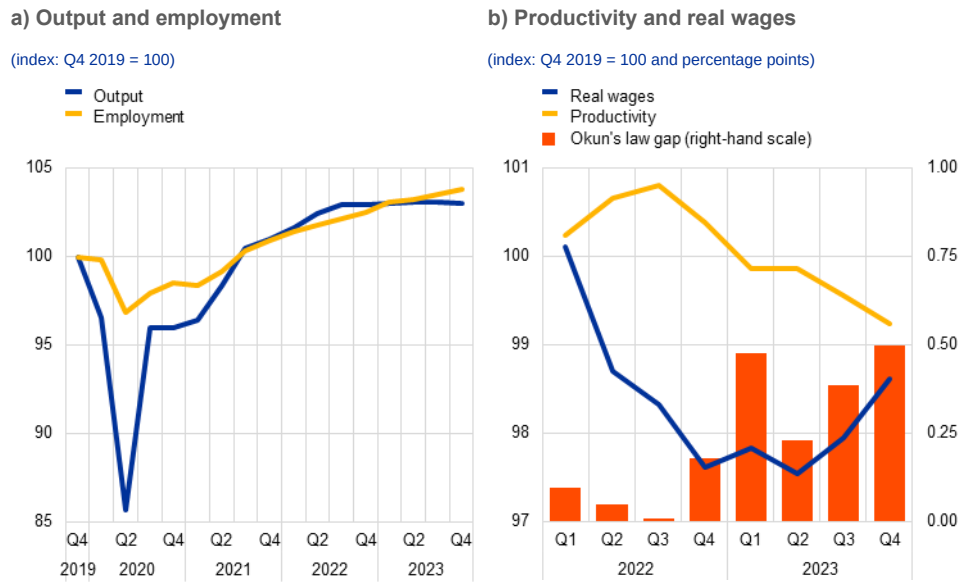
1 For a thorough overview of the euro area labour market that complements the results presented in this box, see the box entitled "The euro area labour force: recent developments and drivers", *Economic Bulletin, Issue 6, ECB, 2023;* Arce, O., Consolo, A., Dias da Silva, A. and Mohr, M., "More jobs but fewer working hours", *ECB Blog*, 7 June 2023; and the box entitled "The role of public employment during the COVID-19 crisis", *Economic Bulletin*, Issue 6, ECB, 2022.

2 For a review, see Ball, L., Leigh, D. and Loungani, P., "*Okun's Law: Fit at 50?*", *Journal of Money, Credit and Banking*, Vol. 49, Issue 7, 2017, pp. 1413-1441.

3 See Anderton, R., Arank, T., Bonthuis, B. and Jarvis, V., "Disaggregating Okun's law", *Working Paper Series,* No 1747, ECB, Frankfurt am Main, December 2014.

Chart A

Okun's law, productivity and real wages



Sources: Eurostat and ECB calculations.
Notes: Panel b) shows real wages deflated by the private consumption deflator. When using the GDP deflator, the gap between productivity and real wages remains positive but is quantitatively smaller and closes in the fourth quarter of 2023. Productivity is measured as output per worker. The red bars show the deviations (in percentage points) from Okun's law. The latest observations are for the fourth quarter of 2023.

Job creation has been supported by real wages falling by more than productivity. In contrast to developments during the 1970s, real wages underwent a stronger adjustment than labour productivity following the 2022 energy crisis, thus supporting job creation (Chart A, panel b). The opening of a gap between real wage growth and productivity growth pushed employment growth above the rate consistent with its historical relation with GDP, in line with what a large positive Okun's law gap would predict. Not only does such an adjustment in real wages provide a rationale for job creation, it can also limit job destruction by making firms' existing relationships with workers more valuable (hence encouraging labour hoarding) in times of buoyant profitability for firms and scarcity of labour market skills.[4]

Looking through the lens of an empirical model of Okun's law, we find that demand fluctuations and real wage adjustments following the energy crisis have helped decouple employment growth from output dynamics. We use a structural Bayesian vector autoregressive (BVAR) model comprising an aggregate demand shock and three aggregate supply shocks (neutral technology, factor substitution, and labour market-specific) to explain the key drivers of employment

4 As regards the role of profitability, see the box entitled "Higher profit margins helped firms to hoard labour" in this issue of the Economic Bulletin.

fluctuations.[5] The neutral technology shock can be seen as a fall in total factor productivity generating a proportional contraction in the use of capital and labour, typically also consisting of other disturbances, such as global supply-chain bottlenecks.[6] The factor substitution shock, meanwhile, captures the direct substitution between labour and other production inputs, not necessarily only capital. In the face of a large increase in energy and intermediate input prices, it is natural to assume that reallocation and substitution effects are also at play.[7] The quantitative relevance of each driver is measured by applying the model to the data. Chart B shows the historical breakdown of how the four shocks have contributed to output and employment growth. As of early 2022, the contribution from neutral technology shocks (red bar) has been largely negative for both output and employment, primarily reflecting global supply bottlenecks. The factor substitution shock (green bar) has been important in driving output down and employment up, highlighting the possible significance of substitution among production inputs. This reflects a relative price change of input factors as labour became cheaper compared with energy and capital.

5 The BVAR model disentangles the different potential driving forces behind output and employment growth (see Consolo, A. and Foroni, C., "The euro area labour market: and yet, it moves!", mimeo). The model is estimated using quarterly data on employment, real GDP, Harmonised Index of Consumer Prices (HICP) inflation, real wages (deflated by the GDP deflator) and nominal interest rates from 1970 to 2023. The identification strategy is implemented via sign restrictions derived from theoretical models of the labour market (see Abbritti, M. and Consolo, A., "Labour market skills, endogenous productivity and business cycles", *Working Paper Series,* No 2651, ECB, February 2022, and Foroni, C, Furlanetto, F. and Le Petit, A., "Labor supply factors and economic fluctuations", *International Economic Review*, 2018, Vol. 59, pp. 1491-1510.

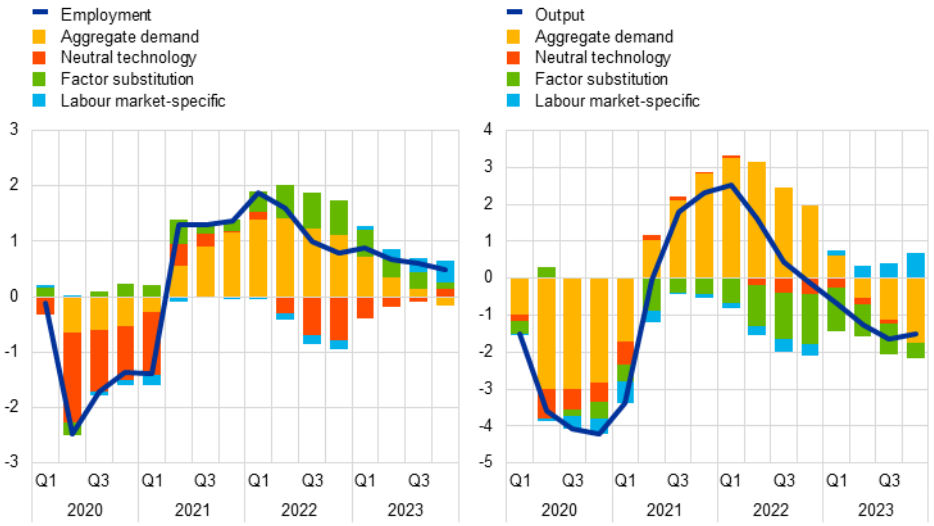
6 See Blanchard, O. and Galí, J., "The Macroeconomic Effects of Oil Price Shocks: Why Are the 2000s so Different from the 1970s?", Working Papers Series, No 15467, NBER, 2010.

7 The literature is increasingly focusing on shocks which create a similar negative co-movement between output and employment. These include what are sometimes defined as automation shocks (see Foroni, C. and Furlanetto, F., "Explaining deviations from Okun's law", *Working Paper Series*, No 2699, ECB, August 2022) and sectoral shocks that alter capital deepening across sectors in the spirit of Acemoglu, D. and Guerrieri, V., "Capital Deepening and Nonbalanced Economic Growth", *Journal of Political Economy*, 2008, Vol. 116, pp. 467-498.

Chart B

Historical decomposition of employment and output

(percentage changes and percentage point contributions)



Source: Consolo, A. and Foroni, C., "The euro area labour market: and yet, it moves!", mimeo.
Notes: The lines depict the year-on-year growth rates of employment (left panel) and output (right panel) in terms of deviation from their respective deterministic component. The bars show the percentage point contribution of each shock. A description of the economic meaning of each shock is provided in the main text. The latest observations are for the fourth quarter of 2023.

Recovering demand supported employment and output growth until the beginning of 2023. Since then, weaker demand has led to a stronger slowdown in economic activity than in employment growth, contributing to the greater deviation from Okun's law. Demand-side factors – including monetary and fiscal policies – have been conducive to employment growth, as captured by the yellow bars in Chart B. Examples of fiscal policies supporting employment have been the increase in public employment as well as indirect effects from apprenticeship schemes and tax credits in some euro area countries. Together with the aggregate demand effects of targeted energy-related policies, this has sustained demand and jobs, with a stronger impact on employment than on output.[8] However, the effects of monetary policy tightening have led to a considerable dampening of demand, causing employment growth to slow and economic activity to weaken. The model suggests that demand depressed activity more quickly than it did employment. In 2022 the model attributes only limited negative effects to labour market-specific drivers (blue bars) stemming from lower labour force participation and the greater bargaining power of workers.[9] These effects have partly reverted to previous levels in 2023, possibly reflecting the lack of automatic wage indexation schemes and the fact that inflation expectations were well anchored in 2022. As opposed to previous energy crises (such as that experienced during the 1970s), these factors have led to the

8 See the box entitled "Update on euro area fiscal policy responses to the energy crisis and high inflation", *Economic Bulletin*, Issue 2, ECB, 2023.

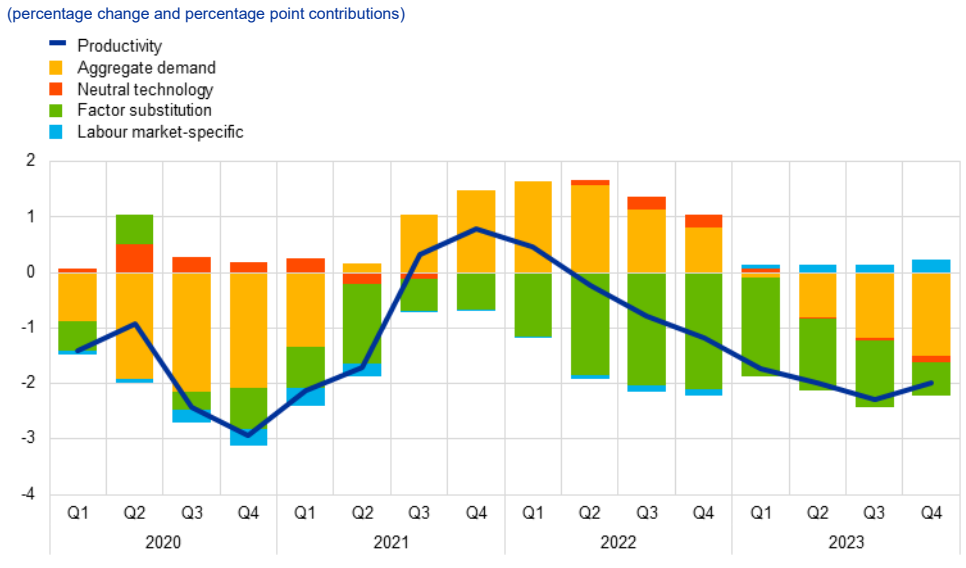
9 A labour market-specific shock covers the degree of bargaining power of workers or drivers of labour supply. These shocks originating in the labour market have been shown to be quantitatively relevant to explain employment and wages (see Consolo, A., Foroni, C. and Martínez Hernández, C., "A Mixed Frequency BVAR for the Euro Area Labour Market", *Oxford Bulletin of Economics and Statistics, 2023, Vol. 85, pp. 1048-1082).*

adjustment of the labour market through real wages rather than through a higher unemployment rate.

According to the model, a large share of the recent fall in productivity has been driven by cyclical factors. After a positive rebound in productivity following the pandemic, the energy crisis weighed substantially on productivity. The cyclicality of euro area productivity was even more amplified by the exceptional strength of the labour market. The model shows that the resilience of employment, triggered by the factor substitution shock, has amplified the fall in labour productivity (Chart C). The same shock has also made real wages less costly and, in so doing, amplified the positive effect on employment and negative effect on productivity. Moreover, the adjustment in productivity is also related to demand-side factors (yellow bars), the contribution of which has become more negative recently but is expected to fade in the longer run. The factor substitution shock is dissipating, also reflecting the changes in energy prices and real interest rates, but other supply-side factors such as innovation and digitalisation, population ageing, and other structural trends may have more persistent effects on long-term productivity dynamics in the euro area.

Chart C

Historical decomposition of labour productivity



Source: Consolo, A. and Foroni, C., "The euro area labour market: and yet, it moves!", mimeo.
Notes: Productivity is measured as output per worker. The line depicts year-on-year productivity growth in terms of deviation from the deterministic component. The bars show the percentage point contribution of each shock. The latest observations are for the fourth quarter of 2023.

Looking ahead, several factors currently weighing on productivity growth are expected to subside. The effects of fiscal support measures that have sustained employment are expected to fade in the coming quarters. Energy prices are normalising, reducing the factor substitution effect between labour, energy and capital. And, as the euro area inflation rate declines towards target, the restrictive effect of monetary policy on demand is likely to normalise. All these drivers of the slump in productivity are expected to fade, thereby helping to close the gap between real wage growth and productivity growth. With fewer incentives for firms to hire

workers or hoard labour, the relation of employment to GDP is likely to return to normal, with a consequent cyclical adjustment in productivity growth.[10]

[10] See Arce, O. and Sondermann, D., "Low for long? Reasons for the recent decline in productivity", *ECB Blog*, May 2024.

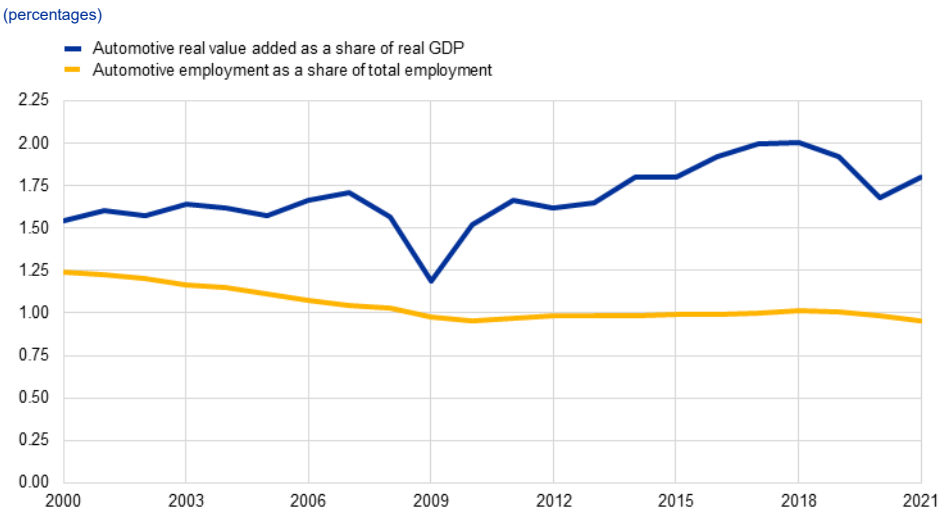
5 Will the euro area car sector recover?

Prepared by Roberto A. De Santis, Virginia Di Nino, Nina Furbach, Ulla Neumann and Pedro Neves

The automotive industry contributes a significant share to the value added of the euro area economy. The share of the car industry in the manufacturing sector's real value added amounts to 10% and the share in real GDP is slightly below 2%. The car industry accounts for 1% of total euro area employment and 4% of extra-euro area exports. When inter-sectoral linkages are taken into account, the value added almost doubles, highlighting the sector's extensive reach within the economy.[1] The resilience of the industry can be seen from its historical performance compared with aggregate GDP. Apart from during the global financial crisis and the most recent period, the sector had been expanding by more than aggregate GDP, reaching a peak in early 2018. Moreover, the sector has maintained a relatively stable share of total euro area employment since 2012 (Chart A).

Chart A

Size of the euro area automotive sector vis-à-vis the total economy



Sources: Eurostat and ECB calculations.
Note: The latest observation is for 2021.

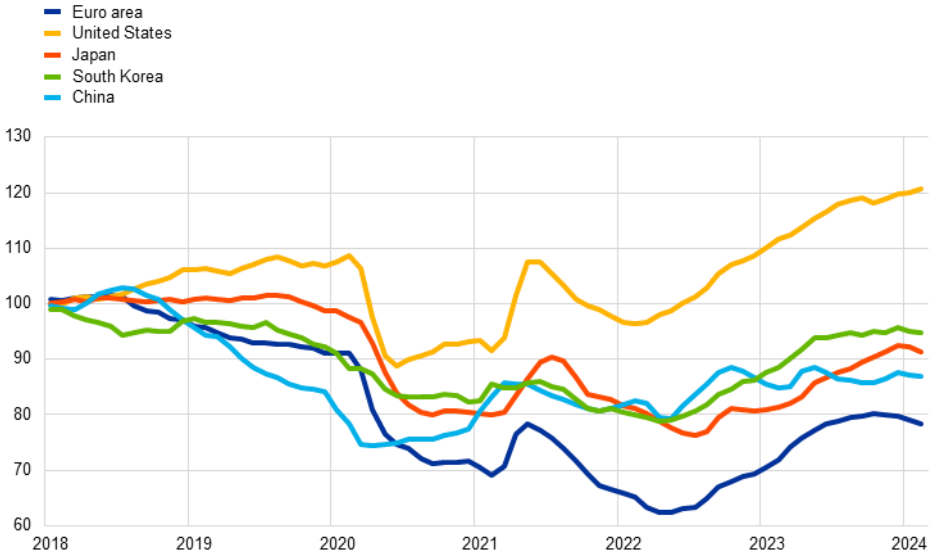
However, since the peak in early 2018 the euro area automotive industry has faced significant challenges, with production and exports declining noticeably and remaining below pre-Covid levels. Production and export volumes have struggled to recover and lag those of international competitors, standing at around one-tenth below pre-Covid levels and one-fifth short of their peaks in early 2018 (Charts B and C). Competitors have fared much better: the automotive industry in countries like China, Japan, the United States and Korea has performed more robustly, with China gradually emerging as a significant exporter to the euro area.

[1] See the article entitled "Sectoral dynamics and the business cycle in the euro area" in this issue of the Economic Bulletin.

Chart B

Car production volumes among global competitors

(12-month moving average, December 2017 = 100)

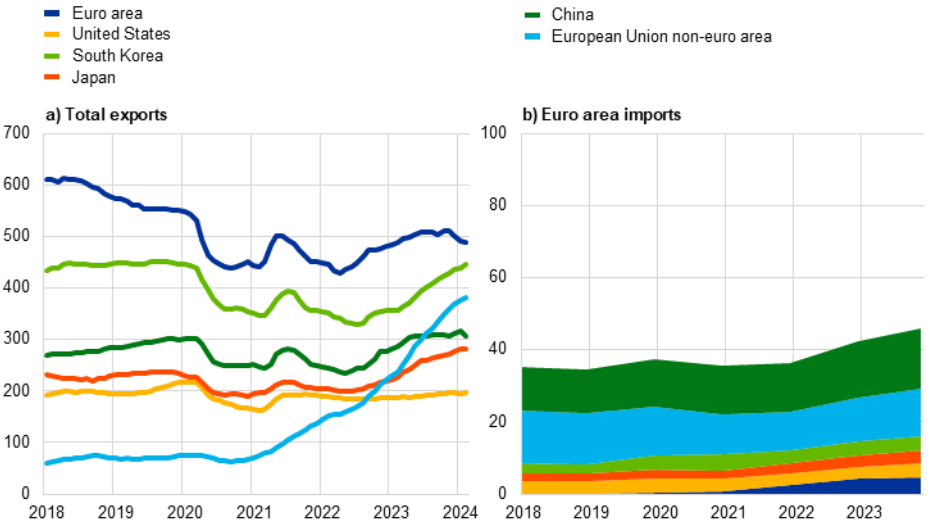


Sources: Eurostat, national statistical offices and ECB calculations.
Note: The latest observations are for February 2024.

Chart C

Car export volumes and import shares

(panel a: thousands of cars, 12-month moving average; panel b: percentage of domestic car demand)



Sources: Trade Data Monitor, Eurostat, Statistical Office of the European Union and ECB calculations.
Notes: Export volumes are expressed in units of exported vehicles. The latest observations in panel a) are for January 2024 (and December 2023 for China) and in panel b) for 2023.

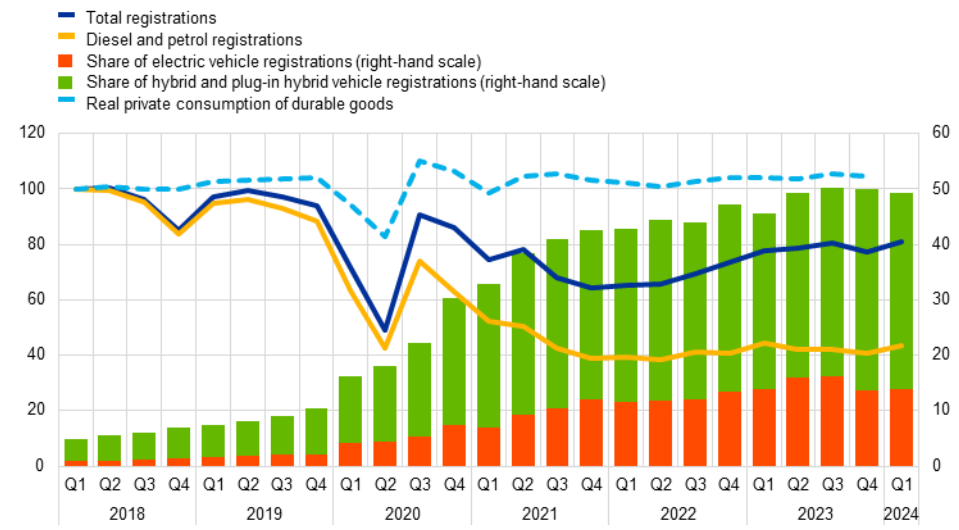
This decline in activity was triggered by a drop in sales of combustion engine cars, which was only partly offset by rising demand for hybrid and electric cars. EU regulatory standards for motor vehicles changed in mid-2018, enforcing stricter standards on carbon dioxide (CO_2) emissions and more stringent emissions tests, which disincentivised the purchase of combustion cars. Sales of hybrid and electric vehicles steadily increased from one-tenth of total registrations in 2018 to

half of total registrations by 2023 (Chart D). Euro area car registrations were around 20% lower in the first quarter of 2024 compared with the beginning of 2018 (Chart D). The significant disparity between car registrations and household consumption of durable goods, which remains relatively stable, suggests that households may be delaying the purchases of new vehicles of all types.

Chart D

Car registrations by type

(left-hand scale: index Q1 2018 = 100; right-hand scale: percentages of total registrations)



Sources: European Automobile Manufacturers' Association, Eurostat and ECB calculations.
Note: The latest observations are for the first quarter of 2024 and, for durable goods consumption, the fourth quarter of 2023.

Demand for motor vehicles has also been dampened by price increases triggered by supply chain disruptions, higher energy costs and tight financing conditions. The delivery time for auto components lengthened during the pandemic, particularly in the euro area, where production chains are highly globally integrated. In addition, since September 2021 spikes in energy prices have passed through to producer prices and final car prices.[2] Finally, the rise in interest rates resulting from the tightening of monetary policy has discouraged leasing and credit for car purchases, which lessened demand for both domestic and foreign cars.

Despite these challenges, the euro area has largely managed to defend its position in global markets by making a faster transition than its competitors towards electric and, in particular, hybrid vehicles. Exports in these segments have risen from low levels to account for more than one-third of total exported units today. Although the euro area has lost market share over the past few years, the decline in value terms has been relatively modest (a 2.5% reduction in terms of value since 2017).[3] Moreover, these losses solely concerned the traditional car segment and were partly offset by large gains in the hybrid and electric segments

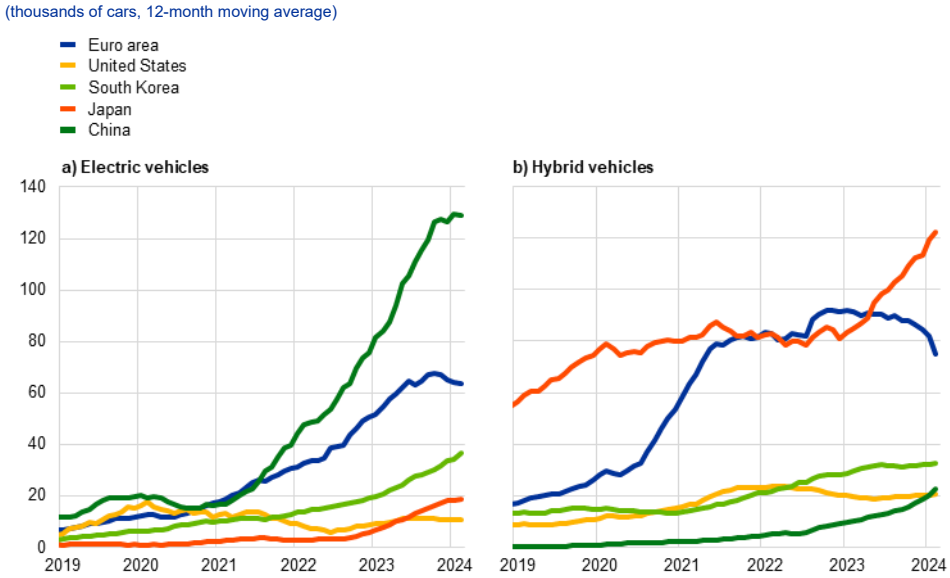
2 See the box entitled "Motor vehicle sector: explaining the drop in output and the rise in prices", *Economic Bulletin*, issue 7, ECB, 2022, and De Santis, R. A., "Supply Chain Disruption and Energy Supply Shocks: Impact on Euro Area Output and Prices", *International Journal of Central Banking*, 2024, Vol. 20, pp. 193-236.

3 See Schnabel, I., "The future of inflation (forecast) targeting", speech at the International Research Forum on Monetary Policy, Federal Reserve Board, Washington, D.C., (slide 8), 17 April 2024.

(Chart E). While China has made large inroads in the electric vehicle segment, so far this has mainly occurred for small and economical vehicles. The euro area has remained the second largest producer of electric and hybrid cars since 2020 and 2022 respectively. In addition, euro area carmakers have historically specialised in the high-end market segment, benefiting from a relatively price-inelastic demand.[4] In fact, euro area carmakers have remained highly profitable, consistently posting the highest net profit margins among their main global competitors in 2022 and 2023. This demonstrates the resilience of the euro area industry and its competitive edge in the global automotive market.

Chart E

Electric and hybrid car export volumes



Sources: Trade Data Monitor and ECB calculations.
Notes: Export volumes are expressed as units of exported vehicles. The latest observations are for February 2024.

The resilience of the euro area automotive industry in the face of intensified competition from abroad is also reflected in its position as a global hub for automotive manufacturing. Despite challenges such as growing imports and import penetration[5] from China, the euro area seems to maintain a competitive advantage in transport equipment, as revealed by its favourable net trade balance.[6] In 2022 the euro area exported more of its transport equipment production to destinations worldwide than it received, highlighting its strength as an exporter (Chart F). Even with the growing presence of Chinese imports in the domestic market (Chart B) and China's dominance in global battery production, the euro area's net trade balance in transport equipment with China remained positive, amounting to 3.8% of its industry's domestic production.

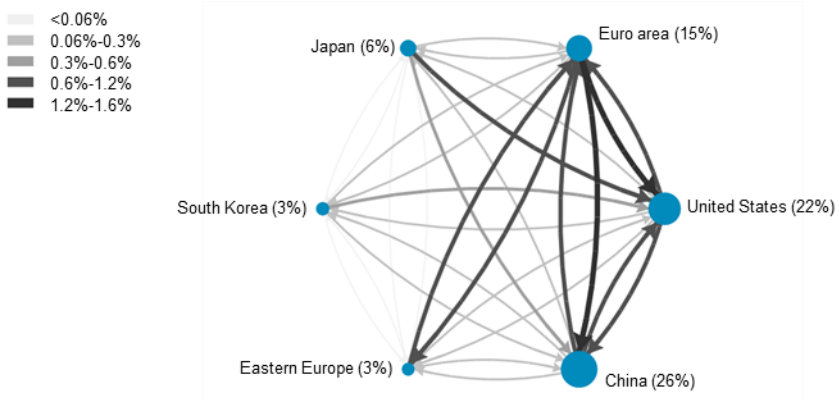
4 Internal empirical analyses suggest that euro area exported units are less sensitive to changes in car prices compared with the exported units of other main global producers (Japan, United States and Korea) and significantly less sensitive than those of China.

5 Import penetration is measured by the ratio of imports to total domestic consumption.

6 Within transport equipment, motor vehicles, trailers and semi-trailers account for 76% of euro area exported value added and 89% of its net trade balance.

Chart F

Global value added network in transport equipment in 2022



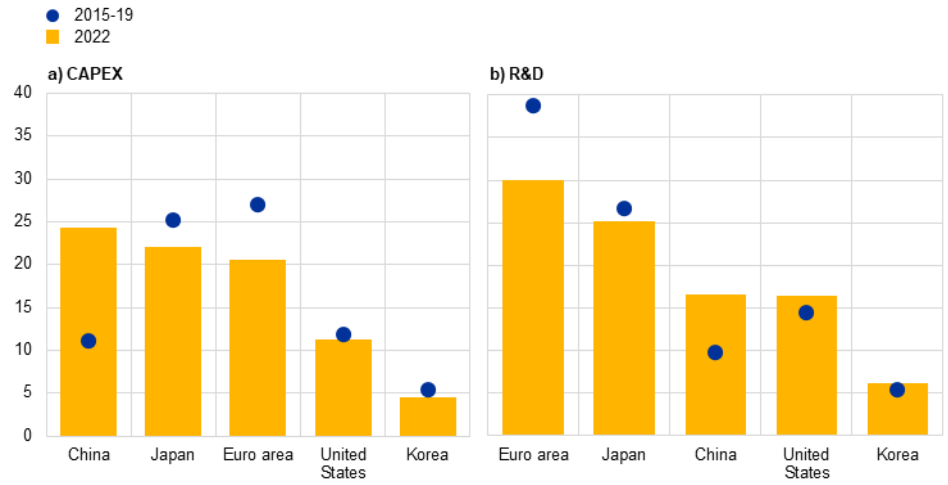
Sources: Multi-regional Input-output data and ECB calculations.
Notes: The size of the nodes is proportional to domestic value added in transport equipment in US dollars. The thickness of the arrows represents bilateral inflows and outflows of value added in transport equipment. Percentages displayed at the nodes and in the legend indicate the share of the respective value added relative to the total global value added of transport equipment.

Euro area car producers are investing substantial amounts in electrification and digital technologies to remain competitive in the rapidly evolving automotive market. This investment can be seen from significant capital expenditure (CAPEX) and research and development (R&D) expenditure, with euro area car producers accounting for approximately 20% and 30% globally in 2022 (Chart G). While China has emerged as a leader in CAPEX, euro area carmakers continue to lead in R&D investment, reflecting their commitment to innovation. This is demonstrated by the large number of new transport-related patents registered by euro area firms at the European Patent Office between 2020 and 2022, which exceed those registered by competitors. However, euro area firms are lagging behind in registrations of patents for digital communication, which signals the potential challenges facing the euro area automotive sector related to the digital transformation.

Chart G

Share of the automotive sector in CAPEX and R&D expenditure

(percentages, purchasing power parities)



Sources: Reuters and ECB calculations.

In the medium term a recovery in euro area car production is expected to be primarily driven by consumer demand, but there are significant risks ahead. If obstacles to adopting electric cars weaken and as temporary shocks fade, domestic demand should recover. However, there are several important risks that could affect this outlook. The success of euro area carmakers in integrating digital processes with traditional ones, accelerating innovation and launching technologies that win market favour will be critical. Additionally, the heavy dependence of euro area carmakers on suppliers concentrated in a few locations (for instance, semiconductors and batteries produced in a small number of countries in Asia) poses risks to the supply chain, especially in times of heightened geopolitical tension. Efforts must be made to enhance resilience against supply chain disruptions and to diversify sources of strategic components to maintain competitiveness. Industrial policies, particularly those related to the green transition, such as charging infrastructure, will also shape the outlook for the euro area automotive sector.[7]

[7] In 2021 the European Parliament approved a Regulation on the deployment of alternative fuels infrastructure, which prepares the ground for the adoption of EU green strategies. Similar initiatives include the Digital Vehicle Passport and Digital Battery Passport, which are aimed at enhancing transparency and sustainability in the automotive industry. The EU has also enacted legislation on battery recycling materials to drive the industry towards innovative and sustainable design and production methods. Additionally, the EU provides economic incentives like the Carbon Border Adjustment Mechanism, which imposes fees on carbon-intensive imports to reduce carbon leakage and encourage greener practices within the industry.

6 Profit indicators for inflation analysis considering the role of total costs

Prepared by Elke Hahn and Théodore Renault

Standard indicators of profits in the economy which are derived from national accounts use GDP rather than economic output as a benchmark. While "output" is often used as a synonym for GDP, national accounts make a distinction between the two. Output, unlike GDP, includes intermediate consumption, i.e. the consumption of goods and services used in the generation of GDP or the related concept of "value added".[1] "Output" is a well-defined concept, but the quarterly national accounts do not contain timely data on output for the euro area.[2] The standard national accounts profit indicators based on GDP hence allow profit developments – measured in terms of gross operating surplus and mixed income – to be assessed in relation to labour costs but not in relation to total costs. These indicators are therefore useful for assessing how profits are currently buffering rising labour costs, but do not show precisely how this has been hampered or facilitated by developments in costs for intermediate inputs such as energy. Such insights would be provided by profit indicators based on output.

Profit indicators that consider the total cost of inputs can be approximated by replacing output with the concept of "total supply". Total supply is defined as the sum of GDP and imports, which are both available in the euro area quarterly national accounts. The approximation of output via total supply makes use of the fact that total supply minus imports equals GDP, which is equal to output minus intermediate consumption.[3] While the value of imports is considerably lower than that of intermediate consumption, import prices and intermediate goods prices move closely together.[4] This makes total supply a reasonable proxy for output when calculating profit margin developments, which are measured as the ratio of price to cost developments. While the standard profit margin indicator is derived as the ratio between the GDP deflator at basic prices and unit labour costs, the total supply-based profit margin indicator can be computed as the ratio of the total supply deflator to total unit costs (the sum of labour and import costs per unit).[5] Profit margin indicators have a distributional focus, as these provide information on developments in profits relative to the evolution of labour costs or total costs. For instance, a positive growth rate of a profit margin indicator shows that unit profits (defined as

1 Output is defined as the sum of gross value added and intermediate consumption. GDP is equal to the sum of gross value added and net taxes on products. See the European System of Accounts 2010 for a full description.

2 Data on output are available at annual frequency for the euro area. They are also available at quarterly frequency but only for a limited number of euro area countries.

3 For simplicity, we abstract from the role of net taxes on products.

4 An indication of this co-movement at the euro area level is the correlation coefficient of 0.9 between the quarterly annual rates of change of the import deflator and producer prices for intermediate goods for the period 1999 to 2023.

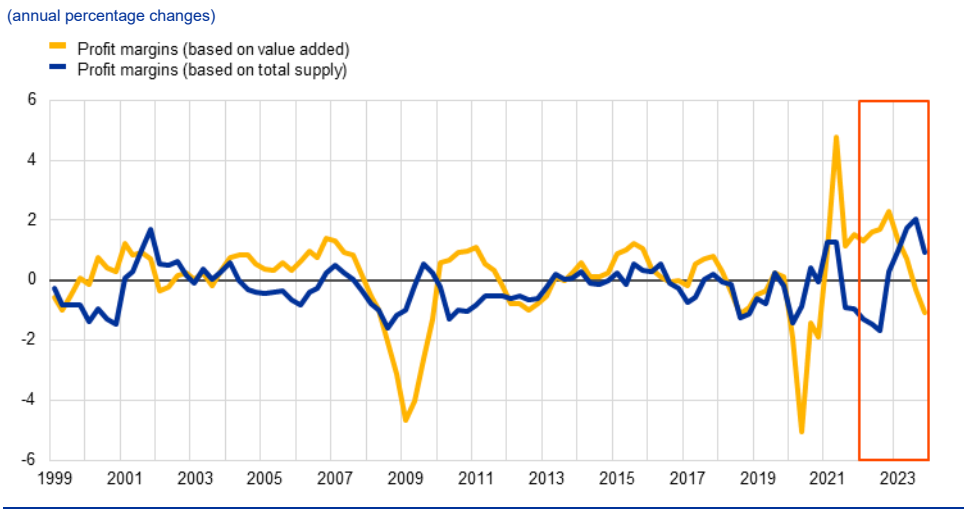
5 For a discussion of a wider set of profit indicators and the link between the concept of profits used in the national accounts (gross operating surplus and mixed income) and that of business profits, see the box entitled "How have unit profits contributed to the recent strengthening of euro area domestic price pressures?", *Economic Bulletin*, Issue 4, ECB, 2023.

gross operating surplus and mixed income per unit of real GDP or of real total supply) are growing at a higher pace than the unit cost component considered.

Taken together, the GDP (value added) and total supply-based profit margin indicators suggest that in 2023 profits started to buffer the impact of labour cost developments on price pressures but benefited from the decline in other costs. According to the GDP-based indicator, profit margins grew in 2022 but started contracting in 2023 in line with a buffering of labour costs in the second half of that year. [6] However, the total supply-based indicator suggests that profit margins declined in 2022 and, after increasing somewhat in the course of 2023, have started to slow more recently but remained positive.[7] In other words, it suggests that profit margins buffered total costs in 2022 when import prices surged, but increased in 2023, benefiting from the decline in import prices.

Chart A

Growth rate of profit margins based on GDP (value added) and total supply



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

The total supply deflator, as a proxy for output prices, points to some bottoming out of overall price pressures in the euro area economy in the second half of 2023. Growth in the total supply deflator surged from 2021 to mid-2022 and then fell sharply, before showing signs of some stabilisation in the second half of 2023 (Chart B, panel a). As with the GDP deflator (Chart B, panel b), developments in the total supply deflator can be broken down into components. Its decomposition indicates the sources of the rise and fall in overall price pressures and their evolution over time. It suggests that the surge in inflation was triggered initially by a strong increase in import (input) price pressures. This was followed on

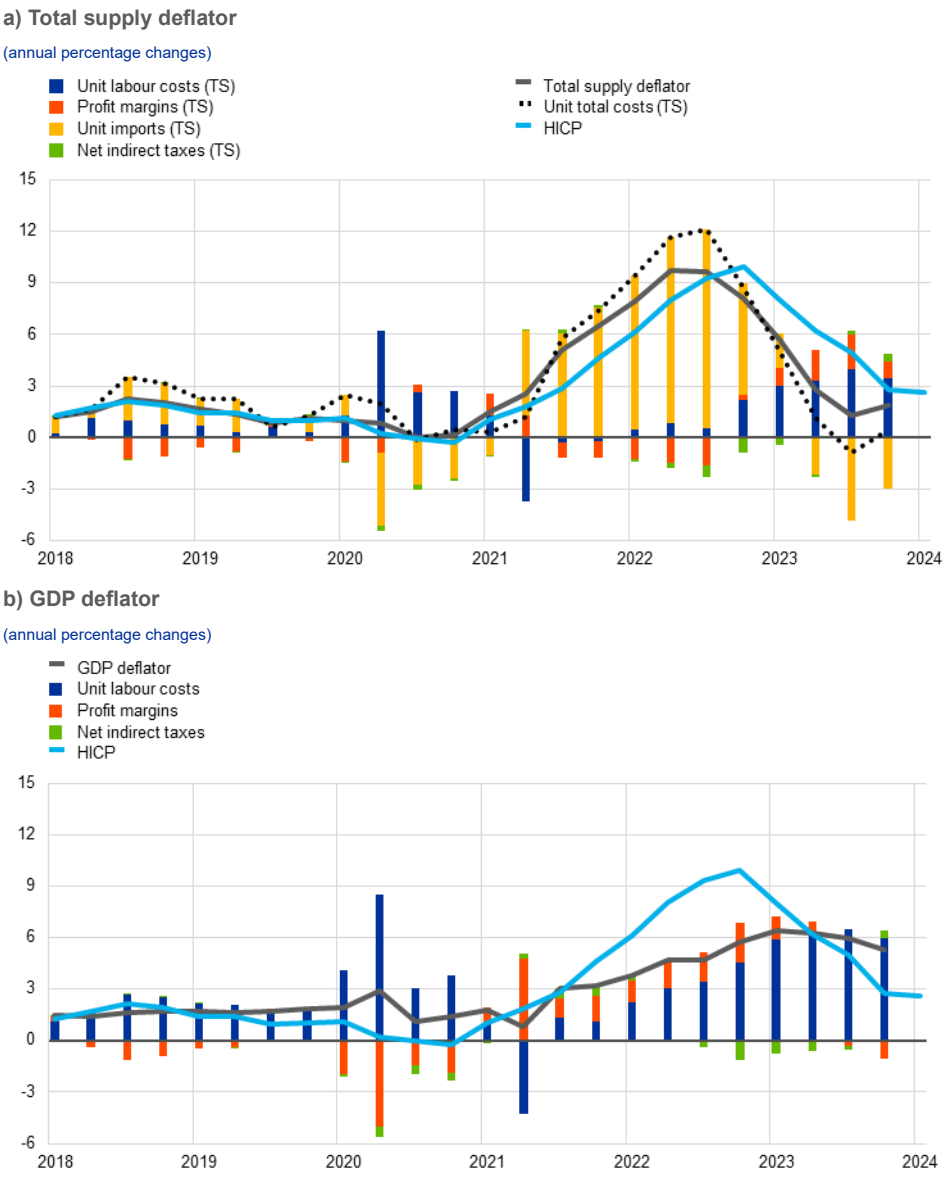
6 The large fluctuations of the standard profit margin indicator during and after the pandemic-related recession reflect large swings in some of the underlying data, such as labour productivity, during the recession.

7 Note that for unit profits, which is another frequently used profit indicator in the context of inflation analysis, developments in the standard indicator (gross operating surplus and mixed income divided by real GDP) and the corresponding total supply-based indicator (gross operating surplus and mixed income divided by real total supply) were very similar over the past two years. This is not surprising as there were exceptional developments in import prices but not in import volumes.

the domestic side, with some delay and to a smaller extent, by a rise in profits and then in labour costs. The sequencing implies positive growth of profit margins on the basis of value added at the time of the inflation surge, but negative growth on the basis of total supply. The same sequencing is visible for the decline in price pressures, with reversed developments in profit margins. Import price pressures started to recede in mid-2022, and weakening price pressures have been visible for several quarters on the domestic side in the moderation of profit growth with the fading of the pandemic and energy crisis. In the fourth quarter of 2023, unit labour cost growth also started to decrease slightly.

Chart B

Total supply deflator and GDP deflator

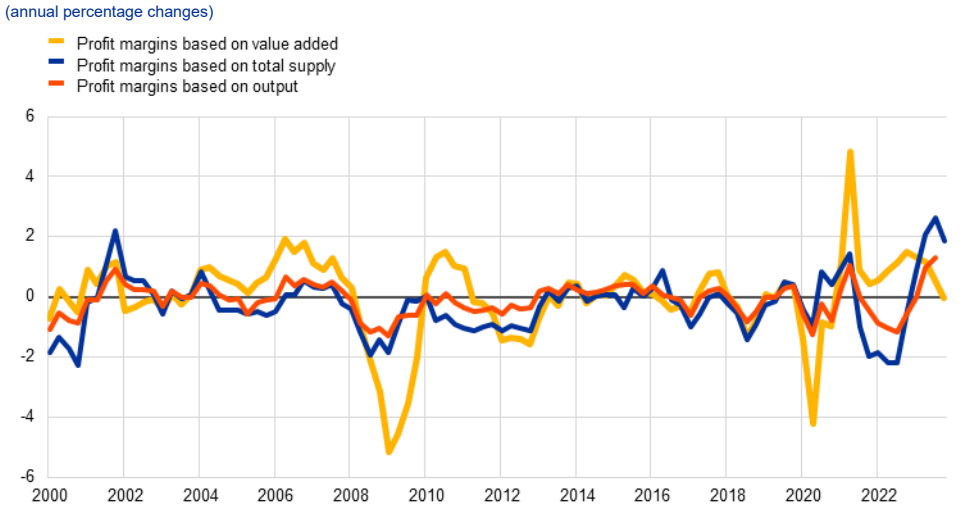


Sources: Eurostat and ECB calculations.
Notes: The latest observations are for the first quarter of 2024 for the HICP and for the fourth quarter of 2023 for the other data. Panel a): unit labour costs (TS) and unit imports (TS) are shown as percentage point contributions to unit total costs (TS).

A profit indicator based on "genuine" output can be calculated for a limited sample of euro area countries, and its developments largely follow those of the indicators based on total supply. The total supply-based profit margin indicator may be an imperfect proxy for an output-based indicator if import prices develop very differently from intermediate consumption prices. The euro area quarterly national accounts provide information on output and intermediate consumption for six euro area countries, together accounting for 60% of euro area GDP.[8] This allows a direct comparison to be made between the profit margin indicators based on total supply and output respectively. For the limited sample, the two indicators have moved closely together over time and largely coincide in their periods of positive and negative growth, including in the most recent period.[9] The indicator based on output is slightly less volatile, which can be partly attributed to the fact that intermediate goods prices have recently been somewhat less volatile than the prices of imported goods. This suggests that, for the euro area as whole, the total supply-based profit margin indicator can be a reliable proxy for an output-based profit margin indicator.

Chart C

Growth rate of profit margins based on value added, total supply and output for a limited sample of euro area countries



Sources: Eurostat and ECB calculations.
Notes: The latest observations are for the fourth quarter of 2023 for the value added-based and total supply-based indicators and for the third quarter of 2023 for the output-based indicator. The limited sample of euro area countries comprises Germany, Estonia, Greece, France, the Netherlands and Finland.

To sum up, at times of exceptional movements in prices of intermediate inputs, a profit indicator based on total supply can complement the standard value added-based profit indicator. Looking ahead, following the relatively large deviations between the two indicators over the past two years, a fading out of the exceptional developments in import prices will likely lead to closer realignment of

8 Data on output and intermediate consumption are available for Germany, Estonia, Greece, France, the Netherlands and Finland.

9 The developments in both the value added-based and the total supply-based profit margin indicator on the basis of the limited sample are comparable to those for the euro area aggregate (see Chart A).

growth in profit margins based on value added and on total supply in terms of direction and positive/negative magnitudes.

7 Liquidity conditions and monetary policy operations from 31 January to 16 April 2024

Prepared by Juliane Kinsele and Vagia Iskaki

This box describes liquidity conditions and the Eurosystem monetary policy operations during the first and second reserve maintenance periods of 2024. Together, these two maintenance periods ran from 31 January to 16 April 2024 (the "review period").

Average excess liquidity in the euro area banking system continued to decline over the review period. This was due to the maturing of the seventh operation under the third series of targeted longer-term refinancing operations (TLTRO III.7) and early repayments by banks of outstanding amounts under other TLTRO III operations on 27 March 2024. Liquidity provision also declined due to the discontinuation of reinvestments under the asset purchase programme (APP) at the beginning of July 2023. However, the lower liquidity provision was partly offset by the continued decline in liquidity-absorbing 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 €99.7 billion to €1,531.2 billion over the review period. This was due almost entirely to a €98 billion decline in net autonomous factors to €1,369.7 billion (see the section of Table A entitled "Other liquidity-based information") that was driven by both a decrease in liquidity-absorbing autonomous factors and an increase in liquidity-providing autonomous factors. Minimum reserve requirements fell by €1.7 billion to €161.5 billion.

Liquidity-absorbing autonomous factors decreased by €33.7 billion to €2,619.7 billion over the review period, owing mainly to a continued decline in non-monetary policy deposits and banknotes in circulation. Government deposits (see the section of Table A entitled "Liabilities") declined by €27.7 billion on average over the review period to €154.6 billion. This reflects the continued normalisation of the overall volume of cash holdings of national treasuries with the Eurosystem, which was also encouraged by the changes to the remuneration of government deposits with the Eurosystem that came into effect on 1 May 2023. On 16 April 2024 the Governing Council confirmed the remuneration ceiling of these deposits at the euro short-term rate (€STR) minus a spread of 20 basis points, although the national central banks may decide to apply a lower rate based on domestic considerations.[1] Other non-monetary policy deposits included under other autonomous factors also

[1] See "ECB confirms remuneration ceiling for euro area government deposits and adjusts remuneration of other non-monetary policy deposits", *press release*, ECB, 17 April 2024.

continued to decline.[2] The normalisation of repo market conditions amid the easing of collateral scarcity issues also made placing non-monetary policy deposits in the market a more attractive option. The average value of banknotes in circulation decreased by €9.1 billion over the review period to €1,544.6 billion, reflecting the ongoing reduction in banknote holdings observed since negative policy rates were phased out.

Liquidity-providing autonomous factors rose by €64.1 billion to stand at €1,250.3 billion. Net assets denominated in euro increased by €29.3 billion over the review period, largely as a result of the continued reduction in liabilities to non-euro area residents denominated in euro. This, in turn, reflects the adjustment to the cash management strategies of customers of the Eurosystem reserve management services (ERMS) seen since the change in the remuneration of deposits held under the ERMS framework to €STR minus 20 basis points came into effect on 1 May 2023 and was confirmed as such on 16 April 2024.[3] Net foreign assets increased by €34.8 billion, owing primarily to the revaluation in the second reserve maintenance period of certain foreign reserve assets, which rose by €29.0 billion. However, this increase was counterbalanced by revaluation adjustments included under other autonomous factors.

Table A provides an overview of the autonomous factors discussed above and their changes.[4]

2 In net terms, however, other autonomous factors increased marginally as a result of lower non-monetary policy deposits and higher revaluation accounts.

3 See "ECB confirms remuneration ceiling for euro area government deposits and adjusts remuneration of other non-monetary policy deposits", *press release*, ECB, 17 April 2024.

4 For further details on autonomous factors, see the article entitled "The liquidity management of the ECB", *Monthly Bulletin*, ECB, May 2002.

Table A

Eurosystem liquidity conditions

Liabilities

(averages; EUR billions)

	Current review period: 31 January 2024-16 April 2024						Previous review period: 1 November 2023-30 January 2024	
	First and second maintenance periods		First maintenance period: 31 January-12 March 2024		Second maintenance period: 13 March-16 April 2024		Seventh and eighth maintenance periods	
Liquidity-absorbing autonomous factors	2,619.7	(-33.7)	2,620.9	(-29.4)	2,618.3	(-2.6)	2,653.5	(-67.1)
Banknotes in circulation	1,544.6	(-9.1)	1,543.2	(-13.5)	1,546.3	(+3.0)	1,553.7	(-6.1)
Government deposits	154.6	(-27.7)	168.5	(+0.1)	137.8	(-30.7)	182.3	(-40.3)
Other autonomous factors (net)[1]	920.6	(+3.1)	909.2	(-16.0)	934.3	(+25.1)	917.5	(-20.7)
Current accounts above minimum reserve requirements	7.0	(-1.1)	7.2	(-0.9)	6.8	(-0.5)	8.1	(-1.4)
Minimum reserve requirements[2]	161.5	(-1.7)	161.4	(-1.0)	161.6	(+0.2)	163.2	(-1.8)
Deposit facility	3,421.3	(-99.1)	3,490.9	(+3.5)	3,337.9	(-153.0)	3,520.5	(-94.6)
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: 31 January 2024-16 April 2024						Previous review period: 1 November 2023-30 January 2024	
	First and second maintenance periods		First maintenance period: 31 January-12 March 2024		Second maintenance period: 13 March-16 April 2024		Seventh and eighth maintenance periods	
Liquidity-providing autonomous factors	1,250.3	(+64.1)	1,232.1	(+14.4)	1,272.1	(+40.0)	1,186.2	(+35.4)
Net foreign assets	979.6	(+34.8)	966.5	(+8.1)	995.4	(+29.0)	944.8	(+17.3)
Net assets denominated in euro	270.7	(+29.3)	265.6	(+6.3)	276.7	(+11.1)	241.4	(+18.1)
Monetary policy instruments	4,959.5	(-199.9)	5,048.5	(-42.4)	4,852.6	(-195.9)	5,159.4	(-200.0)
Open market operations	4,959.5	(-199.9)	5,048.5	(-42.4)	4,852.6	(-195.9)	5,159.4	(-200.0)
Credit operations	334.0	(-123.5)	402.1	(-2.0)	252.2	(-149.9)	457.4	(-110.8)
MROs	3.9	(-3.7)	4.8	(-3.1)	2.8	(-2.0)	7.6	(+0.8)
Three-month LTROs	6.4	(+2.0)	5.0	(+1.1)	7.9	(+2.9)	4.4	(-3.8)
TLTRO III	323.7	(-121.8)	392.3	(+0.0)	241.5	(-150.8)	445.5	(-107.8)
Outright portfolios[1]	4,625.5	(-76.5)	4,646.4	(-40.4)	4,600.4	(-46.0)	4,702.0	(-89.3)
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: 31 January 2024-16 April 2024						Previous review period: 1 November 2023-30 January 2024	
	First and second maintenance periods		First maintenance period: 31 January-12 March 2024		Second maintenance period: 13 March-16 April 2024		Seventh and eighth maintenance periods	
Aggregate liquidity needs[1]	1,531.2	(-99.7)	1,550.4	(-45.1)	1,508.1	(-42.3)	1,630.9	(-104.1)
Net autonomous factors[2]	1,369.7	(-98.0)	1,389.0	(-44.1)	1,346.5	(-42.6)	1,467.7	(-102.3)
Excess liquidity[3]	3,428.3	(-100.2)	3,498.1	(+2.7)	3,344.7	(-153.4)	3,528.5	(-96.0)

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 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: 31 January 2024-16 April 2024				Previous review period: 1 November 2023-30 January 2024			
	First maintenance period: 31 January-12 March 2024		Second maintenance period: 13 March-16 April 2024		Seventh maintenance period		Eighth maintenance period	
MROs	4.50	(+0.00)	4.50	(+0.00)	4.50	(+0.00)	4.50	(+0.00)
Marginal lending facility	4.75	(+0.00)	4.75	(+0.00)	4.75	(+0.00)	4.75	(+0.00)
Deposit facility	4.00	(+0.00)	4.00	(+0.00)	4.00	(+0.00)	4.00	(+0.00)
€STR	3.907	(+0.006)	3.908	(+0.001)	3.903	(+0.00)	3.901	(-0.001)
RepoFunds Rate Euro	3.955	(+0.049)	3.947	(-0.008)	3.945	(+0.019)	3.905	(-0.040)

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 €199.9 billion to €4,959.5 billion over the review period (Chart A). The reduction in liquidity was driven primarily by the ongoing decline in the amounts provided through credit operations.

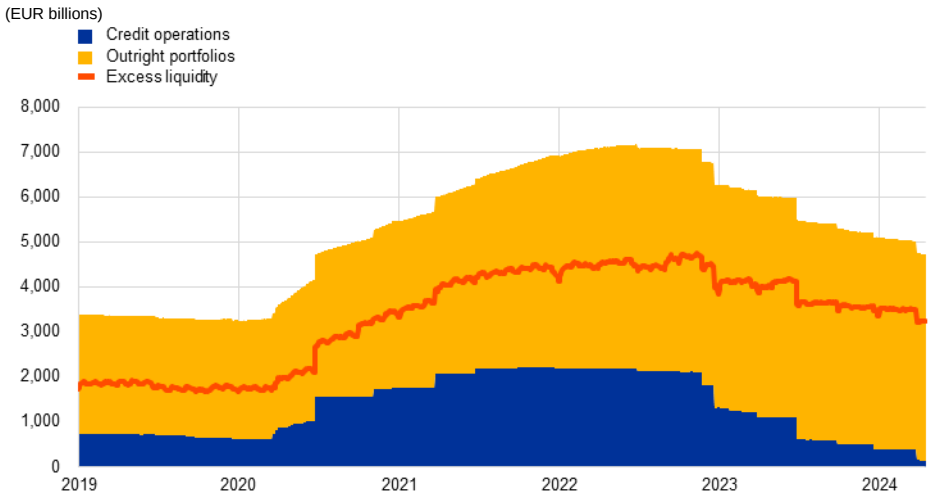
The average amount of liquidity provided through credit operations fell by €123.5 billion to €334 billion over the review period. This decrease largely reflects the decline in outstanding TLTRO III amounts owing to the maturing of TLTRO III.7 (€215.4 billion), together with early repayments of other TLTRO funds amounting to €35.8 billion on 27 March 2024. At the same time, there was also a slight decrease in the overall outstanding amounts of Eurosystem standard refinancing operations – main refinancing operations (MROs) and three-month longer-term refinancing operations (LTROs). This was driven largely by an average decline in MROs of €3.7 billion, while three-month LTROs increased by €2 billion.

The limited participation of banks in these operations and their ability to repay sizeable TLTRO funds without switching to regular refinancing operations reflect their comfortable liquidity positions 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 €76.5 billion over the review period. This decline was due to the discontinuation of reinvestments of principal payments from maturing securities under the APP since 1 July 2023. Under the pandemic emergency purchase programme, the principal payments from maturing securities have been fully reinvested since net purchases were discontinued at the end of March 2022.[5,6]

Chart A

Changes in liquidity provided through open market operations and excess liquidity



Source: ECB.
Note: The latest observations are for 16 April 2024.

Excess liquidity

Average excess liquidity decreased by €100.2 billion to reach €3,428.3 billion over the review period (Chart A). Excess liquidity is the sum of banks' reserves above the 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, average excess liquidity has declined steadily, owing mainly to the maturing and early repayment of TLTRO III funds, with the discontinuation of reinvestments under the APP also contributing to this fall since July 2023.

5 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.

6 In December 2023 it was announced that, in the second half of 2024, the ECB intends to only partially reinvest the principal payments from maturing securities under the pandemic emergency purchase programme.

Interest rate developments

The Governing Council kept the three key ECB interest rates unchanged over the review period. The rates on the deposit facility, the MROs and the marginal lending facility remained at 4.00%, 4.50% and 4.75% respectively.

The average €STR was broadly unchanged over the review period, while maintaining a stable spread with the ECB's key policy rates. The €STR traded, on average, 9.2 basis points below the deposit facility rate throughout the review period, thus slightly higher than the average spread of 9.9 basis points for the 2023 reserve maintenance periods. The lower excess liquidity has not, therefore, had a material upward impact on the €STR so far.

The average euro area repo rate, as measured by the RepoFunds Rate Euro index, continued to trade closer to the deposit facility rate. On average, the repo rate was 4.9 basis points below the deposit facility rate over the review period, having increased by approximately 2.5 basis points compared with the previous period. This reflects the continued reversal of factors that have been exerting downward pressure on repo rates since the last quarter of 2023. These include the repricing of interest rate expectations, which encourages financial intermediaries to take long positions in bonds funded by repos, and the greater availability of collateral, amid the decline in outstanding APP holdings and the release of mobilised collateral from maturing TLTROs.

8 Credit risk and bank lending conditions

Prepared by Francesca Barbiero and Maria Dimou

Credit risk has been gradually increasing in recent quarters, but has not reached the levels of deterioration implied by headline measures of bank credit risk based on historical regularities, given a weak economic outlook for the euro area, higher interest rates and rising numbers of bankruptcies. Both non-performing loan ratios and broader measures of credit risk, such as early arrears and underperforming (Stage 2) loans, have been steadily increasing in recent quarters, with some heterogeneity across countries resulting from, for instance, different exposures to more interest rate sensitive sectors like commercial real estate. However, the increase has remained contained overall.[1] In addition, probabilities of default on banks' balance sheet exposures have barely moved up since the start of the recent monetary policy tightening cycle, despite an increased interest rate burden and a worsened economic outlook.[2] In general, reported default frequencies are below the levels that might be expected based on historical regularities, given the current macroeconomic outlook.[3]

Part of the benign evolution of credit risk on bank balance sheets may be attributable to the fact that, since the start of the tightening cycle, banks have actively reallocated their portfolios towards safer assets (Chart A). Looking at banks' corporate loan portfolios from the end of 2021, as reported in AnaCredit, the euro area credit register, there was indeed a deterioration in borrower creditworthiness, likely reflecting higher interest rate burdens and the gradual weakening of macroeconomic conditions (Chart A, yellow bars). This would have been expected to prompt a marked deterioration in the loan portfolios of banks. However, on top of the broad-based contraction in the supply of credit since the start of monetary policy tightening, banks have been selectively shifting credit origination towards safer counterparties in their corporate loan portfolios (Chart A, blue bars). This rebalancing has more than compensated for the passive deterioration in the quality of banks' exposures stemming from changes in the creditworthiness of pre-existing counterparties. As a result, the share of less risky loans in corporate loan portfolios (Chart A, blue circles) actually increased, leading to a lower than expected deterioration in the overall quality of outstanding loans. This is also consistent with the increase in risk aversion reported by banks in the euro area bank lending survey (BLS) since the start of the tightening cycle, paired with increased risk perceptions.[4] The impact of safer and potentially more liquid assets being seen as more attractive

1 See, for example, the series for non-performing loans and for Stage 2 loans in the ECB's supervisory banking statistics.

2 See, for example, the box entitled "Corporate vulnerabilities as reported by firms in the SAFE", *Economic Bulletin*, Issue 1, ECB, 2024.

3 See also af Jochnick, Kerstin "The single supervisor ten years on: experience and way forward", *LBBW Fixed Income Forum*, Frankfurt, 13 March 2024, and "Euro area banking sector", *Financial Stability Review*, ECB, May 2024.

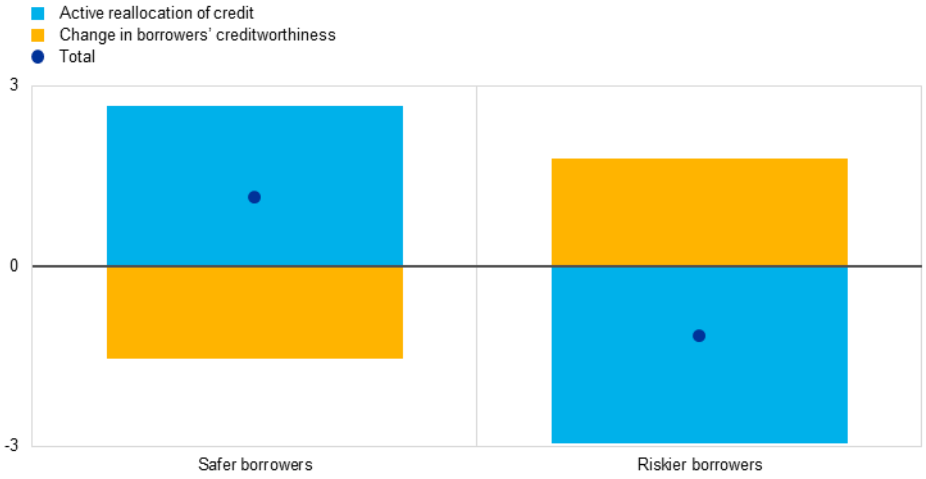
4 See "The euro area bank lending survey – first quarter of 2024", ECB, April 2024.

also extended to banks rebalancing assets towards securities holdings rather than loans, which is a pattern that largely reflects securitisation activity.[5]

Chart A

Decomposition of developments in the corporate loan portfolios of banks between the fourth quarter of 2021 and the fourth quarter of 2023

(changes in shares of loan volume and contributions, percentage points)



Sources: ECB (AnaCredit) and ECB calculations.
Notes: This chart shows the cumulative quarterly changes in the share of loans belonging to each borrower category from the first quarter of 2022 to the fourth quarter of 2023. The borrower categories reflect mapping between realised default rates and ratings as provided by rating agencies. "Safer borrowers" includes borrowers with a probability of default of up to 5%. "Riskier borrowers" includes borrowers with a probability of default that is higher than 5%. The calculations are based on outstanding amounts of loans granted by euro area banks to euro area residents. The definitions are consistent with Regulation ECB/2021/2 (BSI Regulation). The blue bars represent cumulations of quarterly changes in the shares of loans within each category, calculated while applying the probabilities of default observed in the previous quarter.

A reallocation of bank portfolios towards safer assets could reflect their attempts to contain the cost of credit risk by avoiding a sharper increase in loan loss provisions and broader measures of credit risk. After reaching record levels in the aftermath of the global financial crisis and the sovereign debt crisis, the cost of credit risk has remained contained over recent years (Chart B, green area).[6] As a result of increased supervisory pressure, banks have undertaken costly efforts to clean up their balance sheets and faced continuous scrutiny of their risk management practices. Costs related to credit risk, in combination with other operational inefficiencies, contributed to low profitability levels, high cost of equity and a lack of capital distributions in the years before the recent tightening cycle, and especially during past crises. Therefore, pronounced risk-off attitudes would be consistent with banks' efforts to keep down the cost of credit risk in order to attain profitability levels that would enable them to continue to distribute capital to their investors.[7] Currently, as a result of these adaptive banking strategies, loan loss provisions and broader measures of credit risk remain contained despite renewed scrutiny from supervisors and markets. For the same reason, loan loss provisions and measures of credit risk in bank balance sheets have partially lost their ability to

5 The rebalancing of bank assets towards securities from the end of 2021 was not associated with changes in the overall risk profile of the loan books.

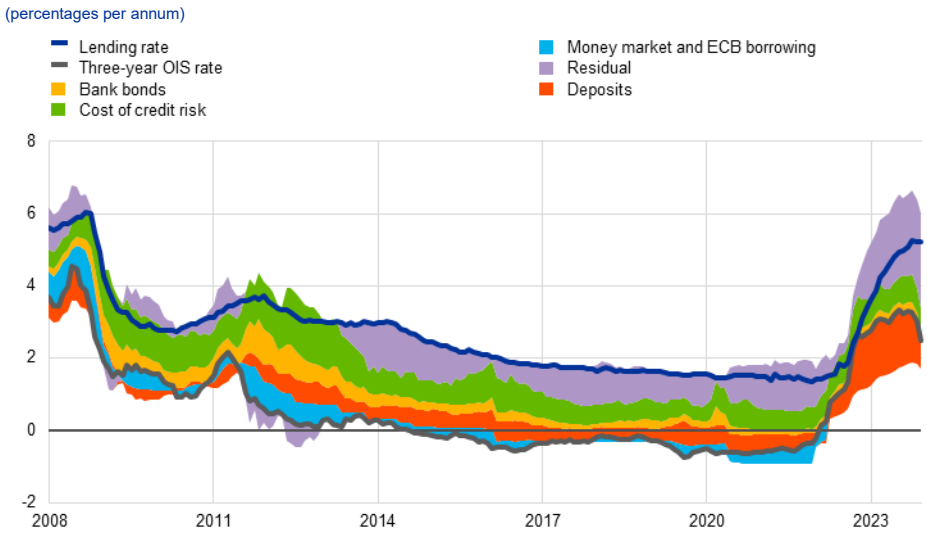
6 In this context, the cost of credit risk is the sum of capital charges and expected (credit) losses.

7 See the box entitled "Banks' capital distributions and implications for monetary policy", *Economic Bulletin*, Issue 6, ECB, 2023.

fully reflect the level at which the tightening of monetary policy has been affecting firms and households. This suggests that a more holistic view of monetary policy transmission to the real economy is warranted. It likely also reflects the fact that firm and household balance sheets were in a favourable state at the start of the tightening cycle, which, coupled with strong profitability and employment, may have prevented a greater deterioration in creditworthiness.

Chart B

Lending rate to non-financial corporations and its components



Sources: ECB (balance sheet items, MFI interest rate statistics), Bloomberg, Moody's and ECB calculations.
Notes: This chart decomposes the realised lending rate to non-financial corporations (blue line) into contributions from bank cost components. The residual between the realised lending rate and the various cost components identifies a measure of intermediation margin. The costs of deposits, bank bonds and money market and ECB borrowing are expressed as spreads vis-à-vis the base rate, i.e. the three-year overnight index swap rate (black line), weighted by their respective importance in banks' funding mixes. The latest observations are for December 2023.

The empirical evidence suggests that banks became more prudent in the allocation of credit as a result of regulatory and supervisory considerations (Chart C, panel a). Heightened supervisory scrutiny compels banks to adopt a more risk-averse stance in their lending activities.[8] As regulatory pressure mounts, banks become increasingly motivated to comply with capital adequacy standards and mitigate their exposure to risky assets. Consequently, banks strategically reallocate credit towards safer borrowers or less risky assets in order to adhere to regulatory requirements and supervisory pressure, and to avoid unwarranted increases in loan loss provisioning needs ex post. The role of regulatory and supervisory pressure is captured via banks' replies to the BLS question on the impact on credit standards of supervisory or regulatory actions in the previous 12 months. Empirical analysis suggests that banks that reported a tightening impact from supervisory or regulatory actions significantly reduced lending to riskier borrowers compared with lending to

[8] Altavilla, C., Boucinha, M., Peydró, J. L., and Smets, F., "Banking supervision, monetary policy and risk taking: big data evidence from 15 credit registers", *Working Paper Series*, No 2349, ECB, January 2020.

safer borrowers over the horizon considered.[9] Specifically, a bank tightening credit standards because of supervisory and regulatory pressure to the same extent as the average bank between 2021 and 2023 (cumulated net percentage of 20%), reduced lending to riskier borrowers by 3 percentage points, which compares with an overall 9.8% decline in loan volume for the sample of riskier borrowers over the horizon considered. This supports the hypothesis that, as a consequence of ongoing scrutiny by prudential authorities, banks may have been prudent in their allocation of credit to borrowers with weak repayment prospects, notwithstanding the fact that other factors, like a lower demand for loans, may also have played an important role for these borrowers.

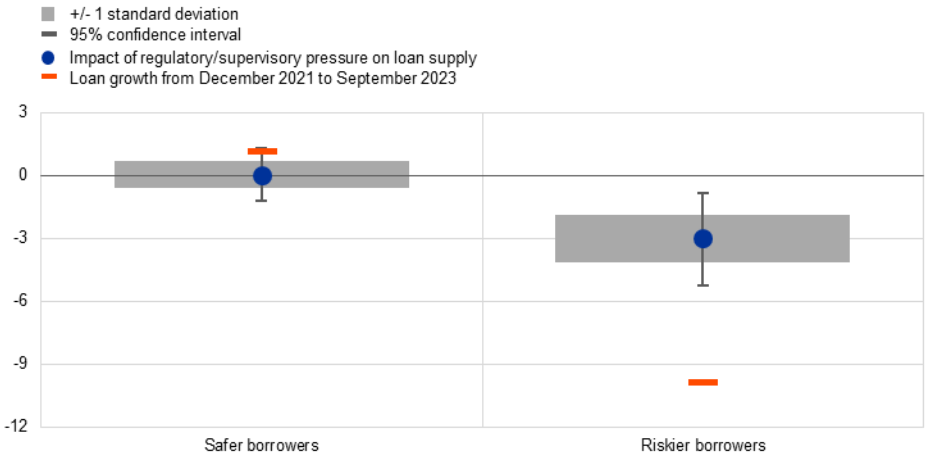
9 To test for alternative explanations that could be underpinning bank behaviour when it comes to credit risk, we constructed a bank-firm dataset by linking AnaCredit with banks' individual replies to the BLS, along with balance sheet positions from individual balance sheet item statistics. We focused on the change in loan volume at the bank-firm pair level between December 2021, before the tightening cycle, and September 2023. To characterise factors that affected the change in the relative allocation of credit to ex ante safer or riskier borrowers over this period, we employed a standard empirical approach that allowed us to include single-bank firms when identifying bank credit supply shocks by assuming that shocks affect firms within the same industry, location and size classification in a similar way (see Degryse, H., De Jonghe, O., Jakovljević, S., Mulier, K., and Schepens, G., "Identifying credit supply shocks with bank-firm data: Methods and applications", *Journal of Financial Intermediation*, Vol. 40, October 2019.) We then specify a cross-sectional regression model, where we include bank and firm controls, such as the size of the bank and the age of the firm, as well as industry-location-size fixed effects as described above.

Chart C

Empirical evidence on factors driving allocation of credit supply

a) Impact of regulatory/supervisory pressure

(percentage points, ex ante loan volumes)



b) Impact of ex ante capital buffers and excess liquidity

(percentage points, ex ante loan volumes)

Sources: ECB (individual balance sheet items, AnaCredit), BLS, ECB supervisory reporting and ECB calculations.
Notes: The chart displays the coefficients from the regression: $Loan\ growth_{b,f} = Riskier_f + \beta^1 Safer_f \times X_b + \beta^2 Riskier_f \times X_b + Y_b + Z_f + \gamma_{ILS} + \epsilon_{b,f}$, where $Loan\ growth_{b,f}$ is the (log) change in loan volume at the bank-firm level between December 2021 and September 2023. $Safer_f$ and $Riskier_f$ are complementary dummy variables equal to 1 if the ex ante probability of default of the borrower is above (below) 5% respectively. X_b is a variable equal to 1 if supervisory or regulatory actions in the previous 12 months had a tightening impact on credit standards (panel a) or the ex ante capital buffer or the excess liquidity over asset ratio (panel b). The regression includes bank and firm controls (Y_b and Z_f), such as the size of the bank and the age of the firm, as well as industry-location-size fixed effects (γ_{ILS}). Standard errors are clustered at the bank level. The coefficients are rescaled by the cumulated net tightening of credit standards from regulatory/supervisory pressure over the period 2021-23, averaged across loans to small and medium-sized enterprises and large corporates, as reported in the BLS.

By contrast, bank balance sheet strength and absorption capacity before the tightening cycle does not seem to have significantly affected the qualitative allocation of credit (Chart C, panel b). Ample capital and liquidity buffers affect the way monetary policy is transmitted and can interact with banks' credit risk

management.[10] At the start of the recent tightening cycle, banks held large levels of liquidity and their capital buffers significantly exceeded the regulatory requirements. This was the result of years of stringent regulatory and supervisory scrutiny, which rendered the euro area banking system more resilient to shocks such as the banking turmoil of March 2023. However, the ex ante levels of capital buffers and excess liquidity ratios do not appear to be significant in explaining the shifts in the allocation of credit towards safer and riskier borrowers over the tightening cycle, whereas regulatory and supervisory pressure does seem to play a significant role, as discussed above.

[10] In particular, reallocation of credit from riskier to safer borrowers would be expected to be less prevalent among banks with higher capital and excess liquidity levels, in keeping with Gambacorta, L. and Shin, H.S., "Why bank capital matters for monetary policy", *Journal of Financial Intermediation*, Vol. 35, July 2018, pp. 17-29.

Articles

1 Sectoral dynamics and the business cycle in the euro area

Prepared by Niccolò Battistini and Johannes Gareis

1 Introduction

Sectoral dynamics are key to understanding the business cycle in two ways. First, sectors are an important source of aggregate fluctuations. For example, an individual sector may experience unexpected changes, or shocks, in its production processes, including severe disruptions to its supply chains. Recent examples of this include the semiconductor shortage that hit the automotive sector or the difficulties the transport sector had in sourcing labour.[1] Second, sectors play a prominent role in the propagation of shocks to overall economic activity. Indeed, different sectors interact through a network of input-output linkages, which in turn connect the primary inputs of production, such as labour and capital, to the final uses of goods and services, such as consumption and investment. Taken together, these interconnections shape the sectoral structure of the economy and affect how different sectors respond to shocks and propagate them to the business cycle.[2]

Recent developments, such as large sectoral shocks and visible changes in long-run trends, have rekindled interest in understanding the implications of sectoral dynamics for economic activity. On the one hand, the exceptional sequence of sectoral shocks observed in recent years – mobility restrictions impeding contact-intensive services, supply bottlenecks disrupting long supply chains for industries and gas price volatility affecting energy-intensive sectors – has revived interest in sectoral dynamics. On the other hand, recent developments in long-run trends, such as the slowdown in globalisation, the acceleration in digitalisation and the progress made towards the green transition may cause changes in the sectoral structure of the economy, warranting a reassessment of the propagation mechanism of shocks.[3]

How can sectoral dynamics inform the near-term assessment of the business cycle? To answer this question, this article examines the main features of recent sectoral developments in the euro area using the decomposition of quarterly real

1 For a detailed analysis of recent developments and an assessment of the near-term outlook for the automotive sector in the euro area, see the box entitled "Will the euro area car sector recover?" in this issue of the Economic Bulletin. For a recent analysis of how firms managed to cope with labour shortages, see the box entitled "Higher profit margins helped firms to hoard labour" in this issue of the Economic Bulletin.

2 For a study of the different sensitivities of sectoral activity to aggregate shocks and their implications for overall economic activity, see the box entitled "Monetary policy and the recent slowdown in manufacturing and services", *Economic Bulletin*, Issue 8, ECB, 2023.

3 This article only briefly mentions the role of long-term trends in the dynamics of the sectoral composition of the economy. A thorough assessment of their impact is beyond the scope of this article.

gross value added for eleven sectors provided by Eurostat.[4] This is the best way to measure economic activity at the highest possible level of granularity and frequency in a consistent way across countries.[5] After briefly reviewing the existing literature, the article presents new evidence on the implications of sectoral developments for the near-term outlook of economic activity in the euro area.

2 Existing literature

A large body of literature shows that sectors are important sources of business cycle fluctuations and that their interactions shape the propagation of shocks to the economy. Gabaix argues that idiosyncratic shocks to large firms may explain an important part of aggregate movements in economic activity.[6] Acemoglu, Carvalho, Ozdaglar and Tahbaz-Salehi extend this intuition to an economy with static intersectoral input-output linkages, showing that idiosyncratic shocks in sectors that are important direct and indirect suppliers of other sectors – such as producers of transport goods or service providers of professional activities (e.g. engineering or research and development) – can determine aggregate fluctuations.[7] Baqaee and Fahri, Acemoglu and Azar, and Elliott, Golub and Leduc further enrich this framework with endogenous production networks to show how the complexity of network linkages together with microeconomic structural features determine the propagation of shocks.[8] In their empirical work across advanced economies, Foerster, Sarte and Watson, Atalay, Garin, Pries and Sims, and De Graeve and Schneider provide evidence that sector-specific shocks are the foremost determinants of aggregate fluctuations.[9] In addition, Joya and Rougier, and Caraiani

4 Note that euro area economic activity has been increasingly affected by developments in Ireland over the last ten years, most notably due to the large role of multinational corporations in driving activity in manufacturing and information and communication. See the box entitled "Intangible assets of multinational enterprises in Ireland and their impact on euro area GDP", *Economic Bulletin*, Issue 3, ECB, 2023. However, all the empirical results in this article are robust, to the exclusion of Ireland.

5 The eleven sectors correspond to the NACE2 data on real gross value added for sectors A (henceforth, agriculture), B, D and E (mining and energy), C (manufacturing), G, H and I (trade, transport and hospitality), J (information and communication), K (finance and insurance), L (real estate), M and N (professional activities), O, P and Q (public administration) and R, S, T and U (arts and recreation). Note that, due to limited data availability, real gross value for mining and energy is proxied by the difference between real gross value added for B, C, D and E and real gross value added for C.

6 Gabaix, X., "The Granular Origins of Aggregate Fluctuations", *Econometrica*, Vol. 79, No 3, 2011, pp. 733-772, building on the contributions by Long, Jr., J.B. and Plosser, C.I., "Real Business Cycles", *Journal of Political Economy*, Vol. 91, No 1, 1983, pp. 39-69; Horvath, M., "Sectoral shocks and aggregate fluctuations", *Journal of Monetary Economics*, Vol. 45, Issue 1, 2000, pp. 69-106; and Dupor, W., "Aggregation and irrelevance in multi-sector models", *Journal of Monetary Economics*, Vol. 43, Issue 2, 1999, pp. 391-409.

7 Acemoglu, D., Carvalho, V.M., Ozdaglar, A. and Tahbaz-Salehi, A., "The Network Origins of Aggregate Fluctuations", *Econometrica*, Vol. 80, No 5, 2012, pp. 1977-2016.

8 Baqaee, D.R. and Farhi, E., "The Macroeconomic Impact of Microeconomic Shocks: Beyond Hulten's Theorem", *Econometrica*, Vol. 87, 2019, pp. 1155-1203; Acemoglu, D. and Azar, P.D., "Endogenous Production Networks", *Econometrica*, Vol. 88, Issue 1, 2020, pp. 33-82; and Elliott, M., Golub, B. and Leduc, M.V., "Supply Network Formation and Fragility", *American Economic Review*, Vol. 112, No 8, 2022, pp. 2701-47.

9 Foerster, A.T., Sarte, P-D.G. and Watson, M.W., "Sectoral versus Aggregate Shocks: A Structural Factor Analysis of Industrial Production", *Journal of Political Economy*, Vol. 119, No 1, 2011, pp. 1-38; Atalay, E., "How Important Are Sectoral Shocks?", *American Economic Journal: Macroeconomics*, Vol. 9, No 4, 2017, pp. 254-280; Garin, J., Pries, M.J. and Sims, E.R., "The Relative Importance of Aggregate and Sectoral Shocks and the Changing Nature of Economic Fluctuations", *American Economic Journal: Macroeconomics*, Vol. 10, No 1, 2018, pp. 119-48; and De Graeve, F. and Schneider, J.D., "Identifying sectoral shocks and their role in business cycles", *Journal of Monetary Economics*, Vol. 140, 2023, pp. 124-141.

et al. show how the economic impact of sectoral and aggregate shocks depends on the characteristics of the production network.[10]

The existing literature devotes relatively little attention to the predictive power of the sectoral features of the economy for business cycle fluctuations. A large part of the theoretical literature uses static quantitative models of production networks or assumes a complete propagation of shocks within a single period. Furthermore, the empirical literature focuses mostly on the explanatory power of sectoral shocks for overall macroeconomic fluctuations without exploring the dynamics of their propagation. However, recent works by Baqaee, Fahri and Rubbo, based on dynamic models with an incomplete pass-through of shocks through long supply chains, show that shocks ripple through the economy only gradually.[11] Building on their insights, this article investigates to what extent sectoral developments may act as leading indicators for aggregate economic activity.[12]

3 Cross-sectoral shifts in activity and the business cycle

Between 1999 and 2023, the sectoral composition of euro area economic activity remained broadly similar despite episodes of significant shifts in activity across sectors. Looking at the sectoral shares of real gross value added in the euro area in 1999, 2019 and 2023 (Chart 1), the sectoral composition of economic activity in the euro area seems largely stable, as the ranking across sectors by size and the sectoral concentration of activity (measured by the weighted average of sectoral shares) remained broadly the same. Specifically, public administration, trade, transport and hospitality, and manufacturing were still the largest sectors, followed by professional activities and real estate. Over the same period, the composition of activity changed visibly only for relatively small sectors. Some of these exhibited a steady decline, such as construction, due mainly to the contraction in the housing market after the global financial crisis, and mining and energy, especially after the recent energy crisis, while others recorded steady growth, such as information and communication, most notably following the increasing digitalisation of the economy. However, these long-term developments largely overlook short-term shifts in activity across sectors in specific episodes.

10 Joya, O. and Rougier, E., “Do (all) sectoral shocks lead to aggregate volatility? Empirics from a production network perspective”, *European Economic Review*, Vol. 113, Issue C, pp. 77-107; and Caraiani, P., Dutescu, A., Hoinaru, R. and Stănilă, G.O., "Production network structure and the impact of the monetary policy shocks: Evidence from the OECD", *Economics Letters*, Vol. 193, Issue C, 2020.

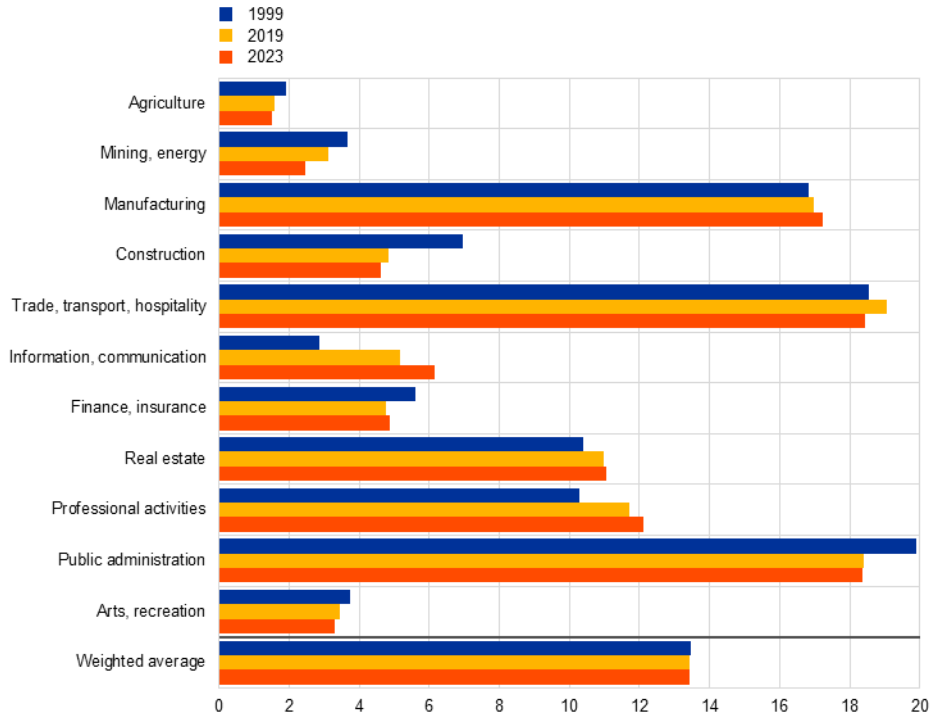
11 Baqaee, D.R. and Farhi, E., “Networks, Barriers, and Trade”, *Econometrica*, Vol. 92, 2024, pp. 505-541; and Baqaee, D.R. and Rubbo, E., “Micro Propagation and Macro Aggregation”, *Annual Review of Economics*, Vol. 15, 2023.

12 Assessing the leading-indicator properties of sectoral developments is important, especially in the light of the time lag in the availability of sectoral hard data on value added. Indeed, the presence of leading-indicator properties would justify the use of recent high-frequency, short-term indicators for sectoral output as well as past sectoral hard data on value added to inform the near-term outlook of overall economic activity.

Chart 1

Sectoral composition of economic activity in the euro area

(sectoral share; percentages of real gross value added)



Sources: Eurostat, ECB calculations.
Note: The weighted average uses the sectoral shares of real gross value added as weights and it is a synthetic measure for the degree of sectoral concentration of the economy, in the spirit of a Herfindahl-Hirschmann Index (commonly used to gauge market concentration at the firm level) applied to sectoral real gross value added.

Relatively short-lived episodes of significant shifts in activity across sectors occurred during the two largest euro area recessions. These cross-sectoral shifts in activity can be shown by a simple overall index measuring the aggregate absolute magnitude of changes in sectoral shares at a quarterly frequency, as detailed in Box 1.[13] This overall index of cross-sectoral shifts increases with the magnitude of the changes in sectoral shares, thus indicating a greater reallocation of activity across sectors in the economy. Looking at the evolution of this index between 1999 and 2023 (Chart 2), cross-sectoral shifts increased significantly on two occasions: the first occurred during the global financial crisis and the second during the pandemic crisis.[14] These developments hint at the presence of a clear correlation between large recessions and sizeable reallocations of activity across sectors. Moreover, the index of cross-sectoral shifts provides insights into the magnitude of the recessions, indicating that larger index values are associated with

13 This index of cross-sectoral shifts is inspired by the seminal work by Lilien, D. M., "Sectoral Shifts and Cyclical Unemployment", *Journal of Political Economy*, Vol. 90, No 4, 1982, pp. 777-793, as well as more recently by Chodorow-Reich, G. and Wieland, J., "Secular Labor Reallocation and Business Cycles", *Journal of Political Economy*, Vol. 128, No 6, 2020, pp. 2245-2287. In this article, the index is computed as proposed by Tase, M., "Sectoral dynamics and business cycles", *Economics Letters*, Vol. 175, 2019, pp. 60-63. It is based solely on accounting decompositions and does not rely on model assumptions to net out the impact of the business cycle, such as the measure proposed by Rissman, E.R., "Measuring labor market turbulence", *Economic Perspectives*, Federal Reserve Bank of Chicago, Vol. 21, No 3, 1997, pp. 2-14.

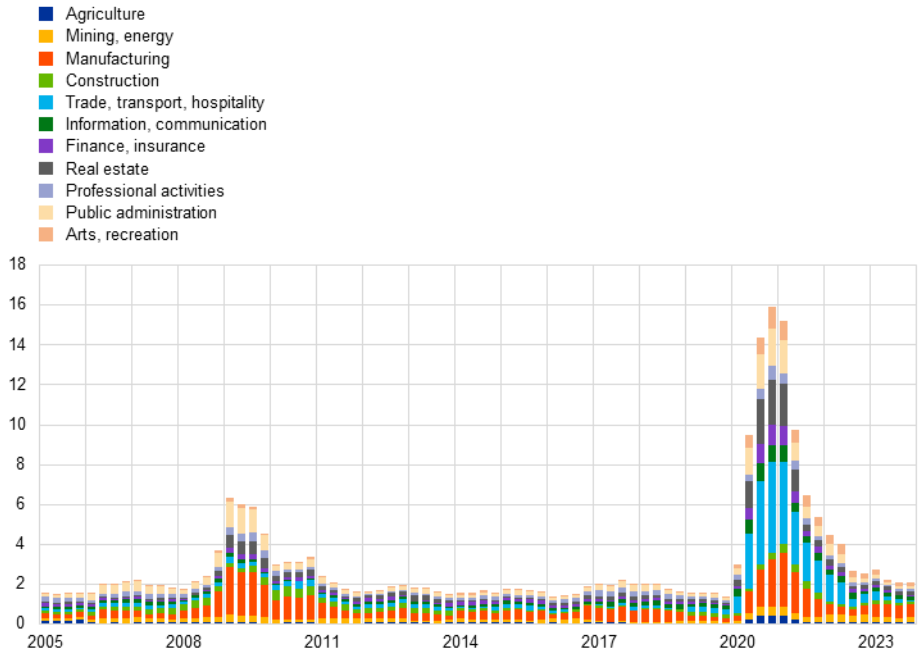
14 In the absence of Ireland, the index of cross-sectoral shifts would exhibit almost identical dynamics to the index shown in Chart 2.

deeper contractions in economic activity. Indeed, in year-on-year terms, the index increased by about 6 percentage points of real gross value added on average in 2009 as real GDP decreased by about 4 per cent, while it gained about 11 percentage points on average in 2020 vis-à-vis a contraction in real GDP of about 6 per cent on average. This correlation between the magnitude of cross-sectoral shifts and the depth of recessions mainly stems from the rebalancing of activity *within* the services sector that occurred during the pandemic crisis.[15]

Chart 2

Shifts in economic activity across sectors in the euro area

(year-on-year changes and contributions; percentage points of real gross value added)



Sources: Eurostat, ECB calculations.
Notes: The bars represent the absolute value of the year-on-year changes in each sector's share of total real gross value added. By construction, the actual changes (not in absolute value) across sectors sum to zero at each point in time. The latest observations are for the fourth quarter of 2023.

Shifts in activity across sectors reflect a reallocation of activity between and within countries. The overall index of cross-sectoral shifts can be broken down into between-country and within-country indices of cross-sectoral shifts (see Box 1).[16] Looking at the absolute magnitude of cross-sectoral shifts, as in the case of the overall index, the between-country index gauges the reallocation of activity from one country to another assuming unchanged sectoral shares, while the within-country

15 Note that a less detailed index of cross-sectoral shifts constructed with only industry and market services would not display the correlation in terms of magnitude, as it would miss the reallocation of activity within the services sector during the pandemic crisis and would show a similar increase during the global financial crisis and the pandemic crisis. For the role of contact-intensive services in driving economic activity in the aftermath of the pandemic crisis, see the box entitled "The impact of containment measures across sectors and countries during the COVID-19 pandemic", *Economic Bulletin*, Issue 2, ECB, 2021, the box entitled "Economic developments and outlook for contact-intensive services in the euro area", *Economic Bulletin*, Issue 7, ECB, 2021, and the box entitled "What role do reopening effects play across countries and sectors?", *Economic Bulletin*, Issue 6, ECB, 2023.

16 In a different context, a similar accounting decomposition was used to understand the secular decline in the wage share of income by Karabarbounis, L. and Neiman, B., "The Global Decline of the Labor Share", *Quarterly Journal of Economics*, Vol. 129, Issue 1, 2014, pp. 61-103.

index measures the shifts in activity from one sector to another assuming unchanged country shares.[17] The between-country index may therefore reflect shocks inducing cross-country asymmetries, since these shocks entail a relocation of production processes across countries aimed at making efficiency gains through specialisation and comparative advantage, but which require large adjustment costs and thus typically occur gradually.[18] In contrast, the within-country index may reflect shocks leading to cross-sectoral asymmetries, as these shocks imply changes in the use of factors of production by different sectors, such as hours worked and capital utilisation, which companies may need to implement during a crisis and then unwind as the economy improves. This interpretation appears to be confirmed by the empirical analysis in Box 1, according to which unexpected movements in between-country and within-country cross-sectoral shifts induce persistent positive and negative effects on economic activity respectively.[19] Indeed, the within-country and the between-country indices show significantly different dynamics between 1999 and 2023, indicating their potentially different role in predicting fluctuations in economic activity (Chart 3). While the within-country index largely explains the overall index and is tightly linked to the occurrence of recessions, the between-country index exhibits significantly smaller changes and tends to increase during recoveries, such as between the global financial crisis and the sovereign debt crisis and then again before and after the pandemic crisis, despite a marked increase also during the pandemic crisis, as in the case of the within-country index.[20]

17 This methodology makes it possible to identify symmetric shocks as well as cross-country and cross-sectoral asymmetric shocks. In this way, it contributes to the literature on the assessment of the importance of sectoral and aggregate shocks in driving macroeconomic fluctuations, such as Foerster et al., op. cit., Garin et al., op. cit., and the box entitled "Disentangling aggregate and sectoral shocks", *Economic Bulletin*, Issue 3, ECB, 2020.

18 In their discussion of the secular decline of the wage share, Karabarbounis and Neiman, op. cit., find that within-sector reallocations explain most of the variation in the wage share over time and across countries, while between-sector reallocations play a relatively minor role in driving the wage share. On the basis of these dynamics, the authors argue that between-sector shifts may be related to long-run developments, such as globalisation more generally.

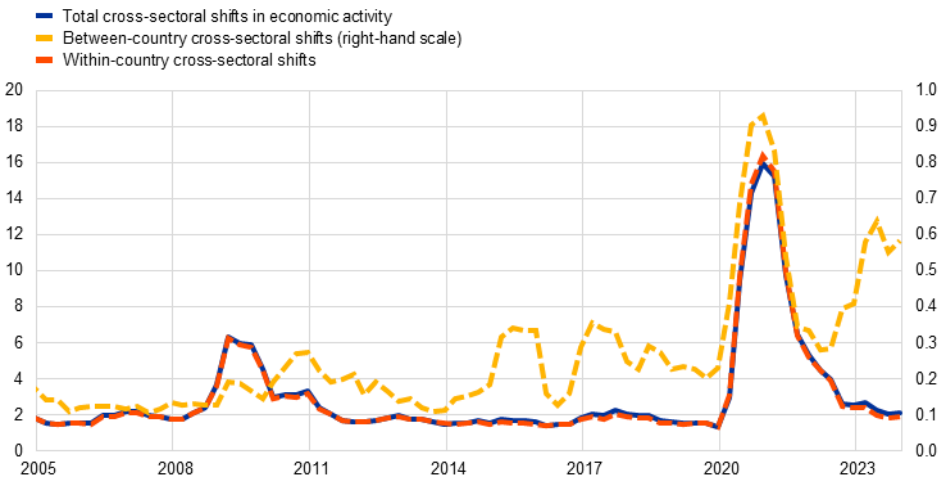
19 This interpretation is also in line with empirical evidence and theoretical foundation proposed by Garin et al., op. cit., which show that reallocative shocks of labour supply across sectors – regardless of the direction of the reallocation – precipitate a reduction in employment and thus in output.

20 The between-country index for the euro area as a whole increases several times, especially in 2011, 2015, 2017 and again in 2022 and 2023, mainly due to large shifts in German and Irish manufacturing and Irish information and communication, but also reallocations in trade, transport and hospitality, real estate and public administration across the largest countries. In the absence of Ireland, the index of within-country cross-sectoral shifts would exhibit almost identical dynamics to the index shown in Chart 3, while the index of between-country cross-sectoral shifts would show less marked but still sizeable spikes in 2011, 2015 and 2017 (driven by trade, transport and hospitality, and manufacturing), as well as in 2020 and beyond (driven also by real estate and public administration), reflecting contributions by the largest countries.

Chart 3

Cross-sectoral shifts in euro area economic activity between and within countries

(year-on-year changes and contributions; percentages and percentage points of real gross value added)



Sources: Eurostat, ECB calculations.
Notes: Between-country cross-sectoral shifts represent the absolute magnitude of year-on-year changes in sectoral shares of real gross value added explained by shifts in activity across countries, conditional on no change in the sectoral composition of economic activity within countries. Within-country cross-sectoral shifts represent the absolute magnitude of year-on-year changes in sectoral shares of real gross value added explained by shifts in activity across sectors in each country, conditional on no change in the country composition of economic activity in the euro area. The latest observations are for the fourth quarter of 2023.

An empirical model shows that the two largest recessions in the euro area were driven mainly by asymmetric shocks across sectors. The empirical model disentangles the contributions of symmetric shocks as well as cross-country and cross-sectoral asymmetric shocks to overall economic activity (see Box 1). To this end, the model assumes that symmetric shocks affect only real GDP on impact, while asymmetric shocks induce changes in both real GDP and cross-sectoral shifts.[21] Importantly, the model allows the data to indicate the direction of the response of real GDP to asymmetric shocks. The model suggests that cross-country and cross-sectoral asymmetric shocks respectively induce lasting positive and negative changes in activity. It thus confirms that cross-sectoral shifts between and within countries are important leading indicators of aggregate activity. Using the model to interpret fluctuations in aggregate activity, the results show that symmetric shocks played a relatively large role over time, especially in the sovereign debt crisis, but cross-sectoral asymmetric shocks explained a significant part of the economic recessions during the global financial crisis and, to a larger extent, the pandemic crisis, suggesting that cross-sectoral (relative to cross-country) dynamics played a prominent role in the euro area business cycle (Chart 4). [22] Looking ahead, it indicates that, as the impact of the pandemic subsides, cross-country and cross-

[21] Note that this identification strategy implies that asymmetric or symmetric shocks do or do not *lead to* shifts in activity across countries and sectors respectively. Hence, this identification strategy does not explain whether asymmetric or symmetric shocks do or do not *originate from* a specific country or sector respectively. In other words, the shocks are identified on the basis of their effects (ex post), rather than their causes (ex ante).

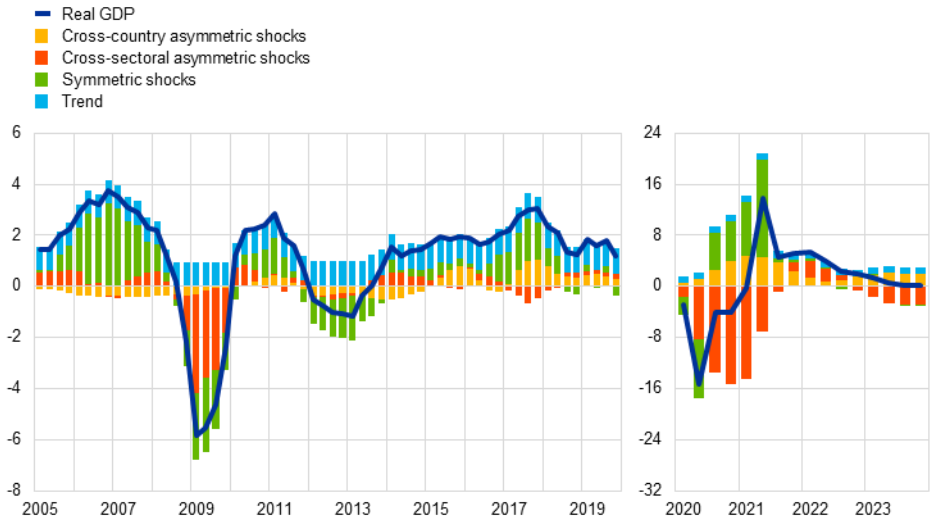
[22] This result is in line with empirical and theoretical evidence showing that a country-specific financial shock induces a synchronisation of the business cycle across financially integrated countries. See Cesa-Bianchi, A., Imbs, J. and Saleheen, J., "Finance and synchronization," *Journal of International Economics*, Vol. 116, 2019, pp. 74-87.

sectoral asymmetric shocks should have a broadly offsetting impact on economic activity, implying an overall moderate momentum in the near term.[23]

Chart 4

Drivers of real GDP in the euro area due to cross-sectoral shifts between and within countries

(year-on-year changes; percentages and percentage points computed as log deviations times 100)



Sources: Eurostat, ECB calculations.
Notes: The chart shows the year-on-year changes in the (log) level of real GDP and the contributions from unexpected movements (shocks) in between-country and within-country cross-sectoral shifts in economic activity in the euro area based on an estimated empirical model. See Box 1 for details on the estimation of the empirical model. The latest observations are for the fourth quarter of 2023.

Box 1

Disentangling the business cycle implications of cross-sectoral shifts in activity between and within countries

Prepared by Niccolò Battistini and Johannes Gareis

This box investigates the changes in the allocation of economic activity across sectors over time and explores how these sectoral dynamics relate to the euro area business cycle. It first explains the methodology used to construct a simple index of sectoral dynamics based on shifts in euro area economic activity across sectors. It then shows how to decompose this index into two components reflecting cross-sectoral shifts between and within euro area countries, suggesting a possible interpretation of their dynamics as being driven by cross-country and cross-sectoral asymmetric shocks respectively. To confirm this interpretation, the box applies an empirical model to estimate the impact of symmetric and (cross-country and cross-sectoral) asymmetric shocks on economic activity.

A simple index can measure the extent of the allocation of economic activity across sectors in the euro area as well as its breakdown between and within countries. The index of sectoral dynamics is computed as the sum of the absolute value of the changes in the sectoral shares of euro area real gross value added across all sectors between two consecutive quarters.[24] Hence, the larger the

[23] These results are not significantly affected by the exclusion of Ireland and/or the post-pandemic period.

[24] By construction, the sum of the same changes would equal zero if they were not taken in absolute value.

index, the more pronounced the changes in the sectoral composition of the economy. In turn, each sectoral change can be further broken down into a first component reflecting the change in every country's share of the euro area economy (conditional on a constant country-specific sectoral share) and a second reflecting the change in every country's sectoral share (conditional on a constant country share of the euro area economy).[25] In other words, the first and second components reflect cross-sectoral shifts driven by the allocation of activity between and within countries respectively. As discussed in Section 3, the between-country and within-country indices of cross-sectoral shifts exhibit markedly different dynamics, the former being associated mainly with recoveries, the latter with recessions. In turn, these dynamics suggest that these indices can be interpreted as reallocations of activity induced by cross-country and cross-sectoral asymmetric shocks with positive and negative implications for economic activity respectively.

An empirical model shows the different role of cross-country and cross-sectoral asymmetric shocks in driving the euro area business cycle. The model is a structural vector autoregression estimated with Bayesian techniques on aggregate euro area data from the first quarter of 1999 to the fourth quarter of 2023.[26] The baseline version of the model includes the index of total cross-sectoral shifts and real GDP, while the extended version includes the two indices of between-country and within-country cross-sectoral shifts and real GDP. The model teases out the economic impact of symmetric and asymmetric shocks by assuming that positive symmetric shocks raise real GDP and do not imply any change in cross-sectoral shifts, while positive asymmetric shocks increase cross-sectoral shifts and may affect real GDP in either direction. According to the baseline model (Chart A, panel a), total asymmetric shocks reduce real GDP on average by more than 0.3% on impact, about 0.4% at trough and around 0.3% over the medium term.[27] According to the extended model (Chart A, panels b and c), these results mask opposing effects from cross-sectoral asymmetric shocks, which induce a larger negative impact compared with total asymmetric shocks, and cross-country asymmetric shocks, which instead exert persistent and increasing upward pressure on real GDP, reaching almost 0.6% after five years, on average. Hence, these results indicate that shifts in activity across sectors within countries are associated with recessions, while reallocations between countries generate a prolonged increase in activity. Overall, these results suggest that between-country and within-country cross-sectoral shifts have significant implications for business cycle fluctuations over the near term.

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25 The index of total cross-sectoral shifts (σ_t) is computed as $\sigma_t = \sum_s \left|\Delta\omega_{s,t}\right|$ and the between-country ($\sigma_{b,t}$) and within-country ($\sigma_{w,t}$) components are calculated as $\sigma_{b,t} = \sum_s \left|\sum_c \mu\omega_{c,s,t}\, \Delta\omega_{c,t}\right|$ and $\sigma_{w,t} = \sum_s \left|\sum_c \mu\omega_{c,t}\, \Delta\omega_{c,s,t}\right|$, with $\omega_{s,t}$, $\omega_{c,t}$, and $\omega_{c,s,t}$ denoting the share of sector s in euro area real gross value added, the share of country c in euro area real gross value added and the share of sector s in country c's real gross value added respectively, for each quarter t. Further, the symbols Δ and μ denote the change and the sum of the following variable over quarter $t-1$ and t respectively. Note that the sum of the two components is greater than or equal to the index due to the absolute values and the following accounting identity: $\sum_s \Delta\omega_{s,t} = \sum_s \left(\sum_c \mu\omega_{c,s,t}\, \Delta\omega_{c,t} + \sum_c \mu\omega_{c,t}\, \Delta\omega_{c,s,t}\right) = \sum_s \sum_c \mu\omega_{c,s,t}\, \Delta\omega_{c,t} + \sum_s \sum_c \mu\omega_{c,t}\, \Delta\omega_{c,s,t}$. The computation of the index of total cross-sectoral shifts follows Tase, op. cit. The decomposition of the index into its between- and within-country components follows an analogous methodology applied to the wage share of income by Karabarbounis and Neiman, op. cit.

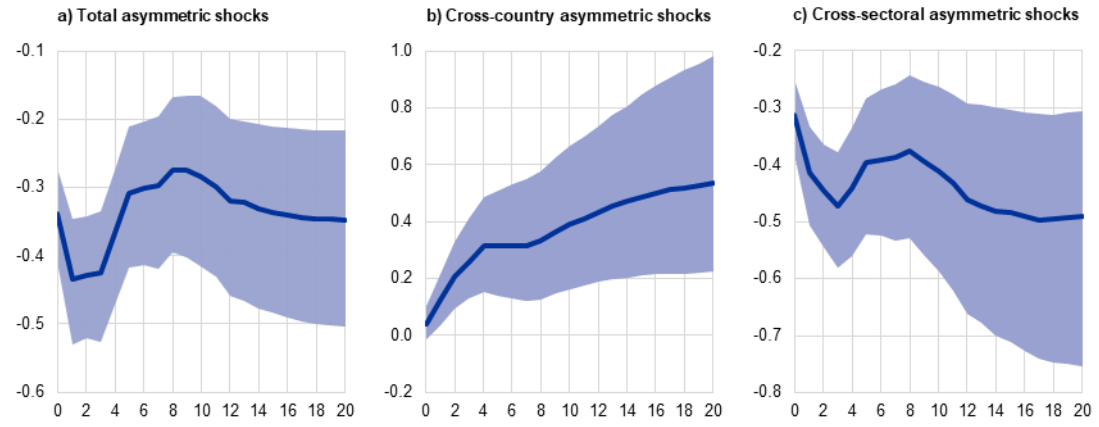
26 The models use data for the euro area as a whole and account for the marked volatility of macroeconomic data in 2020 by using a pandemic heteroskedasticity adjustment from the first to the fourth quarter of 2020. See Lenza, M. and Primiceri, G., "How to estimate a vector autoregression after March 2020", *Journal of Applied Econometrics*, Vol. 37, Issue 4, June/July 2022, pp. 688-699.

27 These results are qualitatively and quantitatively in line with those in Tase, op. cit. and are robust to the exclusion of Ireland and/or the post-pandemic period.

Chart A

Average impact of asymmetric shocks on real GDP in the euro area

(x axis: quarters; y axis: percentages, computed as log deviations times 100)



Sources: Eurostat, ECB calculations.
Notes: The charts in panels a, b, and c show the dynamic impact on the log level of real GDP of a unit-standard deviation shock in quarter-on-quarter total, between-country, and within-country shifts in sectoral shares, corresponding to 0.36, 0.04 and 0.32 percentage points of real gross value added respectively. The solid line refers to the median and the shaded areas refer to the 68% credibility bands. The structural vector autoregression model is estimated with Bayesian techniques from the first quarter of 1999 to the fourth quarter of 2023, including twelve lags and a Minnesota prior with a pandemic heteroskedasticity adjustment from the first to the fourth quarter of 2020 (Lenza and Primiceri, op. cit.).

4 Granular sectoral developments and the business cycle

Cross-sectoral shifts, as measured by the overall index mentioned previously, have important implications for the business cycle over the near term, but the dynamics of individual sectors also provide useful information. These granular sectoral dynamics are important because specific characteristics, such as an individual sector's relative size, volatility or sensitivity to aggregate shocks affect their leading-indicator properties. Moreover, sectors are interconnected through input-output linkages. Changes in activity specific to one sector can therefore have cascading effects on other sectors and become a source of macroeconomic fluctuations, especially if the sector affected by the shock has a central position within the production structure of the economy.

Manufacturing, construction, trade, transport and hospitality as well as professional activities individually act as leading indicators for overall economic activity in the euro area. To gauge the leading-indicator characteristics of activity in the eleven sectors of the euro area economy, a vector autoregressive model assesses whether activity in a sector is helpful for predicting real GDP. The model is based on "Granger causal priority", which takes into account the indirect effects between economic activity in the different sectors and other macroeconomic variables, and estimates the probabilities that activity in an individual sector predicts real GDP better than vice versa.[28] A high probability means that sectoral activity is

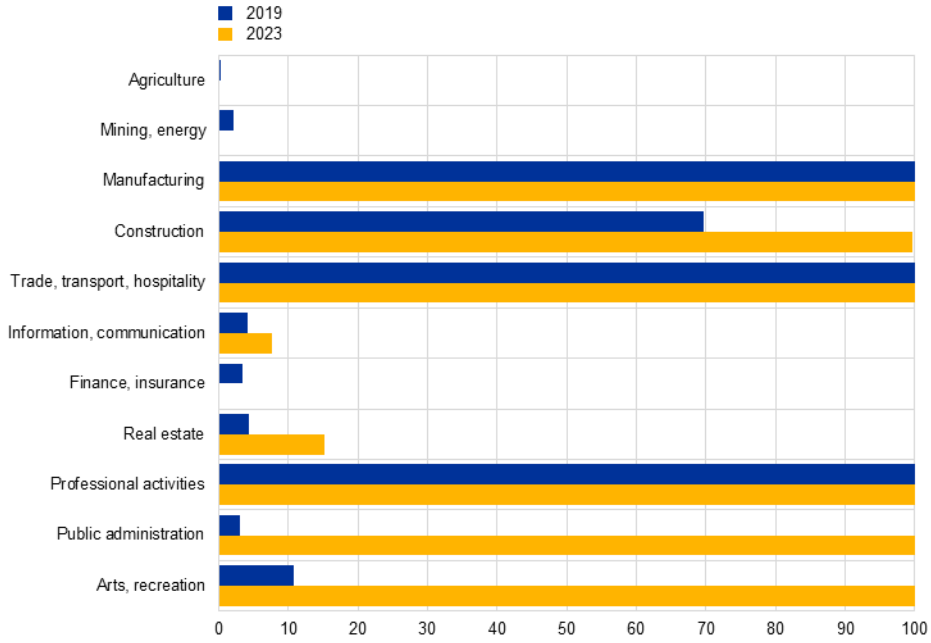
[28] To this end, the model uses the unweighted (auto)correlation pattern between all variables. Therefore, the estimated Granger causal priority cannot be interpreted structurally, as the model is silent about the underlying causes for the different leading-indicator characteristics of the sectors. See Jarociński, M. and Maćkowiak, B., "Granger Causal Priority and Choice of Variables in Vector Autoregressions", *The Review of Economics and Statistics*, MIT Press, Vol. 99, No 2, 2017, pp. 319-329.

very important for predicting real GDP. The results of the model show that manufacturing, trade, transport and hospitality, and professional activities are the best predictors of real GDP for both the pre-pandemic sample and the full sample (Chart 5). In addition, construction activity tends to act as a leading indicator for overall economic activity, while other sectors do not appear to be very relevant. However, for the sample including the post-pandemic period, the estimated probabilities also point towards the importance of public administration and arts and recreation as sectors with leading-indicator characteristics. This result shows that these sectors were subject to strong and symmetric fluctuations in the post-pandemic period, with lasting effects on the overall economy.[29] However, as the effects of the pandemic subside, the leading-indicator role of these sectors is likely to weaken again in the future.

Chart 5

Leading-indicator relation between sectoral activity and real GDP in the euro area

(percentages)



Sources: Eurostat, European Commission, ECB and ECB calculations.
Notes: The chart shows the estimated probability that real GDP is not Granger causally prior to sectoral activity for two samples starting in the first quarter of 1999 and ending in the fourth quarter of 2019 (blue bars) and in the fourth quarter of 2023 (yellow bars) respectively. The empirical model follows Jarociński and Maćkowiak (see footnote 28). In addition to euro area real GDP and real gross value added in the eleven sectors, the HICP, 3-month Euribor, oil prices, effective euro exchange rate and economic sentiment measured by the European Commission survey are also included in the model. All variables are entered in the model in log levels, except for interest rates and economic sentiment, which are entered in levels.

The sectors of the euro area economy vary considerably in terms of their position within the production structure. Intuitively, the leading-indicator property of a sector is linked to its "centrality" within the economy, namely whether a sector occupies a central position in the economy's production network and can therefore be an important source or propagator of shocks. This centrality can be measured using input-output tables in different ways. First-order centrality measures the direct

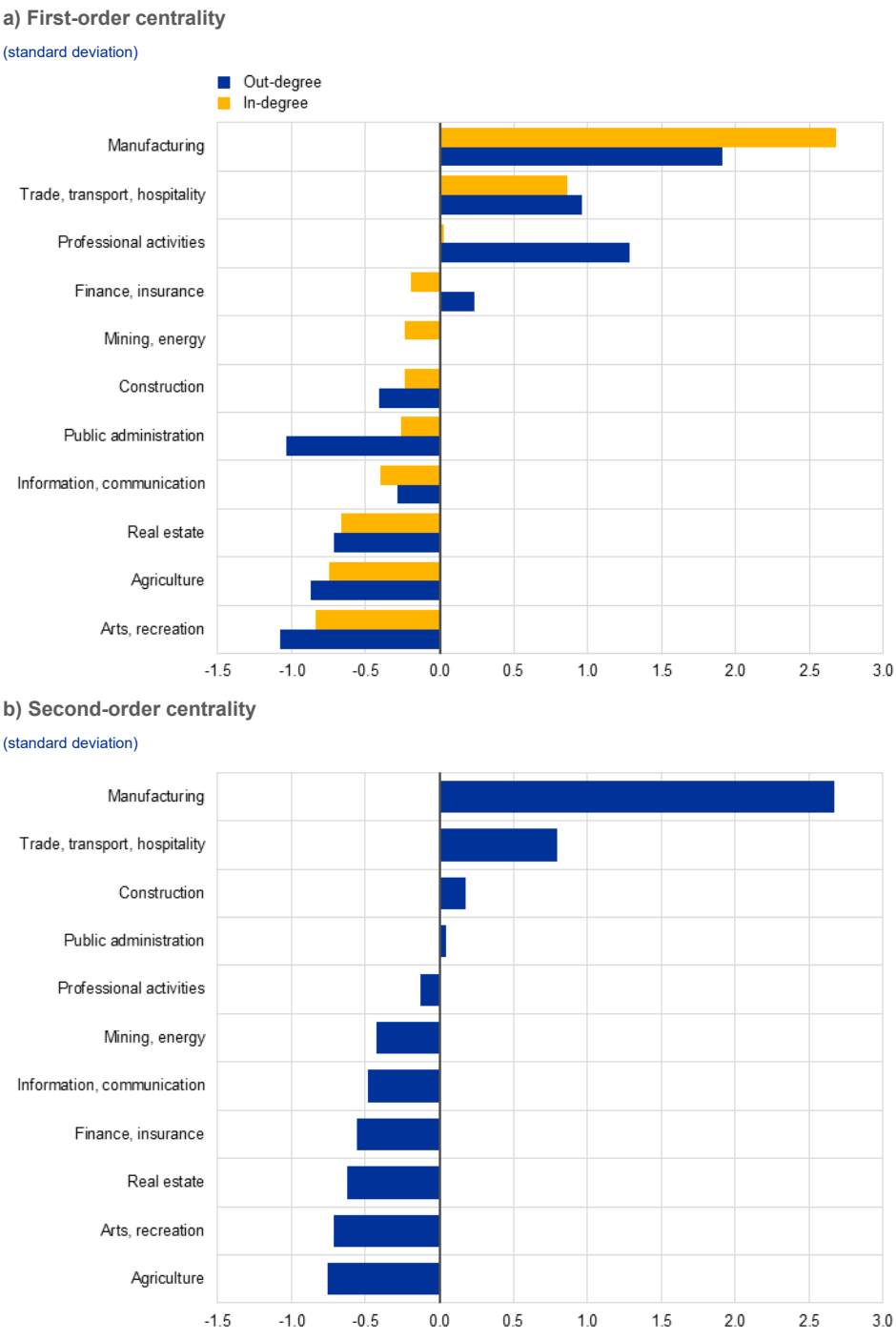
[29] See the box entitled "What role do reopening effects play across countries and sectors?", *Economic Bulletin*, Issue 6, 2023.

links of a sector as a provider or user of inputs to or from other sectors. Second-order centrality gauges the direct and indirect links across the entire network of sectors. According to the second-order centrality, a sector can therefore also be central if it has few links with other important sectors. Computations based on Eurostat's FIGARO input-output tables show that the most central sector of the euro area economy according to both first-order and second-order centrality is manufacturing (Chart 6, panels a and b).[30] In addition to the manufacturing sector, trade, transport and hospitality also have a relatively high first and second-order centrality. Construction, on the other hand, has relatively few direct links to other sectors based on first-order out-degree and in-degree centrality (hence, low first-order centrality) but is a very central sector based on second-order centrality because it is linked to other important sectors, such as manufacturing. The least central sectors within the production structure of the euro area economy are agriculture and arts and recreation, both in terms of first-order centrality and second-order centrality.

[30] Eurostat's FIGARO input-output tables contain information on production linkages between the two-digit NACE2 level, covering a total of 64 subsectors and 46 countries, and are available at an annual frequency from 2010 to 2021. The domestic input-output table for the euro area for the 64 subsectors are aggregated into the eleven main sectors and first- and second-order centrality measures are constructed. The measures for first-order out-degree and in-degree centrality of sector i are defined as the importance of sector i as a producer and a user for all other sectors and they are computed as $foc_i = \sum_j a_{ij}$ and $fic_i = \sum_i b_{ij}$ respectively, with a_{ij} denoting the use of sector i's input by sector j relative to sector j's total output and b_{ij} the use of sector i's input by sector j relative to sector i's total output. Second-order centrality is measured by PageRank centrality, which measures the importance of sector i as a producer and a user for all other sectors and is computed as $sc_i = (I - \delta A)^{-1} 1_i$, with δ denoting the dampening factor (i.e. the probability that a random walk follows a link), A the matrix with elements a_{ij} (see previous footnote) and I and 1_i the identity matrix and (standardised) selection vectors respectively. See Acemoglu et al., op. cit. and Joya and Rougier, op. cit. Among the manufacturing subsectors at the two-digit NACE2 level, the automotive sector has the highest second-order centrality, followed by the manufacture of food, beverages and tobacco and the manufacture of machinery.

Chart 6

Position of sectors in the production structure of the euro area economy



Sources: FIGARO and ECB calculations.
Notes: The chart shows standardised values with mean zero and a standard deviation of one for the average values for first-order and second-order centrality for the available data from 2010 to 2021. First-order centrality is measured in terms of in-degree and out-degree, while second-order centrality is measured by PageRank centrality. The sectors are sorted according to the degree of centrality, with the sector with the highest centrality coming first. In panel a, this order refers to the in-degree.

A formal test confirms that the leading-indicator characteristics of manufacturing, construction, trade, transport and hospitality and of professional activities are linked to these sectors' central position within the

euro area economy. To formally check whether centrality can explain the relevance of sectoral activity for predicting real GDP, a cross-sectional regression is performed for the ten largest euro area countries, relating the leading-indicator characteristic of a sector to its various centrality measures and taking into account the relative size and volatility of a sector.[31] The results show that, for the pre-pandemic sample, the different centrality measures are positively and statistically significantly associated with the leading-indicator characteristic of a sector, while size and volatility do not seem to matter (Table 1, columns 1, 2 and 3). Indeed, while manufacturing and trade, transport and hospitality each have a relatively large share of total economic activity across the euro area, the share of construction is relatively small. In the sample covering the post-pandemic period, the first-order measures are not significant, while the second-order centrality remains significant, and size becomes statistically relevant in explaining the leading-indicator characteristics across sectors (Table 1, columns 4, 5 and 6). The latter result is explained by public administration, which is quite large and emerged as a sector with leading-indicator characteristics in the sample including the post-pandemic period.

[31] Similar to the results for the euro area for the pre-pandemic sample, manufacturing and trade, transport and hospitality are found to act as sectors with leading-indicator characteristics for overall economic activity in all countries considered; construction and professional activities were also found to act as sectors with leading-indicator characteristics in the vast majority of countries. The same is true for the sample that includes the pandemic, for which public administration and arts and recreation also emerge as leading-indicator sectors in all countries. In terms of centrality, manufacturing, construction, trade, transport and hospitality and professional activities are always relatively centrally located in the respective economies.

Table 1

Determinants of the leading-indicator properties of a sector

(coefficient estimates and standard errors (in parenthesis); dependent variable: Granger causal priority probabilities)

		1999-2019			1999-2023		
		1	2	3	4	5	6
First-order centrality	In-degree	0.14***			0.05		
		(0.004)			(0.053)		
First-order centrality	Out-degree		0.11***			0.02	
			(0.034)			(0.042)	
Second-order centrality	PageRank			0.19***			0.13**
				(0.044)			(0.057)
Size		-0.00	0.01	-0.01	0.028***	0.03***	0.01**
		(0.007)	(0.005)	(0.001)	(0.008)	(0.006)	(0.009)
Volatility		-0.06	-0.05	-0.07	0.04	0.06	0.02
		(0.032)	(0.031)	(0.030)	(0.054)	(0.052)	(0.054)
Total observations		**110**	**110**	**110**	**110**	**110**	**110**
R-squared		**0.20**	**0.20**	**0.25**	**0.25**	**0.25**	**0.28**

Sources: Eurostat, FIGARO, European Commission, ECB and ECB staff calculations.
Notes: The table presents cross-sectional regressions for the ten largest euro area member countries. The dependent variable is the Granger causal priority probability of a sector in each country. The first-order out-degree and in-degree centrality measures the importance of the producers of inputs for other sectors and the users of inputs from other sectors respectively, while PageRank centrality takes into account the direct sectoral inflows and outflows as well as the indirect links across the entire network of sectors. The size of a sector is measured by the share of sectoral real gross value added and the volatility by the standard deviation of the annual growth rate of a sector's real gross value added relative to total real gross value added, on average, over the corresponding sample. Ordinary standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1, where the p-value denotes the significance of the estimated coefficient. R-squared refers to McFadden's pseudo R-squared and indicates the relative explanatory power of the regressions.

The recent developments in economic activity in manufacturing, construction, trade, transport and hospitality as well as in professional activities point to moderate momentum for euro area real GDP in the near term. The (unweighted) average of the year-on-year changes in real gross value added for manufacturing, construction, trade, transport and hospitality as well as for professional activities generally appears to act as a leading indicator for developments in economic activity in the other sectors (Chart 7).[32] This underlines that activity in these sectors, which include both manufacturing and some market services, is more relevant for predicting overall economic activity than activity in the other sectors. In terms of recent economic developments, momentum in the sectors with leading-indicator properties declined in 2023, while it held steady in the other sectors, driven mostly by buoyant activity in information and communication, and in arts and recreation. Although activity in information and communication may continue to grow owing to the increase in digitalisation, activity in arts and recreation may be held back due to the dissipation of reopening effects. Together with weakening activity in the sectors with leading-indicator properties, these developments suggest moderate momentum

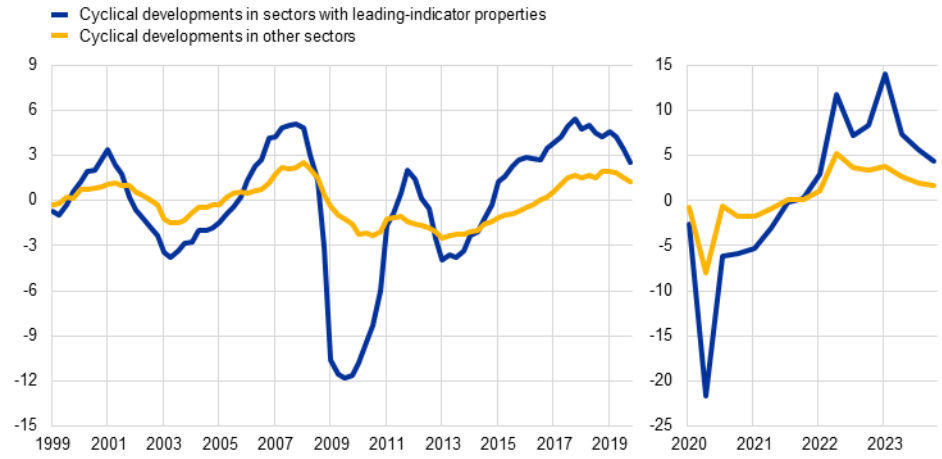
[32] For the pre-pandemic sample, the lead-lag relationship between growth in economic activity in the sectors with leading-indicator properties and in the other sectors shows a lead of half a year for the former. Including the pandemic period, the growth momentum in both sectors changes largely simultaneously.

in the overall economy over the near term in line with the signals from the cross-sectoral shifts in activity (Section 3).

Chart 7

Developments in sectors with leading-indicator properties and other sectors in the euro area

(year-on-year changes, percentages)



Sources: Eurostat and ECB calculations.
Notes: The chart shows the (unweighted) average of the year-on-year percentage changes for real gross value added in the sectors with leading-indicator properties (manufacturing, construction, trade, transport and hospitality as well as professional activities) and the other sectors in the euro area economy. The latest observations are for the fourth quarter of 2023.

5 Conclusion

The article provides model-based evidence that cross-sectoral shifts in activity can act as leading indicators for aggregate economic activity. Moreover, it shows that the overall index of cross-sectoral shifts – as measured by the sum of absolute changes in sectoral shares – masks opposing effects from shifts in activity between countries owing to the gradual relocation of production processes aimed at efficiency gains across countries, and within countries, reflecting detrimental changes in the use of resources across sectors. Based on model evidence, the article shows that between-country shifts anticipate lasting growth dynamics, while within-country shifts precede economic recessions.

The article further identifies four sectors with leading-indicator properties for aggregate activity, namely manufacturing, construction, trade, transport and hospitality, as well as professional activities. It then examines the position of sectors in the production structure of the euro area economy on the basis of their centrality, which measures a sector's importance in the economy in terms of its influence on other sectors; it then relates this centrality to a sector's usefulness for predicting real GDP. The article finds that the centrality of a sector, especially its second-order centrality, which measures its influence through direct and indirect effects within the economy's production structure, explains its predictive power with respect to economic activity.

Overall, the article underlines the importance of monitoring and analysing sectoral developments. It argues that examining cross-sectoral shifts from an aggregate perspective as well as individual sectoral developments from a granular perspective provides a comprehensive understanding of the economy and enables more effective policymaking. In fact, a thorough sectoral analysis helps to understand how shocks originate and propagate throughout the economy, which is crucial for assessing their potential magnitude and cascading effects. Ultimately, monitoring and analysing sectoral developments enables policymakers to anticipate and mitigate potential risks to the economy by adjusting their policy responses.

2 Longer-term challenges for fiscal policy in the euro area

Prepared by Edmund Moshammer

1 Introduction

In the future, various longer-term challenges are likely to exert pressure on public finances in the euro area. On top of the existing fiscal burdens – as reflected in the high debt ratios in a number of euro area countries, which were exacerbated by the pandemic and the subsequent energy crisis – there are several important longer-term challenges for fiscal dynamics. This article starts by reviewing some of the most important challenges and discussing their fiscal relevance, with a focus on demographic ageing (Section 2), the end of the "peace dividend" (Section 3), digitalisation (Section 4) and climate change (Section 5). Acknowledging the uncertainties surrounding any quantification of these challenges, Section 6 then presents some tentative – purely indicative – estimates of the additional fiscal effort that could be required to ensure the long-term sustainability of public finances in the presence of such developments. The implications of digitalisation are excluded from that exercise, given the particular uncertainty that surrounds their quantification. Section 7 then provides some concluding remarks.

2 Fiscal costs of ageing societies

The euro area is experiencing demographic ageing. The region is witnessing a significant decline in fertility rates, coupled with steady increases in life expectancy, resulting in an ageing population. At the level of the European Union as a whole, average remaining life expectancy at the age of 65 has increased over the last two decades, rising from 17.8 years in 2002 to 19.5 years in 2022.[1]

This demographic ageing presents challenges for government finances. With the number of elderly citizens increasing relative to the working-age population, pay-as-you-go pension systems face mounting financial pressures. Furthermore, ageing populations typically require more extensive healthcare services and long-term care.

Developments in ageing-related public spending vary across euro area countries. The recently published 2024 Ageing Report provides long-term projections for the key drivers of ageing-related costs and their components (which comprise pensions, health care, long-term care and education) in EU Member States over the period 2022-2070.[2] In the baseline scenario, which assumes unchanged policies, the euro area on aggregate will face an increase in ageing-related expenditure of 1.4 percentage points of GDP relative to today, but this could

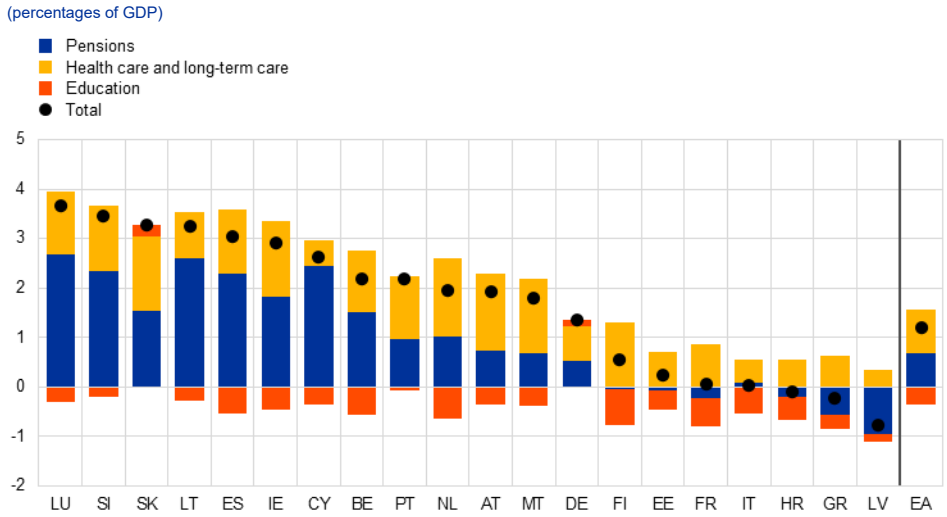
1 This figure peaked at 20.2 years in 2019 (i.e. pre-pandemic).

2 See European Commission, "2024 Ageing Report: Economic & Budgetary Projections for the EU Member States (2022-2070)", *European Economy – Institutional Papers*, No 279, April 2024.

increase to 4.0 percentage points in a risk scenario. And even in the baseline scenario five countries may need to increase their ageing-related spending by over 3 percentage points of GDP (Chart 1). The increase in the public cost of pensions has the highest variability across countries, given the varied nature of demographics and pension system arrangements at country level (e.g. the extent to which retirement ages are linked to life expectancy). The increased burden of ageing will require policy reforms or structurally increased savings in other areas.

Chart 1

Additional fiscal efforts required owing to ageing populations



Sources: 2024 Ageing Report and ECB calculations.
Notes: This chart shows, for each component, the average increase in ageing-related costs from 2023 to 2070, weighted by the cumulative product of the reciprocal interest-growth differential. This increase can be interpreted as the constant additional budget balance needed in all years to meet the fiscal burden of an ageing population. Public spending on pensions is net of tax revenues.

3 Fiscal costs of the end of the "peace dividend"

Russia's war of aggression against Ukraine has prompted far-reaching discussions on security, military spending and geopolitical stability. NATO members in the euro area have responded to this challenge by announcing and implementing large increases in defence spending, which represents a significant reversal of previous trends. As the Cold War thawed, all major economies reduced their defence expenditure (Chart 2, panel a). The United States and the United Kingdom more than halved their spending, reducing it from over 10% of GDP in the 1950s to less than 5% as of the 1990s. Germany and France, in turn, reduced their spending from over 4% of GDP to less than 2% today. Using this "peace dividend", governments refocused their budgets, targeting new priorities such as increased social welfare spending.[3] After Russia's annexation of Crimea in 2014, all NATO members agreed to spend at least 2% of GDP on defence.[4] Since then – and

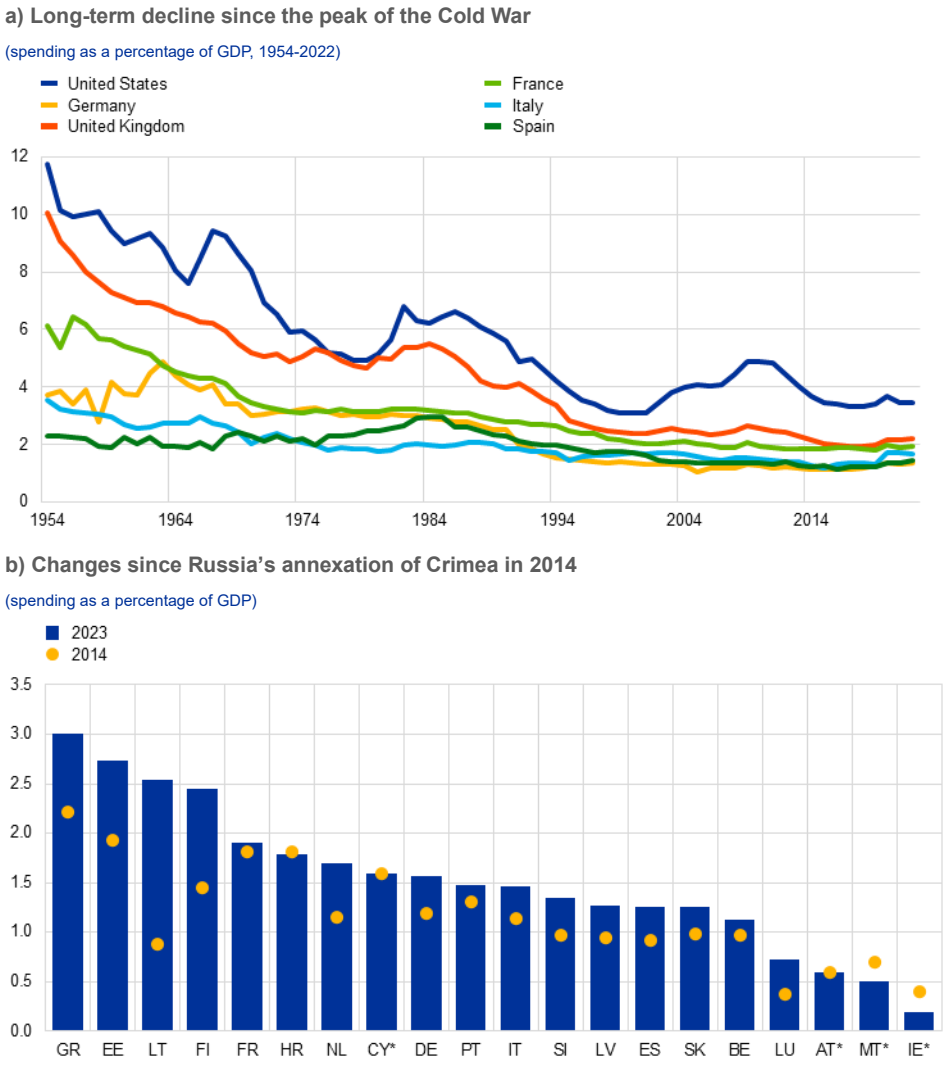
[3] See the article entitled "Social spending, a euro area cross-country comparison", *Economic Bulletin*, Issue 5, ECB, 2019.

[4] Only three of the 32 current NATO members achieved that target in 2014. By 2023, however, the number had risen to 11, and it is expected to reach 18 by the end of 2024. See "Pre-ministerial press conference by NATO Secretary General Jens Stoltenberg", 14 February 2024.

especially following Russia's full-scale invasion of Ukraine – the vast majority of euro area countries have increased their defence expenditure (Chart 2, panel b). If all euro area countries (including those that are not NATO members) were to increase their defence expenditure to 2% of GDP, this would result in an estimated €71 billion of additional spending annually – equivalent to 0.5% of euro area GDP.[5]

Chart 2

Public spending on defence



Sources: Stockholm International Peace Research Institute (SIPRI), NATO and Eurostat.
Notes: In panel a, data are sourced from SIPRI. In panel b, the asterisks denote non-NATO countries, where data are sourced from Eurostat and the blue bars refer to 2022. Data for other countries are sourced from NATO (press release from 7 July 2023).

Additional defence spending could potentially increase GDP growth in the EU, with positive implications for fiscal sustainability in the longer term, if it (i) is concentrated in R&D-intensive investment, (ii) does not crowd out other productive investment, and (iii) focuses on EU-based sources. According to the

[5] See also Freier, M., Ioannou, D. and Vergara Caffarelli, F., "EU public goods and military spending", Box 16 in "The EU's Open Strategic Autonomy from a central banking perspective – Challenges to the monetary policy landscape from a changing geopolitical environment", *Occasional Paper Series*, No 311, ECB, March 2023.

European Commission, using EU-based suppliers in defence contracts and, accordingly, shifting towards sourcing defence equipment and services from within the EU's internal market could stimulate economic growth in the longer term. The Commission recently announced the European Defence Industrial Strategy, which encourages EU Member States to make strategic investments in their defence capabilities while promoting intra-EU collaboration and cooperation.[6] One of the key pillars of this strategy involves ensuring that defence products are readily available through the European Defence Technological and Industrial Base. This is about incentivising Member States to procure defence equipment and services from EU suppliers, thereby strengthening domestic defence industries, reducing reliance on external sources and enhancing resilience to any potential geopolitical shocks. According to the Commission, this has the potential to support the growth and development of EU-based defence companies, fostering innovation, job creation and technological advancement within the region. It would also produce multiplier effects across different sectors and ultimately increase fiscal revenues.

The economic impact of Russia's war of aggression extends far beyond the realm of military spending. In the two years since the invasion of Ukraine, EU Member States and institutions have committed an estimated 0.55% of the EU's annual GDP in bilateral short-term support.[7] Furthermore, the EU has also established a €50 billion Ukraine Facility covering the period 2024-27. The World Bank estimates that Ukraine's overall recovery and reconstruction needs will total around $486 billion over the next ten years.[8]

Moreover, in 2022 and 2023, governments were also forced to react to the resulting energy crisis and the high levels of inflation that followed. Indirectly, the war in Ukraine triggered a large temporary fiscal policy response at European level aimed at counteracting the high energy prices and the ensuing inflation, thus pointing to the multifaceted challenges posed by the ongoing conflict.[9] While governments should continue to roll back these energy-related support measures in 2024 to allow the disinflation process to proceed sustainably, the longer-term challenge of improving energy security in the EU will remain.

As the war in Ukraine is still ongoing and the geopolitical landscape is also characterised by instability in the Middle East and other parts of the world, the full long-term fiscal cost of the end of the peace dividend remains uncertain and is very difficult to estimate. For instance, the fragmentation of global trade could have severe implications for producers and consumers alike. If firms restructure their production chains in order to source inputs from countries that are geographically closer, rather than those with the most efficient production capabilities, their production costs will typically increase.[10] While the indirect fiscal

6 See the Commission's website for more details.

7 See Kiel Institute for the World Economy, "Ukraine Support Tracker" database.

8 See World Bank, "Ukraine – Third Rapid Damage and Needs Assessment (RDNA3): February 2022 – December 2023", February 2024.

9 See the article entitled "Fiscal policy and high inflation", *Economic Bulletin*, Issue 2, ECB, 2023, and the box entitled "Update on euro area fiscal policy responses to the energy crisis and high inflation" in the same issue.

10 See Di Sano, M., Gunnella, V. and Lebastard, L., "Deglobalisation: risk or reality?", *The ECB Blog*, 12 July 2023.

effects are very difficult to quantify, they could be sizeable.[11] As a result, there continues to be significant uncertainty regarding the long-term fiscal consequences of these developments.

4 Fiscal costs of closing the digitalisation gap

The rising importance of digital value chains and transformative technologies is necessitating substantial investment in digital infrastructure and digital public services in order to maintain competitiveness. Before establishing the Recovery and Resilience Facility (RRF) in 2021, the European Commission estimated the EU's digital investment gap vis-à-vis the United States and China at €125 billion per year (equivalent to around 0.9% of the EU's GDP), calling for the resulting costs to be shared between the private and the public sector.[12] This will involve significant investment in digital infrastructure, particularly telecommunications networks.

In 2022, the EU adopted the Digital Decade Policy Programme 2030, a set of targets and objectives aimed at catching up in the area of digital transformation, supported by public investment. Around 70% of all funding for that programme – €117 billion in total – will come from the RRF, with €16.6 billion having been disbursed to fund the digital transition by March 2024 (Chart 3, panel a).[13] Under EU rules, at least 20% of all disbursed RRF funds must be spent on the digital transition. However, most Member States are exceeding this minimum threshold in their revised Recovery and Resilience Plans, with country-specific allocations of RRF funds to the digital transition ranging from the minimum of 20% in Croatia and Slovenia to 48.1% in Germany. The degree of digitalisation still varies considerably across countries. In order to gauge progress towards the targets set, a Digital Economy and Society Index (DESI) has been devised (Chart 3, panel b). This is a composite index comprising 32 sub-indicators, 11 of which are directly linked to the Digital Decade. The short time horizon limits any causal inference, but estimates suggest that there is a significant correlation between DESI scores and GDP per capita, further reinforcing the ongoing Digital Decade agenda.[14] Digital investment that results in the strengthening of economic growth may, ultimately, also boost fiscal revenues.

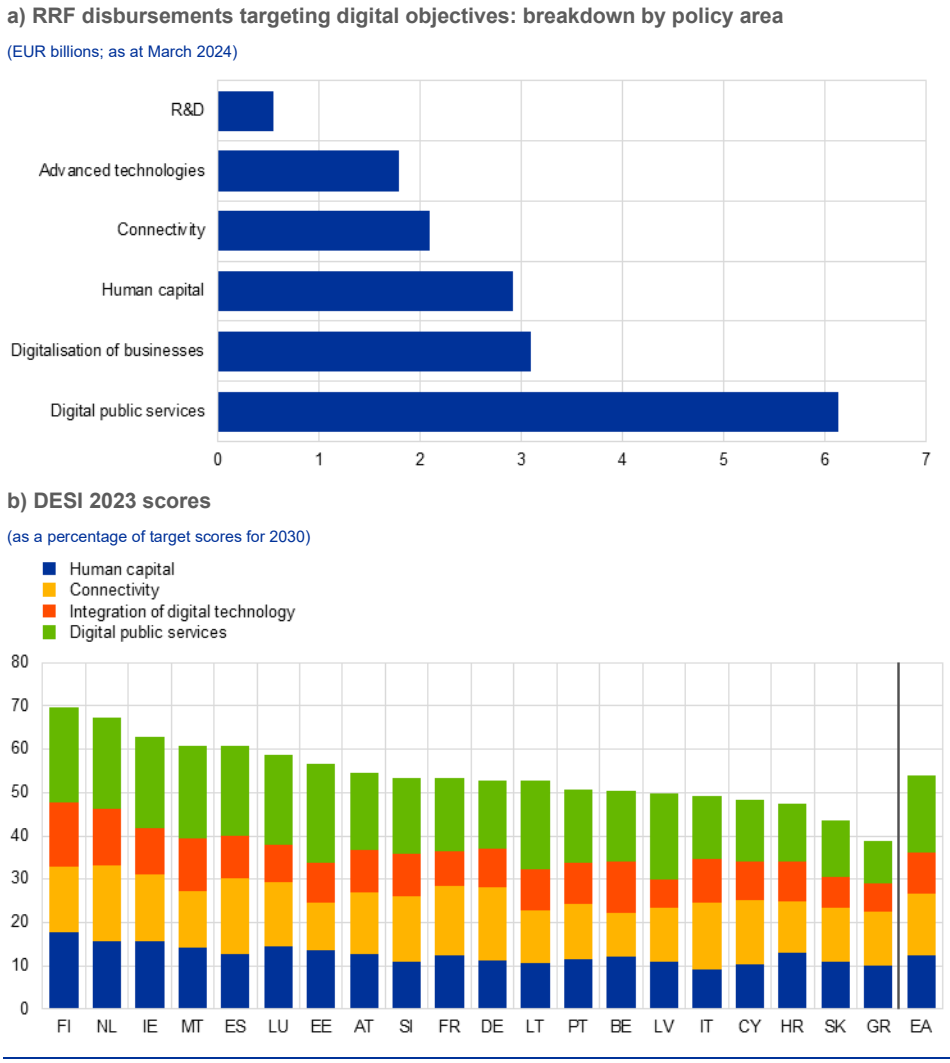
11 Restructuring production chains in order to prioritise geographical proximity over efficiency could result in increased production costs, a fall in employment and disruption to supply chains. This would ultimately have an impact on government revenues from corporate taxation, personal income tax, sales taxes and international trade. Additionally, it could also discourage investment in innovation, further hampering long-term economic growth and tax revenues.

12 See European Commission, "Identifying Europe's recovery needs" (SWD/2020/98 final), 27 May 2020.

13 See "Delivering the Digital Decade with EU investments", Chapter 5 of European Commission, "Implementation of the Digital Decade objectives and the Digital Rights and Principles" (SWD/2023/570 final), 27 September 2023.

14 See Olczyk, M. and Kuc-Czarnecka, M., "Digital transformation and economic growth – DESI improvement and implementation", *Technological and Economic Development of Economy*, Vol. 28, No 3, 2022, pp. 775-803.

Chart 3
Digital RRF expenditure and DESI scores



Sources: European Commission and ECB calculations.
Note: In panel b, the target for each of the four broad categories is a maximum score of 25 points.

5 Fiscal effects of climate change

Climate change poses major fiscal challenges for euro area economies. From the direct costs of extreme weather events to the broader economic implications of transitioning to a low-carbon future, the fiscal impact of climate change is multifaceted and requires comprehensive analysis and action. As outlined in the ECB's climate and nature plan 2024-2025, central banks will need to improve their understanding of these drivers in order to deliver on their core objectives.

Extreme weather events – which may increase in frequency and severity as a result of climate change – pose immediate and tangible risks. The economic costs of floods, storms, heatwaves and droughts have increased sharply in recent

decades, placing a substantial financial burden on governments.[15] Costs relating to disaster relief, infrastructure repair and healthcare services in the aftermath of such events place strain on public finances, diverting resources from other essential areas. At the same time, the burden of climate change is distributed unevenly across euro area countries. For example, the European Commission's PESETA IV project estimates that welfare losses from climate change in southern Europe will be several times larger than in the north of Europe, mostly because of higher temperatures and water scarcity.[16] This uneven burden is further exacerbated by the fact that some countries which have historically suffered significant losses also have large insurance protection gaps.[17] Against that background, a recent European Commission discussion paper sheds light on the potential fiscal repercussions of extreme climate events.[18] The paper estimates that in a scenario where temperatures rise by 2°C globally in the long term, eight euro area countries could see their public debt-to-GDP ratio rise by over 2 percentage points by 2032 owing to extreme weather events.

Transitioning to a low-carbon economy entails significant upfront costs and policy challenges. Mitigation measures (such as investment in renewable energy infrastructure, energy efficiency improvements and other emission reduction strategies) require substantial financial resources and long-term planning. Green investment, both public and private, will be essential in order to facilitate the transition to a sustainable economy.[19] Carbon-pricing mechanisms such as carbon taxes offer a potential source of revenue that could offset some of the fiscal costs of climate policies.[20] Recent IMF estimates based on a New Keynesian dynamic general equilibrium model suggest that primary deficits in advanced economies could increase by around 0.4 percentage points of GDP over the next few decades as a result of a policy package designed to achieve net-zero emissions in 2050.[21] However, this assumes that a large share of public spending on green investment and subsidies is financed through carbon tax revenues.

The macroeconomic and financial consequences of climate change and related policies can also have an indirect impact on public finances. The economic consequences of climate change (which include productivity losses, disruptions to supply chains and declines in agricultural output) can dampen GDP growth. The resulting contraction in economic activity can, in turn, erode government

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15 The global economic losses are estimated to total $4.3 trillion. See World Meteorological Organization, "Atlas of Mortality and Economic Losses from Weather, Climate and Water-Related Hazards (1970-2021)", 22 May 2023.

16 See Feyen, L., Ciscar, J.C., Gosling, S., Ibarreta, D. and Soria, A. (eds.), "Climate change impacts and adaptation in Europe", JRC PESETA IV final report, 2020.

17 See ECB and EIOPA, "Policy options to reduce the climate insurance protection gap", Discussion Paper, April 2023.

18 See Gagliardi, N., Arévalo, P. and Pamies, S., "The Fiscal Impact of Extreme Weather and Climate Events: Evidence for EU Countries", *European Economy Discussion Papers*, No 168, European Commission, July 2022.

19 In Europe, for instance, an estimated €275 billion of Next Generation EU and REPowerEU funds will be used to support investment in clean technology, while €118 billion has been set aside to help fund the transition to clean energy between now and 2027 under the Cohesion Policy.

20 See the article entitled "Fiscal policies to mitigate climate change in the euro area", *Economic Bulletin*, Issue 6, ECB, 2022.

21 See Chapter 1 of the IMF's October 2023 Fiscal Monitor.

revenues and result in higher debt servicing costs. Model simulations conducted by the Network of Central Banks and Supervisors for Greening the Financial System (NGFS) suggest that some euro area countries could experience significant real output losses. When conducting such analysis, the cost of different transition policies[22] needs to be set against the reduction in physical risks from climate-related events. For instance, in the "net-zero by 2050" scenario, which limits global warming to 1.5°C through stringent climate policies and innovation, real output losses are fairly limited (Chart 4, panel a); however, the costly transition policies lead to spikes in inflation and relatively persistent increases in interest rates (which rise by 1 percentage point on average; Chart 4, panel b). Increases in interest rates tend to reflect the inflationary pressure created by carbon prices, as well as increased demand for investment.[23] The higher interest rates in the NGFS's "net-zero by 2050" scenario are the single most important driver of the long-term interest-growth differential. For instance, for a country with debt totalling 60% of GDP, a 1 percentage point increase in the interest-growth differential would, over time, result in the annual debt service burden rising by 0.6 percentage points of GDP. Naturally, these simulations are based on strong assumptions and contain a large degree of model uncertainty.[24] Several aspects – including the drivers of rising long-term interest rates and the role of monetary policy – need to be investigated further, and the ECB is actively contributing to those research efforts.

Under EU rules, at least 37% of all RRF funds disbursed must be spent on the green transition. While Member States often choose to spend significantly higher shares (ranging from 37.4% in Lithuania to 68.8% in Luxembourg and Malta), RRF funds can only cover a limited proportion of a country's climate expenditure needs.

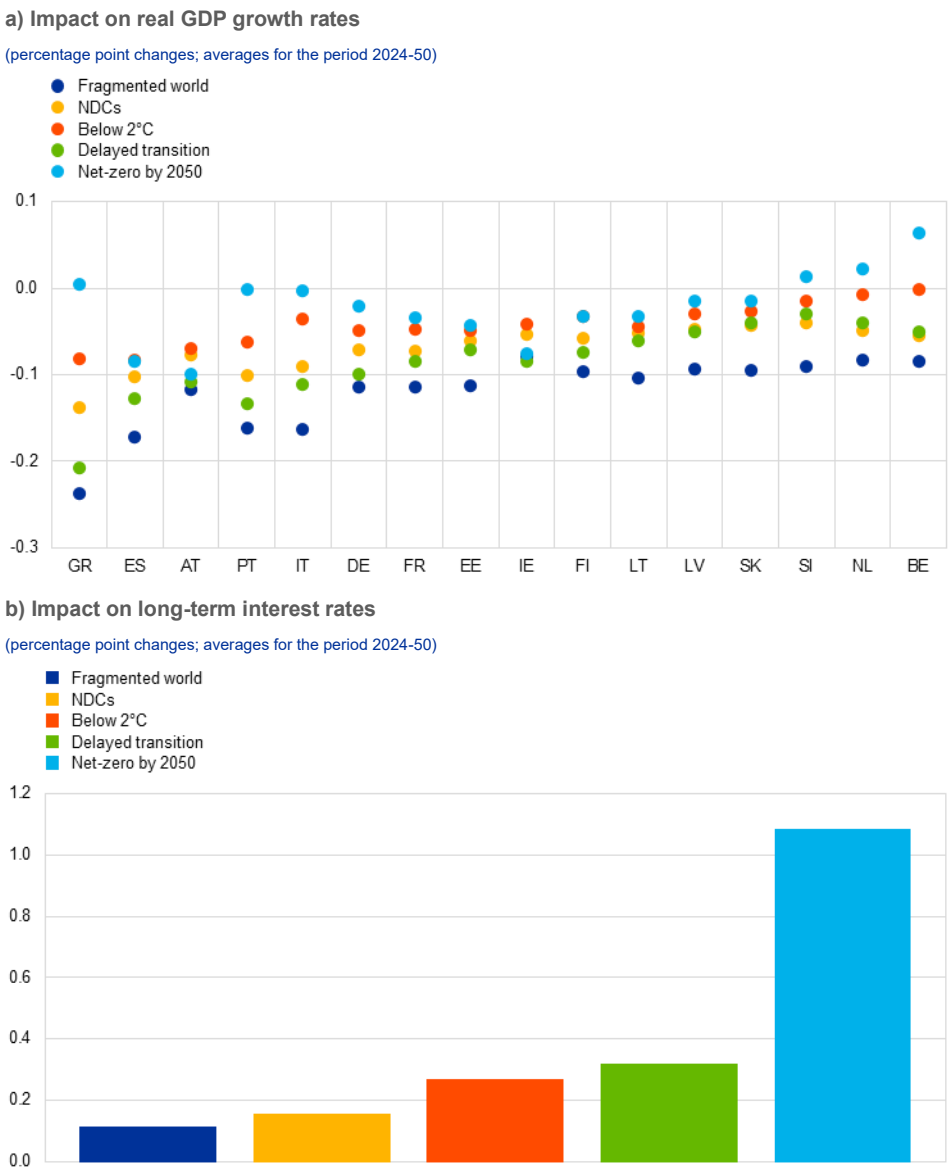
22 NGFS Phase IV simulates the impact in terms of physical and transition risks of five transition scenarios relative to a hypothetical baseline scenario with no physical or transition risk. "Net-zero by 2050" is an ambitious scenario that limits global warming to 1.5°C through stringent climate policies and innovation, reaching net-zero CO_2 emissions around 2050. "Delayed transition" assumes that annual global emissions do not start to decline until 2030, with strong policies then being needed to keep global warming below 2°C. "Below 2°C" is a scenario where the stringency of climate policies is gradually increased, giving a 67% chance of keeping global warming below 2°C. "NDCs" (nationally determined contributions) is a scenario where all current NDCs are implemented (including NDCs that have been pledged but not yet implemented). The "fragmented world" scenario assumes delayed and divergent climate policy ambition globally, leading to elevated transition risks in some countries and high physical risks everywhere owing to the overall ineffectiveness of the transition.

23 For these macroeconomic scenarios, the NGFS applies the NiGEM model, under which central banks follow the Taylor rule and long-term fiscal solvency is ensured. Furthermore, there is an assumption that 50% of the carbon price will be passed straight on to consumer prices. In the NiGEM model, the high levels of investment can result in persistently higher real interest rates owing to several interrelated factors. First, heightened demand for investment can lead to a crowding-out effect, whereby increased competition for available funds in capital markets drives borrowing costs up. And second, inflation expectations can, if influenced by increased investment activity, prompt lenders to demand higher nominal interest rates, driving up real interest rates. At the same time, the concrete formulation of central bank behaviour has major implications for the interest rate path in the model simulations.

24 See, for example, the article entitled "The macroeconomic implications of the transition to a low-carbon economy", *Economic Bulletin*, Issue 5, ECB, 2023 and the box entitled "Assessing the macroeconomic effects of climate change transition policies", *Economic Bulletin*, Issue 1, ECB, 2024.

Chart 4

Simulating the impact of climate change under different transition scenarios



Sources: NGFS long-term scenarios (Phase IV) and ECB calculations.
Notes: See footnote **Error! Bookmark not defined.** for a description of NGFS scenarios. Countries are ordered on the basis of the a verage cross-scenario impact. Data refer to geometric means over the period 2024-50 and are not available for Croatia, Cyprus, Luxembourg or Malta. NGFS simulations employ three different models (GCAM, MESSAGEix-GLOBIOM and REMIND-MAgPIE), and the results presented here are averages of the findings for those three models.

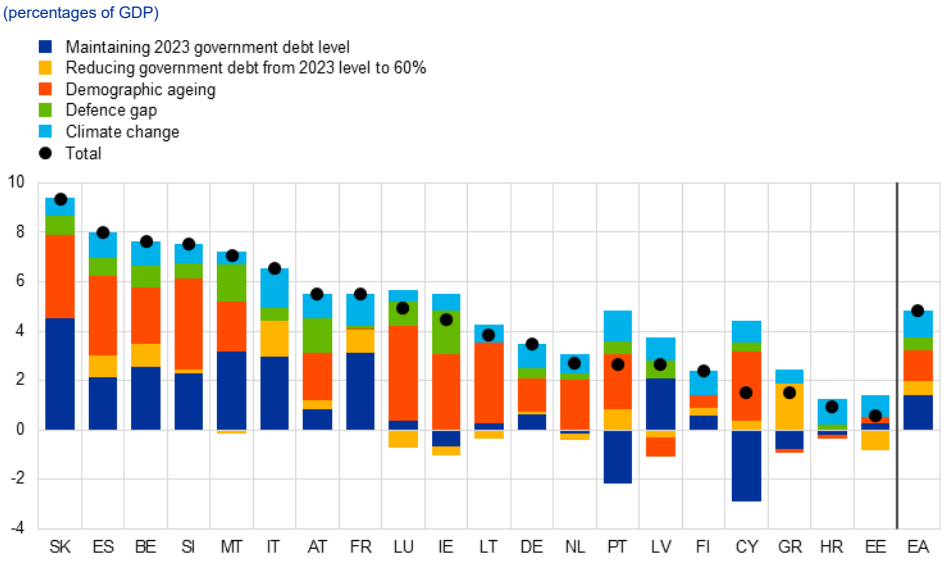
6 Cumulative impact

This section provides a rough and purely indicative estimate of the possible fiscal burden arising from the developments described in the previous sections. A single indicator aggregates the various components (Chart 5 and Box 1), estimating the fiscal adjustment that each euro area country would need to

implement as of 2024 and maintain throughout the simulation horizon.[25] The shared long-term target is a government debt-to-GDP ratio of 60% (as referred to in the Treaty) by 2070.[26] This fiscal gap measure is indicative and requires further analysis and interpretation to reach normative conclusions. Countries will need to ascertain and execute their respective adjustment paths. Moreover, the implementation of more ambitious structural reforms – notably those that support long-term growth – would help to reduce the fiscal burden, which is computed here on the basis of currently projected long-term growth rates. This is also the reason why the issue of digitalisation is not included in this exercise, as the benefits of digitalisation could potentially compensate for some of the fiscal costs incurred.

Chart 5

Overview of fiscal efforts required in response to specific challenges



Sources: 2024 Ageing Report, European Commission's Debt Sustainability Monitor 2023, NGFS Phase IV simulations, IMF's October 2023 Fiscal Monitor, NATO, Eurostat and ECB calculations.
Notes: The chart depicts the required immediate and permanent one-off improvement in the ratio of structural primary balance to GDP to bring the debt ratio to 60% of GDP by 2070, incorporating financing for any additional expenditure until 2070 arising from an ageing population, defence and climate. See Box 1 for a description of the methodology.

Achieving a government debt-to-GDP ratio of 60% by 2070 from today's debt levels would require euro area governments to immediately and permanently increase their primary balances by 2% of GDP on average (dark blue and yellow bars in Chart 5). 16 euro area countries would require fiscal adjustments just to maintain their current debt levels, with necessary average savings of 1.4% of GDP (blue bars). Going further and reducing debt to 60% of GDP would, on average,

[25] See also the section entitled "Fiscal Policy Sustainability and Structural Spending Pressures" in Chapter 1 of the IMF's April 2024 Fiscal Monitor, which presents details of a comparable exercise and reaches similar conclusions. The IMF shows that advanced economies are facing additional public spending pressures equivalent to 7.4% of GDP by 2030. This comprises increases of 1 percentage point for interest payments, 2 percentage points for climate spending (under the "net-zero by 2050" scenario), 2.9 percentage points for demographic ageing, 0.6 percentage points for defence spending, and 1 percentage point for industrial policy and the UN's Sustainable Development Goals.

[26] The government debt-to-GDP ratio of 60% is referred to in Article 126(2) of the Treaty on the Functioning of the European Union and specified in Protocol No 12 annexed to the Treaty.

require additional savings totalling 0.6% of GDP in the euro area, with high-debt countries having the largest adjustment needs (yellow bars).

The additional challenges discussed above, excluding digitalisation, could widen the euro area's average fiscal deficit by approximately a further 3% of GDP.[27] Of those challenges, demographic ageing is expected to result in the largest fiscal burden over the next five decades, potentially necessitating additional spending of up to 4% of GDP for some countries, and 1.2% for the euro area on average. As regards the NATO target for defence expenditure, four of the NATO members in the euro area are already spending the targeted amount of 2% of GDP, while the other 12 face additional burdens of up to 1% of GDP, resulting in an average burden of 0.5% of GDP at euro area level. For the four non-NATO countries – Ireland, Cyprus, Malta and Austria – there is no formal requirement to spend a specific amount on defence. However, Chart 5 plots the gap vis-à-vis 2% of GDP in the light of the changing geopolitical environment.[28] For climate change, assuming a "net-zero by 2050" scenario which limits global warming to 1.5°C, we estimate an average cost increase totalling 1.1% of GDP at the level of the euro area as a whole. This is driven by the 0.4 percentage point increase in the primary deficit-to-GDP ratio that was calculated by the IMF and the additional interest burden on debt stocks that was projected by the NGFS.[29]

The necessary fiscal adjustment is large by historical standards, but not without precedent. At the same time, for all of the challenges discussed above, there is considerable cross-country heterogeneity in the required fiscal efforts, with estimates of gaps ranging from 0.5% to almost 10% of GDP. In the past, large fiscal adjustments were mainly observed in response to major fiscal crises and in the presence of sizeable debt overhangs. Belgium, Ireland and Finland maintained cyclically adjusted primary surpluses of over 5% of GDP on average for more than a decade in the 1990s and early 2000s.[30] In some countries, the fiscal pressures discussed may not strengthen in the short term; however, there is no room for complacency, as the longer the adjustment is postponed, the larger the eventual adjustment cost will be.

Moreover, additional fiscal burdens may well emerge in the medium term. For instance, the model-based simulations used in this article exclude the digitalisation gap, the long-term implications of which are still hard to grasp. Furthermore, one does not need to go back very far in time to find a large fiscal shock appearing out of the blue: the euro area's government debt-to-GDP ratio increased by a total of 13 percentage points in 2020 in response to the COVID-19 pandemic. At the same time, the simulation of climate change is based on simplified assumptions and on the

27 The exclusion of digitalisation stems mainly from the limited number of reliable forecasts and the lack of clarity regarding interaction with other key macroeconomic and financial variables.

28 See also European Commission, "Defence Investment Gaps Analysis and Way Forward", Joint communication to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, 18 May 2022. For Luxembourg, a target of 1.7% of GDP is assumed, given its commitment to spending 2% of gross national income.

29 Climate shock scenario data, which are only available until 2050 in the source material, are constant-extrapolated. The Greek NGFS climate shock is adjusted to reflect the fact that debt with fixed rates and long maturities accounts for a significant share of total debt.

30 See the box entitled "Past experience of EU countries with sustaining large primary budget surpluses", *Monthly Bulletin*, ECB, June 2011.

unlikely premise that limiting global warming to 1.5°C is still feasible. It also does not capture the impact of societal repercussions (such as conflict), tipping points or macroeconomic effects (such as changes to prices and productivity). This suggests that there could be substantial additional fiscal costs associated with climate change.[31] On the upside, however, the simulation may understate the potential positive economic side effects of increased public spending, such as spending on digitalisation. While the demographic ageing and climate change scenarios are built on a set of internally consistent assumptions, which also capture macroeconomic effects, the modelling of defence spending does not take account of the possible macroeconomic impact (e.g. the potential for the benefits of technological progress to spill over from the defence sector to the wider economy).

Box 1
Methodology of the fiscal gap indicator

In order to make the diverse fiscal long-term pressures comparable in a single indicator per country, we compute the immediate and permanent improvement in the structural primary balance required to bring the debt ratio to 60% of GDP by 2070. In addition to accounting for the adjustment need to stabilise and then reduce the initial debt level to the target level, the indicator incorporates financing for any additional expenditure arising from an ageing population, defence needs and climate change.

Deriving the fiscal gap and its components

Government debt in euro at the end of any given year is the sum of four components: (i) the debt at the end of the previous year, (ii) the interest accrued on that debt, (iii) the negative primary balance, and (iv) any debt-deficit-adjustment (DDA). Expressed in terms of GDP, in an economy with a balanced budget and zero DDA, debt-to-GDP grows every year proportional to the interest-growth differential (IGD). The IGD is the ratio between (i) one plus the average nominal interest rate and (ii) one plus the nominal GDP growth rate. However, the development of government debt is also determined by future primary balances and any DDA. From the above accounting identity we can apply the net present value (NPV) approach, discounting future flows by the annual IGDs and thus making them comparable across different time horizons. For instance, for reducing the current debt ratio by a given percentage, a government could apply a certain amount of savings in the current year or the same savings discounted by IGD in the following year. More generally, the difference between (i) the NPV of government debt as a percentage of GDP at a future date, and (ii) current government debt equals the NPV of the (negative) primary balances plus any DDA flows between today and the future date.

We define as our fiscal gap indicator the necessary permanent improvement in the ratio of the structural primary balance to GDP as of 2024 to reach a government debt of 60% of GDP by 2070. To determine the NPV of the fiscal flows needed to meet the target, we take (i) the 2023 government debt as a percentage of GDP, (ii) subtract the NPV of 60% of GDP debt discounted

[31] The recently published UN Emissions Gap Report found that even in the most optimistic scenario, the chance of limiting global warming to 1.5°C is only 14%, leaving open a large possibility that global warming will exceed 2°C or even 3°C. See United Nations Environment Programme, "Emissions Gap Report 2023: Broken Record – Temperatures hit new highs, yet world fails to cut emissions (again)", November 2023; and Elderson, F., "'Know thyself" – avoiding policy mistakes in light of the prevailing climate science", keynote speech at the Delphi Economic Forum IX, 12 April 2024.

from 2070 to 2023, and (iii) add the NPV of negative primary balances plus DDA flows from 2024 to 2070. This NPV is then converted into a steady flow of primary balances that guarantee the attainment of the final target.

This approach can also be used to provide a breakdown of the fiscal gap into the different drivers. Looking at the equation below, we split the effort to reach the 60% debt ratio by 2070 into five components. These are the adjustments needed to (i) achieve the 2023 debt ratio (d_0) by 2070 taking into account the starting primary balance and any DDA, (ii) reduce the 2070 debt ratio to 60% of GDP, (iii) cover ageing-related costs, (iv) cover additional defence expenditure needs, and (v) cover climate change-related costs.

$$\text{gap} = \left(\sum \frac{1}{a_t}\right)^{-1} \left[\left(d_0 - \frac{d_0}{a_T} - \sum \frac{pbBase_t - dda_t}{a_t}\right) + \left(\frac{d_0 - 60\%}{a_T}\right) + \left(\sum \frac{age_t}{a_t}\right) + \left(\sum \frac{def_t}{a_t}\right) + \left(\sum \frac{climate_t}{a_t}\right)\right]$$

In this equation, a_t and a_T are the NPV discount factors at period t and in 2070 respectively, and Σ refers to the sum of flows from 2024 to 2070.

Assumptions for fiscal pressures and future interest-growth differentials

Our approach is similar to the S1 indicator presented in the European Commission's Debt Sustainability Monitor (DSM) 2023, also with regard to the assumptions for primary balances, the interest-growth differential and ageing costs.[32] There are, however, three notable differences in the approach used here. First, the one-off fiscal adjustment is assumed to happen in 2024, compared with a two-year delay in the DSM. Second, we assume a constant structural primary fiscal balance over the projection horizon in order to avoid double-counting of legislated climate and defence measures. Third, we include these two additional components, which do not feature in the Commission's indicator.

7 Conclusions

Issues such as demographic ageing, increased defence expenditure, digitalisation and climate change will result in significant fiscal burdens in the decades ahead. These developments will be challenging enough in isolation, and countries will face all of them simultaneously. Consequently, action needs to be taken today – especially in high-debt countries facing elevated interest rates and the associated risks.[33] Economic policies should seek to gradually reduce high levels of public debt and prepare for the future, which will also help to ensure a sound environment for the conduct of the euro area's single monetary policy.

32 See European Commission, "Debt Sustainability Monitor 2023", *Institutional Papers*, No 271, 22 March 2024.

33 See Adrian, T., Gaspar, V. and Gourinchas, P.-O., "The Fiscal and Financial Risks of a High-Debt, Slow-Growth World", *IMF Blog*, 28 March 2024.

Statistics

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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	2.6	8.4	5.9	4.0	3.0	4.7	2.6	-0.2	0.9	2.6
2022	3.2	1.9	4.3	1.0	3.0	3.4	9.5	6.8	8.0	9.1	2.5	2.0	8.4
2023	3.2	2.6	0.1	1.9	5.2	0.4	6.9	7.0	4.1	7.4	3.2	0.2	5.4
2023 Q2	0.7	0.5	0.0	1.0	0.5	0.1	6.6	7.0	4.0	8.4	3.3	0.1	6.2
Q3	0.9	1.2	-0.1	-0.9	1.8	-0.1	6.4	7.0	3.5	6.7	3.2	-0.1	5.0
Q4	0.7	0.8	-0.3	0.0	1.2	-0.1	5.9	6.8	3.2	4.2	2.9	-0.3	2.7
2024 Q1	.	0.4	0.6	-0.5	1.6	0.3	5.7	6.5	3.2	3.5	2.6	0.0	2.6
2023 Dec.	-	-	-	-	-	-	6.0	6.7	3.4	4.0	2.6	-0.3	2.9
2024 Jan.	-	-	-	-	-	-	5.7	6.6	3.1	4.0	2.2	-0.8	2.8
Feb.	-	-	-	-	-	-	5.7	6.4	3.2	3.4	2.8	0.7	2.6
Mar.	-	-	-	-	-	-	5.8	6.4	3.5	3.2	2.7	0.1	2.4
Apr.	-	-	-	-	-	-	5.7	.	3.4	2.3	2.5	.	2.4
May	-	-	-	-	-	-	.	.	.	.	.	.	2.6

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	9.9	12.5
2022	-	-	-	-	-	-	-	-	-	2.5	4.2	0.6
2023	52.0	51.2	51.2	51.8	52.5	49.7	49.8	52.3	47.6	-2.3	-3.8	-0.6
2023 Q2	54.0	53.6	53.9	53.1	53.9	52.3	50.5	54.8	47.6	-0.2	-1.2	0.9
Q3	51.5	50.8	49.3	52.3	51.5	47.5	49.3	51.4	47.0	-0.3	-0.3	-0.2
Q4	51.0	50.8	50.5	50.0	51.4	47.2	49.4	50.9	47.9	1.0	0.9	1.1
2024 Q1	52.6	52.2	52.9	51.3	52.6	49.2	51.1	52.4	49.2	-0.4	0.2	-1.1
2023 Dec.	51.6	50.9	52.1	50.0	52.6	47.6	49.4	51.6	48.1	1.0	0.9	1.1
2024 Jan.	52.5	52.0	52.9	51.5	52.5	47.9	50.3	52.3	48.8	-0.9	-0.4	-1.5
Feb.	52.6	52.5	53.0	50.6	52.5	49.2	51.2	52.4	49.3	-0.4	0.2	-1.0
Mar.	52.6	52.1	52.8	51.7	52.7	50.3	51.9	52.4	49.5	-0.4	0.2	-1.1
Apr.	52.5	51.3	54.1	52.3	52.8	51.7	51.4	52.7	50.5	.	.	.
May	.	54.4	52.8	.	.	52.2	52.6	.	50.4	.	.	.

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	12,474.6	11,980.5	6,354.5	2,737.3	2,727.0	1,388.6	761.4	570.4	161.7	494.1	6,172.3	5,678.2
2022	13,507.4	13,266.1	7,069.4	2,901.0	3,017.6	1,560.8	847.5	602.3	278.0	241.3	7,440.0	7,198.8
2023	14,375.9	13,861.3	7,535.7	3,037.9	3,176.9	1,626.8	904.8	637.8	110.8	514.6	7,389.7	6,875.2
2023 Q1	3,540.4	3,408.5	1,855.9	741.2	782.8	405.2	223.3	152.5	28.6	131.9	1,896.0	1,764.1
Q2	3,580.7	3,445.7	1,874.5	754.8	788.5	405.7	226.0	155.0	27.8	135.0	1,859.2	1,724.1
Q3	3,602.7	3,466.5	1,899.1	767.8	794.1	407.0	228.7	156.4	5.5	136.2	1,827.8	1,691.7
Q4	3,650.9	3,529.0	1,909.1	775.3	808.5	409.0	225.3	172.3	36.1	121.9	1,836.2	1,714.3
as percentage of GDP												
2023	100.0	96.4	52.4	21.1	22.1	11.3	6.3	4.4	0.8	3.6	-	-
Chain-linked volumes (prices for the previous year)												
quarter-on-quarter percentage changes												
2023 Q2	0.1	0.8	0.1	0.3	0.2	-0.4	0.4	1.4	-	-	-1.1	-0.1
Q3	-0.1	-0.1	0.3	0.7	0.0	-0.5	0.7	0.4	-	-	-1.2	-1.4
Q4	-0.1	0.3	0.1	0.5	1.0	-0.4	-2.5	9.6	-	-	0.0	0.6
2024 Q1	0.3	.	.	.	.	.	.	.	-	-	.	.
annual percentage changes												
2021	5.9	4.7	4.4	4.2	3.5	5.8	8.1	-6.5	-	-	11.5	9.2
2022	3.4	3.6	4.2	1.6	2.5	1.4	4.5	2.6	-	-	7.2	7.9
2023	0.4	0.2	0.5	0.8	1.2	-0.8	3.3	3.5	-	-	-1.1	-1.6
2023 Q2	0.6	0.7	0.7	0.5	1.7	-0.6	5.3	2.6	-	-	-0.5	-0.4
Q3	0.1	-0.4	-0.3	1.3	0.5	-0.3	2.6	-0.3	-	-	-3.0	-4.1
Q4	0.1	0.3	0.6	1.2	1.5	-0.6	0.4	8.4	-	-	-2.8	-2.5
2024 Q1	0.4	.	.	.	.	.	.	.	-	-	.	.
contributions to quarter-on-quarter percentage changes in GDP; percentage points												
2023 Q2	0.1	0.7	0.0	0.1	0.0	0.0	0.0	0.1	0.6	-0.6	-	-
Q3	-0.1	-0.1	0.2	0.1	0.0	-0.1	0.0	0.0	-0.4	0.1	-	-
Q4	-0.1	0.3	0.0	0.1	0.2	0.0	-0.2	0.4	-0.1	-0.3	-	-
2024 Q1	0.3	.	.	.	.	.	.	.	.	.	-	-
contributions to annual percentage changes in GDP; percentage points												
2021	5.9	4.8	2.4	1.0	0.9	0.7	0.5	-0.3	0.6	1.4	-	-
2022	3.4	3.5	2.2	0.4	0.5	0.2	0.3	0.1	0.4	0.0	-	-
2023	0.4	0.2	0.3	0.2	0.3	-0.1	0.2	0.2	-0.5	0.2	-	-
2023 Q2	0.6	0.7	0.4	0.1	0.4	-0.1	0.3	0.1	-0.1	-0.1	-	-
Q3	0.1	-0.4	-0.1	0.3	0.1	0.0	0.2	0.0	-0.7	0.6	-	-
Q4	0.1	0.3	0.3	0.3	0.3	-0.1	0.0	0.4	-0.6	-0.3	-	-
2024 Q1	0.4	.	.	.	.	.	.	.	.	.	-	-

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	Manufac-turing energy and utilities	Const-ruction	Trade, transport, accomo-dation and food services	Infor-mation and commu-nication	Finance and insurance	Real estate	Pro-fessional, business and support services	Public administra-tion, education, health and social work	Arts, entertain-ment 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	11,191.6	186.6	2,218.6	595.0	2,021.7	598.5	515.2	1,247.3	1,298.1	2,173.0	337.6	1,283.0
2022	12,165.7	215.1	2,450.1	656.6	2,333.5	633.2	532.7	1,300.2	1,398.4	2,274.6	371.3	1,341.7
2023	13,004.5	221.5	2,628.7	723.6	2,447.6	678.9	610.0	1,412.2	1,491.4	2,391.3	399.3	1,371.4
2023 Q1	3,201.4	57.1	660.9	178.2	605.1	164.1	147.5	343.9	364.4	582.8	97.4	339.1
Q2	3,244.4	55.6	662.1	180.1	612.6	169.3	152.1	349.9	372.2	591.7	98.9	336.3
Q3	3,256.3	54.8	653.2	181.8	611.7	170.9	155.0	353.3	374.5	600.8	100.2	346.3
Q4	3,297.2	54.0	662.0	184.2	618.6	173.2	155.0	359.2	381.2	609.1	100.8	353.7
	as percentage of value added											
2023	100.0	1.7	20.2	5.6	18.8	5.2	4.7	10.9	11.5	18.4	3.1	-
	Chain-linked volumes (prices for the previous year)											
	quarter-on-quarter percentage changes											
2023 Q1	0.1	1.0	-1.3	1.9	0.1	0.9	-0.4	0.9	0.1	0.2	2.1	-0.5
Q2	0.1	-0.1	-0.2	-0.6	0.1	1.5	0.6	-0.1	0.5	0.1	0.7	0.2
Q3	-0.1	-1.2	-1.0	-0.1	0.0	0.8	0.1	0.2	0.0	0.1	1.7	0.1
Q4	0.0	0.8	-0.4	-0.1	-0.3	0.2	-0.6	0.1	0.3	0.6	-1.3	-0.2
	annual percentage changes											
2021	5.8	1.1	8.7	3.0	7.8	9.3	5.6	2.0	6.7	3.5	4.3	7.2
2022	3.5	-2.5	1.2	1.1	7.7	6.1	0.7	1.8	4.9	1.9	12.0	2.6
2023	0.6	0.6	-1.7	0.6	0.4	4.2	0.4	1.3	1.3	1.1	4.0	-1.2
2023 Q1	1.8	0.8	0.2	0.8	2.5	5.2	0.6	1.7	1.9	1.5	6.6	-2.5
Q2	0.9	1.2	-0.6	0.3	0.2	4.8	0.8	1.2	1.5	1.1	3.3	-1.3
Q3	0.2	0.0	-2.4	1.1	-0.6	3.6	0.8	1.2	1.0	0.7	3.2	-0.3
Q4	0.1	0.4	-3.0	1.1	-0.1	3.5	-0.3	1.1	1.0	1.1	3.2	-0.5
	contributions to quarter-on-quarter percentage changes in value added; percentage points											
2023 Q1	0.1	0.0	-0.3	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1	-
Q2	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	-
Q3	-0.1	0.0	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	-
Q4	0.0	0.0	-0.1	0.0	-0.1	0.0	0.0	0.0	0.0	0.1	0.0	-
	contributions to annual percentage changes in value added; percentage points											
2021	5.8	0.0	1.8	0.2	1.4	0.5	0.3	0.2	0.8	0.7	0.1	-
2022	3.5	0.0	0.2	0.1	1.4	0.3	0.0	0.2	0.6	0.4	0.4	-
2023	0.6	0.0	-0.3	0.0	0.1	0.2	0.0	0.1	0.1	0.2	0.1	-
2023 Q1	1.8	0.0	0.0	0.0	0.5	0.3	0.0	0.2	0.2	0.3	0.2	-
Q2	0.9	0.0	-0.1	0.0	0.0	0.2	0.0	0.1	0.2	0.2	0.1	-
Q3	0.2	0.0	-0.5	0.1	-0.1	0.2	0.0	0.1	0.1	0.1	0.1	-
Q4	0.1	0.0	-0.6	0.1	0.0	0.2	0.0	0.1	0.1	0.2	0.1	-

Sources: Eurostat and ECB calculations.

2 Economic activity

2.3 Employment [1)]

(quarterly data seasonally adjusted; annual data unadjusted)

		By employment status		By economic activity									
	Total	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	86.1	13.9	3.0	14.4	6.3	24.1	3.1	2.4	1.0	14.0	25.0	6.6
2022	100.0	86.2	13.8	2.9	14.2	6.4	24.4	3.2	2.3	1.0	14.1	24.8	6.5
2023	100.0	86.3	13.7	2.8	14.2	6.4	24.5	3.3	2.3	1.0	14.1	24.8	6.5
annual percentage changes													
2021	1.4	1.6	0.4	0.2	0.0	3.2	0.3	4.5	0.6	0.4	2.9	2.1	0.9
2022	2.3	2.4	1.3	-0.8	1.2	3.2	3.4	5.8	0.0	2.8	3.0	1.6	1.5
2023	1.4	1.5	1.1	-1.3	0.9	1.5	1.9	3.5	1.0	1.6	1.6	1.4	0.9
2023 Q2	1.4	1.5	0.9	-2.2	1.1	1.0	1.9	4.0	1.0	2.2	1.9	1.4	0.7
Q3	1.4	1.4	0.9	-1.0	0.8	1.4	2.0	2.4	1.1	0.8	1.4	1.5	0.5
Q4	1.2	1.2	1.3	-0.6	0.4	1.8	1.4	2.7	0.7	1.2	1.2	1.5	1.1
2024 Q1	1.0	.	.	.	.	.	.	.	.	.	.	.	.
Hours worked													
as a percentage of total hours worked													
2021	100.0	81.8	18.2	4.1	15.0	7.3	24.3	3.4	2.5	1.1	14.0	22.6	5.8
2022	100.0	81.9	18.1	3.9	14.6	7.3	25.2	3.5	2.4	1.1	14.1	22.0	5.9
2023	100.0	82.1	17.9	3.8	14.5	7.3	25.3	3.5	2.4	1.1	14.1	22.1	5.9
annual percentage changes													
2021	5.9	5.7	6.7	1.1	5.1	9.8	6.8	7.9	3.0	5.9	8.2	3.9	6.5
2022	3.4	3.5	3.0	-1.3	1.0	3.3	7.6	5.9	-0.2	4.6	3.9	0.6	5.7
2023	1.3	1.5	0.4	-1.5	0.6	1.2	1.7	3.0	0.6	1.1	1.6	1.5	1.4
2023 Q1	2.1	2.5	0.5	-0.6	1.8	1.7	3.0	4.6	1.1	1.8	2.3	1.5	2.5
Q2	1.6	1.8	0.8	-2.5	1.3	1.2	1.8	4.1	1.3	1.7	2.2	1.8	1.6
Q3	1.4	1.6	0.7	-1.2	0.6	1.4	1.8	1.9	1.0	1.1	1.6	1.8	1.5
Q4	1.3	1.4	0.6	-0.7	0.5	2.1	1.2	3.0	0.4	0.8	1.4	1.8	1.0
Hours worked per person employed													
annual percentage changes													
2021	4.4	4.1	6.3	0.9	5.1	6.4	6.4	3.2	2.3	5.4	5.1	1.7	5.6
2022	1.1	1.1	1.7	-0.4	-0.2	0.1	4.1	0.1	-0.2	1.8	1.0	-1.0	4.2
2023	-0.1	0.0	-0.7	-0.2	-0.3	-0.3	-0.2	-0.4	-0.3	-0.5	0.0	0.1	0.6
2023 Q1	0.4	0.7	-0.6	0.7	0.5	-0.1	0.7	-0.3	0.0	-0.4	0.4	0.1	1.3
Q2	0.2	0.3	-0.2	-0.2	0.2	0.2	-0.1	0.2	0.3	-0.5	0.3	0.5	0.9
Q3	0.0	0.1	-0.2	-0.2	-0.2	-0.1	-0.2	-0.5	-0.1	0.2	0.2	0.3	1.1
Q4	0.1	0.2	-0.7	-0.1	0.1	0.3	-0.2	0.3	-0.3	-0.4	0.2	0.3	-0.1

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	% of total posts
	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	165.007	3.4	12.831	7.8	3.2	10.347	6.9	2.484	16.9	6.548	7.4	6.283	8.2	2.5
2022	167.790	3.1	11.394	6.8	2.7	9.140	6.0	2.254	14.5	5.722	6.4	5.672	7.2	3.3
2023	169.982	2.9	11.174	6.6	2.4	8.877	5.8	2.297	14.5	5.642	6.2	5.533	6.9	3.0
2023 Q2	169.835	2.9	11.111	6.5	2.4	8.838	5.7	2.273	14.3	5.599	6.2	5.513	6.9	3.1
Q3	169.974	2.9	11.206	6.6	2.3	8.877	5.8	2.329	14.6	5.670	6.3	5.536	6.9	3.0
Q4	170.720	2.9	11.145	6.5	2.3	8.782	5.7	2.363	14.8	5.639	6.2	5.506	6.9	2.9
2024 Q1	-	-	-	6.5	-	-	5.7	-	14.5	-	6.2	-	6.9	2.9
2023 Nov.	-	-	11.155	6.5	-	8.831	5.7	2.324	14.7	5.669	6.2	5.486	6.9	-
Dec.	-	-	11.134	6.5	-	8.803	5.7	2.331	14.6	5.643	6.2	5.491	6.9	-
2024 Jan.	-	-	11.182	6.5	-	8.852	5.7	2.330	14.6	5.679	6.2	5.503	6.9	-
Feb.	-	-	11.203	6.5	-	8.875	5.7	2.328	14.6	5.690	6.2	5.514	6.9	-
Mar.	-	-	11.098	6.5	-	8.807	5.7	2.291	14.3	5.594	6.1	5.504	6.9	-
Apr.	-	-	10.998	6.4	-	8.726	5.6	2.272	14.1	5.577	6.1	5.421	6.7	-

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	Food, beverages, tobacco	Non-food	Fuel		
	Total	Manu-facturing	Inter-mediate goods	Capital goods	Consumer goods	Energy							
	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	5.3	1.0	8.3	9.0	8.0	-2.9
2022	2.1	2.8	-1.9	5.0	6.3	-2.9	2.9	0.9	-2.8	3.1	4.5	10.0	-4.3
2023	-2.2	-1.7	-5.4	2.3	-1.7	-5.6	1.5	-2.0	-2.7	-1.0	-1.7	2.8	14.5
2023 Q2	-0.8	0.1	-6.2	7.5	-1.6	-8.4	1.5	-2.2	-3.3	-1.1	-0.8	2.7	22.7
Q3	-4.8	-4.3	-5.3	-2.5	-3.2	-7.6	1.7	-2.3	-1.9	-1.6	-3.8	2.0	15.4
Q4	-3.9	-4.3	-4.5	-2.5	-6.7	-0.8	1.1	-0.8	-0.6	0.0	-4.0	1.8	4.1
2024 Q1	-4.6	-4.7	-2.5	-6.0	-5.5	-2.3	-0.2	-0.1	-0.5	0.2	-0.6	.	4.8
2023 Nov.	-5.2	-5.9	-5.6	-4.7	-6.9	0.7	-0.2	-0.6	-0.5	0.3	-3.1	1.5	5.3
Dec.	0.2	0.3	-3.4	4.7	-4.9	-1.7	2.4	-0.5	-0.1	-0.1	-3.4	1.9	-0.4
2024 Jan.	-6.5	-7.4	-2.9	-11.2	-4.2	0.3	0.6	-0.7	-1.3	-0.7	0.7	3.8	7.0
Feb.	-6.2	-6.2	-2.4	-8.9	-5.0	-4.1	-1.8	-0.3	-1.2	0.7	-1.5	4.9	4.5
Mar.	-1.0	-0.8	-2.3	1.8	-7.1	-3.5	0.1	0.7	1.0	0.7	-1.0	.	2.9
Apr.	.	.	.	.	.	.	.	0.0	-0.5	0.4	0.3	.	3.8
month-on-month percentage changes (s.a.)													
2023 Nov.	0.4	0.4	-0.7	0.5	1.1	2.0	-0.2	0.4	-0.1	0.3	1.9	0.1	0.7
Dec.	1.6	5.9	-1.3	11.6	0.4	0.7	0.4	-0.5	-0.6	-0.7	0.5	0.4	-1.3
2024 Jan.	-3.2	-6.7	2.2	-15.6	-0.3	0.8	0.8	0.2	0.3	0.4	0.6	0.8	-1.2
Feb.	1.0	0.9	0.8	1.7	-0.3	-3.4	0.4	-0.3	-0.2	0.4	-1.1	1.0	1.0
Mar.	0.6	0.9	-0.5	1.0	-1.8	-0.9	0.1	0.8	1.0	-0.1	1.0	.	-1.2
Apr.	.	.	.	.	.	.	.	.	-0.5	-0.1	-2.2	.	-0.3

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 Q3	94.2	-8.9	80.7	-16.3	-4.7	-4.6	5.0	90.5	43.2	43.1	49.2	47.5
Q4	94.8	-9.0	79.9	-16.7	-4.2	-6.5	6.2	90.5	43.9	44.0	48.4	47.2
2024 Q1	96.0	-9.2	79.4	-15.5	-5.2	-6.1	7.0	90.1	46.4	46.7	50.0	49.2
Q2	.	.	79.0	.	.	.	.	90.0	.	.	.	.
2023 Dec.	96.4	-9.0	.	-15.1	-3.5	-5.5	8.1	.	44.4	44.4	48.8	47.6
2024 Jan.	96.1	-9.3	79.4	-16.1	-4.5	-5.7	8.4	90.1	46.6	46.6	48.4	47.9
Feb.	95.5	-9.5	.	-15.5	-5.4	-6.7	6.1	.	46.5	46.6	50.2	49.2
Mar.	96.3	-8.9	.	-14.9	-5.6	-6.0	6.5	.	46.1	47.1	51.5	50.3
Apr.	95.6	-10.4	79.0	-14.7	-5.9	-6.8	6.1	90.0	45.7	47.3	53.3	51.7
May	96.0	-9.9	.	-14.3	-6.0	-6.8	6.5	.	47.3	49.3	53.2	52.2

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	17.5	95.2	2.0	3.6	19.1	8.5	8.8	36.1	8.4	76.0	5.4	9.9	3.3
2022	13.7	92.8	-0.2	2.4	12.8	2.1	7.9	35.8	5.3	71.6	3.4	9.0	2.2
2023	14.4	87.0	1.3	2.1	3.1	1.3	-1.9	34.6	5.6	67.1	1.5	2.9	0.7
2023 Q1	13.5	90.8	1.3	2.3	7.1	2.0	4.2	35.5	5.6	69.5	2.8	1.2	1.6
Q2	13.9	89.3	1.3	2.2	2.3	2.2	1.1	35.5	5.6	68.5	1.8	19.9	0.9
Q3	14.0	88.0	0.4	2.0	1.3	1.1	-0.7	35.2	5.6	67.7	1.4	-11.2	0.5
Q4	14.4	87.0	2.0	2.1	2.2	1.3	-1.9	34.6	5.6	67.1	1.5	5.5	0.7

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 Q2	1,401.7	1,342.2	59.5	725.2	667.1	327.2	294.0	305.1	295.0	44.3	86.1	25.8	22.9
Q3	1,414.6	1,339.8	74.8	722.9	645.1	329.1	295.4	320.3	313.1	42.4	86.2	29.1	18.5
Q4	1,384.2	1,311.9	72.3	710.3	645.0	328.0	295.0	299.6	284.8	46.3	87.2	61.6	40.6
2024 Q1	1,445.7	1,341.9	103.7	746.9	632.2	340.3	324.1	314.8	311.8	43.7	73.8	22.0	18.3
2023 Oct.	457.1	440.1	17.0	230.1	217.8	109.7	98.4	102.7	94.5	14.6	29.5	10.7	9.6
Nov.	462.4	439.0	23.4	239.8	213.3	108.6	99.3	99.1	97.7	15.0	28.8	9.3	7.5
Dec.	464.7	432.8	31.9	240.4	213.8	109.8	97.3	97.8	92.6	16.8	29.0	41.6	23.5
2024 Jan.	480.1	441.0	39.1	249.5	201.8	112.2	107.9	104.2	107.3	14.2	23.9	4.8	9.1
Feb.	486.5	457.6	28.9	246.6	212.9	116.9	109.7	108.2	110.8	14.7	24.2	5.5	3.7
Mar.	479.2	443.4	35.8	250.8	217.6	111.2	106.5	102.3	93.7	14.9	25.7	11.7	5.5
12-month cumulated transactions													
2024 Mar.	5,646.2	5,336.0	310.3	2,905.2	2,589.3	1,324.6	1,208.5	1,239.7	1,204.8	176.7	333.4	138.5	100.3
12-month cumulated transactions as a percentage of GDP													
2024 Mar.	39.3	37.1	2.2	20.2	18.0	9.2	8.4	8.6	8.4	1.2	2.3	1.0	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 Q2	-1.5	-13.5	710.1	331.9	144.1	216.5	590.6	707.3	411.9	113.6	164.9	503.5	74.1
Q3	-5.2	-22.1	704.3	331.8	141.9	214.6	587.4	677.7	390.4	111.9	158.5	488.6	82.2
Q4	-4.6	-16.7	709.4	334.8	144.1	214.7	589.0	668.9	382.3	107.2	157.2	475.7	81.2
2024 Q1	-3.2	-12.3	712.7	.	.	.	587.4	652.8	.	.	.	458.9	.
2023 Oct.	-1.6	-15.3	236.4	112.1	47.6	70.8	197.5	226.0	130.0	36.2	53.1	160.5	29.5
Nov.	-4.2	-16.2	237.7	111.9	48.9	71.8	197.3	222.1	127.4	35.3	52.2	157.9	26.7
Dec.	-8.3	-18.7	235.2	110.9	47.6	72.1	194.2	220.8	124.9	35.7	52.0	157.4	25.0
2024 Jan.	0.6	-16.1	237.7	113.0	46.8	72.0	196.3	211.6	120.8	33.4	51.0	149.9	25.2
Feb.	0.1	-8.3	237.4	111.2	47.5	72.9	195.9	220.7	124.1	35.3	52.3	153.8	24.8
Mar.	-9.2	-12.0	237.7	.	.	.	195.2	220.4	.	.	.	155.2	.
Volume indices (2000 = 100; annual percentage changes for columns 1 and 2)													
2023 Q1	0.7	-3.0	99.2	95.5	98.4	108.0	98.6	110.4	108.5	111.4	111.1	109.8	144.9
Q2	-3.6	-6.6	97.3	92.7	99.4	105.2	97.2	109.7	107.9	112.3	112.0	110.9	159.0
Q3	-4.2	-10.1	96.3	93.8	95.9	102.4	95.9	106.6	104.5	111.5	109.4	108.5	171.7
Q4	-3.4	-8.7	96.5	93.2	96.1	102.9	95.7	104.3	101.1	104.3	107.8	105.3	164.4
2023 Sep.	-8.3	-13.4	96.1	94.6	93.5	101.3	95.7	104.6	103.0	108.1	107.0	106.6	173.5
Oct.	-0.2	-5.9	96.2	93.6	95.8	101.1	95.6	105.0	102.0	107.3	109.7	107.4	162.2
Nov.	-2.9	-9.4	96.6	93.0	96.4	103.3	96.1	103.1	100.0	101.1	107.3	103.8	162.6
Dec.	-7.3	-11.1	96.8	93.0	96.2	104.2	95.4	104.8	101.2	104.4	106.4	104.7	168.5
2024 Jan.	0.1	-9.5	97.3	95.5	93.3	102.2	96.1	101.4	99.0	96.4	103.9	100.4	160.9
Feb.	-1.1	-3.6	96.2	92.2	91.9	104.4	94.8	103.1	99.9	101.8	105.9	102.2	166.6

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 Q2	123.2	6.2	5.5	6.8	5.2	0.6	1.8	0.9	0.7	-4.3	1.2	6.1	6.8
Q3	123.9	5.0	5.1	4.5	5.3	0.9	1.1	1.2	0.5	1.3	0.9	5.0	4.5
Q4	124.1	2.7	3.7	1.7	4.2	0.3	0.7	0.9	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	0.3	0.2	1.1	2.7	2.3
2023 Dec.	124.0	2.9	3.4	2.1	4.0	0.0	0.0	0.0	0.2	-1.6	0.3	3.1	1.7
2024 Jan.	123.6	2.8	3.3	1.8	4.0	0.4	0.5	0.3	0.1	1.2	0.4	3.0	1.9
Feb.	124.4	2.6	3.1	1.5	4.0	0.4	0.2	-1.0	0.1	1.4	0.5	2.6	2.5
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	0.2	2.4	2.1
May[3)]	126.3	2.6	2.9	.	4.1	0.1	0.1	0.0	0.0	-1.2	0.5	.	.

	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 Q2	12.5	13.5	9.5	3.7	5.8	-1.8	3.7	2.7	6.1	0.4	7.5	4.1
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
2023 Dec.	6.1	5.9	6.8	-0.1	2.5	-6.7	3.5	2.7	3.3	0.5	5.2	3.8
2024 Jan.	5.6	5.2	6.9	-0.3	2.0	-6.1	3.4	2.8	3.5	-0.3	5.4	3.8
Feb.	3.9	4.5	2.1	0.2	1.6	-3.7	3.4	2.8	3.3	0.1	5.2	3.9
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[3)]	2.6	2.9	1.8	.	0.8	0.3	.	.	.	.	.	.

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: May 2024

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	7.4	5.7	10.9	2.6	2.2	3.4	1.7	30.3	5.8	7.9	0.5
2022	133.5	33.5	17.2	14.0	19.9	7.2	12.2	16.5	7.0	82.0	11.9	7.1	0.6
2023	130.5	-2.2	1.8	3.7	-0.3	5.1	8.3	8.4	5.0	-13.3	6.8	-1.1	-7.4
2023 Q2	129.0	-0.8	0.7	4.1	-0.6	5.7	9.5	9.6	5.9	-11.3	7.5	-1.6	-9.4
Q3	128.1	-8.8	-0.5	1.3	-4.0	4.4	6.4	5.5	4.1	-25.2	4.9	-2.2	-6.7
Q4	128.4	-8.7	-1.2	-0.1	-4.8	3.3	3.6	2.1	2.4	-23.1	4.6	-1.1	-8.7
2024 Q1	125.4	-8.1	-1.6	-1.3	-5.2	2.0	1.5	-0.3	0.9	-20.4	3.6	.	.
2023 Nov.	128.5	-8.1	-1.4	-0.2	-4.9	3.2	3.6	2.0	2.4	-21.9	-	-	-
Dec.	127.7	-9.6	-0.9	-0.3	-4.6	3.0	3.1	1.6	2.1	-25.2	-	-	-
2024 Jan.	126.5	-8.0	-2.0	-1.2	-5.4	2.2	1.8	0.2	1.1	-19.9	-	-	-
Feb.	125.1	-8.4	-1.6	-1.3	-5.4	2.0	1.4	-0.4	0.9	-21.2	-	-	-
Mar.	124.5	-7.8	-1.3	-1.3	-4.8	1.9	1.2	-0.6	0.8	-20.3	-	-	-
Apr.	123.3	-5.7	-0.7	-1.0	-3.9	1.5	1.0	-0.9	0.7	-14.7	-	-	-

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	109.7	2.2	2.9	2.2	1.8	3.9	5.9	7.9	59.8	29.5	21.4	37.1	29.0	22.0	37.0
2022	114.9	4.7	6.9	6.8	4.3	8.0	12.5	17.6	95.0	18.3	28.8	9.6	19.4	27.7	10.9
2023	121.8	6.0	4.3	6.1	3.9	4.1	0.5	-2.9	76.4	-13.0	-11.6	-14.3	-13.8	-12.5	-15.3
2023 Q2	121.2	6.3	4.3	6.8	4.5	4.2	0.3	-3.7	71.6	-18.0	-16.1	-19.9	-18.4	-16.4	-20.8
Q3	122.1	5.9	3.2	5.8	4.1	3.1	-1.9	-7.0	79.8	-13.8	-14.5	-13.0	-14.9	-15.2	-14.5
Q4	123.8	5.3	3.8	3.8	3.0	2.7	-1.4	-4.5	78.5	-9.0	-9.3	-8.8	-10.1	-10.4	-9.6
2024 Q1	.	.	.	.	.	.	.	.	76.5	-2.9	2.8	-8.4	-3.5	1.0	-8.7
2023 Dec.	-	-	-	-	-	-	-	-	71.4	-5.8	-3.7	-7.9	-6.8	-5.5	-8.2
2024 Jan.	-	-	-	-	-	-	-	-	73.5	-5.3	-0.7	-9.6	-6.3	-3.2	-9.7
Feb.	-	-	-	-	-	-	-	-	77.5	-3.9	1.2	-8.9	-4.1	0.4	-9.1
Mar.	-	-	-	-	-	-	-	-	78.6	0.5	7.9	-6.6	-0.2	5.8	-7.2
Apr.	-	-	-	-	-	-	-	-	85.0	11.7	19.2	4.2	9.8	14.5	4.1
May	-	-	-	-	-	-	-	-	.	12.4	12.6	12.2	11.4	11.0	11.9

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 Q2	7.1	29.8	18.0	12.3	76.9	41.6	64.3	49.2	58.0
Q3	3.5	22.1	15.3	6.4	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	16.6	17.5	5.1	64.5	44.9	62.3	48.2	56.0
2023 Dec.	3.6	18.4	18.8	11.6	66.9	43.1	61.6	48.9	55.6
2024 Jan.	4.6	18.6	20.0	9.9	66.1	42.8	62.6	48.6	56.3
Feb.	4.0	16.9	17.3	3.7	65.3	45.5	62.9	48.3	56.6
Mar.	5.6	14.3	15.1	1.6	62.1	46.5	61.5	47.7	55.1
Apr.	5.6	14.0	14.0	2.5	58.3	49.0	61.7	47.9	55.9
May	6.4	13.7	13.2	3.6	56.9	49.4	60.5	48.2	54.2

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	100.9	0.9	1.0	0.5	0.9	0.9	1.4
2022	105.7	4.8	4.0	7.0	5.0	4.2	2.9
2023	110.4	4.4	4.4	4.7	4.9	3.4	4.5
2023 Q2	113.7	4.3	4.4	4.0	4.6	3.8	4.4
Q3	107.4	5.2	5.2	4.9	5.7	3.9	4.7
Q4	117.9	3.3	3.2	4.0	4.0	2.0	4.5
2024 Q1	107.6	4.9	5.0	4.4	5.1	5.0	4.7

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	-0.2	1.8	-3.6	5.5	-1.8	1.2	-1.5	5.0	1.0	0.9	-0.1
2022	113.7	3.3	6.9	3.6	6.1	1.9	3.0	2.7	4.9	3.2	3.5	-3.0
2023	120.8	6.2	3.7	8.3	5.6	7.4	4.4	5.2	4.4	6.5	4.5	2.3
2023 Q1	118.8	5.9	3.9	6.9	5.3	6.5	4.5	5.8	4.2	7.0	3.9	0.0
Q2	119.5	6.2	2.4	7.0	5.8	7.7	4.5	4.6	4.9	6.6	4.9	2.9
Q3	121.5	6.5	4.5	9.2	5.0	8.0	4.1	4.5	3.5	6.6	5.1	2.9
Q4	123.2	5.9	3.7	9.2	5.4	6.9	4.2	5.8	4.9	5.5	3.8	3.2
Compensation per employee												
2021	111.6	4.2	2.7	4.7	5.2	5.5	5.8	3.3	6.6	4.7	2.3	3.3
2022	116.6	4.5	5.1	3.6	4.0	6.2	3.3	3.4	3.9	5.2	3.8	7.1
2023	122.6	5.2	5.6	5.5	4.7	5.8	5.1	4.6	4.0	6.2	4.1	5.5
2023 Q1	121.0	5.4	6.1	5.7	4.3	6.7	4.8	5.2	3.7	6.9	4.0	5.4
Q2	121.7	5.3	6.0	5.2	5.0	5.9	5.3	4.4	3.8	6.2	4.7	5.5
Q3	123.3	5.2	5.5	5.8	4.7	5.2	5.3	4.2	3.8	6.3	4.4	5.7
Q4	124.6	4.7	4.8	5.5	4.7	5.3	5.0	4.7	4.7	5.2	3.4	5.3
Labour productivity per person employed												
2021	101.4	4.4	0.9	8.7	-0.2	7.5	4.6	4.9	1.5	3.6	1.3	3.4
2022	102.5	1.1	-1.7	-0.1	-2.0	4.2	0.3	0.7	-0.9	1.9	0.3	10.4
2023	101.5	-1.0	1.9	-2.6	-0.9	-1.5	0.7	-0.6	-0.4	-0.3	-0.3	3.1
2023 Q2	101.8	-0.8	3.5	-1.6	-0.7	-1.6	0.8	-0.2	-1.0	-0.4	-0.3	2.6
Q3	101.5	-1.2	1.0	-3.1	-0.3	-2.6	1.1	-0.2	0.3	-0.3	-0.7	2.7
Q4	101.2	-1.1	1.0	-3.4	-0.7	-1.5	0.7	-1.1	-0.2	-0.2	-0.4	2.1
2024 Q1	101.2	-0.6	.	.	.	.	.	.	.	.	.	.
Compensation per hour worked												
2021	114.1	0.1	0.5	-0.1	-0.5	-0.6	2.7	1.2	2.2	0.1	0.8	-1.5
2022	118.0	3.4	6.3	3.9	4.3	1.7	3.3	3.4	2.7	3.9	4.9	3.7
2023	124.0	5.1	5.4	5.8	4.8	5.8	5.3	5.0	4.5	6.0	4.0	4.7
2023 Q1	121.8	4.7	4.7	5.2	4.1	5.3	5.0	5.2	4.0	6.1	3.7	4.1
Q2	122.5	5.0	6.4	5.0	5.1	6.0	5.1	4.2	4.1	5.8	4.1	4.2
Q3	124.4	5.0	5.1	5.8	5.0	5.3	5.5	4.5	4.7	6.0	4.0	4.3
Q4	125.9	4.5	4.6	5.3	3.8	5.4	4.4	4.8	4.0	4.8	3.2	5.0
Hourly labour productivity												
2021	104.7	0.0	0.0	3.4	-6.2	1.0	1.3	2.6	-3.7	-1.4	-0.3	-2.1
2022	104.7	0.0	-1.3	0.2	-2.1	0.1	0.2	0.8	-2.6	1.0	1.3	5.9
2023	103.8	-0.9	2.1	-2.3	-0.6	-1.3	1.1	-0.2	0.1	-0.3	-0.4	2.5
2023 Q1	103.7	-0.8	1.5	-1.6	-0.9	-0.5	0.6	-0.5	-0.1	-0.4	0.0	4.0
Q2	103.6	-1.0	3.8	-1.8	-0.9	-1.5	0.6	-0.5	-0.6	-0.7	-0.7	1.6
Q3	103.5	-1.3	1.1	-3.0	-0.3	-2.4	1.6	-0.2	0.1	-0.6	-1.0	1.7
Q4	103.3	-1.2	1.1	-3.5	-1.0	-1.3	0.4	-0.8	0.2	-0.5	-0.7	2.2

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
2023 Dec.	3.90	3.86	3.93	3.92	3.67	5.33	-0.01
2024 Jan.	3.90	3.87	3.93	3.89	3.61	5.32	-0.01
Feb.	3.91	3.87	3.92	3.90	3.67	5.31	-0.01
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

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
2023 Dec.	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 Jan.	3.81	3.05	2.47	2.05	2.27	-0.79	-0.81	-1.03	2.26	1.67	2.06	2.76
Feb.	3.82	3.33	2.90	2.43	2.48	-0.85	-0.76	-0.46	2.79	2.24	2.20	2.79
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

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
2023 Dec.	472.0	4,508.6	1,019.9	298.5	163.4	122.7	202.0	862.9	950.4	390.0	282.2	749.5	4,688.4	33,118.0
2024 Jan.	471.8	4,505.8	998.5	289.2	163.2	120.2	204.7	875.3	963.2	381.9	288.4	762.5	4,804.5	35,451.8
Feb.	489.4	4,758.9	989.4	315.9	165.3	119.0	207.3	916.0	1,085.4	353.4	283.8	747.9	5,012.0	37,785.2
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

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 May	0.21	1.30	2.47	2.48	7.15	16.35	8.16	7.60	8.31	5.08	4.28	3.99	3.65	3.31	3.93	3.59
June	0.23	1.37	2.71	2.59	7.29	16.35	7.03	7.49	7.99	5.11	4.42	4.07	3.72	3.41	4.05	3.71
July	0.27	1.42	2.83	2.86	7.50	16.41	8.42	7.73	8.41	5.23	4.58	4.14	3.72	3.46	4.09	3.76
Aug.	0.31	1.50	3.04	3.11	7.60	16.47	8.78	7.83	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	1.59	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	1.65	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	1.68	3.20	3.15	8.14	16.85	7.99	8.02	8.73	5.37	4.85	4.08	3.67	3.52	4.15	3.88
Feb.	0.38	1.70	3.17	3.07	8.18	16.80	7.68	7.94	8.63	5.31	4.83	4.01	3.64	3.49	4.11	3.85
Mar.	0.39	1.71	3.18	2.91	8.16	16.90	8.09	7.79	8.54	5.16	4.79	4.00	3.57	3.44	4.05	3.80
Apr.	0.39	1.73	3.12	2.89	8.14	16.92	8.11	7.85	8.58	5.19	4.82	3.99	3.59	3.42	4.03	3.80

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 May	0.49	2.96	3.13	4.56	5.05	5.07	5.16	4.76	4.84	4.01	4.47	4.58	4.01	4.58
June	0.55	3.20	3.10	4.78	5.24	5.43	5.26	4.95	4.99	4.14	4.71	4.88	4.10	4.78
July	0.61	3.31	3.58	4.88	5.52	5.52	5.43	5.13	5.02	4.30	4.86	5.01	4.32	4.94
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	5.66	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	3.98	5.14
Mar.	0.90	3.68	3.60	5.35	5.39	5.70	5.53	5.41	5.17	4.34	5.16	5.16	4.16	5.18
Apr.	0.91	3.66	3.30	5.36	5.20	5.60	5.62	5.35	5.09	4.30	5.19	4.99	4.13	5.18

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	1,408.4	429.7	125.2	48.8	88.8	764.7	674.9	387.2	138.6	79.0	26.3	32.1	137.6	104.8
2022	1,378.0	473.9	142.6	50.4	94.6	667.0	621.7	480.7	182.9	115.8	48.1	48.1	133.9	97.1
2023	1,519.6	595.3	134.3	51.1	88.4	701.8	659.1	499.4	211.5	111.4	37.8	49.0	127.5	103.8
2023 Nov.	1,542.5	598.2	134.2	46.5	98.1	712.0	667.7	481.1	187.2	119.5	40.0	45.5	129.0	100.2
Dec.	1,519.6	595.3	134.3	51.1	88.4	701.8	659.1	329.1	143.3	80.0	36.0	32.1	73.6	60.7
2024 Jan.	1,532.4	598.9	155.5	51.4	93.2	684.8	642.7	541.5	212.1	132.9	43.2	47.7	148.8	121.6
Feb.	1,525.7	593.5	152.9	49.6	96.0	683.4	643.2	457.6	183.1	112.3	36.8	39.7	122.5	100.7
Mar.	1,528.0	600.3	151.2	48.3	85.1	691.4	644.0	461.7	181.5	109.7	33.1	38.9	131.5	102.8
Apr.	1,497.2	564.1	153.9	47.3	91.4	687.8	643.4	438.5	173.6	93.5	32.4	46.1	125.3	103.8
Long-term														
2021	19,872.6	4,170.0	3,341.1	1,350.1	1,620.3	10,741.2	9,942.9	316.2	68.7	83.4	33.8	23.3	140.9	128.1
2022	17,817.7	3,956.3	3,204.6	1,347.1	1,414.3	9,242.4	8,559.1	297.9	79.4	71.6	30.1	16.9	130.0	121.2
2023	19,460.7	4,485.8	3,387.7	1,362.5	1,525.1	10,062.0	9,361.1	322.1	94.4	69.2	25.4	21.0	137.5	129.9
2023 Nov.	18,976.4	4,400.1	3,345.8	1,356.9	1,482.4	9,748.1	9,065.7	302.9	83.7	87.6	36.1	25.7	105.9	101.2
Dec.	19,460.7	4,485.8	3,387.7	1,362.5	1,525.1	10,062.0	9,361.1	214.8	68.9	59.6	19.5	16.7	69.6	68.0
2024 Jan.	19,564.1	4,542.8	3,447.3	1,371.7	1,524.9	10,049.1	9,345.3	471.0	167.2	91.8	31.3	22.7	189.2	172.3
Feb.	19,520.6	4,543.0	3,442.8	1,364.6	1,514.8	10,020.0	9,311.1	369.8	100.3	63.6	11.3	19.5	186.4	168.1
Mar.	19,793.3	4,622.2	3,471.7	1,372.2	1,535.6	10,163.8	9,445.2	435.0	124.4	95.7	31.7	35.8	179.1	164.4
Apr.	19,685.1	4,638.9	3,459.0	1,361.8	1,528.8	10,058.3	9,351.8	322.8	96.1	58.3	10.8	27.5	140.8	135.0

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	21,281.0	4,599.7	3,466.3	1,398.8	1,709.1	11,505.9	10,617.8	10,368.4	600.3	1,486.6	8,280.5
2022	19,195.7	4,430.2	3,347.2	1,397.4	1,508.9	9,909.4	9,180.8	8,711.1	525.2	1,290.2	6,895.1
2023	20,980.3	5,081.1	3,522.0	1,413.7	1,613.4	10,763.7	10,020.2	9,689.7	621.8	1,414.9	7,652.6
2023 Nov.	20,518.9	4,998.3	3,480.0	1,403.4	1,580.5	10,460.1	9,733.4	9,392.7	611.5	1,395.6	7,385.2
Dec.	20,980.3	5,081.1	3,522.0	1,413.7	1,613.4	10,763.7	10,020.2	9,689.7	621.8	1,414.9	7,652.6
2024 Jan.	21,096.5	5,141.7	3,602.8	1,423.2	1,618.1	10,733.9	9,988.0	9,841.5	641.1	1,443.2	7,756.7
Feb.	21,046.3	5,136.4	3,595.7	1,414.2	1,610.8	10,703.4	9,954.3	10,165.8	652.5	1,506.6	8,006.2
Mar.	21,321.3	5,222.5	3,622.8	1,420.4	1,620.7	10,855.2	10,089.2	10,521.7	727.4	1,595.5	8,198.4
Apr.	21,182.3	5,203.0	3,613.0	1,409.1	1,620.2	10,746.1	9,995.2	10,247.2	729.1	1,531.8	7,985.9
Growth rate [1]											
2023 Sep.	6.3	11.3	4.4	3.9	2.0	5.4	6.2	-1.0	-3.1	1.2	-1.2
Oct.	5.9	10.9	4.1	3.7	2.5	4.8	5.5	-1.4	-3.0	1.1	-1.7
Nov.	5.3	10.4	2.8	1.1	2.5	4.4	4.9	-1.3	-3.3	1.0	-1.5
Dec.	5.7	11.8	2.9	1.2	2.3	4.5	5.0	-1.5	-3.1	0.8	-1.7
2024 Jan.	5.8	10.8	4.4	2.7	2.3	4.6	5.1	-1.5	-3.0	0.8	-1.8
Feb.	5.5	10.2	4.0	1.9	2.2	4.4	4.8	-1.5	-3.0	0.8	-1.7
Mar.	5.6	10.9	4.3	2.4	2.6	4.2	4.6	-1.3	-3.0	1.1	-1.6
Apr.	5.4	10.0	3.9	0.7	2.6	4.2	4.5	-1.4	-3.1	0.7	-1.6

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	89.4	68.3	87.6	120.5	94.3
2022	95.3	90.8	93.7	84.3	63.3	82.8	116.1	90.9
2023	98.1	94.0	98.1	88.4	65.1	86.5	121.8	94.7
2023 Q2	98.2	93.9	98.1	88.2	64.3	85.9	121.4	94.6
Q3	98.9	94.9	99.0	89.0	65.3	87.4	123.5	95.9
Q4	98.3	94.2	98.3	89.0	65.3	87.1	123.0	95.1
2024 Q1	98.4	94.5	98.5	.	.	.	123.7	95.2
2023 Dec.	98.2	93.9	98.0	-	-	-	123.2	94.9
2024 Jan.	98.4	94.4	98.4	-	-	-	123.6	95.2
Feb.	98.1	94.2	98.2	-	-	-	123.3	94.9
Mar.	98.8	94.8	98.8	-	-	-	124.2	95.5
Apr.	98.6	94.6	98.5	-	-	-	124.0	95.2
May	98.9	94.8	98.8	-	-	-	124.4	95.3
Percentage change versus previous month								
2024 May	0.3	0.3	0.3	-	-	-	0.3	0.2
Percentage change versus previous year								
2024 May	1.0	1.3	1.0	-	-	-	2.8	1.2

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	7.794	.	25.043	7.460	389.736	166.824	4.291	0.856	4.9742	11.605	0.980	1.077
2023 Dec.	7.787	.	24.478	7.456	381.803	157.213	4.334	0.862	4.9707	11.203	0.944	1.090
2024 Jan.	7.820	.	24.716	7.457	382.042	159.458	4.365	0.859	4.9749	11.283	0.937	1.091
Feb.	7.765	.	25.232	7.455	388.039	161.377	4.326	0.855	4.9746	11.250	0.946	1.079
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
Percentage change versus previous month												
2024 May	0.7	0.0	-1.8	0.0	-1.3	2.1	-0.5	-0.1	0.0	0.2	0.7	0.8
Percentage change versus previous year												
2024 May	3.0	.	5.2	0.2	4.0	13.2	-5.6	-1.7	0.6	2.2	0.8	-0.5

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 Q1	31,760.6	31,487.6	273.0	12,342.4	10,109.1	11,351.7	13,390.3	35.4	6,897.7	7,988.2	1,133.5	16,096.9
Q2	31,906.0	31,584.7	321.3	12,230.2	9,984.7	11,737.5	13,698.8	13.5	6,819.1	7,901.2	1,105.7	16,069.4
Q3	32,083.3	31,600.0	483.3	12,334.0	10,074.6	11,785.9	13,705.3	-9.6	6,859.0	7,820.1	1,114.1	16,078.3
Q4	32,017.5	31,432.1	585.3	11,957.1	9,642.3	12,219.9	14,267.5	8.3	6,683.8	7,522.3	1,148.3	15,749.5
Outstanding amounts as percentage of GDP												
2023 Q4	222.7	218.6	4.1	83.2	67.1	85.0	99.2	0.1	46.5	52.3	8.0	109.6
Transactions												
2023 Q2	12.9	-27.2	40.1	-104.3	-97.0	213.7	131.6	-5.0	-93.4	-61.8	1.9	-
Q3	122.2	26.8	95.4	8.3	-0.5	96.5	114.6	-2.7	22.2	-87.3	-2.2	-
Q4	-326.7	-424.5	97.8	-321.5	-311.6	41.9	93.1	23.6	-77.1	-206.0	6.4	-
2024 Q1	489.7	411.2	78.5	58.5	13.5	131.4	199.9	23.8	274.8	197.7	1.2	-
2023 Oct.	-38.2	-71.8	33.6	-119.8	-121.4	0.7	8.7	17.3	60.1	40.8	3.5	-
Nov.	10.0	-27.9	38.0	-54.6	-57.0	79.0	33.9	1.3	-17.0	-4.9	1.4	-
Dec.	-298.5	-324.7	26.2	-147.0	-133.2	-37.7	50.5	5.0	-120.3	-242.0	1.5	-
2024 Jan.	175.8	170.3	5.5	-5.3	-8.3	55.1	123.4	15.6	109.5	55.1	0.8	-
Feb.	182.5	174.0	8.5	34.0	2.2	45.4	56.6	13.8	88.4	115.2	0.9	-
Mar.	131.4	66.9	64.5	29.8	19.7	30.9	19.8	-5.6	76.9	27.3	-0.5	-
12-month cumulated transactions												
2024 Mar.	298.1	-13.7	311.8	-359.0	-395.5	483.5	539.2	39.7	126.5	-157.4	7.3	-
12-month cumulated transactions as percentage of GDP												
2024 Mar.	2.1	-0.1	2.2	-2.5	-2.8	3.4	3.8	0.3	0.9	-1.1	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	819.8	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 Q2	1,535.3	9,179.2	10,714.5	1,865.1	2,517.8	4,382.9	15,097.4	114.1	695.9	83.7	893.7	15,991.1
Q3	1,535.7	8,985.8	10,521.5	2,085.9	2,465.8	4,551.6	15,073.2	131.0	714.4	75.7	921.1	15,994.3
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 (p)	1,522.3	8,735.8	10,258.1	2,447.5	2,431.0	4,878.5	15,136.6	192.7	787.1	72.9	1,052.7	16,189.3
2023 Nov.	1,533.7	8,835.1	10,368.7	2,232.6	2,446.9	4,679.5	15,048.3	161.4	719.3	73.1	953.8	16,002.1
Dec.	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 Jan.	1,532.6	8,729.1	10,261.7	2,360.5	2,447.6	4,808.1	15,069.9	183.2	754.0	85.6	1,022.8	16,092.7
Feb.	1,532.7	8,711.8	10,244.5	2,423.9	2,433.7	4,857.6	15,102.1	178.5	769.2	69.4	1,017.2	16,119.3
Mar.	1,522.3	8,735.8	10,258.1	2,447.5	2,431.0	4,878.5	15,136.6	192.7	787.1	72.9	1,052.7	16,189.3
Apr. (p)	1,531.4	8,712.1	10,243.4	2,459.1	2,431.4	4,890.5	15,133.9	205.1	797.0	70.3	1,072.4	16,206.4
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	23.1	157.8	23.9
2023 Q2	-6.9	-275.5	-282.4	226.1	-30.2	195.9	-86.5	11.6	19.0	-5.5	25.2	-61.3
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	-129.3	228.9	-6.8	222.2	92.9	35.0	26.0	-6.3	54.6	147.6
2024 Q1 (p)	-13.1	-104.1	-117.2	135.8	-27.0	108.9	-8.3	8.3	47.4	8.0	63.7	55.4
2023 Nov.	-2.2	-27.4	-29.7	66.4	-6.2	60.2	30.6	17.8	7.9	-15.1	10.6	41.2
Dec.	2.3	12.5	14.8	78.3	11.7	90.0	104.8	3.8	21.3	-2.3	22.8	127.6
2024 Jan.	-2.8	-110.2	-113.0	46.7	-11.0	35.7	-77.3	-1.2	14.4	21.2	34.3	-43.0
Feb.	0.1	-17.8	-17.8	65.7	-13.3	52.4	34.6	-4.6	15.1	-14.9	-4.4	30.2
Mar.	-10.3	24.0	13.6	23.5	-2.7	20.8	34.4	14.2	17.9	1.7	33.7	68.2
Apr. (p)	9.0	-25.9	-16.9	11.3	0.4	11.7	-5.2	12.2	9.8	0.5	22.5	17.3
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	457.8	11.1	3.8
2023	-0.3	-9.7	-8.5	66.6	-3.9	20.9	-0.9	32.9	14.5	43.4	19.3	0.1
2023 Q2	0.4	-9.3	-8.0	85.8	-0.4	24.0	-0.6	-2.7	14.4	325.1	22.3	0.5
Q3	-0.2	-11.4	-9.9	76.3	-3.3	21.9	-2.2	10.3	18.4	64.8	19.9	-1.2
Q4	-0.3	-9.7	-8.5	66.6	-3.9	20.9	-0.9	32.9	14.5	43.4	19.3	0.1
2024 Q1 (p)	-1.3	-7.5	-6.6	49.8	-4.6	16.7	-0.2	68.6	16.3	-16.7	19.3	0.9
2023 Nov.	-0.6	-10.9	-9.5	68.7	-4.1	20.8	-1.9	18.2	13.0	92.2	17.7	-0.9
Dec.	-0.3	-9.7	-8.5	66.6	-3.9	20.9	-0.9	32.9	14.5	43.4	19.3	0.1
2024 Jan.	-0.5	-9.9	-8.6	62.1	-4.3	19.8	-1.1	25.1	18.2	68.9	22.8	0.1
Feb.	-0.4	-8.9	-7.8	57.9	-4.7	18.8	-0.6	29.6	17.8	0.1	18.2	0.4
Mar.	-1.3	-7.5	-6.6	49.8	-4.6	16.7	-0.2	68.6	16.3	-16.7	19.3	0.9
Apr. (p)	-0.3	-7.0	-6.0	45.4	-4.2	15.7	0.0	78.5	17.8	-10.7	22.6	1.3

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 Q2	3,333.1	2,502.4	687.7	132.0	11.0	8,362.5	5,310.2	701.6	2,349.9	0.8	1,186.6	229.1	564.9
Q3	3,322.7	2,438.9	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 [p)]	3,332.7	2,380.0	814.3	127.6	10.8	8,460.0	5,056.1	1,135.9	2,267.0	1.0	1,244.0	227.2	543.1
2023 Nov.	3,326.1	2,405.1	772.6	132.0	16.4	8,373.2	5,123.7	969.9	2,278.8	0.8	1,217.1	223.3	536.3
Dec.	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 Jan.	3,325.8	2,383.3	802.9	128.4	11.1	8,441.4	5,083.3	1,073.2	2,283.8	1.1	1,208.5	221.9	522.9
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	8,460.0	5,056.1	1,135.9	2,267.0	1.0	1,244.0	227.2	543.1
Apr. [p)]	3,348.0	2,385.9	824.8	126.8	10.7	8,486.2	5,058.2	1,159.7	2,267.4	1.0	1,248.1	209.9	515.4
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 Q2	0.7	-91.7	90.6	-0.6	2.4	-19.1	-127.0	135.2	-27.1	-0.1	-37.7	-1.3	-10.7
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	21.1	-8.8	32.4	-0.1	-2.5	76.6	-93.0	175.0	-6.0	0.6	30.9	23.0	-24.1
2024 Q1 [p)]	-4.0	-46.0	45.8	-3.5	-0.2	32.1	-55.7	112.2	-24.0	-0.4	-8.3	-8.0	1.3
2023 Nov.	4.0	-5.9	5.5	0.7	3.7	23.6	-30.0	60.9	-7.4	0.1	20.3	13.4	-10.8
Dec.	11.4	20.7	-4.7	-0.3	-4.2	52.3	-12.5	52.0	12.2	0.6	25.6	11.6	5.4
2024 Jan.	-10.9	-42.1	34.3	-3.3	0.1	13.5	-28.6	49.7	-7.2	-0.3	-46.4	-13.2	-18.8
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. [p)]	13.3	3.8	10.4	-0.8	-0.2	27.3	2.8	24.2	0.4	-0.1	2.6	-17.6	-27.7
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 Q2	0.7	-12.7	125.2	2.1	10.4	1.1	-4.5	97.4	-0.3	20.9	-14.2	0.5	-2.3
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 [p)]	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
2023 Nov.	-1.8	-13.0	59.3	1.0	102.4	-0.3	-8.5	132.7	-4.4	-18.6	-8.7	-8.9	-5.1
Dec.	-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 Jan.	-1.1	-11.2	49.6	-3.2	57.8	0.3	-8.3	121.7	-4.3	39.2	-5.3	-4.9	-7.3
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. [p)]	0.7	-7.0	32.6	-3.2	16.1	1.4	-6.2	91.7	-4.3	9.0	1.9	-8.6	-8.6

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	6,361.8	1,004.7	5,332.0	15,390.4	12,990.1	13,178.0	5,129.8	6,632.2	1,080.6	147.6	1,564.3	836.0
2023	6,315.7	994.7	5,295.6	15,493.8	13,037.0	13,256.8	5,126.7	6,648.6	1,122.8	139.0	1,559.1	897.7
2023 Q2	6,275.3	986.6	5,263.3	15,431.0	12,986.7	13,208.0	5,127.0	6,636.1	1,081.1	142.5	1,575.0	869.3
Q3	6,212.1	989.2	5,197.9	15,435.4	12,984.0	13,192.8	5,114.7	6,635.7	1,096.5	137.2	1,576.9	874.6
Q4	6,315.7	994.7	5,295.6	15,493.8	13,037.0	13,256.8	5,126.7	6,648.6	1,122.8	139.0	1,559.1	897.7
2024 Q1	6,217.3	976.8	5,214.9	15,547.5	13,044.8	13,275.9	5,115.7	6,644.2	1,145.1	139.8	1,571.2	931.4
2023 Nov.	6,226.7	986.0	5,215.5	15,474.0	13,035.7	13,237.3	5,118.3	6,654.4	1,129.0	134.1	1,560.4	877.9
Dec.	6,315.7	994.7	5,295.6	15,493.8	13,037.0	13,256.8	5,126.7	6,648.6	1,122.8	139.0	1,559.1	897.7
2024 Jan.	6,249.9	984.4	5,240.1	15,498.6	13,004.6	13,240.7	5,110.5	6,634.7	1,125.2	134.1	1,584.3	909.7
Feb.	6,210.2	982.6	5,202.1	15,527.6	13,028.1	13,262.5	5,113.2	6,638.2	1,140.6	136.1	1,581.9	917.5
Mar.	6,217.3	976.8	5,214.9	15,547.5	13,044.8	13,275.9	5,115.7	6,644.2	1,145.1	139.8	1,571.2	931.4
Apr.	6,208.5	972.7	5,210.2	15,536.4	13,059.1	13,292.9	5,112.2	6,641.7	1,168.2	137.0	1,557.5	919.8
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	176.0	9.6	165.6	636.0	624.1	680.8	269.5	241.9	126.1	-13.4	18.2	-6.4
2023	-160.5	-16.8	-144.0	55.4	25.0	72.6	-5.4	7.8	30.7	-8.1	-15.3	45.7
2023 Q2	-75.1	-8.6	-67.0	7.0	-25.7	6.3	-5.1	-28.6	7.2	0.8	17.5	15.2
Q3	-18.2	1.6	-19.5	10.1	2.2	-9.4	-8.6	2.1	14.0	-5.3	2.1	5.8
Q4	5.9	7.8	-2.2	39.1	46.6	69.4	10.1	17.6	16.7	2.2	-23.8	16.3
2024 Q1	-75.1	-16.4	-58.9	60.9	24.9	37.5	-4.1	-0.9	29.2	0.8	12.3	23.7
2023 Nov.	-15.1	-2.1	-13.1	0.4	14.6	21.6	-3.9	11.2	8.2	-0.8	-6.7	-7.5
Dec.	36.4	9.0	27.3	6.1	-5.1	13.4	11.3	-3.5	-17.8	4.9	-4.4	15.7
2024 Jan.	-44.2	-8.8	-35.6	7.2	-28.0	-11.8	-14.1	-13.2	4.2	-4.9	27.0	8.3
Feb.	-22.1	-2.0	-20.0	36.3	32.9	33.3	5.7	4.7	20.4	2.0	-1.3	4.7
Mar.	-8.8	-5.6	-3.3	17.3	20.1	16.0	4.3	7.6	4.5	3.6	-13.4	10.6
Apr.	13.3	-3.5	16.7	-4.6	14.0	17.8	-3.9	-1.5	22.2	-2.8	-12.5	-6.1
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 Q2	-2.5	-2.3	-2.5	1.6	1.4	2.0	2.5	1.1	0.8	-12.2	1.0	4.4
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	-2.6	-1.6	-2.8	0.8	0.4	0.8	-0.2	-0.1	6.2	-1.2	0.5	7.2
2023 Nov.	-2.8	-1.7	-3.1	0.2	0.0	0.4	-0.7	0.2	3.4	-10.5	-0.2	3.9
Dec.	-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 Jan.	-2.5	-1.1	-2.7	0.4	-0.1	0.4	-0.5	-0.1	3.0	-9.1	1.3	6.4
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.	-2.6	-1.6	-2.8	0.8	0.4	0.8	-0.2	-0.1	6.2	-1.2	0.5	7.2
Apr.	-1.9	-0.8	-2.1	0.7	0.5	0.9	-0.1	-0.2	8.6	-4.5	-0.5	5.7

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	962.7	1,077.6	3,089.6	6,632.2	6,832.8	717.3	5,214.7	700.2
2023	5,126.7	5,143.4	910.1	1,091.2	3,125.5	6,648.6	6,865.8	733.5	5,229.2	685.9
2023 Q2	5,127.0	5,137.8	922.0	1,088.2	3,116.8	6,636.1	6,869.6	726.0	5,209.8	700.3
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	910.1	1,091.2	3,125.5	6,648.6	6,865.8	733.5	5,229.2	685.9
2024 Q1	5,115.7	5,132.8	888.0	1,088.6	3,139.0	6,644.2	6,873.5	742.0	5,222.6	679.6
2023 Nov.	5,118.3	5,129.6	904.6	1,087.5	3,126.1	6,654.4	6,868.5	732.1	5,233.4	688.9
Dec.	5,126.7	5,143.4	910.1	1,091.2	3,125.5	6,648.6	6,865.8	733.5	5,229.2	685.9
2024 Jan.	5,110.5	5,128.0	889.9	1,093.8	3,126.9	6,634.7	6,869.4	734.7	5,216.4	683.7
Feb.	5,113.2	5,130.4	890.8	1,090.6	3,131.8	6,638.2	6,871.8	736.7	5,220.3	681.2
Mar.	5,115.7	5,132.8	888.0	1,088.6	3,139.0	6,644.2	6,873.5	742.0	5,222.6	679.6
Apr.	5,112.2	5,128.1	876.3	1,088.1	3,147.8	6,641.7	6,875.2	741.1	5,223.8	676.8
Transactions										
2021	176.9	208.3	0.2	2.3	174.4	261.7	267.3	10.7	254.9	-3.9
2022	269.5	309.2	78.0	77.4	114.1	241.9	250.3	23.3	217.8	0.9
2023	-5.4	24.9	-43.8	10.6	27.9	7.8	25.7	18.9	9.9	-21.1
2023 Q2	-5.1	-0.1	-9.6	-2.9	7.5	-28.6	1.1	3.9	-27.6	-4.9
Q3	-8.6	-10.4	-10.8	-3.3	5.5	2.1	0.6	6.7	3.1	-7.6
Q4	10.1	30.3	4.0	5.4	0.7	17.6	3.4	3.8	17.6	-3.8
2024 Q1	-4.1	-2.0	-19.8	-1.2	16.9	-0.9	9.8	9.4	-5.2	-5.0
2023 Nov.	-3.9	12.9	-1.8	-2.4	0.3	11.2	3.4	1.5	9.0	0.7
Dec.	11.3	16.7	6.7	4.6	0.0	-3.5	-0.4	2.0	-3.7	-1.9
2024 Jan.	-14.1	-12.9	-18.8	1.8	2.9	-13.2	3.5	1.1	-12.4	-1.8
Feb.	5.7	6.2	2.1	-2.4	5.9	4.7	4.0	2.5	4.5	-2.3
Mar.	4.3	4.7	-3.1	-0.7	8.2	7.6	2.3	5.7	2.7	-0.9
Apr.	-3.9	-4.1	-8.1	-2.1	6.2	-1.5	2.6	-0.4	1.4	-2.5
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	-4.6	1.0	0.9	0.1	0.4	2.6	0.2	-3.0
2023 Q2	2.5	3.1	-1.8	6.3	2.5	1.1	1.7	2.6	1.3	-1.7
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	-4.6	1.0	0.9	0.1	0.4	2.6	0.2	-3.0
2024 Q1	-0.2	0.4	-3.9	-0.2	1.0	-0.1	0.2	3.3	-0.2	-3.0
2023 Nov.	-0.7	0.0	-8.0	1.4	0.9	0.2	0.5	2.6	0.4	-2.9
Dec.	-0.1	0.5	-4.6	1.0	0.9	0.1	0.4	2.6	0.2	-3.0
2024 Jan.	-0.5	0.2	-5.8	0.8	0.7	-0.1	0.3	2.7	-0.1	-3.1
Feb.	-0.3	0.3	-4.5	0.1	0.8	-0.2	0.3	2.8	-0.2	-3.1
Mar.	-0.2	0.4	-3.9	-0.2	1.0	-0.1	0.2	3.3	-0.2	-3.0
Apr.	-0.1	0.3	-3.9	-0.6	1.1	-0.2	0.2	3.0	-0.2	-3.1

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	6,755.7	1,783.1	45.9	2,121.8	2,804.8	1,333.4	387.1	137.2	147.2
2023	461.3	7,340.2	1,826.4	90.5	2,422.1	3,001.2	1,859.0	268.1	155.0	152.6
2023 Q2	484.9	6,985.1	1,806.8	61.5	2,229.8	2,886.9	1,461.0	293.8	169.0	172.6
Q3	455.9	7,144.7	1,824.6	72.9	2,367.0	2,880.2	1,633.3	314.0	153.8	163.3
Q4	461.3	7,340.2	1,826.4	90.5	2,422.1	3,001.2	1,859.0	268.1	155.0	152.6
2024 Q1 (p)	399.4	7,464.6	1,828.5	105.2	2,502.4	3,028.5	2,045.5	243.1	178.0	174.2
2023 Nov.	407.5	7,273.8	1,827.9	83.7	2,414.0	2,948.2	1,793.9	188.7	170.4	162.0
Dec.	461.3	7,340.2	1,826.4	90.5	2,422.1	3,001.2	1,859.0	268.1	155.0	152.6
2024 Jan.	457.2	7,377.6	1,829.9	96.9	2,447.4	3,003.3	1,961.6	217.3	165.7	159.7
Feb.	438.6	7,366.3	1,828.1	101.7	2,464.0	2,972.5	1,941.7	244.6	165.4	173.4
Mar.	399.4	7,464.6	1,828.5	105.2	2,502.4	3,028.5	2,045.5	243.1	178.0	174.2
Apr. (p)	438.2	7,508.0	1,826.6	107.9	2,531.7	3,041.8	2,172.1	235.6	163.6	177.4
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	62.1	-89.0	-4.4	15.5	140.0	-68.3	-174.8	10.4	18.0
2023	-193.7	332.2	24.7	40.1	225.3	42.1	459.0	-191.4	19.7	9.0
2023 Q2	-88.7	96.8	13.8	6.1	61.8	15.1	90.0	-75.1	16.8	6.7
Q3	-29.1	96.4	16.9	11.4	44.9	23.2	130.4	-59.7	-13.3	-6.0
Q4	5.4	61.3	-11.3	17.6	60.0	-5.0	176.1	-6.9	1.2	-10.7
2024 Q1 (p)	-61.5	107.0	4.9	14.7	94.3	-6.8	133.8	-18.6	25.6	21.5
2023 Nov.	-32.5	16.5	-4.9	6.0	16.7	-1.4	64.7	-24.8	7.3	10.7
Dec.	53.8	12.3	-2.0	6.8	19.2	-11.7	52.9	98.3	-15.4	-9.4
2024 Jan.	-3.7	61.8	2.7	6.4	38.3	14.5	105.9	-53.9	10.7	7.0
Feb.	-18.6	12.4	1.8	4.7	14.8	-8.9	-11.9	21.7	2.3	13.7
Mar.	-39.2	32.8	0.4	3.5	41.2	-12.4	39.7	13.6	12.5	0.8
Apr. (p)	38.5	24.0	-1.8	2.7	23.3	-0.2	103.7	-32.6	-14.4	3.2
Growth rates										
2021	3.6	-0.6	-3.9	-11.9	-2.0	2.7	-	-	-6.0	-3.0
2022	-11.4	0.9	-4.8	-13.0	0.6	4.9	-	-	7.8	12.7
2023	-29.7	4.9	1.4	80.2	10.5	1.5	-	-	14.3	6.0
2023 Q2	-37.5	3.6	-2.2	25.1	8.7	3.2	-	-	1.8	10.3
Q3	-30.2	4.9	1.4	48.8	10.4	2.3	-	-	5.6	14.2
Q4	-29.7	4.9	1.4	80.2	10.5	1.5	-	-	14.3	6.0
2024 Q1 (p)	-30.3	5.2	1.3	89.9	11.7	0.9	-	-	20.3	7.1
2023 Nov.	-40.3	5.3	1.3	68.5	10.3	2.8	-	-	7.4	-2.7
Dec.	-29.7	4.9	1.4	80.2	10.5	1.5	-	-	14.3	6.0
2024 Jan.	-20.1	5.2	1.6	85.3	10.3	2.1	-	-	8.4	4.2
Feb.	-21.4	5.0	1.7	88.6	10.5	1.4	-	-	10.0	11.0
Mar.	-30.3	5.2	1.3	89.9	11.7	0.9	-	-	20.3	7.1
Apr. (p)	-23.4	5.1	0.4	89.7	12.4	0.8	-	-	9.6	11.8

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	-3.7	-3.9	0.0	0.0	0.3	-2.0
2023	-3.6	-3.6	-0.2	-0.2	0.4	-1.8
2023 Q1	-3.8	.	.	.	.	-2.1
Q2	-4.0	.	.	.	.	-2.3
Q3	-3.9	.	.	.	.	-2.2
Q4	-3.6	.	.	.	.	-1.9

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	12.9	12.7	15.5	0.5	53.5	48.9	10.7	6.0	1.5	25.3	4.6
2021	47.1	46.3	13.2	13.1	15.1	0.8	52.3	47.1	10.2	6.0	1.5	24.0	5.2
2022	47.0	46.2	13.5	12.9	14.8	0.8	50.6	45.3	9.9	5.9	1.7	22.8	5.3
2023	46.5	45.6	13.4	12.5	14.7	0.8	50.1	44.6	9.8	6.0	1.7	22.6	5.4
2023 Q1	46.7	45.9	13.4	12.8	14.7	0.8	50.4	45.1	9.8	5.9	1.7	22.7	5.3
Q2	46.5	45.7	13.4	12.7	14.7	0.8	50.5	45.1	9.8	5.9	1.7	22.7	5.4
Q3	46.4	45.6	13.4	12.6	14.7	0.8	50.3	44.9	9.8	6.0	1.7	22.6	5.4
Q4	46.4	45.6	13.4	12.5	14.7	0.8	50.0	44.6	9.8	6.0	1.7	22.6	5.4

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	97.2	3.2	14.5	79.5	54.3	39.1	42.9	11.2	86.0	18.8	31.0	47.5	95.6	1.7
2021	94.8	3.0	13.9	77.9	54.9	41.3	39.9	9.9	84.9	17.4	30.3	47.2	93.3	1.4
2022	90.8	2.7	13.2	74.9	53.1	40.2	37.7	8.8	82.0	16.3	28.8	45.7	89.9	1.0
2023	88.6	2.5	12.2	73.9	49.9	36.6	38.7	8.0	80.5	15.4	28.4	44.7	87.8	0.8
2023 Q1	90.6	2.5	12.8	75.2	.	.	.	.	.	.	.	.	.	.
Q2	90.1	2.5	12.4	75.1	.	.	.	.	.	.	.	.	.	.
Q3	89.6	2.5	12.2	74.9	.	.	.	.	.	.	.	.	.	.
Q4	88.6	2.5	12.2	73.9	.	.	.	.	.	.	.	.	.	.

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	13.1	5.5	2.2	2.5	2.1	0.4	-0.1	0.1	-0.3	0.1	5.3	9.6
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	-3.9	2.0	-0.3	-0.2	-0.7	0.2	0.1	0.1	0.6	-0.7	-5.6	2.7
2023	-2.3	1.8	-0.3	-0.5	-0.5	-0.2	0.1	0.1	0.6	-0.4	-3.8	2.7
2023 Q1	-3.9	2.1	-0.7	-0.8	-1.2	0.2	0.1	0.1	0.8	-0.7	-5.3	2.3
Q2	-3.4	2.3	-0.9	-1.2	-1.5	0.1	0.1	0.1	0.7	-0.5	-4.7	2.3
Q3	-2.5	2.2	-0.4	-0.6	-0.8	-0.2	0.2	0.1	0.7	-0.4	-4.3	2.8
Q4	-2.3	1.9	-0.4	-0.5	-0.5	-0.2	0.1	0.1	0.6	-0.4	-3.8	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 Q2	12.8	11.5	3.4	1.3	0.3	8.1	1.9	1.3	1.5	1.9	2.0	2.8	1.1
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	13.0	11.6	3.8	1.4	0.3	8.3	2.0	1.3	2.1	2.1	1.5	3.7	2.5
2023 Nov.	12.9	11.5	3.5	1.4	0.4	8.2	2.0	1.2	2.0	2.0	1.7	3.6	1.8
Dec.	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 Jan.	12.5	11.2	3.9	1.3	0.3	8.2	2.0	1.2	2.0	2.0	1.4	3.6	2.1
Feb.	12.6	11.2	4.3	1.3	0.3	8.2	2.0	1.2	2.2	2.0	1.4	3.7	2.3
Mar.	13.0	11.6	3.8	1.4	0.3	8.3	2.0	1.3	2.1	2.1	1.5	3.7	2.5
Apr.	12.9	11.5	3.9	1.4	0.4	8.3	2.1	1.3	2.2	2.1	1.5	3.7	2.6

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 Q1	-4.0	-2.9	-1.3	1.9	-2.8	-4.4	-4.8	-0.1	-8.5	3.1
Q2	-3.8	-3.3	-1.8	1.9	-2.7	-4.6	-5.3	-0.5	-8.3	3.0
Q3	-3.9	-3.2	-2.3	1.6	-1.4	-4.5	-5.5	-0.3	-7.7	3.1
Q4	-4.4	-2.5	-3.4	1.7	-1.6	-3.6	-5.5	-0.7	-7.4	3.1
	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 Q1	106.3	65.6	17.3	43.5	169.4	111.2	112.5	68.6	139.3	82.9
Q2	105.6	64.6	18.5	43.1	167.2	111.2	112.0	65.8	140.1	84.9
Q3	107.6	64.7	18.2	43.5	165.6	109.8	112.0	63.9	137.9	79.0
Q4	105.2	63.6	19.6	43.7	161.9	107.7	110.6	63.0	137.3	77.3

	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 Q1	-4.3	-1.0	-0.9	-4.8	-0.4	-3.0	0.1	-3.0	-2.3	-0.4
Q2	-3.0	-1.1	-1.0	-4.3	-0.5	-3.4	0.0	-2.8	-2.8	-1.3
Q3	-3.3	-0.9	-1.0	-3.7	-0.4	-3.2	0.4	-2.8	-3.4	-2.0
Q4	-2.2	-0.8	-1.3	-4.9	-0.3	-2.7	1.2	-2.5	-4.9	-2.7
	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 Q1	43.7	38.0	28.4	51.6	48.3	80.1	112.3	72.2	57.9	73.6
Q2	40.1	38.1	28.3	49.8	46.9	78.5	110.0	70.7	59.5	74.5
Q3	42.0	37.4	25.8	49.6	45.8	78.3	107.5	71.8	58.4	74.3
Q4	43.6	38.3	25.7	50.4	46.5	77.8	99.1	69.2	56.0	75.8

Source: Eurostat.

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

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