Economic Bulletin

Contents

Update on economic, financial and monetary developments

Summary

At its meeting on 25 January 2024, the Governing Council decided to keep the three key ECB interest rates unchanged. The incoming information broadly confirmed its previous assessment of the medium-term inflation outlook. Aside from an energy-related upward base effect on headline inflation, the declining trend in underlying inflation has continued, and the past interest rate increases keep being transmitted forcefully into financing conditions. Tight financing conditions are dampening demand, and this is helping to push down inflation.

The Governing Council is determined to ensure that inflation returns to its 2% medium-term target in a timely manner. Based on its current assessment, the Governing Council considers that the key ECB interest rates are at levels that, maintained for a sufficiently long duration, will make a substantial contribution to this goal. The Governing Council's future decisions will ensure that its policy rates will be set at sufficiently restrictive levels for as long as necessary.

The Governing Council will continue to follow a data-dependent approach to determining the appropriate level and duration of restriction. In particular, the Governing Council's interest rate decisions will be based on its assessment of the inflation outlook in light of the incoming economic and financial data, the dynamics of underlying inflation and the strength of monetary policy transmission.

Economic activity

The euro area economy is likely to have stagnated in the final quarter of 2023.[1] The incoming data continue to signal weakness in the near term. However, some forward-looking survey indicators point to a pick-up in growth further ahead.

The labour market has remained robust. The unemployment rate, at 6.4% in November, has fallen back to its lowest level since the start of the euro and more workers have entered the labour force. At the same time, demand for labour is slowing, with fewer vacancies being advertised.

Governments should continue to roll back energy-related support measures to avoid driving up medium-term inflationary pressures. Fiscal and structural policies should be designed to make the euro area economy more productive and competitive, as well as to gradually bring down high public debt ratios. Structural reforms and investments to enhance the euro area's supply capacity – which would be supported

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[1] The cut-off date for data included in this issue of the Economic Bulletin was 24 January 2024. According to the preliminary flash estimate released by Eurostat on 30 January 2024, euro area real GDP was unchanged from the third quarter to the fourth quarter of 2023.

by the full implementation of the Next Generation EU programme – can help reduce price pressures in the medium term, while supporting the green and digital transitions. Following the recent ECOFIN Council agreement on the reform of the EU's economic governance framework, the legislative process should be concluded swiftly so that the new rules can be implemented without delay. Moreover, it is imperative that progress towards capital markets union and the completion of banking union be accelerated.

Inflation

Inflation rose to 2.9% in December 2023 as some of the past fiscal measures to cushion the impact of high energy prices dropped out of the annual inflation rate, although the rebound was weaker than expected.[2] Aside from this base effect, the overall trend of declining inflation continued. Food price inflation dropped to 6.1% in December. Inflation excluding energy and food also declined again, to 3.4%, due to a fall in goods inflation to 2.5%. Services inflation was stable at 4.0%.

Inflation is expected to ease further over the course of 2024 as the effects of past energy shocks, supply bottlenecks and the post-pandemic reopening of the economy fade, and tighter monetary policy continues to weigh on demand.

Almost all measures of underlying inflation declined further in December. The elevated rate of wage increases and falling labour productivity are keeping domestic price pressures high, although these too have started to ease. At the same time, lower unit profits have started to moderate the inflationary effect of rising unit labour costs. Measures of shorter-term inflation expectations have come down markedly, while those of longer-term inflation expectations mostly stand around 2%.

Risk assessment

The risks to economic growth remain tilted to the downside. Growth could be lower if the effects of monetary policy turn out stronger than expected. A weaker world economy or a further slowdown in global trade would also weigh on euro area growth. Russia's unjustified war against Ukraine and the tragic conflict in the Middle East are key sources of geopolitical risk. This may result in firms and households becoming less confident about the future and global trade being disrupted. Growth could be higher if rising real incomes mean spending increases by more than anticipated, or if the world economy grows more strongly than expected.

Upside risks to inflation include the heightened geopolitical tensions, especially in the Middle East, which could push energy prices and freight costs higher in the near term and hamper global trade. Inflation could also turn out higher than anticipated if wages increase by more than expected or profit margins prove more resilient. By contrast, inflation may surprise on the downside if monetary policy dampens demand

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[2] According to Eurostat's flash estimate of 1 February 2024, HICP inflation declined to 2.8% in January 2024.

by more than expected, or if the economic environment in the rest of the world worsens unexpectedly. Moreover, inflation could decline more quickly in the near term if energy prices evolve in line with the recent downward shift in market expectations of the future path for oil and gas prices.

Financial and monetary conditions

Market interest rates have moved broadly sideways since the Governing Council's monetary policy meeting on 14 December 2023. The Governing Council's restrictive monetary policy continues to transmit strongly into broader financing conditions. Lending rates on business loans declined slightly, to 5.2% in November, while mortgage rates increased further to 4.0%.

High borrowing rates, with the associated cutbacks in investment plans and house purchases, led to a further drop in credit demand in the fourth quarter of 2023, as reported in the January 2024 euro area bank lending survey. While the tightening of credit standards for loans to firms and households moderated, they remained tight, with banks concerned about the risks faced by their customers.

Against this background, credit dynamics have improved somewhat but overall remain weak. Loans to firms stagnated in November 2023 compared with a year earlier – after contracting in October – as the monthly flow of short-term loans rebounded. Loans to households grew at a subdued annual rate of 0.5%.

Monetary policy decisions

The interest rate on the main refinancing operations and the interest rates on the marginal lending facility and the deposit facility remain unchanged at 4.50%, 4.75% and 4.00% respectively.

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

The Governing Council intends to continue to reinvest, in full, the principal payments from maturing securities purchased under the pandemic emergency purchase programme (PEPP) during the first half of 2024. Over the second half of the year, it intends to 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

At its meeting on 25 January 2024, the Governing Council decided to keep the three key ECB interest rates unchanged. The Governing Council is determined to ensure that inflation returns to its 2% medium-term target in a timely manner. Based on its current assessment, the Governing Council considers that the key ECB interest rates are at levels that, maintained for a sufficiently long duration, will make a substantial contribution to this goal. The Governing Council's future decisions will ensure that the key ECB interest rates will be set at sufficiently restrictive levels for as long as necessary. The Governing Council will continue to follow a data-dependent approach to determining the appropriate level and duration of restriction.

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 moderated in the fourth quarter of 2023. Tailwinds to consumer spending as a result of tight labour markets are beginning to wane, while past monetary policy tightening continues to be transmitted to the economy. Core inflation continued to decline in the fourth quarter, but further progress might be sluggish as wage growth is still high, remaining above long-term averages. Oil prices rose during the period between the Governing Council's monetary policy meetings in December and January, amid some volatility, as attacks on tankers in the Red Sea have intensified geopolitical tensions in the Middle East, while European gas prices have fallen amid continued low demand and high levels of gas storage in the EU.

Global economic growth moderated at the turn of the year. The global composite output Purchasing Managers' Index (PMI) points to a decline in the rate of real GDP growth in the fourth quarter of 2023. High frequency indicators, such as global retail sales, also suggest a slowdown in consumer spending towards the end of the year. This reflects waning tailwinds to consumption across large advanced economies as labour markets are gradually becoming less tight, nominal wage growth is moderating and the stock of excess savings built up by households has been subsiding. At the same time, past monetary policy tightening continues to be transmitted to the global economy.

Global trade growth is expected to improve further, but disruptions to shipping pose downside risks. Merchandise trade growth momentum returned to positive territory in October 2023, amid broad-based improvements across countries globally. Global trade has been supported by the unwinding of post-pandemic factors that had weighed on trade last year, such as companies' reduction of inventories built up in 2022. However, there are downside risks to this normalisation of trade growth as some shipping companies have suspended services through the Red Sea and the Suez Canal following attacks on cargo vessels. Delivery times are lengthening as ships are being rerouted around the Cape of Good Hope, while spot rates for container shipping have increased, particularly between China and Europe (Chart 1). Although the situation remains highly uncertain, it has so far had much less of an impact on trade flows than the pandemic-related trade disruptions seen in 2021-22. This is due to the comparatively lower growth in demand for goods, higher spare shipping capacity and reduced congestion in ports currently being observed.

Chart 1

Global shipping costs

(indices: January 2019 = 100 (left-hand panel), November 2023 = 100 (right-hand panel))

- China to United States
- China to Europe
- Global charter rate (HARPEX)
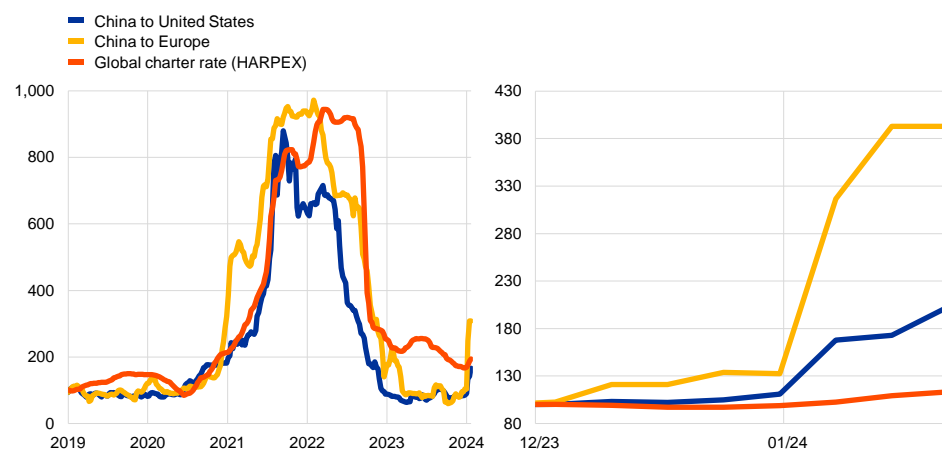
Sources: Bloomberg, Freightos, HARPER PETERSEN and ECB staff calculations.
Notes: The Freightos Baltic Index (FBX) tracks directional freight costs (for forty-foot equivalent unit shipping container prices) between China and the United States, and between China and Europe, among others. The global charter rate (HARPEX) is the HARPER PETERSEN Charter Rates Index, which tracks the cost of chartering container vessels operating on all routes globally. The latest observations are for 21 January 2024.

In December 2023 core inflation across member countries of the Organisation for Economic Co-operation and Development (OECD) continued to decline, but further normalisation could be sluggish. Annual headline consumer price index (CPI) inflation across OECD member countries excluding Türkiye decreased to 3.4% in November, down from 3.6% in October, owing to some easing in food price inflation (Chart 2). Core inflation (headline inflation excluding food and energy) also declined in November, falling 0.2 percentage points to 4.1%, but remains elevated. The PMI input and output price indices, which have strong leading indicator properties for global core goods and services inflation, point to core services inflation continuing to be persistent and slow to return to its long-term average. This partly reflects easing, albeit still tight, labour markets.

Chart 2

OECD consumer price inflation

(annual percentage changes; percentage point contributions)

Legend:
- Core
- Food
- Energy
- Headline
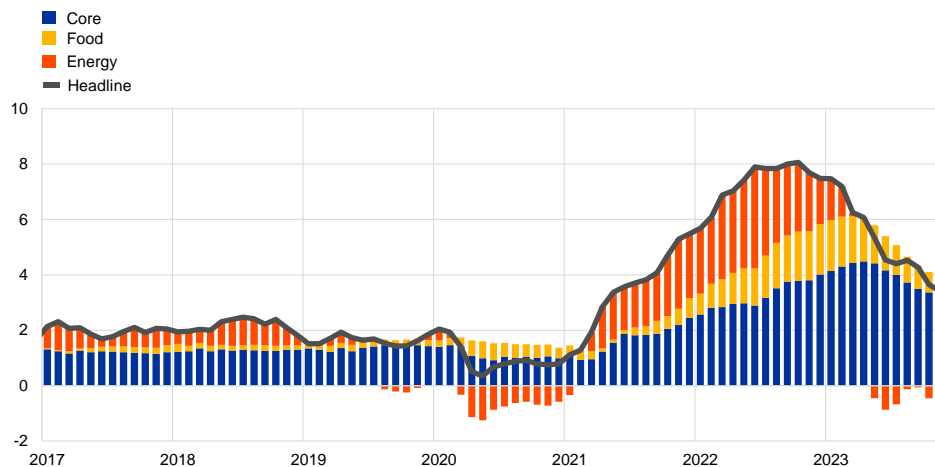
Sources: OECD and ECB staff calculations.
Notes: OECD inflation excludes Türkiye and is calculated based on national consumer price indices and annual private final consumption expenditure weights expressed in purchasing power parity (PPP) terms. Core inflation refers to headline inflation excluding food and energy. The latest observations are for November 2023.

Developments in energy commodity prices have been mixed since the Governing Council's meeting in December 2023, amid higher oil prices and lower gas prices. Oil prices in US dollars have risen by 10.4% amid concerns that attacks on ships in the Red Sea could affect shipments of oil through the Suez Canal, which serves as a key passage for global oil traded by sea (Chart 3). According to the International Energy Agency, the global oil market is expected to remain balanced in the first quarter of 2024, amid deeper voluntary production cuts implemented at the start of the year by some member countries of the Organisation of the Petroleum Exporting Countries plus other oil-producing countries (OPEC+). However, the supply of oil is likely to be in surplus for the rest of the year, reflecting upward revisions to US oil supply and weakening demand from advanced economies, among other factors. European gas prices have fallen, down by 18.2%, amid continued low demand, with gas consumption remaining below historical norms for the heating season, owing to a combination of mild winter weather, changes in consumer behaviour and weak industrial activity. At the same time, central and eastern European countries made use of their ability to draw gas from Ukrainian storage facilities, which also helped to keep EU gas storage levels high.

Chart 3

Commodity price developments

(left-hand scale: USD/barrel (oil), index: 2020 = 100 (all commodities excluding energy); right-hand scale: EUR/MWh (gas))
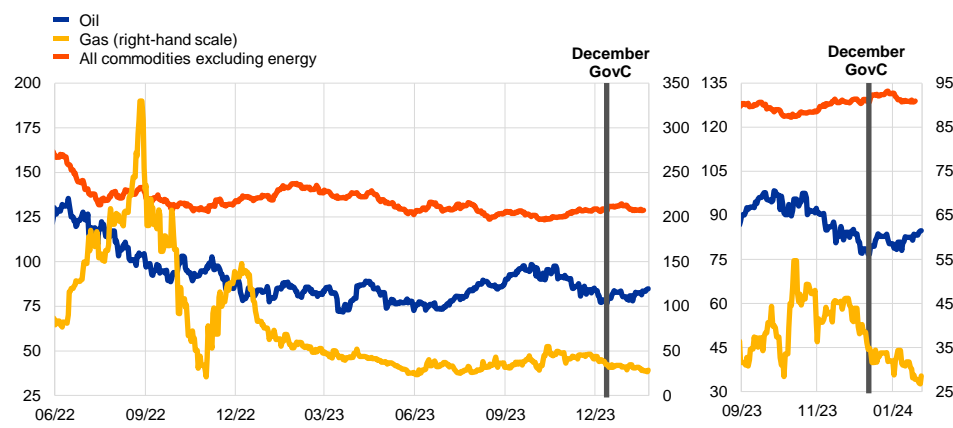
Sources: LSEG, HWWI and ECB calculations.
Notes: "Gas" refers to the Dutch TTF gas price. The vertical line marks the date of the Governing Council's monetary policy meeting in December 2023. The latest observations are for 24 January 2024 for oil and gas, and 19 January 2024 for commodities excluding energy.

Non-energy commodity prices have been stable amid slightly higher metal prices, but lower food prices. Since the December meeting of the Governing Council, metal prices have increased by 1%, driven mainly by higher prices for tin, lead and aluminium. Some volatility was seen in aluminium prices owing to worries about growing tightness in the aluminium market as the UK government imposed sanctions on Russian metals trading, and an explosion at a fuel depot in Guinea in December raised fears of a bauxite shortage that could affect aluminium production in China. Food commodity prices have declined by 1.7% on the back of falling soybean and grain prices.

In the United States, economic growth was expected to show some signs of moderation at the end of last year, following strong growth in the third quarter.[3] High frequency indicators, such as credit card spending, suggest a deceleration in consumer spending at the turn of the year. At the same time, rising consumer loan delinquencies indicate that household balance sheets are coming under increasing pressure. In December 2023 US headline CPI inflation rose by 0.3 percentage points, up to 3.4%, as the contribution of energy prices became less negative. Core inflation fell by 0.1 percentage points to 3.9%, as core services inflation continued to recede, albeit slowly. Meanwhile, the Federal Reserve System left interest rates unchanged at its December meeting for the second time in a row. It also revised downwards its projections for inflation and interest rates in 2024, signalling that demand is likely to weigh on the economy during the year.

In China, economic activity slowed in the fourth quarter of 2023 as the real estate sector continues to pose headwinds. Quarter-on-quarter real GDP growth slowed to 1.0% in the fourth quarter of 2023, down from 1.5% in the previous quarter. For the year 2023 as a whole, GDP growth reached 5.2%, which is well in

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3   The advance estimate of US GDP for the fourth quarter of 2023 was released after the cut-off date for data included in this issue of the Economic Bulletin.

line with the government's growth target of "around 5%" for 2024. The real estate sector is still acting as a drag on the economy. House prices continue to decline, while construction activity remains low, weighing on overall investment. Although consumer spending growth is positive in year-on-year terms, consumption of goods and services related to housing (such as furniture) is still contracting. Meanwhile, annual headline CPI inflation rates remained in negative territory in the fourth quarter, with prices falling by 0.3% in December, owing primarily to lower food prices. By contrast, annual core inflation remained positive at 0.6% in the same month. In the near term, inflationary pressures are likely to remain subdued, reflecting low food prices alongside weak domestic and external demand.

In Japan, consumer spending is showing signs of a modest recovery, while inflationary pressures persist. Economic activity indicators point to a gradual strengthening of domestic demand, as consumer confidence is improving amid expectations of higher wages. Nevertheless, uncertainty related to the economic impact of the New Year's Day earthquake in central Japan prevails, but at this stage supply chain disruptions appear to be relatively limited. Meanwhile, headline consumer price inflation slowed in December to 2.6%, down from 2.8% in the previous month. At the same time, core inflation picked up slightly by 0.1 percentage points, to reach 2.8% in December, signalling persistent underlying price pressures. While the Bank of Japan kept its policy rate unchanged in December, a shift towards a tighter monetary policy stance in 2024 is widely expected.

In the United Kingdom, economic activity remains modest, while inflation is expected to ease further. GDP growth in the third quarter of 2023 was revised downwards to -0.1% in quarter-on-quarter terms. Recent high frequency data signal greater resilience, suggesting that GDP growth improved modestly in the fourth quarter of the year. Looking ahead, economic activity is expected to remain subdued in the coming quarters, as past monetary policy tightening and higher financing costs for firms are expected to weigh on demand. However, a recent fall in mortgage rates has stimulated new mortgage borrowing and could boost consumer spending to some extent. Headline CPI inflation surprised mildly on the upside in December, rising by 0.1 percentage points year on year, up to 4.0%, having fallen sharply in previous months. Inflation is expected to continue to decline in the months ahead, albeit more slowly, as pressures stemming from still elevated wage growth are expected to persist, reflecting continued tightness in the labour market.

2 Economic activity

The euro area economy is likely to have stagnated in the final quarter of 2023, following a year of broadly flat growth.[4] This comes on the back of the prolonged weakness in global trade and of strong monetary policy transmission. Incoming data show signs of a modest strengthening of growth in the first quarter of 2024. The labour market remains resilient, although more recent indicators suggest signs of cooling following the protracted period of weak economic activity. The euro area economy is expected to start gradually improving over the course of this year. Growth is expected to be supported by rising real disposable income, which in turn should benefit from declining inflation and robust wage growth. At the same time, exports should catch up with improvements in foreign demand.

Euro area real GDP growth is expected to have remained weak in the final quarter of 2023. The euro area economy contracted slightly in the third quarter of 2023 (Chart 4), following a period of stagnation over the past year. Changes in inventories were the main negative driver behind the third quarter outcome. Domestic demand contributed positively, while net trade had a neutral impact. Incoming data for the fourth quarter point to continued weak output growth. In October and November 2023, euro area industrial production stood 1.2% below its average level for the third quarter, a decline that was widespread across various industrial sectors. Moreover, services production shrank by 0.9% month on month in October, to stand 0.7% below its third-quarter average, indicating that the feeble growth dynamics spread throughout the economy. More timely survey data, encompassing the full fourth quarter, corroborate this picture of slow growth – or even falling output – during that period. The composite output Purchasing Managers' Index (PMI) for the euro area declined from 47.5 in the third quarter to 47.2 in the fourth quarter, but recovered from 46.5 in October to 47.6 in December 2023, reflecting developments in both industry and services (see Box 2).

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[4]   According to the preliminary flash estimate released by Eurostat on 30 January 2024, euro area real GDP showed zero growth, quarter on quarter, in the fourth quarter of 2023. This estimate was not available at the cut-off date for this issue of the Economic Bulletin.

Chart 4

Euro area real GDP, composite output PMI and ESI

(left-hand scale: quarter-on-quarter percentage changes; right-hand scale: diffusion index)
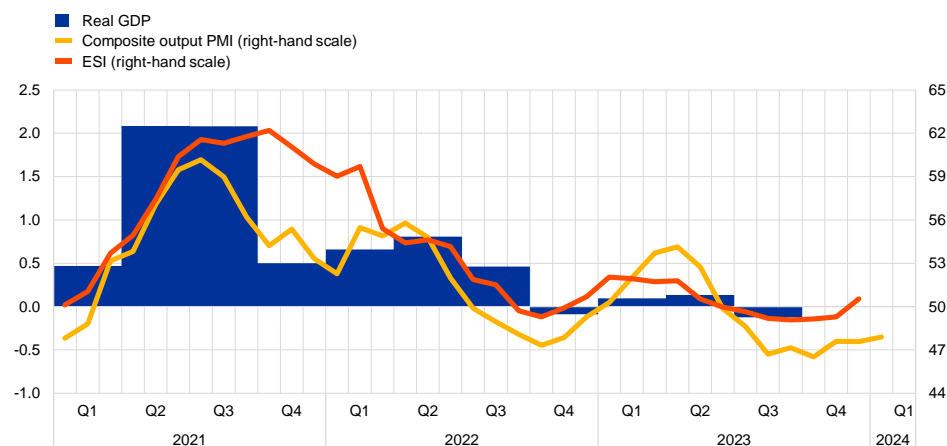
- Real GDP
- Composite output PMI (right-hand scale)
- ESI (right-hand scale)

Sources: Eurostat, European Commission, S&P Global Market Intelligence and ECB calculations.
Notes: The two lines indicate monthly developments; the bars show quarterly data. The European Commission's Economic Sentiment Indicator (ESI) has been standardised and rescaled to have the same mean and standard deviation as the composite output PMI. The latest observations are for the third quarter of 2023 for real GDP, December 2023 for the ESI and January 2024 for the composite output PMI.

Although euro area output growth remains weak, it is expected to show some improvement at the beginning of 2024. PMI data for January show continued weakness at the beginning of the year, on the back of the growing impact of weak global trade and of strong monetary policy transmission. However, the composite output PMI improved slightly, further reflecting a robust increase in manufacturing output, alongside a small decline in services sector business activity (Chart 5). New orders for both the manufacturing and services sectors continued to increase between December 2023 and January 2024, signalling a slight improvement in the first quarter of this year. The main findings from the ECB's recent contacts with non-financial companies (see Box 3) also suggest that growth will gradually strengthen. In the same vein, the results from the most recent ECB Survey of Professional Forecasters (conducted in January) indicate that economic activity will slowly start to recover in the first quarter of 2024.

Chart 5

PMI indicators across sectors of the economy

a) Manufacturing

(diffusion indices)

- Output
- New orders

b) Services

(diffusion indices)

- Business activity
- New business
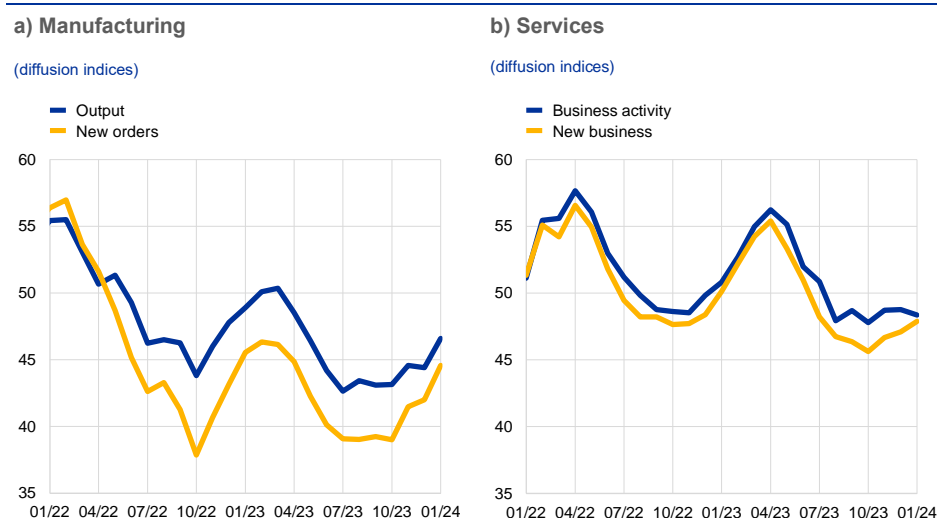
Source: S&P Global Market Intelligence.
Note: The latest observations are for January 2024.

The labour market remains resilient, albeit recent indicators signal a cooling following weaker economic activity. Employment growth continued to be robust in the third quarter of the year, at a quarterly rate of 0.2%. The rise in employment levels masked a decline in working hours as a result of continued high levels of sick leave and some labour hoarding. As the labour force continued to grow, the unemployment rate returned to its lowest level since the beginning of the euro, standing at 6.4% in November, down from 6.5% in October 2023 (Chart 6). Recent short-term indicators suggest a further loss of momentum in job creation amid weaker economic developments overall. In the same vein, the PMI employment indicator for the whole economy suggests a slowdown in employment dynamics in the second half of 2023. According to the flash estimate, the PMI for employment in January stood at 50.1, slightly above its neutral value of 50. In terms of the different sectors, this estimate suggests that employment has been declining in the manufacturing sector but has continued to moderately increase in the services sector. The improvement compared with December 2023 notwithstanding, the PMI composite employment indicator has, overall, followed a downward trend since April 2023. Contacts from the corporate telephone survey reported weaker employment growth in the fourth quarter of 2023. An increasing number of firms reported slight reductions in employment rates overall, mainly as a result of not replacing staff who had either retired or left the company.

Chart 6

Euro area employment, the PMI assessment of employment and the unemployment rate

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

■ Employment
— PMI assessment of employment
— Unemployment rate (right-hand scale)
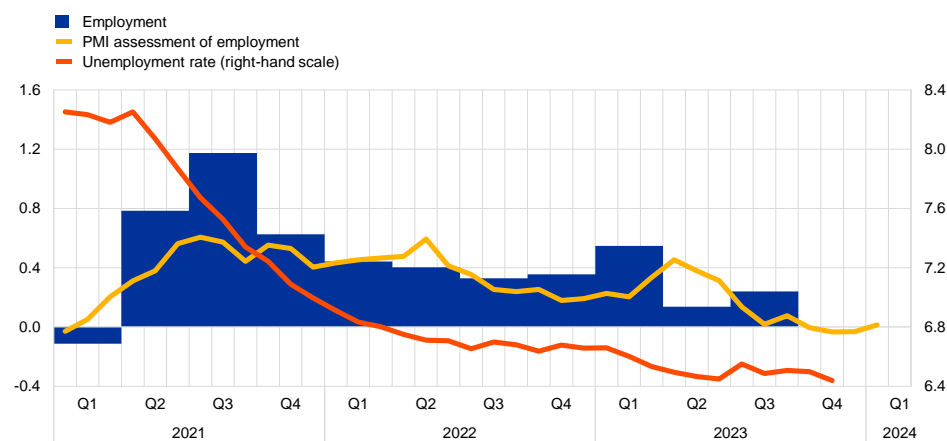
Sources: Eurostat, S&P Global Market Intelligence and ECB calculations.
Notes: The two lines indicate monthly developments; the bars show quarterly data. The PMI is expressed in terms of the deviation from 50 divided by 10. The latest observations are for the third quarter of 2023 for employment, January 2024 for the PMI assessment of employment and November 2023 for the unemployment rate.

Private consumption growth remained weak in the last quarter of 2023, reflecting continued subdued spending on goods. This was indicated by the ongoing weakness in retail sales volumes, which in October and November stood, on average, at the same level as in the third quarter of 2023. At the same time, in the fourth quarter of 2023, new passenger car registrations stood 0.6% below their third-quarter level, after a strong recovery in the third quarter resulting mainly from orders of electric cars that had previously been delayed. While the European Commission's indicator for consumer confidence improved further in December, it remains well below its long-term average.

Incoming survey data continue to point to overall weakness in spending on goods alongside strong spending on services at the beginning of the year. The Commission's indicators for expected retail trade business and for expected major purchases by consumers remained subdued in December 2023, despite a small improvement in the latter. By contrast, there was no strong downward correction in expected demand for contact-intensive services, which continued to hold up in December, remaining above its historical average (Chart 7). Similarly, the ECB's Consumer Expectations Survey for December suggests resilient expected demand for holiday bookings. Likewise, the ECB's recent contacts with the non-financial sector indicate that demand for contact-intensive services is likely to remain relatively strong, while demand for goods, particularly durable goods, is expected to remain weak. The transmission of tighter financing conditions to the real economy is likely to continue to curb household borrowing, resulting in high savings and keeping consumer spending growth subdued in the near term. At the same time, consumer spending should benefit from improving purchasing power on the back of falling inflation and a still resilient labour market.

Chart 7

Expectations for the production of consumer goods, retail trade business and services demand

(percentage balances)

- Expectations for production of consumer goods
- Expectations for retail trade business
- Expected demand for contact-intensive services
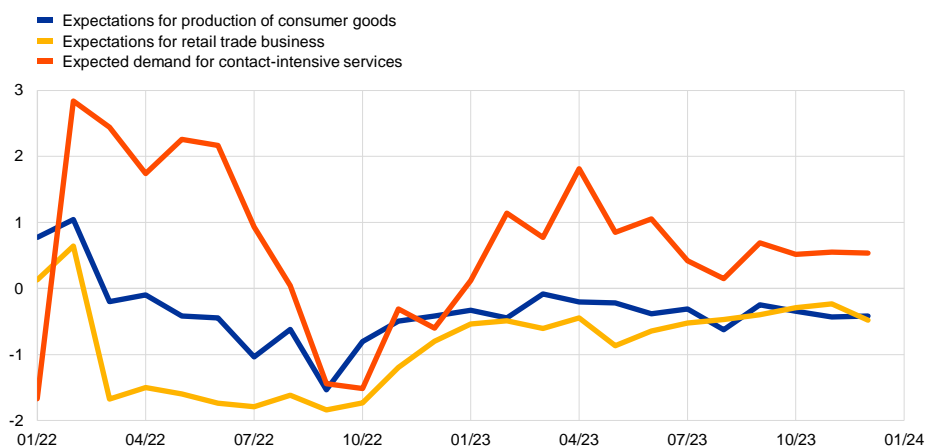
Sources: European Commission and ECB calculations.
Notes: "Contact-intensive services" refers to the weighted average of accommodation, food and travel services. The latest observations are for December 2023.

Business investment growth is likely to have slowed in the fourth quarter amid weak demand and tight financing conditions. Following an increase of 0.5%, quarter on quarter, in the third quarter of 2023, subdued capital goods indicators suggest that business investment growth, excluding intangible investment in Ireland, is set to have weakened in the fourth quarter. At the same time, while PMI new orders remained in contractionary territory in the fourth quarter of 2023, the existing stock of orders still assured capital goods production for a longer period than they did in pre-pandemic times, according to the European Commission's business and consumer survey (Chart 8, panel a). This may have supported investment at the end of last year. At the same time, bankruptcies in the euro area increased in the first three quarters of 2023 compared with the same period in 2022, albeit from low levels. This came as policy support related to the pandemic and energy crises was phased out and financing conditions tightened. Such corporate vulnerabilities, together with weak demand and high uncertainty about geopolitical and financing conditions, could weigh on investment this year, as suggested by the weaker investment outlook reported by corporate contacts (see Box 5).

Chart 8

Business and housing investment and short-term indicators

a) Business investment

(quarter-on-quarter percentage changes, deviations from the mean)

- Business investment
- Months of assured production
- New orders (right-hand scale)
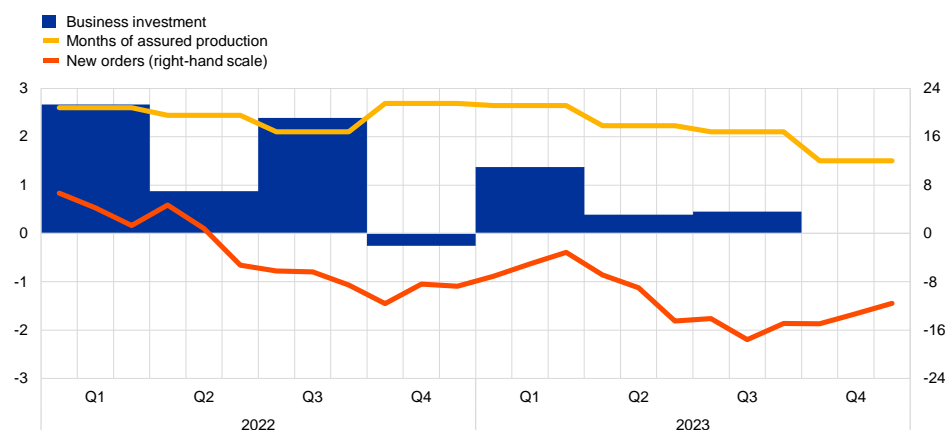
b) Housing investment

(quarter-on-quarter percentage changes, deviations from the mean)
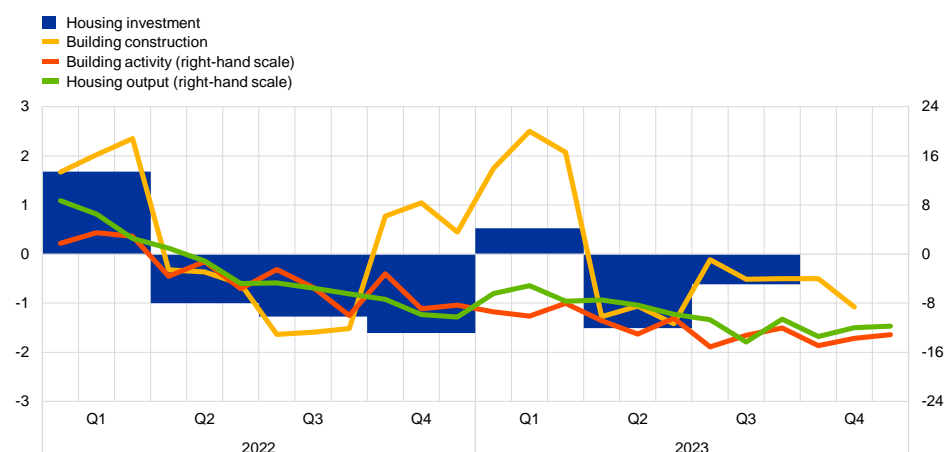
- Housing investment
- Building construction
- Building activity (right-hand scale)
- Housing output (right-hand scale)

Sources: Eurostat, European Commission, S&P Global Market Intelligence and ECB calculations.
Notes: The lines indicate monthly developments; the bars show quarterly data. Business investment is proxied by non-construction investment and excludes Irish intellectual property products. Business investment and PMI new orders for capital goods are expressed as deviations from the 1999-2019 average. Months of assured capital goods production out of existing orders are expressed as deviations from the 1999-2019 average. The latest observations are for the third quarter of 2023 for investment, the fourth quarter of 2023 for the months of assured production and December 2023 for the other variables. The index for building construction production is computed as the percentage change over the average level in the previous quarter. The European Commission's index for building construction activity over the past three months is calculated as the change from the average level in the fourth quarter of 2021. The PMI for housing (i.e. residential construction) output is expressed as deviations from 50. The latest observations are for the third quarter of 2023 for housing investment, November 2023 for building construction and December 2023 for the other variables.

Housing investment is likely to have fallen further in the fourth quarter of 2023, as shown by hard and soft indicators. Building construction output – a leading indicator for housing investment – fell by an average of 1.1% in October and November compared with its average level in the third quarter. In addition, survey-based activity measures, such as the European Commission's indicator for building construction activity in the last three months and the PMI for residential construction, remained in contractionary territory until December 2023, although they improved slightly in the last two months of the fourth quarter of the year (Chart 8, panel b). According to the European Commission business and consumer survey on factors limiting construction activity, insufficient demand was cited by firms more frequently in the fourth quarter than in the third quarter of 2023 and remained the most cited

factor, followed by labour shortages. Building permits for residential buildings (measured by floor space) increased in September but continued to fall significantly overall in the third quarter after five consecutive quarters of decline. This sustained downward trend in building permits indicates that the momentum in housing investment is likely to remain weak in the near future, which is consistent with subdued household borrowing for house purchases.

Euro area trade momentum remained subdued at the end of the year. In November, extra-euro area goods export volumes contracted by 0.4% in three-month-on-three-month terms. While the easing of supply bottlenecks continued to provide some support, exports were dragged down by weak foreign demand and reduced competitiveness related to the past appreciation of the euro, as well as the energy shock which is still weighing on some sectors. At the same time, the global inventory cycle has also had an impact on export demand (see Box 1). Looking ahead, as global activity recovers and the inventory drawdown diminishes, the drag on euro area exports should gradually fade. In the near term, forward-looking indicators – for both goods and services exports – still point to moderation. Moreover, the situation in the Red Sea poses additional downside risks to the outlook. Extra-euro area goods import volumes contracted again by 2.4%, three-month on three-month, following a weakening of activity and a sharp destocking of inventories in the euro area.

Beyond the near term, GDP growth is expected to gradually strengthen. The euro area economy is expected to start steadily improving over the course of this year. Growth should be supported by rising real disposable income, which in turn should benefit from declining inflation and robust wage growth. In addition, exports should catch up with improvements in foreign demand. The gradually fading impact of the ECB's monetary policy tightening and of adverse credit supply conditions should also support this recovery over the medium term.

3   Prices and costs

*Euro area headline inflation rose to 2.9% in December from 2.4% in November 2023
due to energy-related base effects, although the rebound was weaker than expected
and the declining trend in underlying inflation continued.* [5] *Inflation excluding energy
and food declined again, from 3.6% in November to 3.4% in December, driven by the
decline in goods inflation. Almost all measures of underlying inflation decreased
further in December. The elevated rate of wage increases and falling labour
productivity are keeping domestic price pressures high, although these too have
started to ease. Measures of longer-term inflation expectations stand at around 2%,
while measures of shorter-term expectations have come down markedly.*

**Euro area headline inflation rose to 2.9% in December from 2.4% in November,
after falling substantially during the course of the year (Chart 9).** The increase
was driven by a less negative energy inflation rate, mainly due to base effects.
Meanwhile food inflation and HICP inflation excluding energy and food declined
further.

Chart 9
Headline inflation and its main components

(annual percentage changes; percentage point contributions)
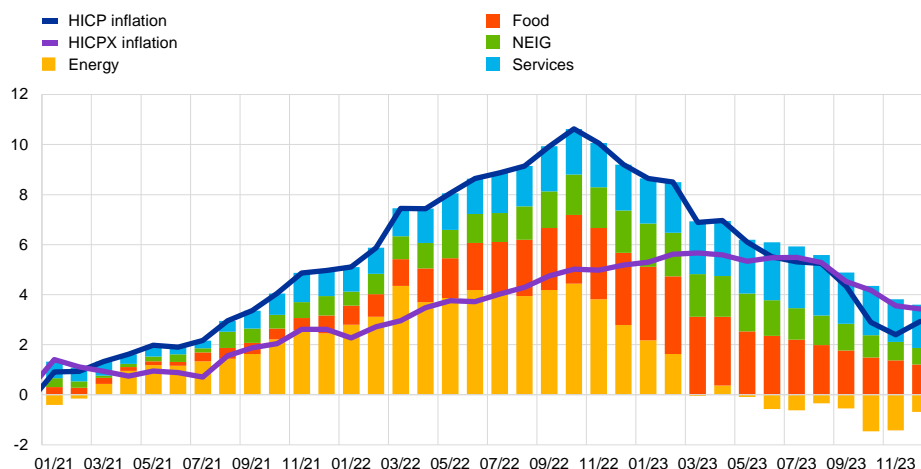
Sources: Eurostat and ECB calculations.
Notes: NEIG stands for non-energy industrial goods. The latest observations are for December 2023.

**As expected, energy inflation saw an increase in December, but the change to
-6.7% from -11.5% in November was smaller than anticipated.** The main driver of
the less negative annual rate of change was a large base effect. This was related to
both the one-off gas support measures in Germany and a substantial drop in fuel
prices in December 2022.

**Food inflation continued to decline, to 6.1% in December from 6.9% in
November, but remained elevated (Chart 10).** The decrease was driven by slower
dynamics in processed food prices (5.9% year-on-year growth after 7.1% in

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[5]   Eurostat's flash estimate for January 2024, released after the cut-off date for this issue of the Economic
Bulletin (24 January), saw headline inflation decreasing from 2.9% to 2.8%.

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November). This reflected declines in energy costs and food commodity prices as measured by, for instance, euro area farm gate prices. While unprocessed food price inflation increased from 6.3% in November to 6.8% in December, this reflected a base effect from developments one year earlier rather than the latest price dynamics.

HICP inflation excluding energy and food (HICPX) decreased further from 3.6% in November to 3.4% in December. In terms of components, non-energy industrial goods (NEIG) inflation declined from 2.9% to 2.5%, reflecting the gradually fading impact of past shocks. Services inflation was unchanged at 4.0% in December. The relatively greater persistence in services inflation is in line with strong wage growth and the more prominent role that labour costs play in the production of services.

Chart 10
Energy and food input costs, and HICP food prices

(annual percentage changes)

- Producer price index – energy
- Euro area farm gate prices
- Producer price index – manufacturing of food products (right-hand scale)
- HICP food (right-hand scale)
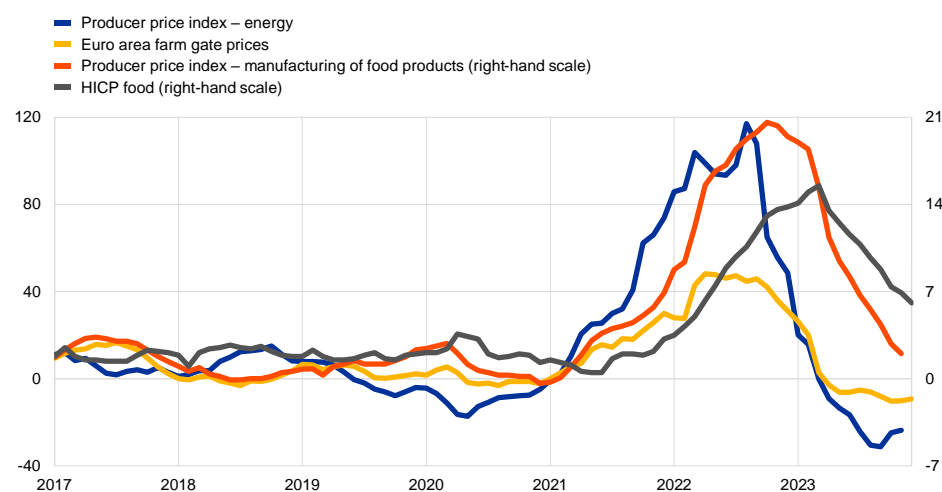
Source: Eurostat.
Note: The latest observations are for November 2023 for the producer price indices and December 2023 for euro area farm gate prices and HICP food inflation.

Producer and import price pressures continued to remain negative across all main industrial categories (Chart 11). At the early stages of the pricing chain, producer price inflation for domestic sales of intermediate goods was negative and unchanged (-5.3% in November and October). The annual growth rates of import prices for intermediate goods also remained significantly negative, although slightly less so than in the previous month (-7.8% after -8.3% in October). At the later stages of the pricing chain, the annual growth rates of producer prices for non-food consumer goods continued to decline to 2.7% in November, down from 3.0% in October, reaching the lowest level since September 2021. Import price growth for non-food consumer goods edged down from -0.4% to -0.6%. The same unwinding tendencies hold for producer prices and import prices in the manufactured consumer goods segment, confirming the general gradual easing of pipeline pressures on consumer goods prices.

Chart 11

Indicators of pipeline pressures

(annual percentage changes)

- Domestic producer prices – non-food consumer goods
- Import prices – non-food consumer goods
- Domestic producer prices – intermediate goods
- Import prices – intermediate goods
- Domestic producer prices – manufacturing of food products
- Import prices – manufacturing of food products
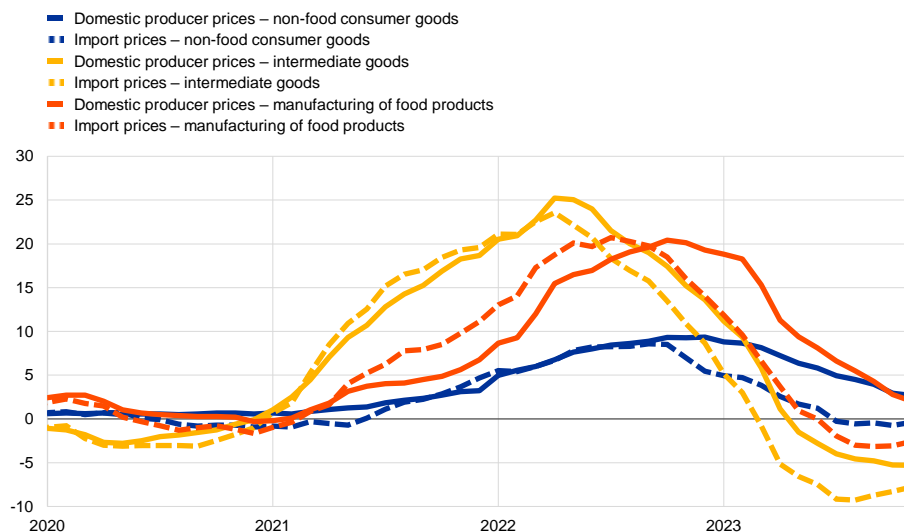
Sources: Eurostat and ECB calculations.
Note: The latest observations are for November 2023.

Measures of underlying inflation in the euro area continued to decrease, as the impact from past shocks fades and demand eases amid tighter monetary policy (Chart 12). The range has been declining and narrowing since July 2023, but remains relatively high, as the impact of past shocks has yet to fully dissipate for most measures. The Persistent and Common Component of Inflation (PCCI) remained at the bottom of the range, declining further to 1.9% in December. HICPXX inflation (HICPX excluding travel-related items, clothing and footwear) decreased at the same rate as the HICPX, to 3.4% in December from 3.6% in November. The Supercore indicator, which includes cyclically sensitive HICP items, continued its decline from 4.4% in November to 4.0% in December, but remains relatively high. Domestic inflation (comprising items with a low import content) is also moderating from more elevated levels than other measures. It declined to 4.5% in December from 4.7% in November. The higher level and more gradual easing of this indicator primarily reflects the large share of services items included in it, particularly those sensitive to wage pressures.

Chart 12

Indicators of underlying inflation

(annual percentage changes)

- Range of indicators
- HICPX
- HICPXX
- PCCI
- Supercore
- Domestic inflation
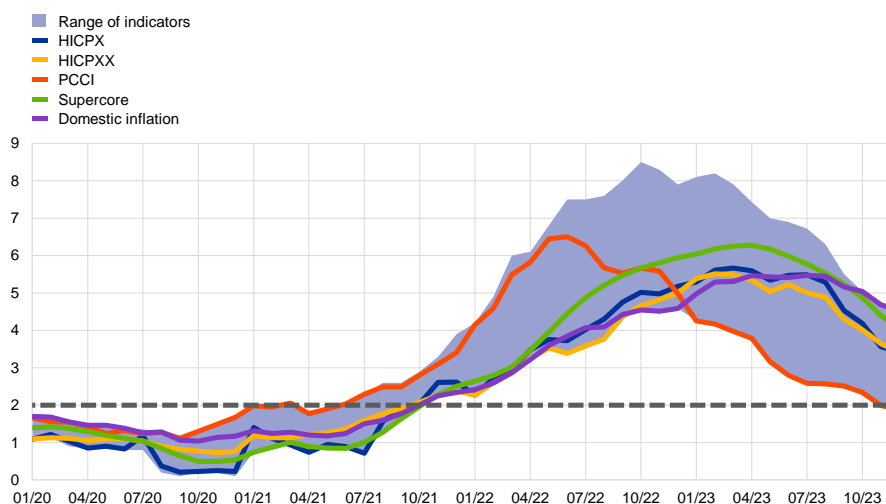
Sources: Eurostat and ECB calculations.
Notes: The range of indicators of underlying inflation includes HICP excluding energy, HICP excluding energy and unprocessed food, HICPX, HICPXX, domestic inflation, 10% and 30% trimmed means, PCCI, the Supercore indicator and a weighted median. The grey dashed line represents the ECB's inflation target of 2% over the medium term. The latest observations are for December 2023.

Wage growth measures had been moving broadly sideways recently, at elevated levels. The latest available data refer to the third quarter of 2023 and show an increase in the annual growth rate of negotiated wages to 4.7% from 4.4% in the second quarter of 2023. The forward-looking wage trackers signal continued high wage pressures, although with some tentative signs of a cooling down by the end of 2023. Actual wage growth, as measured by compensation per employee and compensation per hour, decreased in the third quarter of 2023 to 5.3% and 5.2% respectively, down from 5.5% and 5.3% in the second quarter. Labour costs meanwhile account for the largest contribution to domestic price pressures, as measured by the annual growth rate of the GDP deflator, while the contribution of unit profits weakened in the third quarter of 2023 from a historical high in the first half of the year.

Most survey-based indicators of longer-term inflation expectations in the euro area, as well as market-based measures of inflation compensation adjusted for risk premia, are at around 2% (Chart 13). The ECB Survey of Professional Forecasters (SPF) for the first quarter of 2024 sees average longer-term inflation expectations (for 2028) at 2.0%, revised downward from 2.1% in the fourth quarter of 2023. Longer-term inflation expectations also stood at 2.0% in the January 2024 Consensus Economics survey. The median longer-term expectations remained unchanged at 2.0% in the January 2024 ECB Survey of Monetary Analysts (SMA). In the ECB Consumer Expectations Survey (CES) for December 2023, median expectations over the next year decreased from 3.2% in November to 3.1% in December, while those for three years ahead rose to 2.4%, up from 2.2%.[6] With regard to perceptions of past inflation, they did not follow the decline in HICP inflation

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[6]　See "ECB Consumer Expectations Survey results – December 2023", press release, ECB, 6 February 2024.

between June and October 2023. However, they eased considerably from October 2023 onwards, with the median declining from 8.0% in September to 6.2% in December. Euro area market-based measures of inflation compensation (based on the HICP excluding tobacco) stayed broadly unchanged between mid-December 2023 and 24 January 2024 after decreasing substantially over the preceding months. At the short end of the yield curve, the one-year forward inflation-linked swap (ILS) rate one year ahead stood at around 2.1% in late January, down by 9 basis points from the levels prevailing in mid-December. Meanwhile the euro area five-year forward ILS rate five years ahead stayed broadly unchanged at 2.3%. However, it should be noted that these market-based measures of inflation compensation are not a direct gauge of the genuine inflation expectations of market participants, as these measures include inflation risk premia, which compensate for inflation risks.

Chart 13

Headline inflation, inflation projections and expectations

a) Headline inflation, survey-based indicators of inflation expectations, inflation projections and market-based measures of inflation compensation

(annual percentage changes)

- HICP
- Fixings (24 January 24)
- Market-based measures of inflation compensation (24 January 2024)
- Eurosystem staff macroeconomic projections (December 2023)
- Survey of Monetary Analysts (January 2024)
- Survey of Professional Forecasters (Q1 2024)
- Consensus Economics (January 2024)
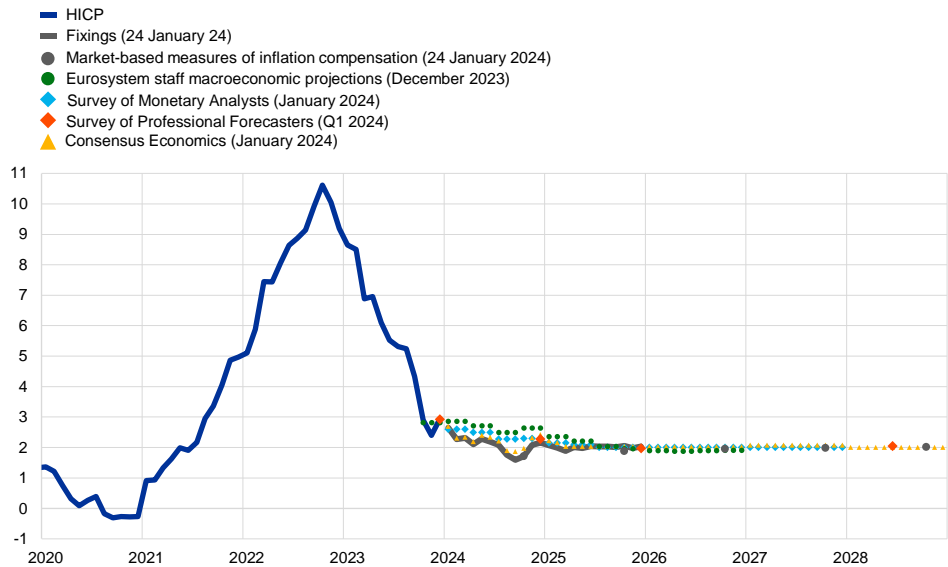
b) Headline inflation and ECB Consumer Expectations Survey

(annual percentage changes)

- HICP
- Perception of past inflation, mean/median
- Inflation expectations one year ahead, mean/median
- Inflation expectations three years ahead, mean/median
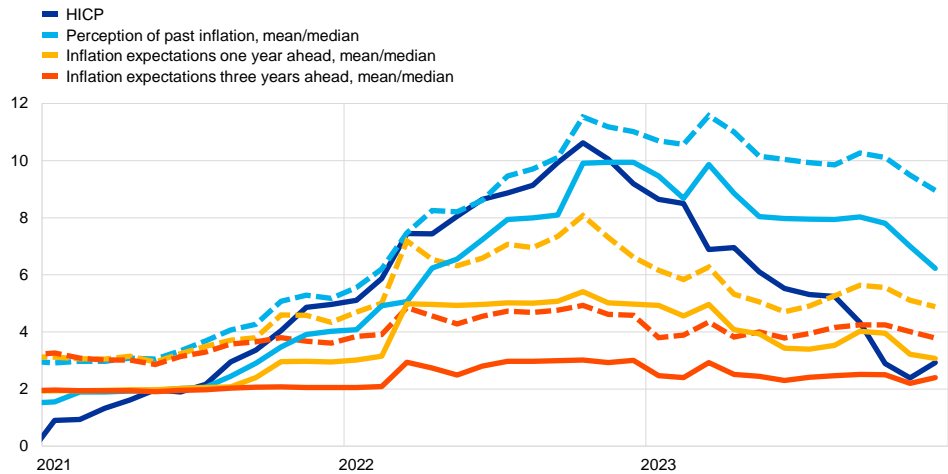
Sources: Eurostat, Refinitiv, Consensus Economics, CES, SPF, SMA, Eurosystem staff macroeconomic projections for the euro area, December 2023, and ECB calculations.
Notes: The market-based measures of inflation compensation series are based on the one-year spot inflation rate, the one-year forward rate one year ahead, the one-year forward rate two years ahead and the one-year forward rate three years ahead. The observations for market-based measures of inflation compensation are for 24 January 2024. Inflation fixings are swap contracts linked to specific monthly releases in euro area year-on-year HICP inflation ex. tobacco. The SPF for the first quarter of 2024 was conducted between 5 and 10 January 2024. The cut-off date for the Consensus Economics long-term forecasts was January 2024. For the CES, dashed lines represent the mean and solid lines the median. The cut-off date for data included in the Eurosystem staff macroeconomic projections was 23 November 2023. The latest observations are for December 2023.

4 Financial market developments

Over the review period (14 December 2023 to 24 January 2024), developments in the euro area financial markets reflected evolving policy rate expectations as markets continued to focus on the pace of disinflation and the expected monetary policy adjustments. Following the Governing Council's widely expected monetary policy decision in December 2023 to leave the key ECB policy rates unchanged, the short end of the euro area risk-free curve varied only marginally over the review period, reflecting stable expectations for no change in ECB policy rates at the January meeting. By contrast, policy rate expectations over longer horizons fluctuated more markedly, but ended the review period close to their mid-December levels. Sovereign bond yields in the euro area moved in line with risk-free rates, which increased slightly, and the announcement made at the December meeting to start gradually reducing pandemic emergency purchase programme (PEPP) reinvestments by mid-2024 had no visible impact on sovereign yields. Equity prices remained range bound as declines in earnings expectations were offset by a reduction in the equity risk premium. Euro area corporate bond markets were broadly unchanged, with some decline in the high-yield segment. In foreign exchange markets, the euro appreciated slightly in trade-weighted terms.

Euro area near-term risk-free rates ended the review period broadly in line with the levels prevailing around the time of the December Governing Council meeting. The euro short-term rate (€STR) averaged 3.90% over the review period. Excess liquidity decreased by around €63 billion to stand at €3,521 billion. The overnight index swap (OIS) forward curve, which is based on the benchmark €STR, remained stable for short-term maturities after the Governing Council's widely expected monetary policy decision in December to keep the key ECB policy rates unchanged. Short-term forward rates for horizons beyond the January 2024 Governing Council meeting were, however, subject to heightened volatility over the review period as markets continued to focus on the pace of disinflation and the expected monetary policy adjustments. Overall, the priced probability of a first rate cut in March and April 2024 edged down. At the end of the review period markets had fully priced in a rate cut of 25 basis points for June and cumulative rate cuts of 133 basis points by the end of 2024. Euro area longer-term risk-free rates increased slightly in the review period, after falling in the days following the December Governing Council meeting and returning to their previous levels in the first weeks of 2024. The euro area ten-year nominal risk-free rate, for instance, decreased to 2.2% at the end of December before rebounding to around 2.5%, ending the review period with an overall increase of 16 basis points.

Long-term sovereign bond yields moved broadly in line with risk-free rates amid overall stable sovereign spreads (Chart 14). On 24 January the euro area GDP-weighted average ten-year sovereign bond yield stood at around 2.9%, around 19 basis points above its level at the beginning of the review period. Sovereign spread movements across euro area jurisdictions were closely contained throughout the review period, and the announcement at the December 2023 meeting to start gradually reducing PEPP reinvestments by mid-2024 did not appear to leave a notable mark. The increase in euro area long-term rates followed similar dynamics

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globally: the ten-year US sovereign bond yield increased by 26 basis points to stand at 4.2%, and the UK sovereign bond yield rose by 23 basis points to 4.0%.

Chart 14

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

(percentages per annum)

- GDP-weighted euro area average
- Ten-year euro area OIS rate
- United Kingdom
- United States
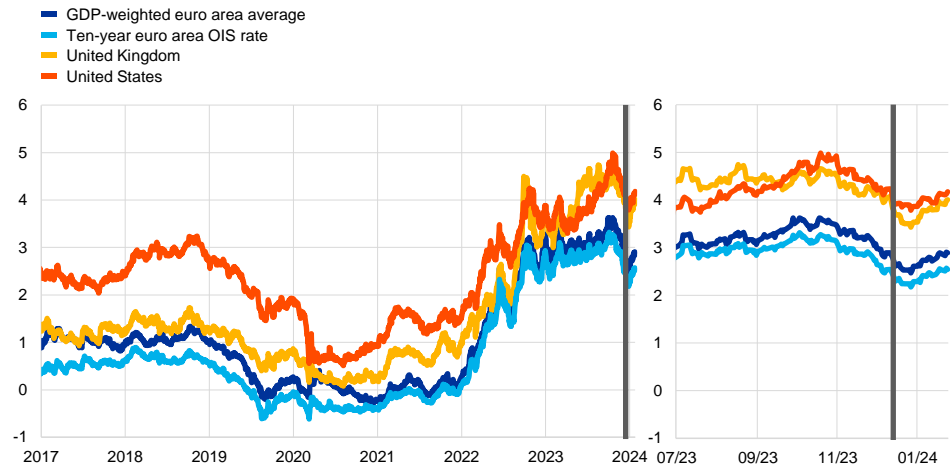
Sources: LSEG and ECB calculations.
Notes: The vertical grey lines denote the start of the review period on 14 December 2023. The latest observations are for 24 January 2024.

Corporate bond spreads were largely unchanged over the review period, with spreads in the high-yield segment narrowing. The spreads for investment-grade firms ended the review period broadly unchanged, while spreads in the high-yield segment were more volatile, narrowing by 34 basis points.

Euro area equity prices remained range bound as declines in earnings expectations were offset by a reduction in the equity risk premium. Broad stock market indices in the euro area were largely unchanged over the review period, amid declining earnings expectations, whereas they increased by 2.7% in the United States. Equity price losses in the euro area were concentrated in the non-financial sector, with interest rate-sensitive sectors, such as technology and real estate, underperforming, while the financial sector continued to outperform the broad index. Overall, the equity prices of euro area non-financial corporations decreased by around 0.9%, while euro area banks' equity prices and other euro area financials increased by 2.4% and 3.1% respectively. In the United States, equity prices increased by 3.1% for non-financial corporations and were broadly unchanged for banks.

In foreign exchange markets, the euro appreciated slightly in trade-weighted terms (Chart 15). 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 0.4% over the review period. Expected monetary policy developments remained a major driver of exchange rate fluctuations and generated some volatility. That said, the euro was fairly stable against the US dollar, depreciating by only 0.1% as expectations for lower US rates were partly dialled back from the start of the year following the Federal Open Market Committee

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meeting in December 2023. In terms of bilateral exchange rate movements against other major currencies, the euro appreciated against the Turkish lira (by 3.9%) and the Japanese yen (by 3.7%), while it depreciated against the Swiss franc (by 0.8%) and the Pound sterling (by 0.5%).

Chart 15

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

(percentage changes)

■ Since 14 December 2023
■ Since 25 January 2023
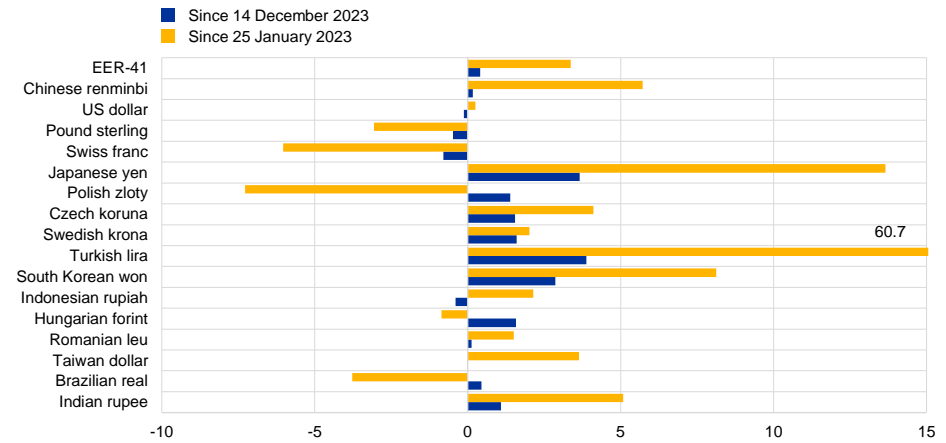
Source: ECB calculations.
Notes: EER-41 is the nominal effective exchange rate of the euro against the currencies of 41 of the euro area's most important trading partners. A positive (negative) change corresponds to an appreciation (depreciation) of the euro. All changes have been calculated using the foreign exchange rates prevailing on 24 January 2024.

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5 Financing conditions and credit developments

In November 2023 composite bank funding costs and bank lending rates for firms declined slightly, while mortgage rates increased further. After declining significantly in November, the cost to non-financial corporations (NFCs) of market-based debt increased from 14 December 2023 to 24 January 2024, while the cost of equity financing continued to decline over this period. The most recent euro area bank lending survey indicates that there was a further but moderate net tightening of credit standards for loans to firms, with more tightening expected in the first quarter of 2024. Demand for loans by firms and households continued to decrease substantially, albeit less steeply than in the previous quarter. In the second half of 2023, bank lending conditions for firms tightened more in the real estate and construction sectors than in others. The weakness in bank lending to firms and households continued in November, reflecting the strong pass-through of policy tightening to lending rates, combined with lower loan demand and tighter credit standards. Money growth continued to contract, with annual rates close to historical lows, owing to high opportunity costs, subdued credit growth and the reduction in the Eurosystem balance sheet.

Euro area bank funding costs decreased slightly in November 2023, driven by declining bank bond yields. The composite cost of debt financing for euro area banks in November stood slightly below that in the previous month, amid considerable cross-country heterogeneity (Chart 16, panel a). The substantial decrease in bank bond yields (Chart 16, panel b) reflected the pass-through of similar declines in risk-free rates. At the same time, deposit rates continued to rise, with some variation across instruments and sectors. The rates offered to firms for holding time deposits were close to the ECB's deposit facility rate and remained above those for households. Moreover, the composition of bank funding continued to shift towards more expensive sources, namely bank bonds and time deposits, given that the increasing opportunity cost of holding overnight deposits has led depositors to substitute large volumes with time deposits and other instruments with higher remuneration.

The ongoing contraction of the Eurosystem balance sheet has contributed to a reduction in excess liquidity, but system-wide liquidity remains ample. Although there were no repayments of targeted longer-term refinancing operation (TLTRO) funds over the review period, the discontinuation in July of reinvestment by the Eurosystem of principal payments from maturing securities has continued to mechanically drain liquidity from the financial system. To make up for the lower liquidity provided by the ECB, banks have increased their issuance of debt securities and money market instruments. Issuance of bank bonds, which are more expensive for banks than deposits, has increased in volume since September 2022, amid the Eurosystem balance sheet contraction and the decline in overnight deposits.

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Chart 16

Composite bank funding costs in selected euro area countries

(annual percentages)

- Euro area
- Germany
- France
- Italy
- Spain

a) Banks' composite cost of debt financing

b) Bank bond yields
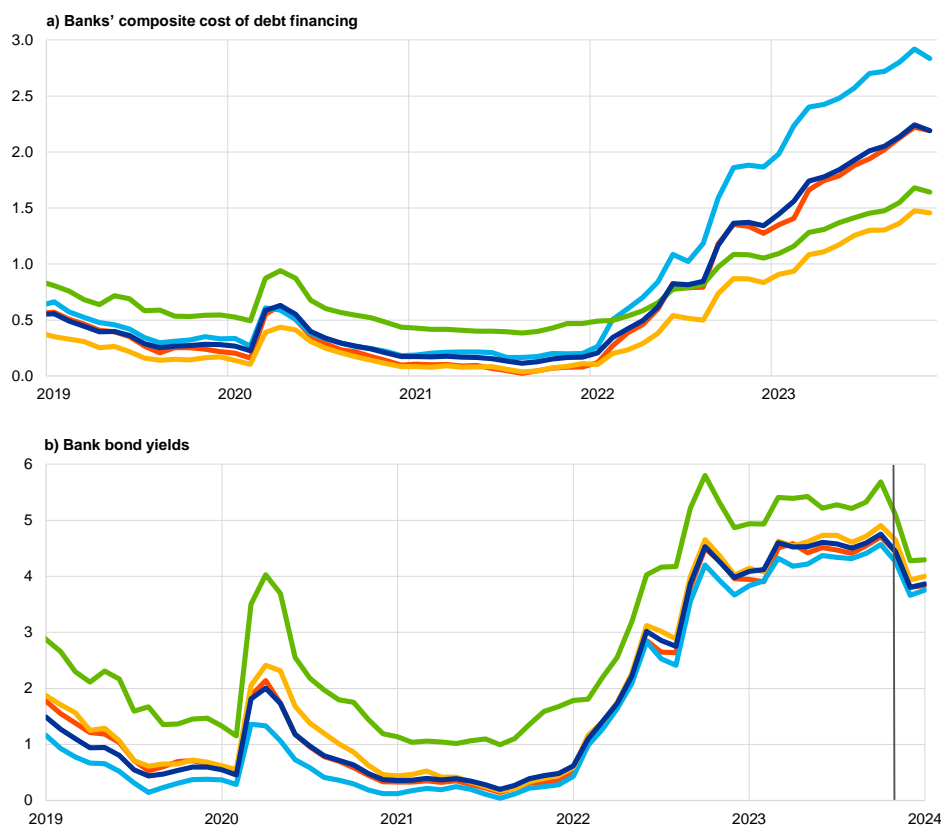
Sources: ECB, S&P Dow Jones Indices LLC and/or its affiliates, and ECB calculations.
Notes: Composite bank funding costs are a weighted average of the composite cost of deposits and unsecured market-based debt financing. The composite cost of deposits is calculated as an average of new business rates 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 vertical grey line in panel b) denotes 30 November 2023. The latest observations are for November 2023 for banks' composite cost of debt financing and for 24 January 2024 for bank bond yields.

In November 2023 lending rates for firms declined slightly for the first time since July 2022, while the rates for housing loans increased further. Although lending rates for firms and households have reacted strongly to the increase in policy rates since the beginning of the tightening cycle, the response to the recent declines in market rates has been relatively muted so far. Between early July 2022 and September 2023, the ECB's policy rates rose substantially and rapidly, by a total of 450 basis points. This led to a sharp increase in lending rates for both firms and households across euro area countries (Chart 17). Since May 2022, i.e. before the ECB signalled the first rate hike in the current tightening cycle, lending rates for firms and for housing loans have risen by 368 basis points and 223 basis points respectively. In November 2023 lending rates for firms declined to 5.23%, compared with 5.27% in October. The small decline could be an early indication that lending rates to firms have passed a peak, following the start of the decline in risk-free rates in autumn 2023. This decrease was driven mainly by large loans, with substantial

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cross-country heterogeneity. Bank rates on new loans to households for consumption decreased from 7.90% in October to 7.85% in November. Lending rates on new loans in the category "other lending to households", which includes sole proprietors, also decreased slightly in November to 5.55%, down from 5.58% in October. At the same time, lending rates on new loans to households for house purchase continued to increase, reaching 4.01% in November, up from 3.91% in October. This increase was widespread across euro area countries and interest rate fixation periods and is explained by margins on riskier loans and other factors, despite the sizeable decreases seen in market rates for medium and longer-term maturities. The results of the ECB's Consumer Expectations Survey for November 2023 suggest that consumers expect mortgage rates to decline from their current levels over the next 12 months. A large, but declining, net percentage of survey respondents perceived credit standards to be tight and expected housing loans to become harder to obtain over that same period. The cross-country dispersion of lending rates for firms and households remained at a low level (Chart 17), suggesting smooth monetary policy transmission across euro area countries.

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Chart 17

Composite bank lending rates for NFCs and households in selected countries

(annual percentages; standard deviation)

- Euro area
- Germany
- France
- Italy
- Spain
- Cross-country standard deviation (right-hand scale)

a) Rates on loans to NFCs

b) Rates on loans to households for house purchase
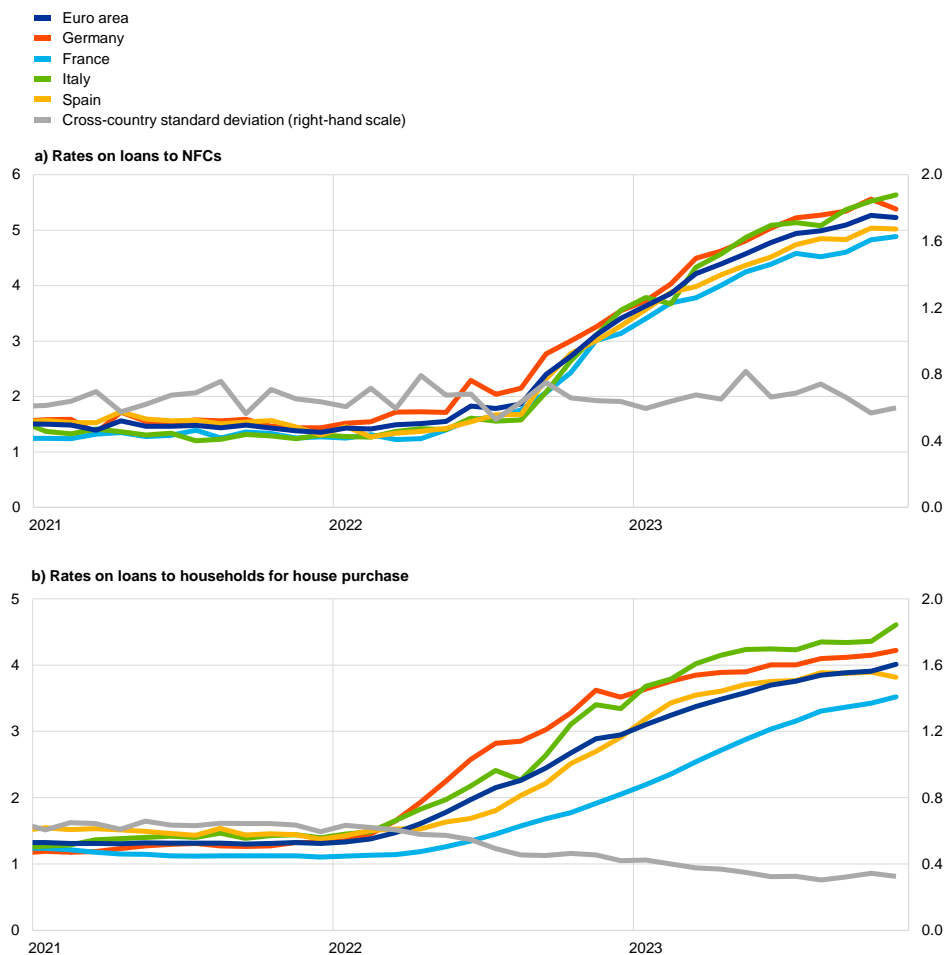
Sources: ECB and ECB calculations.
Notes: Composite bank lending rates for non-financial corporations (NFCs) are calculated by aggregating short and long-term rates using a 24-month moving average of new business volumes. The cross-country standard deviation is calculated using a fixed sample of 12 euro area countries. The latest observations are for November 2023.

After declining significantly in November, the daily data for the review period – 14 December 2023 to 24 January 2024 – show that the cost to NFCs of market-based debt increased, while the cost of equity financing declined somewhat. In November the overall cost of financing for NFCs – i.e. the composite cost of bank borrowing, market-based debt and equity – declined significantly from the multi-year high reached in October and stood at 6.07%, which is almost 50 basis points lower than in the previous month (Chart 18).[7] All components contributed to the decline in the cost of financing in November, with the cost of market-based debt and cost of equity being the main drivers. Based on the daily data, the cost of market-based debt increased between 14 December 2023 and 24 January 2024, owing to a rise in the risk-free rate, while spreads on bonds issued by NFCs remained stable or even declined in the investment-grade and high-yield segments respectively. A significant

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7   Owing to lags in the data availability for the cost of borrowing from banks, data on the overall cost of financing for NFCs are only available up to November 2023.

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decline in the equity risk premium more than compensated for the higher risk-free rate (approximated by the ten-year overnight index swap rate), thus leading to a decline in the cost of equity financing (see Section 4).

Chart 18

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

(annual percentages)

- Overall cost of financing
- Cost of equity
- Cost of market-based debt
- Short-term cost of bank borrowing
- Long-term cost of bank borrowing
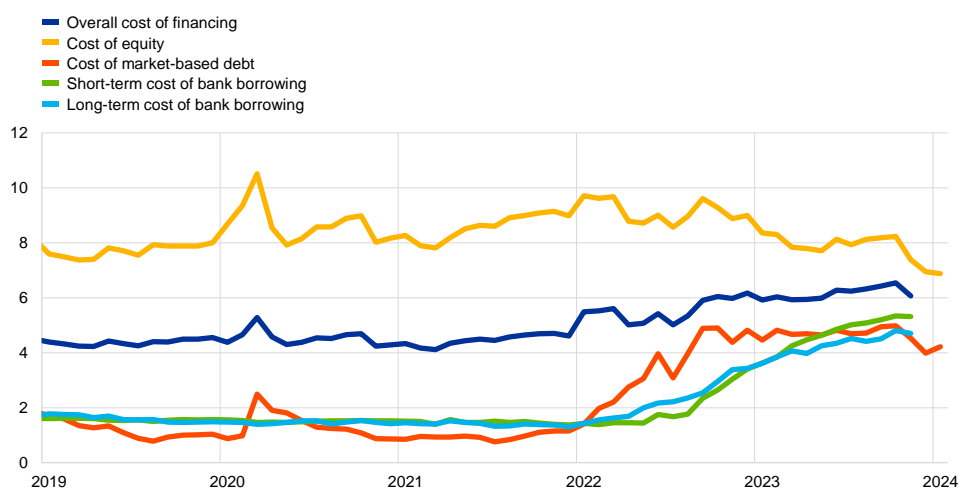
Sources: ECB and ECB calculations, Eurostat, Dealogic, Merrill Lynch, Bloomberg and Thomson Reuters.
Notes: The overall cost of financing for non-financial corporations (NFCs) is based on monthly data and is calculated as a weighted average of the cost of borrowing from banks (monthly average data), market-based debt and equity (end-of-month data), based on their respective outstanding amounts. The latest observations are for 24 January 2024 for the cost of market-based debt and the cost of equity (daily data), and for November 2023 for the overall cost of financing and the cost of borrowing from banks (monthly data).

According to the January 2024 euro area bank lending survey**, credit standards for loans to firms tightened moderately further in the fourth quarter of 2023 (Chart 19).** The tightening adds to the substantial cumulative tightening since 2022, which has contributed, together with weak demand, to the strong fall in loan growth to firms. Risks related to the economic outlook and the financial situation of firms continued to have a tightening impact, whereas the impact of banks' cost of funds and balance-sheet situations, competition and risk tolerance was broadly neutral at the euro area level in the fourth quarter of 2023. The impact of past tightening will continue to dampen loan growth in the coming quarters. In line with the leading indicator properties of credit standards – about five to six quarters ahead of actual loan growth developments – weakness in lending to firms can be expected to continue in 2024. Euro area banks expect the tightening of credit standards for loans to firms to pick up in the first quarter of 2024.

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Chart 19

Changes in credit standards and net demand for loans to NFCs and loans to households for house purchase

(net percentages of banks reporting a tightening of credit standards or an increase in loan demand)

- Credit standards – loans to households for house purchase
- Credit standards – loans (or credit lines) to NFCs
- Demand – loans to households for house purchase
- Demand – loans (or credit lines) to NFCs
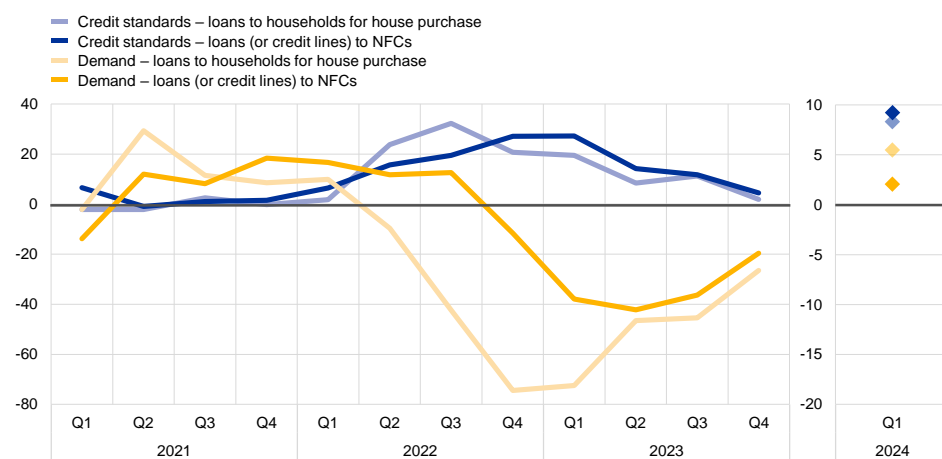
Source: Euro area bank lending survey.
Notes: NFC stands for non-financial corporation. For survey questions on credit standards, "net percentages" are defined as the difference between the sum of the percentages of banks responding "tightened considerably" and "tightened somewhat" and the sum of the percentages of banks responding "eased somewhat" and "eased considerably". For survey questions on demand for loans, "net percentages" are defined as the difference between the sum of the percentages of banks responding "increased considerably" and "increased somewhat" and the sum of the percentages of banks responding "decreased somewhat" and "decreased considerably". The diamonds denote expectations reported by banks in the current survey round. The latest observations are for the third quarter of 2023.

Banks reported a further net tightening of credit standards for loans to households in the fourth quarter of 2023, which was small for housing loans and more pronounced for consumer credit. Risk perceptions were a major driver of the tightening of credit standards in both categories, with banks' lower risk tolerance also driving the tightening of credit standards for consumer credit. While the slight tightening in the housing loan segment was driven by smaller euro area countries, credit standards for consumer credit tightened across the four largest euro area economies. For both loan categories, the net tightening was lower than in the third quarter, in line with banks' expectations. For the first quarter of 2024, euro area banks' expectations point to a pick-up in the net tightening of credit standards for housing loans, while for consumer credit they point to a net tightening similar to that reported for the last quarter of 2023.

Demand for loans by firms and households continued to decrease substantially in the fourth quarter of 2023, albeit less steeply than in the previous quarter. The drop in demand for loans to firms was due mainly to higher interest rates and lower fixed investment, consistent with the strong net decrease in demand for long-term loans. For housing loans and consumer credit, the decrease was driven by higher interest rates and low consumer confidence, with housing market prospects also exerting substantial downward pressure on demand for housing loans. Banks also reported a further net increase in the share of rejected loan applications for loans to firms and for housing loans. For the first quarter of 2024, banks expect a small net increase in demand for loans to firms (for the first time since the second quarter of 2022) and rising housing loan demand (for the first time since the first quarter of 2022), but a further decrease in consumer credit demand.

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Bank lending conditions tightened more in the real estate and construction sectors than in others, based on the results of ad hoc questions to survey respondents on the second half of 2023. Lending conditions for firms continued to tighten moderately in most economic sectors in the second half of 2023, ranging from almost nil net tightening in services to relatively large net tightening in commercial real estate, construction and residential real estate. Loan demand decreased in net terms across all economic sectors, especially in real estate and construction. Banks also reported that their access to wholesale funding had improved somewhat in the fourth quarter of 2023, but had tightened slightly for short-term retail funding and securitisation. Supervisory and regulatory measures contributed to an increase in banks' capital, as well as their liquid and risk-weighted assets, which in turn contributed to a tightening of credit standards and credit margins across most loan categories in 2023. Perceived credit quality in banks' loan portfolios had a moderate tightening impact on their credit standards for loans to firms and for consumer credit in the second half of 2023, whereas the impact was neutral for housing loans. Banks reported that the decline in excess liquidity held with the Eurosystem in the second half of 2023 had had only a limited impact on bank lending conditions.

Weakness in bank lending to firms and households continued in November 2023, reflecting the strong pass-through of policy tightening to bank lending rates, together with lower loan demand and tighter credit standards. Reflecting a large monthly flow, annual growth in loans to NFCs rebounded slightly to stand at 0.0% in November, up from -0.3% in October (Chart 20, panel a), amid considerable heterogeneity across countries and maturities. Overall, the stagnation in loan demand is explained by high borrowing rates and associated spending plan cuts. Moreover, loan supply also plays a role, as suggested by the moderate further tightening of credit standards in the fourth quarter of 2023. The annual growth rate of loans to households edged down to 0.5% in November, after 0.6% in October (Chart 20, panel b), amid negative housing market prospects, somewhat tighter credit standards and higher lending rates. The decline was driven mainly by housing loans and loans to sole proprietors (i.e. unincorporated small businesses), while consumer loans remained more resilient, despite a further tightening of credit standards and low consumer confidence.

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Chart 20

MFI loans in selected euro area countries

(annual percentage changes; standard deviation)

- Euro area
- Germany
- France
- Italy
- Spain
- Cross-country standard deviation (right-hand scale)

a) MFI loans to NFCs

b) MFI loans to households
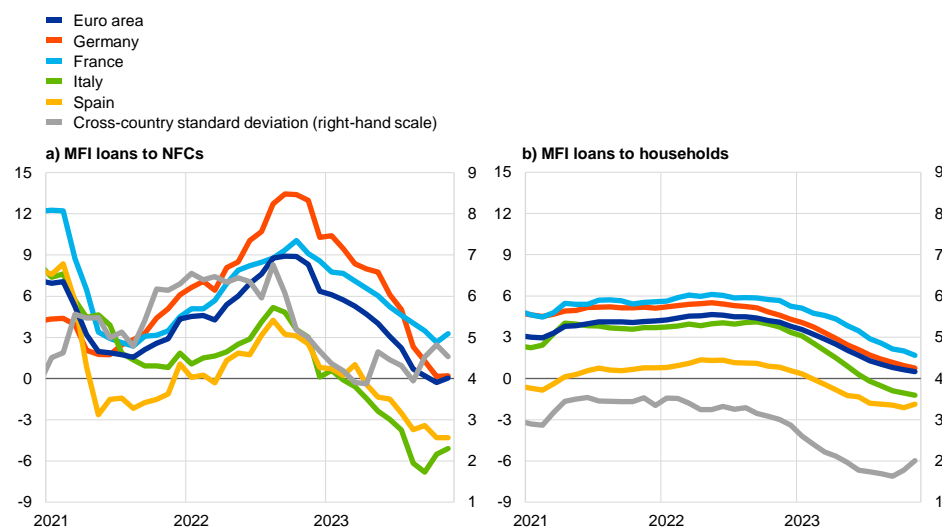
Sources: ECB and ECB calculations.
Notes: Loans from monetary financial institutions (MFIs) are adjusted for loan sales and securitisation; in the case of non-financial corporations (NFCs), loans are also adjusted for notional cash pooling. The cross-country standard deviation is calculated using a fixed sample of 12 euro area countries. The latest observations are for November 2023.

Households continued to reallocate overnight deposits to time deposits in November, while firms moderated these shifts as their deposit allocation normalised. The annual growth rate of overnight deposits continued its double-digit decline to stand at -10.9% in November, up from -11.5% in October (Chart 21). For households, November saw another large monthly shift from overnight to time deposits, whereas firms switched between these two instruments at a considerably slower pace. The strong preference for time deposits is explained by the widening spread between rates on time and overnight deposits during the tightening cycle given that, as in previous tightening cycles, interest rates on overnight deposits have adjusted to policy rate changes more slowly than those on time deposits.[8] However, households' share of overnight deposits relative to their total deposit holdings still remains well above historical levels, reflecting the legacy effects of the low opportunity cost of holding such deposits during a low interest rate period, while this share is now smaller for firms.

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[8] See also the box entitled "Monetary dynamics during the tightening cycle", *Economic Bulletin*, Issue 8, ECB, 2023.

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Chart 21

M3, M1 and overnight deposits

(annual growth rate, adjusted for seasonal and calendar effects)

- M3
- M1
- Overnight deposits
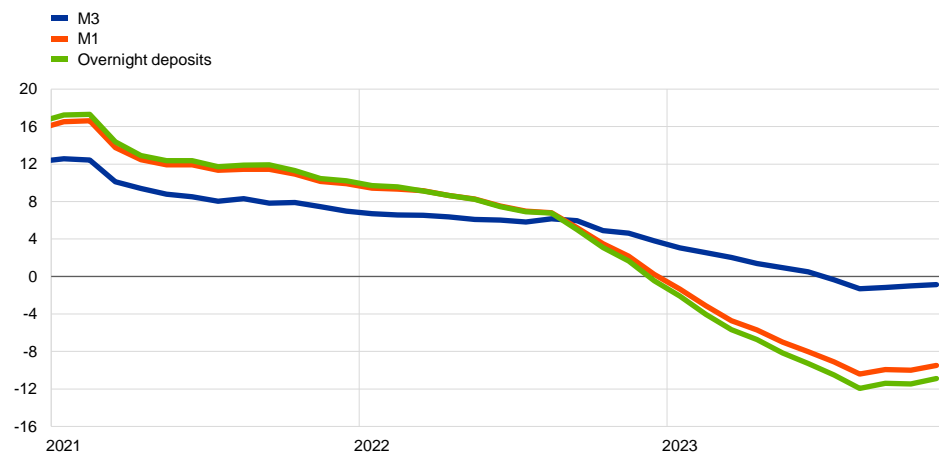
Source: ECB.
Note: The latest observations are for November 2023.

In November 2023 money growth continued to contract at annual rates close to recent historical lows driven by high opportunity costs, subdued credit growth and the reduction in the Eurosystem balance sheet. Annual broad money (M3) growth in the euro area stabilised around historically low rates, standing at -0.9% in November, up from -1.0% in October and -1.2% in September (Chart 21). Annual narrow money (M1) growth continued to decline at a close to double-digit rate, with weak monetary dynamics being reinforced by portfolio shifts. In November it stood at -9.5%, up from -10.0% in October and -10.4% in September. As in previous months, the Eurosystem's balance sheet reduction and bond acquisitions by money holders continued to have a contractionary effect on monetary dynamics in November. In addition, repayments of TLTRO funds and the higher opportunity cost for depositors of holding liquid assets are leading banks to issue bonds with longer maturities not included in M3. At the same time, a growing current account surplus amid weak imports has led to higher monetary inflows from the rest of the world.

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Boxes

1   Global trade in the post-pandemic environment

Prepared by Maria Grazia Attinasi, Lukas Boeckelmann, Laura Hespert, Jan Linzenich and Baptiste Meunier

Global trade dynamics in 2023 were still influenced by the legacy of the pandemic shock. When global activity collapsed at the start of the pandemic, triggering the deepest global recession (albeit short-lived) since the Second World War amid large-scale policy support, there was also a sweeping fall in world trade. In the first two quarters of 2020, global trade contracted by 16%, exceeding even the shock observed during the global financial crisis. In 2021 and 2022 it staged a rapid recovery, growing by 12.8% and 5.5% respectively and reaching pre-pandemic levels by the first quarter of 2021 (Chart A, panel a). However, during the second half of 2022 world trade growth started to decelerate markedly and, after dipping into negative territory in the fourth quarter, only began to gradually recover during 2023. According to the December 2023 Eurosystem staff macroeconomic projections, global trade may have grown by just 1.1% in 2023, well below its average annual growth over the pre-pandemic period (2012 to 2019) and subpar compared with global GDP growth in 2023 (Chart A, panel b).[1]

Chart A
World trade vs. trend

a) Levels

(index, 2019 = 100)

b) Growth rates

(annual percentage changes)
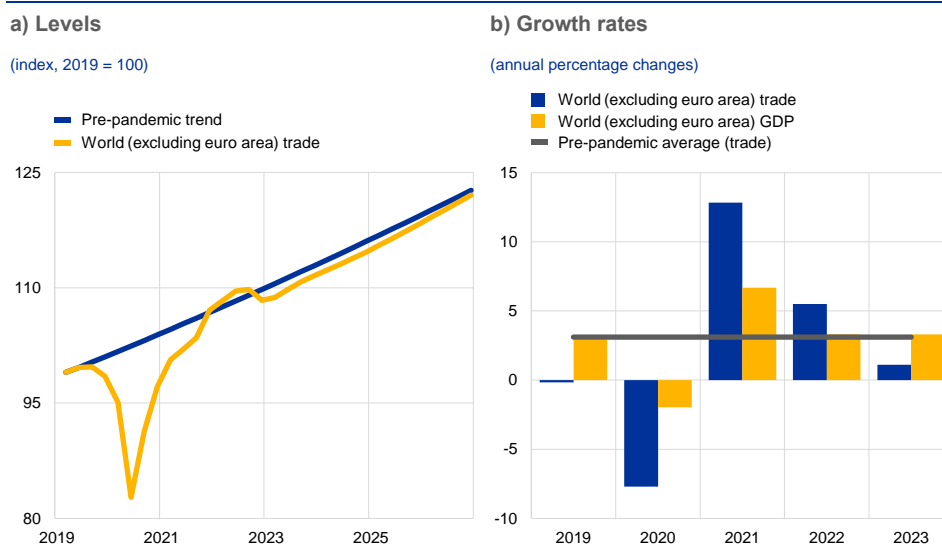
Sources: Haver Analytics, ECB staff calculations and December 2023 Eurosystem staff macroeconomic projections.
Notes: World trade refers to the aggregation of real imports across all countries, excluding the euro area. In panel a), trend growth is based on the average growth rate of the trend component of world trade from 2012 to 2019, obtained by an Hodrick-Prescott filtering of log values.

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[1]   See Box 2 of "Eurosystem staff macroeconomic projections for the euro area, December 2023", published on the ECB's website on 14 December 2023.

Buoyant global trade growth in 2021 and early 2022 was spurred by pandemic-specific factors. The most important of these was the rebound of overall economic activity after the initial COVID-19 shock. This was compounded by the rotation of global demand from services to goods. From the second half of 2020, there was a sharp recovery in goods demand as consumption patterns underwent an exceptional shift, with contact-based services consumption constrained by pandemic-related containment measures (Chart B) amid large-scale fiscal support to cushion the COVID-19 shock. Given the higher trade intensity of goods compared with services, this shift in demand patterns amplified the strong rebound in trade, which exceeded its pre-pandemic trend towards the end of 2021 (Chart A). At the same time, pandemic-related supply disruptions prevented an even sharper increase in global trade, raising delivery times globally. In 2022, trade growth was temporarily supported by firms building up their inventories amid stock-out fears. The normalisation of supply bottlenecks and the weakening of global demand helped companies to gradually clear backlogs of orders (Chart C). The recovery in international tourism travel and transportation was an additional tailwind for global trade throughout the year.

Chart B

World (excluding euro area) consumption vs. trend

a) Goods

(index, 2019 = 100)

b) Services

(index, 2019 = 100)
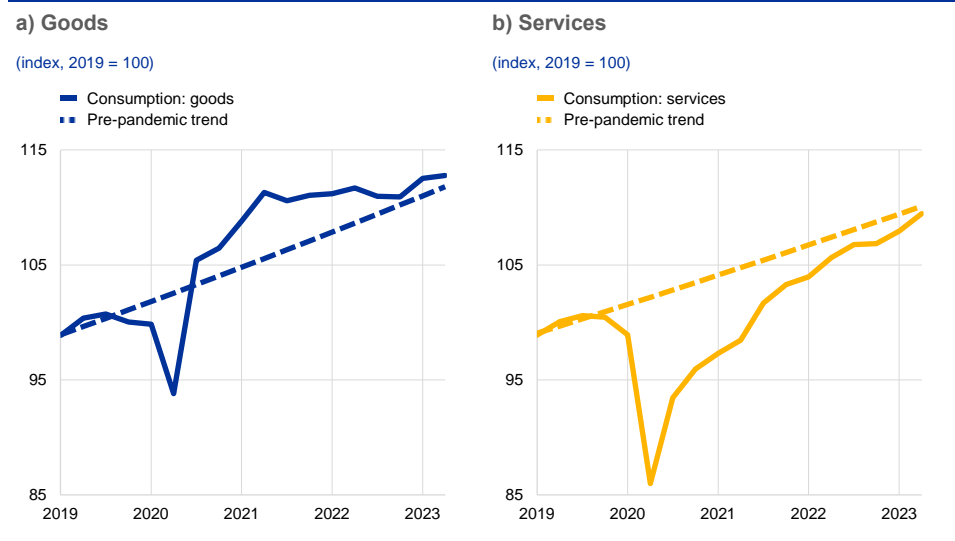
Sources: National sources, Organisation for Economic Co-operation and Development, and ECB staff calculations.
Notes: World consumption refers to an aggregation of private domestic consumption in 16 non-euro area countries accounting for 48% of world GDP, weighted by country shares in world (excluding euro area) consumption. Trend growth is based on the average growth rate from 2012 to 2019. The latest observation is for the third quarter of 2023.

Chart C

Inventories, backlogs and bottlenecks

(left-hand scale: standardised changes in deviation from 2012-2019 average; right-hand scale: diffusion index)

- Change in inventories of advanced economies
- Order backlogs (right-hand scale)
- Suppliers' delivery times (right-hand scale)
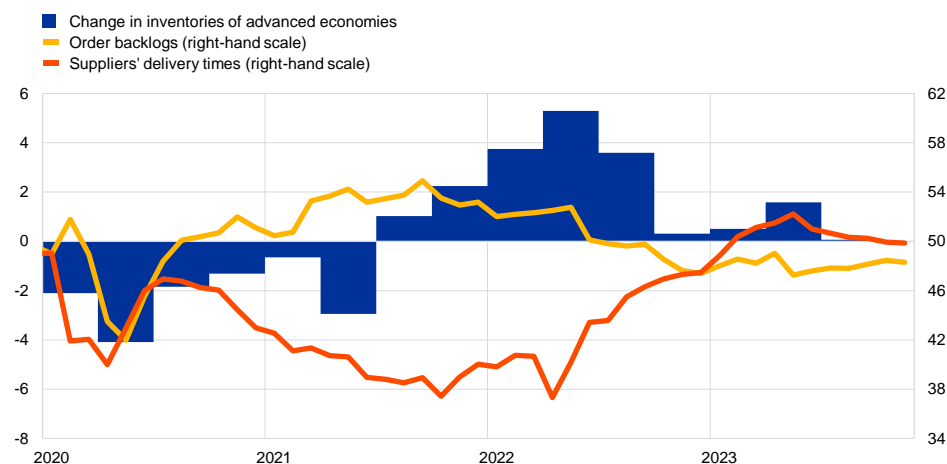
Sources: Haver Analytics, S&P Global, and ECB staff calculations.
Notes: Excludes the euro area. Real inventories are calculated as the principal component of standardised measures of national account data for Australia, Canada, Japan, New Zealand, Norway, Sweden, the United Kingdom and the United States. A diffusion index is constructed for suppliers' delivery times and order backlogs according to the proportion of respondents reporting an improvement (a deterioration) in economic conditions; a value above (below) 50 means that a higher proportion of respondents reported an improvement (a deterioration). The latest observation is for November 2023 for suppliers' delivery times and order backlogs, and the third quarter of 2023 for changes in real inventories.

The subsequent weakness in global trade in 2023 reflects a less trade-friendly composition of global economic activity and the unwinding of the abovementioned exceptional factors. First, real GDP growth slowed more strongly in advanced economies (AEs) – where domestic demand is more import-intensive – than in emerging market economies (EMEs).[2] Second, while private consumption recovered sharply, private investment remained weak, reflecting a combination of tighter monetary policy, higher uncertainty amid intensified geopolitical tensions, and the unwinding of pandemic-related fiscal support measures. Estimates from import-demand models suggest that around half of the drop in global trade since 2022 can be attributed to these weaker fundamentals, particularly the lacklustre momentum in investment, which turned negative in the last quarter of 2022 (Chart D).[3] Beyond the role of fundamentals, the model suggests that other factors were at play in early 2023 (having started in late 2022), as indicated by the large negative residuals. These residuals are possibly related to the unwinding of the pandemic-specific factors mentioned above, including the fact that demand started to rotate back from

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[2]   Import intensity refers to the share of a country's final demand that is directly or indirectly linked to imports. On average, the import intensity of domestic demand is around 20% in EMEs, compared with 30% in AEs. In the same vein, the import intensity for global consumption is around 20%, compared with 40% for investment. Finally, the import intensity is around 45% for the consumption of goods, compared with only 15% for the consumption of services. Import intensities are computed based on the trade in value added (TiVA) input-output tables of the Organisation for Economic Co-operation and Development (OECD) for 2019, and following the methodology set out in Bussière, M., Callegari, G., Ghironi, F., Sestieri, G. and Yamano, N., "Estimating Trade Elasticities: Demand Composition and the Trade Collapse of 2008-2009", *American Economic Journal: Macroeconomics*, Vol. 5, No 3, 2013, pp. 118-151.

[3]   Contributions, as shown in Chart D, are obtained from error correction models for individual countries that relate import volumes to domestic demand components and relative import prices. Measures of import intensity-adjusted demand are computed by weighting the components of domestic demand according to their import intensity. Non-linear deterministic trends are included in the long-term relationships to capture factors such as shifts in non-price competitiveness or changes in trade openness. "Other fundamentals" include contributions from the relative prices and the trends.

trade-intensive goods towards services owing to the full relaxation of pandemic containment measures (Chart B), further weighing on trade momentum. This shift in consumption patterns is also consistent with the observed moderation in global manufacturing activity. As the manufacturing sector is highly trade-intensive, a sharp slowdown in manufacturing output is associated with a more pronounced decline in global trade than in global GDP.[4]

Chart D

Contributions to world trade growth

(quarterly percentage changes, percentage points)
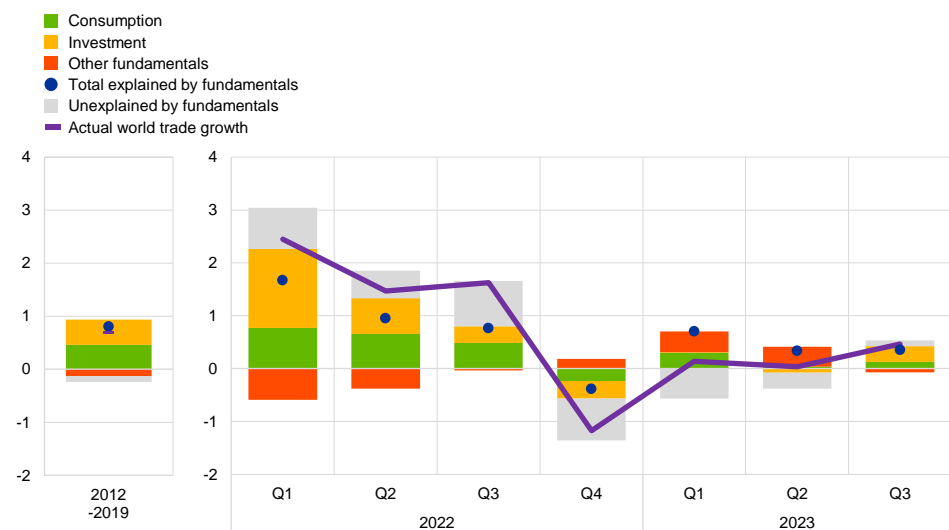
Sources: World Input-Output Database (WIOD), Haver Analytics, and ECB staff calculations.
Notes: World trade refers to an aggregation of real imports across 17 non-euro area countries accounting for 58% of world (excluding euro area) imports. Owing to data limitations, China is not included in the sample. The latest observation is for the third quarter of 2023.

The drivers of these developments can be illustrated by a structural decomposition of world trade based on a Bayesian vector autoregression (Chart E).[5] The initial trade collapse is explained by a sharp decline in demand in the first half of 2020, which was followed by a period of buoyant demand, somewhat dampened by the supply bottlenecks that materialised in the course of 2021. The supply bottleneck shock turned from negative to positive in early 2022 amid the gradual normalisation of supply disruptions, supporting trade even as demand began

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[4] Manufactured goods account for 81% of world total imports of goods and services but only 20% of world value added (with services accounting for 19% and 80% respectively).

[5] The estimation is based on a Bayesian vector autoregression (BVAR) with five series: the Federal Reserve Bank of New York's Global Supply Chain Pressure Index (GSCPI), world (excluding euro area) imports, world (excluding euro area) export prices on national currencies, oil prices and the EUR/USD exchange rate. The model is estimated at quarterly frequency from the first quarter of 1998 until the first quarter of 2023. The identification of the model's five shocks (global demand, energy, supply bottlenecks, other supply and the EUR/USD exchange rate) is based on zero and sign restrictions.

to moderate and the energy supply shock kicked in.[6] Falling domestic demand then caused a marked deceleration in global trade, notably in the fourth quarter of 2022. The contribution of demand to global trade progressively recovered throughout 2023, with pandemic-specific factors broadly normalising.

Chart E

Shock decomposition of world trade growth

(quarterly percentage changes in deviation from 2012-2019 average, percentage points)
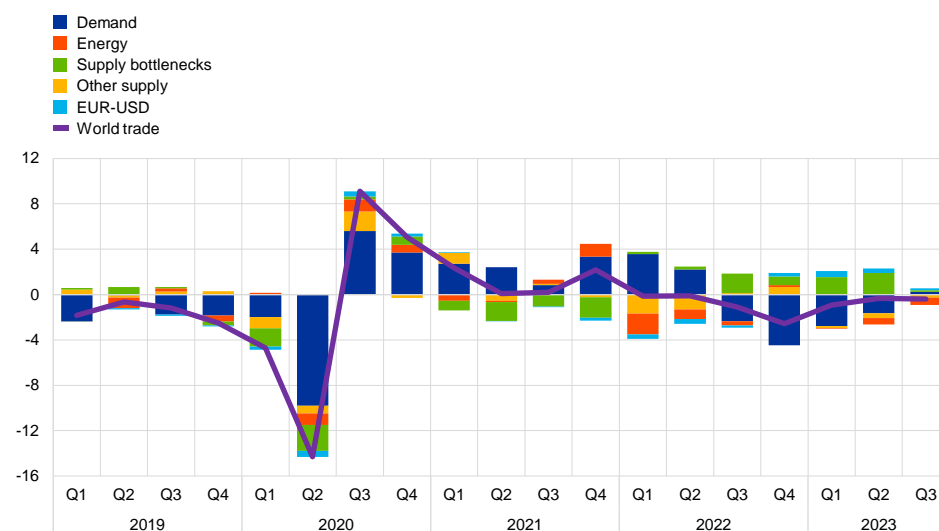
Sources: Haver Analytics, Federal Reserve Bank of New York, and ECB staff calculations.
Notes: World trade refers to world (excluding euro area) imports. The shock decomposition is based on a BVAR model with five variables (world imports, world export prices, the Global Supply Chain Pressure Index, oil prices, and the EUR/USD exchange rate). Structural shock identification is achieved by means of zero and sign restrictions. The latest observation is for the third quarter of 2023.

Global trade growth is forecast to recover over the projection horizon, with trade flows expected to align more closely with fundamentals (Chart D) and converge towards the long-term trend (Chart A, panel a). Now that supply bottlenecks and the inventory cycle are broadly back to normal levels (Chart C), inventory accumulation is expected to evolve in a manner that is more in line with historical norms. Moreover, incoming survey data for sectoral services output point to a significant deceleration compared with the strong growth recorded during the first half of 2023, suggesting that the impetus from the post-pandemic re-opening has largely run its course. This implies that the composition of consumer demand is on a normalisation path and that the rotation towards services consumption is almost over

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6 The limited contribution of the energy supply shock to world trade in 2022 (and its positive contribution in the fourth quarter of 2021) could stem from the following factors: (1) higher energy prices also act as a drag on demand, as income is redistributed from energy importers to energy exporters, which typically have a lower marginal propensity to spend, and (2) the analysis excluded the euro area, where the recent energy price shock has been disproportionately strong. The magnitude of the energy supply shock is robust to alternative measurements of energy prices, including a synthetic index combining oil and gas prices. The limited impact of the energy supply shock on the volume of trade is also in line with the literature – see, for example, Sato, M., and Dechezleprêtre, A., "Asymmetric industrial energy prices and international trade", *Energy Economics*, Vol. 52, 2015, pp. 130-141, and similar estimations of trading volumes based on a structural VAR. For extra-euro area exports, see the box entitled "The energy shock, price competitiveness and euro area export performance", *Economic Bulletin*, Issue 3, ECB, 2023. The effect of financial factors on world trade is assumed to be captured by the demand shock, as financial constraints hindered borrowing capacities. Nevertheless, financial factors are estimated to have played a limited role in shaping trade since the pandemic (see, for example, Simola, H., "Consumption and service sector demand played a key role in the COVID-19 global trade collapse", *VoxEU.org, 24 November 2021*).

– as also suggested by goods and services consumption converging towards their pre-pandemic trend (Chart B). The December 2023 Eurosystem staff macroeconomic projections forecast a gradual recovery in world trade growth (excluding the euro area) to 3.0% in 2024 (up from 1.1% in 2023), broadly in line with the long-term unitary elasticity of world trade to world GDP.[7] This would also imply that the level of trade will gradually return to the pre-pandemic trend towards the end of the projection horizon (Chart A, panel a).[8] The trade projections are also in line with the forecasts from peer institutions that point to a normalisation of the world trade outlook from 2024 onwards.[9]

Looking ahead, the balance of risks to global trade is assessed as broadly balanced. Trade in goods and services could be boosted, inter alia, by an increased uptake of digital services – including those related to artificial intelligence. At the same time, the introduction of policies aimed at reshoring production (especially of critical goods and technologies) in the context of growing trade tensions, notably between the United States and China (for example, the US CHIPS and Science Act, China's dual circulation strategy and the US Inflation Reduction Act) could reduce trade volumes.[10] More generally, a fragmentation of trade along spheres of political influence could weigh on trade even as cyclical factors normalise. While there is thus far little evidence to suggest that deglobalisation has significantly hampered aggregate trade, the number of trade barriers has been rising since 2019, and soft indicators based on firms' earning calls suggest that mentions of "reshoring" or "friend-shoring" have increased markedly since 2022 (Chart F).[11] Moreover, a recent European Central Bank survey of large EU corporate firms shows that over the next

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[7] See IRC Trade Task Force, "Understanding the weakness in global trade – what is the new normal?", *Occasional Paper Series*, No 178, ECB, Frankfurt am Main, September 2016.

[8] See Box 2 of "Eurosystem staff macroeconomic projections for the euro area, December 2023", op. cit.

[9] For instance, in 2024 the annual growth rate of world trade is forecast to reach 3.5% by the International Monetary Fund (IMF), 2.7% by the OECD, 3.3% by the World Trade Organization (WTO, only merchandise trade), 3.0% by the European Commission and 2.8% by the World Bank. The IMF figure is taken from its October 2023 World Economic Outlook, the OECD figure is taken from its November 2023 Economic Outlook, the WTO figure is taken from its October 2023 Global Trade Outlook, the European Commission figure is taken from its Autumn 2023 Economic Forecast, and the World Bank figure is taken from its June 2023 Global Economic Prospects.

[10] Under the "dual circulation" strategy adopted in 2020, China is aiming to (1) vertically integrate its production and become self-sufficient, aided by its large domestic market, and (2) globalise Chinese companies through the Belt and Road Initiative. In the United States, the CHIPS and Science act of 2022 introduced large subsidies and incentives for the research, development and production of technological components. The US Inflation Reduction Act of 2022 aims to increase the ability of the United States to attract key green technologies, using large sectoral production subsidies and significant financial incentives (for example, tax credits for the purchase of electric vehicles and investments in renewable energy equipment) that are conditional on domestic content requirements.

[11] Empirical evidence on how geoeconomic fragmentation affects trade is scarce, with no significant effect found on aggregate trade (Di Sano, M., Gunnella, V. and Lebastard, L., "Deglobalisation: risk or reality?", *ECB Blog, ECB, 12 July 2023*). Further empirical evidence shows that the application of trade barriers between two countries generally results in trade being diverted via a third country, meaning that no impact is found on aggregate trade (see Freund, C., Mattoo, A., Mulabdic, A. and Ruta, M., "Is US Trade Policy Reshaping Global Supply Chains?", VoxEU.org, 31 August 2023).

five years these firms expect to become more active in relocating operations in order to make their business model more resilient.[12]

Chart F

Global incidence of reshoring-related terms in firms' earnings calls

(sentences containing at least one of the search phrases, as a proportion of all sentences recorded during firms' earnings calls, percentages)
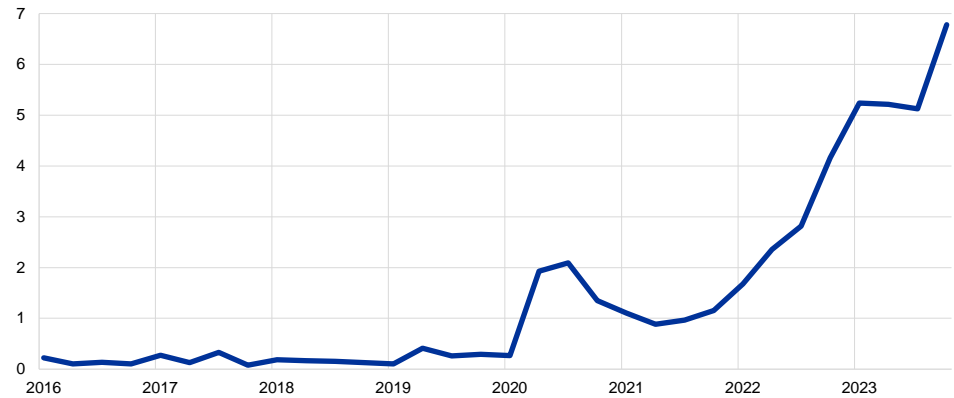
Sources: NL Analytics and ECB staff calculations.
Notes: Firm-level incidence rates are averaged across all firms and across each quarter. The search phrases were "friend-shoring", "near-shoring", "on-shoring", and "reshoring". The latest observation is for the third quarter of 2023.

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[12] See the box entitled "Global production and supply chain risks: insights from a survey of leading companies", *Economic Bulletin*, Issue 7, ECB, 2023. It is unclear what impact reshoring will have on aggregate world trade growth, however. It will depend on whether a significant share of euro area corporate firms opt to relocate extra-euro area suppliers towards the euro area – which could hamper aggregate trade growth – or to other extra-euro area countries (e.g. from China to Vietnam), which in this case would affect the geography of trade flows but possibly have only a limited impact on aggregate trade growth.

2 Is the PMI a reliable indicator for nowcasting euro area real GDP?

Prepared by Gabe de Bondt and Lorena Saiz

The euro area composite output Purchasing Managers' Index (PMI) tends to be strongly correlated with real GDP growth (Chart A). The composite output PMI is a diffusion index, which measures the sum of the percentage of month-on-month "higher" output responses and half the percentage of "no output change" responses. The PMI survey output question asks about the actual unit volume of output this month compared to the previous month. It indicates the degree to which output changes are diffused throughout the panel of respondents and has a no-change benchmark of 50. A simple PMI-based rule of thumb, hereafter referred to as the PMI-based tracker rule, calculates euro area quarterly real GDP growth as 10% of the quarterly average level of the composite output PMI from which a value of 50 is subtracted. This rule-of-thumb exhibited a good nowcasting performance during the pre-coronavirus (COVID-19) period.[1] However, since the composite output PMI is a diffusion index, it provides information on the extensive margin of change (the number of firms that reported a change in output) but not on the intensive margin of change (the amount by which output changed). It implies that in periods of extreme volatility in output, such as during the COVID-19 pandemic, the level of the composite output PMI might become less informative. Another limitation of the composite output PMI is the incomplete sector coverage; the index is a weighted average of the services business activity PMI and the manufacturing output PMI, while other important sectors such as retail, construction and government are missing. Moreover, the euro area composite output is based solely on the four largest euro area countries and Ireland.

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[1] See de Bondt, G.J., "Nowcasting: Trust the Purchasing Managers' Index or wait for the flash GDP estimate?" in Papanikos, G.T. (ed.), *Economic essays*, Athens Institute for Education and Research, pp. 83–97, 2012; and de Bondt, G.J., "A PMI-based real GDP tracker for the euro area", *Journal of Business Cycle Research,* Volume 15, pp.147–170, 2019.

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Chart A

Euro area composite output PMI and real GDP growth

(left axis: quarterly percentage changes, right axis: diffusion index)

■ Real GDP growth
■ Composite output PMI (right-hand scale)
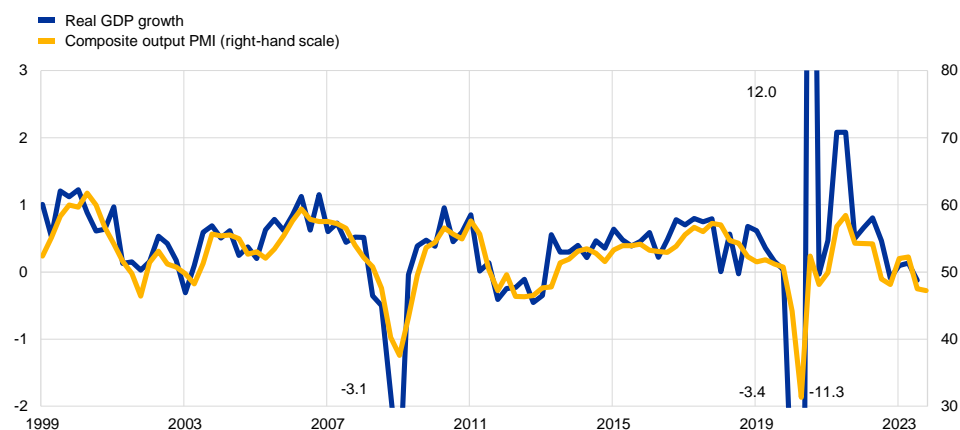
Sources: Eurostat, S&P Global and ECB calculations.
Notes: The two y-axis scales reflect the PMI-based tracker rule, which is calculated as 10% of the quarterly average of the composite output PMI minus 50.

Information derived from composite and sectoral PMIs plays an important role for the mechanical short-term GDP forecasting tools used by ECB and Eurosystem staff. The ECB short-term mechanical forecasting models include basic linear regressions, which directly link quarterly averages of monthly PMI data with real GDP.[2] These regressions are known as bridge equations because GDP predictors bridge the gap between earlier available higher frequency data, such as industrial production, and quarterly GDP. The GDP predictors are, in turn, forecast with satellite models using sectoral PMIs, among other monthly indicators. Overall, compared with other indicators, PMIs tend to have a relatively high weight in the forecasting models due to their timeliness.

After losing some predictive capacity during pandemic-related lockdowns and reopenings, the forecast accuracy of the PMI-based short-term forecasting models of the ECB has recovered (Chart B). After deteriorating in 2020 and 2021, the forecast accuracy of the PMI-based short-term tool of the ECB improved in 2022 and 2023 when the prediction errors – measured by the root mean squared forecast error – became much lower and gradually returned to previous more regular levels as measured by the 2016-19 average.[3] The PMI-based models underpredicted GDP growth, as indicated by a negative bias, in 2021 and 2022 by 0.4 and 0.3 percentage points respectively, while the average bias was practically zero in 2023. This suggests that growth drivers in 2021 and 2022 were not fully captured by the PMIs. More specifically, looking at sectoral developments, PMIs did not fully capture reopening effects and supply disruptions, which led to some underprediction of services activity and an overestimation of industrial activity.

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[2]   See the article entitled "Short-term forecasting of euro area economic activity at the ECB", *Economic Bulletin*, Issue 2, ECB, 26 March 2020.

[3]   The results for 2020 are not reported in this Box. During the COVID-19 outbreak in 2020, the standard tools used for nowcasting euro area real GDP growth in real time warranted adjustments, as reported in the article entitled "Assessing short-term economic developments in times of COVID-19", *Economic Bulletin*, Issue 8, ECB, 5 January 2021.

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Chart B

Forecast accuracy of the ECB's PMI-based short-term forecasting tool

(in percentage points)

- 2016-19
- 2021
- 2022
- 2023
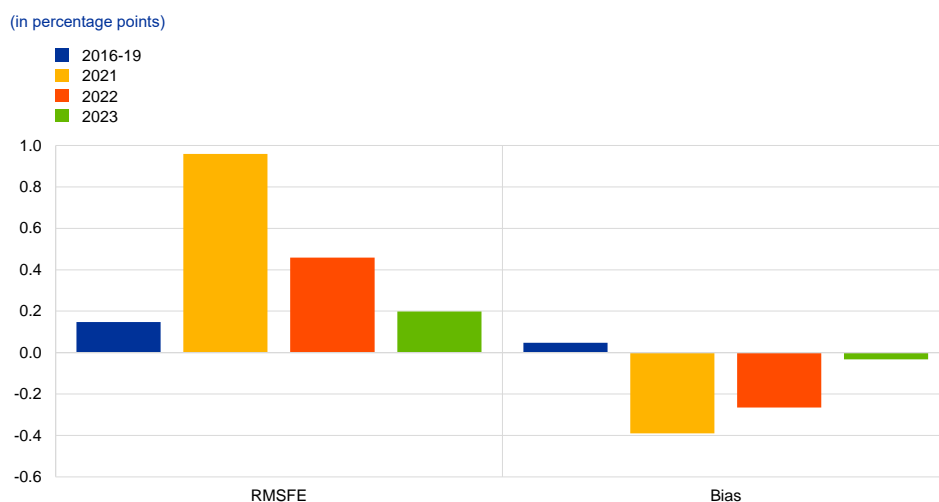
Sources: ECB calculations.
Notes: The chart shows the root mean squared forecast error (RMSFE) and the bias, which is defined as the average difference between the forecast and the outcome. The forecasts use real-time data and are made two weeks before the official flash estimate of GDP is released by Eurostat and are evaluated against it.

In 2022 and 2023 the forecast accuracy of PMI-based nowcasts was comparable to the accuracy of the first GDP estimates with the latest GDP vintage as target (Chart C).[4] The forecast errors of the ECB's PMI-based short-term forecasting models and PMI-based tracker rule were also of a similar size to those for the nowcasts from the ECB/Eurosystem staff macroeconomic projections, which make use of all available real-time information, including the PMI-derived forecasts, as well as expert judgement. Typically, as more monthly information becomes available in real time within a given quarter, the nowcast errors for GDP growth in that same quarter become smaller. For 2022 and 2023 this was not the case for the GDP nowcasts from the ECB's PMI-based short-term forecasting tool. The unusual slight deterioration in the performance as more information became available probably reflected policy responses to successive shocks and the growth impact of sectors not covered by the composite output PMI, such as government expenditure. However, no strong conclusions can be drawn given the small number of observations per calendar year. In short, the PMI composite output index is still a reliable indicator for nowcasting euro area real GDP growth.

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[4]   In recent quarters the errors, including those derived from the first GDP release might, however, turn out to be falsely low because GDP will be revised over time.

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Chart C

Root mean squared forecast errors in nowcasting euro area real GDP growth based on the latest GDP vintage

(in percentage points)

- ■ ECB short-term forecasting tool
- ■ PMI-based tracker rule
- ▬ ECB/Eurosystem staff macroeconomic projections
- ▬ First GDP estimates
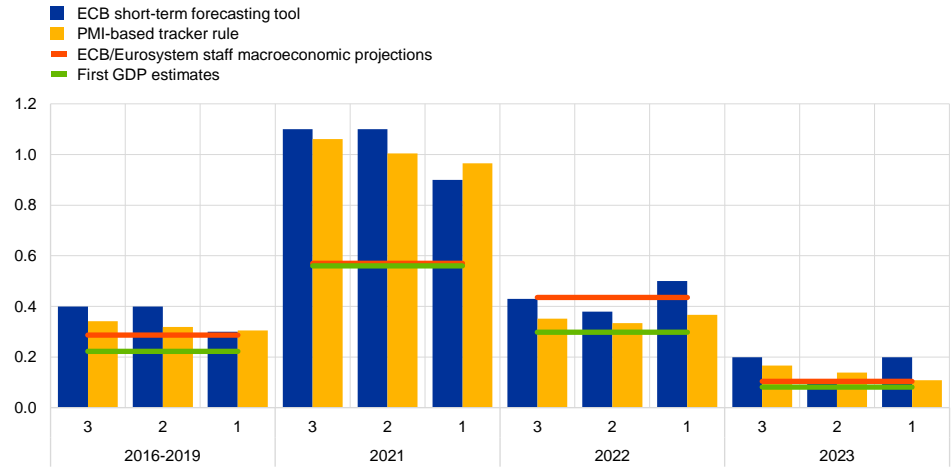
Sources: ECB, S&P Global and ECB staff calculations.
Notes: The numbers "3", "2" and "1" represent the number of months before the release of the first GDP estimate. The real-time nowcast from the ECB/Eurosystem staff macroeconomic projections is available around two months before the first GDP estimate. The forecast errors are calculated using the latest available GDP vintage (19 January 2024) as a target. 2023 is based on the first three quarters of 2023 only because the first GDP vintage for the fourth quarter of 2023 was released after the cut-off date of this Bulletin.

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3 Main findings from the ECB's recent contacts with non-financial companies

Prepared by Gabe de Bondt, Friderike Kuik and Richard Morris

This box summarises the findings of recent contacts between ECB staff and representatives of 70 leading non-financial companies operating in the euro area. The exchanges took place between 2 and 10 January 2024.[1]

Contacts painted a largely unchanged picture of activity stagnating or contracting slightly in the fourth quarter of 2023, with little or no pick-up expected in the first quarter of 2024 (Chart A). There was still a lot of variation both within and across sectors in terms of reported dynamics. Manufacturing and construction activity were seen as remaining weak as were related transport and logistics services, while leisure-oriented consumer services and digital services were the main areas of growth. A year-long inventory correction has reportedly now largely come to an end, resulting in a bottoming out of demand for many intermediate goods. But long order backlogs caused by earlier supply disruption have dissipated, prompting a slowing of growth, or contraction, in capital goods production. Consequently, developments in manufacturing activity were now considered to better reflect the evolution of final consumption and investment demand.

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

Chart A

Summary of views on activity, employment, prices and costs

(averages of ECB staff scores)

- Previous round
- Current round
- Historical average
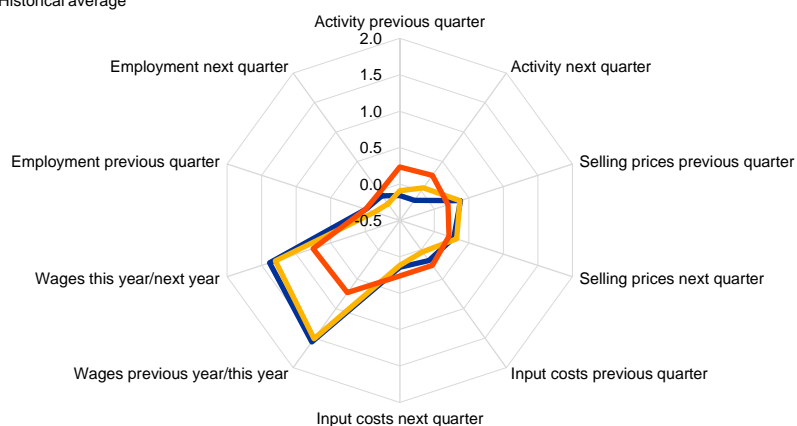
Source: ECB.
Notes: The scores reflect the average of scores given by ECB staff in their assessment of contacts' statements about quarter-on-quarter developments in activity (sales, production, orders), input costs (material, energy, transport, etc.) and selling prices, and about year-on-year wage developments. Scores range from -2 (significant decrease) to +2 (significant increase). A score of 0 would mean no change. For the current round, previous quarter and next quarter refer to the fourth quarter of 2023 and the first quarter of 2024 respectively, while for the previous round these refer to the third and the fourth quarter of 2023. Discussions with contacts in January and in March/April regarding wage developments normally focus on the outlook for the current year compared with the previous year, while discussions in June/July and September/October focus on the outlook for the next year compared with the current year. The historical average reflects an average of scores compiled using summaries of past contacts extending back to 2008.

Contacts indicated that consumers continued to favour leisure-related services rather than physical goods in general, and durable household items in particular. Demand for kitchen appliances, consumer electronics and furniture continued to fall, due to the reduction in households' purchasing power coupled with declining activity in the housing market. Demand for passenger cars, which had generally been below production levels during 2023 as manufacturers worked through their long order backlogs, was said to be responding well to recent price incentives. Sales of most non-durable consumer goods (food, clothes, etc) were reportedly fairly stable, or growing slightly, albeit with continued downtrading as many consumers sought to make their money go further. By contrast, contacts noted that demand for leisure-related services, and in particular for tourism, continued to grow strongly, with 2023 proving to be a record year and current booking trends pointing to yet more growth in 2024.

Investment in housing and in machinery and equipment was contracting, according to contacts, but this was partly offset by growing investment related to the green transition and digitalisation. Investment in machinery and equipment and (even more so) in residential construction was dampened notably by the recent rises in interest rates, elevated uncertainty and low confidence. Residential construction and real estate activity were seen as falling sharply as existing projects were completed and demand for new projects was very limited. Contacts producing industrial machinery said that order intake was low and that production was being – or would be – cut as order backlogs could no longer sustain production as they had done in 2023. By contrast, civil engineering, renovation and projects related to the distribution and supply of renewable energy were continuing to benefit from growing

demand. Moreover, contacts in – or supplying – the IT and digital services sector pointed to continued growth, implying a positive trend in intangible investment.

Chart B

Evolution of views on developments in and the outlook for activity and prices

(averages of ECB staff scores)
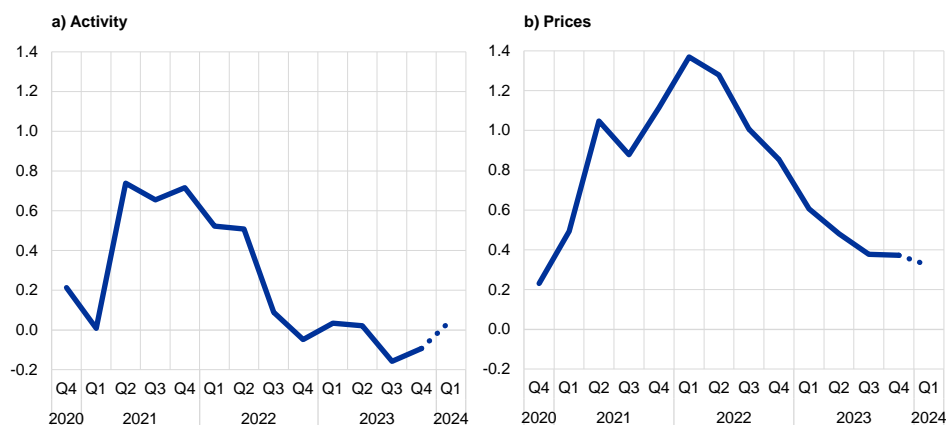
a) Activity	b) Prices

Source: ECB.
Notes: The scores reflect the average of scores given by ECB staff in their assessment of what contacts said about quarter-on-quarter developments in activity (sales, production and orders) and prices. Scores range from -2 (significant decrease) to +2 (significant increase). A score of 0 would mean no change. The dotted line refers to expectations for the next quarter.

The overall short-term outlook was still considered quite gloomy as interest rates and regulatory and geopolitical uncertainty hold back the recovery. Most contacts said that the business environment was "not getting worse, but not getting much better", with a majority anticipating activity remaining stable or only growing very modestly in 2024. Even if domestic demand were to recover, European manufacturers would likely face increased competition from imports, given persistently high energy costs. A large number also cited the increasing burden of regulatory costs, especially related to sustainability reporting. Many contacts said that consumer and business confidence were unlikely to improve significantly until there was a clearer signal that inflation had been tamed and that interest rates would fall (or at least not rise further). Many also referred to the prevalence of bad news and heightened uncertainty amid increasing geopolitical tensions and armed conflict, including most recently the attacks on shipping in the Red Sea.

Contacts highlighted weakening employment amid prolonged uncertainty and an increasing need to contain costs. While most contacts said that employment in their company and/or sector was stable, an increasing number were either passively allowing headcount to decline via churn or actively shedding labour. The latter was particularly seen to be the case in the more energy-intensive parts of the intermediate goods sector, the durable consumer goods sector, construction and real estate, and road transport and logistics. In these sectors, the extent of the decline in activity, lower future anticipated activity and/or cost pressures and squeezed margins reportedly made reducing labour costs imperative. More generally across the economy, firms were increasingly cautious about hiring. Contacts in many sectors observed an increasing reluctance on the part of staff to change jobs. Employment agencies reported not only strong declines in temporary placements but also a

slowdown in permanent placement activity. Many contacts still viewed the labour market as being "tight", reflecting a structural shortage of supply in many professions and geographical areas, but others also said they were finding it easier to fill vacancies than a few quarters ago.

Contacts reported that growth in selling prices remained moderate in the fourth quarter of 2023, with some further easing expected in the short term (Chart B, panel b). The extent and rate of increases in selling prices still varied greatly. Selling prices were said to be generally stable on average in the industrial sectors. This reflects a continued easing of input costs in terms of materials, energy and transport, which most contacts described as stable or declining. With non-labour input cost pressures moderating and demand for many manufactured goods remaining weak or falling, many contacts in the industrial sectors expected prices to come under continued or increasing downward pressure or, at most, anticipated somewhat modest price increases going forward. Many contacts referred to the attacks on shipping in the Red Sea and, as a consequence of these attacks, they expected shipping costs to rise, albeit not on the scale experienced during the coronavirus (COVID-19) pandemic. Food retailers and their suppliers reported a fairly stable outlook for food prices, albeit at high levels. The cost of fresh produce had also been impacted by extreme weather, driven by climate change. Non-food retailers mostly reported stable or gently rising prices, but with somewhat stronger price growth in luxury segments. Elsewhere in the services sector, most contacts reported – and continued, on average, to expect – quite strong growth in selling prices. This was especially the case for tourism services (although air ticket prices were said to have peaked), digital services (that are in high demand) and services where prices are driven by indexation or rising labour costs.

Wage growth is expected to ease somewhat this year. Taking a simple average of the quantitative indications provided, contacts expected wage growth to decrease from around 5.3% in 2023 to 4.4% in 2024. This is slightly lower than the indications based on average expectations from the previous two survey rounds. The delayed effect of past (multiannual) negotiations meant that there was still an element of catch-up in actual or expected wage agreements for 2024 for some companies and sectors. However, most contacts now saw the easing of inflation and a subdued demand outlook as factors contributing to a moderation, or even normalisation, of wage growth.

4 Assessing the macroeconomic effects of climate change transition policies

Prepared by Marien Ferdinandusse, Friderike Kuik and Romanos Priftis

This box gauges the macroeconomic impact of climate change policies aimed at reducing greenhouse gas emissions. To meet the goal of reducing emissions in the European Union (EU) by at least 55% in 2030 compared with 1990 levels, governments have started implementing different sets of measures. The EU has recently adopted the "Fit for 55" package, which will be progressively implemented between 2024 and 2034.[1] This box first assesses the impact of green fiscal discretionary measures, as included in the latest December 2023 Eurosystem staff macroeconomic projections on euro area real GDP and inflation. Such measures are unlikely to be sufficient to fully achieve the EU's targets for emission reduction, energy efficiency and renewable energy production in the Fit for 55 package. The box therefore goes on to illustrate the medium-term impact of alternative transition policy scenarios using model simulations.

The impact of green fiscal measures included in the Eurosystem staff macroeconomic projections

Discretionary fiscal measures that have a positive effect on the green transition are classified as green measures. A fiscal measure, either on the revenue or the expenditure side, is classified as a green measure if it has a positive impact in terms of climate change prevention or adaptation.[2] These measures are principally discretionary decisions by national governments, such as increasing national energy taxes or fuel excises. They do not provide a view on the level of green revenues or expenditures or include the impact of fluctuations in emission permit prices under the EU Emissions Trading System (EU ETS).[3] In line with the principles governing the ECB/Eurosystem staff macroeconomic projections, green measures need to be sufficiently detailed and likely to receive legislative approval for inclusion in the projections.

The combined effect of the green fiscal measures included in the December 2023 Eurosystem staff projections on both headline inflation and GDP growth is small over the projection horizon. The effect on euro area headline inflation is

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[1] See the European Commission's webpage "Fit for 55: Delivering on the proposals".

[2] The ECB has gathered information on these measures since the conclusion of its ECB's strategy review in 2021 as part of the action plan to incorporate climate change considerations into its policy framework. For more information about the classification of climate-related fiscal measures, see Box 5 entitled "Climate-related policies in the Eurosystem/ECB staff macroeconomic projections for the euro area and the macroeconomic impact of green fiscal measures", *Economic Bulletin*, ECB, Issue 1, 2023; for the amounts included in the December 2023 Eurosystem staff projections, see Box 8 entitled "Fiscal policy measures in response to the energy and inflation shock and climate change" in this issue of the Economic Bulletin.

[3] While not classified as green fiscal measures, the Eurosystem staff macroeconomic projections are informed by technical assumptions on carbon prices under the EU ETS, which are based on futures prices and foresee a slight increase to €85.2/tCO2 in 2026.

estimated to amount to around 0.1 percentage point in all years of the projection horizon, with minor variation (Chart A). For euro area real GDP growth, the effect is estimated to amount to around 0.07 percentage points in 2023 and to be negative at -0.01 percentage points in 2024, -0.06 percentage points in 2025 and -0.02 percentage points in 2026. The combined effect of the green fiscal measures on both headline inflation and real GDP growth are heterogenous across countries.

Chart A

Impact of green fiscal discretionary measures on real GDP growth and inflation

a) Real GDP growth

(percentage points)

b) HICP inflation

(percentage points)
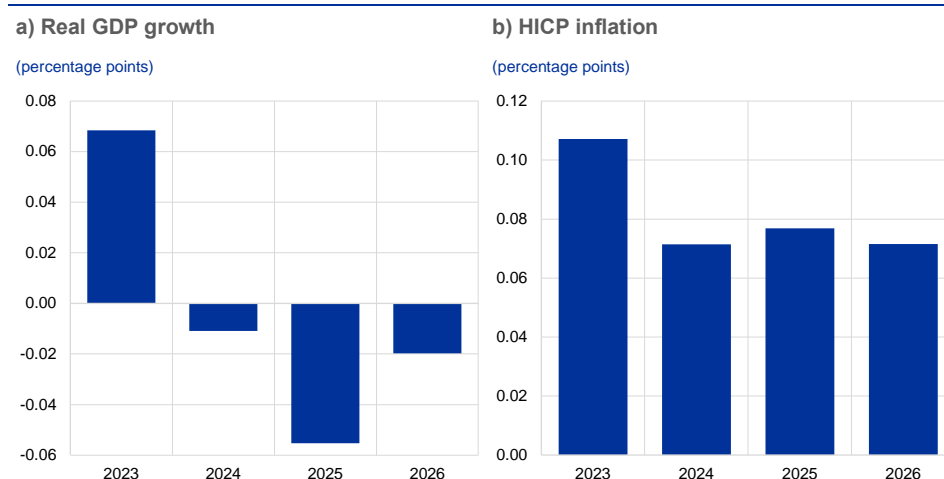
Source: December 2023 Eurosystem staff macroeconomic projections.
Notes: A fiscal measure is classified as a green measure if it has a positive impact in terms of climate change prevention or adaptation. This classification relates to discretionary measures which do not include the effect of fluctuations in EU ETS prices.

The fiscal measures included in the Eurosystem staff baseline projections are unlikely to be sufficient to fully achieve the EU targets for emission reduction, energy efficiency and renewable energy production. Some of the measures included in the Fit for 55 package are included in the baseline projections, in particular green fiscal measures that contribute to Member States meeting their national emission reduction targets. However, it is unlikely that the measures (and assumptions) included in the current projections will be sufficient to fully meet EU targets, for several reasons: (i) some of the measures geared to these targets will only be implemented after the end of the current projection horizon in 2026; (ii) some of the EU targets for energy efficiency and renewable energy production still need to be transposed into national and European legislation; and (iii) the national emission reduction targets that were strengthened under the Fit for 55 package, from -29% to -40% by 2030 compared with 2005, still need to be followed up by EU Member States. That is why recent emission projections by Member States still point to a large gap with the EU targets, and more measures will be needed to achieve the Fit for 55 targets.

Medium-term impact of transition policies consistent with EU emission reduction targets

Model simulations are used to explore the impacts of a number of transition scenarios that are consistent with the EU emission reduction targets.
Simulations are performed using the New Area-Wide Model with a disaggregated energy sector (NAWM-E).[4] The benchmark reflects the current emission projections reported by euro area countries and is based on existing policies. To define the benchmark carbon price, the existing carbon tax-related measures are summarised in an effective carbon price as calculated by the Organisation for Economic Co-operation and Development (OECD) corresponding to 87 euro per tonne of CO_2 in 2023. The simulations then target an additional emission reduction of 18% by 2030 on top of the reduction required under existing policies, consistent with the EU emission target for a -55% reduction by 2030 compared to 1990 levels (Chart B).[5] As many combinations of instruments may achieve this reduction, this box considers carbon taxes and, in one scenario, assumes stronger increases in the productivity of the clean energy sector and a smoother transition away from dirty energy, without explicitly specifying how this can be achieved.

Chart B

EU greenhouse gas emissions

(MtCO2e)
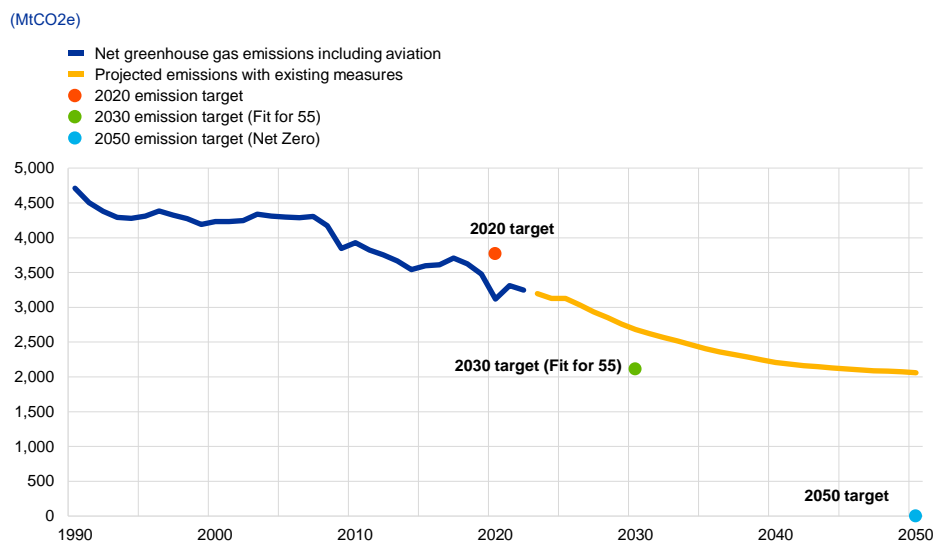
Sources: European Environment Agency (EEA) and ECB calculations.
Notes: Projections are based on data reported by Member States to the EEA, which do not include the Fit for 55 measures.

The model simulations consider the following scenarios (Table A):

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[4] The NAWM-E augments the ECB's New Area-Wide Model (NAWM) with disaggregated energy production and use, where firms and households demand energy for production and consumption purposes (see Coenen, G., Lozej, M. and Priftis, R., "Macroeconomic effects of carbon transition policies: an assessment based on the ECB's New Area-Wide Model with a disaggregated energy sector", *Working Paper Series*, No 2819, ECB, 2023).

[5] OECD net effective carbon rates, which cover the effective carbon price resulting from national carbon and energy taxes, the EU ETS and offsetting subsidies, are most recently available for 2021. For this exercise, they have been extended to 2023 on the basis of EU ETS future prices and under the assumption that national taxes are unchanged.

- **IEA carbon tax scenario**: This scenario considers carbon taxes as the only measure for reducing emissions. This assumption is based on the 2022 World Energy Outlook of the International Energy Agency (IEA) and implies a linear increase in the carbon tax to 140 euro per tonne of CO_2 by 2030. Alone, this carbon tax path is insufficient to meet EU emission targets (IEA, 2022).[6]

- **Fit for 55 carbon tax scenario**: This scenario also considers carbon taxes only as the measure for reducing emissions. Carbon taxes increase linearly to 225 euro per tonne of CO_2 by 2030. This means the model satisfies the EU emission reduction target in 2030, irrespective of additional carbon regulation or technological progress.

- **Fit for 55 policy mix scenario**: This scenario considers a mix of rising carbon taxes and non-carbon tax elements. Carbon taxes increase linearly to 180 euro per tonne of CO_2 by 2030. Non-carbon tax elements are proxied by a rise in the total factor productivity (TFP) of the clean energy sector by 1% over the simulation horizon, and by considering higher elasticities of substitution between dirty energy and clean energy as well as between energy and other inputs of production and consumption.[7] These non-carbon tax elements capture possible changes in the technology mix in the clean energy sector (for example, stemming from green investment) and tighter environmental regulation. Given that changes in technology are expected to occur over a longer time horizon, this scenario is illustrative and designed to meet the EU's emission reduction target as well as the EU targets for clean energy production and energy consumption by 2030.

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[6] The results of this scenario are in line with the analysis presented in Brand, C., Coenen, G., Hutchinson, J. and Saint Guilhem, A., "The macroeconomic implications of the transition to a low-carbon economy", *Economic Bulletin*, Issue 5, ECB, 2023, which uses a suite of model approach to assess the impact of carbon taxation on the euro area, as well as with Coenen, G., Lozej, M. and Priftis, R., "Macroeconomic effects of carbon transition policies: an assessment based on the ECB's New Area-Wide Model with a disaggregated energy sector", *Working Paper Series*, No 2819, ECB, 2023.

[7] Exogenous TFP proxies for autonomous energy efficiency improvements, which are frequently used in CGE models and imply that the clean energy use per unit of output declines over time (see, for example, Webster, M., Paltsev, S. and Reilly, J., "Autonomous efficiency improvement or income elasticity of energy demand: Does it matter?", *Energy Economics*, Vol. 30(6), 2008, pp. 2785-2798). In this box, the increase in TFP is calibrated to 1%, in line with historical productivity growth rates. Higher elasticities of substitution can be rationalised through a model with directed technical change (see, for example, Hassler, J., Krusell, P. and Olovsson, C., "Directed Technical Change as a Response to Natural Resource Scarcity", *Journal of Political Economy*, Vol. 129(11), 2021, pp. 3039-3072). Raising the elasticity between energy and other inputs to 0.8 and that between clean energy and dirty energy to 3 allows energy consumption to decline further and clean energy to increase. The higher value of the between-energy substitution elasticity corresponds to the upper range of empirical estimates in the literature (see Papageorgiou, C., Saam, M. and Schulte, P., "Substitution between Clean and Dirty Energy Inputs: A Macroeconomic Perspective", *The Review of Economics and Statistics*, Vol. 99(2), 2017, pp. 281-290).

Table A

Overview of scenarios

	Instruments		Targets achieved by scenarios		
Scenario	Carbon tax (EUR/tCO2)	Other	Fit for 55 emissions -18%	Clean energy share +12.5%	Energy consumption -11.9%
IEA carbon tax	140		✗	✗	✗
Fit for 55 carbon tax	225		✓	✗	✗
Fit for 55 policy mix	180	Clean energy total factor productivity: +1% Higher elasticity of substitution between energy and other inputs (0.8) and between dirty and clean energy (3)	✓	✓	✓

Source: ECB.
Notes: The Fit for 55 package is designed to meet EU emission reduction targets and other targets through carbon pricing and regulation. Fit for 55 targets refer to euro area greenhouse gas emissions, and the share of clean energy over dirty energy, as well as energy consumption relative to current EU levels. For emissions, the reductions are compared to euro area countries' projections based on existing measures (Chart B).

Carbon taxes lower the demand for dirty energy and induce firms to substitute less costly clean energy for production of the aggregate energy good. The increase in the post-tax price of dirty energy, combined with the rise in the price of clean energy stemming from higher demand for it, causes aggregate energy prices to increase. Higher energy prices feed into the price of households' consumption bundles and firms' marginal costs, translating into an increase in headline inflation. On the real side, firms and households experience a fall in their current and expected future profitability and real income respectively, which lowers investment and consumption, and hence GDP. Being a by-product of dirty energy production, carbon emissions decline, while the economy experiences a "green transition" as firms use a higher share of clean energy, but less energy overall for production.

Depending on the scenario, HICP inflation is higher by 0.2 to 0.4 percentage points in 2025 and 2026 than the benchmark with no additional measures, while the level of real GDP is lower (Chart C). The results depend on the scenario: when only carbon tax policy is considered, the effects on GDP and inflation are driven by the magnitude of the carbon tax and the degree of substitution across the energy varieties. Consequently, the Fit for 55 carbon tax scenario amplifies the effects relative to the IEA carbon tax scenario. Under the Fit for 55 policy mix scenario, an increase in the TFP of the clean energy sector improves the efficiency of clean energy, allowing more energy to be produced per unit of clean energy. Higher elasticities of substitution between clean and dirty energy then strengthen the substitution across energy varieties. Together, these elements lead to a reduction in carbon emissions, an increase in the share of clean energy and a reduction in total energy consumption, while maintaining the carbon tax at a lower terminal level. Overall, the negative effects on GDP and inflation are mitigated, especially in the medium term, while GDP increases modestly on impact owing to the expansionary effect of the increase in TFP.

Chart C

Impact of transition policy scenarios on real GDP and inflation

a) Real GDP

(percentages)

- IEA carbon tax
- Fit for 55 carbon tax
- Fit for 55 policy mix

b) HICP inflation

(percentage points)

- IEA carbon tax
- Fit for 55 carbon tax
- Fit for 55 policy mix
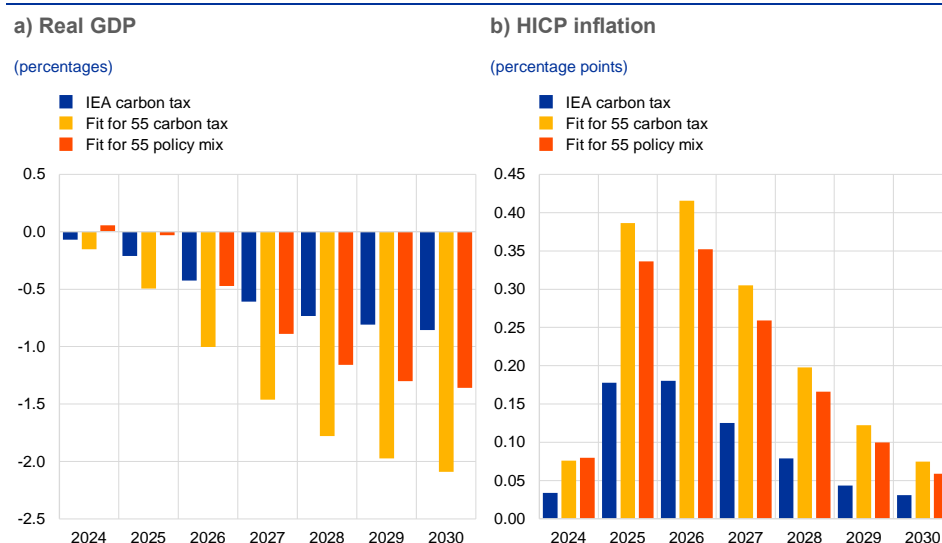
Source: ECB.
Notes: Dynamic responses based on NAWM-E simulations relative to a benchmark with existing measures . Simulations start in 2024 and consider endogenous monetary policy.

The NAWM-E simulations suggest that the mix of transition policies is important in determining the extent of lower growth and higher inflation. A caveat of the model-based analysis is that the regulatory elements of the Fit for 55 package are not modelled explicitly, implying that the EU's emission reduction targets may in practice be attained through alternative combinations of policies with a range of different effects on growth and inflation. Similarly, the analysis does not explicitly model green investment activities, thereby abstracting from time-to-build delays and funding needs. Other modelling choices, such as how carbon revenues are redistributed or how tax policies are implemented (for example, frontloaded, backloaded or staggered) may also affect the results.[8] The scenarios used should therefore be seen as indicative. It should also be acknowledged that it is possible to define different scenarios using different instruments that would achieve the same goals in terms of reducing emissions but have potentially different macroeconomic implications.

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[8] For more details on the implementation of the carbon tax, see Coenen, G., Lozej, M. and Priftis, R., "Macroeconomic effects of carbon transition policies: an assessment based on the ECB's New Area-Wide Model with a disaggregated energy sector*", Working Paper Series*, No 2810, ECB, 2023.

5 Corporate vulnerabilities as reported by firms in the SAFE

Prepared by Carmela Attolini, Annalisa Ferrando and Judit Rariga

This box analyses corporate vulnerabilities as derived from firm-level replies to the Survey on the Access to Finance of Enterprises (SAFE)**.** A firm is considered vulnerable if it simultaneously reports lower turnover, lower profits, higher interest expenses and a higher or unchanged debt-to-assets ratio over the past six months.[1] The concept is particularly relevant when assessing the implications for the transmission of monetary policy as it provides strong signals on the financial health of firms.

The share of financially vulnerable firms in the SAFE, which is broadly in line with the dynamics in corporate bankruptcies, has increased recently (Chart A). Corporate bankruptcies have been on the rise in the euro area since the second half of 2022. In the second and third quarters of 2023 the bankruptcy declarations index exceeded pre-pandemic levels, reaching its highest level since 2015, when the index first became available.[2] As bankruptcy is the legal process initiated when a firm has been declared insolvent, statistics on bankruptcy represent the tip of the iceberg of firms in financial difficulties. The scale and speed at which firms in financial difficulties become bankrupt also depends on the legislative system in place in each country.

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1   The aggregate SAFE financial vulnerability indicator is the survey-weighted share of vulnerable firms in the sample, where the weights ensure the representativeness of the results in each size class, economic activity and country for the underlying population of firms.

2   The bankruptcy declarations index is based on the absolute number of bankruptcies reported to Eurostat by EU Member States (on a voluntary basis until the fourth quarter of 2020 and on a mandatory basis since the first quarter of 2021). The base year for the index is 2015.

Chart A

Evolution of bankruptcies, corporate insolvencies and vulnerability

(left-hand scale: percentages; right-hand scale: 2015=100)

- Insolvency
- Vulnerability
- Bankruptcy index (right-hand scale)
- Distance to insolvency, reversed (right-hand scale)
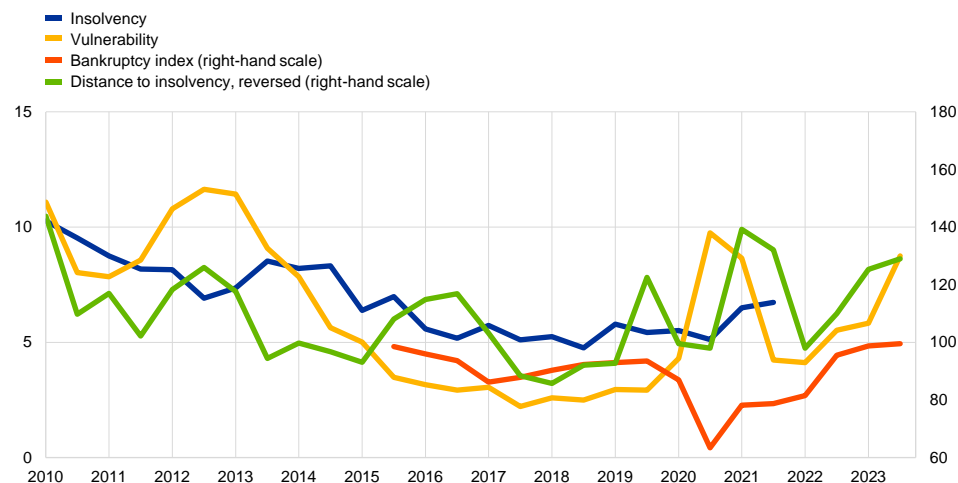
Sources: ECB and European Commission (SAFE), Eurostat, BvD Orbis, LSEG and ECB calculations.
Notes: Vulnerable firms are defined as firms that simultaneously report lower turnover, decreasing profits, higher interest expenses and a higher or unchanged debt-to-assets ratio. Distance to insolvency is calculated as the inverse of the volatility of a firm's return on equity based on a sample of large euro area listed firms. Lower values of the measure indicate that firms are closer to insolvency, anticipating future default. The chart displays an inverted distance to insolvency index (2015=100). The number of bankruptcies is shown as an index (2015=100). The insolvency indicator shows the percentage of firms in the SAFE sample which have negative profits and are unable to cover their losses with equity. The chart is plotted at biannual frequency, matching the frequency of the SAFE survey rounds.

In the second and third quarters of 2023, the share of vulnerable firms in the SAFE reached 9%, up from 6% in the previous survey wave. From a historical perspective, the dynamics of the SAFE financial vulnerability indicator are broadly aligned not only with bankruptcies but also with two other indicators of insolvency: (i) a solvency measure based on firm balance sheet data showing the share of firms unable to cover their losses with equity; and (ii) a market-based measure of distance to insolvency.[3,4] Following the sovereign debt crisis, all indicators began improving from 2012 onwards. At the start of the COVID-19 pandemic in 2020, while the SAFE financial vulnerability indicator and both insolvency indicators were on the rise owing to deteriorating financial positions, firms were shielded from bankruptcy by the provision of government guarantees (in the literature, this is referred to as the "bankruptcy gap").[5] More recently, like the evolution of bankruptcies and the SAFE financial vulnerability indicator, the distance to insolvency is also pointing to increased corporate distress, although it is lagging the other two indicators.

The rise in vulnerabilities in the SAFE in the second and third quarters of 2023 is driven mostly by firms in industry, construction and trade, and vulnerability

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[3]   The insolvency indicator shows the percentage of firms in the SAFE sample which have negative profits and are unable to cover their losses with equity (see Lalinski, T. and Pal, R., "Efficiency and effectiveness of the COVID-19 government support: Evidence from firm-level data", *EIB Working Paper*, No 6, European Investment Bank, June 2021). Owing to the publication lag for balance sheet data, the latest available year with full coverage of enterprises for this indicator is 2021.

[4]   Distance to insolvency is calculated as the inverse of the volatility of a firm's return on equity based on a sample of large euro area listed firms. For more detail, see Ampudia, M., Busetto, F. and Fornari, F., "Chronicle of a death foretold: does higher volatility anticipate corporate default?", *Working Paper Series*, No 2749, ECB, November 2022.

[5]   See Banerjee, R., Noss, J. and Vidal Pastor, J.M., "Liquidity to solvency: transition cancelled or postponed?", *BIS Bulletin*, No 40, Bank for International Settlements, March 2021.

increased more for large firms than for small and medium-sized enterprises (SMEs) (Chart B). There are substantial heterogeneities in vulnerability across economic sectors and countries and in relation to firm characteristics such as size and age. The share of vulnerable firms increased across all sectors relative to the previous survey round, albeit to varying degrees. It remained relatively low in the services sector (6%) in the second and third quarters of 2023, while reaching somewhat higher levels in industry (11%), construction (10%) and trade (10%). Across the four big euro area countries, Italy and Germany have the highest share of vulnerable firms (9%). Both of these countries have also seen a substantial increase in this share recently, reflecting their relatively high share of industrial firms. The share of vulnerable firms has increased more among large firms than among SMEs compared with the previous survey round, even though SMEs historically tend to be more financially fragile.[6] In addition, the share of vulnerable firms has increased more among young firms than among older firms recently.

Chart B

Heterogeneity in corporate vulnerability in the SAFE

(percentages)
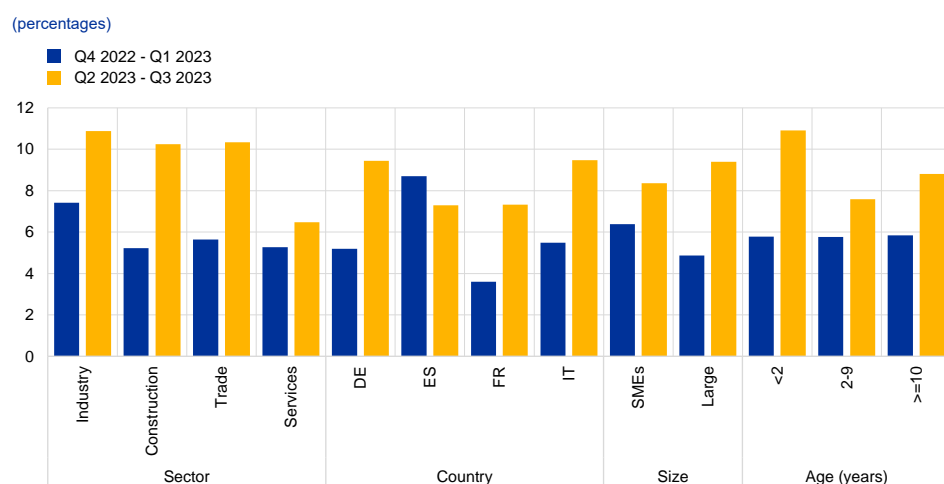
Sources: ECB and European Commission (SAFE) and ECB calculations.
Notes: The bars show the share of vulnerable firms across sectors, countries, firm size and firm age in the last two rounds of the SAFE (Q4 2022-Q1 2023 and Q2 2023-Q3 2023).

Increases in interest expenses are important in explaining the likelihood of firms becoming vulnerable (Chart C). Reduced-form regressions are performed to investigate which balance sheet characteristics are most relevant to firms becoming vulnerable. The analysis suggests that, for the sample of firms in SAFE with balance sheet information for the period 2010-2021, on average a 1 percentage point increase in interest paid as a share of profits increases the probability of becoming vulnerable by 12%. Changes in debt, turnover or profits have a much smaller impact on the probability of becoming vulnerable. This suggest that increases in interest rates, which are needed to bring down inflation from very elevated levels, could

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[6]   In general, SMEs are considered more fragile as their activities are less diversified and flexible and they are less capital intensive and therefore more reliant on external financing. See Udell, G., "SME Access to Finance and the Global Financial Crisis", *Journal of Financial Management, Markets and Institutions*, Vol. 8, No 1, 2040003, August 2020.

affect economic activity via their impact on firms. In fact, as explained below, vulnerable firms invest less than non-vulnerable ones.

Chart C

Corporate vulnerability in SAFE and its drivers

(percentages)

- Coefficient
- 95% confidence interval
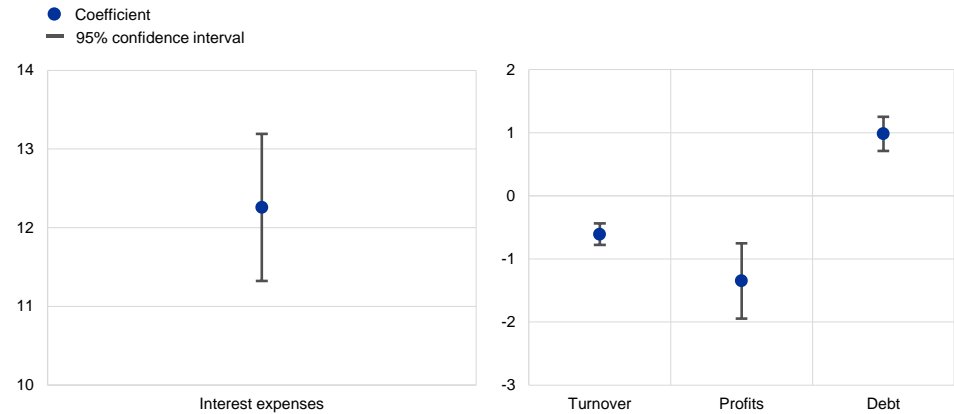
Sources: ECB and European Commission (SAFE), BvD Orbis and ECB calculations.
Notes: The chart plots regression coefficients for average marginal effects, showing the impact of turnover, profits, interest expenses and debt on the probability of a firm becoming vulnerable. Interest expenses are measured as total interest paid over profits before tax; profits are measured as net income over sales; turnover is defined as sales over total assets; and debt is defined as total debt over total assets. Regressions contain country, time, firm size and industry fixed effects. Whiskers represent 95% confidence intervals. The sample covers SAFE firms with financial statements for the period 2010-2021.

Vulnerable firms in the SAFE are more likely to have non-performing loans than non-vulnerable firms (Chart D). Looking at past survey rounds, on average, around 10% of vulnerable firms in the SAFE already had non-performing bank loans in the quarter in which they were surveyed and considered vulnerable. Following the progress of vulnerable firms for four quarters after they were identified as vulnerable in the survey shows that the share of vulnerable firms with non-performing loans increases, reaching on average up to 13% one year after the firm was identified as vulnerable. In contrast, only around 6% of non-vulnerable firms had non-performing loans across past survey waves, and this share stays stable in the quarters following the survey. This finding confirms that vulnerability weighs heavily on firms' debt servicing capacity.

Chart D

Share of vulnerable and non-vulnerable firms with non-performing loans

(percentages)
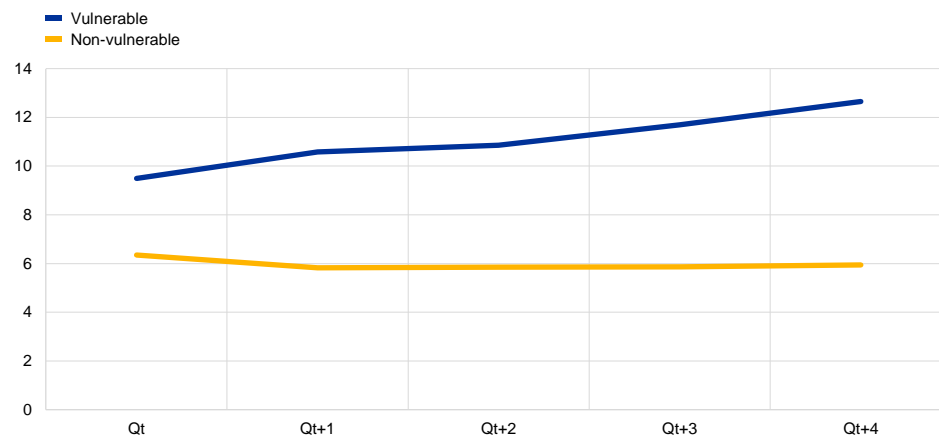
Sources: ECB and European Commission (SAFE), AnaCredit and ECB calculations.
Notes: The chart shows the average share of vulnerable and non-vulnerable firms with non-performing exposures as reported in AnaCredit (the euro area credit register) over survey rounds 20 (October 2018-March 2019) to 27 (April 2022-September 2022). At Qt the chart shows the average share of firms with non-performing exposures for the last quarter of the respective survey round for vulnerable and non-vulnerable firms in the SAFE. These firms are then followed for four additional quarters after the initial survey round (Qt+1 to Qt+4).

Balance sheet data for firms in the SAFE confirm that vulnerability has implications for the future investment and employment decisions of firms (Chart E). By focusing on the sample of firms in SAFE with balance sheet information for the period 2010-2021, simple regressions controlling for firm fundamentals and a set of structural fixed effects show that vulnerability according to the SAFE indicator is associated with holding lower working capital. This confirms the short-term distress of vulnerable firms. Moreover, vulnerability is also associated with both lower future fixed investment and lower future employment. Relative to non-vulnerable firms, vulnerable firms have on average a 4 percentage point lower investment rate and a 5 percentage point lower growth in employment. This indicates that changes in the fragility of firms, as reported via firms' own perceptions, are related to real economic outcomes.

Chart E

Corporate vulnerability in SAFE and firm outcomes

(percentage points)

● Coefficient
▬ 95% confidence interval
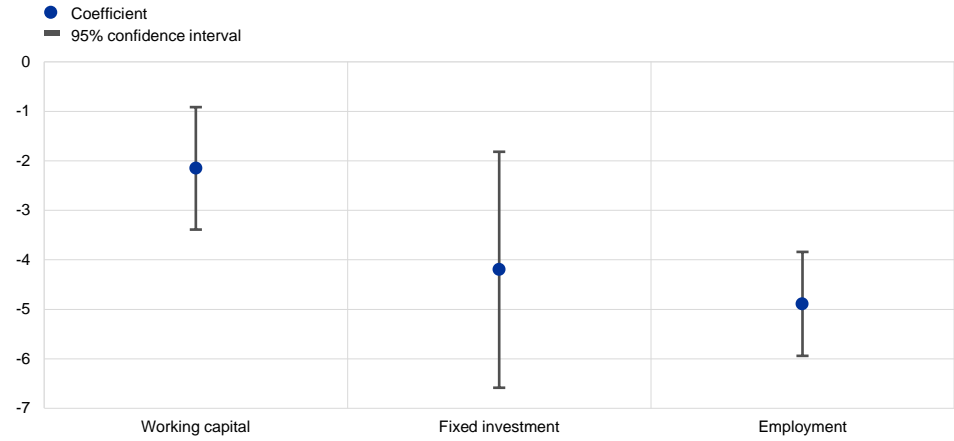
Sources: ECB and European Commission (SAFE), BvD Orbis and ECB calculations.
Notes: The regressions show the impact of firm vulnerability in period t on working capital, fixed investment and employment in period t+1. Working capital is the difference between current assets and liabilities over total assets; investment is the change in fixed assets over total fixed assets; employment is the change in the number of employees over the total number of employees. Regressions include firm controls (profits over total assets and long-term debt over total debt) and country, wave, industry and firm size fixed effects. Whiskers represent 95% confidence intervals. The sample covers SAFE firms with financial statements for the period 2010-2021.

6 Policy expectation errors during the recent tightening cycle – insights from the ECB's Survey of Monetary Analysts

Prepared by Yıldız Akkaya Blake, Lea Bitter, Claus Brand and Diogo Sá

Information from the Survey of Monetary Analysts **(SMA) on respondents' expectations about the future evolution of the ECB's monetary policy measures can provide insights into the source of expectation errors during the recent tightening cycle.** Since July 2022 the Governing Council has raised the key ECB interest rates by a total of 450 basis points in response to the extraordinary surge in inflation. After a protracted period of policy rates close to the effective lower bound, financial markets and analysts expected an interest rate path that was much flatter than the one ultimately realised. Accordingly, policy expectation errors have been large and have only recently started to diminish. SMA data can help to determine whether these errors are due to a misperception of the ECB's reaction function or to miscalculations about the macroeconomic environment.[1]

Since spring 2022 financial markets and analysts have predicted the Governing Council's immediate policy rate decisions relatively accurately but made substantial errors in their predictions three Governing Council meetings ahead. Using individual SMA expectations, ex post excess returns, measured as the difference between the euro short-term rate (€STR) forward curve and the realised deposit facility rate (DFR), can be decomposed into two components:[2] (i) risk premia, approximated by the difference between the €STR forward curve and the SMA DFR expectations, and (ii) expectation errors, namely the difference between the SMA DFR expectations and the realised DFR.[3] The resulting decomposition (Chart A) shows that, during the sample period, both financial markets and SMA respondents underestimated the pace of the interest rate hiking cycle. In the very short term (one Governing Council meeting ahead), monetary policy expectations predicted the interest rate decisions accurately in most cases. However, over a longer horizon (three Governing Council meetings ahead) there was a sharp increase in policy expectation errors. Specifically, SMA respondents consistently underpredicted the path of policy rates during 2022, by up to 1 percentage point.

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1   For further details on the SMA, see Brand, C. and Hutchinson, J., "The ECB Survey of Monetary Analysts: an introduction", *Economic Bulletin*, Issue 8, ECB, 2021.

2   The €STR forward curve is adjusted by adding individual SMA expectations for the spread between the DFR and the €STR.

3   For comparable decompositions of excess returns, see Schmeling, M., Schrimpf, A. and Steffensen, S.A.M., "Monetary policy expectation errors", *Journal of Financial Economics*, Vol. 146, No 3, December 2022, pp. 841-858; and Cieslak, A., "Short-Rate Expectations and Unexpected Returns in Treasury Bonds", *The Review of Financial Studies*, Vol. 31, No 9, September 2018, pp. 3265-3306.

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Chart A

SMA-based expectation errors and risk premia three Governing Council meetings ahead

(basis points)

- ■ Median expectation errors
- ■ Median risk premia
- ● Median excess returns
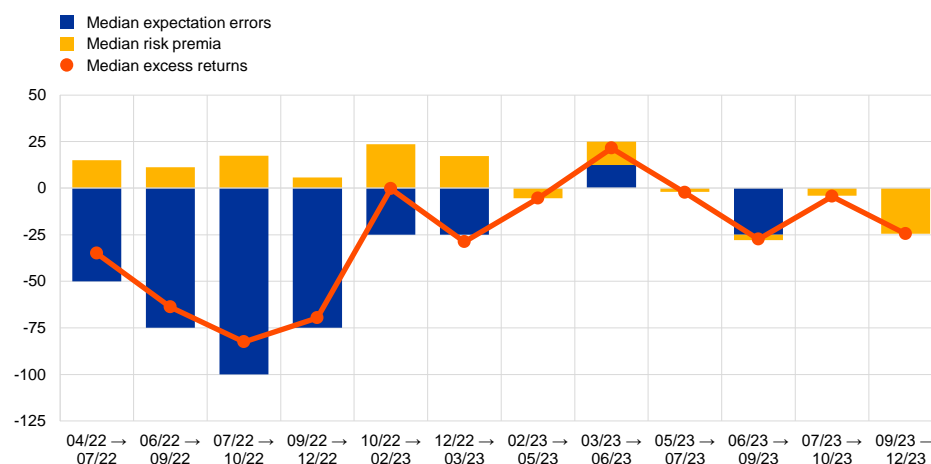
Sources: SMA and ECB calculations.
Notes: SMA expectations are used to decompose ex post excess returns XR (measured as the difference between €STR forward rates Fwd and the realised deposit facility rate DFR) into risk premia RP (approximated by the difference between the €STR forward rates and SMA DFR expectations) and expectation errors EE (the difference between the SMA DFR expectations and the realised DFR)

$$XR_t = Fwd_{t-3,t} - DFR_t = \underbrace{(Fwd_{t-3,t} - DFR_{t-3,t}^{SMA})}_{RP_t} + \underbrace{(DFR_{t-3,t}^{SMA} - DFR_t)}_{EE_t}.$$

For instance, "three meetings ahead" implies that, at the SMA cut-off date ahead of the July 2022 Governing Council meeting, expectations for the October 2022 Governing Council decision are considered. The sample period spans from April 2022 to December 2023. The latest observations are for 14 December 2023.

The uncertain macroeconomic environment, as reflected in large revisions to inflation and output expectations, has played a major role in shaping the policy expectation errors.[4] Econometric evidence suggests that a considerable share of the underprediction of the policy rate path three Governing Council meetings ahead is associated with revisions to expectations for macroeconomic developments (Chart B). Specifically, revisions to macroeconomic expectations, measured here by revisions to SMA expectations of year-on-year HICP inflation and quarter-on-quarter real GDP growth four quarters ahead, are strongly linked to the policy expectation errors. Similarly, upward revisions to expectations for the DFR in the long run can help explain those errors. Hence, the underprediction of policy tightening correlates with respondents consistently revising their inflation expectations upwards and their real GDP growth expectations downwards, reflecting an economic environment dominated by supply-side shocks causing inflation and output to move in opposite directions. Such correlation patterns cannot be interpreted as a perceived structural policy reaction function, owing to the episodic nature of the short sample being investigated. Nevertheless, they suggest that developments in macroeconomic expectations are a key factor in explaining the policy expectation errors.

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[4] For a similar analysis, but with calibrated coefficients, see Bernardini, M. and Lin, A., "Out of the ELB: expected ECB policy rates and the Taylor Rule", *Occasional Papers*, No 815, Banca d'Italia, October 2023.

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Chart B

Decomposition of expectation errors three Governing Council meetings ahead

(basis points)

- ● Median expectation errors
- ■ Revisions to HICP expectations
- ■ Revisions to real GDP growth expectations
- ■ Revisions to expectations of the DFR in the long run
- ■ Aggregation residuals
- ■ Unexplained expectation errors
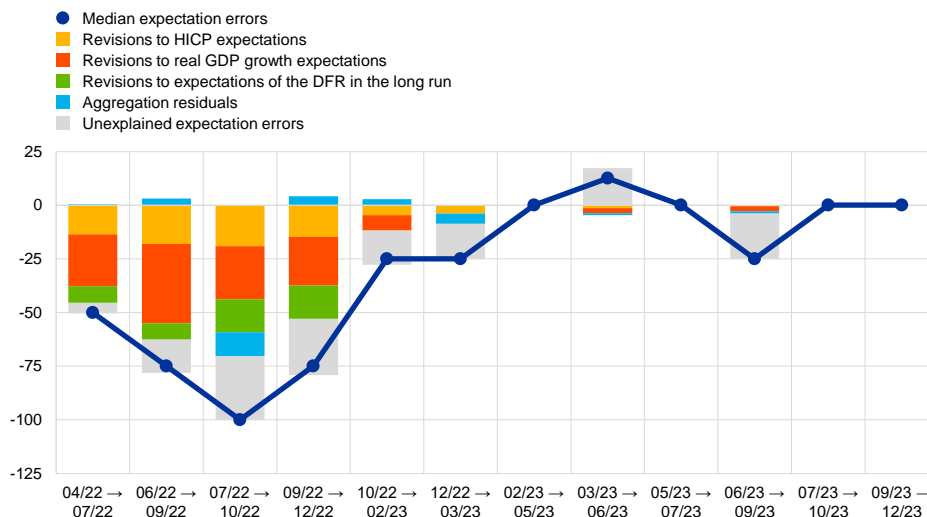
Sources: SMA and ECB calculations.
Notes: Expectation errors are decomposed at the individual level via a pooled ordinary least squares (OLS) regression with revisions to (i) HICP inflation expectations four quarters ahead, (ii) real GDP growth expectations four quarters ahead, and (iii) expectations for the DFR in the long run as regressors. The chart shows the median contributions from these three components. Aggregation residuals are the differences between the regression's fitted values and the sum of the median of these three components. Unexplained expectation errors are the differences between the observed expectation errors and the fitted values. The coefficients are estimated based on the sample of individual SMA expectations from April 2022 to September 2023. The latest observations are for 14 December 2023.

This analysis suggests that SMA respondents perceived a broadly consistent policy reaction to macroeconomic developments when forming expectations for monetary policy. Since the start of the increases in the key ECB interest rates, both excess yield returns and errors in predicting the path of the DFR have been predominantly negative, as financial markets and analysts have underestimated the pace and size of the hikes. The rise in expectation errors has been mostly related to changes in macroeconomic expectations, suggesting that analysts perceived a broadly consistent policy reaction to economic developments, but have had difficulty predicting those developments.

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7 Estimates of the natural interest rate for the euro area: an update

Prepared by Claus Brand, Noëmie Lisack and Falk Mazelis

The natural rate of interest, r* (or "r-star"), is defined as the real rate of interest that is neither expansionary nor contractionary.[1] In the wake of the 2008 global financial crisis, real interest rates (as measured by deducting inflation expectations from a nominal rate of interest) slumped to exceptionally low levels in advanced economies, including the euro area. They have moved higher only recently as monetary policy was tightened following the post-pandemic surge in inflation.

Available estimates of r* can broadly be classified as either slow-moving equilibrium measures or cyclical inflation-stabilising measures. In its 2021 monetary policy strategy review, the ECB referred to the former as being most relevant for gauging risks of policy rates being constrained by their effective lower bound. Slow-moving measures reflect long-run equilibrium levels, determined by structural factors, towards which real interest rates are gravitating. But over the business cycle slow-moving measures are not a good indicator of the natural short-term real interest rate that eliminates both inflationary and disinflationary pressures. Gauging developments in the natural rate over the business cycle requires a model-based approach which ensures that a central bank tracking r* stabilises inflation either concomitantly (in the textbook New Keynesian Dynamic Stochastic General Equilibrium – DSGE – model, in the absence of nominal frictions) or over the medium term (in econometric models, in the absence of unforeseen shocks).

Inferences about movements in r* are subject to high uncertainty. r* is unobservable and its estimation is fraught with a host of measurement and model-specification challenges. In practice, r* estimates and their interpretation are always model and data-dependent, and thereby subject to both model uncertainty and statistical uncertainty. When assessing movements in r*, the models used and the specifics of the estimation must be taken into consideration. Such aspects include the policy instrument used to measure the monetary policy stance, the measure of economic slack included in the analysis, the level at which inflation stabilises once the slack is absorbed and the time horizon over which this occurs. Whether the lower bound on interest rates or the effects of unconventional monetary policies are factored into the estimation of r* also matters for the statistical validity of the measures.

Cyclical measures of euro area r* differ in their inflation-stabilising properties. Not all cyclical measures offer desirable inflation-stabilising properties. Among the

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[1] This box uses the terms "natural" and "neutral" real rate of interest interchangeably. By contrast, Obstfeld (2023) distinguishes between a natural rate – as the real rate of interest prevailing over a long-run equilibrium where price rigidities are absent – and a neutral rate –as the real policy rate of interest that eliminates inflationary and deflationary pressures. However, these two definitions overlap, because neutral measures defined in this way track the frictionless real rate of interest, i.e. they have natural rate characteristics, too. See Obstfeld, M, "Natural and Neutral Real Interest Rates: Past and Future", NBER Working Paper, No 31949, December 2023.

cyclical measures discussed in this box, only a few are obtained from econometric or structural models positing a relationship between a model-specific measure of economic slack, the difference of inflation from the central bank target and the real rate gap (the distance of actual real rates from r*).[2] In addition, for these econometric model-based measures, the time horizon over which the inflation target is reached can vary greatly with the size and persistence of shocks. Other measures, be they cyclical or slow-moving, model-dependent or survey-based, have even less well-understood inflation-stabilising properties.

The post-pandemic economic environment may have raised cyclical measures of r* but it has also complicated its measurement. The impact of the pandemic, global supply chain disruptions, sharp energy price increases and more interventionist fiscal policies contributed to an exceptional surge in inflation in 2021-2022 and may, in principle, also be associated with a temporary increase in cyclical measures of r*. The inflation surge initially lowered the real short-term interest rate and thereby opened a large negative real rate gap. In principle, this gap has supported increasing economic activity and thereby fuelled inflation further. In addition, to the extent that the post-pandemic recovery in aggregate demand has outpaced productive capacities (which were constrained by further adverse supply shocks), the real rate of interest would have had to increase for this overutilisation of capacities to be corrected, pointing to a cyclically higher r*.[3] If a higher r* were material and persisted beyond the post-pandemic inflationary episode, it would undercut the effects of the normalisation and tightening of monetary policy since the end of 2021. However, the normalisation of supply in recent years – as seen, for instance, in improvements in delivery times – would work in the opposite direction, reducing the required equilibrium increase in r*.

Slow-moving measures of r* anchored to long-run economic trends are unlikely to have risen recently. While cyclical measures of r* might be edging higher, slow-moving measures of r* that only change over decades are unlikely to have risen, since their long-run economic drivers, such as productivity growth, demographics and risk aversion, have not changed fundamentally.[4] Productivity growth has remained low and the demographic transition is driving up savings at the global level in anticipation of longer retirement periods. Risk aversion and the scarcity of safe assets have been important factors behind the decline in euro area r* in the wake of global financial crisis. But it is difficult to gauge how the impact of these factors might be waning over time.

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[2] The widely used r* measure from Laubach and Williams (2003) posits a backward-looking relationship between the real interest rate gap, economic slack and inflation. The resulting r* estimate stabilises inflation around a random drift, i.e. not necessarily close to the central bank's inflation target. See Laubach, T. and Williams, J.C., "Measuring the Natural Rate of Interest", *Review of Economics and Statistics*, Vol. 85, No 4, November 2003, pp. 1063-70.

[3] Post-pandemic measures of slack are above zero when accounting for the impact of supply shocks on potential output – see the box entitled "Potential output in times of temporary supply shocks", *Economic Bulletin*, Issue 8, ECB, 2023.

[4] Cesa-Bianchi, Harrison and Sajedi (2023) draw the same conclusions with respect to global r* developments, for similar reasons. They estimate global r* to have been around or below zero recently. See Cesa-Bianchi, A., Harrison, R. and Sajedi, R, "Global R*", Staff Working Paper No 990, Bank of England, October 2023.

While estimates of euro area r* vary widely across a suite of models, the median estimate has risen by about 30 basis points compared with levels prevailing in mid-2019, before the onset of the pandemic (Chart A). Euro area r* was reported to have fallen to levels around or below zero following the global financial crisis.[5] Given the uncertainty surrounding r* measures, Chart A reports evidence based on a suite of models and approaches for estimating some slow-moving r* measures and a larger number of cyclical measures of r*, including term structure models, semi-structural models, a DSGE model and survey-based estimates.[6] Recently the exceptional nature of the pandemic shock has complicated model-based inferences about cyclical measures of r*. Many models have not been amended to factor this shock into the estimation of r*. In a few instances, time averaging of r* or allowing for stochastic volatility in the output gap are used to ensure that the high macroeconomic volatility during this period does not mechanically translate into large r* fluctuations. With this caveat in mind, updated estimates suggest that euro area r* had fallen into negative territory by 2021, with the size of the range of estimates pointing to a very high degree of model uncertainty. Subsequently r* is estimated to have moved closer to pre-pandemic levels – albeit within a narrower range around zero – mainly owing to changes in cyclical measures. Since the second half of 2023 estimates obtained from term structure models and semi-structural models (i.e. excluding the more volatile DSGE model-based estimate) have ranged between about minus three-quarters of a percentage point to around half a percentage point.[7]

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[5] See the Working Group on Econometric Modelling 2018 Report entitled "The natural rate of interest: estimates, drivers, and challenges to monetary policy", *Occasional Paper Series*, No 217, ECB, Frankfurt am Main, December 2018.

[6] The range of estimates obtained only accounts for model uncertainty and does not take account of much larger statistical uncertainty.

[7] By comparison, for the United States, mixed evidence about developments in r* also highlights model uncertainty. According to the New York Federal Reserve's DSGE model, between June 2022 and March 2023 the nominal short-term natural rate increased more than the Federal Funds rate (see Baker, K., Casey, L., del Negro, M., Gleich, A. and Nallamotu, R., "The Post-Pandemic r*", *Liberty Street Economics*, August 2023; and Baker, K., Casey, L., del Negro, M., Gleich, A. and Nallamotu, R., "The Evolution of Short-Run r* after the Pandemic", *Liberty Street Economics*, August 2023). However, this finding remains debatable as updated estimates of Lubik and Matthes (2015) and estimates from Holston, Laubach and Williams (2023) move in opposite directions. The latter use a semi-structural model assuming that r* is consistent with non-accelerating inflation, while the former do not impose inflation-stabilising properties and define r* as the long-horizon forecast of the real short-term rate in a Vector Autoregression model with time-varying parameters. This resulting discrepancy across recent estimates for the United States also highlights the considerable model uncertainty surrounding r* measures. See Lubik, T.A. and Matthes, C., "Calculating the Natural Rate of Interest: A Comparison of Two Alternative Approaches", Federal Reserve Bank of Richmond Economic Brief, No 15-10, October 2015; and Holston, K., Laubach, T. and Williams, J.C., "Measuring the Natural Rate of Interest after COVID-19", Federal Reserve Bank of New York Staff Reports, No 1063, June 2023.

Chart A

Real natural rates of interest in the euro area

(percentages per annum)

- Term structure-based (range)
- DSGE model
- Median (all measures)
- Semi-structural (range)
- Survey-based (median)
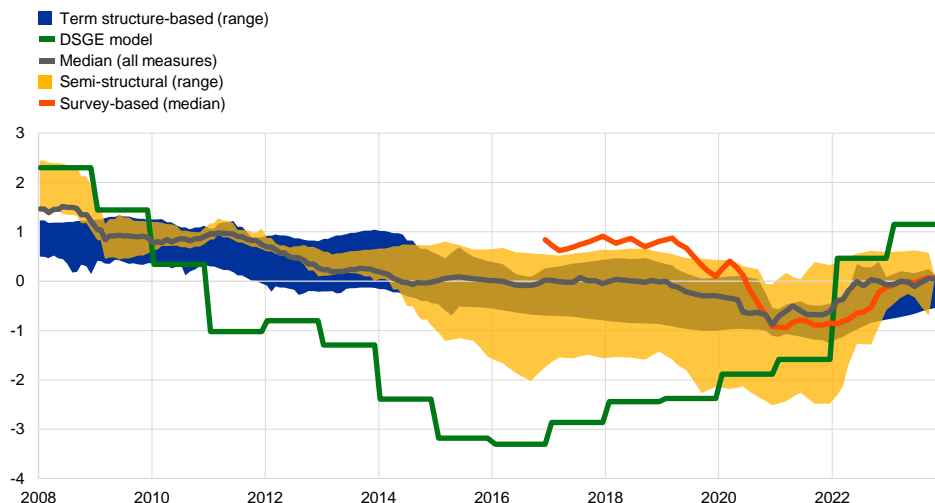
Sources: Eurosystem estimates, ECB calculations, Federal Reserve Bank of New York and Consensus Economics.
Notes: Survey-based estimates include the following: the estimate from the Survey of Monetary Analysts, which is the median of respondents' long-run expectations regarding the ECB's deposit facility rate, less expectations of inflation in the long run (starting in the second quarter of 2021); and the Consensus Economics estimate, which is the expected three-month interbank rate ten years ahead, less expectations of inflation in the long run. Term structure-based estimates are derived from Geiger, F. and Schupp, F., "With a little help from my friends: Survey-based derivation of euro area short rate expectations at the effective lower bound", Deutsche Bundesbank Discussion Paper, No 27, 2018; Joslin, S., Singleton, K.J. and Zhu, H., "A New Perspective on Gaussian Dynamic Term Structure Models", *Review of Financial Studies*, Vol. 24, Issue 3, January 2011, pp. 926-970; Ajevskis, V., "The natural rate of interest: information derived from a shadow rate model", *Applied Economics*, Vol. 52(47), July 2020, pp. 5129-5138; and Brand, C., Goy, G. and Lemke, W., "Natural rate chimera and bond pricing reality", *Working Paper Series*, No 2612, ECB, Frankfurt am Main, November 2021. Semi-structural estimates are derived from Holston, K., Laubach, T. and Williams, J.C., "Measuring the Natural Rate of Interest after COVID-19", Federal Reserve Bank of New York Staff Reports, No 1063, June 2023; Brand, C. and Mazelis, F., "Taylor-rule consistent estimates of the natural rate of interest", *Working Paper Series*, No 2257, ECB, Frankfurt am Main, March 2019 (including stochastic volatility in the output gap, a long-term interest rate, asset purchase effects and the effective lower bound); Carvalho, A., "The euro area natural interest rate – Estimation and importance for monetary policy", Banco de Portugal Economic Studies, Vol. IX, No 3 (based on Holston, Laubach and Williams (2023), with and without inflation expectations); and Grosse-Steffen, C., Lhuissier, S., Marx, M. and Penalver, A., "How to weigh stars? Combining optimally estimates for the natural rate", Banque de France working paper, forthcoming. DSGE-based estimates are derived from Gerali, A. and Neri, S., "Natural rates across the Atlantic", *Journal of Macroeconomics*, Vol. 62(C), 2019 (displayed as a three-year moving average of the estimates).
The latest observations are for the third quarter of 2023 for Holston, Laubach and Williams (2023), Ajevskis (2020), Grosse-Steffen, Lhuissier, Marx and Penalver (forthcoming), Carvalho (2023), and Geiger and Schupp (2018); and for the fourth quarter of 2023 for all other estimates.

Overall, model uncertainty complicates the measurement of r* and its use as an indicator for monetary policy. While cyclical measures of euro area r* have been edging higher, slow-moving estimates anchored to long-run economic trends are unlikely to have risen. The estimates vary widely, reflecting a high degree of model uncertainty and differences in model-specific inflation stabilisation properties. While these features greatly complicate the use of r* estimates as an indicator for monetary policy at high frequencies, trends in r* estimates still signal risks of nominal interest rates possibly becoming constrained by their effective lower bound in the future.

8 Fiscal policy measures in response to the energy and inflation shock and climate change

Prepared by Marien Ferdinandusse and Mar Delgado-Téllez

This box provides estimates and projections of discretionary fiscal measures taken by euro area governments relating to the energy crisis, high inflation, and climate change, updated as part of the December 2023 Eurosystem staff macroeconomic projections.

The discretionary fiscal measures to support households and companies in response to the energy price and high inflation shocks are projected to largely wind down in the coming years. They are estimated to amount to 1.3% of GDP in 2023, down from 1.8% in 2022, and to remain below 0.5% per annum over the 2024-26 projection horizon (Chart A). Specifically, about two-thirds of support measures in place in 2023 are expected to expire in 2024, and another 20% in 2025. The remaining measures are projected to stay in place in 2026. As regards the type of measures, in 2023 almost half were subsidies. Of these, more than half related to the energy price caps in Germany, France and the Netherlands. The share of subsidies in total energy and inflation support measures is expected to fall significantly in 2024 and to be negligible as of 2025.

Chart A

Euro area discretionary fiscal measures in response to high energy and inflation – by instrument

(percentage of euro area GDP)
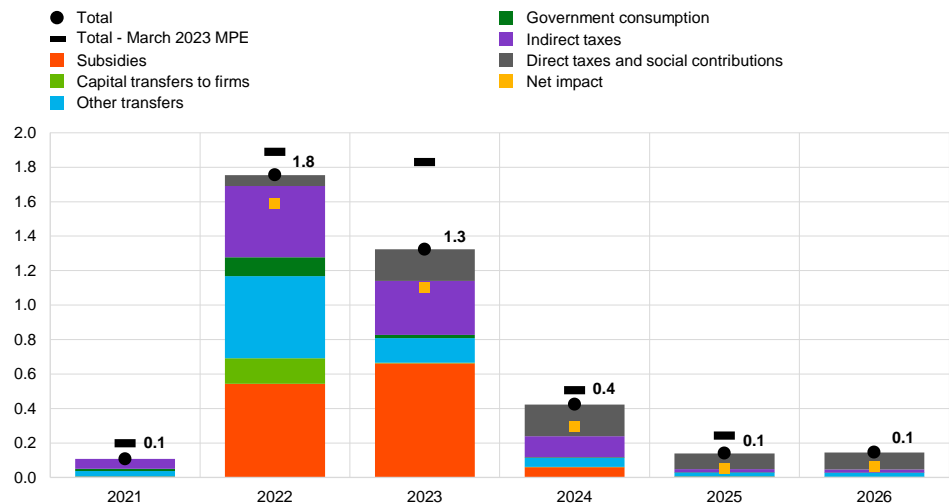
Sources: ECB staff calculations based on the December 2023 Eurosystem staff macroeconomic projections and the fiscal questionnaires provided by the ESCB Working Group on Public Finance (WGPF).

The fiscal costs at euro area level of the energy and inflation support measures have been revised down in the December 2023 Eurosystem staff projections, as energy prices are lower than had been expected earlier in

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2023.[1] Compared with the 2023 March ECB staff projections, these fiscal costs have been revised down in 2022 and especially in 2023. This partly reflects a stronger than anticipated fall in energy prices that has made these measures less expensive (Chart A).[2] For 2024 the fiscal impact is broadly in line with the March projections. Existing measures have been extended or new measures introduced in the 2024 budgets of many euro area countries. However, this effect is broadly offset by the German energy price cap expiring at the end of 2023, instead of in April 2024, due to the constitutional court ruling on the use of emergency credits.[3] Over the full projection horizon the fiscal costs of the compensation measures have been revised down by around 0.7 percentage points of GDP.

As the energy and high inflation support packages shrink over time, the share cross-financed through discretionary measures goes up. The discretionary financing measures predominantly consist of: (i) taxes on energy company windfall profits; and (ii) increases in energy taxes or cuts in subsidies.[4] The financing measures are projected to cover more than half of the remaining support measures in 2025 and 2026. Taking into account the limited overall size, this is a considerably higher proportion than in previous years.

Chart B

Targeting of discretionary fiscal measures in response to high energy and inflation
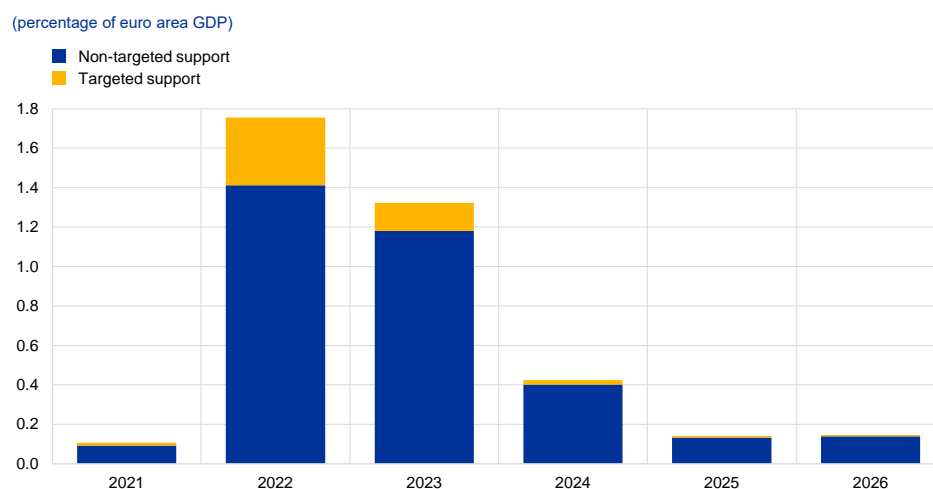
(percentage of euro area GDP)

- Non-targeted support
- Targeted support

Sources: ECB staff calculations based on the December 2023 Eurosystem staff macroeconomic projections and the fiscal questionnaires provided by the ESCB Working Group on Public Finance (WGPF).
Note: Targeted measures denote measures intended to directly support households based on clear means-tested income criteria, see "Euro area fiscal policy response to the war in Ukraine and its macroeconomic impact", *Economic Bulletin*, Issue 5, ECB, 2022.

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

2   See "Update on euro area fiscal policy responses to the energy crisis and high inflation", *Economic Bulletin*, Issue 2, ECB, 2023. Earlier estimates of the fiscal compensation measures can be found in "Euro area fiscal policy response to the war in Ukraine and its macroeconomic impact", *Economic Bulletin*, Issue 5, ECB, 2022 and "Fiscal policy and high inflation", *Economic Bulletin*, Issue 2, ECB, 2023.

3   In some countries, measures were extended or newly introduced as part of the 2024 budget process after the cut-off date for the December 2023 Eurosystem staff macroeconomic projections.

4   In the December 2023 Eurosystem staff projections, euro area countries are expected to accrue total revenues over the projection horizon of around 0.1% of GDP, mostly in 2023.

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For the euro area as a whole, the share of targeted measures has remained very low. Looking ahead, the measures are expected to be almost entirely untargeted as the energy crisis fades. The response to the energy price shock included compensation measures targeting retail prices, such as energy price caps, and other measures that broadly benefited all households or firms. While these measures ensured widespread compensation, they also came with a considerably higher fiscal cost than other more targeted measures, such as transfers to low-income households. The end of the price caps and the resulting reduction in the fiscal envelopes for energy and high inflation compensation is projected to coincide with a decrease in the share of targeted measures as a percentage of euro area GDP (Chart B). It should be noted that the aggregate number for the euro area conceals considerable heterogeneity across countries. In particular, a number of smaller countries relied more on targeted measures, but given their lack of weight this is not evident in the euro area aggregate. Still, even in an unweighted average of the country shares, targeted measures would only make up around one-fifth of the total in 2025 and 2026.

The winding down of the energy compensation measures shows up in the reduction in discretionary fiscal measures detrimental to the climate. The energy compensation measures that influence the price of energy or otherwise incentivise the use of fossil fuels, such as price caps or reductions in energy taxes, are assessed as being detrimental to the green transition. By contrast energy compensation measures not influencing the incentives to consume carbon-based fuels, such as social transfers, are not. Most of the climate-related measures (Chart C) are detrimental. While these measures have outweighed green measures in recent years, they have started to be phased out in 2023. This is expected to continue over the projection horizon.[5]

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[5]   See also Box 5 "Climate-related policies in the Eurosystem/ECB staff macroeconomic projections for the euro area and the macroeconomic impact of green fiscal measures", *Economic Bulletin*, Issue 1, ECB, 2023, and Box 4 "Assessing the macroeconomic effects of climate change transition policies" of this issue of the *Economic Bulletin*.

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Chart C

Climate-related discretionary fiscal measures

(percentage of GDP)

- Green measures
- Measures detrimental to green transition
- Extreme weather events (right-hand scale)
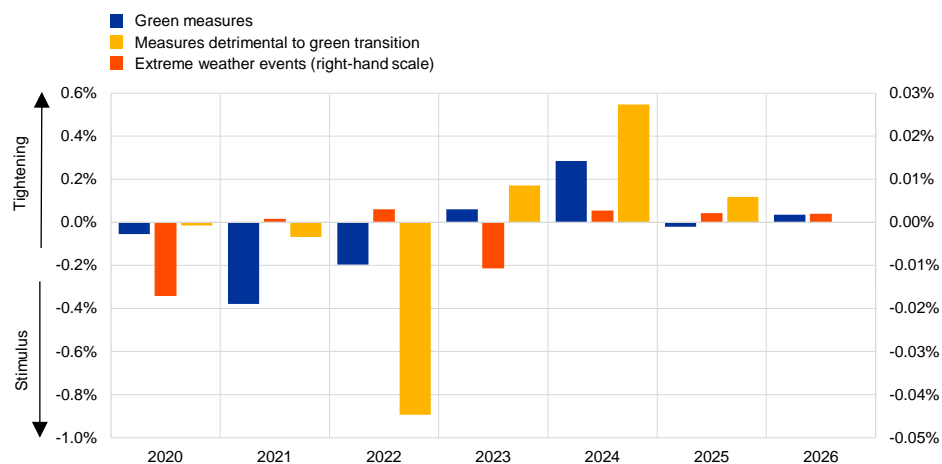
Source: ESCB.
Note: The chart shows the budget balance impact of discretionary fiscal measures included in the December 2023 Eurosystem staff projections and related to climate change. A fiscal measure, whether on the revenue or the expenditure side, is classified as a climate change policy if it has a positive (green) or detrimental impact on climate change prevention and adaptation or compensates for the effects of extreme weather events. See also Box 5 "Climate-related policies in the Eurosystem/ECB staff macroeconomic projections for the euro area and the macroeconomic impact of green fiscal measures" in *Economic Bulletin*, Issue 1, ECB, 2023 and Box 4 "Assessing the macroeconomic effects of climate change transition policies" of this issue of the *Economic Bulletin*.

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Article

1   The Eurosystem policy response to developments in retail payments

Prepared by Patrick Papsdorf and Karine Themejian

1   Introduction

Retail payments – those made between consumers, businesses and public administrations – are undergoing profound changes that are reshaping the European payments landscape. Digitalisation is playing a major role in this, with a trend towards the increased use of cashless payment instruments, instantaneity and a truly seamless payment experience. Numerous innovative payment solutions are being developed and offered. These are made possible through the use of new technology and are further characterised by the need to enhance global and cross-border use cases, as well as the consideration that solutions can be rolled out globally.[1] These trends and developments are not only driven by existing players in the payments market. The payments business also attracts start-up firms, as well as established firms that are new to payments.

Developments in retail payments require multi-faceted actions from a Eurosystem perspective to ensure a safe, integrated, innovative and competitive euro retail payments market, with continued access to public money. The Eurosystem – the European Central Bank and the national central banks of those EU Member States that have adopted the euro – has a mandate to promote the smooth functioning of the payment system from a holistic perspective. From the perspective of retail payments, the smooth functioning of the payment system means ensuring that, in their tangible interaction with the euro, people and businesses are able to make safe and efficient payments and thus their trust in the currency is maintained. To this end, the Eurosystem is responsible for issuing public money, currently in the form of cash, which may possibly be complemented by a digital version, i.e. a digital euro. In addition, the Eurosystem can act: (i) as a catalyst for change, promoting efficiency in the field of retail payments; (ii) as overseer, setting retail payment standards and rules and ensuring compliance; and (iii) as an operator, having the possibility to set up public infrastructures. The trends at work in the retail payments landscape have the potential to bring benefits to consumers and businesses alike. However, they also carry risk and will require the Eurosystem to take action in its different capacities.

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[1]   See Panetta, F., "Extending the benefits of digital technologies to cross-border payments", *The ECB Blog*, ECB, 31 October 2023.

This article looks at the changing retail payments ecosystem (Section 2), before turning to the Eurosystem's multi-faceted policy response (Section 3) and providing perspectives on the way ahead (Section 4).

2 A changing retail payments ecosystem

Digitalisation is transforming the way we live, communicate, consume and interact with the financial system, especially the way we pay. Consumers increasingly expect businesses to offer services online – ideally 24 hours a day, seven days a week – and to be able to pay also online using their preferred payment method. Similarly, consumers at point of sale expect to be able to choose between cash and non-cash payment methods, and even to pay contactless, for instance using a digital wallet on a mobile device.[2] At the same time, they expect to be able to pay quickly and not to wait long for payment authorisation, in the knowledge that payment data will be kept private and the whole purchase process is secure. Moreover, consumers expect there to be only low or no transaction fees. While these aspects certainly resonate with many businesses, they require investment and the support of payment service providers.

Changes in the retail payments ecosystem are driven by a number of factors. Besides consumers' and businesses' preferences and needs (Box 1), changes in the retail payments ecosystem are also influenced by other factors. The following are deemed the most impactful. First, increased interaction and integration at the global level means a potential for retail payment solutions to be offered across borders and to address cross-border payment use cases. Second, crises and geopolitical developments can lead to an acceleration in ongoing trends. For instance, the coronavirus pandemic boosted the need for online and contactless payments, an increased awareness of the climate crisis prompted calls for sustainable payments processing and geopolitical developments have drawn attention to potential operational disruptions and cyber risks (notably power outages, supply chain dependencies and the heightened risk of cyberattacks).Third, regulatory activities aimed at fostering payment innovation and addressing retail payment risks (like the risk of fraud) are shaping the retail payments area. Examples of such activities are the recent EU regulatory initiatives in the field of crypto-assets, digital operational resilience and instant payments, to name but a few.[3]

Technological developments are a main enabler of the evolution in retail payments. The internet has allowed everyone to connect online and to shop and pay online. The broad availability of smart devices and the development of

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[2]   The ECB digital euro glossary defines the point of sale as "A physical place at which goods and services are sold and paid for, such as shops and restaurants".

[3]   See (i) Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on markets in crypto-assets, and amending Regulations (EU) No 1093/2010 and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937 (OJ L 150, 9.6.2023, p. 40); (ii) Regulation (EU) 2022/2554 of the European Parliament and of the Council of 14 December 2022 on digital operational resilience for the financial sector and amending Regulations (EC) No 1060/2009, (EU) No 648/2012, (EU) No 600/2014, (EU) No 909/2014 and (EU) 2016/1011 (OJ L 333, 27.12.2022, p. 1); and (iii) Proposal for a Regulation of the European Parliament and of the Council amending Regulations (EU) No 260/2012 and (EU) 2021/1230 as regards instant credit transfers in euro (COM/2022/546).

contactless technology for proximity payments then combined, bringing us mobile contactless payments. Additionally, increases in computational power have led to massive gains in capacity and speed, supporting faster and lower-cost retail payments. Artificial intelligence applications may have a use, for instance, in helping identify anomalous transactions and payment behaviour to prevent fraud. However, there are also concerns about this technology, such as its use in sophisticated cyberattacks like phishing. Despite some concerns (notably on the capacity to handle high volume activity at speed), distributed ledger technology is seen by some as a technology that can possibly bring benefits to payment processing, potentially facilitating payments for streaming services, micro-payments and the programmability of payments.[4]

Technology-enabled innovation in financial services, including retail payments, is driven by multiple players. The Financial Stability Board (FSB) defines fintech as "technologically enabled innovation in financial services that could result in new business models, applications, processes or products with an associated material effect on financial markets and institutions and the provision of financial services".[5] This means innovation can be introduced by existing payment players (so-called "incumbents"), as well as by existing non-financial firms that are expanding into financial services or entirely new firms (start-ups). The motivation behind firms active in retail payments varies considerably. They may be aiming to protect or to increase their existing market shares, or even to offer broader services to customers. Alternatively, they may wish to leverage value chains, gain access to payments data or enter the existing payments market with new business models and the ambition to address inefficiencies or shortcomings.

Another perspective from which to describe the changing ecosystem is to look at what financial services are offered and how they are affected, especially by technology. If combined with technological developments, financial services – like payment services – will evolve. For instance, payments in the form of credit transfers have developed with the option of instant payments that can be made by end users around the clock and settled within seconds with irrevocability. This is a major development, as real-time payments used to be only available in the wholesale market, i.e. to financial institutions participating in real-time gross settlement systems. A very different example of technological impact is the case of crypto-assets. The terms used in the crypto-asset space are often similar to those used in financial services, although usually they are subject to less stringent regulation and oversight or are not (yet) regulated. When it comes to crypto-assets, it is worth noting that unbacked crypto-assets show high price volatility owing to their missing inherent value. They are therefore not suited to the payment function and are merely a speculative instrument, often likened to gambling.[6]

Developments in retail payments can bring both opportunities and challenges. Digitalisation can unlock efficiency gains and improve the competitiveness of the

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4   See, for instance, the article entitled "Central bank money settlement of wholesale transactions in the face of technological innovation", *Economic Bulletin*, Issue 8, ECB, 2023.

5   See the Financial Stability Board's website at www.fsb.org.

6   See Panetta, F., "Caveat emptor does not apply to crypto", *The ECB Blog*, ECB, 5 January 2023.

players that embrace them. It can also allow for more user-friendly and potentially safer payment solutions for end users. It could even have the potential to help step up financial inclusion. Nevertheless, it also comes with a number of risks. It may introduce fragmentation in the euro retail payments market if innovative payment solutions are developed as closed-loop solutions, meaning that a solution can only be used in a specific ecosystem with no scope for interoperability. It may also carry the risk of excluding vulnerable individuals who, for various reasons, may not be in a position to take advantage of innovative payment solutions aimed at making retail payments safe and efficient. Finally, the more numerous digital interconnections and digital infrastructures, the greater the exposure to cyberattacks.[7]

Box 1
Developments in consumers' attitudes and preferences

Monitoring developments in consumers' payment attitudes and preferences is the basis for the ECB to help ensure consumers' freedom to choose how they pay. The ECB therefore regularly conducts its Study on the payment attitudes of consumers in the euro area (SPACE) to understand how consumers use different payment methods and to find out about their payment preferences and perceptions concerning access to and acceptance of these means of payment.

While cash plays a significant role in consumer payments in the euro area, its use appears to be gradually declining, with a shift to electronic payment methods accelerated by the pandemic. Cash continues to be the most frequently used payment option at the point of sale and for person-to-person payments. Chart A shows that, in 2022, cash was used in 59% of point-of-sale transactions, down from 72% in 2019 and 79% in 2016.[8] In terms of value, in 2022, cards accounted for a higher share of payments at the point of sale for the first time, with 46% compared with 42% for cash.

Chart A
Share of payment instruments used at the point of sale in terms of number and value of euro area transactions for the period 2016-22

a) Number of transactions

(percentages)

Legend: Cash, Cards, Mobile, Other

2016: Cash 79%, Cards 19%, Other 2%
2019: Cash 72%, Cards 25%, 2% 1%
2022: Cash 59%, Cards 34%, Mobile 3%, 3%

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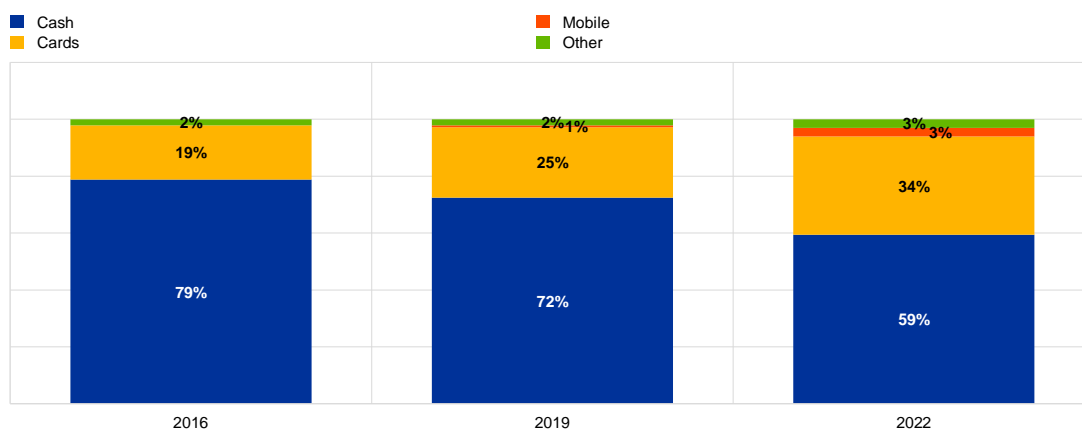
7   See Panetta, F., "Adapting to the fast-moving cyber-threat landscape: no room for complacency", introductory remarks at the seventh meeting of the Euro Cyber Resilience Board for pan-European Financial Infrastructures, Frankfurt, 1 June 2022.

8   See "Study on the payments attitudes of consumers in the euro area (SPACE)", ECB, December 2022.

b) Value of transactions

(percentages)

Legend: ■ Cash ■ Cards ■ Mobile ■ Other

Year	Cash	Cards	Mobile	Other
2016	54%	39%		7%
2019	47%	43%	1%	8%
2022	42%	46%	4%	8%
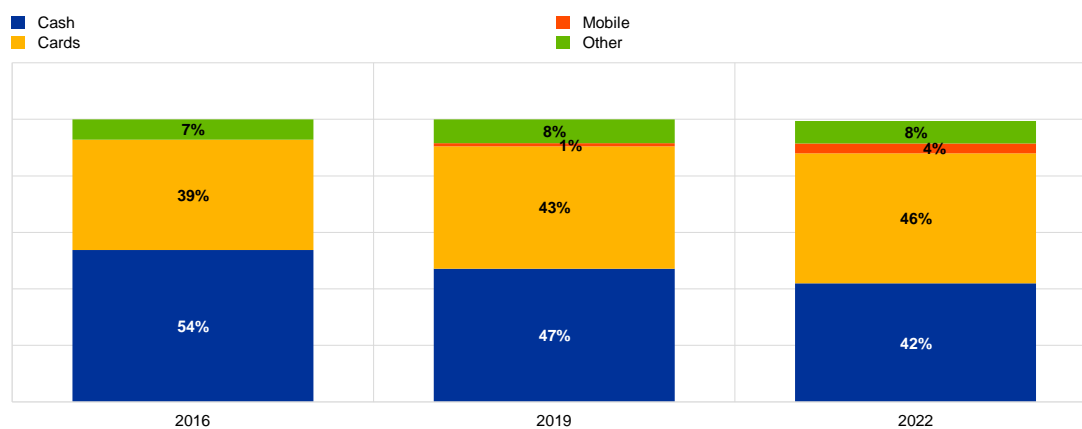
Sources: ECB's Study on the payment attitudes of consumers in the euro area (2022); calculations based on De Nederlandsche Bank and the Dutch Payments Association (2020 and 2022) and Deutsche Bundesbank (2018 and 2022).
Notes: "Other" includes bank cheques, credit transfers, loyalty points, vouchers and gift cards, and other payment instruments. Percentages may not add up owing to rounding.

This shift in payment means is also influenced by an increase in online payments for consumers' day-to-day purchases, both in terms of volumes and value.

As regards electronic payments, the highest increase was recorded for mobile phone payments, albeit still at a low level, and for cards. In the case of cards, contactless payments at the point of sale have soared, accounting for 62% of all card payments in 2022. The convenience of contactless payments appears to be one of the main advantages in using cards, in addition to consumers not having to carry cash and contactless payments being perceived as faster. For payment purposes, crypto-assets appear to be used by only a very small number of consumers.

Despite the trend towards using cashless payment instruments and a declared preference for cards at the point of sale, a majority of consumers have expressed the wish to keep cash as a payment option. In 2022, 60% considered it important to have the option to pay in cash, an increase of 5 percentage points from 2019. Cash is preferred notably for its anonymity and the protection of privacy it provides, but also because there is a perception that it makes consumers more aware of how much they spend.

3 The Eurosystem's policy response

As part of its mandate, the Eurosystem considers developments in retail payments from different perspectives as part of a comprehensive policy response. Among its main statutory objectives, the Eurosystem promotes the smooth operation of payment systems. In this context, the Eurosystem actively monitors and assesses euro area and global developments in retail payments. Given this article's focus on the policy perspective, it does not cover the actions taken by the Eurosystem in its operator capacity, notably its service offering for instant retail payment settlement via the TARGET Instant Payment Settlement service.

The Eurosystem's catalyst response

Further action is needed to arrive at an integrated, innovative and competitive euro retail payments market. Despite the progress made with the Single Euro Payments Area (SEPA), a European-governed solution for point-of-sale and e-commerce payments is still missing. Migration to SEPA has been achieved for credit transfers and direct debits in euro under the "SEPA end-date Regulation", which set the deadline for migration to pan-European credit transfers and direct debits in euro.[9] In view of the increased demand for instantaneity in payments, a scheme for SEPA instant credit transfers in euro was introduced at the end of 2017. However, SEPA migration remains incomplete in some respects, with notable instances of the illegal practice of IBAN discrimination still persisting and preventing a payer from using a payment account issued in a different SEPA country. Furthermore, the SEPA vision has not materialised for card payments. As noted in Box 1, cards are a fast-growing retail payment instrument and, as observed in the latest SPACE report, even outweighed cash at the point of sale in value terms for the first time. Yet this key payment instrument for euro area consumers relies heavily on international card schemes. So far, a SEPA for cards has not been achieved. Some standardisation has taken place, but there is still no European card scheme or interoperability of domestic schemes.[10] Cross-border acceptance of national card schemes relies on "co-badging" with international card schemes. This means that commercial banks are also members of at least one international card scheme and offer cards that bear both a national and an international scheme brand. In countries where there is no national card scheme, even domestic card transactions rely on international card schemes. The increase in online payments further underlines the lack of a pan-European solution for e-commerce. Technological innovation, regulatory reforms and the increasing digitalisation of people's daily lives have reshaped the European retail payments landscape and are set to continue to do so.[11]

The heavy reliance of a large share of euro area retail payments on non-European-governed players prompted the Eurosystem to relaunch its retail payments strategy in November 2019, outlining its expectations for payments at the point of interaction, i.e. payments at the point of sale and e-commerce.[12] While competition is an important element to ensure that the euro retail payments market remains efficient and innovative, the dominance of non-European providers raises a number of concerns about full compliance with European market requirements, the costs for merchants and thus to end users and, more generally, European sovereignty. So, as part of its relaunched strategy, the Eurosystem stated its aim of fostering the development of pan-European payment solutions for point-of-interaction payments. The Eurosystem further outlined five objectives that these

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[9] Regulation (EU) No 260/2012 of the European Parliament and of the Council of 14 March 2012 establishing technical and business requirements for credit transfers and direct debits in euro and amending Regulation (EC) No 924/2009. The new pan-European schemes replaced the national ones in the euro area on 1 August 2014.

[10] See "Cards payments in Europe – current landscape and future prospects", ECB, April 2019.

[11] See "Implications of digitalisation in retail payments for the Eurosystem's catalyst role", ECB, July 2019.

[12] See Cœuré, B., "Towards the retail payments of tomorrow: a European strategy", speech at the Joint Conference of the ECB and the Nationale Bank van België/Banque Nationale de Belgique on "Crossing the chasm to the retail payments of tomorrow", Brussels, November 2019.

solutions would have to fulfil: (i) pan-European reach and customer experience, (ii) convenience and low cost, (iii) safety and efficiency, (iv) European brand and governance, and (v) global acceptance (in the long run). In this context, the Eurosystem welcomed the European Payments Initiative, a market initiative to develop a digital wallet-based payment solution for consumers and merchants across Europe, which would cover in-store, online and person-to-person payments, as well as cash withdrawals.[13] In doing so, the ECB encouraged the pursuit of the initiative's aim of being pan-European and, in this regard, including all markets. The Eurosystem would also support other payment solutions, provided that it is concluded that they are working to meet the above-mentioned five key objectives[14].

In October 2020 the Eurosystem complemented its strategy with further goals to support the full deployment of instant payments, the improvement of cross-border payments beyond the EU borders and active support for innovation, while bearing in mind sustainability and accessibility.[15] Retaining the support for a pan-European point-of-interaction payment solution as the first priority, the Eurosystem sought to address other areas where efforts are needed to progress towards an integrated, innovative and competitive euro retail payments market. The strategy notably aimed to address the slow deployment and uptake of instant payments since the launch of SEPA instant credit transfer. The provision of instant payments on a pan-European basis is a key enabler for innovative retail payment solutions in SEPA and is expected to unlock unrealised efficiency gains. As such, one of the major goals of the Eurosystem's retail payments strategy is the full deployment of instant payments.

In addition to continuing its engagement with market participants, in recent years the Eurosystem has expanded the range of stakeholders it interacts with. The Eurosystem engages with market stakeholders from both the demand side and the supply side. Given the network characteristics of the retail payments industry, which requires cooperation in order to be able to compete, the Eurosystem has sought to bring relevant players together. This has been achieved notably through the Euro Retail Payments Board (ERPB), which, under a lean structure, has brought together a balanced representation of the demand and supply sides of the euro retail payments market to foster an innovative, integrated and competitive market.[16] Since it was set up towards the end of 2013, the ERPB has played an instrumental role in ensuring that developments in the euro retail payments market do not lead to fragmentation. This was the case for instant payments and more recently for open banking, being notably at the initiative of the respective developing

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[13] See "ECB welcomes initiative to launch new European payment solution", *press release*, ECB, 2 July 2020; and "ECB welcomes the EPI's progress on building a European payment solution", *MIP News*, ECB, 25 April 2023.

[14] It is noted that other initiatives, for instance relying on interoperability, aim to meet the key objectives of the Eurosystem's retail payments strategy.

[15] See Panetta, F., "On the edge of a new frontier: European payments in the digital age", speech at the ECB Conference "A new horizon for pan-European payments and digital euro", Frankfurt am Main, October 2020.

[16] For further information on the ERPB (mandate, composition, meeting documentation, statements, etc.), see the ERPB web page on the ECB's website.

pan-European schemes[17]. As for emerging trends in fraud, the ERPB agreed to address the issue as a priority in May 2023. The outcome of this work is expected to lead to a mapping of possible actions concerning the prevention, mitigation and investigation of fraud by different types of stakeholders. This will comply with data protection requirements and be based on an analysis of the current state of fraud for retail payment instruments, with a focus on new modus operandi and techniques. Beyond this structured institutional exchange via the ERPB, the Eurosystem has sought to enlarge the scope of its interactions by considering the evolving payments ecosystem. In this regard, in the context of its retail payments strategy, the Eurosystem has established a "European fintech payments dialogue" to discuss payment-related topics. Unlike the ERPB, this dialogue is not organised as a standing group of stakeholder associations, rather individual companies are invited to participate according to the topic to be addressed.

The Eurosystem revised and updated its retail payments strategy in 2023, in light of developments since it was first adopted, and confirmed the previous goals while adding resilience to the list.[18] To ensure that it remains fit for purpose, the Eurosystem has reviewed its strategy in light of the external developments that have affected the payments landscape since its strategy was first developed in 2019 and expanded in 2020. More specifically, these concern the continued shift of consumer behaviour towards digital payments, a growing role of big tech in retail payment solutions and the Russian war of aggression towards Ukraine, which has led to intense work to improve the resilience of the retail payments infrastructure. These developments confirmed the previous goals of the Eurosystem's retail payments strategy while requiring changes to the actions foreseen and the addition of a new goal for increasing the resilience of retail payments. As a result of this review, the primary goal of the strategy remains that of promoting the development of a pan-European payment solution at the point of interaction. The second major goal of the strategy, the full deployment of instant payments, has been broadened to cover more generally the strengthening of the "classic SEPA". This activity encompasses the following additional aspects: (i) the need to make the current SEPA schemes for direct debit and credit transfer future proof; (ii) the development of the SEPA Payment Account Access Scheme under the umbrella of the European Payments Council as a cornerstone for the development of open banking; and (iii) the need to take legal enforcement action against the practice of IBAN discrimination preventing a payer from using a payment account issued in a different SEPA country. Improvement of cross-border payments and the support for innovation, digitalisation and a European payments ecosystem are maintained as additional goals. In light of recent external geopolitical developments, the goal of increasing the resilience of retail payments has been added to the strategy to reflect the need for a catalyst action towards retail payment transactions besides the oversight-related work conducted in this area.

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[17] For instant payments, this is the scheme for SEPA instant credit transfers in euro referred to earlier in the article. For open banking, it is the SEPA Payment Account Access Scheme.

[18] See "The Eurosystem's retail payments strategy – priorities for 2024 and beyond".

The Eurosystem's oversight response

The Eurosystem's oversight activities for retail payments and retail payment systems aim to ensure their safety and efficiency. Oversight, a statutory task of the Eurosystem, is defined as "(…) a central bank function whereby the objectives of safety and efficiency are promoted by monitoring existing and planned systems, assessing them against these objectives and, where necessary, inducing change."[19] Eurosystem oversight considers the payment system in a holistic manner, comprising wholesale as well as retail payments. For the latter payments, the Eurosystem has set out its oversight requirements and expectations for retail payment systems[20], as well as those that apply to electronic payment instruments, schemes and arrangements (PISA)[21]. For overseeing systemically important payment systems (SIPS), the ECB applies hard law and has issued a Regulation.[22] For the oversight of both non-SIPS and electronic payments under the PISA framework, the Eurosystem applies soft law based on moral suasion – not excluding the fact that the Eurosystem could also use its regulatory powers and issue regulations also for non-SIPS and electronic payments. These oversight frameworks are further explained below.

In addressing the changing retail payments ecosystem, overseers monitor and assess the various developments in retail payments and ensure that oversight standards, expectations and frameworks remain fit for purpose. Oversight standards are usually developed firstly at the international level, also on the basis of contributions from central banks. The Eurosystem contributes to these global initiatives, for instance through the work of the Committee on Payments and Market Infrastructure (CPMI)[23], which, together with the Technical Committee of the International Organization of Securities Commissions (IOSCO), established the CPMI IOSCO Principles for financial market infrastructures (PFMI). These were then adopted at the Eurosystem level as oversight standards.[24] Requirements are regularly checked to see if they remain fit for purpose. For example, in 2021, the Eurosystem's PISA oversight framework was established. This framework is based on international standards and it extended the scope of Eurosystem oversight to digital payment tokens and digital payment wallets. Similarly, in 2022, CPMI-IOSCO provided guidance on the application of the PFMI to stablecoin arrangements.[25]

In applying oversight to the various payment players in the changing retail payments ecosystem, several principles apply, especially "same function –

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[19] See "Central bank oversight of payment and settlement systems", Committee on Payment and Settlement Systems, Bank for International Settlements, May 2005.

[20] See "Revised oversight framework for retail payment systems", ECB, February 2016. Retail payment systems are formal arrangements for the transmission, clearing and/or settlement of monetary obligations arising between their members based on payments made by their clients.

[21] See "Eurosystem oversight framework for electronic payment instruments, schemes and arrangements", ECB, November 2021.

[22] Regulation of the European Central Bank (EU) No 795/2014 of 3 July 2014 on oversight requirements for systemically important payment systems (OJ L 217, 23.7.2014, p. 16).

[23] Formerly known as the Committee on Payment and Settlement Systems (CPSS).

[24] See "Principles for financial market infrastructures", CPSS-IOSCO, April 2012.

[25] See "Application of the Principles for Financial Market Infrastructures to stablecoin arrangements", CPMI-IOSCO, July 2022.

same risk – same rules", technological neutrality and proportionality. The first principle, "same function – same risk – same rules", means that an innovation in retail payments is checked for similarity with existing services. If there is a resemblance in terms of function and risk, the same rules are applied. Where new risks arise, oversight rules may need to be adapted to ensure that they capture and address the new risks. For example, when considering the addition of digital payment wallets to the scope of Eurosystem oversight, the Eurosystem concluded that existing oversight rules generally applied, although with some exceptions and clarifications. The second principle of technological neutrality means that oversight standards are not written for and do not determine specific technologies but are principle-based, with an emphasis on oversight outcomes. Of course, new technologies used in the area of retail payments have to be fully understood by overseers for them be able to judge whether the technologies raise specific concerns or risks. An example of this is distributed ledger technology, where oversight analysis focuses on the impacts of the technology on, say, operational risk or settlement finality. The third principle, proportionality, means that retail payment solutions that are new and with limited business initially or, from an overall payment systems perspective, less significant in volume and value, may only need to meet less stringent requirements, may be subject to less intense oversight reporting or other activities, or may even be exempted from oversight altogether. In the context of an evolving retail payments landscape, it is important that smaller or new firms can grow their retail payments innovation with less intense oversight (given their limited risk magnitude) and that oversight activities focus on those payment players that are of higher overall relevance or systemic importance. Still, even the smaller or new firms are explicitly invited to adhere to oversight requirements and should have the ambition to do so.

The Eurosystem oversees all euro area retail payment systems in euro. This includes retail payment systems that are systemically relevant and classified as SIPS, prominently important retail payment systems or other retail payment systems.[26] SIPS need to comply with the SIPS Regulation, which sets out stringent, legally binding requirements and describes the tools used by the Eurosystem to exercise its powers (including possible on-site visits to gain direct insight and the use of penalties in severe cases of infringement). In turn, non-systemically important retail payment systems need to meet fewer but still important requirements based on a moral suasion oversight approach.

In light of a changing retail payments ecosystem, the payment systems that are candidates for oversight are regularly reviewed. This has, for instance, led to the inclusion of instant payment systems and card payment systems under Eurosystem oversight. As another example, the so-called transfer function of a stablecoin arrangement (referred to in the EU Markets in Crypto-Assets Regulation, MiCAR, as "e-money tokens" and "asset-referenced tokens") may fall under Eurosystem oversight. Moreover, in its oversight role, the Eurosystem also assesses links between retail payment systems, e.g. links to facilitate cross-border retail payments.

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26 For an overview of the payment systems subject to oversight, see the payment systems web page on the ECB's website.

In 2021 the Eurosystem introduced the new oversight framework for electronic payment instruments, schemes and arrangements (PISA).[27] The PISA framework establishes a set of harmonised oversight principles, based on international standards, to assess the safety and efficiency of electronic payment instruments, schemes and arrangements. It replaced the former Eurosystem oversight approach and oversight standards for payment instruments. The PISA framework is future proof and agile, and a response to developments in the retail payments market. Its scope embraces all common retail payment instruments, as well as the payment schemes that are managed by a governance body, which sets the rules enabling end users to make a payment with an electronic payment instrument. Examples of such payment schemes are card payment schemes, e-money schemes, digital payment token schemes and credit transfer schemes. PISA oversight also includes payment arrangements, which are a set of operational functionalities that support end users in using an electronic payment instrument. An example of this is digital payment wallets. The PISA exemption policy provides that only those PISA entities relevant overall for the payment system are overseen, while others are either monitored or exempted.[28]

The Eurosystem as overseer places a strong focus on digital operational resilience.[29] Digital operational resilience is closely interrelated to digitalisation. In 2018 the Eurosystem developed its cyber resilience strategy for financial market infrastructures, which also applies to retail payment systems. Its key elements are: (i) assessments of overseen entities against detailed cyber resilience oversight expectations (CROE), (ii) regular cyber surveys to assess the level of cyber posture of overseen entities, and (iii) a framework for threat-led penetration testing. The framework, called Threat-Intelligence Based Ethical Red-teaming (TIBER-EU), is used to test the resilience of entities against cyberattacks in a real but controlled set-up. While not part of the oversight toolkit, the strategy also includes a pillar on regulator-industry engagement, under which the Euro Cyber Resilience Board for pan-European market infrastructures (ECRB) was established. The ECRB brings together industry and regulators in a trusted group setting, and under its auspices (but free from oversight/regulatory scrutiny) a framework for cyber intelligence and information sharing across ECRB market infrastructures was established (the Cyber Information and Intelligence Sharing Initiative (CIISI-EU)). For information and communications technology (ICT) service providers, the Eurosystem requires each overseen entity to identify and carefully manage the third-party ICT service providers it uses. Moreover, overseers are interested in identifying third-party ICT service providers that are critical for the payment system overall. They therefore run regular surveys to identify service providers and oversee the critical ones directly or indirectly.

The analysis of retail payment fraud is a further example of the oversight response to the evolving payments ecosystem. In recent years the analysis has

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[27] See "The Eurosystem oversight framework for electronic payments (PISA) is published", *MIP News*, ECB, 22 November 2021.

[28] For an overview of the payment schemes and arrangements subject to oversight, see the payment schemes and arrangements web page on the ECB's website

[29] For further information, see the cyber resilience and financial market infrastructures web page on the ECB's website.

focused on card payment fraud but it is now expanding to include other retail payment instruments given the availability of more data.[30] This activity helps overseers understand trends and support the development of suitable measures to reduce fraud, acting alongside other authorities and legislators as appropriate. A recent example of a successful measure was the implementation of Strong Customer Authentication, which was introduced as part of the revised EU Payment Services Directive.[31]

The need to ensure continued access to public money

The Eurosystem is committed to ensuring that people retain the freedom of choice in their use of payment instruments and especially continued access to public money in the form of cash. As outlined in Box 1, despite a gradual decline in the use of cash, cash remains a key method of payment at the point of sale and for person-to-person payments. A majority of consumers have also expressed the wish to have cash as a payment option.[32] The Eurosystem cash strategy aims to ensure that cash remains widely available and accepted as both a means of payment and a store of value.[33] Several efforts to monitor the adequacy of access to cash have been ongoing at the euro area and national levels, including the development and continued improvement of a common Eurosystem methodology to measure access to cash.[34] In this regard, the Eurosystem welcomes the European Commission proposal for a regulation on the legal tender of euro banknotes and coins.[35]

Given the growing trend of digitalisation, the Eurosystem is working on a digital euro in order to be prepared to make public money available to people and businesses in a digital form, alongside cash. A digital euro would offer people an additional option to pay with an electronic equivalent of cash. It would also ensure that public money remains available despite the growing digitalisation of payments. A digital euro would complement cash and not replace it. After an investigation phase analysing how a digital euro could be designed and distributed, as well as the impact it could have on the market, in November 2023 the Eurosystem launched a preparation phase to lay the foundations of a potential digital euro.[36] The first stage of the preparation phase should allow the finalisation of some conceptual elements of a digital euro and the preparation of the development and

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[30] See "Report on card fraud in 2020 and 2021", ECB, May 2023.

[31] Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC (OJ L 337, 23.12.2015, p. 35).

[32] See the article entitled "Is there a digital divide in payments? Understanding why cash remains crucial for many", *Economic Bulletin*, ECB, 2024, forthcoming.

[33] See the Eurosystem cash strategy web page on the ECB's website.

[34] See the article entitled "Guaranteeing freedom of payment choice: access to cash in the euro area", *Economic Bulletin*, Issue 5, ECB, 2022.

[35] See "Opinion of the European Central Bank of 13 October 2023 on a proposal for a regulation on the legal tender of euro banknotes and coins (CON/2023/31)", ECB, October 2023.

[36] See "Eurosystem proceeds to next phase of digital euro project", *press release*, 18 October 2023; and the digital euro web page on the ECB's website.

experimentation of its architecture. On the basis of the findings of this work, which is expected to last two years, and of the development of the digital euro legislative framework, the Eurosystem will decide on whether to go ahead with a second stage. The launch of the preparation phase does not, however, preclude a Eurosystem decision on whether to issue a digital euro. It merely aims to ensure that the Eurosystem is prepared in the event a decision to go ahead is made.

The digital euro project is complementary to cash but also to the development of a market-led pan-European payment solution for the point of interaction and the further strengthening of "classic" SEPA. This combined approach reflects the needs to achieve strategic autonomy in retail payments, to make retail payments more resilient by ensuring choice and to cater for varying use cases and user preferences. A digital euro could contribute to the goals of the Eurosystem's retail payments strategy in multiple ways. For instance, it would offer a pan-European payment solution, making as much use as possible of existing industry standards, components and technology, and thereby be instrumental for private payment solutions to achieve pan-European reach and expand their use cases.

4 Going forward

The trends currently at work in the euro retail payments market will likely further accelerate, requiring the Eurosystem to remain vigilant to ensure the safety and efficiency of retail payments and the access to public money under diverse scenarios. This will mean following the Eurosystem's retail payments strategy and applying active monitoring. It also means applying continuous oversight to individual overseen entities, identifying payment trends and ensuring that the oversight frameworks remain fit for the changing ecosystem and that oversight requirements are thoroughly implemented. The Eurosystem will also continue its work on the digital euro project to be in a position to issue a digital euro if the need arises.

In carrying out these activities, the Eurosystem will continue to interact with stakeholders and, where relevant, will further reinforce exchanges and collaboration with relevant fora and market players. The Eurosystem has established two high-level groups, bringing together relevant players to foster an integrated, innovative and competitive euro retail payments market – along with the ERPB – and to raise awareness, catalyse joint initiatives and share best practices on cyber resilience – together with the ECRB. In addition to this structured interaction, input is sought from market players other than the traditional players in the payments market. The Eurosystem has notably stepped up its interactions with fintechs, organising dedicated dialogues on selected topics.

The Eurosystem cooperates with other central banks and relevant authorities worldwide, given the global nature of the developments and use cases. International standards and cooperation are key in addressing the changing payments ecosystem. Through its participation in international fora such as the CPMI, hosted by the Bank for International Settlements, the ECB actively contributes

to the development of international standards. International cooperation is also important to commonly oversee internationally active payment entities and thus ensure that the needs of each jurisdiction concerned are taken on board and regulatory arbitrage is avoided.

Statistics

Contents

Further information

Data published by the ECB can be accessed from the ECB Data Portal: https://data.ecb.europa.eu/

Detailed tables are available in the "Publications" section of the ECB Data Portal: https://data.ecb.europa.eu/publications

Methodological definitions, general notes and technical notes to statistical tables can be found in the "Methodology" section of the ECB Data Portal: https://data.ecb.europa.eu/methodology

Explanations of terms and abbreviations can be found in the ECB's statistics glossary: http://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)						
	G20	United States	United Kingdom	Japan	China	Memo item: euro area	OECD countries		United States	United Kingdom (HICP)	Japan	China	Memo item: euro area [2] (HICP)
							Total	excluding food and energy					
	1	2	3	4	5	6	7	8	9	10	11	12	13
2021	6.5	5.8	8.7	2.6	8.4	5.9	4.0	2.9	4.7	2.6	-0.3	0.9	2.6
2022	3.2	1.9	4.3	1.0	3.0	3.4	9.5	6.7	8.0	9.1	2.5	1.9	8.4
2023	.	.	.	.	.	.	.	.	4.1	7.4	.	0.3	5.4
2022 Q4	0.5	0.6	0.1	0.2	0.8	-0.1	10.1	7.5	7.1	10.8	3.8	1.8	10.0
2023 Q1	1.0	0.6	0.3	1.2	2.3	0.1	8.6	7.2	5.8	10.2	3.6	1.3	8.0
Q2	0.6	0.5	0.0	0.9	0.5	0.1	6.5	6.9	4.0	8.4	3.3	0.1	6.2
Q3	0.7	1.2	-0.1	-0.7	1.3	-0.1	6.2	6.7	3.5	6.7	3.2	-0.1	5.0
2023 July	-	-	-	-	-	-	5.9	6.7	3.2	6.8	3.3	-0.3	5.3
Aug.	-	-	-	-	-	-	6.4	6.8	3.7	6.7	3.1	0.1	5.2
Sep.	-	-	-	-	-	-	6.2	6.6	3.7	6.7	3.0	0.0	4.3
Oct.	-	-	-	-	-	-	5.6	6.5	3.2	4.6	3.3	-0.2	2.9
Nov.	-	-	-	-	-	-	5.4	6.3	3.1	3.9	2.8	-0.5	2.4
Dec.	-	-	-	-	-	-	.	.	3.4	4.0	2.6	-0.3	2.9

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	54.7	59.6	55.9	49.4	52.0	54.9	53.7	55.0	52.1	11.3	9.9	12.8
2022	50.6	50.7	53.0	50.3	48.2	51.4	49.9	51.0	47.8	2.7	4.2	1.0
2023	52.0	51.2	51.2	51.8	52.5	49.7	49.8	52.3	47.6	.	.	.
2023 Q1	51.7	49.7	51.3	51.6	53.3	52.0	50.1	52.2	48.3	-1.2	-1.0	-1.3
Q2	54.0	53.6	53.9	53.1	53.9	52.3	51.1	54.9	48.3	-0.3	-1.4	0.9
Q3	51.5	50.8	49.3	52.3	51.5	47.5	50.3	51.8	48.1	-0.7	-0.7	-0.8
Q4	51.0	50.8	50.5	50.0	51.4	47.2	50.3	51.3	48.8	.	.	.
2023 Aug.	51.2	50.2	48.6	52.6	51.7	46.7	50.3	51.5	48.0	-0.8	-1.1	-0.5
Sep.	51.0	50.2	48.5	52.1	50.9	47.2	50.8	51.0	48.7	-0.7	-0.7	-0.8
Oct.	50.6	50.7	48.7	50.5	50.0	46.5	49.7	50.9	48.5	0.4	0.4	0.4
Nov.	50.9	50.7	50.7	49.6	51.6	47.6	50.7	51.0	49.0	0.8	1.1	0.5
Dec.	51.6	50.9	52.1	50.0	52.6	47.6	50.3	52.0	48.9	.	.	.
2024 Jan.	.	52.3	52.5	.	.	47.9	.	.	.	.	.	.

Sources: Markit (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									External balance [1]		
	Total	Domestic demand								Total	Exports [1]	Imports [1]
		Total	Private consumption	Government consumption	Gross fixed capital formation				Changes in inventories [2]			
					Total	Total construction	Total machinery	Intellectual property products				
	1	2	3	4	5	6	7	8	9	10	11	12
	Current prices (EUR billions)											
2020	11,517.2	11,106.0	5,951.3	2,579.7	2,534.3	1,236.1	689.6	601.8	40.6	411.2	5,222.9	4,811.7
2021	12,474.8	11,979.4	6,352.2	2,737.4	2,728.4	1,390.3	761.3	570.3	161.4	495.5	6,171.6	5,676.2
2022	13,491.9	13,248.2	7,062.9	2,899.2	3,019.6	1,561.8	847.0	603.8	266.4	243.7	7,436.2	7,192.5
2022 Q4	3,457.8	3,383.6	1,828.1	742.7	774.7	398.4	219.0	155.6	38.1	74.2	1,912.7	1,838.5
2023 Q1	3,526.3	3,393.6	1,854.0	738.6	783.5	405.1	223.5	153.1	17.5	132.7	1,894.7	1,762.0
Q2	3,570.5	3,435.1	1,871.4	752.0	787.9	404.2	226.3	155.6	23.7	135.4	1,858.5	1,723.1
Q3	3,592.2	3,457.0	1,894.7	761.0	794.4	406.3	228.9	157.3	6.9	135.2	1,829.1	1,693.9
	as a percentage of GDP											
2022	100.0	98.2	52.3	21.5	22.4	11.6	6.3	4.5	2.0	1.8	-	-
	Chain-linked volumes (prices for the previous year)											
	quarter-on-quarter percentage changes											
2022 Q4	-0.1	-0.5	-0.8	0.5	-0.4	-0.6	-0.8	0.6	-	-	-0.3	-1.1
2023 Q1	0.1	-0.6	0.1	-0.5	0.4	0.8	2.0	-2.8	-	-	-0.4	-1.7
Q2	0.1	0.8	0.0	0.2	-0.1	-0.9	0.2	1.4	-	-	-1.1	0.0
Q3	-0.1	-0.1	0.3	0.4	0.0	-0.4	0.4	0.5	-	-	-1.2	-1.2
	annual percentage changes											
2020	-6.1	-5.7	-7.7	1.0	-5.9	-3.4	-11.6	-3.9	-	-	-9.1	-8.5
2021	5.9	4.7	4.4	4.2	3.5	5.9	8.0	-6.5	-	-	11.5	9.2
2022	3.4	3.5	4.2	1.6	2.6	1.4	4.9	2.8	-	-	7.2	7.9
2022 Q4	1.9	1.2	1.3	0.7	0.9	-0.2	7.1	-3.9	-	-	4.6	3.3
2023 Q1	1.3	0.6	1.4	-0.2	1.8	-1.0	5.7	3.5	-	-	2.5	1.4
Q2	0.6	0.7	0.6	0.2	1.1	-1.3	4.7	2.4	-	-	-0.6	-0.4
Q3	0.0	-0.4	-0.4	0.6	-0.1	-1.0	1.8	-0.4	-	-	-3.0	-4.0
	contributions to quarter-on-quarter percentage changes in GDP; percentage points											
2022 Q4	-0.1	-0.5	-0.4	0.1	-0.1	-0.1	0.0	0.0	-0.1	0.4	-	-
2023 Q1	0.1	-0.6	0.0	-0.1	0.1	0.1	0.1	-0.1	-0.6	0.7	-	-
Q2	0.1	0.7	0.0	0.1	0.0	-0.1	0.0	0.1	0.7	-0.6	-	-
Q3	-0.1	-0.1	0.1	0.1	0.0	0.0	0.0	0.0	-0.3	0.0	-	-
	contributions to annual percentage changes in GDP; percentage points											
2020	-6.1	-5.5	-4.1	0.2	-1.3	-0.4	-0.8	-0.2	-0.3	-0.6	-	-
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	0.3	0.6	0.2	0.3	0.1	0.3	0.0	-	-
2022 Q4	1.9	1.1	0.7	0.1	0.2	0.0	0.4	-0.2	0.1	0.8	-	-
2023 Q1	1.3	0.6	0.7	0.0	0.4	-0.1	0.3	0.2	-0.4	0.6	-	-
Q2	0.6	0.7	0.3	0.0	0.3	-0.2	0.3	0.1	0.1	-0.1	-	-
Q3	0.0	-0.5	-0.2	0.1	0.0	-0.1	0.1	0.0	-0.4	0.5	-	-

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.

2.2 Value added by economic activity
(quarterly data seasonally adjusted; annual data unadjusted)

	Gross value added (basic prices)											Taxes less subsidies on products
	Total	Agriculture, forestry and fishing	Manufacturing energy and utilities	Const-ruction	Trade, transport, accom-modation and food services	Infor-mation and com-munica-tion	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
Current prices (EUR billions)												
2020	10,378.7	175.2	2,009.2	549.4	1,807.3	546.9	486.6	1,210.9	1,203.5	2,066.4	323.2	1,138.5
2021	11,191.7	186.6	2,220.1	594.6	2,021.5	598.5	515.1	1,247.2	1,297.7	2,173.0	337.6	1,283.1
2022	12,152.7	213.1	2,456.6	655.3	2,330.1	633.2	523.6	1,304.0	1,396.7	2,269.7	370.4	1,339.2
2022 Q4	3,134.3	55.8	639.1	169.3	600.9	161.8	138.2	335.5	359.8	579.7	94.2	323.5
2023 Q1	3,197.7	56.3	663.7	178.1	604.7	164.0	144.3	344.5	364.1	581.2	96.7	328.6
Q2	3,232.5	54.4	662.9	179.1	610.7	168.4	149.2	349.1	370.9	589.5	98.2	338.0
Q3	3,245.1	55.0	652.8	180.7	612.2	169.9	151.7	352.6	373.2	597.6	99.5	347.1
as a percentage of value added												
2022	100.0	1.8	20.2	5.4	19.2	5.2	4.3	10.7	11.5	18.7	3.0	-
Chain-linked volumes (prices for the previous year)												
quarter-on-quarter percentage changes												
2022 Q4	-0.1	0.2	-0.3	-0.2	-0.7	0.2	0.4	0.2	0.2	0.3	-1.2	0.0
2023 Q1	0.2	1.0	-1.1	1.9	0.2	0.9	-0.3	0.9	0.1	0.3	2.0	-0.7
Q2	0.0	0.0	-0.4	-0.8	0.0	1.4	0.6	-0.2	0.5	0.1	0.6	1.0
Q3	-0.1	-1.0	-1.0	-0.1	0.0	1.0	0.3	0.1	0.0	0.2	1.6	-0.7
annual percentage changes												
2020	-5.9	-1.8	-6.0	-5.3	-13.9	2.2	-0.5	-0.9	-5.4	-2.9	-18.1	-7.3
2021	5.8	1.1	8.7	2.9	7.9	9.3	5.6	1.9	6.6	3.5	4.3	7.1
2022	3.5	-3.2	1.3	1.1	7.5	5.8	0.2	2.3	4.7	1.9	11.9	2.5
2022 Q4	2.2	-3.1	1.5	-0.6	2.9	4.2	0.4	1.7	3.0	2.1	7.4	-0.9
2023 Q1	1.7	0.3	-0.1	0.7	2.5	5.1	0.3	1.9	1.8	1.7	6.7	-2.5
Q2	0.7	0.9	-1.0	-0.2	0.2	4.7	0.7	1.1	1.4	1.2	3.2	-0.5
Q3	0.1	0.1	-2.8	0.7	-0.5	3.5	0.9	1.1	0.9	0.8	2.9	-0.4
contributions to quarter-on-quarter percentage changes in value added; percentage points												
2022 Q4	-0.1	0.0	-0.1	0.0	-0.1	0.0	0.0	0.0	0.0	0.1	0.0	-
2023 Q1	0.2	0.0	-0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1	-
Q2	0.0	0.0	-0.1	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	0.1	0.0	0.0	0.0	0.0	0.1	-
contributions to annual percentage changes in value added; percentage points												
2020	-5.9	0.0	-1.2	-0.3	-2.6	0.1	0.0	-0.1	-0.6	-0.5	-0.6	-
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	-0.1	0.3	0.1	1.4	0.3	0.0	0.3	0.5	0.4	0.4	-
2022 Q4	2.2	-0.1	0.3	0.0	0.5	0.2	0.0	0.2	0.4	0.4	0.2	-
2023 Q1	1.7	0.0	0.0	0.0	0.5	0.3	0.0	0.2	0.2	0.3	0.2	-
Q2	0.7	0.0	-0.2	0.0	0.0	0.2	0.0	0.1	0.2	0.2	0.1	-
Q3	0.1	0.0	-0.6	0.0	-0.1	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)

	Total	By employment status		By economic activity									
		Employ-ees	Self-employed	Agricul-ture, forestry and fishing	Manufac-turing, energy and utilities	Con-struc-tion	Trade, transport, accom-modation and food services	Infor-mation and com-munica-tion	Finance and insur-ance	Real estate	Professional, business and support services	Public adminis-tration, edu-cation, 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									
2020	100.0	86.0	14.0	3.0	14.6	6.2	24.4	3.0	2.4	1.0	13.8	24.8	6.6
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
				annual percentage changes									
2020	-1.4	-1.5	-1.1	-2.5	-1.9	0.7	-3.9	1.9	0.4	0.7	-2.0	1.0	-3.0
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	1.2	-0.9	1.2	3.1	3.4	5.8	0.0	2.9	3.0	1.6	1.4
2022 Q4	1.5	1.7	0.8	-1.3	1.0	2.1	1.8	4.7	0.5	3.2	2.0	1.3	0.9
2023 Q1	1.6	1.7	1.4	-1.4	1.3	1.5	2.3	4.7	1.2	2.6	2.0	1.2	1.1
Q2	1.4	1.4	1.4	-2.4	1.1	0.7	2.0	3.8	1.2	2.7	2.1	1.1	0.3
Q3	1.3	1.2	1.5	-1.1	0.8	1.1	2.1	2.4	1.3	1.7	1.4	1.2	-0.1
					Hours worked								
				as a percentage of total hours worked									
2020	100.0	82.0	18.0	4.3	15.1	7.0	24.1	3.3	2.6	1.1	13.7	23.1	5.7
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
				annual percentage changes									
2020	-8.0	-7.3	-11.2	-3.5	-7.6	-6.1	-14.7	-1.8	-2.2	-5.4	-8.2	-2.0	-12.7
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	-1.5	0.9	3.2	7.5	5.9	-0.1	4.6	4.0	0.7	5.8
2022 Q4	2.1	2.2	1.9	-1.3	1.1	3.0	3.1	5.0	1.2	3.7	2.8	1.0	2.6
2023 Q1	1.9	2.2	0.6	-1.0	1.6	1.3	2.8	4.3	1.3	1.9	2.3	1.2	2.1
Q2	1.5	1.6	1.0	-2.7	1.3	1.1	1.7	3.8	1.5	2.2	2.3	1.5	1.0
Q3	1.3	1.3	1.1	-1.3	0.6	1.4	1.8	1.8	1.3	2.0	1.6	1.4	0.9
				Hours worked per person employed									
				annual percentage changes									
2020	-6.7	-5.9	-10.2	-0.9	-5.8	-6.7	-11.3	-3.7	-2.6	-6.0	-6.4	-3.1	-10.0
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	-0.5	-0.3	0.1	4.0	0.2	-0.1	1.7	1.0	-0.9	4.3
2022 Q4	0.6	0.5	1.1	0.0	0.1	0.8	1.3	0.3	0.7	0.5	0.8	-0.4	1.7
2023 Q1	0.3	0.5	-0.8	0.5	0.4	-0.2	0.5	-0.3	0.1	-0.7	0.3	0.1	1.0
Q2	0.1	0.2	-0.4	-0.3	0.2	0.4	-0.3	0.0	0.3	-0.4	0.2	0.4	0.7
Q3	0.0	0.1	-0.4	-0.2	-0.1	0.3	-0.3	-0.6	0.0	0.3	0.2	0.2	1.0

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

2.4 Labour force, unemployment and job vacancies
(seasonally adjusted, unless otherwise indicated)

	Labour force, millions	Under-employ-ment, % of labour force	Unemployment [1]											Job vacancy rate [3]
			Total		Long-term unemploy-ment, % of labour force [2]	By age				By gender				
			Millions	% of labour force		Adult		Youth		Male		Female		% of total posts
						Millions	% of labour force	Millions	% of labour force	Millions	% of labour force	Millions	% of labour force	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
% of total in 2020			100.0			80.1		19.9		51.2		48.8		
2020	162.758	3.5	12.964	8.0	3.0	10.381	7.0	2.584	18.1	6.644	7.6	6.320	8.3	1.8
2021	165.020	3.4	12.790	7.8	3.2	10.305	6.9	2.485	16.9	6.517	7.4	6.273	8.1	2.4
2022	167.789	3.1	11.339	6.8	2.7	9.080	6.0	2.259	14.6	5.686	6.4	5.653	7.2	3.1
2022 Q4	168.605	3.0	11.199	6.6	2.5	8.942	5.8	2.257	14.3	5.587	6.2	5.611	7.1	3.1
2023 Q1	169.462	3.0	11.132	6.6	2.5	8.929	5.8	2.203	13.9	5.596	6.2	5.536	7.0	3.1
Q2	169.827	3.0	11.033	6.5	2.3	8.765	5.7	2.268	14.3	5.567	6.2	5.466	6.9	3.0
Q3	169.965	2.9	11.167	6.6	2.3	8.851	5.7	2.316	14.6	5.634	6.2	5.533	6.9	2.9
2023 June	-	-	10.956	6.4	-	8.723	5.7	2.233	14.0	5.534	6.1	5.422	6.8	-
July	-	-	11.125	6.5	-	8.815	5.7	2.310	14.5	5.616	6.2	5.509	6.9	-
Aug.	-	-	11.016	6.5	-	8.704	5.7	2.311	14.5	5.578	6.2	5.438	6.8	-
Sep.	-	-	11.060	6.5	-	8.730	5.7	2.330	14.6	5.577	6.2	5.483	6.9	-
Oct.	-	-	11.069	6.5	-	8.693	5.6	2.375	14.8	5.570	6.2	5.498	6.9	-
Nov.	-	-	10.970	6.4	-	8.649	5.6	2.321	14.5	5.546	6.1	5.424	6.8	-

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						Con-struction produc-tion	Retail sales				Services production [1]	New passenger car regis-trations
	Total (excluding construction)		Main Industrial Groupings					Total	Food, beverages, tobacco	Non-food	Fuel		
		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 2015	100.0	88.7	32.1	34.5	21.8	11.6	100.0	100.0	40.4	52.5	7.1	100.0	100.0
						annual percentage changes							
2020	-7.7	-8.2	-7.2	-11.2	-4.3	-4.4	-5.4	-0.8	3.7	-2.3	-14.4	-9.8	-24.3
2021	8.9	9.8	9.6	11.7	8.1	1.5	6.0	5.1	0.9	7.8	9.6	8.2	-2.9
2022	2.3	3.0	-1.3	5.5	5.4	-3.7	2.3	0.7	-2.8	2.5	6.3	10.0	-4.3
2022 Q1	1.6	2.1	1.0	0.3	6.3	-1.4	6.1	6.0	-1.5	11.4	12.4	12.5	-12.3
Q2	2.0	2.6	-0.3	4.5	3.3	-1.8	2.7	1.1	-2.8	3.2	7.6	13.4	-16.2
Q3	3.4	4.0	-1.7	9.9	3.1	-1.7	0.7	-0.6	-1.6	-0.6	3.1	9.1	1.5
Q4	2.2	3.5	-4.4	7.2	8.9	-9.3	0.1	-2.8	-5.1	-2.0	3.4	6.2	15.2
2023 July	-2.1	-1.9	-5.1	0.7	-1.4	-6.0	1.7	-0.8	-2.1	1.3	-1.6	3.4	16.5
Aug.	-5.3	-5.0	-5.2	-7.0	-2.7	-5.8	-0.4	-1.8	-2.4	0.1	-7.2	2.6	23.6
Sep.	-6.7	-6.8	-4.6	-9.5	-5.5	-6.0	0.3	-2.9	-0.8	-3.5	-6.6	2.2	8.8
Oct.	-6.6	-7.1	-4.1	-9.7	-7.1	-0.9	-0.7	-0.8	-1.2	0.2	-5.9	1.8	14.1
Nov.	-6.8	-7.6	-5.2	-10.3	-7.0	0.8	-2.2	-1.1	-0.7	-0.2	-4.5	.	6.0
Dec.	.	.	.	.	.	.	.	.	.	.	.	.	-4.3
					month-on-month percentage changes (s.a.)								
2023 July	-1.3	-4.3	0.1	-3.0	0.8	1.0	0.6	0.0	0.2	0.2	-0.3	0.3	4.3
Aug.	0.4	0.3	-0.3	0.5	0.4	-0.2	-1.0	-0.8	-0.5	-0.7	-2.4	0.3	4.2
Sep.	-0.8	-0.5	-0.4	0.0	-1.1	-1.5	0.5	0.0	1.0	-0.8	0.5	-0.2	-1.9
Oct.	-0.7	-0.7	-0.7	-1.1	-1.3	0.6	-0.6	0.4	-0.9	1.0	0.1	-0.4	-0.6
Nov.	-0.3	-0.2	-0.6	-0.8	1.0	0.9	-1.0	-0.3	-0.1	-0.4	1.4	.	1.5
Dec.	.	.	.	.	.	.	.	.	.	.	.	.	-3.3

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 confid-ence indicator	Service industries		Purchasing Managers' Index (PMI) for manu-facturing	Manu-facturing 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	99.7	-4.3	80.7	-10.7	-12.4	-7.0	7.3	-	51.4	52.5	52.7	52.6
2021	110.7	9.4	81.8	-7.4	4.2	-1.8	8.3	87.7	60.2	58.3	53.6	54.9
2022	101.9	4.8	82.0	-21.9	5.2	-3.8	9.3	90.1	52.1	49.3	52.1	51.4
2023	96.2	-5.9	.	-17.4	-2.3	-4.3	6.9	.	45.0	45.8	51.2	49.7
2023 Q1	99.0	0.0	81.3	-19.7	1.2	-1.0	9.0	90.0	48.2	49.8	52.8	52.0
Q2	96.8	-5.1	80.6	-17.0	-0.8	-4.1	7.4	90.3	44.7	46.4	54.5	52.3
Q3	94.0	-9.3	79.7	-16.3	-4.9	-5.2	5.0	90.4	43.2	43.1	49.2	47.5
Q4	94.7	-9.3	.	-16.6	-4.5	-6.8	6.3	.	43.9	44.0	48.4	47.2
2023 Aug.	93.8	-9.9	-	-16.0	-5.3	-5.1	4.8	-	43.5	43.4	47.9	46.7
Sep.	93.6	-8.8	-	-17.7	-5.9	-5.8	4.6	-	43.4	43.1	48.7	47.2
Oct.	93.7	-9.2	79.4	-17.8	-5.3	-7.5	5.1	90.1	43.1	43.1	47.8	46.5
Nov.	94.0	-9.5	-	-16.9	-4.4	-7.1	5.5	-	44.2	44.6	48.7	47.6
Dec.	96.4	-9.2	-	-15.0	-3.6	-5.7	8.4	-	44.4	44.4	48.8	47.6
2024 Jan.	.	.	-	-16.1	.	.	.	-	46.6	46.6	48.4	47.9

Sources: European Commission (Directorate-General for Economic and Financial Affairs) (col. 1-8) and Markit (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]	Hous-ing wealth	Profit rate [3]	Saving rate (gross)	Debt ratio [4]	Financial investment	Non-financial investment (gross)	Finan-cing
	Percentage of gross disposable income (adjusted) [1]		Annual percentage changes					Percentage of gross value added		Percent-age of GDP	Annual percentage changes		
	1	2	3	4	5	6	7	8	9	10	11	12	13
2020	19.6	95.5	-0.2	4.2	-1.5	5.5	4.9	45.8	24.6	78.5	3.8	-11.9	2.6
2021	17.5	95.2	2.0	3.7	19.3	8.8	8.9	49.1	27.1	76.0	5.5	9.8	3.4
2022	13.7	92.8	-0.2	2.5	12.2	2.2	8.2	48.9	24.8	71.7	3.0	8.6	1.9
2022 Q4	13.7	92.8	-0.4	2.5	5.3	2.2	8.2	48.9	24.8	71.7	3.0	0.8	1.9
2023 Q1	13.5	90.9	1.2	2.3	5.5	2.5	5.1	48.5	24.8	69.7	2.4	-0.3	1.3
Q2	13.9	89.3	1.3	2.1	1.4	3.1	2.3	48.2	24.5	68.8	1.7	19.4	0.8
Q3	14.1	88.1	0.5	1.9	0.9	2.3	0.9	48.2	24.1	68.0	1.5	-9.8	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
2022 Q4	1,380.2	1,384.8	-4.6	757.9	757.0	313.0	268.8	266.1	276.5	43.2	82.5	58.8	34.0
2023 Q1	1,387.6	1,352.0	35.5	749.4	697.7	323.9	298.5	273.7	280.5	40.6	75.3	35.5	30.8
Q2	1,393.6	1,334.1	59.6	719.3	668.1	327.2	295.1	303.2	284.9	43.9	85.9	25.7	21.5
Q3	1,395.2	1,316.7	78.4	709.5	635.9	324.9	297.5	319.1	298.7	41.7	84.6	28.2	17.4
2023 June	478.5	442.9	35.6	251.0	222.1	109.9	96.8	103.2	94.6	14.4	29.4	12.7	7.1
July	455.1	429.4	25.8	227.1	208.8	108.3	96.1	106.0	95.7	13.7	28.7	7.1	7.0
Aug.	477.6	450.4	27.2	248.0	217.7	108.2	101.1	107.2	103.7	14.1	27.9	7.9	5.5
Sep.	462.4	437.0	25.5	234.3	209.4	108.4	100.3	105.9	99.3	13.8	28.0	13.2	4.9
Oct.	471.8	439.5	32.3	243.9	214.7	108.1	88.8	106.3	108.7	13.6	27.4	10.8	7.8
Nov.	474.8	450.2	24.6	247.6	214.6	113.4	92.9	100.2	116.1	13.6	26.6	9.0	5.5
12-month cumulated transactions													
2023 Nov.	5,572.8	5,341.6	231.2	2,916.1	2,671.7	1,299.4	1,161.4	1,189.7	1,181.1	167.5	327.4	150.2	108.3
12-month cumulated transactions as a percentage of GDP													
2023 Nov.	39.4	37.8	1.6	20.6	18.9	9.2	8.2	8.4	8.3	1.2	2.3	1.1	0.8

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		Intermediate goods	Capital goods	Consumption goods	Manu-facturing		Intermediate goods	Capital goods	Consumption goods	Manu-facturing	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)													
2022 Q4	15.4	20.3	737.2	362.1	139.6	221.7	606.0	801.1	481.2	115.0	170.3	521.9	97.2
2023 Q1	8.5	1.0	722.5	347.2	138.3	224.5	595.7	729.6	430.3	114.6	161.8	502.7	78.6
Q2	-1.9	-13.8	708.5	331.9	143.8	216.6	588.6	706.2	410.8	113.3	164.8	501.9	73.9
Q3	-5.4	-22.3	702.3	332.0	141.5	214.3	584.4	677.7	390.2	111.0	158.5	486.4	82.4
2023 June	0.0	-16.1	236.5	111.6	47.0	71.8	196.8	228.3	131.4	36.5	54.0	163.7	24.4
July	-2.7	-18.1	232.9	109.4	46.3	71.4	193.2	228.8	131.6	37.8	54.0	165.4	26.6
Aug.	-3.8	-24.4	235.7	110.7	49.0	71.9	197.3	224.5	128.7	36.7	53.0	161.2	27.3
Sep.	-9.3	-24.0	233.6	111.8	46.2	71.0	193.9	224.5	129.9	36.6	51.5	159.8	28.5
Oct.	-2.5	-16.5	234.6	111.2	47.3	70.3	195.8	223.4	128.8	35.5	52.5	158.5	29.5
Nov.	-4.7	-16.7	236.8	.	.	.	196.5	222.1	.	.	.	154.3	.
Volume indices (2000 = 100; annual percentage changes for columns 1 and 2)													
2022 Q4	1.8	2.9	107.6	104.6	110.4	117.2	107.3	120.9	118.4	122.1	123.7	121.1	146.0
2023 Q1	0.8	-2.1	106.5	102.8	107.0	119.2	106.3	117.1	115.2	121.9	117.0	118.0	146.0
Q2	-2.8	-6.6	105.0	100.6	110.1	115.6	105.6	116.2	115.4	123.2	119.0	119.9	159.5
Q3	-3.9	-10.4	104.1	100.7	107.6	112.5	104.3	112.6	111.6	119.5	117.1	117.2	173.6
2023 May	-2.9	-7.1	106.9	101.1	113.8	117.0	107.7	117.1	115.7	127.4	121.1	121.7	153.5
June	0.2	-7.0	105.0	101.1	107.9	115.0	105.6	112.5	112.3	117.2	116.1	116.5	163.6
July	-1.2	-5.3	103.1	100.2	105.9	112.6	103.4	115.5	114.9	121.8	119.1	119.4	170.2
Aug.	-1.8	-12.0	105.2	100.8	111.9	113.4	105.7	111.6	110.1	118.4	117.9	116.9	175.2
Sep.	-8.1	-13.6	103.8	101.0	104.9	111.4	104.0	110.8	109.9	118.1	114.4	115.3	175.4
Oct.	-1.1	-7.5	103.3	99.7	106.6	110.0	103.5	110.1	108.5	114.9	116.0	115.0	164.2

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	Total excluding food and energy	Goods	Services	Total	Processed food	Unprocessed food	Non-energy industrial goods	Energy (n.s.a.)	Services	Total HICP excluding administered prices	Administered prices
	1	2	3	4	5	6	7	8	9	10	11	12	13
% of total in 2023	100.0	100.0	69.8	56.5	43.5	100.0	15.5	4.5	26.3	10.2	43.5	86.8	13.2
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 Q1	121.3	8.0	5.5	10.3	4.7	0.8	3.4	2.6	1.6	-6.0	1.2	8.1	7.3
Q2	123.2	6.2	5.5	6.8	5.2	0.6	1.8	0.8	0.6	-4.3	1.3	6.1	6.8
Q3	123.9	5.0	5.1	4.5	5.3	1.0	1.1	1.3	0.7	1.3	1.0	5.0	4.5
Q4	124.1	2.7	3.7	1.7	4.2	0.3	0.7	1.0	0.0	-1.1	0.6	3.0	1.3
2023 July	123.4	5.3	5.5	4.8	5.6	0.3	0.4	1.0	0.3	-0.2	0.4	5.2	6.3
Aug.	124.0	5.2	5.3	4.9	5.5	0.5	0.3	-0.2	0.3	3.3	0.3	5.3	5.2
Sep.	124.4	4.3	4.5	4.0	4.7	0.3	0.4	0.3	-0.1	1.5	0.3	4.6	2.2
Oct.	124.5	2.9	4.2	1.7	4.6	0.1	0.2	0.4	0.0	-1.2	0.3	3.2	0.6
Nov.	123.9	2.4	3.6	1.3	4.0	-0.2	0.1	0.9	-0.1	-2.2	-0.1	2.5	1.5
Dec.	124.1	2.9	3.4	2.1	4.0	0.0	0.1	-0.1	0.2	-1.6	0.3	3.1	1.7

	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		Rents				
	14	15	16	17	18	19	20	21	22	23	24	25
% of total in 2023	20.0	15.5	4.5	36.5	26.3	10.2	9.5	5.6	7.3	2.2	15.2	9.2
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 Q1	14.9	15.4	13.3	7.8	6.7	10.0	3.6	2.5	5.8	0.2	7.2	3.8
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
2023 July	10.8	11.3	9.2	1.6	5.0	-6.1	3.7	2.7	7.1	0.0	7.5	4.3
Aug.	9.7	10.3	7.8	2.2	4.7	-3.3	3.7	2.8	6.2	0.0	7.3	4.3
Sep.	8.8	9.4	6.6	1.4	4.1	-4.6	3.7	2.7	3.9	0.0	6.7	4.1
Oct.	7.4	8.4	4.5	-1.4	3.5	-11.2	3.6	2.8	3.9	0.3	6.4	4.1
Nov.	6.9	7.1	6.3	-1.7	2.9	-11.5	3.5	2.7	2.5	0.2	5.9	4.0
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

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 Prices and costs

3.2 Industry, construction and property prices
(annual percentage changes, unless otherwise indicated)

	Industrial producer prices excluding construction [1]										Con-struction [2]	Residential property prices [3]	Experimental indicator of commercial property prices [3]
	Total (index: 2015 = 100)	Total		Industry excluding construction and energy					Energy			
			Manu-facturing	Total	Intermediate goods	Capital goods	Consumer goods						
							Total	Food, beverages and tobacco	Non-food				
	1	2	3	4	5	6	7	8	9	10	11	12	13
% of total in 2015	100.0	100.0	77.3	72.1	28.9	20.7	22.5	16.6	5.9	27.9			
2020	102.0	-2.6	-1.7	-0.1	-1.6	0.9	0.9	1.1	0.6	-9.7	1.7	5.3	1.6
2021	114.5	12.3	7.4	5.8	10.9	2.5	2.1	3.3	1.8	32.2	5.6	8.1	0.5
2022	153.8	34.3	16.9	14.1	20.3	7.2	12.1	16.4	7.7	85.2	11.5	7.1	0.6
2022 Q4	161.9	27.2	14.5	13.1	15.4	7.6	15.3	19.9	9.3	56.1	11.6	2.9	-2.8
2023 Q1	156.2	10.9	9.0	9.8	8.7	7.2	14.1	17.4	8.5	11.5	10.0	0.4	-4.9
Q2	147.2	-1.4	0.9	3.7	-1.1	5.7	9.4	9.6	6.5	-13.1	7.0	-1.5	-9.9
Q3	145.9	-10.5	-0.3	1.1	-4.4	4.5	6.4	5.5	4.5	-28.9	4.4	-2.1	.
2023 June	145.8	-3.4	-1.1	2.5	-2.8	5.3	8.4	8.1	5.8	-16.5	-	-	-
July	145.0	-7.6	-0.8	1.6	-4.0	4.8	7.4	6.6	5.0	-24.2	-	-	-
Aug.	146.0	-11.5	0.0	1.1	-4.6	4.5	6.4	5.5	4.5	-30.6	-	-	-
Sep.	146.7	-12.4	0.0	0.5	-4.8	4.1	5.4	4.3	3.9	-31.2	-	-	-
Oct.	147.1	-9.4	-1.5	-0.2	-5.3	3.6	4.2	2.8	3.0	-24.9	-	-	-
Nov.	146.7	-8.8	-1.4	-0.5	-5.3	3.1	3.5	2.0	2.7	-23.7	-	-	-

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)					
	Total (s.a.; index: 2015 = 100)	Total	Domestic demand				Exports [1]	Imports [1]		Import-weighted [2]			Use-weighted [2]		
			Total	Private consump-tion	Govern-ment consump-tion	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	45.4	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	114.8	4.6	6.8	6.7	4.3	7.8	12.5	17.6	95.0	18.3	28.8	9.6	19.4	27.7	10.9
2023	.	.	.	.	.	.	.	.	76.4	-13.0	-11.7	-14.3	-13.9	-12.6	-15.3
2023 Q1	119.6	6.1	5.6	8.0	4.1	6.5	5.3	4.1	75.8	-10.5	-5.8	-14.6	-11.5	-7.7	-15.6
Q2	121.0	6.1	4.1	6.9	4.5	4.6	0.3	-3.6	71.6	-18.0	-16.1	-19.9	-18.4	-16.4	-20.8
Q3	121.8	5.9	3.1	5.8	3.9	3.5	-1.9	-7.0	79.8	-13.8	-14.5	-13.0	-14.9	-15.2	-14.5
Q4	.	.	.	.	.	.	.	.	78.5	-9.4	-9.9	-8.8	-10.2	-10.7	-9.6
2023 July	-	-	-	-	-	-	-	-	72.5	-13.5	-13.7	-13.2	-15.0	-15.1	-14.8
Aug.	-	-	-	-	-	-	-	-	78.8	-15.8	-15.9	-15.6	-16.5	-16.0	-17.1
Sep.	-	-	-	-	-	-	-	-	88.1	-12.1	-13.9	-10.1	-13.1	-14.4	-11.4
Oct.	-	-	-	-	-	-	-	-	86.2	-12.2	-13.8	-10.4	-13.1	-14.2	-11.7
Nov.	-	-	-	-	-	-	-	-	76.9	-9.4	-10.6	-8.1	-10.3	-11.5	-8.9
Dec.	-	-	-	-	-	-	-	-	71.4	-6.4	-4.8	-7.9	-7.1	-6.1	-8.3

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 balances)					Purchasing Managers' Surveys (diffusion indices)			
	Selling price expectations (for next three months)				Consumer price trends over past	Input prices		Prices charged	
	Manu-facturing	Retail trade	Services	Construction	12 months	Manu-facturing	Services	Manu-facturing	Services
	1	2	3	4	5	6	7	8	9
1999-20	4.4	5.5	-	-2.9	27.9	56.5	56.1	-	50.0
2021	31.6	24.0	10.3	19.7	30.4	84.0	61.9	66.8	53.4
2022	48.4	52.9	27.2	42.5	71.6	77.1	75.4	69.6	62.0
2023	9.4	28.6	19.4	13.6	74.5	43.7	64.6	50.0	57.4
2023 Q1	23.7	43.5	25.8	26.9	78.4	51.3	69.9	57.8	61.2
Q2	7.4	29.9	18.1	12.1	76.9	41.6	64.3	49.2	58.0
Q3	3.3	22.1	16.3	6.1	73.3	39.1	62.0	45.7	55.5
Q4	3.1	18.9	17.2	9.3	69.4	42.8	62.0	47.5	54.8
2023 Aug.	3.1	22.6	16.8	6.5	72.9	39.7	62.2	46.2	55.6
Sep.	3.4	20.7	15.5	6.7	73.6	41.9	62.7	45.8	54.7
Oct.	3.6	19.9	15.8	7.5	72.5	42.5	62.0	46.4	54.1
Nov.	2.4	17.7	17.7	9.0	68.9	42.7	62.5	47.2	54.5
Dec.	3.2	19.0	18.1	11.3	66.9	43.1	61.6	48.9	55.6
2024 Jan.	.	.	.	.	.	43.2	62.8	48.6	56.2

Sources: European Commission (Directorate-General for Economic and Financial Affairs) and Markit.

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

	Total (index: 2020 = 100)	Total	By component		For selected economic activities		Memo item: Indicator of negotiated wages [1]
			Wages and salaries	Employers' social contributions	Business economy	Mainly non-business economy	
	1	2	3	4	5	6	7
% of total in 2020	100.0	100.0	75.3	24.7	69.0	31.0	
2020	100.0	3.1	3.6	1.5	2.7	3.9	1.8
2021	100.9	0.9	1.1	0.5	0.9	1.0	1.3
2022	105.7	4.7	3.9	7.0	4.9	4.0	2.9
2022 Q4	114.1	5.9	5.3	7.9	5.8	6.2	3.1
2023 Q1	102.7	5.3	5.0	6.3	5.7	4.4	4.4
Q2	113.8	4.5	4.6	4.1	4.6	4.2	4.4
Q3	107.4	5.2	5.3	5.1	5.8	4.1	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)

| | Total (index: 2015 =100) | Total | By economic activity | | | | | | | | | |
| | | | Agriculture, forestry and fishing | 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 labour costs							
2020	110.3	4.6	2.4	2.0	5.2	7.9	-0.2	0.8	1.3	3.4	6.2	16.7
2021	110.1	-0.2	1.8	-3.7	5.6	-1.9	1.2	-1.5	5.0	1.1	0.9	-0.1
2022	113.8	3.4	7.4	3.5	6.2	2.1	3.2	2.9	4.7	3.5	3.4	-3.0
2022 Q4	116.5	4.7	7.8	3.0	7.8	4.2	4.0	3.3	4.2	5.1	4.9	-1.3
2023 Q1	118.9	5.9	4.2	7.1	5.5	6.5	4.5	6.0	4.7	7.2	3.6	0.0
Q2	119.6	6.3	2.7	7.4	6.4	7.9	4.7	4.8	5.7	6.9	4.9	3.1
Q3	121.6	6.7	4.3	9.7	5.7	8.0	4.3	4.7	4.2	6.8	4.9	3.3
					Compensation per employee							
2020	107.1	-0.3	3.2	-2.3	-1.0	-3.3	0.0	-0.2	-0.2	-0.2	2.1	-1.5
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	5.0	3.6	4.1	6.2	3.3	3.0	4.2	5.2	3.8	7.0
2022 Q4	119.1	5.0	5.8	3.5	4.9	5.4	3.5	3.1	2.6	6.1	5.7	5.1
2023 Q1	121.1	5.5	6.0	5.6	4.6	6.7	5.0	4.9	4.0	7.0	4.2	5.5
Q2	121.8	5.5	6.1	5.2	5.5	6.0	5.6	4.3	4.1	6.2	5.0	6.1
Q3	123.4	5.3	5.5	5.8	5.3	5.2	5.4	4.3	3.5	6.3	4.5	6.4
					Labour productivity per person employed							
2020	97.1	-4.7	0.8	-4.2	-5.9	-10.4	0.2	-0.9	-1.5	-3.5	-3.9	-15.6
2021	101.4	4.4	0.9	8.7	-0.3	7.5	4.6	4.9	1.5	3.6	1.3	3.4
2022	102.5	1.1	-2.3	0.1	-2.0	4.0	0.1	0.2	-0.5	1.7	0.4	10.3
2022 Q4	102.3	0.3	-1.9	0.5	-2.6	1.1	-0.4	-0.1	-1.5	1.0	0.7	6.5
2023 Q1	101.8	-0.4	1.7	-1.3	-0.9	0.2	0.4	-1.0	-0.7	-0.2	0.5	5.5
Q2	101.8	-0.8	3.4	-2.1	-0.8	-1.7	0.8	-0.5	-1.5	-0.6	0.1	2.9
Q3	101.5	-1.3	1.2	-3.6	-0.4	-2.6	1.1	-0.4	-0.6	-0.5	-0.4	3.0
					Compensation per hour worked							
2020	114.0	5.9	5.9	3.3	5.1	7.6	3.1	1.8	4.9	5.9	4.9	7.1
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	4.0	4.4	1.9	3.2	3.1	2.9	3.9	4.8	3.4
2022 Q4	120.7	4.5	7.4	3.3	4.3	3.9	3.5	2.6	1.9	5.2	6.1	3.8
2023 Q1	122.1	4.9	4.7	5.3	4.5	5.6	5.2	4.9	4.4	6.3	4.0	4.5
Q2	122.7	5.3	6.4	4.9	5.1	6.2	5.5	4.2	4.7	6.0	4.5	4.9
Q3	124.6	5.2	5.1	5.7	5.1	5.5	5.5	4.6	4.7	6.1	4.4	5.0
					Hourly labour productivity							
2020	104.7	2.1	1.7	1.6	0.8	1.0	4.1	1.7	4.8	3.1	-0.9	-6.2
2021	104.7	0.0	0.0	3.5	-6.3	1.0	1.3	2.5	-3.7	-1.5	-0.4	-2.1
2022	104.7	0.0	-1.7	0.4	-2.1	0.0	-0.1	0.3	-2.3	0.7	1.3	5.8
2022 Q4	104.6	-0.3	-1.9	0.3	-3.5	-0.2	-0.7	-0.8	-2.0	0.2	1.1	4.7
2023 Q1	103.8	-0.6	1.3	-1.7	-0.7	-0.3	0.7	-1.0	0.0	-0.5	0.4	4.5
Q2	103.6	-0.9	3.7	-2.3	-1.3	-1.5	0.8	-0.8	-1.1	-0.9	-0.3	2.2
Q3	103.6	-1.3	1.4	-3.4	-0.7	-2.2	1.7	-0.3	-0.9	-0.7	-0.6	2.0

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 deposits (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 June	3.24	3.34	3.54	3.83	4.01	5.06	-0.07
July	3.40	3.47	3.67	3.94	4.15	5.10	-0.05
Aug.	3.64	3.63	3.78	3.94	4.07	5.30	-0.06
Sep.	3.75	3.76	3.88	4.03	4.15	5.31	-0.05
Oct.	3.90	3.86	3.97	4.11	4.16	5.31	-0.02
Nov.	3.90	3.84	3.97	4.06	4.02	5.32	-0.02
Dec.	3.90	3.86	3.93	3.92	3.67	5.33	-0.01

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), 2)]					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 June	3.39	3.45	3.12	2.58	2.51	-0.94	-1.59	-0.96	3.21	2.45	2.25	2.56
July	3.48	3.42	3.02	2.53	2.54	-0.87	-1.43	-0.86	3.04	2.31	2.33	2.70
Aug.	3.46	3.38	2.95	2.52	2.57	-0.81	-1.30	-0.80	2.96	2.24	2.39	2.77
Sep.	3.70	3.51	3.16	2.78	2.88	-0.64	-0.89	-0.63	3.14	2.56	2.69	3.17
Oct.	3.82	3.39	2.99	2.68	2.82	-0.56	-0.53	-0.48	2.87	2.41	2.67	3.19
Nov.	3.78	3.26	2.81	2.41	2.53	-0.74	-0.83	-0.72	2.67	2.14	2.33	2.88
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

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 June	455.5	4,324.4	952.1	302.2	170.0	112.7	179.3	835.9	904.5	376.5	277.4	806.2	4,345.4	32,754.5
July	460.1	4,364.5	964.7	305.9	172.9	111.0	185.8	838.3	899.6	375.8	277.8	814.8	4,508.1	32,694.1
Aug.	453.9	4,296.8	966.3	297.6	167.8	115.8	188.6	816.5	867.9	362.6	269.1	828.5	4,457.4	32,167.4
Sep.	447.3	4,227.2	963.8	286.2	161.2	123.9	189.5	787.3	835.7	363.4	280.6	825.2	4,409.1	32,725.6
Oct.	430.8	4,104.0	922.9	274.1	155.6	123.1	186.7	748.8	810.5	344.5	269.0	775.7	4,269.4	31,381.0
Nov.	448.0	4,275.0	963.3	282.6	162.0	123.3	192.5	790.5	885.3	368.0	279.3	742.2	4,460.1	32,960.3
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

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					Composite cost-of-borrowing indicator
	Over-night	Redeem-able at notice of up to 3 months	With an agreed maturity of:				By initial period of rate fixation		APRC [3]		By initial period of rate fixation				APRC [3]	
			Up to 2 years	Over 2 years			Floating rate and up to 1 year	Over 1 year			Floating rate and up to 1 year	Over 1 and up to 5 years	Over 5 and up to 10 years	Over 10 years		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2022 Dec.	0.07	0.80	1.42	1.91	5.92	15.90	6.51	6.42	6.98	3.99	3.08	3.16	3.29	2.61	3.18	2.95
2023 Jan.	0.09	0.86	1.60	2.08	6.32	15.99	7.20	6.97	7.58	4.28	3.47	3.32	3.39	2.77	3.39	3.10
Feb.	0.11	1.17	1.91	2.20	6.54	16.08	7.21	7.08	7.78	4.58	3.67	3.48	3.52	2.94	3.55	3.24
Mar.	0.14	1.20	2.11	2.26	6.71	16.07	7.63	7.23	7.90	4.70	3.89	3.78	3.56	3.14	3.72	3.37
Apr.	0.17	1.25	2.28	2.42	6.97	16.23	8.06	7.43	8.11	4.91	4.13	3.85	3.61	3.19	3.81	3.48
May	0.21	1.30	2.47	2.48	7.14	16.34	8.16	7.60	8.31	5.08	4.24	3.98	3.65	3.31	3.93	3.58
June	0.23	1.37	2.71	2.59	7.27	16.27	7.02	7.49	7.99	5.12	4.40	4.07	3.71	3.41	4.05	3.70
July	0.27	1.42	2.82	2.86	7.49	16.40	8.38	7.73	8.41	5.23	4.55	4.14	3.72	3.45	4.09	3.76
Aug.	0.31	1.50	3.04	3.10	7.59	16.47	8.72	7.83	8.49	5.36	4.69	4.21	3.79	3.51	4.16	3.85
Sep.	0.33	1.54	3.08	3.12	7.76	16.54	8.47	7.83	8.56	5.40	4.72	4.24	3.86	3.57	4.24	3.89
Oct.	0.35	1.59	3.27	3.31	7.97	16.56	8.25	7.87	8.54	5.58	4.81	4.28	3.78	3.60	4.27	3.91
Nov. (p)	0.36	1.62	3.32	3.42	7.97	16.65	7.27	7.91	8.54	5.55	4.87	4.31	3.89	3.70	4.35	4.01

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
	Over-night	With an agreed maturity of:			up to EUR 0.25 million			over EUR 0.25 and up to 1 million			over EUR 1 million			
		Up to 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
2022 Dec.	0.19	1.80	2.61	3.20	3.74	3.99	4.19	3.47	3.55	3.27	3.29	3.59	3.29	3.41
2023 Jan.	0.23	1.99	2.72	3.57	4.13	4.20	4.39	3.77	3.92	3.45	3.41	3.75	3.39	3.63
Feb.	0.31	2.30	2.81	3.81	4.40	4.54	4.71	4.06	4.09	3.70	3.69	3.54	3.58	3.86
Mar.	0.41	2.57	2.95	4.11	4.70	4.83	4.88	4.33	4.48	3.84	4.07	4.32	3.87	4.22
Apr.	0.44	2.80	3.11	4.39	4.87	4.74	4.96	4.60	4.58	3.98	4.32	4.37	3.69	4.39
May	0.49	2.96	3.13	4.56	5.04	5.07	5.16	4.76	4.84	4.01	4.47	4.58	4.01	4.57
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	4.11	4.78
July	0.60	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.	0.65	3.42	3.53	5.02	5.46	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	5.58	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	5.66	5.87	5.73	5.49	5.28	4.52	5.23	5.08	4.54	5.27
Nov. (p)	0.83	3.71	3.92	5.32	5.71	5.91	5.79	5.51	5.29	4.53	5.13	5.16	4.36	5.23

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.

4.6 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 corpo-rations other than MFIs	FVCs	Non-financial corpo-rations		of which central govern-ment			Financial corpo-rations other than MFIs	FVCs	Non-financial corpo-rations		of which central govern-ment
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
							Short-term							
2020	1,489.4	430.3	126.3	51.6	96.7	836.1	722.5	.	.	.	.	.	.	.
2021	1,406.7	427.2	126.9	50.1	87.9	764.7	674.9	387.1	138.3	79.1	26.3	32.1	137.6	104.8
2022	1,372.2	467.9	142.7	51.9	94.7	667.0	621.7	480.9	182.5	116.4	48.2	48.1	133.9	97.1
2023 July	1,489.0	580.6	138.5	51.4	99.2	670.7	634.6	509.9	187.0	119.4	36.5	56.6	146.9	122.5
Aug.	1,515.0	593.3	142.2	51.5	99.1	680.4	647.9	518.8	230.4	121.9	40.2	40.5	126.0	108.3
Sep.	1,533.6	592.0	138.3	50.4	92.1	711.3	676.2	521.3	213.9	116.1	42.2	46.8	144.5	126.5
Oct.	1,520.5	577.3	139.1	49.1	95.0	709.1	671.7	486.6	197.8	116.3	37.5	51.0	121.5	92.2
Nov.	1,531.2	591.7	135.3	48.5	95.6	708.6	667.8	480.0	188.4	120.4	41.4	44.9	126.2	100.2
Dec.	1,486.5	582.5	126.3	45.1	82.9	694.7	657.2	307.4	134.1	72.6	30.3	30.3	70.4	58.1
							Long-term							
2020	19,284.3	4,076.4	3,096.8	1,254.1	1,545.4	10,565.6	9,778.7	.	.	.	.	.	.	.
2021	19,916.6	4,182.2	3,371.8	1,341.1	1,599.6	10,762.9	9,941.9	316.3	67.9	83.4	33.6	23.1	141.8	128.3
2022	17,900.6	3,972.6	3,260.6	1,339.8	1,396.4	9,271.0	8,559.2	298.8	78.5	73.1	29.2	16.6	130.6	121.2
2023 July	18,786.8	4,296.4	3,372.3	1,374.6	1,432.1	9,686.0	8,965.9	347.6	140.9	55.7	15.8	18.8	132.2	127.4
Aug.	18,814.9	4,311.3	3,364.2	1,357.6	1,427.2	9,712.2	8,989.7	205.9	52.3	47.8	12.0	8.4	97.4	93.9
Sep.	18,674.8	4,299.1	3,401.7	1,362.6	1,429.5	9,544.5	8,830.9	351.9	91.3	93.6	21.4	29.3	137.8	127.8
Oct.	18,713.3	4,346.0	3,399.4	1,359.1	1,430.4	9,537.6	8,825.2	335.9	93.7	70.3	19.7	14.4	157.6	151.4
Nov.	19,089.1	4,419.2	3,416.8	1,335.2	1,465.0	9,788.1	9,066.8	307.5	86.7	87.6	20.9	27.1	106.1	101.2
Dec.	19,571.1	4,510.2	3,451.3	1,326.7	1,508.4	10,101.2	9,361.0	199.2	66.9	46.4	12.0	17.2	68.8	67.2

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

4.7 Annual growth rates and outstanding amounts of debt securities and listed shares
(EUR billions and percentage changes; market values)

	Debt securities							Listed shares			
	Total	MFIs	Non-MFI corporations			General government		Total	MFIs	Financial corporations other than MFIs	Non-financial corporations
			Financial corporations other than MFIs	FVCs	Non-financial corporations		of which central government				
	1	2	3	4	5	6	7	8	9	10	11
						Outstanding amount					
2020	20,773.7	4,506.7	3,223.1	1,305.7	1,642.1	11,401.8	10,501.2	8,521.7	473.8	1,339.2	6,707.7
2021	21,323.3	4,609.4	3,498.7	1,391.1	1,687.6	11,527.6	10,616.8	10,375.3	600.0	1,549.5	8,224.7
2022	19,272.9	4,440.5	3,403.3	1,391.7	1,491.0	9,938.0	9,180.9	8,718.4	524.9	1,355.0	6,837.9
2023 July	20,275.8	4,877.0	3,510.9	1,426.0	1,531.3	10,356.7	9,600.5	9,803.6	619.1	1,524.4	7,659.6
Aug.	20,330.0	4,904.6	3,506.4	1,409.1	1,526.3	10,392.6	9,637.7	9,529.8	582.2	1,493.1	7,454.0
Sep.	20,208.4	4,891.1	3,540.0	1,412.9	1,521.5	10,255.8	9,507.1	9,164.7	576.1	1,424.2	7,163.9
Oct.	20,233.8	4,923.3	3,538.5	1,408.2	1,525.4	10,246.6	9,496.9	8,785.7	558.6	1,367.3	6,859.4
Nov.	20,620.3	5,010.9	3,552.0	1,383.7	1,560.6	10,496.7	9,734.6	9,403.0	611.2	1,462.1	7,329.3
Dec.	21,057.5	5,092.7	3,577.6	1,371.8	1,591.3	10,795.8	10,018.2	9,700.5	622.9	1,476.0	7,601.1
						Growth rate [1]					
2023 May	4.5	9.1	3.2	2.1	0.5	3.6	4.5	-0.2	-2.6	0.5	-0.1
June	5.3	10.3	4.1	3.4	0.8	4.3	5.1	-0.9	-2.4	1.7	-1.3
July	6.0	12.2	4.0	2.1	1.6	4.7	5.3	-1.0	-2.1	0.9	-1.3
Aug.	5.9	12.2	3.9	1.8	0.9	4.6	5.3	-1.0	-2.0	1.0	-1.2
Sep.	6.4	11.1	4.9	3.7	1.4	5.5	6.2	-0.9	-3.1	0.9	-1.1
Oct.	6.0	10.7	4.8	3.3	1.9	5.0	5.5	-1.3	-3.0	0.7	-1.5
Nov.	5.4	10.1	3.6	0.1	2.0	4.5	4.9	-1.2	-3.3	0.8	-1.4
Dec.	5.7	11.7	3.1	-1.5	1.9	4.6	5.0	-1.3	-2.9	0.8	-1.6

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

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4.8 Effective exchange rates [1]
(period averages; index: 1999 Q1=100)

	EER-18						EER-41	
	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	93.5	89.4	68.4	86.9	120.5	94.3
2022	95.3	90.8	93.4	84.4	63.8	82.2	116.1	90.9
2023	98.1	94.0	98.0	.	.	.	121.8	94.7
2023 Q1	97.1	93.0	96.9	86.8	65.8	84.8	119.4	93.4
Q2	98.2	93.8	98.0	88.0	65.0	85.2	121.4	94.6
Q3	98.9	94.9	98.8	88.6	65.2	86.7	123.5	95.9
Q4	98.3	94.2	98.4	.	.	.	123.0	95.1
2023 July	99.2	95.0	98.9	-	-	-	123.7	96.2
Aug.	99.0	95.0	98.9	-	-	-	123.7	96.1
Sep.	98.5	94.6	98.5	-	-	-	123.0	95.5
Oct.	98.0	94.1	98.0	-	-	-	122.5	95.0
Nov.	98.7	94.6	98.8	-	-	-	123.4	95.3
Dec.	98.2	94.0	98.4	-	-	-	123.2	94.9
			Percentage change versus previous month					
2023 Dec.	-0.5	-0.7	-0.4	-	-	-	-0.2	-0.4
			Percentage change versus previous year					
2023 Dec.	1.5	1.5	2.7	-	-	-	3.9	2.2

Source: ECB.
1) For a definition of the trading partner groups and other information see the "Methodology" section of the ECB Data Portal.

4.9 Bilateral exchange rates
(period averages; units of national currency per euro)

	Chinese renminbi	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
2021	7.628	25.640	7.437	358.516	129.877	4.565	0.860	4.9215	10.146	1.081	1.183
2022	7.079	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 Q1	7.342	23.785	7.443	388.712	141.981	4.708	0.883	4.9202	11.203	0.992	1.073
Q2	7.644	23.585	7.450	372.604	149.723	4.537	0.869	4.9488	11.469	0.978	1.089
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
2023 July	7.948	23.892	7.451	379.035	155.937	4.443	0.859	4.9411	11.634	0.966	1.106
Aug.	7.910	24.108	7.452	385.047	157.962	4.460	0.859	4.9411	11.812	0.959	1.091
Sep.	7.797	24.380	7.457	386.429	157.795	4.598	0.862	4.9656	11.842	0.960	1.068
Oct.	7.720	24.584	7.460	385.333	158.038	4.512	0.868	4.9682	11.647	0.955	1.056
Nov.	7.809	24.485	7.458	379.195	161.844	4.402	0.870	4.9703	11.547	0.963	1.081
Dec.	7.787	24.478	7.456	381.803	157.213	4.334	0.862	4.9707	11.203	0.944	1.090
					Percentage change versus previous month						
2023 Dec.	-0.3	0.0	0.0	0.7	-2.9	-1.6	-1.0	0.0	-3.0	-2.0	0.9
					Percentage change versus previous year						
2023 Dec.	5.4	0.9	0.2	-6.3	10.1	-7.5	-0.9	1.0	2.0	-4.3	3.0

Source: ECB.

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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)												
2022 Q4	31,081.0	30,811.8	269.2	12,269.1	10,087.5	11,099.7	12,824.9	18.4	6,579.6	7,899.5	1,114.2	15,838.2
2023 Q1	31,597.9	31,462.3	135.6	12,277.8	10,022.2	11,332.6	13,396.9	-9.4	6,863.4	8,043.2	1,133.5	16,089.2
Q2	31,742.7	31,558.7	184.1	12,170.2	9,895.0	11,711.0	13,708.1	-34.9	6,790.7	7,955.6	1,105.7	16,057.7
Q3	31,882.7	31,556.1	326.7	12,247.4	9,999.7	11,762.3	13,707.3	-57.7	6,816.7	7,849.1	1,114.1	16,042.7
Outstanding amounts as a percentage of GDP												
2023 Q3	225.4	223.1	2.3	86.6	70.7	83.2	96.9	-0.4	48.2	55.5	7.9	113.4
Transactions												
2022 Q4	-514.9	-575.6	60.7	-250.0	-282.3	101.0	87.6	0.1	-375.2	-380.9	9.2	-
2023 Q1	405.4	366.0	39.4	50.5	16.5	63.3	159.7	15.3	295.0	189.8	-18.6	-
Q2	4.7	-45.1	49.8	-108.7	-116.7	205.7	138.0	-4.8	-89.4	-66.4	1.9	-
Q3	102.5	2.1	100.4	6.4	-4.1	86.5	112.5	-3.4	15.2	-106.3	-2.2	-
2023 June	24.7	-54.5	79.2	-8.3	-88.3	100.2	147.3	-10.7	-58.8	-113.5	2.4	-
July	136.7	103.8	32.9	0.5	26.8	52.5	5.1	-8.9	92.3	71.9	0.4	-
Aug.	99.0	77.6	21.5	16.5	4.6	32.7	44.9	3.3	45.3	28.1	1.3	-
Sep.	-133.3	-179.3	46.0	-10.5	-35.5	1.3	62.5	2.2	-122.4	-206.2	-3.9	-
Oct.	9.5	-12.7	22.2	-48.3	-64.8	-19.8	-6.8	17.1	56.7	58.9	3.7	-
Nov.	100.3	29.3	71.0	20.7	24.0	59.4	7.9	1.9	16.8	-2.6	1.5	-
12-month cumulated transactions												
2023 Nov.	58.1	-286.2	344.3	-341.3	-434.9	457.4	408.8	18.2	-67.3	-260.2	-8.9	-
12-month cumulated transactions as a percentage of GDP												
2023 Nov.	0.4	-2.0	2.4	-2.4	-3.1	3.2	2.9	0.1	-0.5	-1.8	-0.1	-

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

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				
	M1			M2-M1							
Currency in circulation	Overnight deposits		Deposits with an agreed maturity of up to 2 years	Deposits redeemable at notice of up to 3 months			Repos	Money market fund shares	Debt securities with a maturity of up to 2 years		
1	2	3	4	5	6	7	8	9	10	11	12
Outstanding amounts											
2020	1,364.0	8,905.5	10,269.5	1,028.8	2,448.9	3,477.7	13,747.1	102.2	624.5	9.4	736.1	14,483.2
2021	1,470.4	9,825.2	11,295.6	918.8	2,504.9	3,423.7	14,719.3	118.7	644.1	25.3	788.1	15,507.4
2022	1,539.5	9,763.4	11,302.9	1,382.1	2,563.9	3,946.0	15,248.9	124.2	646.1	49.5	819.8	16,068.7
2022 Q4	1,539.5	9,763.4	11,302.9	1,382.1	2,563.9	3,946.0	15,248.9	124.2	646.1	49.5	819.8	16,068.7
2023 Q1	1,542.2	9,456.4	10,998.5	1,633.7	2,548.0	4,181.7	15,180.2	102.6	676.7	91.5	870.7	16,050.9
Q2	1,535.3	9,178.3	10,713.6	1,865.1	2,517.8	4,382.9	15,096.5	114.4	695.9	83.8	894.2	15,990.7
Q3	1,535.6	8,985.4	10,521.1	2,085.9	2,465.8	4,551.6	15,072.7	131.0	714.4	75.7	921.2	15,993.9
2023 June	1,535.3	9,178.3	10,713.6	1,865.1	2,517.8	4,382.9	15,096.5	114.4	695.9	83.8	894.2	15,990.7
July	1,534.5	9,084.0	10,618.5	1,922.2	2,506.8	4,428.9	15,047.4	121.8	694.6	77.8	894.2	15,941.6
Aug.	1,534.0	9,008.9	10,542.9	1,993.8	2,485.1	4,478.9	15,021.9	122.0	699.5	84.3	905.8	15,927.7
Sep.	1,535.6	8,985.4	10,521.1	2,085.9	2,465.8	4,551.6	15,072.7	131.0	714.4	75.7	921.2	15,993.9
Oct.	1,536.0	8,868.5	10,404.5	2,168.9	2,453.3	4,622.2	15,026.7	144.3	711.8	90.1	946.1	15,972.9
Nov. (p)	1,534.0	8,840.0	10,374.0	2,231.5	2,447.0	4,678.5	15,052.5	161.4	719.6	74.0	955.0	16,007.5
Transactions											
2020	139.5	1,266.9	1,406.4	-33.3	85.9	52.6	1,459.0	19.8	110.1	2.2	132.0	1,591.1
2021	107.7	910.7	1,018.4	-121.0	65.7	-55.3	963.1	12.3	20.3	13.2	45.8	1,008.9
2022	69.2	-45.8	23.4	428.9	55.5	484.3	507.7	3.9	2.4	76.6	82.8	590.5
2022 Q4	1.9	-331.4	-329.5	205.9	10.1	216.0	-113.6	6.2	43.0	0.7	50.0	-63.6
2023 Q1	1.3	-346.4	-345.1	245.9	-10.8	235.1	-110.0	-22.1	30.4	43.7	52.1	-57.9
Q2	-6.9	-276.4	-283.3	226.7	-30.2	196.5	-86.9	11.9	19.2	-5.3	25.8	-61.1
Q3	0.3	-202.2	-202.0	224.0	-52.1	171.9	-30.1	16.0	18.2	-8.9	25.3	-4.7
2023 June	-1.7	-91.8	-93.5	94.3	-11.3	83.1	-10.4	2.4	5.8	-5.1	3.1	-7.3
July	-0.9	-91.3	-92.2	58.6	-11.0	47.6	-44.6	7.7	-1.4	-5.0	1.3	-43.3
Aug.	-0.4	-82.4	-82.9	75.9	-21.7	54.2	-28.7	-0.1	4.8	4.8	9.4	-19.2
Sep.	1.6	-28.5	-26.9	89.5	-19.4	70.1	43.2	8.5	14.8	-8.6	14.6	57.8
Oct.	0.4	-114.8	-114.4	83.5	-12.3	71.2	-43.2	13.3	-2.7	13.2	23.7	-19.4
Nov. (p)	-2.0	-22.0	-24.0	66.0	-6.2	59.8	35.9	17.8	7.7	-16.0	9.5	45.3
Growth rates											
2020	11.4	16.4	15.8	-3.1	3.6	1.5	11.8	24.5	21.2	-	21.7	12.3
2021	7.9	10.2	9.9	-11.7	2.7	-1.6	7.0	12.1	3.3	158.5	6.2	7.0
2022	4.7	-0.5	0.2	45.7	2.2	14.1	3.4	3.1	0.4	457.8	11.1	3.8
2022 Q4	4.7	-0.5	0.2	45.7	2.2	14.1	3.4	3.1	0.4	457.8	11.1	3.8
2023 Q1	1.4	-5.7	-4.7	69.2	1.3	20.0	1.0	-17.6	15.2	538.5	23.8	2.0
Q2	0.4	-9.3	-8.0	85.7	-0.3	24.0	-0.6	-2.4	14.4	325.9	22.4	0.5
Q3	-0.2	-11.4	-9.9	76.3	-3.3	21.9	-2.2	10.3	18.4	64.9	19.9	-1.2
2023 June	0.4	-9.3	-8.0	85.7	-0.3	24.0	-0.6	-2.4	14.4	325.9	22.4	0.5
July	0.1	-10.5	-9.1	85.2	-1.0	23.9	-1.4	-1.7	16.7	226.2	21.1	-0.4
Aug.	-0.2	-11.9	-10.4	85.9	-2.3	23.8	-2.4	-1.2	16.9	162.5	20.4	-1.3
Sep.	-0.2	-11.4	-9.9	76.3	-3.3	21.9	-2.2	10.3	18.4	64.9	19.9	-1.2
Oct.	-0.4	-11.5	-10.0	72.9	-3.9	21.4	-2.2	15.9	14.5	264.2	22.9	-1.0
Nov. (p)	-0.5	-10.9	-9.5	68.6	-4.1	20.8	-1.8	18.2	13.0	95.3	17.9	-0.9

Source: 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]					Financial corporations other than MFIs and ICPFs [2]	Insurance corporations and pension funds	Other general government [4]
	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			
	1	2	3	4	5	6	7	8	9	10	11	12	13
Outstanding amounts													
2020	2,966.2	2,513.8	308.9	140.0	3.5	7,664.8	4,965.6	438.4	2,260.0	0.9	1,118.3	237.4	498.6
2021	3,228.3	2,802.7	289.7	128.4	7.4	8,087.9	5,380.8	374.1	2,332.3	0.7	1,275.4	229.0	546.9
2022	3,360.4	2,721.5	497.6	134.9	6.4	8,373.7	5,536.8	444.9	2,391.1	0.9	1,302.0	236.9	560.6
2022 Q4	3,360.4	2,721.5	497.6	134.9	6.4	8,373.7	5,536.8	444.9	2,391.1	0.9	1,302.0	236.9	560.6
2023 Q1	3,332.6	2,595.7	595.6	132.6	8.6	8,377.5	5,433.2	566.2	2,377.1	0.9	1,227.4	230.5	572.6
Q2	3,333.1	2,502.4	687.7	132.0	11.0	8,364.2	5,311.8	701.6	2,349.9	0.8	1,185.3	229.1	564.0
Q3	3,322.6	2,438.8	737.1	131.9	14.8	8,351.4	5,205.9	847.5	2,297.1	0.8	1,216.1	212.6	565.3
2023 June	3,333.1	2,502.4	687.7	132.0	11.0	8,364.2	5,311.8	701.6	2,349.9	0.8	1,185.3	229.1	564.0
July	3,310.4	2,467.9	700.2	131.6	10.7	8,363.4	5,269.6	755.0	2,338.0	0.8	1,180.3	216.6	564.1
Aug.	3,314.9	2,452.4	719.7	132.1	10.8	8,360.0	5,238.0	804.5	2,316.7	0.8	1,157.2	217.5	560.3
Sep.	3,322.6	2,438.8	737.1	131.9	14.8	8,351.4	5,205.9	847.5	2,297.1	0.8	1,216.1	212.6	565.3
Oct.	3,326.2	2,413.7	768.3	131.4	12.9	8,345.9	5,149.9	909.0	2,286.3	0.7	1,205.7	210.4	546.7
Nov. (p)	3,328.7	2,408.1	772.2	132.0	16.4	8,363.4	5,114.8	969.0	2,278.8	0.8	1,226.1	223.4	538.5
Transactions													
2020	510.7	465.0	55.6	-6.9	-3.0	612.6	561.7	-53.7	104.6	0.0	159.6	20.9	35.5
2021	248.2	272.8	-21.3	-6.9	3.6	422.2	411.3	-65.0	76.1	-0.2	161.7	-10.4	46.0
2022	121.5	-89.4	206.5	5.9	-1.4	296.5	167.9	74.6	53.9	0.1	1.5	8.2	14.6
2022 Q4	8.6	-104.7	113.4	1.5	-1.7	30.7	-52.9	75.1	8.6	-0.1	-153.8	-6.2	11.6
2023 Q1	-37.0	-136.3	97.7	-0.6	2.3	-25.3	-132.2	115.9	-9.1	0.1	-74.2	-5.1	8.2
Q2	0.9	-91.8	90.9	-0.6	2.4	-13.2	-121.2	135.2	-27.1	-0.1	-43.2	-1.2	-11.3
Q3	-13.8	-65.7	48.3	-0.1	3.7	-14.9	-111.3	149.3	-52.9	0.0	30.6	-17.3	1.1
2023 June	17.7	-26.8	44.5	0.0	0.0	-4.2	-41.4	47.6	-10.4	-0.1	-26.5	1.9	4.8
July	-20.8	-33.3	13.0	-0.3	-0.2	-0.2	-41.9	53.7	-12.0	0.0	-2.8	-12.4	0.1
Aug.	2.9	-16.6	19.1	0.4	0.0	-4.9	-36.7	53.1	-21.3	0.0	-22.9	0.6	-4.0
Sep.	4.1	-15.8	16.2	-0.2	3.9	-9.8	-32.7	42.5	-19.7	0.0	56.2	-5.5	5.0
Oct.	5.4	-23.7	31.4	-0.4	-1.9	-5.3	-55.9	61.5	-10.8	-0.1	-9.7	-2.0	-18.6
Nov. (p)	6.8	-2.8	5.1	0.7	3.7	18.8	-34.4	60.5	-7.4	0.1	24.9	13.5	-8.2
Growth rates													
2020	20.6	22.5	21.6	-4.6	-45.1	8.7	12.8	-10.9	4.9	-5.4	15.9	9.6	7.7
2021	8.4	10.8	-6.9	-5.0	103.4	5.5	8.3	-14.8	3.4	-18.4	14.4	-4.3	9.3
2022	3.7	-3.2	70.1	4.6	-16.4	3.7	3.1	20.1	2.3	19.9	0.4	3.6	2.7
2022 Q4	3.7	-3.2	70.1	4.6	-16.4	3.7	3.1	20.1	2.3	19.9	0.4	3.6	2.7
2023 Q1	1.2	-9.4	105.8	3.1	-18.7	2.0	-1.3	56.8	1.4	-10.8	-8.4	0.3	3.2
Q2	0.7	-12.7	125.2	2.1	10.4	1.1	-4.4	97.1	-0.3	20.9	-14.2	0.5	-2.4
Q3	-1.2	-14.1	90.6	0.2	83.5	-0.3	-7.4	127.5	-3.4	-14.5	-16.4	-12.3	1.8
2023 June	0.7	-12.7	125.2	2.1	10.4	1.1	-4.4	97.1	-0.3	20.9	-14.2	0.5	-2.4
July	-0.6	-14.0	118.3	1.9	12.7	0.6	-5.7	111.8	-1.1	6.4	-15.3	-9.3	-1.8
Aug.	-2.3	-15.7	107.5	0.8	37.5	0.2	-6.7	124.2	-2.4	-1.0	-18.6	-7.5	-2.4
Sep.	-1.2	-14.1	90.6	0.2	83.5	-0.3	-7.4	127.5	-3.4	-14.5	-16.4	-12.3	1.8
Oct.	-2.0	-14.2	73.0	0.7	45.8	-0.5	-8.3	134.0	-4.0	-28.7	-10.7	-16.0	-2.9
Nov. (p)	-1.8	-12.9	59.1	1.1	102.5	-0.3	-8.5	131.9	-4.3	-18.6	-8.3	-9.1	-4.6

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) 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 corpor-ations [3)]	To house-holds [4)]	To financial corporations other than MFIs and ICPFs [3)]	To insurance corporations and pension funds		
						Adjusted loans [2)]						
	1	2	3	4	5	6	7	8	9	10	11	12
					Outstanding amounts							
2020	5,898.2	996.3	4,889.9	14,325.2	11,917.4	12,294.2	4,709.1	6,132.1	908.1	168.1	1,543.2	864.5
2021	6,531.5	994.3	5,535.3	14,805.8	12,340.5	12,722.7	4,864.8	6,372.6	941.9	161.1	1,577.2	888.1
2022	6,361.6	1,004.6	5,332.0	15,390.1	12,990.2	13,183.7	5,131.4	6,632.1	1,079.1	147.6	1,563.7	836.3
2022 Q4	6,361.6	1,004.6	5,332.0	15,390.1	12,990.2	13,183.7	5,131.4	6,632.1	1,079.1	147.6	1,563.7	836.3
2023 Q1	6,353.2	995.3	5,333.0	15,426.3	13,019.5	13,214.7	5,136.1	6,665.6	1,076.5	141.4	1,556.9	849.9
Q2	6,275.3	986.6	5,263.3	15,426.5	12,982.2	13,210.7	5,126.9	6,634.3	1,078.5	142.5	1,575.1	869.3
Q3	6,211.4	989.2	5,197.2	15,428.9	12,977.5	13,194.2	5,114.6	6,633.5	1,092.2	137.2	1,576.8	874.6
2023 June	6,275.3	986.6	5,263.3	15,426.5	12,982.2	13,210.7	5,126.9	6,634.3	1,078.5	142.5	1,575.1	869.3
July	6,239.5	984.3	5,229.8	15,438.4	12,988.8	13,215.7	5,125.2	6,628.6	1,099.6	135.4	1,573.3	876.4
Aug.	6,256.9	987.3	5,244.5	15,414.5	12,963.8	13,186.6	5,119.9	6,632.8	1,079.9	131.2	1,573.7	877.1
Sep.	6,211.4	989.2	5,197.2	15,428.9	12,977.5	13,194.2	5,114.6	6,633.5	1,092.2	137.2	1,576.8	874.6
Oct.	6,196.3	987.3	5,183.9	15,451.3	13,008.6	13,224.3	5,112.7	6,641.7	1,119.1	135.1	1,562.4	880.3
Nov. [(p)]	6,213.5	985.9	5,202.4	15,489.3	13,036.2	13,247.1	5,121.3	6,652.3	1,128.5	134.1	1,575.2	877.9
					Transactions							
2020	1,037.1	12.8	1,024.1	736.4	538.3	558.9	288.5	209.1	22.6	18.0	170.0	28.1
2021	663.0	-0.9	673.6	563.0	475.8	509.2	176.9	261.7	47.4	-10.1	78.0	9.2
2022	175.9	9.4	165.7	634.8	624.3	680.6	269.9	242.0	125.8	-13.4	16.9	-6.4
2022 Q4	31.1	3.0	27.5	20.1	-7.8	37.8	-6.5	26.8	-16.2	-11.8	15.7	12.1
2023 Q1	-72.9	-17.5	-55.3	2.5	3.7	7.7	-2.2	14.8	-3.0	-5.9	-9.7	8.5
Q2	-75.1	-8.6	-67.0	0.9	-32.0	-1.0	-5.2	-28.6	0.8	1.0	17.6	15.3
Q3	-19.1	1.6	-20.4	8.0	-0.2	-11.6	-8.5	1.6	12.1	-5.3	2.4	5.8
2023 June	10.8	-3.7	14.7	-8.3	-10.3	-13.1	-3.6	3.9	-11.9	1.3	-1.9	3.9
July	-34.9	-2.4	-32.6	15.0	11.0	8.5	0.7	-4.8	22.1	-7.0	-2.1	6.0
Aug.	14.9	2.4	12.9	-23.5	-24.1	-27.9	-3.9	4.2	-20.1	-4.3	0.3	0.3
Sep.	1.0	1.6	-0.6	16.5	12.9	7.8	-5.3	2.2	10.1	6.0	4.1	-0.5
Oct.	-16.6	0.8	-17.6	31.7	36.9	34.1	2.5	9.9	26.3	-1.8	-13.3	8.2
Nov. [(p)]	-25.9	-1.9	-24.0	38.3	36.3	30.6	12.6	12.3	12.3	-0.8	9.5	-7.5
					Growth rates							
2020	22.1	1.3	27.8	5.4	4.7	4.7	6.5	3.5	2.5	10.2	11.4	3.3
2021	11.3	-0.1	13.8	3.9	4.0	4.2	3.8	4.3	5.2	-4.6	5.2	1.0
2022	2.7	0.9	3.0	4.3	5.0	5.4	5.5	3.8	13.4	-7.9	1.1	-0.6
2022 Q4	2.7	0.9	3.0	4.3	5.0	5.4	5.5	3.8	13.4	-7.9	1.1	-0.6
2023 Q1	-0.1	-1.5	0.1	2.9	3.5	3.9	4.5	2.9	5.0	-9.7	-1.3	2.0
Q2	-2.5	-2.3	-2.5	1.5	1.4	2.0	2.5	1.1	0.6	-12.2	1.0	4.5
Q3	-2.1	-2.1	-2.2	0.2	-0.3	0.3	-0.4	0.2	-0.6	-13.9	1.7	5.0
2023 June	-2.5	-2.3	-2.5	1.5	1.4	2.0	2.5	1.1	0.6	-12.2	1.0	4.5
July	-2.8	-2.3	-3.0	1.3	1.1	1.7	1.7	0.7	3.2	-15.0	1.1	5.4
Aug.	-2.1	-2.1	-2.1	0.6	0.1	0.7	0.1	0.4	0.4	-13.9	1.7	5.2
Sep.	-2.1	-2.1	-2.2	0.2	-0.3	0.3	-0.4	0.2	-0.6	-13.9	1.7	5.0
Oct.	-2.6	-1.8	-2.7	0.4	0.0	0.4	-0.9	0.2	4.7	-14.2	1.3	5.0
Nov. [(p)]	-3.0	-1.7	-3.3	0.4	0.1	0.4	-0.4	0.2	3.4	-10.5	0.9	3.9

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
		Adjusted loans [4]					Adjusted loans [4]			
	1	2	3	4	5	6	7	8	9	10
Outstanding amounts										
2020	4,709.1	4,830.6	897.6	1,008.9	2,802.6	6,132.1	6,401.8	700.5	4,724.9	706.7
2021	4,864.8	4,995.8	889.0	1,005.2	2,970.7	6,372.6	6,637.3	698.3	4,970.8	703.5
2022	5,131.4	5,139.0	967.2	1,078.9	3,085.3	6,632.1	6,831.4	717.2	5,214.6	700.3
2022 Q4	5,131.4	5,139.0	967.2	1,078.9	3,085.3	6,632.1	6,831.4	717.2	5,214.6	700.3
2023 Q1	5,136.1	5,150.3	940.7	1,092.7	3,102.6	6,665.6	6,870.6	723.6	5,236.1	706.0
Q2	5,126.9	5,147.0	924.2	1,088.2	3,114.5	6,634.3	6,868.1	726.0	5,207.9	700.4
Q3	5,114.6	5,124.5	902.8	1,085.3	3,126.5	6,633.5	6,863.0	731.6	5,210.5	691.4
2023 June	5,126.9	5,147.0	924.2	1,088.2	3,114.5	6,634.3	6,868.1	726.0	5,207.9	700.4
July	5,125.2	5,144.4	919.8	1,088.6	3,116.8	6,628.6	6,863.4	727.4	5,205.0	696.2
Aug.	5,119.9	5,124.1	902.0	1,085.1	3,132.8	6,632.8	6,863.9	729.8	5,209.0	694.0
Sep.	5,114.6	5,124.5	902.8	1,085.3	3,126.5	6,633.5	6,863.0	731.6	5,210.5	691.4
Oct.	5,112.7	5,121.0	897.3	1,087.7	3,127.7	6,641.7	6,862.1	731.0	5,222.8	688.0
Nov. (p)	5,121.3	5,136.8	904.8	1,088.0	3,128.6	6,652.3	6,866.8	731.6	5,231.5	689.1
Transactions										
2020	288.5	325.6	-53.8	138.4	203.9	209.1	193.4	-11.7	210.7	10.2
2021	176.9	208.8	-1.6	2.3	176.1	261.7	266.8	10.7	255.0	-3.9
2022	269.9	309.7	78.6	77.7	113.6	242.0	249.5	22.6	218.5	1.0
2022 Q4	-6.5	22.8	-28.7	18.6	3.6	26.8	35.6	4.9	22.5	-0.7
2023 Q1	-2.2	5.7	-24.1	11.1	10.9	14.8	22.0	4.6	15.0	-4.7
Q2	-5.2	-1.2	-15.1	-2.9	12.8	-28.6	-0.6	3.9	-27.6	-4.9
Q3	-8.5	-18.8	-21.8	-3.3	16.6	1.6	-2.2	7.6	2.7	-8.8
2023 June	-3.6	-2.3	-0.5	-6.6	3.4	3.9	-1.5	0.5	4.1	-0.7
July	0.7	-0.9	-3.1	0.6	3.2	-4.8	-3.7	2.3	-2.9	-4.2
Aug.	-3.9	-18.7	-18.9	-3.2	18.3	4.2	0.6	2.7	3.9	-2.3
Sep.	-5.3	0.8	0.1	-0.6	-4.9	2.2	1.0	2.6	1.8	-2.2
Oct.	2.5	-0.3	-4.2	3.2	3.5	9.9	0.3	0.2	12.4	-2.7
Nov. (p)	12.6	19.6	10.4	0.2	2.0	12.3	5.9	1.1	9.3	1.9
Growth rates										
2020	6.5	7.1	-5.6	15.9	7.8	3.5	3.1	-1.6	4.7	1.5
2021	3.8	4.3	-0.2	0.2	6.3	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	3.2	4.4	0.1
2022 Q4	5.5	6.4	8.8	7.7	3.8	3.8	3.8	3.2	4.4	0.1
2023 Q1	4.5	5.3	4.0	9.1	3.1	2.9	2.9	3.1	3.3	-0.8
Q2	2.5	3.1	-1.9	6.3	2.5	1.1	1.7	2.5	1.3	-1.7
Q3	-0.4	0.2	-9.0	2.2	1.4	0.2	0.8	2.9	0.2	-2.7
2023 June	2.5	3.1	-1.9	6.3	2.5	1.1	1.7	2.5	1.3	-1.7
July	1.7	2.2	-3.1	5.1	2.0	0.7	1.3	2.6	0.8	-2.1
Aug.	0.1	0.7	-7.8	2.6	1.8	0.4	1.0	3.0	0.5	-2.5
Sep.	-0.4	0.2	-9.0	2.2	1.4	0.2	0.8	2.9	0.2	-2.7
Oct.	-0.9	-0.3	-9.6	1.5	1.1	0.2	0.6	2.8	0.3	-3.1
Nov. (p)	-0.4	0.0	-7.6	1.6	1.2	0.2	0.5	2.6	0.3	-2.9

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			
	Central government holdings [2]	Longer-term financial liabilities vis-à-vis other euro area residents					Net external assets	Other		
		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		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										
2020	711.2	6,952.7	1,915.1	42.1	1,988.5	3,006.9	1,441.7	482.0	136.7	141.1
2021	736.9	6,881.5	1,838.9	37.1	1,994.5	3,010.9	1,377.6	411.1	128.5	136.8
2022	649.3	6,746.9	1,782.6	45.9	2,116.1	2,802.4	1,333.4	379.7	137.8	147.6
2022 Q4	649.3	6,746.9	1,782.6	45.9	2,116.1	2,802.4	1,333.4	379.7	137.8	147.6
2023 Q1	574.1	6,915.1	1,791.9	55.5	2,171.6	2,896.2	1,426.2	334.4	152.1	165.8
Q2	485.8	6,985.6	1,806.8	61.4	2,231.2	2,886.2	1,465.2	295.1	168.6	172.6
Q3	456.3	7,137.8	1,825.0	72.9	2,361.9	2,878.0	1,635.2	312.4	153.8	163.3
2023 June	485.8	6,985.6	1,806.8	61.4	2,231.2	2,886.2	1,465.2	295.1	168.6	172.6
July	464.6	7,096.6	1,807.0	64.5	2,319.6	2,905.5	1,547.9	277.0	153.8	156.4
Aug.	439.8	7,138.3	1,807.1	68.0	2,340.6	2,922.5	1,580.4	253.9	165.9	161.8
Sep.	456.3	7,137.8	1,825.0	72.9	2,361.9	2,878.0	1,635.2	312.4	153.8	163.3
Oct.	440.3	7,220.0	1,819.7	77.6	2,410.7	2,912.0	1,738.3	247.1	163.1	151.4
Nov. (p)	407.8	7,257.8	1,811.2	83.7	2,426.4	2,936.5	1,777.6	192.6	170.4	162.0
Transactions										
2020	288.3	-36.9	-14.8	-8.0	-101.4	87.3	-66.8	135.9	-43.6	-47.5
2021	26.3	-38.6	-74.9	-5.0	-40.0	81.4	-111.2	-118.2	-8.3	-4.3
2022	-84.5	37.7	-89.7	-4.4	14.8	117.0	-70.5	-196.4	10.5	17.9
2022 Q4	2.2	57.9	-12.4	1.1	50.5	18.7	49.2	-103.9	-10.2	1.0
2023 Q1	-81.9	89.3	5.9	5.0	67.3	11.2	63.7	-43.8	15.0	18.9
Q2	-88.1	95.1	13.9	6.1	60.1	15.0	93.0	-72.9	16.5	6.7
Q3	-29.7	90.5	17.3	11.4	38.5	23.4	128.1	-60.8	-13.0	-6.0
2023 June	-13.0	31.2	2.9	2.6	24.4	1.3	37.9	-29.4	-5.4	-11.5
July	-21.2	29.2	0.8	3.0	16.1	9.3	42.1	-57.5	-14.8	-16.2
Aug.	-24.8	27.1	0.1	3.5	15.6	7.9	28.1	-36.4	12.1	5.4
Sep.	16.3	34.2	16.3	4.9	6.8	6.3	57.9	33.1	-10.3	4.8
Oct.	-16.1	34.5	-4.4	4.7	26.1	8.0	61.5	-77.6	9.3	-12.0
Nov. (p)	-32.5	31.9	-7.1	6.1	32.4	0.6	54.9	-22.6	7.3	10.7
Growth rates										
2020	82.2	-0.5	-0.8	-15.9	-4.7	3.0	-	-	-24.2	-25.2
2021	3.7	-0.6	-3.9	-11.9	-2.0	2.7	-	-	-6.0	-3.0
2022	-11.5	0.6	-4.8	-13.0	0.6	4.1	-	-	7.9	12.7
2022 Q4	-11.5	0.6	-4.8	-13.0	0.6	4.1	-	-	7.9	12.7
2023 Q1	-22.6	2.4	-3.4	-0.5	4.9	4.0	-	-	-4.2	1.3
Q2	-37.6	3.5	-2.2	25.0	8.7	3.0	-	-	1.7	10.2
Q3	-30.3	4.9	1.4	48.7	10.4	2.4	-	-	5.7	14.1
2023 June	-37.6	3.5	-2.2	25.0	8.7	3.0	-	-	1.7	10.2
July	-38.9	4.0	-1.5	32.5	9.7	2.7	-	-	-10.9	-1.6
Aug.	-34.9	4.5	-0.4	37.0	10.1	2.9	-	-	5.9	11.5
Sep.	-30.3	4.9	1.4	48.7	10.4	2.4	-	-	5.7	14.1
Oct.	-34.5	5.6	1.7	57.7	11.1	3.0	-	-	14.9	-0.6
Nov. (p)	-40.3	5.5	1.2	68.3	11.1	2.9	-	-	7.5	-2.7

Source: 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: Primary deficit (-)/ surplus (+)
	Total	Central government	State government	Local government	Social security funds	
	1	2	3	4	5	6
2019	-0.6	-1.0	0.1	0.1	0.3	1.0
2020	-7.1	-5.8	-0.4	0.0	-0.9	-5.5
2021	-5.2	-5.2	0.0	0.1	0.0	-3.8
2022	-3.6	-3.9	0.0	0.0	0.3	-1.9
2022 Q4	-3.6	.	.	.	.	-1.9
2023 Q1	-3.7	.	.	.	.	-2.0
Q2	-3.8	.	.	.	.	-2.1
Q3	-3.5	.	.	.	.	-1.7

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

6.2 Revenue and expenditure
(as a percentage of GDP; flows during one-year period)

		Revenue						Expenditure				
	Total	Current revenue				Capital revenue	Total	Current expenditure				Capital expenditure
			Direct taxes	Indirect taxes	Net social contributions				Compensation of employees	Intermediate consumption	Interest	Social benefits	
	1	2	3	4	5	6	7	8	9	10	11	12	13
2019	46.3	45.8	12.9	13.1	15.0	0.5	46.9	43.2	9.9	5.4	1.6	22.4	3.8
2020	46.4	45.9	12.9	12.7	15.5	0.5	53.5	48.9	10.6	5.9	1.5	25.3	4.6
2021	47.0	46.2	13.2	13.1	15.1	0.8	52.2	47.2	10.2	5.9	1.5	23.9	5.0
2022	46.9	46.1	13.5	12.9	14.8	0.8	50.5	45.4	9.9	5.9	1.7	22.8	5.1
2022 Q4	46.9	46.1	13.5	12.9	14.8	0.8	50.5	45.4	9.9	5.9	1.7	22.8	5.1
2023 Q1	46.6	45.8	13.4	12.8	14.8	0.8	50.3	45.2	9.8	5.8	1.7	22.7	5.1
Q2	46.4	45.6	13.4	12.7	14.8	0.8	50.2	45.1	9.8	5.8	1.7	22.7	5.1
Q3	46.4	45.6	13.4	12.6	14.8	0.8	49.8	44.8	9.8	5.8	1.7	22.6	5.0

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 deposits	Loans	Debt securities	Resident creditors		Non-resident creditors	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 currencies
						MFIs								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2019	84.1	3.0	13.2	67.8	45.8	30.8	38.3	7.7	76.3	15.6	27.9	40.6	82.7	1.3
2020	97.2	3.2	14.5	79.5	54.6	39.1	42.5	11.1	86.0	18.9	30.9	47.3	95.5	1.7
2021	94.7	3.0	13.8	77.9	55.2	41.3	39.5	9.8	84.9	17.5	30.1	47.1	93.3	1.4
2022	90.9	2.7	13.2	75.0	53.4	40.2	37.5	8.8	82.1	16.3	28.9	45.7	90.0	0.9
2022 Q4	90.9	2.7	13.2	75.0	.	.	.	.	.	.	.	.	.	.
2023 Q1	90.7	2.5	12.8	75.3	.	.	.	.	.	.	.	.	.	.
Q2	90.3	2.5	12.5	75.3	.	.	.	.	.	.	.	.	.	.
Q3	89.9	2.5	12.2	75.1	.	.	.	.	.	.	.	.	.	.

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
2019	-2.0	-1.0	0.1	0.2	0.1	0.0	0.0	0.2	-0.1	0.0	-1.2	0.9
2020	13.1	5.5	2.2	2.5	2.0	0.4	-0.1	0.1	-0.3	0.0	5.3	9.6
2021	-2.4	3.8	-0.2	0.6	0.4	0.1	0.0	0.1	-0.1	-0.7	-6.0	5.1
2022	-3.8	1.9	-0.3	-0.2	-0.7	0.2	0.1	0.2	0.6	-0.6	-5.4	2.7
2022 Q4	-3.8	1.9	-0.3	-0.2	-0.7	0.2	0.1	0.2	0.6	-0.6	-5.4	2.7
2023 Q1	-3.8	2.0	-0.7	-0.7	-1.1	0.1	0.1	0.1	0.7	-0.7	-5.1	2.3
Q2	-3.2	2.1	-0.7	-1.0	-1.4	0.1	0.2	0.1	0.7	-0.4	-4.5	2.4
Q3	-2.3	1.7	0.0	-0.5	-0.7	-0.2	0.2	0.1	0.6	-0.1	-4.1	2.8

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	
			Maturities of up to 3 months		Maturities of up to 3 months		Total	Floating rate	Zero coupon	Fixed rate		Issuance	Redemption
											Maturities of up to 1 year		
	1	2	3	4	5	6	7	8	9	10	11	12	13
2020	14.9	13.5	4.2	1.4	0.4	7.6	2.0	1.2	-0.1	2.2	2.1	0.0	0.8
2021	14.0	12.7	4.2	1.3	0.3	7.9	1.6	1.1	-0.4	1.9	1.9	-0.1	0.5
2022	13.2	11.9	4.2	1.3	0.3	8.0	1.6	1.2	0.4	1.8	1.9	1.1	0.5
2022 Q3	13.0	11.7	3.7	1.3	0.3	8.1	1.6	1.1	0.0	1.9	1.9	0.6	0.4
Q4	13.2	11.9	4.2	1.3	0.3	8.0	1.6	1.2	0.4	1.8	1.9	1.1	0.5
2023 Q1	13.5	12.3	4.2	1.2	0.3	8.1	1.8	1.3	1.0	1.9	2.0	2.1	0.7
Q2	13.6	12.3	3.6	1.3	0.3	8.1	1.9	1.4	1.5	1.9	2.0	2.8	1.1
2023 July	13.6	12.3	4.0	1.3	0.3	8.1	1.9	1.3	1.5	2.0	1.9	3.0	1.2
Aug.	13.5	12.2	4.0	1.3	0.3	8.1	1.9	1.4	1.7	2.0	1.9	3.2	1.4
Sep.	13.8	12.4	3.8	1.3	0.3	8.1	1.9	1.2	1.8	2.0	1.7	3.4	1.5
Oct.	13.4	12.0	3.5	1.4	0.3	8.2	2.0	1.2	1.9	2.0	1.7	3.5	1.7
Nov.	13.6	12.3	3.8	1.4	0.4	8.2	2.0	1.2	2.0	2.0	1.7	3.6	1.8
Dec.	13.8	12.5	4.4	1.4	0.3	8.1	2.0	1.2	2.1	2.0	1.7	3.6	1.9

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 (+)										
2019	-2.0	1.5	0.1	0.5	0.9	-3.1	-3.1	0.2	-1.5	0.9
2020	-8.9	-4.3	-5.4	-5.0	-9.7	-10.1	-9.0	-7.3	-9.6	-5.7
2021	-5.4	-3.6	-2.5	-1.5	-7.0	-6.7	-6.5	-2.5	-8.8	-1.9
2022	-3.5	-2.5	-1.0	1.7	-2.4	-4.7	-4.8	0.1	-8.0	2.4
2022 Q4	-3.5	-2.5	-1.0	1.7	-2.4	-4.7	-4.8	0.1	-8.0	2.4
2023 Q1	-3.9	-3.0	-1.3	2.0	-2.5	-4.4	-4.6	-0.2	-8.1	3.0
Q2	-4.0	-3.1	-1.7	2.2	-2.4	-4.6	-4.9	-0.4	-7.9	3.4
Q3	-4.1	-2.7	-2.2	1.9	-1.2	-4.4	-4.8	0.3	-6.8	3.2
Government debt										
2019	97.6	59.6	8.5	57.1	180.6	98.2	97.4	70.9	134.2	93.0
2020	111.8	68.8	18.6	58.1	207.0	120.3	114.6	86.8	154.9	114.9
2021	108.0	69.0	17.8	54.4	195.0	116.8	112.9	78.1	147.1	99.3
2022	104.3	66.1	18.5	44.4	172.6	111.6	111.8	68.2	141.7	85.6
2022 Q4	104.3	66.1	18.5	44.4	172.6	111.6	111.8	68.2	141.7	85.6
2023 Q1	106.4	65.7	17.2	43.6	169.3	111.2	112.3	69.1	140.9	83.1
Q2	105.9	64.7	18.5	43.2	167.1	111.2	111.8	66.5	142.5	85.1
Q3	108.0	64.8	18.2	43.6	165.5	109.8	111.9	64.4	140.6	79.4

	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Austria	Portugal	Slovenia	Slovakia	Finland
	11	12	13	14	15	16	17	18	19	20
Government deficit (-)/surplus (+)										
2019	-0.5	0.5	2.2	0.5	1.8	0.6	0.1	0.7	-1.2	-0.9
2020	-4.5	-6.5	-3.4	-9.6	-3.7	-8.0	-5.8	-7.6	-5.4	-5.6
2021	-7.2	-1.1	0.6	-7.5	-2.2	-5.8	-2.9	-4.6	-5.2	-2.8
2022	-4.6	-0.7	-0.3	-5.7	-0.1	-3.5	-0.3	-3.0	-2.0	-0.8
2022 Q4	-4.6	-0.7	-0.3	-5.6	-0.1	-3.5	-0.3	-3.0	-2.0	-0.5
2023 Q1	-4.4	-1.2	-0.6	-4.8	-0.1	-3.3	0.1	-3.2	-2.6	-0.4
Q2	-3.0	-1.2	-0.7	-4.2	-0.2	-3.6	0.0	-3.2	-3.4	-1.1
Q3	-3.3	-1.1	-0.4	-3.4	0.1	-3.5	0.5	-3.5	-4.7	-1.5
Government debt										
2019	36.7	35.8	22.4	40.0	48.6	70.6	116.6	65.4	48.0	64.9
2020	42.2	46.2	24.6	52.2	54.7	83.0	134.9	79.6	58.9	74.7
2021	44.0	43.4	24.5	54.0	51.7	82.5	124.5	74.4	61.1	72.5
2022	41.0	38.1	24.7	52.3	50.1	78.4	112.4	72.3	57.8	73.3
2022 Q4	41.0	38.1	24.7	51.6	50.1	78.4	112.4	72.3	57.8	73.3
2023 Q1	43.0	38.1	28.3	51.5	48.3	80.2	112.3	72.0	58.0	73.3
Q2	39.5	38.1	28.2	49.6	46.9	78.5	110.0	70.4	59.6	74.5
Q3	41.4	37.4	25.7	49.3	45.9	78.2	107.5	71.4	58.6	73.8

Source: Eurostat.