EUROPEAN CENTRAL BANK

EUROSYSTEM

Economic Bulletin

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Contents

Economic, financial and monetary developments

Summary

At its meeting on 24 July 2025, the Governing Council decided to keep the three key ECB interest rates unchanged. Inflation is currently at the 2% medium-term target. The incoming information is broadly in line with the Governing Council's previous assessment of the inflation outlook. Domestic price pressures have continued to ease, with wages growing more slowly. Partly reflecting the Governing Council's past interest rate cuts, the economy has so far proven resilient overall in a challenging global environment. At the same time, the environment remains exceptionally uncertain, especially because of trade disputes.

The Governing Council is determined to ensure that inflation stabilises at its 2% target in the medium term. It will follow a data-dependent and meeting-by-meeting approach to determining the appropriate monetary policy stance. In particular, the Governing Council's interest rate decisions will be based on its assessment of the inflation outlook and the risks surrounding it, in light of the incoming economic and financial data, as well as the dynamics of underlying inflation and the strength of monetary policy transmission. The Governing Council is not pre-committing to a particular rate path.

Economic activity

In the first quarter of 2025 the economy grew more strongly than expected. This was partly because firms frontloaded exports ahead of expected tariff hikes. But growth was also bolstered by stronger private consumption and investment.

Recent surveys point to an overall modest expansion in both the manufacturing and services sectors. At the same time, higher actual and expected tariffs, the stronger euro and persistent geopolitical uncertainty are making firms more hesitant to invest.

The robust labour market, rising real incomes and solid private sector balance sheets continue to support consumption. Unemployment stood at 6.3% in May, close to its lowest level since the introduction of the euro. Easier financing conditions are underpinning domestic demand, including in the housing market. Over time, higher public investment in defence and infrastructure should also support growth.

More than ever, the Governing Council considers it crucial to urgently strengthen the euro area and its economy in the present geopolitical environment. Fiscal and structural policies should make the economy more productive, competitive and resilient. Governments should prioritise growth-enhancing structural reforms and strategic investment, while ensuring sustainable public finances. It is important to complete the savings and investments union and the banking union, following a clear

and ambitious timetable, and to rapidly establish the legislative framework for the potential introduction of a digital euro. The Governing Council welcomes the Eurogroup's commitment to improve the effectiveness, quality and composition of public spending and supports the efforts by European authorities to preserve the mutual benefits of global trade.

Inflation

Annual inflation stood at 2.0% in June 2025, after 1.9% in May. Energy prices went up in June but are still lower than in 2024. Food price inflation eased slightly to 3.1%. Goods inflation edged down to 0.5% in June, whereas services inflation ticked up to 3.3%, from 3.2% in May.

Indicators of underlying inflation are overall consistent with the Governing Council's 2% medium-term target. Labour costs have continued to moderate. Year-on-year growth in compensation per employee slowed to 3.8% in the first quarter of 2025, down from 4.1% in the fourth quarter of 2024. Combined with stronger productivity growth, this led to slower growth in unit labour costs. Forward-looking indicators, including the ECB's wage tracker and surveys on wage expectations of firms, consumers and professional forecasters, point to a further decline in wage growth.

Short-term consumer inflation expectations declined in both May and June, reversing the uptick observed in previous months. Most measures of longer-term inflation expectations continue to stand at around 2%, supporting the stabilisation of inflation around the Governing Council's target.

Risk assessment

Risks to economic growth remain tilted to the downside. Among the main risks are a further escalation in global trade tensions and associated uncertainties, which could dampen exports and drag down investment and consumption. A deterioration in financial market sentiment could lead to tighter financing conditions and greater risk aversion, and make firms and households less willing to invest and consume. Geopolitical tensions, such as Russia's unjustified war against Ukraine and the tragic conflict in the Middle East, remain a major source of uncertainty. By contrast, if trade and geopolitical tensions were resolved swiftly, this could lift sentiment and spur activity. Higher defence and infrastructure spending, together with productivity-enhancing reforms, would add to growth. An improvement in business confidence would also stimulate private investment.

The outlook for inflation is more uncertain than usual, as a result of the volatile global trade policy environment. A stronger euro could bring inflation down further than expected. Moreover, inflation could turn out to be lower if higher tariffs lead to lower demand for euro area exports and induce countries with overcapacity to reroute their exports to the euro area. Trade tensions could lead to greater volatility and risk aversion in financial markets, which would weigh on domestic demand and would

thereby also lower inflation. By contrast, inflation could turn out to be higher if a fragmentation of global supply chains pushed up import prices and added to capacity constraints in the domestic economy. A boost in defence and infrastructure spending could also raise inflation over the medium term. Extreme weather events, and the unfolding climate crisis more broadly, could drive up food prices by more than expected.

Financial and monetary conditions

Market interest rates have increased since the Governing Council's monetary policy meeting in June 2025, especially at longer maturities. At the same time, the Governing Council's past interest rate cuts continue to make corporate borrowing less expensive. The average interest rate on new loans to firms declined to 3.7% in May, from 3.8% in April. The cost of issuing market-based debt also came down, falling to 3.6% in May. While the growth rate of loans to firms moderated to 2.5% in May, corporate bond issuance was stronger, growing at a rate of 3.4% in annual terms.

Credit standards for business loans were broadly unchanged in the second quarter of 2025, as reported in the July 2025 bank lending survey for the euro area. While banks' concerns about the economic risks faced by their customers had a tightening impact on credit standards, this was broadly offset by stronger competition among lenders. Meanwhile, firms' demand for credit increased slightly, benefiting from lower interest rates, but they remained cautious because of global uncertainty and trade tensions.

The average interest rate on new mortgages has barely changed since the start of 2025 and stood at 3.3% in May. Growth in mortgage lending edged up to 2.0% in May, in the context of a strong increase in demand, while credit standards tightened slightly in the second quarter.

Monetary policy decisions

The interest rates on the deposit facility, the main refinancing operations and the marginal lending facility remain unchanged at 2.00%, 2.15% and 2.40% respectively.

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

Conclusion

At its meeting on 24 July 2025, the Governing Council decided to keep the three key ECB interest rates unchanged. The Governing Council is determined to ensure that inflation stabilises at its 2% target in the medium term. It will follow a data-dependent and meeting-by-meeting approach to determining the appropriate monetary policy stance. The Governing Council's interest rate decisions will be based on its assessment of the inflation outlook and the risks surrounding it, in light of the incoming

economic and financial data, as well as the dynamics of underlying inflation and the strength of monetary policy transmission. The Governing Council is not pre-committing to a particular rate path.

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

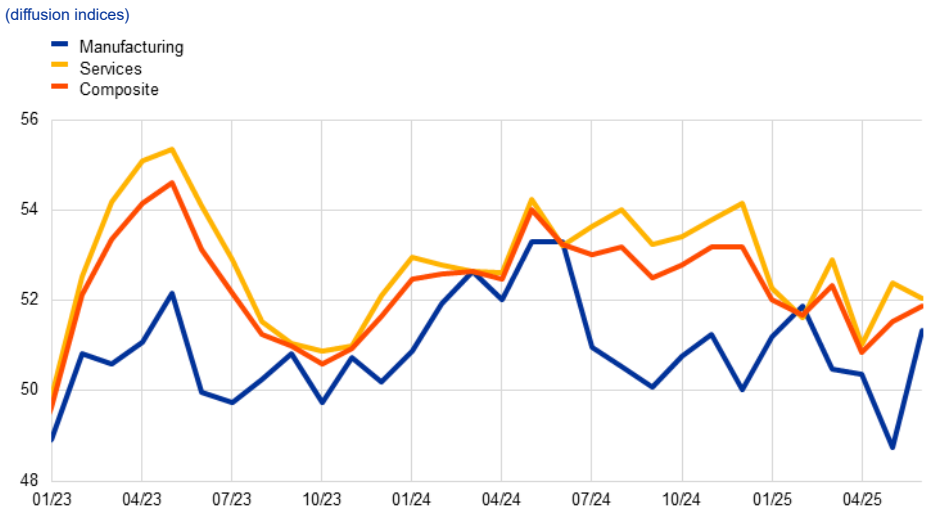
1 External environment

Uncertainty about trade policy remains high. In follow-up talks to the trade truce between the United States and China, the two sides agreed on a framework for China to speed up rare earth export licences and for the United States to ease certain export and visa restrictions. The truce is set to expire on 12 August. Amid limited progress in other ongoing trade negotiations, the United States extended the tariff pause from 9 July to 1 August. While the new US-EU framework agreement represents some progress, some uncertainty persists. The current policy environment therefore poses significant risks to the outlook, weighing on global trade and activity.

Global growth is expected to remain subdued despite a temporary boost from the tariff pause. Global GDP growth slowed to 0.7% quarter-on-quarter in the first quarter of 2025, down from 1.1% at the end of 2024. Available high-frequency indicators suggest modest growth in the coming quarters. The global composite Purchasing Managers' Index (PMI) (excluding the euro area) edged up in June (Chart 1), but the average for the second quarter (51.4) stands below that for the first quarter (52.0). Global PMI manufacturing output declined overall in the second quarter, although it climbed back to its historical average in June (to 51.3 in June from 48.8 in May). This rebound was driven mostly by the United States, where there was an increase in stocks of finished goods following the frontloading of imports observed earlier in the year. The spike in manufacturing activity may not be sustained, as it most likely reflects a precautionary inventory build-up and not necessarily genuine growth in final demand. The global services PMI also edged down in June, although it remains above the level of the manufacturing PMI.

Chart 1

Global output PMI (excluding the euro area)



Sources: S&P Global Market Intelligence and ECB staff calculations.
Note: The latest observations are for June 2025.

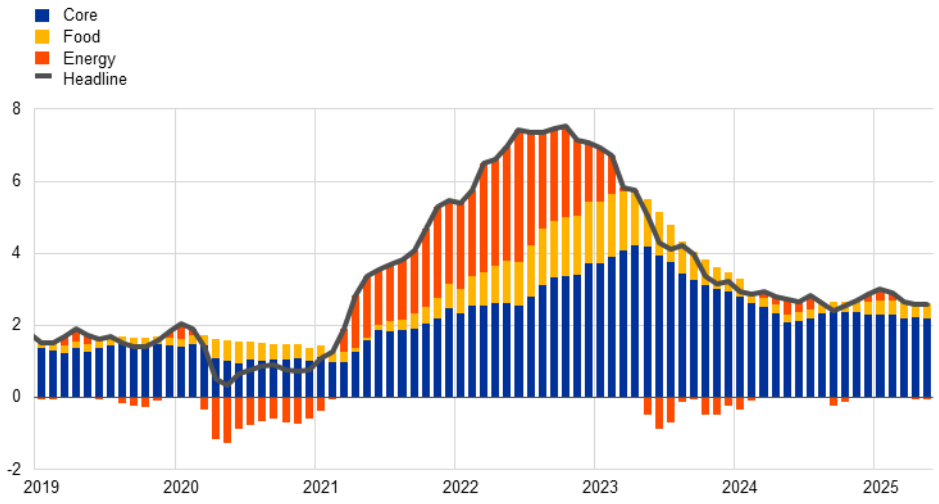
Global trade dynamics are expected to remain volatile in the near term amid pervasive policy uncertainty. Global imports (excluding the euro area) grew by 2.2% quarter-on-quarter in the first quarter, supported by substantial frontloading of imports

in the United States ahead of higher tariffs. Incoming data confirm expectations of a decline in global imports in the second quarter, partly compensating for the surge observed earlier in the year. While higher US tariffs have the potential to reshape global trade flows and pose challenges for logistics, broad-based global supply chain pressures are currently contained. Nevertheless, some signs of strain are emerging at the sectoral level, for instance as regards aluminium, steel and textiles. These are, however, much more muted than during the post-COVID-19 environment. Trade policy uncertainty remains elevated and is expected to continue weighing on the outlook.

Headline inflation across members of the Organisation for Economic Co-operation and Development (OECD) continued to decline gradually. In May 2025 the annual rate of consumer price index (CPI) inflation across OECD member countries continued to decline gradually (to 4% from 4.2% in April); excluding Türkiye, it remained broadly unchanged at 2.6% (Chart 2). This was mainly driven by lower energy prices and a downtick in core inflation to 3% (from 3.1% in the previous month), while food price inflation increased slightly. The impact of higher tariffs is not visible in global headline inflation figures yet, but PMI surveys on input and output prices are signalling a slight acceleration over the near term in advanced economies, mostly driven by developments in the United States.

Chart 2
OECD CPI inflation

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



Sources: OECD and ECB staff calculations.
Notes: The OECD aggregate excludes Türkiye and is calculated using OECD CPI annual weights. The latest observations are for May 2025.

Energy prices experienced strong volatility over the review period due to tensions in the Middle East. Oil prices rose 6% overall, but this increase was marked by sharp swings as prices spiked following Israeli and US strikes on Iran and subsequently declined when Iran's retaliatory attack on a US base was perceived as largely symbolic. However, despite the rise in geopolitical tensions, the initial increase in oil prices appeared relatively subdued overall, with prices remaining below USD 80 per barrel. Two main factors likely explain this muted market reaction. First, investors

seemed to assign a low probability to a blockade of the Strait of Hormuz, as such a move would be seen as self-defeating for Iran. Second, the global oil market remains well supplied, particularly following recent surprise OPEC+ production increases. With the cartel increasing supply for four consecutive months, there is a strong likelihood that OPEC+ will continue unwinding production cuts, putting downward pressure on oil prices. European gas prices also experienced a short-lived surge in line with Middle East tensions. Overall, however, they fell below initial levels and decreased by 7% over the review period, reflecting weaker Chinese liquified natural gas (LNG) imports amid strong Russian pipeline deliveries and subdued domestic demand. Food prices declined by 12%, mainly due to a drop in coffee prices as favourable weather in Brazil boosted supply expectations, while metal prices increased by 1% and experienced strong volatility from copper prices owing to frontloading demand from the United States in the face of tariffs.

US economic activity is expected to rebound in the short term before weakening later in the year. US real GDP is expected to rebound in the second quarter, after declining slightly in the first (by 0.1% quarter-on-quarter). Latest developments across main GDP components confirm this picture. For the second half of the year, growth rates are expected to remain rather low, but this is conditional on the ultimate level of tariffs. Meanwhile, the US labour market is showing signs of moderation but remains solid.

US CPI headline and core inflation increased in May, starting to show some signs of the impact of tariffs. US personal consumption expenditure (PCE) headline inflation increased to 2.3% in May (up 0.1 percentage points compared with April), while core PCE inflation reached 2.6% (up 0.1 percentage points). Latest developments in PCE inflation point to a lower effect of tariffs than previously anticipated, which may be partly related to a more delayed impact. The budget bill signed by President Trump, extending the tax cuts from his first term, is expected to exacerbate the federal budget deficit (available estimates suggest an increase in the deficit of 0.9 percentage points of GDP on average over the next ten years). As expected, the Federal Open Market Committee kept the target range for the federal funds rate unchanged at 4.25-4.5%, while the new projections anticipate higher inflation and lower growth.

China's activity is showing renewed momentum following the US-China trade deal, but fading fiscal support is likely to slow growth later this year. China's growth momentum held up better than expected in the second quarter, but underlying weakness is signalling a slowdown in economic activity. Real GDP growth eased slightly to 1.1% quarter-on-quarter in the second quarter, from 1.2% in the first quarter, supported primarily by a stronger-than-expected contribution from net exports. Industrial production rebounded in June, boosted by robust export growth following the partial US-China tariff de-escalation in early May. Retail sales moderated slightly but remained solid thanks to stronger goods sales under the consumer trade-in scheme, which offers subsidies to consumers replacing older durable products. In contrast, fixed asset investment growth fell short of expectations. Looking ahead, domestic demand remains weak outside policy-supported sectors, with persistent softness in the housing market and subdued consumer spending beyond subsidised

goods. Chinese CPI inflation edged up slightly in June, while producer price index (PPI) inflation declined further. As US tariffs on Chinese imports remain elevated amid sluggish domestic demand, inflationary pressures are expected to remain subdued.

In the United Kingdom, GDP growth is expected to slow in the second quarter, while inflation eased only marginally. Real GDP expanded by 0.7% (quarter-on-quarter) in the first quarter of this year, supported largely by frontloading ahead of tariff and tax increases. As these idiosyncratic factors unwind, activity is expected to slow in the second quarter – a view broadly supported by recent high-frequency data. Annual headline inflation increased to 3.6% in June (from 3.4% previously) and remains significantly above the Bank of England's target. This was driven both by persistent services inflation and by rising core inflation. The UK labour market appears to be easing, and wage growth has shown signs of moderation.

2 Economic activity

The euro area economy grew more strongly than expected in the first quarter of 2025 largely on the back of the temporary boost from frontloading exports in anticipation of the higher tariffs imposed by the US Administration. Across demand components, private consumption, total investment and exports contributed positively to growth, while changes in inventories made a marginal negative contribution. Across sectors, industrial activity was the main driver of growth, even excluding the exceptionally strong contribution from Irish production. Activity in the services and construction sectors also expanded, but at a more moderate pace. However, incoming data point to a slowdown in activity in the second quarter of 2025 as frontloading effects begin to unwind and the more domestically oriented services sector slows, while uncertainty remains elevated.[1] *Looking ahead, the observed rise in protectionism, higher tariffs and trade-distorting measures, as well as the additional appreciation of the euro, are expected to continue to have a disproportionately stronger effect on the manufacturing sector than on other parts of the economy.*[2] *Moreover, recent developments in the Middle East have further increased geopolitical uncertainty, adding to the downside risks in the manufacturing sector. While the labour market has continued to soften, it remains robust. Overall, the projected recovery should be supported by recent purchasing power gains and more affordable credit, in part because of past interest rate cuts.*

Real GDP grew by 0.6%, quarter on quarter, in the first quarter of 2025, largely reflecting the temporary boost of frontloading exports in anticipation of the higher tariffs imposed by the US Administration (Chart 3). Excluding Ireland, euro area GDP growth was 0.3%, quarter on quarter, in the first quarter of 2025. The expansion in euro area real GDP was supported by private consumption, investment and exports, while changes in inventories made a slightly negative contribution. Business investment outperformed expectations, largely owing to a surge in Irish investment in intellectual property products (IPP) and transport equipment. Net trade also contributed positively, bolstered by robust pharmaceutical exports from Ireland, likely frontloaded in anticipation of higher US tariffs. From a sectoral perspective, industry was the main contributor to growth, even excluding Ireland's exceptional performance. Services and construction also expanded, indicating broad-based momentum in the euro area economy.

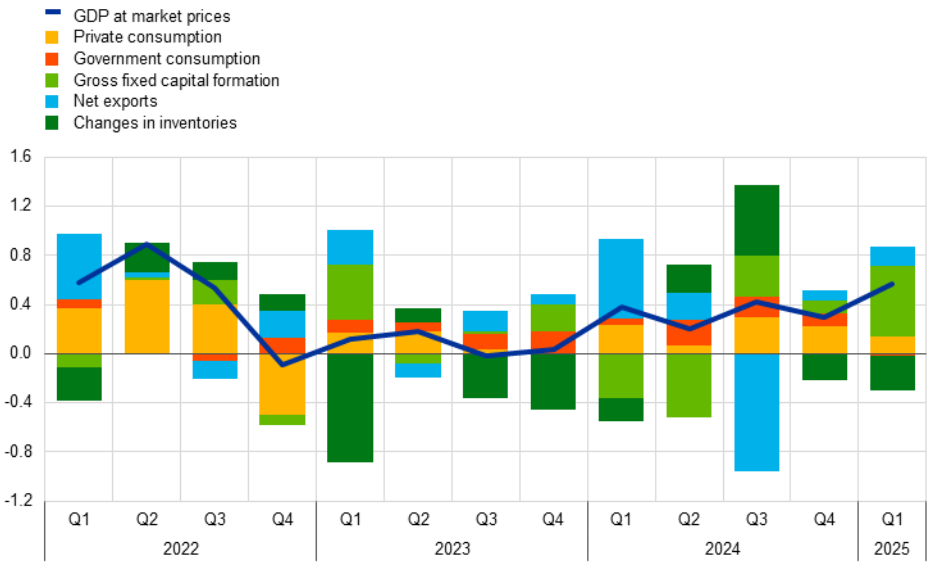
1 According to the flash estimate released by Eurostat on 30 July, euro area real GDP increased by 0.1% in the second quarter of the year. This estimate was not available at the time of the July Governing Council meeting.

2 On 27 July the European Commission and United States agreed on a provisional trade deal framework imposing a 15% baseline tariff on most EU exports to the United States, trimming down the previously threatened rate of 30-50%, but the details of the agreement have yet to be finalised.

Chart 3

Euro area real GDP and its components

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



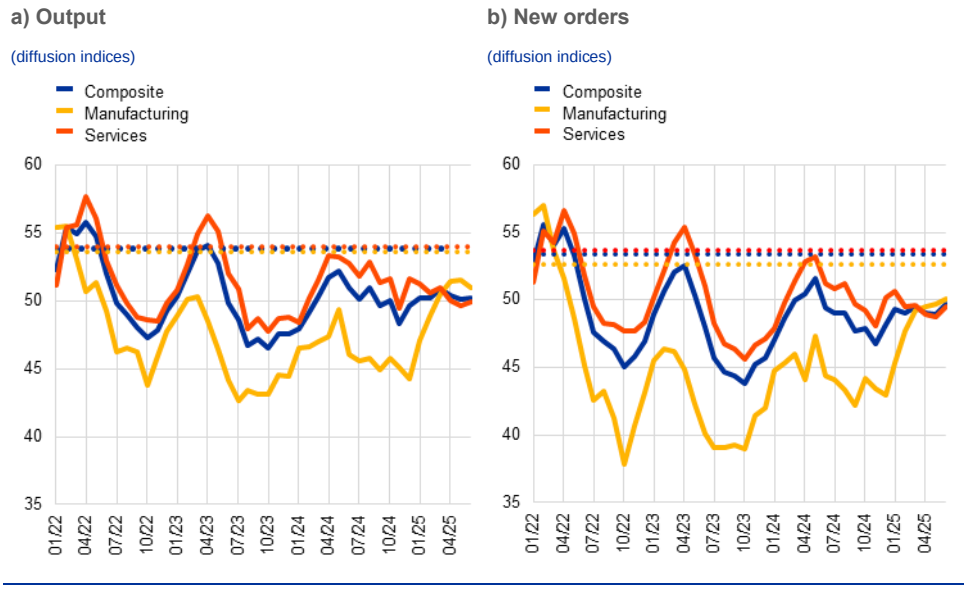
Sources: Eurostat and ECB calculations.
Note: The latest observations are for the first quarter of 2025.

The incoming data confirm a notable slowdown in economic growth in the second quarter and point to moderating momentum in the near term, amid elevated uncertainty. After the strong dynamics seen in the first quarter – which also implies positive carry-over effects for the second quarter – industrial production declined sharply in April and rebounded in May, suggesting a partial reversal of frontloading effects, compounded by the appreciation of the euro and higher tariffs. The composite output Purchasing Managers' Index (PMI) remained stable in the second quarter at a level (50.4) that suggests either slightly increasing or stagnating output. This masks a strong rise in the manufacturing output PMI to 51.3 (from 48.8 in the first quarter), with the indicator marking a quarterly average above the threshold of 50 or the first time in three years. By contrast, the PMI indicator for business activity in the services sector declined to 50.1 in the second quarter, from 51.0 in the first quarter, signalling a slowdown in this sector (Chart 4, panel a). At the same time, the PMI indicator for suppliers' delivery times suggests that supply bottlenecks were not constraining activity up to June. Looking ahead, an environment of higher tariffs and increased protectionism – and the related uncertainty – will continue to weigh on the near-term outlook. The PMI for new orders, which is more forward-looking by nature, portrays a similar picture, suggesting there are no strong differences between perceived ongoing developments and expectations in the near term (Chart 4, panel b). The forward-looking components of the European Commission's Economic Sentiment Indicator suggest somewhat more muted expectations than the assessment of the current situation. Following the positive, albeit temporary, effects of increased production from the frontloading of exports in the first quarter, higher tariffs might have a disproportionately adverse effect on the manufacturing sector compared with other parts of the economy in the months ahead. Moreover, the recent developments in the Middle East have added to geopolitical uncertainty, weighing on the manufacturing

sector. Meanwhile, the latest ECB Corporate Telephone Survey (CTS) suggests a broad-based slowdown across manufacturing and services going forward (see Box 3).

Chart 4

PMI indicators across sectors of the economy



Source: S&P Global Market Intelligence.
Notes: The dotted lines refer to 2015-19 averages. The latest observations are for June 2025.

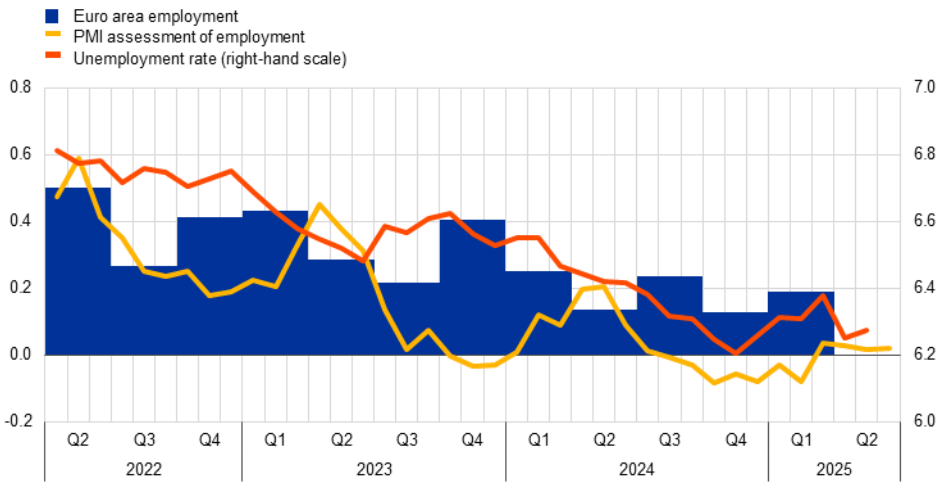
Employment increased by 0.2% in the first quarter of 2025, while total hours worked declined by 0.2%. After a more muted rise of 0.1% in the fourth quarter of 2024, employment growth increased in the first quarter of 2025, standing at 0.2% (Chart 5). At the same time, the unemployment rate stood at 6.3% in May, having remained broadly at this level since mid-2024. This was accompanied by a 0.6% increase in the labour force between the fourth quarter of 2024 and the first quarter of 2025. Between the first quarter of 2024 and the first quarter of 2025, foreign workers accounted for about 42% of the labour force growth. Labour demand declined further, with the job vacancy rate falling to 2.4% in the first quarter, 0.1 percentage points below the level seen in the fourth quarter of 2024.[3]

[3] See also the box entitled "What does increasing competition from China mean for euro area employment" in this issue of the Economic Bulletin.

Chart 5

Euro area employment, PMI assessment of employment and unemployment rate

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



Sources: Eurostat, S&P Global Market Intelligence and ECB calculations.
Notes: The two lines indicate monthly developments, while the bars show quarterly data. The PMI is expressed in terms of the deviation from 50, then divided by 10 to gauge the quarter-on-quarter employment growth. The latest observations are for the first quarter of 2025 for euro area employment, June 2025 for the PMI assessment of employment and May 2025 for the unemployment rate.

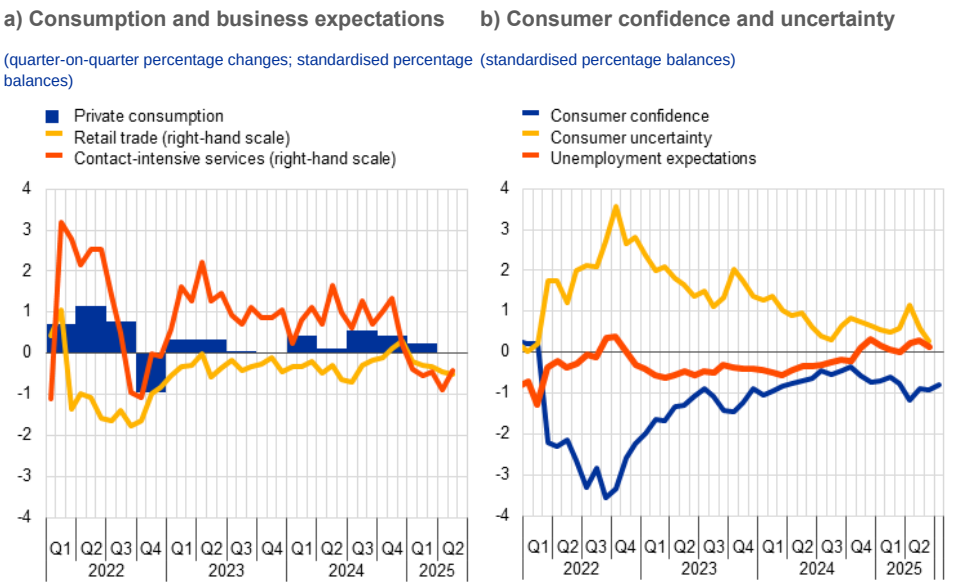
Short-term labour market indicators point to broadly flat employment growth in the second quarter. The monthly composite PMI employment indicator was 50.3 in June, 0.1 points higher than in May and the same as in April, suggesting broadly flat employment growth. The PMI employment indicator for services edged up from 50.9 in May to 51.0 in June, while the PMI employment indicator for manufacturing declined from 48.1 to 47.9.

Private consumption grew at a moderate pace in the first quarter of 2025 and has likely maintained a similar softer pace in the second quarter. After increasing by 0.5%, quarter on quarter, in the fourth quarter of 2024 (Chart 6, panel a), private consumption grew by 0.3% in the first quarter of 2025, reflecting modest spending on services and a renewed softening in the consumption of goods. The slowdown was mirrored by a still elevated saving rate of 15.4%, up from 15.2% in the fourth quarter of 2024. Incoming data indicate that momentum in household spending growth will continue to moderate in the short term. Services production slipped in April and remained only marginally above its level for the first quarter, while retail trade volumes held at 0.3% (on average for April-May) above the level seen over the same reference period despite a decline in May. The recent readings of the European Commission's consumer confidence indicator edged up from the April dip, but remained overall subdued, with perceptions about the future financial situation of households and the general economy hovering well below pre-pandemic averages (Chart 6, panel b). Similarly, an alternative consumer confidence indicator derived from the ECB's Consumer Expectations Survey shows that developments in consumer confidence have been mainly linked to subdued expectations on the economy in recent months, with strong volatility evident in April following the recent trade tensions (see Box 1). While consumer uncertainty declined in June, the overall downbeat household sentiment was reflected in a further drop in the European Commission's indicators of business expectations for demand in total services, retail trade and contact-intensive

services. However, the ECB's latest Consumer Expectations Survey indicates that expected holiday purchases remain strong. Looking ahead, the ongoing economic policy uncertainty – particularly in the context of global economic developments, including persisting trade tensions – should continue to weigh on households' spending decisions. Nevertheless, consumption growth should continue to benefit from recent purchasing power gains and favourable financing conditions.

Chart 6

Private consumption, business expectations for retail trade and contact-intensive services; consumer confidence and uncertainty



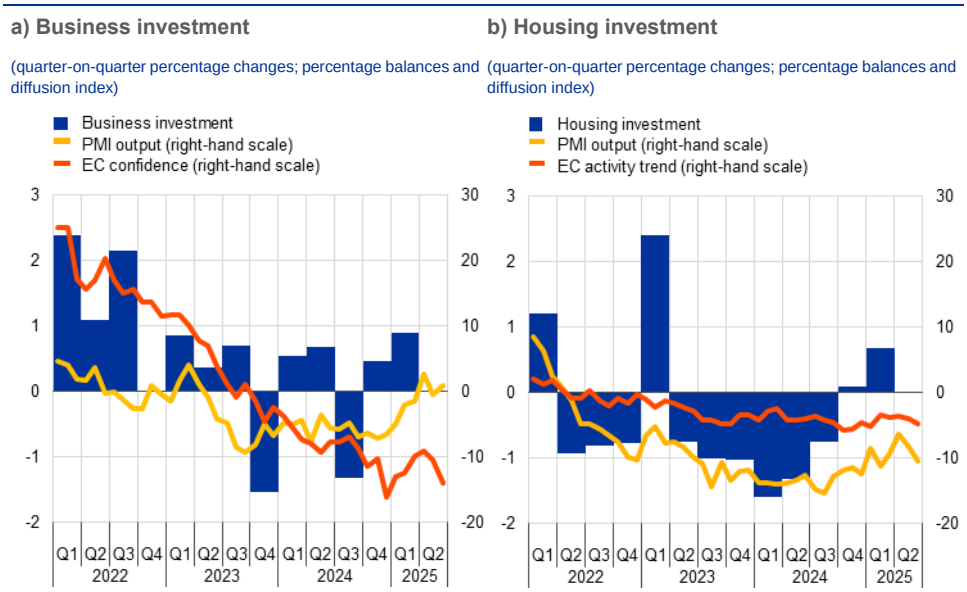
Sources: Eurostat, European Commission and ECB calculations.
Notes: Business expectations for retail trade (excluding motor vehicles) and expected demand for contact-intensive services refer to the next three months; "contact-intensive services" refer to accommodation, travel and food services. The contact-intensive services series is standardised for the period from 2005 to 2019 and consumer uncertainty is standardised for the period from April 2019 to May 2025 with respect to the average for the fourth quarter of 2021, owing to data availability, while all other series are standardised for the period from 1999 to 2019. The latest observations are for the first quarter of 2025 for private consumption, July 2025 for consumer confidence and June 2025 for all other items.

Business investment reflected frontloading in anticipation of higher tariffs in the first quarter of 2025; a partial reversal of these effects is expected in the second half of the year. Euro area business investment, excluding volatile Irish intangibles, rose by 0.9%, quarter on quarter, in the first quarter of 2025. Across assets, business investment in IPP (excluding Ireland) made the largest positive contribution to this figure, compensating the drop in machinery and equipment. The positive momentum seems to have continued in the second quarter, with industrial production in the capital goods sector growing by 1.4% in April-May compared with the average for the first quarter 2025. However, the CTS suggests that frontloading was an important factor in the dynamics of the capital goods sector in the first half of 2025 (see Box 3), implying that it was not necessarily driven by improvements in underlying fundamentals. Evidence from surveys points to a subdued picture for the second half of 2025, in line with a weak growth outlook, amid higher tariffs, a stronger euro and persisting elevated uncertainty. The CTS indicates a likely moderation as firms adopt

a “wait and see” approach.[4] Likewise, the bank lending survey (BLS) suggests only a moderate net increase in financing needs for investment purposes in the third quarter of 2025. Other soft metrics, such as confidence indicators (Chart 7, panel a), remain subdued as well. Similarly, the continued high uncertainty and limited incentives to invest – as reflected by a low Tobin’s Q – point to a weak investment outlook.

Chart 7

Real investment dynamics and survey data



Sources: Eurostat, European Commission (EC), S&P Global Market Intelligence and ECB calculations.
Notes: Lines indicate monthly developments, while bars refer to quarterly data. The PMIs are expressed in terms of the deviation from 50. In panel a), business investment is measured by non-construction investment excluding Irish intangibles. Short-term indicators refer to the capital goods sector. The European Commission’s capital goods confidence indicator is normalised for the 1999-2019 average and standard deviation of the series. In panel b), the line for the European Commission’s activity trend indicator refers to the weighted average of the building and specialised construction sectors’ assessment of the trend in activity over the preceding three months, rescaled to have the same standard deviation as the PMI. The line for PMI output refers to housing activity. The latest observations are for the first quarter of 2025 for investment and June 2025 for PMI output and the European Commission’s indicators.

Housing investment expanded in the first quarter of 2025 and likely continued to recover in the second quarter. After growing by 0.1%, quarter on quarter, in the fourth quarter of 2024, housing investment increased by 0.7% in the first quarter of 2025, marking the end of a prolonged decline that started in the first quarter of 2022. According to high-frequency indicators, housing investment likely continued to recover in the second quarter. Building construction production and specialised construction activities in April and May were, on average, 1.7% above the levels recorded in the first quarter (Chart 7, panel b). However, survey-based indicators, such as the European Commission’s indicator for recent trends in building and specialised construction activities and the PMI housing output, deteriorated from April to June, thus indicating moderate growth prospects for the second quarter. Looking ahead, housing investment should benefit further from improved housing affordability, thanks to more favourable financing conditions and recovering incomes. This is also reflected in buoyant demand for housing loans, according to the July BLS. However, a modest rise in residential building permits in the first quarter of 2025, as well as a marked drop in the European Commission's assessment of order books for building and specialised

[4] See the box entitled “Main findings from the ECB’s recent contacts with non financial companies” in this Issue of the Economic Bulletin.

construction companies in June, point to limited housing activity in the months ahead. Overall, housing investment is set to remain on a path of moderate recovery.

Euro area exports of goods remained stable in May. Following a peak in March – driven mainly by Irish exports of chemicals to the United States – exports returned to their usual levels in April and May. Looking ahead, survey indicators suggest a continued contraction in services exports, with manufacturing exports close to neutral. The appreciation of the euro is likely to further dampen the competitiveness of exports. Adding to the challenges, euro area exporters continue to face elevated trade policy uncertainty, amid discussions on a new trade agreement with the US Administration imposing a 15% tariff celling on EU goods. Meanwhile, euro area imports decreased moderately in May, driven by the United States. Imports from China have grown significantly since the beginning of the year, intensifying competition with domestic producers (see Box 2). With Chinese overcapacity still high and US tariffs possibly encouraging trade diversion, additional price pressure on euro area imports seems likely in the coming months.

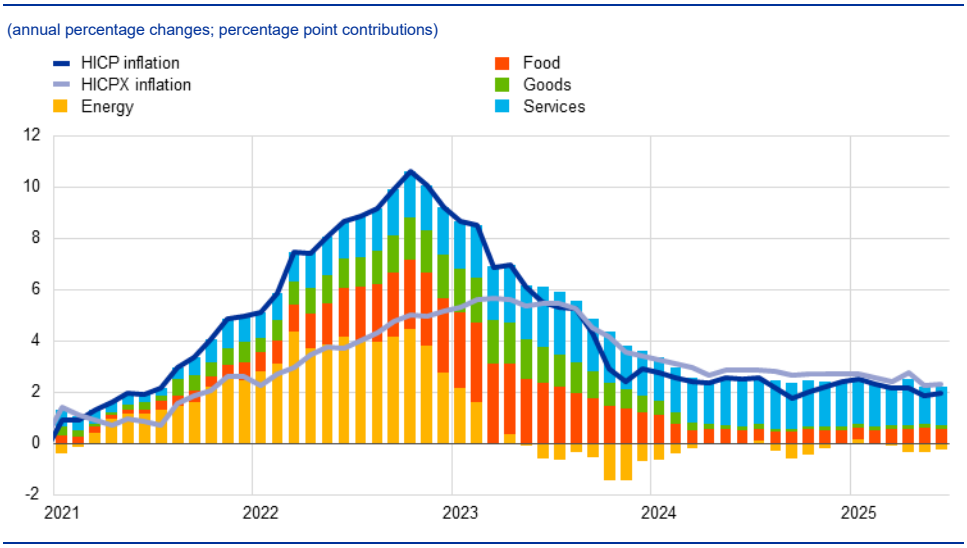
Overall, the outlook for euro area activity remains highly uncertain owing to increased tariffs and persistent geopolitical tensions, despite some significant tailwinds. A high level of uncertainty is likely to further reduce confidence among households and firms. At the same time, rising protectionism at the global level, high tariffs and trade-distorting measures, as well as the further appreciation of the euro, are posing a threat to the euro area outlook. Recent developments in the Middle East have contributed to elevated geopolitical uncertainty. Nevertheless, the recent purchasing power gains from, and the continued resilience of, the labour market will allow households to spend more, while government investment related to defence and infrastructure spending will increasingly support growth (see Box 7). This, together with more favourable financing conditions, should keep the economy resilient to global shocks.

3 Prices and costs

Euro area headline inflation stood at 2.0% in June 2025, slightly up from 1.9% in May.[5] *This increase was mainly due to higher energy prices, which more than offset a decline in food inflation. Most measures of underlying inflation are overall consistent with the ECB's 2% medium-term target. Domestic price pressures have continued to ease, mainly owing to moderating wage growth. Annual growth in compensation per employee stood at 3.8% in the first quarter of 2025, down from 4.1% in the last quarter of 2024. Combined with stronger productivity growth, this led to slower growth in unit labour costs. Most measures of longer-term inflation expectations continue to stand at around 2%, supporting the stabilisation of inflation around the target.*

Euro area headline inflation, as measured in terms of the Harmonised Index of Consumer Prices (HICP), increased slightly to 2.0% in June from 1.9% in May (Chart 8). The increase was driven by less negative energy inflation, which more than offset the decline in food inflation. The inflation outcome for the second quarter of 2025 (2.0%) was in line with the June 2025 Eurosystem staff macroeconomic projections for the euro area.

Chart 8
Headline inflation and its main components



Sources: Eurostat and ECB calculations.
Notes: "Goods" refers to non-energy industrial goods. The latest observations are for June 2025.

Energy prices continue to be volatile: energy inflation remained negative in June but increased to -2.6%, up from -3.6% in May. This increase mainly reflects a positive base effect caused by lower transport fuel prices in June 2024. The detailed breakdown showed an increase in the annual inflation rate for transport fuels – related to rising oil prices – which was only partially offset by lower electricity and gas prices.

Food inflation decreased slightly to 3.1% in June 2025, down from 3.2% in May. This decline was driven by a decrease in the annual rate of change of processed food

[5] The cut-off date for the data included in this issue of the Economic Bulletin was 23 July 2025. According to the flash estimate from Eurostat, HICP inflation was unchanged at 2.0% in July 2025.

prices (to 2.6% in June from 2.9% in May), which was not fully compensated for by the increase in unprocessed food prices (to 4.6% in June from 4.3% in May). The increase in unprocessed food prices was mainly due to a higher annual inflation rate for meat and fruit that was only partially offset by a lower inflation rate for vegetables. Meanwhile, the decrease in the annual rate of growth of processed food prices can primarily be attributed to decreasing pressure from tobacco price inflation. That said, the annual rate for processed food excluding the tobacco component also decreased slightly to 2.1% in June, from 2.2% in May.

HICP inflation excluding energy and food (HICPX) remained unchanged at 2.3% in June. Non-energy industrial goods (NEIG) inflation edged down to 0.5% in June, from 0.6% in May. This decline was offset by slightly higher services inflation, which stood at 3.3% in June after 3.2% in May. The increase in services inflation was driven by higher transport services inflation as well as rising annual inflation in the communication and recreation components. The decrease in NEIG inflation is consistent with the ongoing moderate price pressures from low import price growth and a stronger euro. A slowdown in semi-durable goods inflation drove the decline in the annual rate of NEIG inflation, although this was partly counterbalanced by stronger inflation in durable goods.

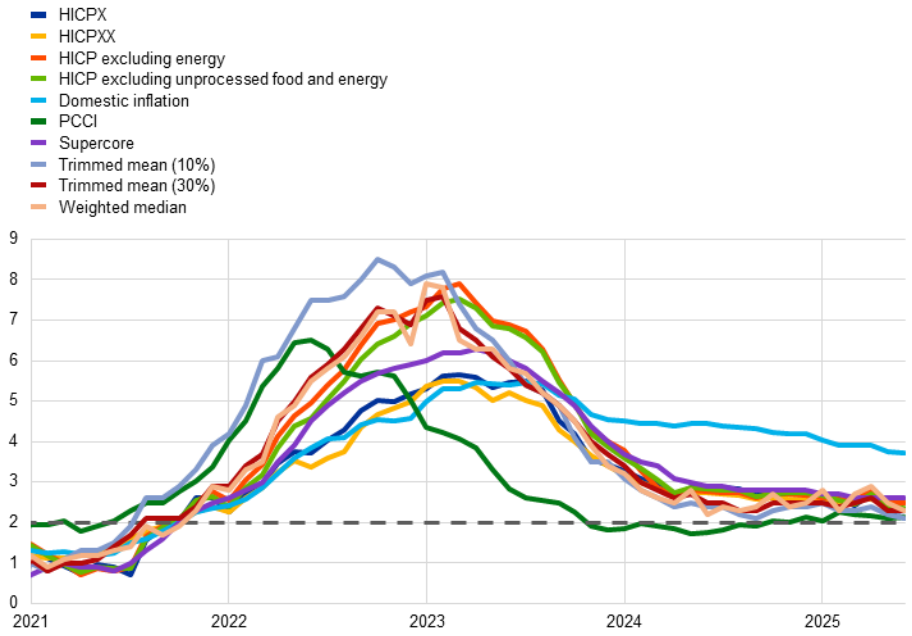
Most measures of underlying inflation are overall consistent with the ECB's 2% medium-term target (Chart 9).[6] The bulk of the indicator values ranged from 2.1% to 2.6%. Underlying inflation was unchanged according to all permanent exclusion-based measures. Some temporary exclusion-based measures, such as the weighted median and the 10% trimmed mean, continued to ease in June. Regarding model-based measures, the Supercore indicator (which comprises HICP items sensitive to the business cycle) was unchanged at 2.6% in June. Meanwhile the Persistent and Common Component of Inflation (PCCI) increased slightly to 2.2% in June after 2.1% in May. Domestic inflation was unchanged at 3.7%, remaining at a persistently high level.

6 For information on the different measures of underlying inflation, see Lane, P.R., "Underlying inflation: an update", speech at the Inflation: Drivers and Dynamics Conference 2024 organised by the Federal Reserve Bank of Cleveland and the ECB, 24 October 2024.

Chart 9

Indicators of underlying inflation

(annual percentage changes)



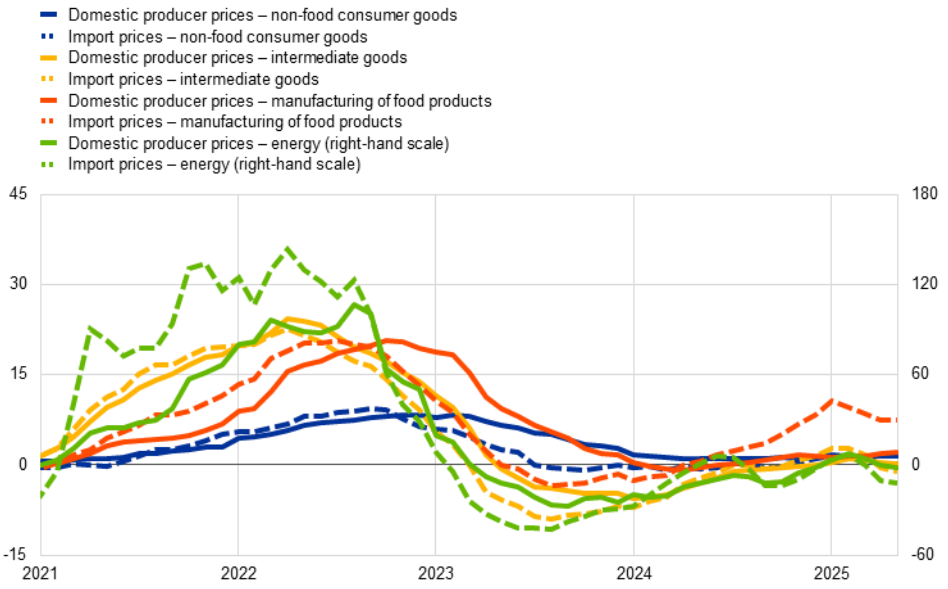
Sources: Eurostat and ECB calculations.
Notes: HICPXX stands for HICP excluding energy, food, travel-related items, clothing and footwear. The grey dashed line represents the ECB's inflation target of 2% over the medium term. The latest observations are for June 2025.

In May pipeline price pressures for goods continued to moderate at the early stages of the pricing chain, while those at the later stages remained broadly stable (Chart 10). At the early stages of the pricing chain, producer price inflation for domestic sales of intermediate goods eased further to 0.3% in May, down from 0.4% in April. At the later stages, the annual growth rate of producer prices for non-food consumer goods remained unchanged at 1.4%. The annual growth rate of import prices for non-food consumer goods rose slightly to 0.3% in May, up from 0.2% in April, while import price inflation for intermediate goods declined to -1.0% from -0.4%. The annual growth rate of producer prices for manufactured food edged up to 2.1% from 2.0% over the same period, suggesting more persistent cost pressures in the food manufacturing segment. Import price inflation for manufactured food was unchanged at 7.4% in May, potentially reflecting elevated international food commodity prices. Overall, the data suggest that while pipeline pressures on consumer goods prices have broadly eased, the food segment shows signs of more persistent inflationary dynamics.

Chart 10

Indicators of pipeline pressures

(annual percentage changes)



Sources: Eurostat and ECB calculations.
Note: The latest observations are for May 2025.

Domestic cost pressures, as measured by growth in the GDP deflator, continued to ease in the first quarter of 2025, with the annual growth rate slowing to 2.3% from 2.6% in the previous quarter (Chart 11). This reflects a substantial decline from the peak of 6.4% in the first quarter of 2023. The deceleration in the GDP deflator was due to smaller contributions from unit labour costs (1.7 percentage points, down from 2.0 percentage points in the previous quarter) and unit taxes (0.4 percentage points, down from 0.7 percentage points). By contrast, the contribution from unit profits increased to 0.2 percentage points after a negative contribution of -0.1 percentage points in the fourth quarter of 2024. The moderation in unit labour costs reflects a combination of lower wage growth, measured in terms of compensation per employee (3.8% in the first quarter of 2025 after 4.1% in the previous quarter), and an increase in productivity growth (to 0.8% from 0.6% in the previous quarter). The easing of compensation per employee continues to be broad-based across sectors and countries. Moreover, its slowing growth rate reflects a large drop in negotiated wages growth (2.5% in the first quarter of 2025, down from 4.1% in the previous quarter), which was partially offset by an increase in the wage drift.[7] Looking ahead, the ECB's wage tracker, which incorporates data on wage agreements negotiated up to the end of June 2025, suggests that wage growth pressures will continue easing throughout 2025. This further moderation is confirmed by the latest survey indicators on wage growth, such as the ECB's Corporate

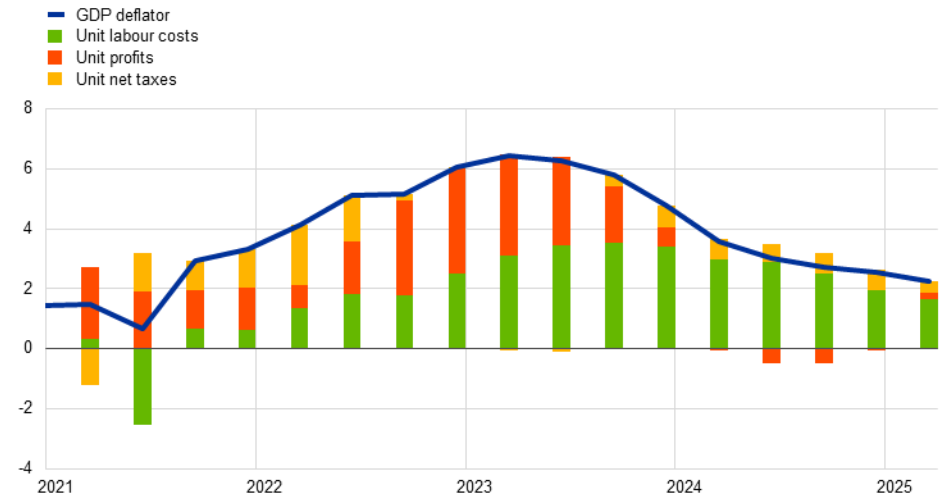
[7] For more information, see the box entitled "Recent developments in wages and the role of wage drift", *Economic Bulletin*, Issue 6, ECB, 2024.

Telephone Survey, in which wage growth expectations stand at 3.3% and 2.8% in 2025 and 2026 respectively[8].

Chart 11

Breakdown of the GDP deflator

(annual percentage changes; percentage point contributions)



Sources: Eurostat and ECB calculations.
Notes: Compensation per employee contributes positively to changes in unit labour costs. Labour productivity contributes negatively. The latest observations are for the first quarter of 2025.

In the period from the June Governing Council meeting, survey-based and market-based indicators of longer-term inflation expectations remained stable, with most standing at around 2% (Chart 12, panel a). In both the ECB Survey of Monetary Analysts (SMA) for July 2025 and the ECB Survey of Professional Forecasters (SPF) for the third quarter of 2025, median and average longer-term inflation expectations were unchanged at 2%. Longer-term market-based measures of inflation compensation (based on the HICP excluding tobacco) have edged up since the June Governing Council meeting, with the five-year forward inflation-linked swap rate five years ahead standing at around 2.1%. Model-based estimates of genuine inflation expectations, excluding inflation risk premia, indicate that market participants continue to expect longer-term inflation to be around 2%.

Market-based measures of near-term inflation compensation, as indicated by inflation fixings, remain below 2% but edged higher over the review period. Following the Governing Council's decision in June to lower the key ECB interest rates by 25 basis points, these short to medium-term measures of market expectations for HICP inflation excluding tobacco moved upwards and have continued to rise modestly since then. Investors currently expect inflation to remain around 2% in the coming months before declining around the turn of the year and rebounding to settle slightly below 2% by mid-2026. Looking further ahead, the one-year forward inflation-linked swap rate one year ahead also increased somewhat, reaching approximately 1.8%.

8 For more information, see the box entitled "Main findings from the ECB's recent contacts with non-financial companies", *Economic Bulletin*, Issue 5, ECB, 2025.

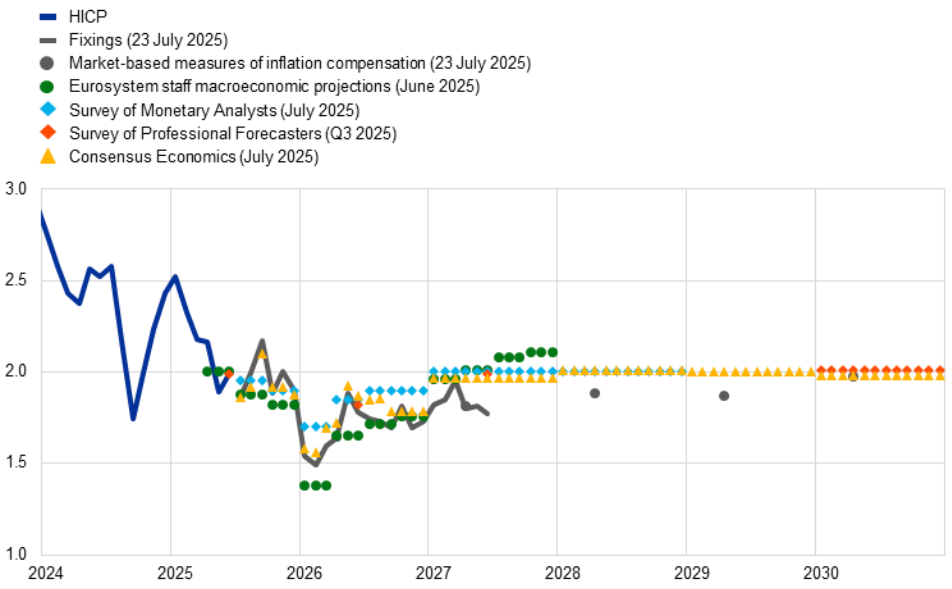
Short-term consumer inflation expectations declined in both May and June, reversing the uptick observed in previous months (Chart 12, panel b). The June 2025 ECB Consumer Expectations Survey (CES) reported that median expectations for headline inflation over the next year declined to 2.6%, after 2.8% in May and 3.1% in April, while inflation expectations for three years ahead remained unchanged at 2.4%. The moderation in short-term inflation expectations may reflect an unwinding in inflation uncertainty and some improvement in the economic sentiment of the survey's participants compared with the April round.

Chart 12

Headline inflation, inflation projections and expectations

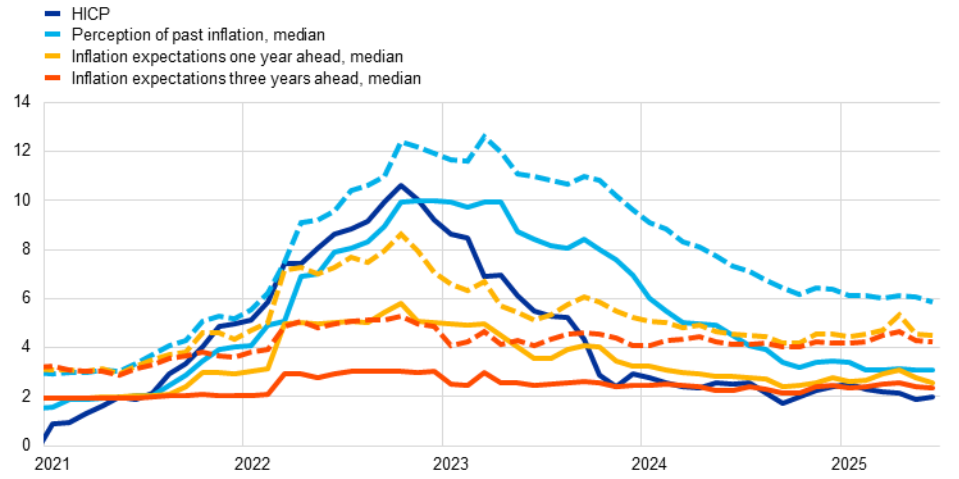
a) Headline inflation, market-based measures of inflation compensation, inflation projections and survey-based indicators of inflation expectations

(annual percentage changes)



b) Headline inflation and ECB Consumer Expectations Survey

(annual percentage changes)



Sources: Eurostat, LSEG, Consensus Economics, ECB (SMA, SPF, CES), Eurosystem staff macroeconomic projections for the euro area, June 2025, and ECB calculations.
Notes: In panel a) 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 23 July 2025. Inflation fixings are swap contracts linked to specific monthly releases in euro area year-on-year HICP inflation excluding tobacco. The SPF for the third quarter of 2025 was conducted between 1 and 3 July 2025. The SMA for July 2025 was conducted between 7 July and 9 July. The cut-off date for the Consensus Economics long-term forecasts was 14 July 2025. The June 2025 Eurosystem staff macroeconomic projections for the euro area were finalised on 21 May 2025 and the cut-off date for the technical assumptions was 14 May 2025. In panel b), for the CES, the dashed lines represent the mean and the solid lines represent the median. The latest observations are for June 2025.

4 Financial market developments

During the review period from 5 June to 23 July 2025, movements in euro area financial markets were relatively muted overall, despite ongoing geopolitical tensions and renewed trade uncertainties. The euro short-term rate (€STR) traded within a narrow range following the Governing Council's decision at its meeting on 5 June 2025 to lower the three key ECB interest rates by 25 basis points. The forward curve remained broadly stable, with market participants pricing in around 25 basis points of cumulative interest rate cuts by the end of the year. Long-term sovereign bond spreads relative to risk-free rates narrowed slightly. This reflected broadly unchanged euro area sovereign yields alongside a simultaneous increase in the overnight index swap (OIS) rate amid expectations of increased public debt issuance. Corporate bond spreads in the euro area tightened overall, reflecting a recovery in risk appetite after the widening of spreads in April. Euro area equity markets, by contrast, declined modestly over the review period after rebounding previously on the back of the US tariff announcement on 2 April. The decline points to lingering investor caution, particularly in sectors that are sensitive to trade-related risks. In foreign exchange markets, the euro appreciated further against the US dollar and on a trade-weighted basis.

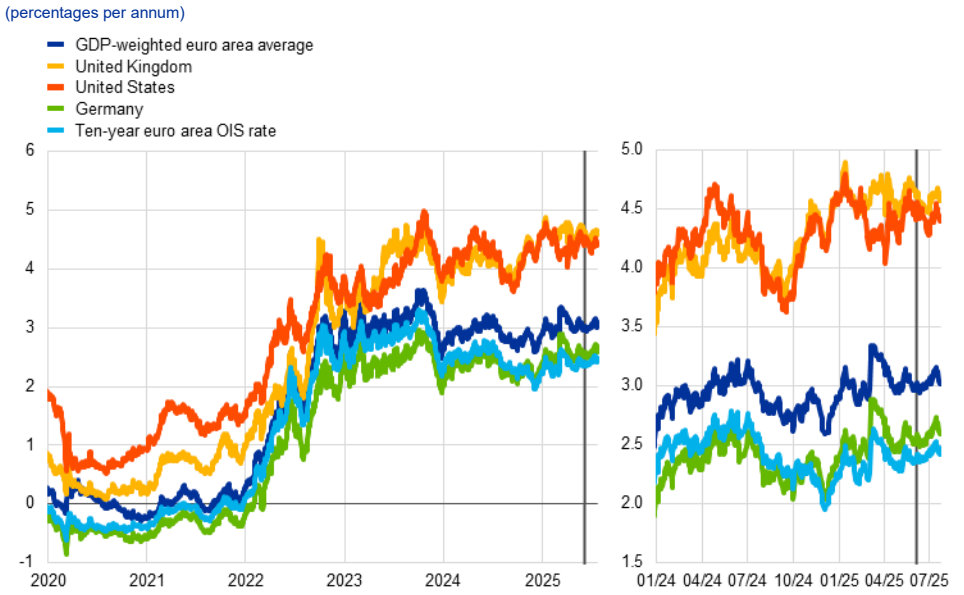
Euro area risk-free rates remained broadly stable over the review period, despite persistently elevated trade and geopolitical uncertainties. The €STR stood at 1.92% at the end of the review period, following the Governing Council's widely anticipated decision at its June 2025 meeting to lower the three key ECB interest rates by 25 basis points. Excess liquidity decreased by around €53 billion to €2,655 billion. This was due mainly to the decline in the portfolios of securities held for monetary policy purposes, as the Eurosystem is no longer reinvesting the principal payments from maturing securities in its asset purchase programmes. The near-term risk-free forward curve shifted upwards on the day of the Governing Council's decision and then traded within a narrow range during the review period. This was despite heightened uncertainty surrounding the expiry of the 90-day tariff pause on 9 July – subsequently extended to 1 August – and elevated geopolitical tensions in the Middle East, which contributed to a temporary rise in oil prices and a short-lived increase in financial market volatility but had little impact on the market-implied path of ECB policy rates. By the end of the review period, market participants were pricing in cumulative interest rate cuts of around 25 basis points by the end of 2025. The OIS curve steepened, with rates remaining broadly unchanged at horizons of up to five years and increasing by 6 basis points, to 2.5%, at the ten-year maturity.

Long-term euro area sovereign bond yield spreads relative to risk-free rates narrowed slightly over the review period (Chart 13). The ten-year GDP-weighted euro area sovereign bond yield remained broadly unchanged at 3.0% during the review period, while the ten-year OIS rate rose by 6 basis points. As a result, the overall change in sovereign risk premia was modest, as reflected in the narrowing of spreads by 7 basis points, with broadly similar yield movements across individual euro area sovereigns. The growth in nominal risk-free rates was driven partly by a rise in inflation compensation and partly by higher real rates. Outside the euro area, there were minimal changes in the ten-year US Treasury yield and the ten-year UK

sovereign bond yield, which settled at 4.4% and 4.6% respectively at the end of the review period.

Chart 13

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



Sources: LSEG and ECB calculations.
Notes: The vertical grey line denotes the start of the review period on 5 June 2025. The latest observations are for 23 July 2025.

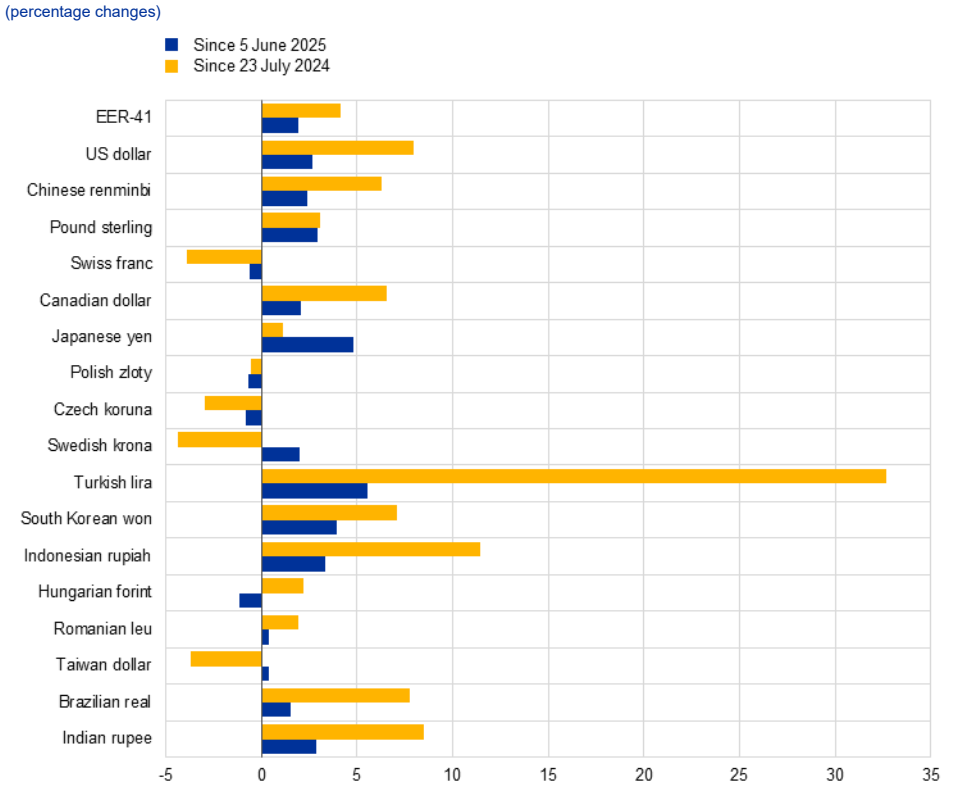
Euro area equity prices fell modestly during the review period, reflecting lingering investor caution amid ongoing economic uncertainties. Following the rebound in equity prices after the US tariff announcement on 2 April, broad stock market indices edged down by 0.4% during the review period, with non-financial corporations (NFCs) recording losses of 0.1% and financial corporations gaining 1.4%, indicating cautious sentiment overall. While the energy sector benefited from higher oil prices, equity prices declined in several other sectors. Those with significant exposure to international trade fared worst, despite the apparent calm in the markets amid ongoing trade negotiations. By contrast, following the correction seen in April, US equity markets notably outperformed their euro area counterparts, with the broad indices rebounding by 7.0%. This strong performance was supported by the 7.0% gains recorded by both financial corporations and NFCs. The growth in US NFC equities was underpinned by improved investor sentiment, reflecting signs of progress in trade negotiations, and by continued strong demand for technology stocks, particularly those associated with artificial intelligence.

Euro area corporate bond spreads tightened after the pronounced widening observed in April, reflecting a recovery in investor risk appetite. At the start of the review period, spreads remained broadly stable as investors assessed the potential implications of renewed global trade tensions for corporate earnings and economic activity. Later on, however, as sentiment began to improve, they narrowed by 8 and 10 basis points in the investment-grade and high-yield segments respectively. This tightening was broad-based across both financial and non-financial issuers.

In foreign exchange markets, the euro appreciated further against the US dollar and on a trade-weighted basis (Chart 14). During the review period, the nominal effective exchange rate of the euro – as measured against the currencies of 41 of the euro area's most important trading partners – strengthened by 2.1%. The euro appreciated by 3.0% against the US dollar, supported by relatively robust euro area fundamentals alongside concerns over US fiscal sustainability amid ongoing trade uncertainties. The euro's upward trajectory generally persisted in June despite escalating geopolitical risks, including the Israel-Iran conflict. From early July, this upward trajectory reversed slightly against the US dollar and in trade-weighted terms as investors reassessed the expected scope of further US monetary policy easing on the back of stronger than expected inflation data. The euro's appreciation was relatively broad-based, strengthening against most major and emerging market currencies. It recorded notable gains against the Japanese yen (4.5%), driven by US tariff-related uncertainties, as well as Japan's political and monetary policy outlook. Conversely, it depreciated slightly, by 0.7%, against the Swiss franc, reflecting continued demand for the currency as a safe haven in this period of heightened uncertainties.

Chart 14

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



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 23 July 2025.

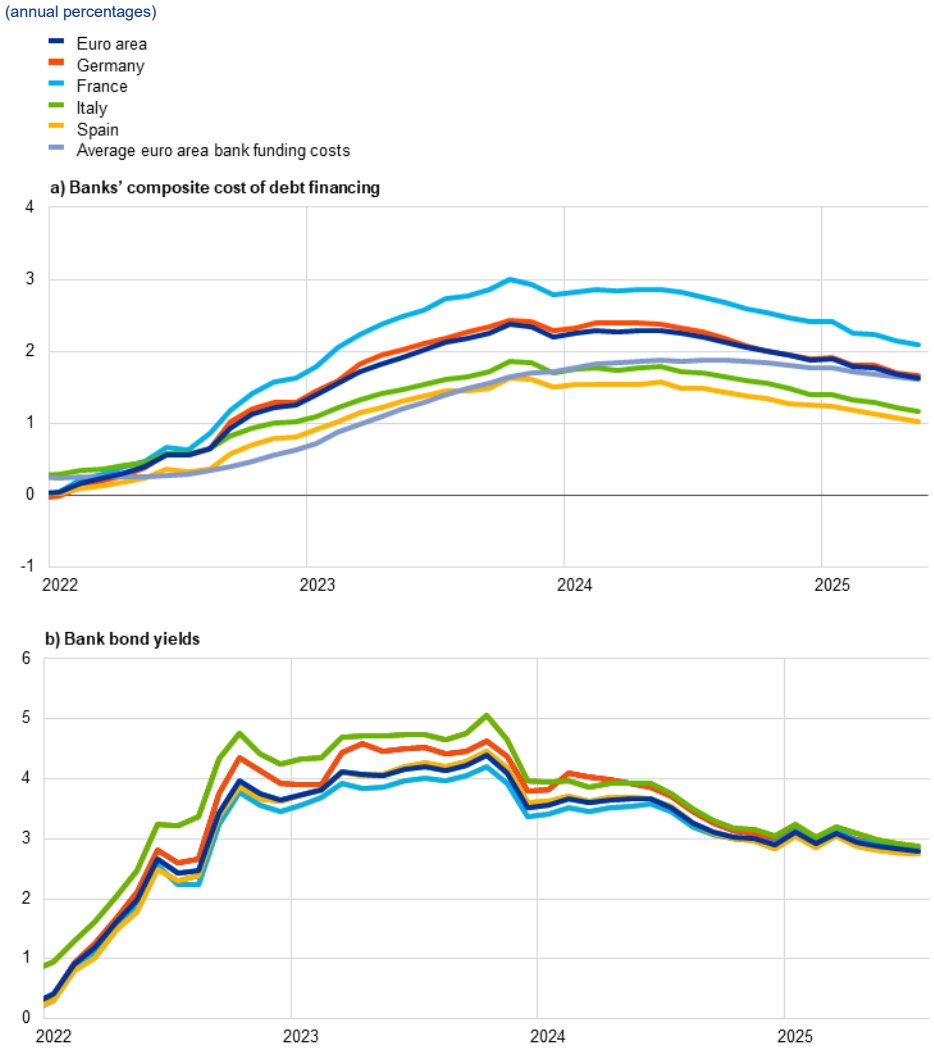
5 Financing conditions and credit developments

In May bank funding costs continued to fall, reflecting lower policy rates. Average interest rates on new loans to firms declined to 3.7% in May, whereas average interest rates for households on new mortgages have changed little since the start of the year and stood at 3.3%. Growth in loans to firms and households was broadly stable in May but remained far below historical averages, also reflecting elevated uncertainty. Over the review period from 5 June to 23 July 2025, the cost to firms of both equity financing and market-based debt financing decreased marginally. According to the ECB's July 2025 euro area bank lending survey, credit standards for loans to firms remained broadly unchanged in the second quarter of 2025, while loan demand increased slightly. Credit standards for housing loans tightened slightly, while housing loan demand continued to increase strongly. In the ECB's Survey on the Access to Finance of Enterprises for the second quarter of 2025, which was conducted between 30 May and 27 June 2025, firms continued to report a decline in bank interest rates, while indicating a slight tightening of other lending conditions. The annual growth rate of broad money (M3) remained stable at 3.9% in May.

Bank funding costs decreased slightly in May 2025, reflecting lower policy rates. The composite cost of debt financing for euro area banks, i.e. the index which measures marginal bank funding costs, fell slightly in May (Chart 15, panel a), reflecting the ECB's policy rate cuts. The decline was driven by deposit and interbank rates. At the same time, bank bond yields have fluctuated at levels around 3.0% since the beginning of the year, amid higher volatility in financial markets, notably since April, related in part to uncertainty about US tariffs (Chart 15, panel b). The composite deposit rate fell slightly in May, to 1.0%, down from its peak of 1.4% in May 2024. This decline has mainly been driven by lower interest rates on the time deposits of firms and households. Overnight deposit rates remained broadly stable and, despite remaining significant, the gap between interest rates on time deposits and overnight deposits for both firms and households narrowed further.

Chart 15

Composite bank funding costs in selected euro area countries



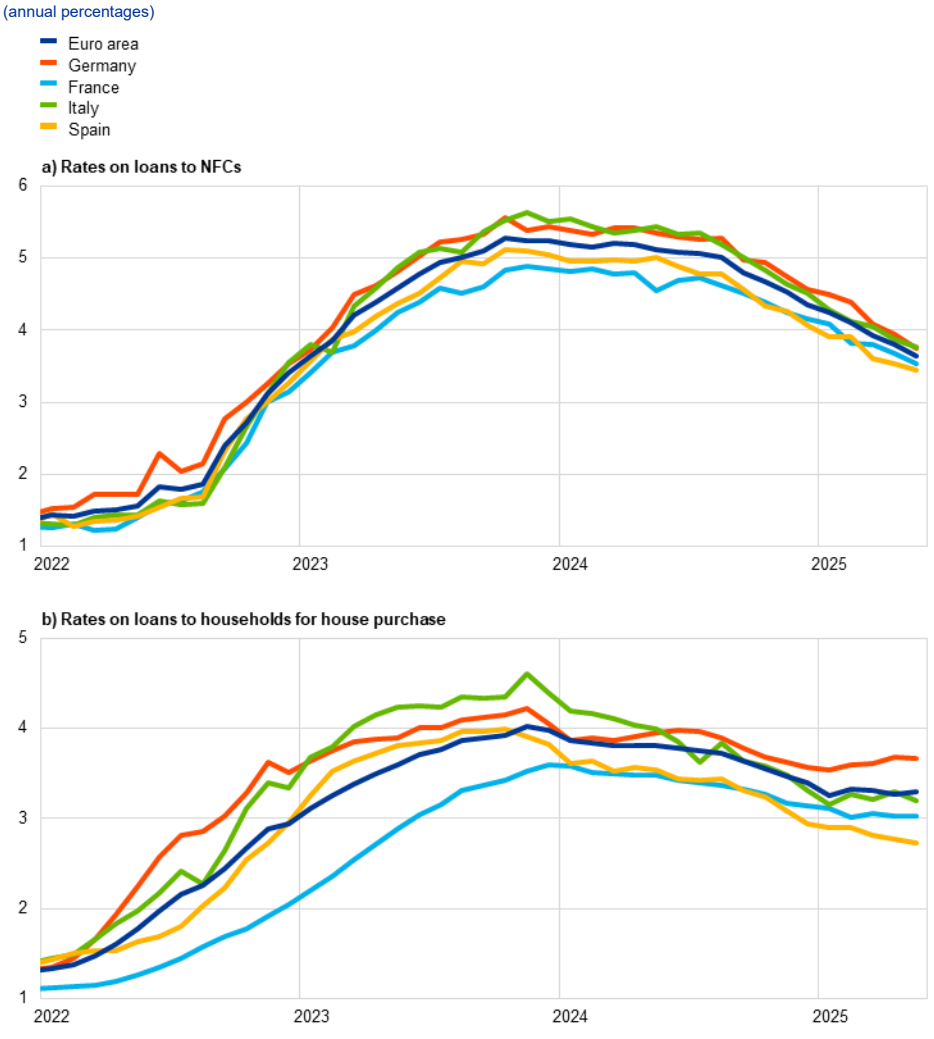
Sources: ECB, S&P Dow Jones Indices LLC and/or its affiliates, and ECB calculations.
Notes: Composite bank funding costs are an average of new business costs for overnight deposits, deposits redeemable at notice, time deposits, bonds and interbank borrowing, weighted by their respective outstanding amounts. Average bank funding costs use the same weightings but are based on rates for outstanding deposits and interbank funding, and on yield to maturity at issuance for bonds. Bank bond yields are monthly averages for senior tranche bonds. The latest observations are for May 2025 for the composite cost of debt financing for banks (panel a) and 23 July 2025 for bank bond yields (panel b).

Bank lending rates for firms continued to decline, while mortgage rates for households remained broadly unchanged, reflecting differences in loan fixation periods. In May 2025 lending rates for new loans to non-financial corporations (NFCs) fell by 15 basis points to stand at 3.65%, a decline of around 1.6 percentage points from their October 2023 peak (Chart 16, panel a). This decline was broad-based across the largest euro area countries; it was driven by short-term loans with a maturity of up to one year, in line with falling short-term market rates. Lending rates on outstanding amounts also decreased, although to a lesser extent. The spread between interest rates on small and large loans to firms increased to 59 basis points in May, with some variation across countries, significantly above its low of 31 basis points in January 2025 but significantly below its long-term average. For households, lending rates on new loans for house purchase remained broadly stable at 3.30% in

May, around 80 basis points below their November 2023 peak, albeit with some variation across countries (Chart 16, panel b). This development reflects some variability across fixation periods and countries, with rates declining on loans with fixation periods of up to five years while increasing for loans with longer fixation periods. Lending rates on outstanding amounts also remained stable at 2.40%. The disparity between lending rates for households and those for firms reflects differences in loan fixation periods. Household loans typically have longer fixation periods in many jurisdictions, making them less sensitive to fluctuations in short-term market rates.

Chart 16

Composite bank lending rates for firms and households in selected euro area countries



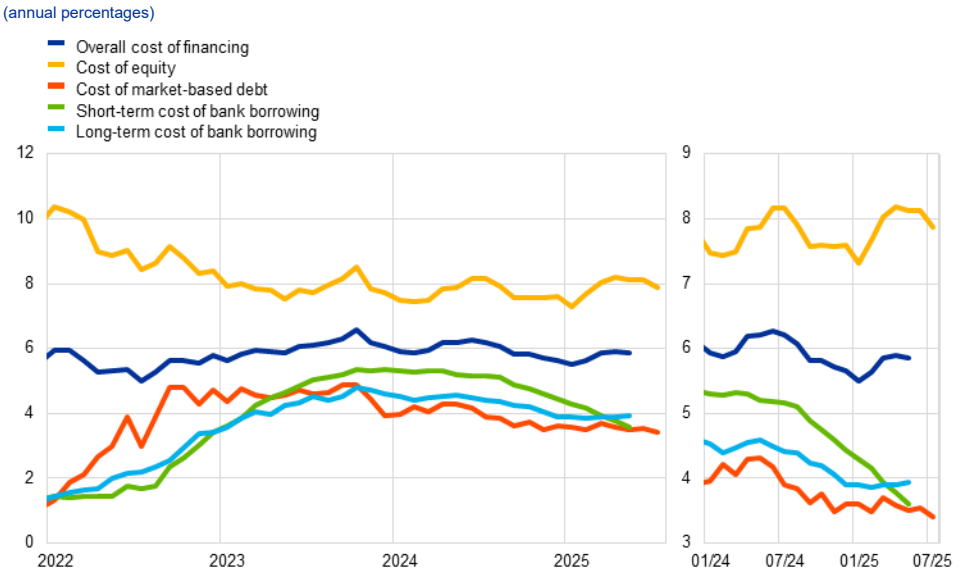
Sources: ECB and ECB calculations.
Notes: Composite bank lending rates are calculated by aggregating short and long-term rates using a 24-month moving average of new business volumes. The latest observations are for May 2025. In panel a), NFCs stands for non-financial corporations.

Over the review period from 5 June to 23 July 2025, the cost to firms of both equity financing and market-based debt financing decreased marginally. The overall cost of financing for NFCs – i.e. the composite cost of bank borrowing, market-based debt and equity – declined slightly in May compared with the previous

month and stood at 5.9% (Chart 17).[9] This was the result of a decrease in all components of the overall cost of financing except for the cost of long-term borrowing from banks, which remained unchanged. Daily data for the review period from 5 June to 23 July 2025 show a further slight decline in the cost of both equity financing and market-based debt financing. A compression of corporate bond spreads in both the investment grade and high-yield segments more than offset a slight increase in long-term risk-free rates, leading to a slight decline in the cost of market-based debt. Similarly, the lower cost of equity financing over the same period reflected a decline in the equity risk premium which, albeit small, was larger than the rise in the long-term risk-free rate, as approximated by the ten-year overnight index swap rate.

Chart 17

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



Sources: ECB, Eurostat, Dealogic, Merrill Lynch, Bloomberg, LSEG and ECB calculations.
Notes: The overall cost of financing for non-financial corporations is based on monthly data and is calculated as a weighted average of the long and short-term costs of bank borrowing (monthly average data), market-based debt and equity (end-of-month data), based on their respective outstanding amounts. The latest observations are for 23 July 2025 for the cost of market-based debt and the cost of equity (daily data) and May 2025 for the overall cost of financing and the cost of borrowing from banks (monthly data).

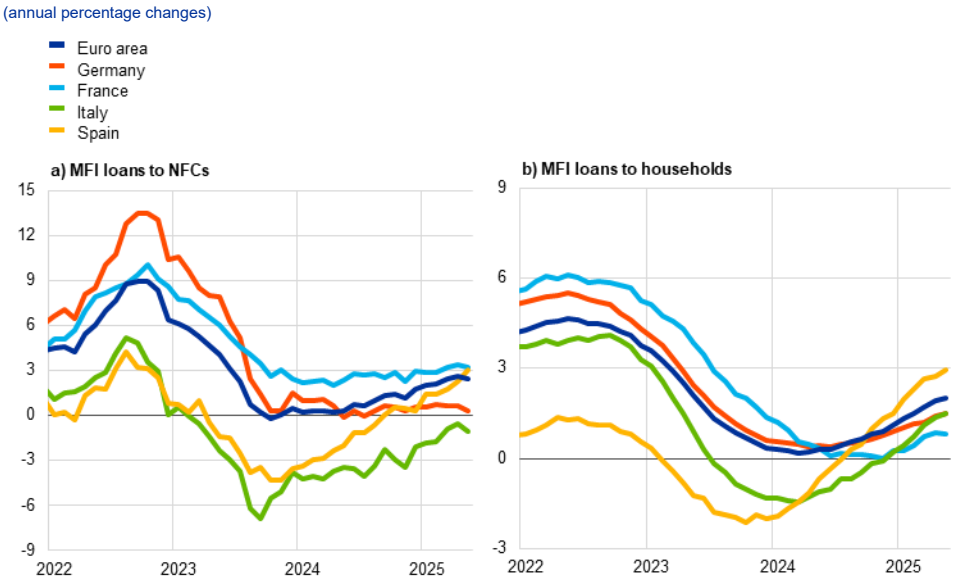
Growth in loans to firms and households was broadly stable in May but remained far below historical averages. The annual growth rate of bank lending to firms edged down to 2.5% in May 2025, after 2.6% in April, thus remaining well below its historical average of 4.3% since January 1999 (Chart 18, panel a). This development reflects weaker short-term dynamics in firms borrowing from banks amid a strong net issuance of corporate debt securities. The annual growth rate of corporate debt issuance rebounded to 3.4% in May from 2.2% in April. The annual growth rate of loans to households edged up to reach 2.0% in May after 1.9% in April, although this level is still significantly below the historical average of 4.1% (Chart 18, panel b). Loans for house purchase were still the primary driving force behind this upward trend, with consumer credit remaining stable at an annual growth rate of 4.3% in May. However, the recovery in loans to households appears to have lost momentum, as

[9] Owing to lags in data availability for the cost of borrowing from banks, data on the overall cost of financing for NFCs are only available up to May 2025.

indicated by weaker monthly flows driven by mortgages. Other forms of household lending, including loans to sole proprietors, remained weak. Household sentiment regarding credit access improved in May. According to the ECB's Consumer Expectations Survey for May, the percentage of households perceiving tighter credit access decreased, but still outweighed the percentage of respondents perceiving easier credit access. Looking ahead, households expect credit access to ease somewhat over the next 12 months.

Chart 18

MFI loans in selected euro area countries



Sources: ECB and ECB calculations.
Notes: Loans from monetary financial institutions (MFIs) are adjusted for loan sales and securitisation; in the case of non-financial corporations (NFCs), loans are also adjusted for notional cash pooling. The latest observations are for May 2025.

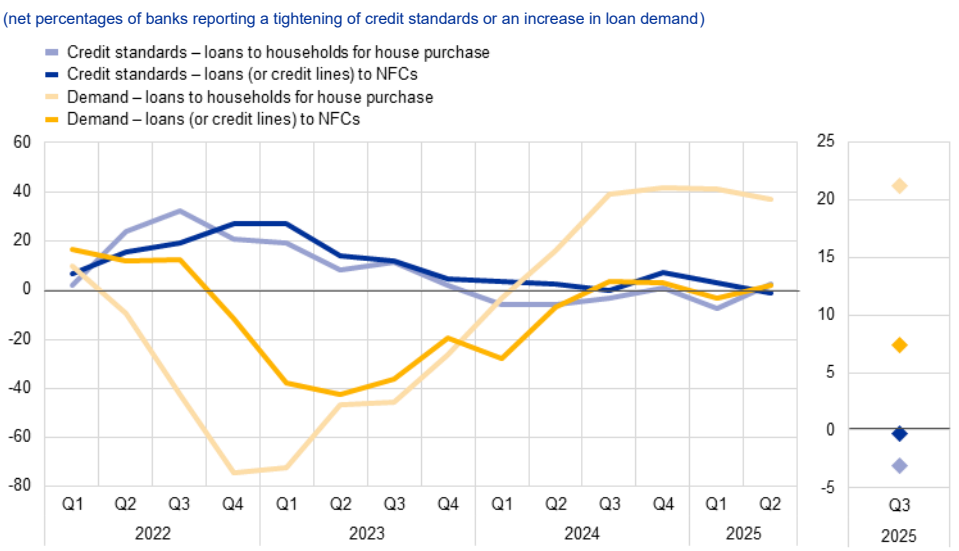
According to the July 2025 euro area bank lending survey**, banks reported broadly unchanged credit standards for loans or credit lines to firms in the second quarter of 2025 and a slight net tightening of credit standards for housing loans (Chart 19).** Credit standards for loans or credit lines to euro area firms remained broadly unchanged in the second quarter of 2025, whereas banks had indicated in the previous survey round that they expected a net tightening. Perceived risks related to the economic outlook continued to contribute to a tightening of credit standards, whereas competition had an easing impact. Euro area banks mostly reported no specific additional tightening impact on their credit standards from geopolitical uncertainty and trade tensions, although they intensified their monitoring of the most exposed sectors and firms. By contrast, banks reported a small net tightening of credit standards for housing loans and a more pronounced net tightening for consumer credit. Changes in risk perceptions and the risk tolerance of banks were the main drivers of the tightening for both household loan segments. Banks reported a small net increase in the share of rejected loan applications for firms, a more pronounced net increase for consumer credit and a broadly unchanged share for housing loans. For the third quarter of 2025, euro area banks expect unchanged credit standards for

loans to firms, a slight easing for housing loans and a further tightening for consumer credit.

In the second quarter of 2025 banks reported a slight increase in loan demand for firms and a further substantial increase in housing loan demand. Loan demand for firms was supported in the second quarter of 2025 by declining lending rates, while the impact of fixed investment and inventories and working capital was neutral. Several banks referred to a dampening impact on loan demand from global uncertainty and the related trade tensions. For housing loans, the strong increase in demand was primarily driven by declining interest rates, improved housing market prospects and, to a lesser extent, rising consumer confidence. Consumer credit demand was also supported by declining interest rates, together with other factors, offsetting the negative contributions from lower consumer confidence and spending on durable goods. For the third quarter of 2025, banks expect demand from firms for loans to increase further and demand for housing loans to increase substantially, while demand for consumer credit is expected to remain broadly unchanged.

Chart 19

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



Source: Euro area bank lending survey.
Notes: NFCs stands for non-financial corporations. 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 round. The latest observations are for the second quarter of 2025.

According to banks' responses to the ad hoc questions, access to funding improved slightly, while perceived risks to credit quality had a tightening impact on credit standards. In the second quarter of 2025 banks' access to retail and wholesale funding improved slightly, driven by short-term retail funding, money markets and debt securities, and remained broadly unchanged for securitisations. Banks indicated that changes in excess liquidity held with the Eurosystem in the first half of 2025 had a neutral impact on bank lending conditions. By contrast, euro area banks reported a tightening impact of non-performing loan ratios and other credit

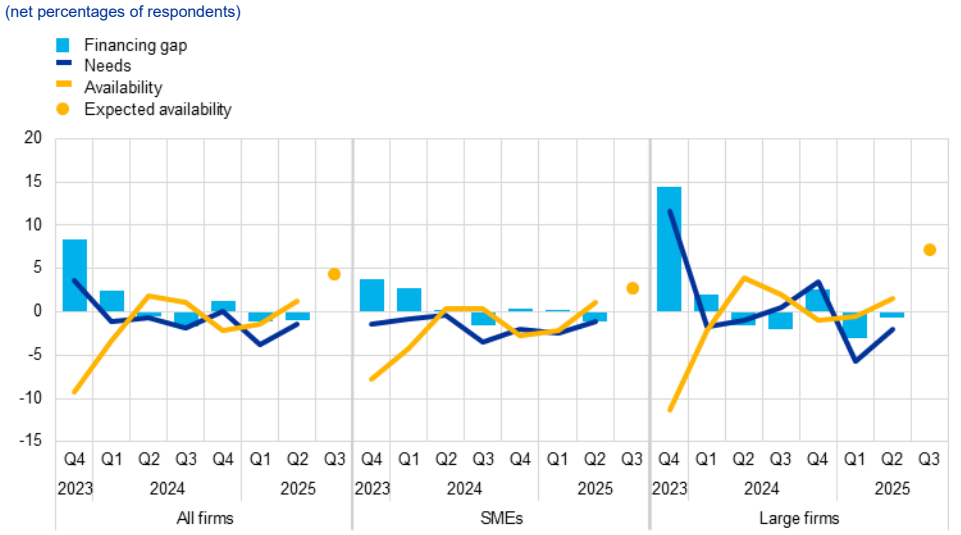
quality indicators on their credit standards across all loan categories in the second quarter of 2025. Developments in credit standards and loan demand were heterogeneous across the main economic sectors in the first half of 2025. Credit standards tightened in commercial real estate, manufacturing, wholesale and retail trade and, to a lesser extent, in construction, while easing slightly across most services (excluding financial services and real estate) and in residential real estate.

According to the survey findings, climate risks and related policy measures contributed to tighter lending conditions for firms with high carbon emissions. Euro area banks indicated that firms' climate-related risks and measures to cope with climate change continued to have a net tightening impact on lending policies for loans to high-emitting firms (i.e. firms that contribute significantly to climate change and have not yet started, or have made little progress, with transition) over the past 12 months. Both physical risk and firms' transition risk had a moderate net tightening impact on banks' lending policy, while climate-related fiscal support continued to have an easing impact. Banks also reported a net increase in demand for loans to firms in transition and green firms owing to climate change, while uncertainty about future climate regulation was perceived as an important obstacle to loan demand. Based on a new question on the impact of climate change on housing loans, banks reported an easing impact on credit standards for buildings with high energy performance and a tightening impact for buildings with low energy performance over the past 12 months. The physical risk of real estate was, however, an important driver of further net tightening in lending conditions overall. Banks also reported a positive impact of climate change on loan demand for buildings with high and medium energy performance but a negative impact for those with low energy performance. Investment into energy performance was the key factor for climate-related loan demand, supported by preferential lending rates for increasing sustainability, whereas uncertainty about future climate regulation was reported as a dampening factor for loan demand.

In the latest Survey on the Access to Finance of Enterprises **(SAFE), firms reported a further decline in bank interest rates amid a continued tightening of other loan conditions.** In the second quarter of 2025 a net 14% of firms reported a decrease in bank interest rates, up from a net 12% in the previous quarter. Notably, a higher net percentage of large firms (31%) observed a decline in interest rates, whereas a net 2% of small and medium-sized enterprises (SMEs) reported an increase. At the same time, a net 16% of firms (down from 24% in the first quarter of 2025) pointed to a rise in other financing costs, such as charges, fees and commissions, and a net 11% of firms (down from 13%) reported stricter collateral requirements.

Chart 20

Changes in euro area firms' bank loan needs, current and expected availability and financing gap



Sources: ECB (SAFE) and ECB calculations.
Notes: SMEs stands for small and medium-sized enterprises. Net percentages are the difference between the percentage of firms reporting an increase in availability of bank loans (needs and expected availability respectively) and the percentage reporting a decrease in availability in the past three months. The indicator of the perceived change in the financing gap takes a value of 1 (-1) if the need increases (decreases) and availability decreases (increases). If firms perceive only a one-sided increase (decrease) in the financing gap, the variable is assigned a value of 0.5 (-0.5). A positive value for the indicator points to a widening of the financing gap. Values are multiplied by 100 to obtain weighted net balances in percentages. Expected availability has been shifted forward by one period to allow for a direct comparison with realisations. The figures refer to Pilot 2 and Rounds 30 to 35 of the SAFE (October-December 2023 to April-June 2025).

Firms reported that their need for bank loans and the availability of such loans were broadly unchanged, with a further improvement in availability anticipated over the next three months (Chart 20). The net percentage of firms reporting an increase in the availability of bank loans was 1% (compared with a net 1% indicating a decline in the previous quarter). SMEs reported a smaller increase in bank loan availability relative to large firms. These developments are consistent with the broadly unchanged credit standards highlighted in the euro area bank lending survey during the same period. The bank loan financing gap indicator – an index capturing the difference between changes in needs and availability – remained broadly stable compared with the previous quarter at a net -1%. Looking ahead, firms expect a further improvement in the availability of bank financing over the next three months.

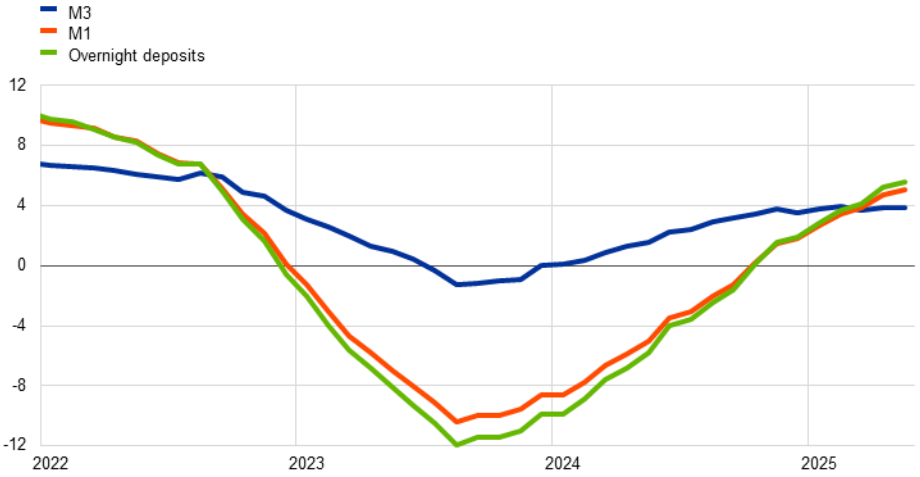
Growth in broad money (M3) remained stable in May 2025, amid elevated uncertainty (Chart 21). Annual M3 growth was unchanged at 3.9% in May. Annual growth of narrow money (M1), which comprises the most liquid components of M3, rose to 5.1% in May from 4.7% in April. This can be attributed to an increase in the annual growth rate of overnight deposits held by firms and households to 5.6% in May, up from 5.2% in April, likely reflecting a preference of investors for liquidity in an uncertain environment and lower interest rates on savings deposits. Regarding the various counterparts, broad money growth was mainly driven by net foreign inflows, pointing to greater interest in euro-denominated assets from foreign investors since April. Bank lending to firms and households made a modest contribution to money creation, and net issuance of longer-term bank bonds rebounded following weaker

issuance in April. At the same time, the ongoing contraction of the Eurosystem balance sheet continued to weigh on M3 growth.

Chart 21

M3, M1 and overnight deposits

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



Source: ECB.
Note: The latest observations are for May 2025.

Boxes

1 Consumer confidence and household consumption decisions

Prepared by Adam Baumann, Luca Caprari, Maarten Dossche, Georgi Kocharkov and Omiros Kouvavas

Consumer confidence plays an important role in determining economic activity. Thanks to timely availability and close co-movement with economic activity, analysts and policymakers closely monitor consumer confidence indicators to help them assess the strength of the economy (Barsky and Sims, 2012; Dees and Brinca, 2013; Ludvigson, 2004). They typically summarise information about consumers' perceptions of current and future economic conditions and expectations for households' financial situations and their spending plans. In this box, we present a new consumer confidence indicator (CCI) derived from the ECB's Consumer Expectations Survey (CES) and use additional microdata to explore the relationship between consumer confidence and actual spending at the household level.

The CES-based consumer confidence indicator (CES CCI) captures individuals' perceptions of economic conditions and their financial outlook. The CES CCI employs a methodology that closely mirrors that of the European Commission's well-established consumer confidence indicator (EC CCI), ensuring a robust, standardised framework for measuring consumer sentiment.[1] The CES CCI is based on four qualitative survey questions on respondents' past and future personal financial situations, aggregate economic growth expectations for the next 12 months and intentions to make major purchases over the next 12 months.[2] Equal weights are assigned to the response score of each question. The weighted scores for the four questions are aggregated to calculate an individual confidence score. The population-weighted sum of all individual confidence scores is then used to obtain the indicator score. A key feature of this methodology is the capacity to calculate from the individual survey observations a specialised consumer confidence indicator for any socio-demographic group. In addition, consumer confidence can be decomposed additively into contributions associated with each of its four components. Thus, the indicator also offers a perspective on both individual financial circumstances and the general economic outlook.

1 See DG-ECFIN (2025), "The Joint Harmonised EU Programme of Business and Consumer Surveys – User Guide", European Commission.

2 For their past financial situation (12 months ago) and future financial situation (12 months ahead), respondents rate their conditions using the following options: "Much worse", "Worse", "Same", "Better" and "Much better", which correspond to response scores of -1, -½, 0, ½ and 1 respectively. Similarly, for expectations on the aggregate economy 12 months ahead, respondents choose between "Shrink", "Same" and "Grow", which are assigned response scores of -1, 0, and 1 respectively. Lastly, respondents answer "Yes" or "No" for intentions to make major purchases 12 months ahead, which correspond to response scores of -1 and 1 respectively.

Consumer confidence remains in negative territory in 2025.[3] The CES CCI aligns closely with the well-established EC CCI, as can be seen in Chart A, panel a. Since its trough in October 2022, the CES CCI has increased by 19 index points; aggregate consumer confidence had improved slightly in the second half of 2024, but this was followed by a drop in April 2025 and a partial recovery in May. These fluctuations highlight the evolving nature of consumer sentiment in response to changing economic conditions.

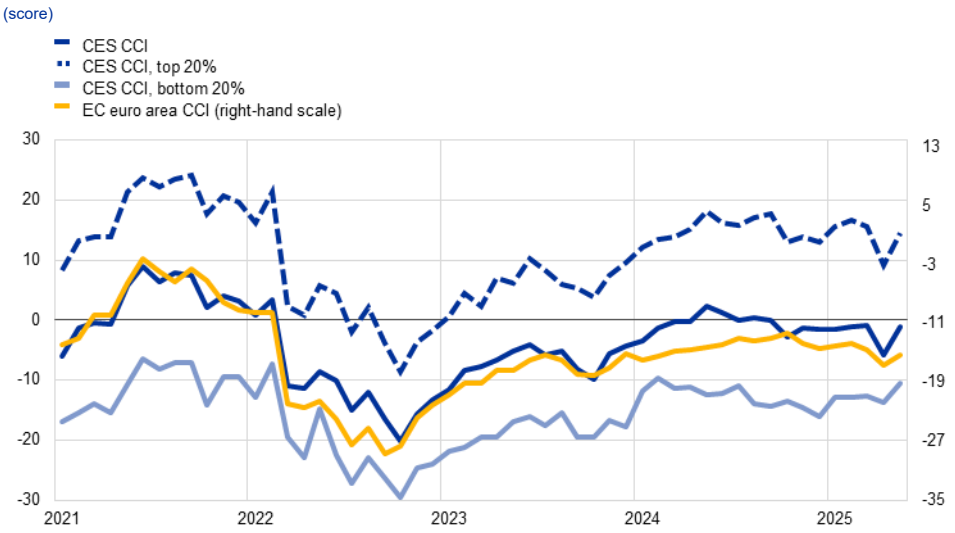
Consumer confidence can be analysed by income quintile and degree of financial literacy. There is a stark difference in CCI levels between households in the top 20% and the bottom 20% income brackets, as shown in Chart A, panel a. This can be explained by the fact that high-income respondents are more optimistic in all four dimensions captured by the indicator. The largest share of the difference comes from their relative optimism in terms of planned major purchases (as also shown in Chart B, panels b and c). Another differentiating factor for individual consumer confidence is the level of financial literacy (Chart A, panel b). Here, respondents with higher levels of financial literacy have a higher level of confidence on average but are also more responsive to shifts in economic conditions (e.g. during the 2022-23 inflation surge).

[3] The indicator is based on weighted net balances, meaning that negative values indicate a higher volume of negative responses. The zero for the CES CCI corresponds to the historical average of -11 for the EC CCI. Consequently, the curve for the EC CCI is aligned with -11.

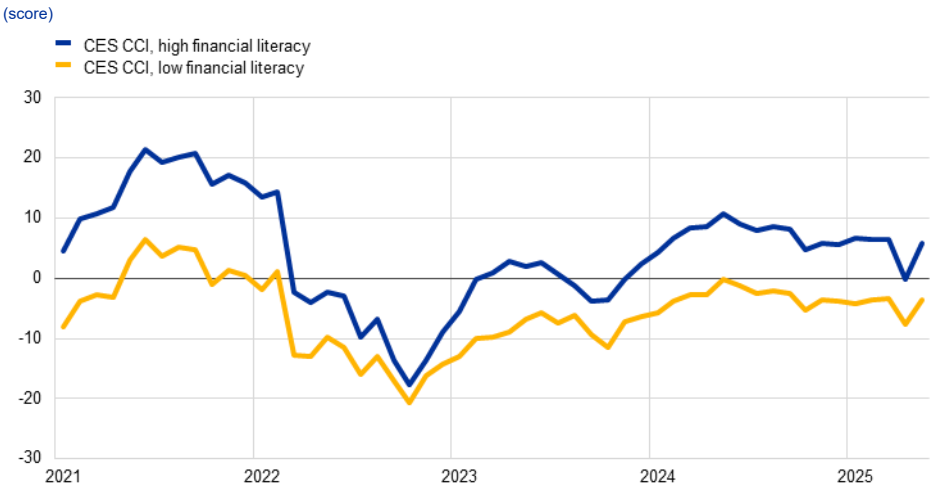
Chart A

Evolution of the consumer confidence indicator

a) CES CCI and EC CCI for the euro area



b) CES CCI, by degree of financial literacy



Sources: ECB (CES) and European Commission.
Notes: In panel a), the correlation between CES CCI and EC CCI is 0.94. Income quintiles are calculated from reported net household income by country and wave. The alignment of the axes between the CES CCI and the EC CCI is based on their approximate long-term averages, reflecting differences in the construction of response scores for each indicator. In panel b), financial literacy is divided into two groups: individuals gaining a score of 4 on a scale of 0-4 in the CES financial literacy "quiz" (high literacy) and those gaining any lower score (low literacy). The latest observations are for May 2025.

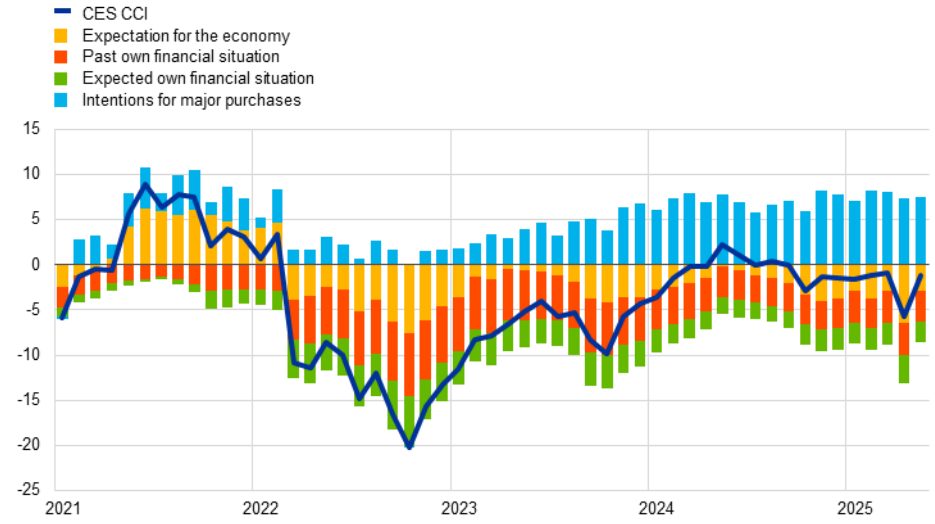
Decomposing the CES CCI into its four components shows that scores on aggregate economic expectations and planned consumption vary the most over time. The evolution of consumer confidence among households is shaped primarily by expectations about the economy and planned major purchases (Chart B, panel a). While expectations about future economic conditions influence all households, planned consumption plays a more significant role in capturing the confidence of high-income households (Chart B, panels b and c). In recent months developments have been mainly linked to subdued expectations on the economy, with strong volatility evident in April 2025 following the recent trade tensions.

Chart B

CCI components

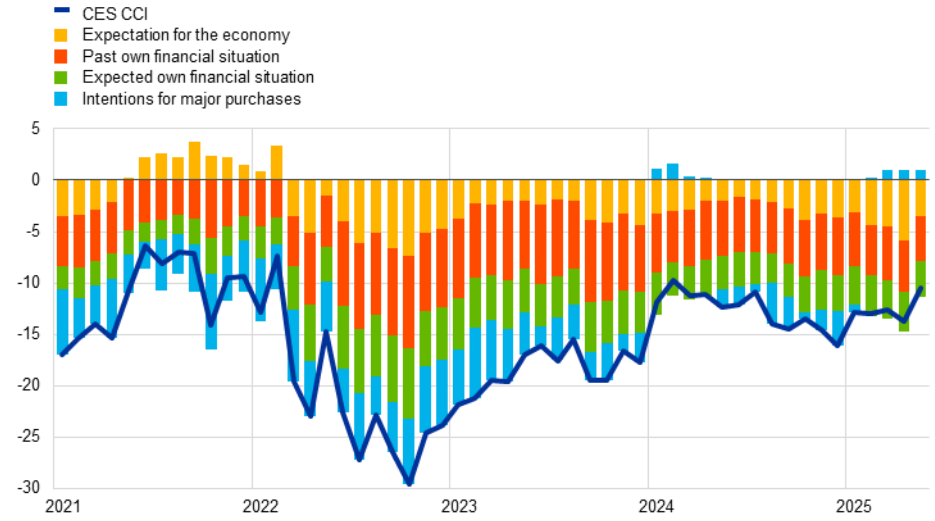
a) Decomposition of CES CCI into contributing components

(scores)



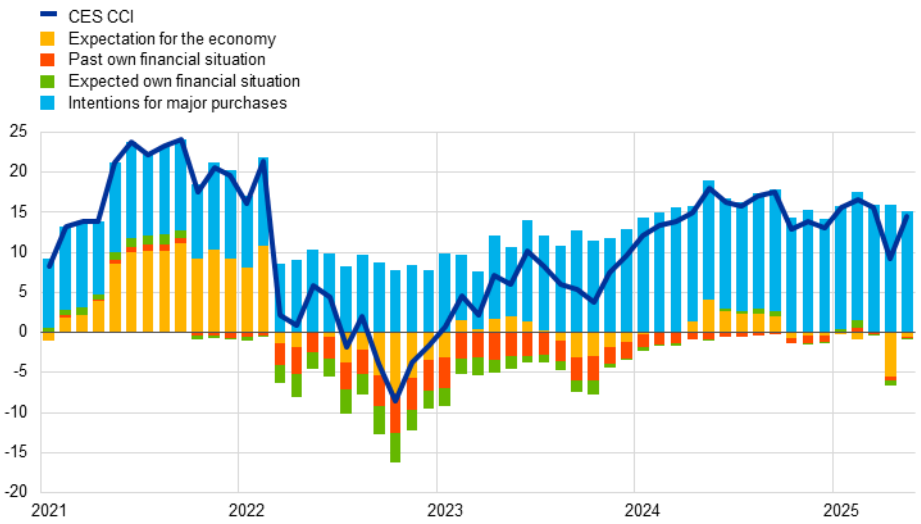
b) Decomposition of CES CCI for households in bottom 20% income bracket

(scores)



c) Decomposition of CES CCI for households in top 20% income bracket

(scores)



Source: ECB (CES).
Notes: CES CCI calculated from individual survey responses. The aggregate CES CCI score is the weighted average across individuals. The indicator can be decomposed into its four contributing questions. For the decomposition, each contributing question is divided by four to obtain the post-weighted values. In panels b) and c), income quintiles are calculated from reported net household income by country and wave. The latest observations are for May 2025.

Consumer confidence at the individual level is closely related to the actual consumption of households. A unique feature of the CES is that it makes it possible to understand how individual consumer confidence relates to self-reported total consumption per household, which is measured by a sequence of quarterly questions in the survey. Unlike Barsky and Sims (2012), the CES CCI relies on individual-level data. The left-hand side of Chart C, panel a), illustrates the association between individual total consumption growth and changes in individual consumer confidence by income quintile, controlling for a series of individual characteristics. On average, a 10 point change in CES CCI score at the individual level is associated with a 1.2% change in individual consumption. Beyond that, the change in consumption for households in the top 20% income bracket increases to about 1.6% for the same increase in confidence. As shown on the right-hand side of Chart C, panel a), the positive association between changes in confidence and consumption growth stems almost entirely from the discretionary component of total consumption.[4] This component also accounts for a larger share of total consumption among high-income households. This finding coincides with recent findings on non-essential consumer spending (Andreolli et al., 2024), which is more procyclical and accounts for a higher share in the consumption basket of high-income households.

Recent developments in consumer confidence, especially for households in the top 20% income bracket, point towards muted consumption growth overall in 2025.[5] Using the quintile-specific estimates together with the shares of each income

[4] Consumption is split into two groups: (1) discretionary, and (2) necessities. Discretionary includes spending on recreation, travel, restaurants and bars, larger household items, luxury items and car purchases, while necessities are defined as spending on housing, utilities, food and health.

[5] The impact of consumer confidence on consumption complements other channels that contribute to the muted response of consumption (see Baumann et al. (2025) for the impact of income misperceptions and Baptista et al. (2025) for the impact of the cash flow channel via mortgages).

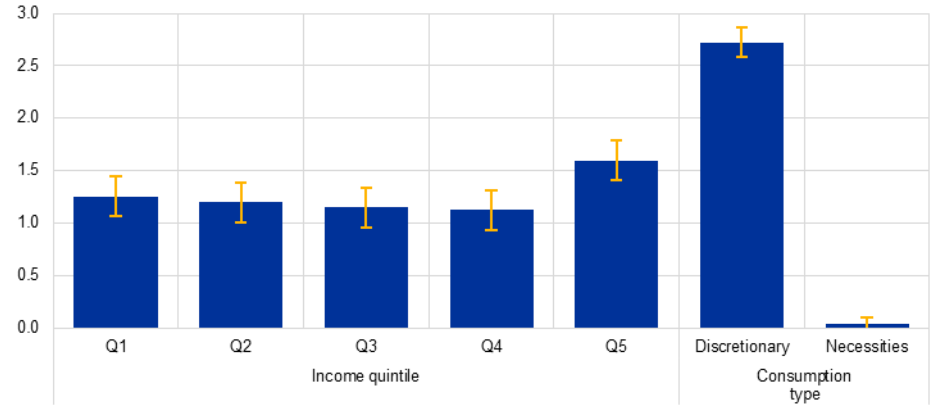
quintile in aggregate consumption makes it possible to compute the marginal impact of a change in confidence on aggregate consumption, all else being equal (Chart C, panel b). This exercise shows that a 10 point decline in the CES CCI score typically corresponds to a decline of 1.3% in aggregate consumption, with the highest quintiles accounting for more than half of the impact.

Chart C

Impact on consumption of a change in CES CCI score

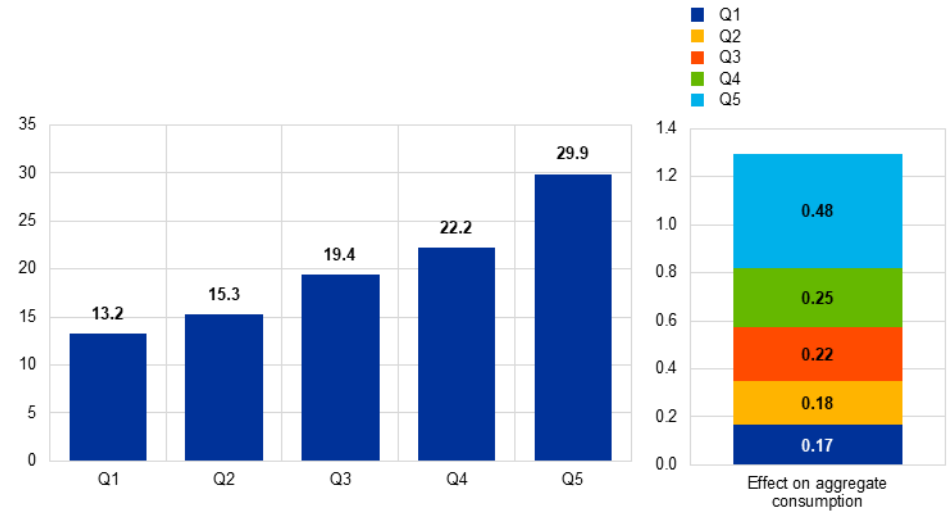
a) Effect on individual consumption of a 10 point change in CES CCI score

(percentages)



b) Aggregate consumption shares and CES CCI score, by income quintile

(percentages)



Source: ECB (CES).
Notes: Income quintiles calculated from reported net household income by country and wave. In panel a), coefficients are derived from a linear regression of year-on-year change in log individual consumption on year-on-year change in CCI score with income quintile interactions, controls and country/wave fixed effects. The yellow whiskers indicate the 90% confidence intervals of the estimated coefficients. In panel b), to compute the decomposition, the share of aggregate consumption of each income quintile is multiplied by the CCI effect on individual consumption (previous regression coefficient).

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2 What does increasing competition from China mean for euro area employment?

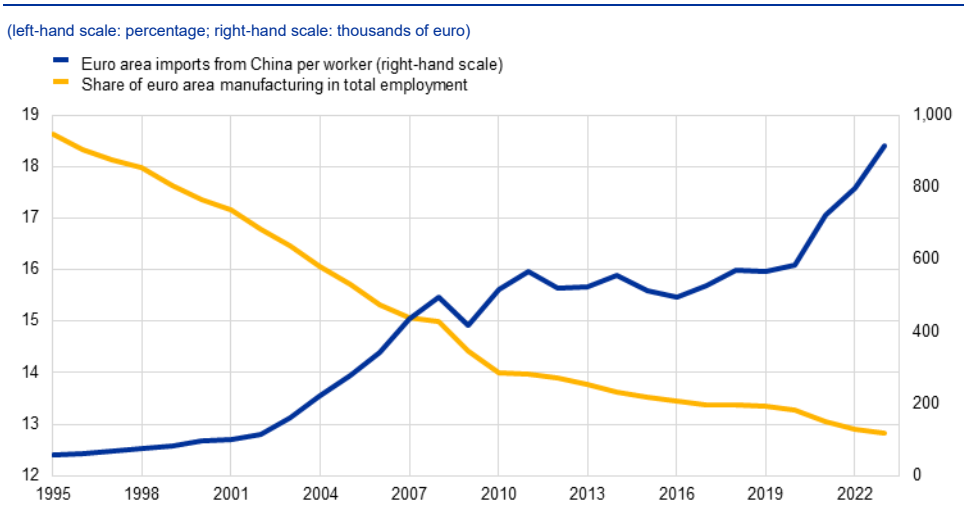
Prepared by Clémence Berson, Claudia Foroni, Vanessa Gunnella and Laura Lebastard

Increased competition from China across global export markets has affected the euro area labour market in recent years. As China has moved up the value chain, its exports have increasingly challenged European firms both domestically and in third-country markets (Banin et al., 2025). This competition is no longer confined to low-cost goods; it extends to high value-added sectors, such as vehicles and specialised machinery (Al-Haschimi et al., 2024). Elevated US tariffs on China may further increase competition for euro area producers if Chinese exporters expand or seek new markets in Europe. This box analyses the implications of increased Chinese competition for euro area employment by exploring how shifts in labour demand are linked to changes in import penetration and trade patterns.

We can assess import penetration by measuring the rise in Chinese imports per worker in European markets, defined as the ratio of euro area imports from China to total euro area employment. This metric highlights the growing presence of Chinese goods in euro area markets (Chart A). Since China's accession to the World Trade Organization in 2001, its exports to the euro area have increased substantially: despite stabilising in the decade 2010-20, these surged by 60% after the pandemic, with China's share of euro area goods imports increasing by two percentage points to 15.6% in 2024.

Chart A

Euro area imports from China per worker and the share of euro area manufacturing employment



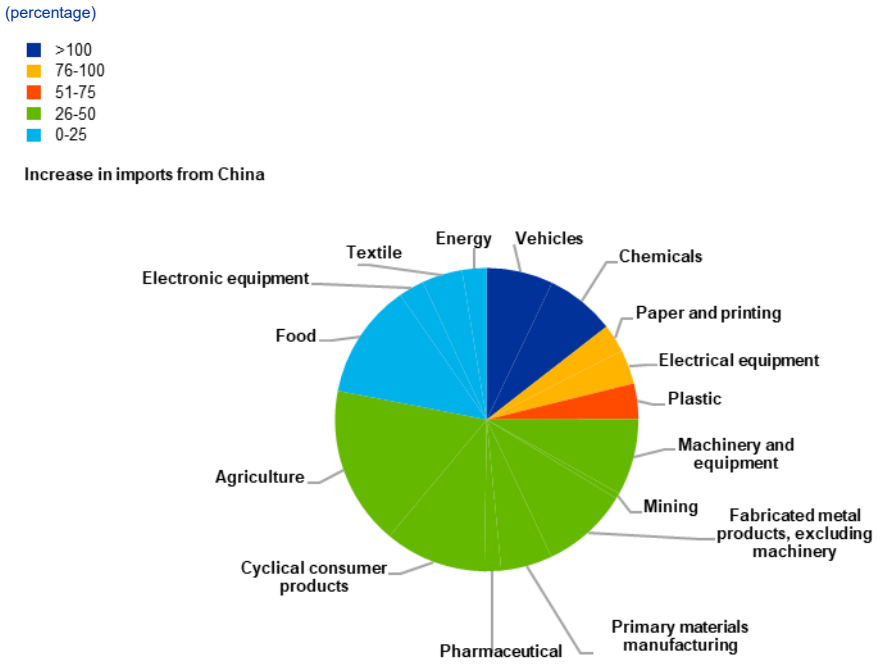
Sources: Eurostat and Trade Data Monitor.

Imports from China have risen significantly in certain sectors. The vehicle and chemicals sectors have experienced the largest increases in imports

from China – rising by 150% and 140% respectively over the past five years (Chart B).[1] Other sectors have also seen significant growth in Chinese imports, for instance paper and printing and electrical equipment each saw an increase of 85%. These statistics emphasise the breadth of China's import penetration across a wide range of industries, from traditional manufacturing to advanced technology.

Chart B

Employment exposure to changes in Chinese euro area imports



Sources: Eurostat and Trade Data Monitor.
Notes: The colours in this chart show changes to euro area imports from China between 2019 and 2024. The latest observations on employment shares are for 2022.

The rise in Chinese competition has direct implications for euro area labour markets. Sectors particularly exposed to China's competition, i.e. sectors where imports from China have increased substantially, employed 29 million workers, accounting for around 27% of total employment in the euro area in 2024. Based on data from that year, the manufacturing sector represents a significant share, as it employs 24 million workers and it is particularly exposed to trade shocks and Chinese import penetration.[2] While the sectors most exposed to increased Chinese import penetration – such as vehicles and chemicals – are not the largest employers, these are critical to the euro area economy. The vehicle sector accounts for only 1% of total euro area employment, but it contributes nearly 10% of the manufacturing sector's real value added and slightly below 2% of euro area GDP. When inter-sectoral linkages are considered, the relevance of the vehicle sector almost doubles, demonstrating its vital importance to the economy (De Santis et al., 2024). Together, the vehicle and chemical sectors employ four million workers, which is 2.5% of total euro area

1 Several European companies in the vehicle sector, and to a lesser extent the chemical sector, have factories and joint ventures in China to serve the domestic market – however, these also serve the rest of the world, including the euro area.

2 The remaining five million workers are employed in the agriculture, mining and energy sectors.

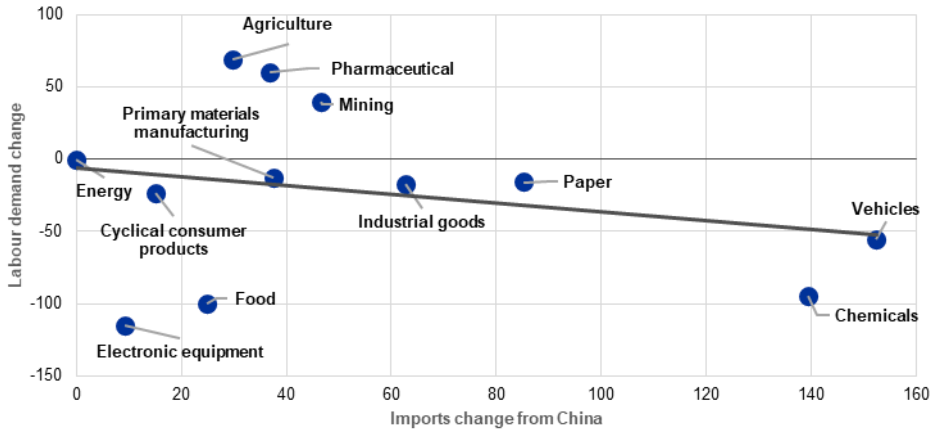
employment. Other exposed sectors, including paper, electrical equipment and plastics, account for an additional three million workers, or 1.7% of total employment.

Labour demand has decreased more in sectors where exposure to China has increased the most between 2019 and 2024. Using earnings calls data and the methodology of Foroni and Schroeder (2025), we have built a sectoral indicator of labour demand tightness based on a list of keywords that reference the pressures firms face from unmet labour demand. In the euro area, labour demand has faced major shocks, such as the pandemic and the energy crisis, and other dynamics in specific sectors (like weak demand for cars in Europe) may have also had an impact. Chart C highlights the link between changes to euro area labour demand and changes in imports from China. Sectors facing greater competition from China have experienced larger declines in published job vacancies – a signal of weaker labour demand. Between 2019 and 2024 labour demand in the vehicles sector fell by 55%, while the decline in the chemicals industry is estimated at 95%. In contrast, sectors with lower exposure to Chinese competition saw, on average, relatively stable labour demand during the same period.

Chart C

Chinese import dynamics and changes to euro area labour demand by sector

(percentage)



Sources: NL Analytics, Trade Data Monitor and ECB staff calculations.
Notes: Labour demand is measured using earnings calls data (Foroni and Schroeder, 2025). The changes shown are for the period 2019-24.

An increase in imports per worker in a sector leads to a corresponding loss in employment within that sector. Applying the analysis of Autor et al. (2013) to euro area countries, Chart D shows the impact on euro area countries' sectoral employment rates in 2022 of an increase in imports from China per worker every year between 2010 and 2021.[3] The long time span allows for a significant impact on employment rates that builds up gradually, as the effects of lay-offs and the workforce adapting to the economic situation can take time to fully develop. Notably, the effects are larger when considering changes since 2010, and gradually diminishing when examining shorter time spans. For instance, a €1,000 increase in imports from China

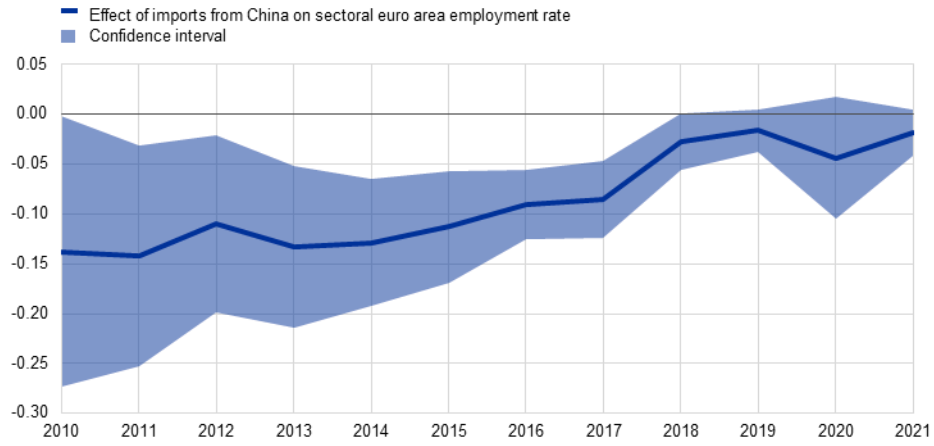
[3] For example, the estimate shown for 2010 is the effect that a €1,000 sectoral increase in imports from China per worker between 2010 and 2022 has on the change in the corresponding sectoral employment rate for the same period.

per worker in a sector between 2015 and 2022 leads to a 0.1 percentage point fall in the employment rate in this sector over the same period. This represents around 240,000 jobs at the euro area level that have either ceased to exist or been reallocated to less exposed sectors.

Chart D

The effect of an increase in imports from China per worker per year on sectoral euro area employment rate in 2022

(cumulative change in employment rate in 2022 relative to each year on the x-axis in percentage points)



Sources: Eurostat and ECB staff calculations.
Notes: The chart shows the estimated β of several cross-section regressions using the following econometric specification: $Lr_{si\_2022} - Lr_{si\_2022-x} = \beta (M_{si\_2022} - M_{si\_2022-x})/L_{si\_2022} + FE_i + \varepsilon_{si}$ with Lr_{si_2022} being the employment rate in sector s, country i in 2022 and M_{si_2022} the imports from China of country i in 2022 of goods produced by sector s. It is weighted by the employment L in the same sector and country. x determines the lag of the regression, that varies between 1 and 12 (corresponding to the years 2010 to 2021). Furthermore, following Autor et al. (2013), we have instrumented $(M_{si\_2022} - M_{si\_2022-x})/L_{si\_2022}$ by $(M_{su\_2022} - M_{su\_2022-x})/L_{si\_2022-x}$ which is the corresponding imports from China to countries u similar to the euro area, namely Australia, Canada, Iceland, Israel, Japan, New Zealand, Norway and South Korea. These countries are affected by a similar shock from increased Chinese imports, but this shock does not affect euro area employment directly. We use lagged employment, because contemporaneous employment can be affected by anticipated China trade. The database is a euro area country panel categorised by NACE2 sector, between 2010 and 2022. The blue shaded band represents a 90% confidence interval.

The current US trade policy and the imposition of tariffs are likely to increase Chinese competition. Following the Trump Administration's announcements of higher US tariffs on Chinese goods, Chinese exporters may expand or seek new markets elsewhere and increasingly redirect trade towards Europe. This trade diversion may amplify the penetration of imports from China into euro area markets, challenging producers (Gunnella et al., 2025). While euro area firms may gain some competitive advantage in US markets relative to China because US tariffs on China are comparatively higher, this is unlikely to offset losses in the domestic market.[4]

All in all, the rising competitiveness of Chinese exports poses significant challenges for euro area labour markets. While at the moment the impact is concentrated in sectors such as vehicles and chemicals, the broader implications might extend to nearly one-third of euro area employment. Trade diversion from the United States, combined with China's increasing competitiveness in high value-added industries, suggests that euro area firms must adapt to an increasingly competitive global environment. Trade shocks can cause short-term disruptions and shifts in jobs between sectors. However, in the long run, total employment may not change much

[4] The potential gains would likely be very small because of the different composition of exports to the United States from the euro area and China (Gunnella et al., 2025).

because the economy adjusts through wage changes and workers moving between industries. Nevertheless, challenges like job market inefficiencies, costs of adjustment and government policies might cause temporary disruptions before the new equilibrium is reached.

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

Prepared by Alex Melemenidis, Richard Morris and Moreno Roma

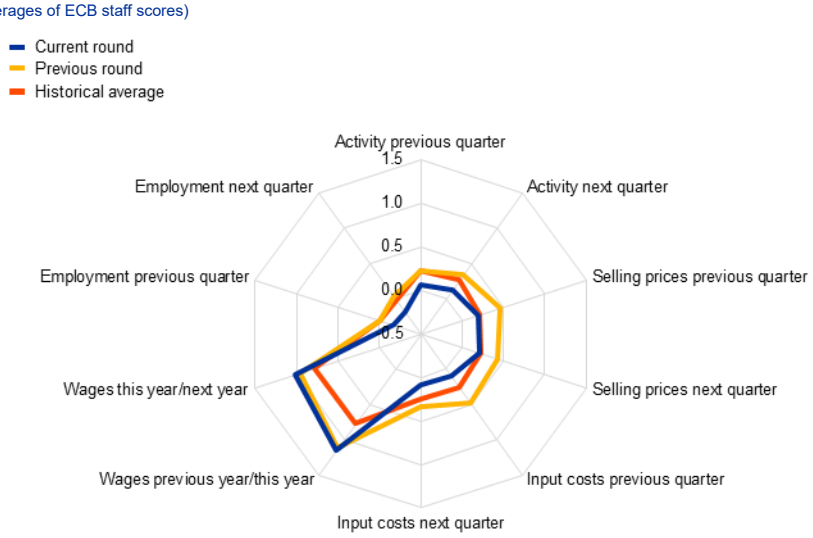
This box summarises the findings of recent contacts between ECB staff and representatives of 72 leading non-financial companies operating in the euro area. The exchanges took place between 23 June and 2 July 2025.[1]

Contacts reported a slowdown in activity in recent months as tariffs, geopolitical tensions and the resulting uncertainty dented business and consumer confidence (Chart A and Chart B). The feedback from contacts was consistent with very modest growth in both the second and third quarters. While manufacturing orders had been recovering in the first months of the year, many contacts indicated a loss of momentum at some point during the second quarter. Growth in services also appeared to have slowed down.

Chart A

Summary of views on activity, employment, prices and costs

(averages of ECB staff scores)



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), 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 second and third quarters of 2025 respectively, while for the previous round these refer to the first and second quarters of 2025. 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 is an average of scores compiled using summaries of past contacts extending back to 2008.

In the manufacturing sector, the positive start to the year appeared not to have been sustained. While reports varied, many contacts said that they had been positively surprised by developments in the first months of the year, but that orders had started to slow down at some point during the second quarter. This pattern of

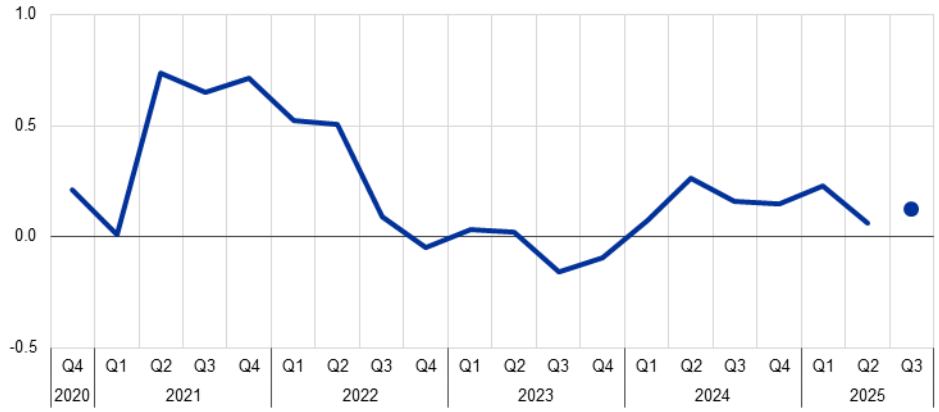
[1] For further information on the nature and purpose of these contacts, see the article entitled "The ECB's dialogue with non-financial companies", *Economic Bulletin*, Issue 1, ECB, 2021.

demand was most commonly described by contacts in the intermediate goods sector as well as by some producers of capital goods and consumer durables. Opinions were divided on whether this slowdown was caused by an unwinding of the frontloading of exports in anticipation of potential US tariff increases or a broader softening in demand. Nevertheless, there was widespread consensus on the increasing role of import competition, especially from China. Despite the more subdued sentiment this round compared with three months ago, there were still some positive developments. For instance, the pharmaceutical industry continued to experience strong growth, supported by frontloading ahead of higher tariffs. Additionally, demand for semiconductors and heavy goods vehicles showed signs of recovery. Contacts in or supplying the construction sector were also more optimistic, maintaining their view that activity was picking up, supported by recent declines in interest rates.

Chart B

Views on developments in and the outlook for activity

(averages of ECB staff scores)



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). Scores range from -2 (significant decrease) to +2 (significant increase). A score of 0 would mean no change. The dot refers to expectations for the next quarter.

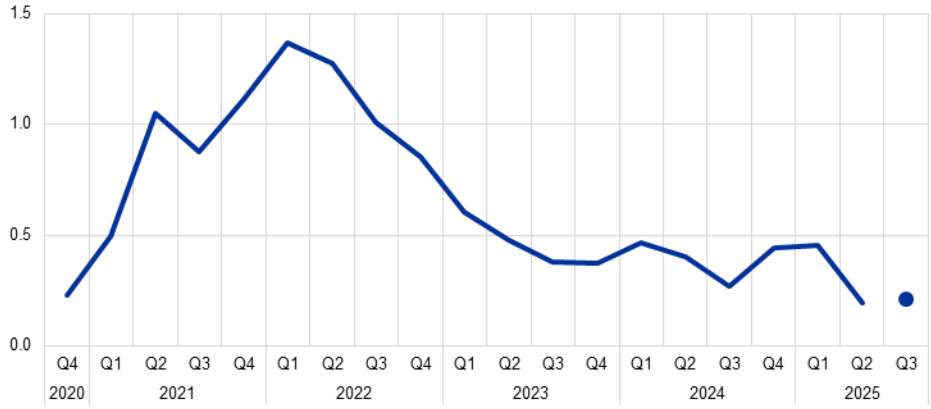
Reports on consumer spending and services activity also pointed to some loss of momentum. Contacts in the consumer goods and retail sectors described activity as rather flat overall. Most notably, manufacturers of consumer electronics and household appliances, who had been more optimistic in the previous survey round, now reported sluggish or declining business. Retailers of clothing and other personal equipment also painted a similar picture of persistently weak spending. Food retailers and their suppliers again emphasised how price sensitivity among consumers remained very high, often citing poor or declining consumer confidence. In the tourism services sector, contacts reported that growth was moderating, albeit at a high level. Popular tourist destinations faced continued capacity constraints in hotels, and consumers were becoming more price sensitive, increasingly booking last-minute and cutting back on other travel-related spending, such as dining out. Other business and consumer service providers described somewhat mixed developments: IT-related services in particular still experienced solid growth, but the overall market environment remained challenging.

With growth momentum weakening, the employment outlook also deteriorated slightly. Headcount reductions were still prevalent – or had even intensified – in the manufacturing sector, reflecting weak demand, overcapacity and ongoing restructuring in many firms. Furthermore, employment was said to be stabilising or even declining in parts of the services sector which had previously shown strong growth, such as tourism. Placement agencies continued to report a challenging environment, especially for white-collar roles and permanent job placements, which were still falling as firms delayed hiring decisions and favoured temporary staffing solutions. There were, however, pockets of growth, most notably in the construction (despite perceived labour shortages), energy, defence and pharmaceutical sectors.

Chart C

Views on developments in and the outlook for prices

(averages of ECB staff scores)



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 selling prices. Scores range from -2 (significant decrease) to +2 (significant increase). A score of 0 would mean no change. The dot refers to expectations for the next quarter.

Contacts reported a slight slowdown in selling price momentum in recent months (Chart A and Chart C). This was mainly driven by developments in manufacturing, and in particular in the capital and intermediate goods sectors, where prices were falling as a result of weaker demand and increased import competition, as well as easing non-labour input costs. This contrasts somewhat with the more optimistic picture of recovering prices painted a few months ago. Price growth across much of the services sector remained relatively robust, particularly in transport and tourism services (partly driven by regulatory costs and capacity constraints). However, contacts in the retail sector and in services such as consultancy, IT and telecoms tended to report moderate – or moderating – price growth in the face of strong competition and cost-conscious customers.

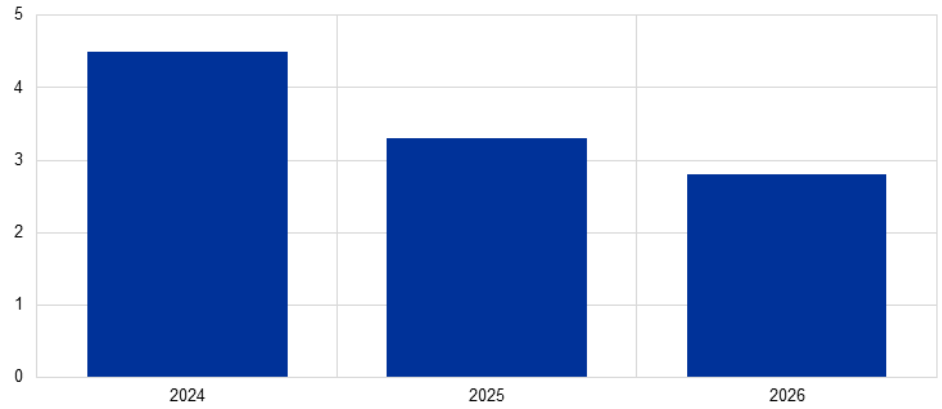
Contacts remained confident that wage growth was moderating (Chart D). On average, the quantitative indications provided would imply that wage growth is expected to slow, from 4.5% in 2024 to 3.3% in 2025 and further to 2.8% in 2026. While these indications are 0.2-0.3 percentage points above those in the previous survey round, they still point to the same direction of travel.[2]

[2] Some variation between survey rounds is to be expected, given the rotating panel of contacts.

Chart D

Quantitative assessment of wage growth

(percentages)



Source: ECB.
Notes: Averages of contacts' perceptions of wage growth in their sector in 2024 and their expectations for 2025 and 2026. The averages for 2024, 2025 and 2026 are based on indications provided by 63, 65 and 51 respondents respectively.

The effect of US tariffs on activity and prices in the euro area was mostly viewed as being negative at present, albeit with little to no impact on final consumer prices. The downward pressure on both activity and prices reflected reduced demand, in part caused by trade diversion from Asia (and China in particular) as exporters from the region sought alternatives to the US market. This was exacerbated by the appreciation of the euro. Consistent with this trend, contacts in the transport and logistics sector pointed to strong growth in imports and a decline in exports. So far, increased import competition mainly affected intermediate goods and in particular more commoditised, upstream products. However, contacts expected this to extend to downstream products with higher value-added content in the coming months and quarters. By contrast, contacts in the retail and consumer services sectors reported minimal, if any, impact on their activity or prices to date, and did not anticipate much impact in the near future.

4 Real wage catch-up in the euro area

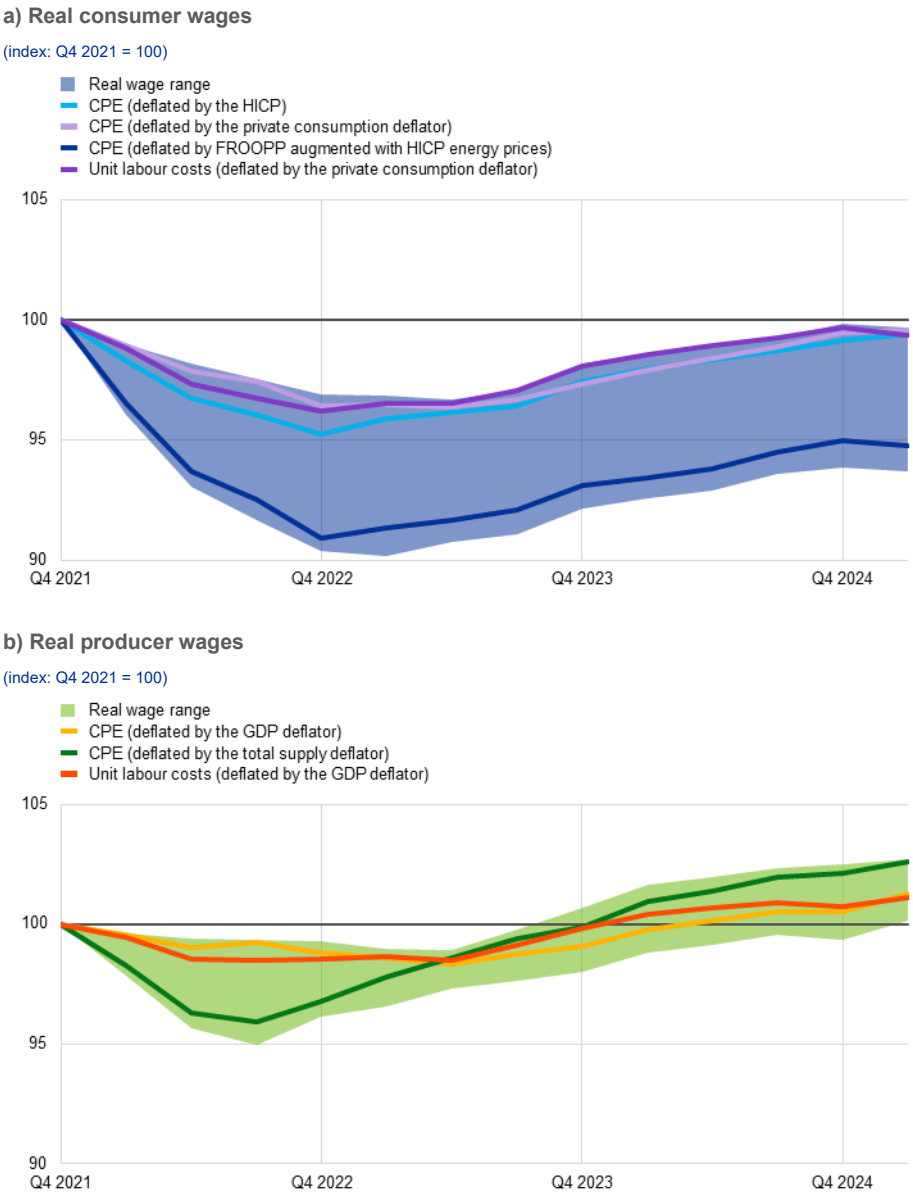
Prepared by Colm Bates, Katalin Bodnár, Vasco Botelho and Flavie Rousseau

Real wages in the euro area have largely recovered from their decline during the period of high inflation in 2022. Nominal wages have recently risen faster than prices. As a result, real wages, which are measured by deflating nominal wages by cost-of-living indicators, are now approaching levels seen before the inflation surge. For example, in the first quarter of 2025, compensation per employee deflated by the Harmonised Index of Consumer Prices (HICP) was only around 0.5% below its level in the fourth quarter of 2021 – at the start of the inflation surge – while in the fourth quarter of 2022 it had dropped 5% below that level (Chart A, panel a). Other wage indicators deflated by the HICP or the private consumption deflator show similar catch-up trends. The recent gradual restoration of lost purchasing power should limit wage demands in the future. However, workers may still perceive a loss in living standards. For instance, they would have continued to perceive a considerable real wage gap in the first quarter of 2025 if they had compared their nominal wages with the prices of frequent out-of-pocket purchases (FROOPP) augmented with HICP energy prices rather than with the overall HICP.[1]

[1] Frequent out-of-pocket purchases (FROOPP) are a subcategory of the HICP. This subcategory is compiled from sub-indices that are considered to mainly represent purchases made by consumers typically at least every month and paid for directly and actively. The main categories of goods included in FROOPP are pharmaceutical products, electric and other personal appliances, non-durable household goods, and pet-related products and services, including veterinary care. We augment this basket of goods with an energy component, as this is likely to influence consumers' perceived purchasing power.

Chart A

Wage indicators for the euro area



Sources: Eurostat and ECB calculations.
Notes: The chart shows the range of real wages, calculated using compensation per employee (CPE), compensation per hour, wages and salaries per employee, the labour cost index (total cost, wages and salaries) and the employee and hourly unit labour cost indices. The unit labour costs line in each panel represents the employee unit labour cost index. Panel a) shows the range of wage indicators deflated by the HICP, the private consumption deflator and frequent out-of-pocket purchases (FROOPP) augmented with HICP energy prices, while panel b) uses the GDP deflator and the total supply deflator. The latest observations are for the first quarter of 2025.

The nature of inflationary pressures in recent years has driven a wedge between "real consumer wages" and "real producer wages". For workers, wages are an income factor that contributes to their wellbeing. For employers, however, wages represent a cost factor that is traditionally closely linked to developments in labour productivity.[2] From their perspective, the relevant real wage measure is

[2] Arce and Sondermann (2024) show that productivity growth has been relatively weak in recent years. Consolo and Foroni (2024) argue that the decline in real wages during the 2022 inflation surge, together with broadly stagnant productivity growth, is one of the factors behind the resilient employment growth in the euro area.

calculated relative to the prices that they can charge to produce their goods and services, which are accounted for by the GDP deflator, total supply deflator or sectoral value-added deflators.[3] When defined in this way, real producer wages have already surpassed their levels prior to the inflation surge (Chart A, panel b).[4] The differences in how real consumer and producer wages have developed largely reflect the fact that higher energy prices and supply chain disruptions pushed up import prices, leading to a deterioration in the terms of trade.[5]

At the sectoral level, real wages have surpassed their levels prior to the inflation surge in market services, but still have some ground to make up in both the industry and construction sector and the public services sector (Chart B, panel a). Inflation affects all workers in similar ways, irrespective of their jobs. Nominal wages have not increased by the same amount or at the same pace in all sectors. In the first quarter of 2025 the real wage catch-up in the market services sector was complete, while real consumer wages were still lagging in both the industry and construction sector and the public services sector. Real producer wages show the extent to which wage costs increased relative to the prices charged by firms in each sector. Employers in market services were less affected by the energy shock and benefited the most from reopening effects following the COVID-19 pandemic, experiencing higher labour shortages as a result, which supported wage growth overall. Real producer wages also increased in public services, with wages weighing more on the sector's costs than in the past. By contrast, employers in the industry and construction sector – a capital-intensive sector that is more exposed to higher energy costs – bore the brunt of the inflation shock. As a result, while real consumer wages in industry and construction have displayed similar dynamics to those in public services, real producer wages are still far below the levels recorded in the fourth quarter of 2021.

Real consumer wages have fully returned to or even exceeded their levels prior to the inflation surge in several euro area countries, while they continue to lag in others (Chart B, panel b). This reflects a combination of factors: (i) structural issues, which have translated into a pattern of real wage losses in some countries over a longer time period; (ii) a high degree of variation in inflation rates during the high-inflation period; and (iii) differences in the speed and structure of wage-setting and the associated negotiations across countries.[6]

3 The total supply deflator is a proxy for the total cost of inputs and is defined as GDP plus imports. See Hahn and Renault (2024).

4 The nomenclature of real consumer and real producer wages follows Bodnár et al. (2022). However, the price of output, as measured by the deflators considered here, does not reflect the indicator of producer prices, which are measured by the Producer Price Index.

5 See Arce et al. (2023).

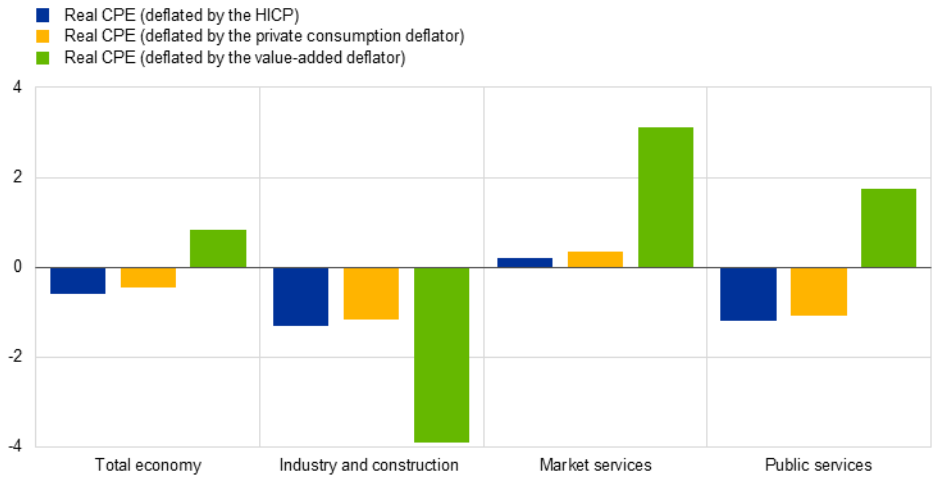
6 See Allayioti and Beschin (2024).

Chart B

Real wage catch-up in the first quarter of 2025: differences across sectors and countries

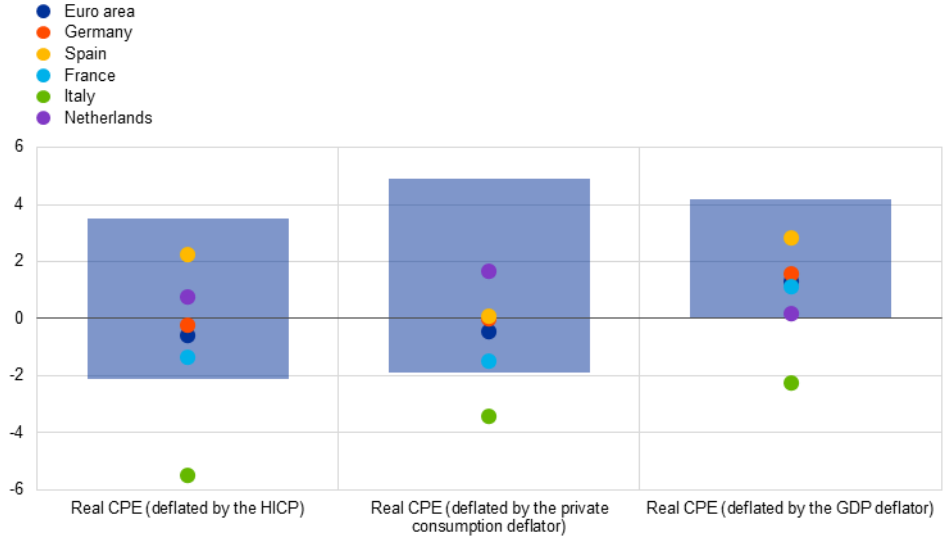
a) Across sectors

(percentages, cumulative change compared with the fourth quarter of 2021)



b) Across countries

(percentages, cumulative change compared with the fourth quarter of 2021)



Sources: Eurostat and ECB calculations.
Notes: CPE stands for compensation per employee. Panel a): sectoral value-added deflators are used to calculate real producer wages. For the total economy, the value-added deflator used corresponds to the GDP deflator. Panel b): the shaded area refers to the cross-country inter-quartile range for the respective indicators. The latest observations are for the first quarter of 2025.

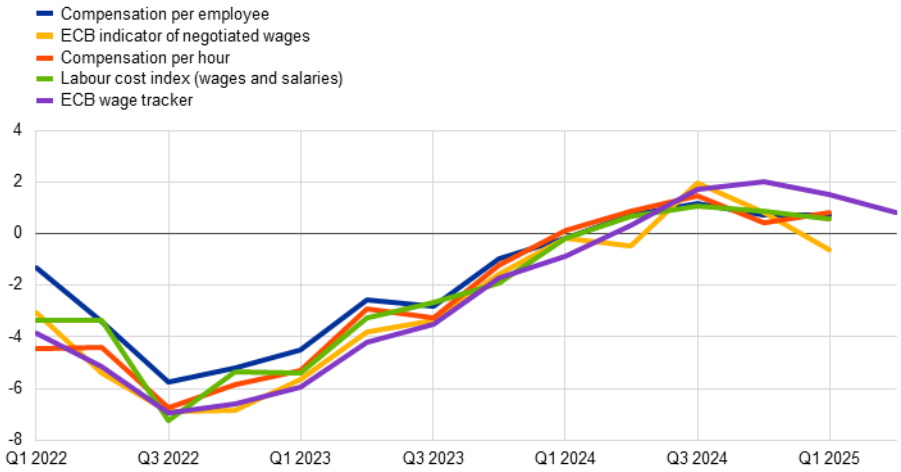
Survey evidence shows that consumers continue to have mixed perceptions of real wage catch-up, despite some improvements. Real wage developments based on aggregate macroeconomic indicators may not fully reflect consumers' perceptions of their real wages. In the second quarter of 2024, annual compensation per employee growth exceeded consumers' inflation perceptions, as recorded in the ECB Consumer Expectations Survey (CES), for the first time since the 2022 inflation surge (Chart C). Some moderation notwithstanding, there was still a positive gap in the first quarter of 2025. Consumers' perceptions of real wage catch-up have implications for their

confidence and consumption decisions. Baumann et al. (2025) find that a large proportion of consumers perceive that their nominal wage growth has not exceeded price growth in the previous 12 months, based on the CES. In April 2025 the CES repeated the same set of questions regarding real wage catch-up, and the results remained unchanged: a still significant proportion of consumers felt that their wage growth had not outstripped price growth.[7] This suggests that consumers tend to focus on alternative consumption baskets and that sharp price changes may continue to be reflected in their perceptions over a longer period. A sustained catch-up of real wages together with price stability is therefore likely to promote consumer confidence and underscore growth in the euro area. The evidence presented in this box confirms that, overall, the choice of price index matters when assessing real wage catch-up. As highlighted, there is a difference between consumer prices and the prices charged by domestic firms. But even when the results focus more narrowly on the purchasing power of consumers, different consumption baskets still have significant implications for consumers' perceptions of their real wages.

Chart C

Real wage growth when deflated by consumers' inflation perceptions

(annual percentage changes)



Sources: ECB wage tracker, Eurostat, ECB Consumer Expectations Survey (CES) and ECB calculations.
Notes: The chart shows the difference between the annual growth rates of the stated nominal wage indicators less consumers' 12-month inflation perceptions, as recorded in the CES. For further details on the ECB wage tracker, see Bates et al. (2024). The latest observations are for the second quarter of 2025 for the ECB wage tracker and the first quarter of 2025 for the remaining indicators.

[7] A variation on these questions was introduced in May 2025, looking at consumers' perceptions of wage growth relative to price changes over the past four years. The original question focused on a shorter period of time (over the past year). The results remain consistent across both horizons.

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5 Uncertainty in seasonally adjusted services inflation: the role of Easter and travel

Prepared by Martin Eiglsperger, Mario Porqueddu and Elisabeth Wieland

When assessing inflation developments, the ECB complements the monitoring of annual inflation rates by analysing measures of "momentum" to gauge shorter-term developments. Momentum is defined as the three-month-on-three-month percentage change in the seasonally and calendar-adjusted price index (annualised for comparability).[1] Annualised shorter-term rates need to be interpreted with caution, not least on account of exceptional effects that may considerably increase uncertainties pertaining to seasonal and calendar adjustment, as illustrated in this box.

HICP services momentum increased sharply from March to April 2025 and remained elevated in May and June, in particular reflecting changes in the seasonally and calendar-adjusted month-on-month rate of change owing to travel-related items (Chart A, panel a). While part of the increase in the momentum of services inflation in early 2025 reflected some annual repricing effects, the exceptional surge in travel-related services in April points to a stronger than usual impact from this year's Easter holiday period (Chart A, panel b).[2] Travel-related services usually associated with holiday effects – including Easter – encompass air transport, package holidays and accommodation services. Since the seasonally and calendar-adjusted rate of change in HICP services items only extracts average Easter effects, exceptional effects from Easter-related travel still remain in the adjusted series.[3] This explains the sharp swing in the seasonally and calendar-adjusted month-on-month rate of change from 0.3% in March to 0.7% in April, the subsequent drop to -0.1% in May and the increase to 0.5% in June.

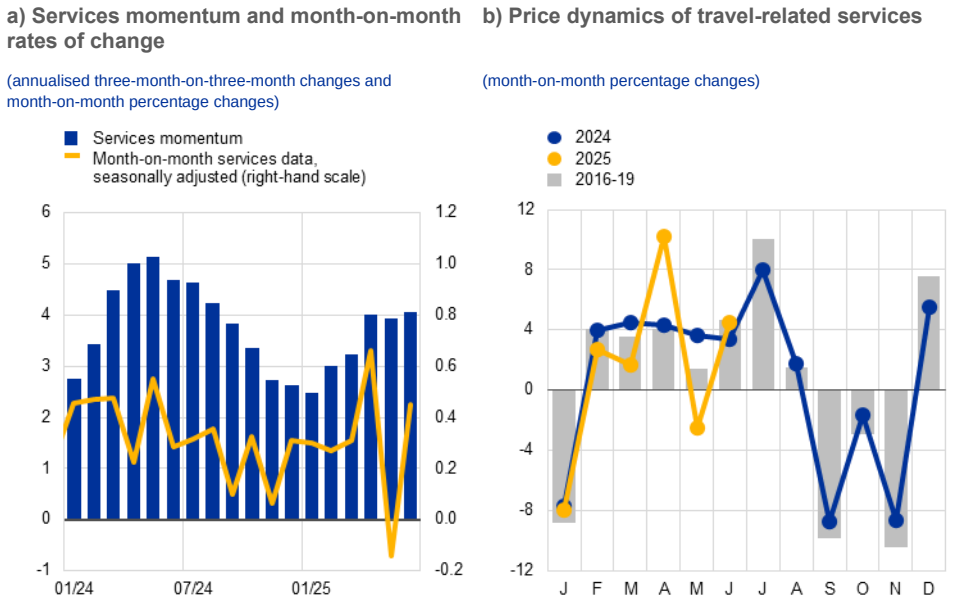
1 See Lane (2023). The momentum indicator can be understood as an intermediate option that falls between indicators calculated at an annual frequency (i.e. the price level in a particular month compared with the price level in the same month one year previously), which always reflect some inertia, and indicators calculated on a month-to-month basis, which run the risk of being affected by a high noise-to-signal ratio because of dominating idiosyncratic factors in the monthly inflation data.

2 For further evidence on the repricing scheme, see Bodnár et al. (2025).

3 By contrast, the month-on-month rate of change in (non-seasonally adjusted) travel-related services in June 2025 was broadly in line with its average over the period 2016-19.

Chart A

Seasonally and calendar-adjusted services dynamics and travel-related services



Sources: Eurostat and ECB staff calculations.
Notes: Panel a) shows seasonally and calendar-adjusted data, while panel b) shows unadjusted data for travel-related HICP services items (air transport, package holidays and accommodation services). The latest observations are for June 2025.

Seasonal and calendar adjustment uses statistical estimations to remove these effects; however, the trend as well as cyclical and irregular movements remain present after adjustment. Seasonal adjustment is a statistical estimation technique, which extracts patterns from a time series that appear every year in the same month, affect the series in a similar manner and can be expected to reappear in the years to come.[4] The ECB conducts separate seasonal adjustments of the main components of the euro area HICP. The HICP for services is also calendar adjusted for Easter, which particularly affects prices for travel services. Removing the seasonal and calendar effects, the remaining adjusted series is composed of trend-cyclical and erratic movements, including potential outliers and one-off effects.[5]

The recent volatility in the seasonally and calendar-adjusted HICP for services reflects a strong impact of Easter in April, which was only partially captured by the ECB's calendar adjustment. The dominant role played by travel-related services in the uptick in HICP services inflation in April (Chart A, panel b) points to a strong impact of the late timing of Easter this year (April in 2025 vs March in 2024), likely exacerbated by the Catholic and Orthodox Easter celebrations falling on the same date. The ECB's calendar adjustment removes average Easter effects, thereby increasing the month-on-month rate of change in HICP for services by about 0.1 percentage points in March 2025 and decreasing this rate by 0.1 percentage points in April 2025. Calendar adjustment identifies the average historical impact of moving calendar dates such as Easter. It is more uncertain than estimations of seasonal effects as statistical evidence is more limited and country-specific school holiday

4 For more information, see Eurostat (2024).

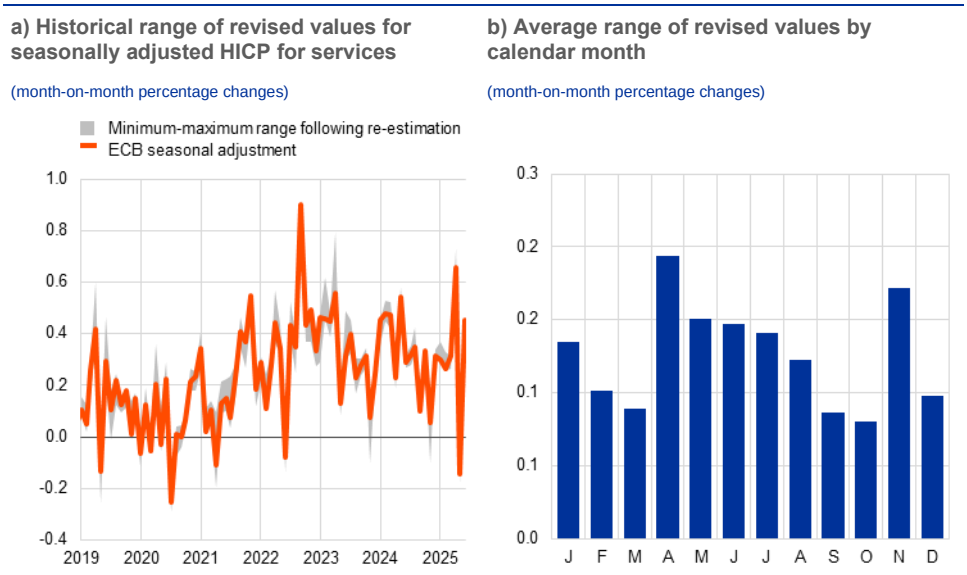
5 For information on the role of seasonality and outliers in HICP inflation excluding food and energy, see Lis and Porqueddu (2018).

schedules differ. As a result, exceptional Easter-related effects that deviate from historical average effects persist even after seasonal and calendar adjustment and consequently pass through to the momentum indicator.[6]

An analysis of the ECB's seasonally and calendar-adjusted HICP for services reveals that estimation uncertainty is generally greater during the second quarter of the year. Revisions of seasonally adjusted backdata usually occur whenever seasonal profiles are re-estimated, as observed in the real-time vintages of the series. Chart B, panel a) presents the range of revised values, i.e. the area between the largest and the smallest reported values for a certain reporting month, over the entire period. In some months, replacing the lowest reported value with the highest one would shift the seasonally and calendar-adjusted month-on-month rate of change by up to 0.3 percentage points. Zooming in on calendar months, seasonally and calendar-adjusted services prices tend to show larger ranges of revised values during the second quarter of the year, suggesting that changes in the timing of school holidays across years as well as evolving seasonal patterns contribute to more uncertain estimates (Chart B, panel b).[7]

Chart B

Historical range of seasonally adjusted HICP for services



Sources: Eurostat and ECB staff calculations.
Notes: Panel a) shows the month-on-month rate of change in the HICP for services according to the ECB's seasonal adjustment method (orange line) together with the range of historical values (minimum to maximum value) following re-estimation (shaded area). Panel b) reports the average range of the maximum and minimum values of the month-on-month rate of the (seasonally adjusted) HICP for services for each calendar month based on historical vintage data from April 2016 onwards. The latest observations are for June 2025.

6 Estimates for these calendar effects may also be adversely affected by structural breaks. Unbiased results require break adjustment. An example of this is the treatment of Easter effects that do not appear in the prices of German package holidays from 2023 onwards as a result of a change in the statistical methodology. Seasonal and calendar factors have been modified accordingly (see Schnorrenberger et al., 2024).

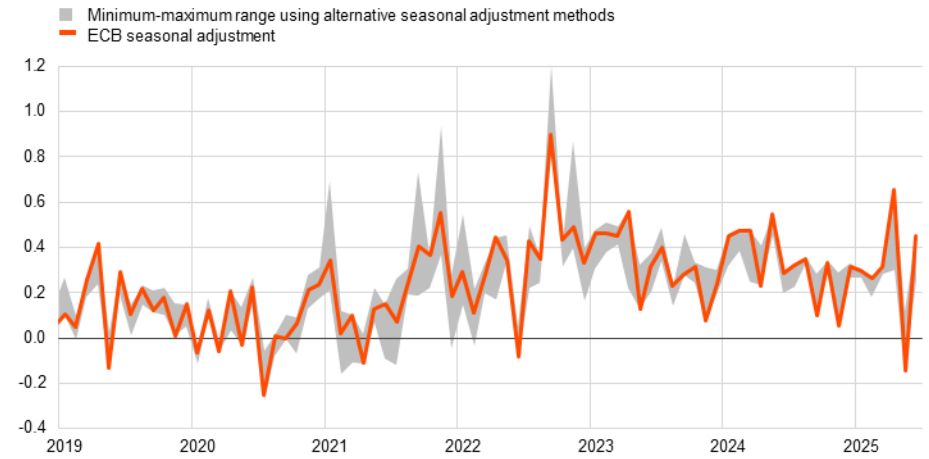
7 This finding also holds when excluding data revisions before March 2019 owing to methodological changes in the calculation of the price index for package holidays in the HICP for Germany. These were revised back to early 2015, which also impacted overall services inflation in the euro area (see Eiglsperger, 2019). The high average range for November is a result of the effect of new data sources for flight prices.

Moreover, seasonally and calendar-adjusted results depend on model choices and parameter settings. While Eurostat provides general recommendations on seasonal adjustment, it does not produce seasonally and calendar-adjusted HICP series. As a result, data users may adopt different approaches to seasonal adjustment. Chart C illustrates how different settings – such as those affecting outliers, trend estimation and seasonal patterns – can significantly alter results compared with the ECB's preferred approach. According to these alternative methods, the range of differences in seasonally and calendar-adjusted rates of change for the HICP for services is, on average, higher than the range of differences arising from revised values. These alternative approaches may have partially removed exceptional travel-related price increases in April 2025 by attributing them to seasonality to some extent, resulting in lower rates of change for that month. By contrast, the ECB's preferred approach keeps the above-average effect separate, while only average Easter effects are extracted.[8]

Chart C

Range of seasonally adjusted HICP for services using alternative seasonal adjustment methods

(month-on-month percentage changes)



Sources: Eurostat and ECB staff calculations.
Notes: The chart shows the month-on-month rate of change for the HICP for services according to the ECB's seasonal adjustment method (orange line) together with the range (minimum to maximum value) according to ten different seasonal adjustment specifications (shaded area), all based on the latest vintage data. The latest observations are for June 2025.

Overall, the volatility in seasonally and calendar-adjusted services dynamics should be interpreted cautiously. April 2025 was marked by sharp price increases in travel-related services. Calendar adjustment procedures rely on average calendar effects based on current and past data. In the ECB's seasonal and calendar adjustment, the higher than average part remains present in the adjusted April 2025 value. The effect is treated as an outlier, not as a seasonal movement; it is higher than a normal Easter effect, while the average Easter effect is extracted by the ECB's

[8] The ECB's preferred approach treats services in Germany separately, controlling for structural breaks in German prices for package holidays and accommodation services. The ECB's explicit treatment of outliers implies more stability in the estimation of seasonal profiles. Alternative approaches, as shown in Chart C, tend to be adversely affected by not singling out these breaks. Generally, allowing for more ad hoc changes when estimating seasonality tends to produce smoother dynamics. However, this may come at the cost of significant revisions when outliers eventually turn out to be substantial (see Mehrhoff et al., 2011).

calendar adjustment. Part of the increase could be explained by shifts in demand preferences for tourism services or a redirection of tourism demand from the summer to the spring (reflecting climate change), potentially altering seasonal dynamics on a permanent basis.

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6 Higher defence spending and its impact on household expectations

Prepared by Adam Baumann, Cristina Checherita-Westphal, Georgi Kocharkov, Steffen Osterloh

Fiscal policies in the euro area are increasingly shaped by a focus on defence spending in response to heightened geopolitical tensions. The February 2025 Munich Security Conference, the launch of the European Commission's Preparedness Union Strategy in March and the conclusions of the June 2025 NATO Summit all underscored EU governments' commitment to increasing defence spending.[1] This box uses data from the ECB Consumer Expectations Survey (CES) rounds conducted in February and May 2025 to assess euro area household expectations regarding defence spending, in terms of both its economic impact in their respective countries and its implications for their personal financial well-being.

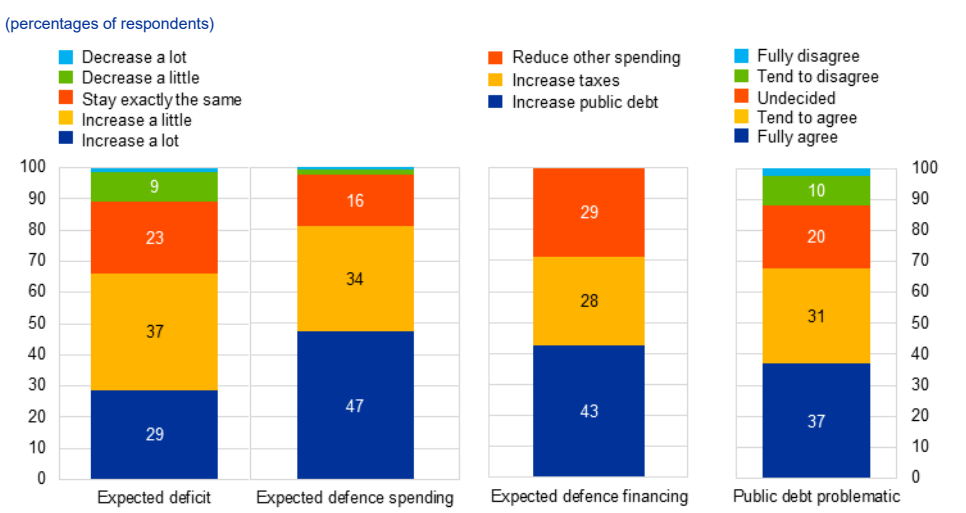
The majority of households expect increases in government deficits and defence spending (Chart A). According to the May 2025 CES results, 66% of respondents believe that the government deficit in their country will increase over the next 12 months, with nearly one-third predicting a significant increase and only 10% expecting a decrease (Chart A, first bar). An even larger share (81%) of respondents believe that defence spending will increase over the next 12 months, with close to half (47%) expecting a significant increase (Chart A, second bar). The difference between the two categories may be partly explained by how households expect higher defence spending to be primarily financed. Specifically, 43% of respondents believe that the primary source of financing would be increased public debt. Meanwhile, 29% expect any increase in defence spending to be financed by reducing other spending, and 28% believe it would be financed through increased taxes (Chart A, third bar). The latter two methods would, in principle, limit a potential increase in the government deficit.

A large proportion of households view the level of public debt in their country as problematic. 68% of respondents tend to agree or fully agree that the level of public debt is a major issue in the country they live in, while only 12% disagree (Chart A, fourth bar). This perspective largely reflects concerns stemming from existing debt burdens. When analysed together, these insights on public debt and the financing of defence spending might offer a clearer understanding of the reasons behind household expectations on the potential effects of increased defence spending.

[1] For more details, see Checherita-Westphal et al. (2025) in this issue of the Economic Bulletin.

Chart A

Household expectations about fiscal policy changes and views on public debt



Source: CES weighted data, May 2025.
Notes: Euro area weighted average of survey responses in the 11 euro area countries covered by the CES (see Chart C). Respondents were asked: (1) how they believe the government deficit will change in the country they currently live in over the next 12 months; (2) how they believe defence spending will change in the country they currently live in over the next 12 months; (3) if defence spending were to increase, how they expect it to be primarily financed; and (4) to what extent they agree with the statement: "The level of government debt in the country you currently live in is a major problem".

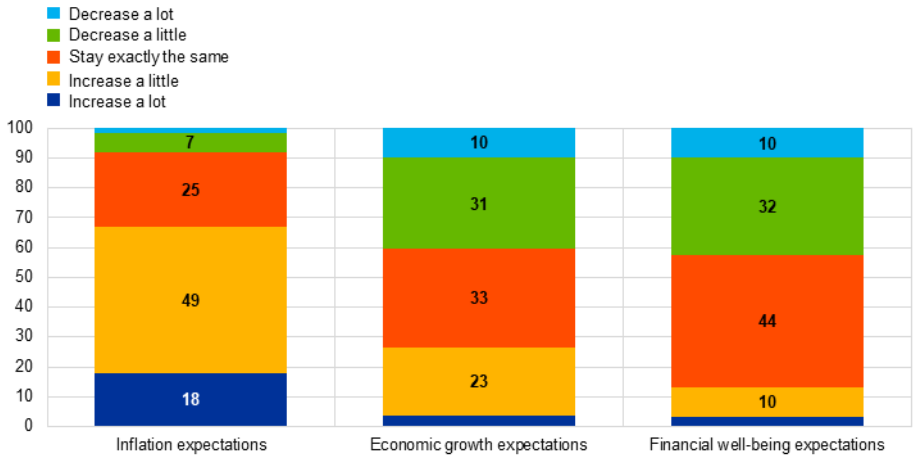
While the overall impact of different defence spending beliefs on expectations remains limited so far, most households expect inflation to increase somewhat in response to higher defence spending, while their expectations about the impact on growth are more varied (Chart B, panel a). Respondents were asked how a potential increase in defence spending in the country they live in would affect prices, economic growth and the financial well-being of their household. A significant share of households (67%) believe that increased defence expenditure will lead to higher inflation, with about half expecting a limited increase in inflation. Expectations for effects on economic growth are more varied and broadly pessimistic, with only 27% of respondents anticipating an increase in economic activity and 33% expecting activity to remain the same, while 41% expect it to decline (of which most expect only a small decline).

Chart B

Household expectations about the effects of increased defence spending

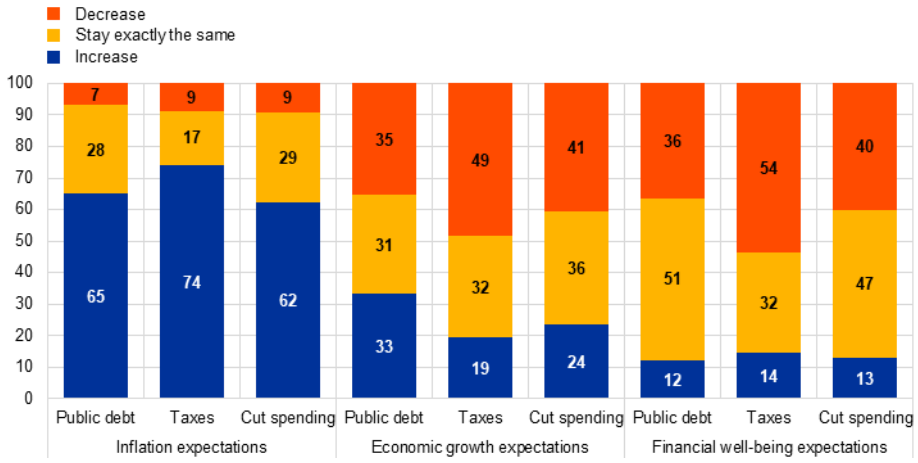
a) Expected effect of increased defence spending on inflation, economic growth and financial well-being

(percentages of respondents)



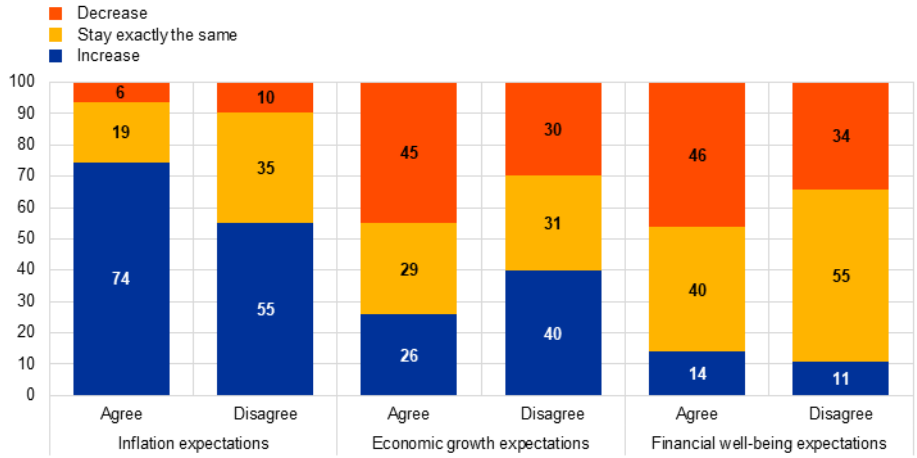
b) Expected effect of increased defence spending by expected primary source of financing

(percentages of respondents)



c) Expected effect of increased defence spending by view on public debt

(percentages of respondents)



Source: CES weighted data.
Notes: Panel a): respondents were asked how any additional spending on defence in the country they currently live in would affect prices of goods and services, economic growth and their household's financial well-being. "Inflation" refers to the change in prices of goods and services. Panel b) breaks down the results of panel a) by the expected primary source of financing of increased defence spending. Panel c) breaks down the results of panel a) according to whether respondents agree or disagree that the government debt level is a major problem in the country they currently live in. Panel b) and panel c): the panel a) categories "Increase a lot" / "Increase a little and "Decrease a lot" / "Decrease a little" are combined into "Increase" and "Decrease" respectively. The latest observations are for May 2025.

Households expect their own financial well-being to remain largely the same. Most households also believe their financial well-being would stay the same (44%) or decrease a little (32%). This suggests the majority of households do not expect that the defence spending pledged in recent announcements will eventually make them more confident to spend more.[2] It is worth mentioning that the results in Chart B, panel a) do not change significantly if the sample is restricted only to respondents who expect defence spending in their country to increase.[3] That being said, the quantitative impact of different defence spending beliefs on expectations for inflation and growth remains limited so far.

Household expectations about the impact of defence spending on the economy and their financial well-being are closely linked with their beliefs about how such spending will be financed and their country's level of public debt. Households who believe future defence spending will be financed through higher taxes are more likely to expect an increase in inflation, and to hold pessimistic views about the ensuing impact on economic growth, compared with those who believe it will be financed through new debt or cuts in other spending (Chart B, panel b). The former belief may be driven by the direct and short-term inflationary impact of tax increases, particularly in the case of indirect taxes. This pattern is also more pronounced among households who view public debt as a significant problem in their country (Chart B, panel c), possibly because they interpret higher defence spending as a signal of heightened geopolitical uncertainty and worsening economic conditions. Additionally, some households may perceive the increased defence spending as a misallocation of resources. Finally, the result that a potential build-up of public debt increases

2 For a detailed analysis of consumer confidence in the euro area based on a new indicator, see Baumann et al. (2025) in this issue of the Economic Bulletin.

3 For example, the share of respondents expecting an increase, changes from 67% to 71% for inflation and from 27% to 29% for economic growth, while for financial well-being it stays constant at 13%.

household inflation expectations – especially if debt is already high – is consistent with findings from other surveys.[4]

At country level, government deficit expectations are markedly different and the February and May results differ in many countries, broadly reflecting expectations about defence spending and its financing (Chart C, panels a and b). The cross-country heterogeneity of expected government deficits is very large in general, with the share of households expecting the deficit to increase ranging from 41% in Portugal to 83% in Germany for the May survey round. The expectations of higher deficits have increased overall since February but developed very differently across countries. The standouts in terms of increases are Germany and Belgium (Chart C, panel a). This coincides with the plans of the German Government to substantially increase spending over the coming years, in particular on defence and infrastructure, and mainly funded through debt. Belgium and other countries also announced similar increases in defence spending, which affected consumer expectations (Chart C, panel b).[5] In contrast, in Greece in particular, but also in Portugal, the percentage of respondents expecting a significant increase in the government deficit dropped between February and May.[6]

Views on whether the level of government debt is a major problem are also very different at the country level but have remained broadly stable since February (Chart C, panel c). Notably, Netherlands, Ireland and Germany are among the countries with the smallest percentage of respondents that consider government debt a major problem, while Italy, France and Greece[7] are among those with the largest percentages. At the same time, some changes in perceptions seem to have occurred for households in Germany (more pessimistic), Greece and Portugal (more optimistic).

4 See, among others, Coibion et al. (2021) for the United States, and Grigoli and Sandri (2023) for the United States, the United Kingdom and Brazil.

5 For instance, the approved 2025 Belgian federal budget includes a defence spending boost to 2% of GDP, along with broader expansionary measures such as investments in nuclear energy, but also pension reforms and lower social spending.

6 These two countries are also among those with the lowest share of respondents expecting a significant increase in defence spending, broadly reflecting their governments' announcements (noting that Greece has one of the highest defence spending-to-GDP ratios in the euro area).

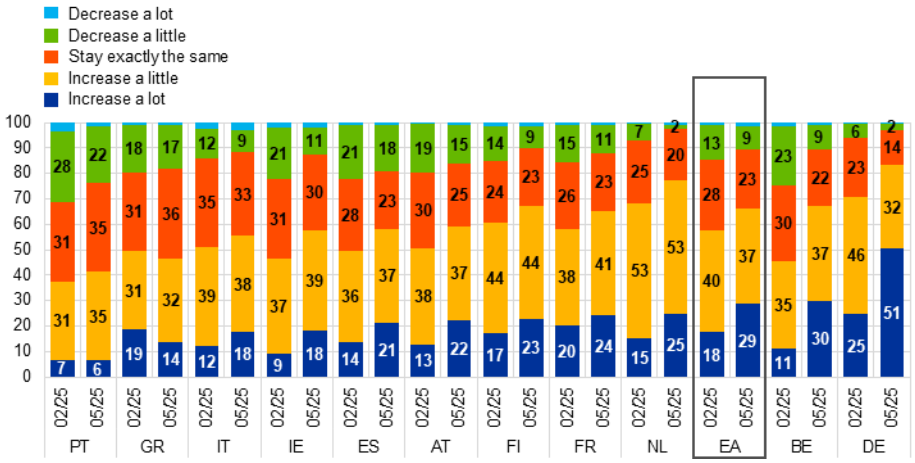
7 Greece also has the smallest proportion of respondents (only 27%) who believe that public debt would be the most likely way of financing increased defence spending.

Chart C

Household expectations and views over time and by country

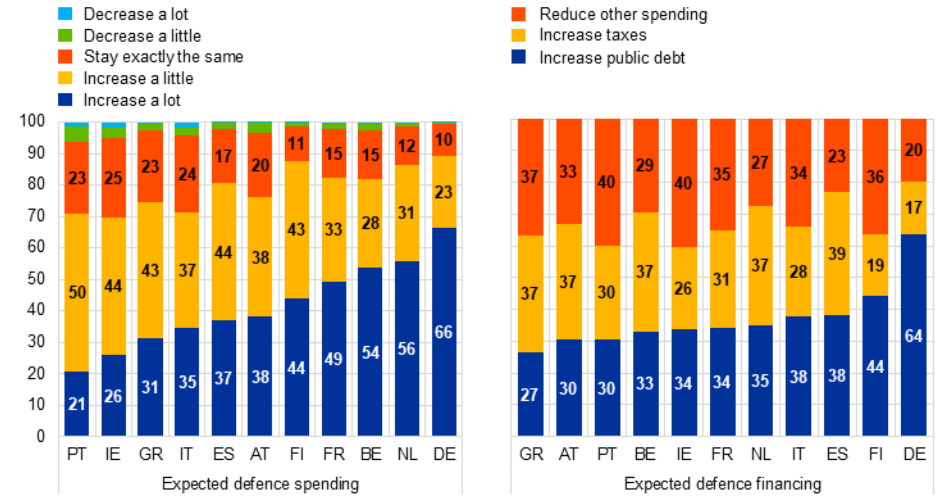
a) Expected change in government deficit

(percentage of respondents)



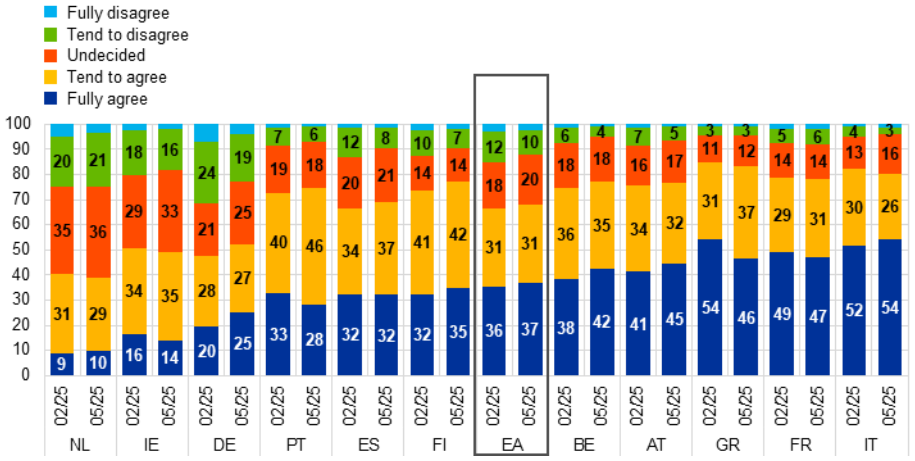
b) Expected change in defence spending and expected primary source of defence financing

(percentage of respondents)



c) View on whether level of public debt major problem

(percentage of respondents)



Source: CES weighted data.
Notes: The euro area (EA) is the aggregate of all 11 countries in the CES. Countries are ordered according to the percentage of respondents that answered "Increase a lot" in May 2025 for panel a), "Increase a lot" / "Increase public debt" for panel b), and "Fully agree" in May 2025 for panel c). Panel a) and panel c) observations are for February and May 2025. Panel b) observations are only from May 2025.

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7 Fiscal aspects of European defence spending: implications for euro area macroeconomic projections and associated risks

Prepared by Cristina Checherita-Westphal, Christian Huber, Marta Rodríguez-Vives and Georg Müller

Government defence spending in the EU is expected to rise in response to heightened geopolitical tensions, particularly following Russia's unjustified invasion of Ukraine. This trend was reinforced by the NATO summit of 24-25 June 2025, at which NATO allies made a commitment to spend 5% of GDP on defence annually by 2035, of which 3.5% on core defence (up from the current guideline of 2%) and 1.5% on defence and security-related spending.[1] For most EU countries, the new target implies a substantial increase in defence spending. Evidence suggests a strong correlation between current levels of defence spending across EU NATO members and proximity to Russia – as an indicator of most imminent geopolitical risks – but also between defence spending and fiscal space (Chart A). According to the latest available NATO data for its members, defence spending at EU level stood at 2.0% of GDP in 2024, while the euro area aggregate was 1.9%.[2] Shortly after the Munich Security Conference in February 2025, the European Commission announced its "Readiness 2030" plan, which allows EU Member States more flexibility under the EU fiscal governance framework to facilitate the necessary shift in spending, as well as proposals to increase spending efficiency and reduce fragmentation in the EU defence sector through joint procurement.[3] This box explores the implications of the new defence plans announced since the Munich Security Conference for euro area baseline projections and the risks around the baseline over the period 2025-27, as reflected in the June 2025 Eurosystem staff macroeconomic projections.[4]

1 See The Hague Summit Declaration of 25 June 2025. The 3.5% of GDP refers to core defence spending according to the current NATO data definition. The additional 1.5% of GDP refers to, among other things, spending to protect critical infrastructure, defend networks, ensure civil preparedness and resilience, unleash innovation, and strengthen the joint defence industrial base. The trajectory under the new investment plan will be reviewed in 2029.

2 It should be noted that NATO data on defence spending may differ significantly from EU data as recorded in national accounts (COFOG – the latest available data are for 2023) and used for fiscal projections and the monitoring of the EU fiscal rules under the Stability and Growth Pact. Methodological differences include, for example, the use of cash-based accounting (NATO) versus accrual (COFOG) and the inclusion of military pensions (NATO). For more details and an international comparison of defence spending, see López Vicente et al. (2024).

3 See the Commission press release of 19 March 2025. For more details, including an assessment of the impact on government debt of the additional fiscal flexibility, see Bouabdallah et al. (2025).

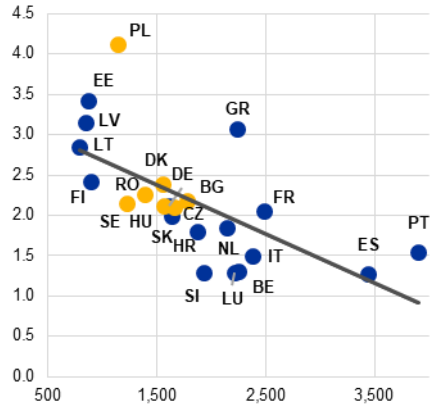
4 See Eurosystem staff macroeconomic projections for the euro area, June 2025, which include a first assessment of these defence plans (in addition to new infrastructure spending in Germany) for the projection baseline.

Chart A

Defence spending in EU NATO countries in 2024 and correlation factors

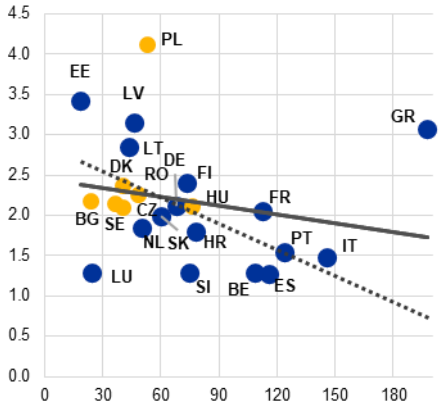
a) Distance from Russia

(x-axis: distance from capital to Moscow as an inverse proxy for risk, km; y-axis: 2024 defence spending, percentages of GDP)



b) Government debt

(x-axis: 2021 gross government debt, percentages of GDP; y-axis: 2024 defence spending, percentages of GDP)



Sources: NATO, European Commission (AMECO) and ECB staff calculations.
Notes: Defence spending shown is NATO 2024 estimates (latest available update, 17 June 2024). Blue dots indicate euro area and yellow dots non-euro area EU countries that are also members of NATO. Panel a) shows a correlation coefficient of -0.64 between defence spending and distance from Russia. In panel b), the solid grey line shows a correlation coefficient of -0.21 between defence spending and government debt, while the steeper dashed line shows a correlation coefficient of -0.5 excluding Greece, which traditionally has high defence spending in light of risks centred on other sources. 2021 debt levels are used as a measure of "initial" fiscal space, i.e. before Russia's full-scale invasion of Ukraine in early 2022, after which many countries increased their defence spending. Using 2024 gross government debt-to-GDP ratios would not change the overall picture significantly.

The fiscal impact of the new defence spending measures announced since mid-February, as factored into the June 2025 Eurosystem staff baseline projection, amounts to 0.6% of GDP cumulatively over 2025-27 (Chart B). In annual terms, the additional spending is projected to rise over time and to reach 0.3% of GDP in 2027 (Chart B, panel a). The new spending originates from eight euro area countries, with the bulk of it coming from Germany. This significantly raises the amounts already embedded in the baseline since 2022.[5] As well as national defence spending, the new measures include defence support for Ukraine (somewhat above 0.2% of GDP cumulatively over 2025-27, which is estimated to have no direct macroeconomic impact on euro area economies). In terms of the projected composition of new euro area national defence spending, more than half is allocated to government consumption – mainly intermediate goods (around 40%), followed by personnel expenditure (around 15%) – while around 40% (more than in the recent past) is directed towards investment (Chart B, panel b).

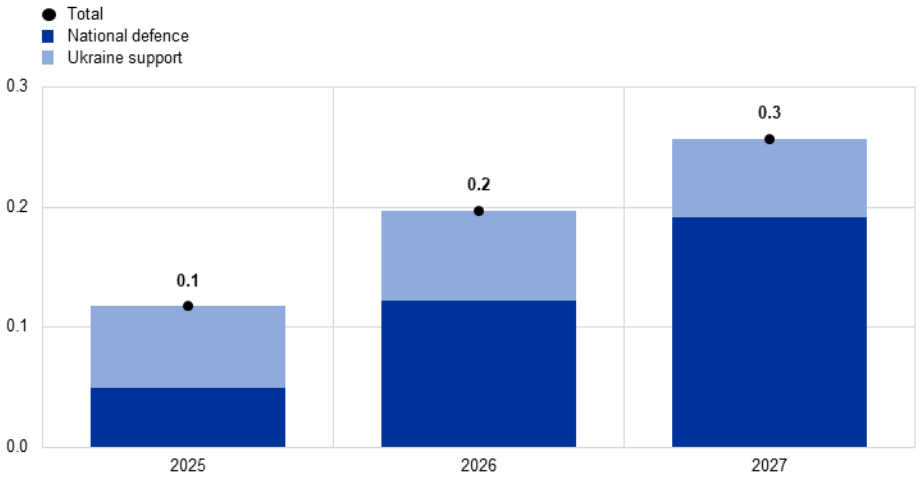
5 These amounts relate to (i) defence and other war-related support, including refugee spending, since Russia's invasion of Ukraine in early 2022, and (ii) other increases in defence spending, mostly related to contracts signed before the invasion. Together with the new spending since mid-February 2025, the fiscal impact of these measures is estimated at around 0.6% of GDP in 2027, compared with 0.35% in 2024.

Chart B

Eurosystem estimates of new defence spending – euro area aggregate

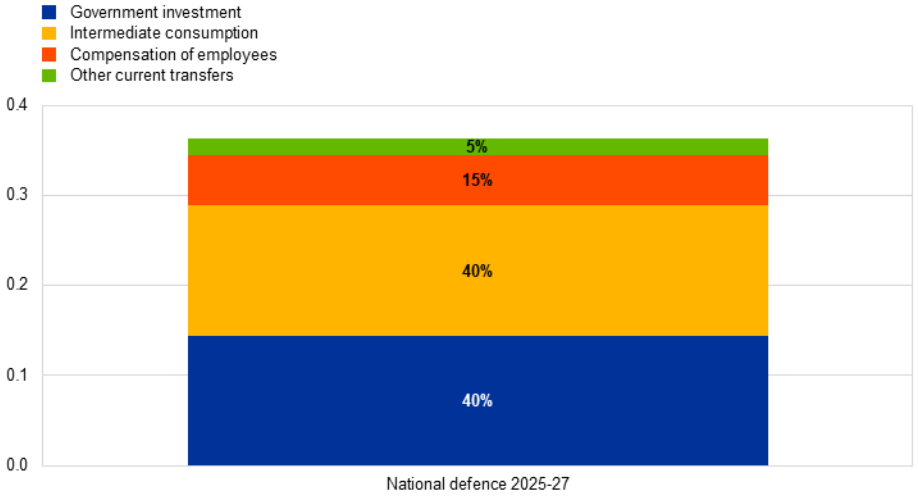
a) Size of new defence spending

(percentages of GDP)



b) Composition of new national defence spending

(y-axis: percentages of GDP; in bars: share of new spending, percentages)



Sources: ECB staff calculations based on June 2025 Eurosystem staff projections.
Notes: Panel a) shows revisions in fiscal measures related to defence since the March 2025 ECB staff macroeconomic projections for the euro area. Panel b) excludes support for Ukraine (light blue bars in panel a).

The new defence spending is expected to provide some support to euro area growth in the baseline, particularly over 2026-27, while the impact on inflation is expected to be muted (Chart C). Eurosystem staff assess the impact on real GDP growth at close to 0.1 percentage points per year over 2026-27, with limited effects in 2025. The impact on inflation is expected to be muted over the projection horizon in the absence of a direct link to prices of consumer goods included in the Harmonised Index of Consumer Prices (HICP).[6] The inflation impact is likely to be lagged and to

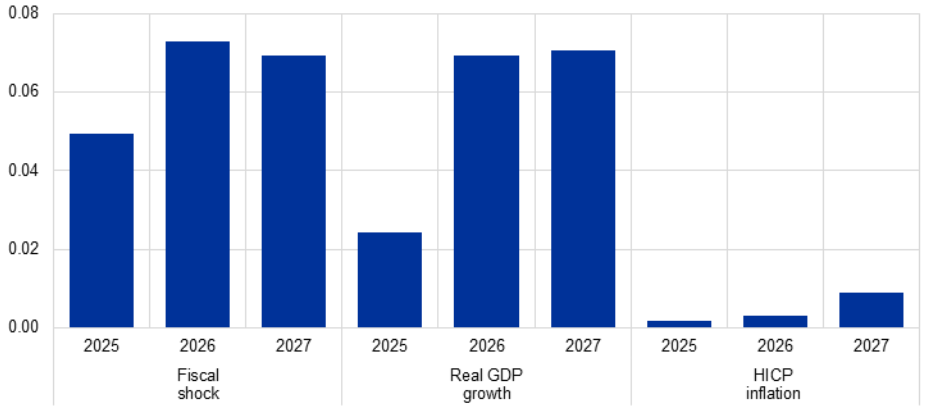
[6] Higher demand for defence goods can have a direct short-term impact on the prices of these goods – reflected in higher government consumption and investment deflators – and hence on the GDP deflator.

increase somewhat over time as indirect effects feed through via domestic demand and higher wages, but it is expected to remain small throughout 2025-27.

Chart C

Estimated macroeconomic effects of new defence spending – euro area aggregate

(percentage point deviations from baseline)

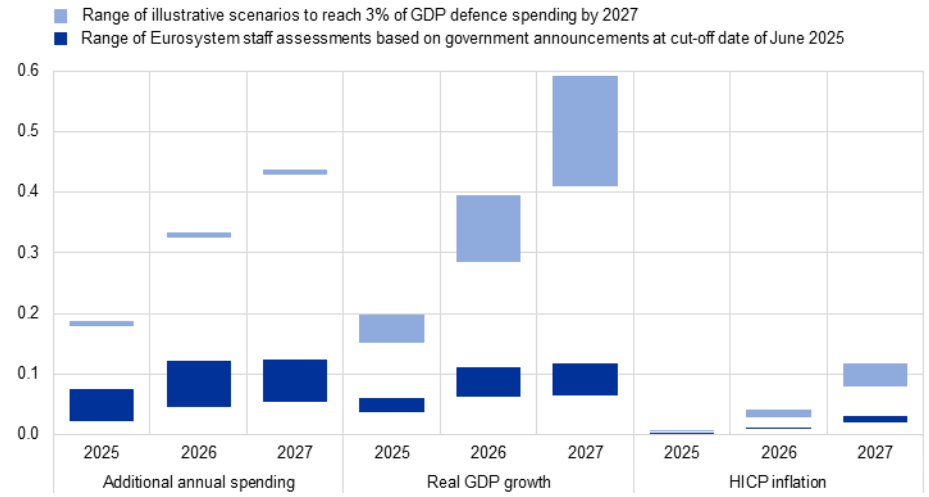


Sources: ECB staff calculations based on June 2025 Eurosystem staff projections.
Notes: The chart shows the euro area macroeconomic effects (growth and inflation) aggregated from country-specific results of macro model simulations conducted by Eurosystem staff. The "fiscal shock" (input used for macro simulations) is the annual change in the levels of additional spending shown in Chart B, panel a), excluding Ukraine support, which does not have a direct macroeconomic impact on euro area economies.

In terms of risks to the baseline, Eurosystem staff first assessed the defence spending risks stemming from actual government announcements at the cut-off date of the June 2025 projections, which were found to be relatively limited (Chart D). In country-specific risk scenarios, based on expert judgement on additional defence spending compared to the baseline, its composition and possible financing, the real GDP growth effects range between 0.06 and 0.12 percentage points per year over 2026-27, with a limited impact on inflation. The effects of additional defence spending tend to be lower when (i) the stimulus is partially financed through cuts in other spending instead of through the issuance of new government debt, and (ii) the defence spending has a higher import content than average government expenditure. On the other hand, given current labour market tightness, inflation effects could be higher if labour income expands more vigorously than under normal circumstances.

Chart D

Risks to the June 2025 projection baseline stemming from additional defence spending



Sources: ECB staff calculations based on Eurosystem staff risk assessments in the context of the June 2025 projections.
Notes: The left three columns show additional net defence spending (fiscal loosening "shocks" or changes per year). The range of the dark blue bars for these columns is given by the scenarios of additional defence spending with and without compensatory financing measures over the projection horizon. In the illustrative scenarios, the fiscal shocks (light blue bars) are without compensatory measures (full debt financing) over 2025-27. The range of macroeconomic results is based on ECB-BASE model simulations, keeping monetary policy, exchange rate and financial spreads fixed at their baseline values and varying the simulation set-ups (degree of import content, labour market tightness and, for the illustrative scenarios, yield effect).

Furthermore, based on Eurosystem staff expectations regarding the outcome of the June NATO summit, illustrative risk scenarios considered higher additional defence spending, which could yield more significant growth effects, while the impact on inflation, albeit increased, would remain limited over the projection horizon. These scenarios (also shown in Chart D), which informed the risk assessment in the June projections, assume a gradual increase in spending (tilted towards government investment) to 3% of GDP at euro area aggregate level by 2027. The scenarios yield larger effects on GDP growth (rising to 0.4-0.6 percentage points above the baseline in 2027) and somewhat higher inflation effects (about 0.1 percentage points in 2027). Such effects can be considered as upper bounds over 2025-27, as the scenarios are set up to allow the additional defence expenditure to be fully debt-financed. As before, the impact of the additional spending is simulated in different settings to construct a range of macroeconomic effects. For these scenarios, in addition to the higher import content of spending and tighter labour markets, a moderate increase in sovereign yields is considered, which lowers the output and inflation effects.[7]

The estimates presented in this box are subject to considerable uncertainty. As well as uncertainty regarding the actual build-up of defence capabilities and related fiscal spending (size, composition and timing of the measures), there is also considerable estimation uncertainty regarding fiscal multipliers of defence spending,

[7] The increase in average euro area long-term interest rates considered in this simulation is similar in magnitude to the increase observed when the German coalition agreement was announced in the spring of 2025.

where the empirical evidence is mixed.[8] Furthermore, the relatively high growth but low inflation impact of the additional defence spending over the projection horizon may warrant further analysis, considering, among other factors, the possible impact on the expectations of households and firms.[9] Finally, the risk analysis abstracts from possible financial market tensions if government debt ratios are not put on a declining path over the medium term, particularly in the highly indebted euro area countries and in the event of more adverse macroeconomic developments.

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[8] Empirical literature on fiscal multipliers suggests that military spending can have favourable short-term demand effects, but – with the exception of research and development spending – its long-run growth effects tend to be muted. However, estimates of fiscal multipliers vary widely and are likely to be state, methodology and sample dependent. Among recent literature reviews, Ilzetzki (2025) finds consensus that GDP does increase in the wake of higher defence spending, but the degree of this expansion and the potential crowding out of the private sector remain unclear.

[9] For more on household expectations, see Baumann et al. (2025) in this issue of the Economic Bulletin.

Articles

1 Unveiling the hidden costs of critical dependencies

Prepared by Maria-Grazia Attinasi, Lukas Boeckelmann, Rinalds Gerinovics and Baptiste Meunier

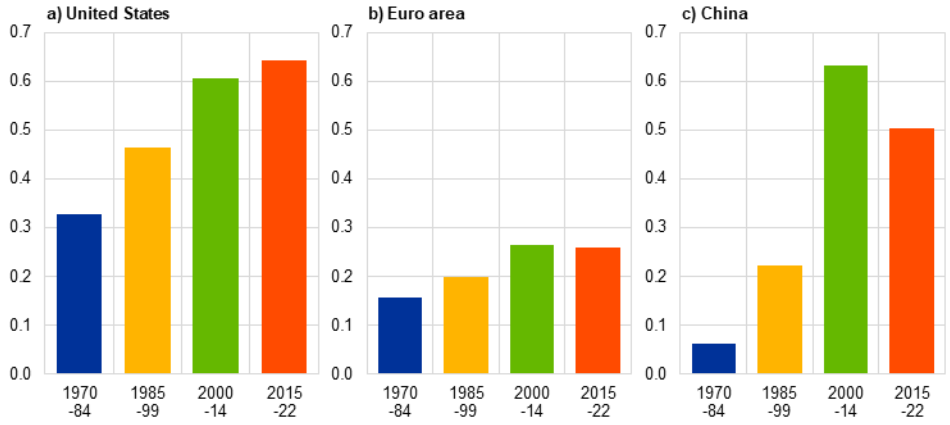
1 Recent trends in global trade

Trade integration, a key driver of economic growth in recent decades, is at a crossroads amid growing geopolitical rivalries and protectionist policies. By liberalising cross-border flows of goods, services, investment and technology, the multilateral rules-based trading system boosted growth and reduced global inequalities (Frankel and Romer, 1999; Feyrer, 2019). A corollary of this deeper globalisation has been the increasing sensitivity of domestic output to external shocks (Chart 1), particularly in the 1990s and the 2000s – a period marked by the proliferation of multilateral trade agreements (e.g. the North American Free Trade Agreement in 1992) and the establishment of the World Trade Organization in 1995, which China joined in 2001. While greater trade openness has enabled countries to cushion domestic shocks through greater reliance on foreign demand (International Relations Committee, 2023), it has also heightened their exposure to global economic disturbances. Recent global shocks – such as the COVID-19 pandemic and Russia's unjustified war against Ukraine – have brought this duality into sharp focus. As a result, trade integration is viewed increasingly through the lens of vulnerability and strategic risk, prompting a shift towards more inward-looking economic policies by many governments. This shift, exemplified by events such as Brexit (2016), the US-China trade tensions (2018-19) and the recent US tariff hikes, represents a paradigm change in global trade relations, characterised by growing scepticism towards trade liberalisation and increasing strain on the open global trading system.

Chart 1

Impact of a 1% shock to foreign total factor productivity on output growth in the first year

(percentage points)



Sources: Boeckelmann et al. (2025), World Input-Output Database, Asian Development Bank and ECB staff calculations.
Notes: Impulse response functions (IRFs) are computed using a dynamic multi-country, multi-sector model featuring sectoral linkages through production networks for intermediate and capital goods. IRFs for the different time periods are derived by calibrating the model with the corresponding vintages of global input-output matrices. Panel b): only shocks outside the euro area are considered.

Governments are reorienting their trade strategies, shifting the focus from liberalisation and efficiency towards security and resilience. There is a growing focus on reducing reliance on foreign suppliers, especially for critical raw materials, strategic technologies and other critical goods – areas where countries with a dominant position in terms of their supply may deliberately restrict access to harm dependent countries. Recent events have underscored this shift. The Organisation for Economic Co-operation and Development (OECD, 2025) highlights a fivefold rise in the number of vital inputs (e.g. lithium, cobalt) under export restrictions since 2009, a trend which reflects the growing demand for these inputs due to the digital and green transitions (e.g. an electric vehicle requires six times the amount of mineral inputs needed for a conventional car). Examples of such restrictions include the controls on US exports of semiconductors to China, which were launched in 2022, and the restrictions on exports of critical metals introduced by China in response.[1] In 2025 China implemented export restrictions on seven rare earth minerals, while the US Administration started to investigate risks to national security posed by reliance on imported critical minerals. In addition, the EU has introduced measures to address critical dependencies (see Box 1).

Box 1
Addressing critical dependencies: the EU approach

Prepared by Lucia Quaglietti

Since 2020 the EU has elevated strategic autonomy into a central policy objective. An array of policy initiatives has been introduced to identify, monitor and reduce critical dependencies, including rare

[1] US export controls on semiconductors were tightened further in 2023 and 2024. China's restrictions on exports included gallium and germanium in 2023 and were expanded to antimony, graphite and superhard materials in 2024.

earth minerals, platinum group metals and materials needed for green and digital infrastructures (International Relations Committee, 2023). The EU's framework has evolved to balance greater internal capacity with trade openness. The initiatives can be categorised into two interlinked strands: (1) strengthening domestic production capacity; and (2) diversifying and enhancing the resilience of existing global supply chains.

In the first strand, the EU has sought to reduce critical dependencies by boosting internal extraction, processing and manufacturing capabilities. Initiatives include:

- fiscal incentives, such as tax credits and subsidies for producers of clean technologies and semiconductors, including under the Green Deal Industrial Plan and the Chips Act[2] (both adopted in 2023);
- public and private investment schemes to support industrial innovation and the scaling-up of production, such as the Important Projects of Common European Interest (IPCEIs) on microelectronics, hydrogen, batteries, cloud infrastructure and digital communication;
- benchmarks and targets to diversify and enhance EU supplies, including under the Critical Raw Materials Act[3] (2024);
- regulations to make state aid rules more flexible and to streamline permitting procedures for mining and processing operations for critical raw materials, including under the Net-Zero Industry Act[4] (2024) and the Critical Raw Materials Act (2024);
- protective trade instruments and revised public procurement policies to shield domestic producers from unfair competition and to target foreign subsidies distorting competition in the EU internal market, including under the Foreign Subsidies Regulation[5] (2023) and the International Procurement Instrument[6] (2022).

In the second strand, the EU has implemented policies to stabilise and diversify supply sources, notably:

- strategic partnerships and bilateral agreements with resource-rich and like-minded partners (e.g. United States, Canada, Australia, Chile, Namibia), incorporating environmental, social and governance standards;

2 Regulation (EU) 2023/1781 of the European Parliament and of the Council of 13 September 2023 establishing a framework of measures for strengthening Europe's semiconductor ecosystem and amending Regulation (EU) 2021/694 (Chips Act) (OJ L 229, 18.9.2023, p. 1).

3 Regulation (EU) 2024/1252 of the European Parliament and of the Council of 11 April 2024 establishing a framework for ensuring a secure and sustainable supply of critical raw materials and amending Regulations (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1724 and (EU) 2019/1020 (OJ L 2024/1252, 3.5.2024).

4 Regulation (EU) 2024/1735 of the European Parliament and of the Council of 13 June 2024 on establishing a framework of measures for strengthening Europe's net-zero technology manufacturing ecosystem and amending Regulation (EU) 2018/1724 (OJ L 2024/1735, 28.6.2024).

5 Regulation (EU) 2022/2560 of the European Parliament and of the Council of 14 December 2022 on foreign subsidies distorting the internal market (OJ L 330, 23.12.2022, p. 1).

6 Regulation (EU) 2022/1031 of the European Parliament and of the Council of 23 June 2022 on the access of third-country economic operators, goods and services to the Union's public procurement and concession markets and procedures supporting negotiations on access of Union economic operators, goods and services to the public procurement and concession markets of third countries (International Procurement Instrument – IPI) (OJ L 173, 30.6.2022, p. 1).

- regulations on the strategic stockpiling and joint procurement of critical goods, including via pooled purchasing mechanisms modelled on the COVID-19 pandemic vaccine strategy, aimed at ensuring continuity in supply.

Policies have been designed to foster collaboration between EU institutions, EU Member States and private stakeholders. For example, both the Critical Raw Materials Act and the Chips Act foresee the creation of boards that include representatives of Member States and the European Commission to advise on and coordinate the implementation of measures and oversee the designation and support of strategic projects within the EU. Under the Green Deal Industrial Plan and the Chips Act, public-private partnerships have been established to encourage research and development in semiconductors and industrial decarbonisation. In general, most policies have been funded through a combination of funds from the EU, Member States and the private sector, except for IPCEIs, which are financed primarily by national budgets.

These policies have yielded tangible progress in reshoring production, stimulating investment and launching cross-border industrial projects. Arjona et al. (2025) find that EU imports are shifting away from countries without trade agreements with the EU and gravitating both inwards and towards regional neighbours and partners engaged in active trade initiatives. At the same time, in some cases, long approval processes – particularly for mining, renewable infrastructure and manufacturing facilities – have delayed project deployment. In addition, while some Member States have mobilised significant public support, fiscal disparities across the EU have led to uneven industrial scaling. Lastly, the implementation of policies can be somewhat fragmented across Member States, owing to varying levels of commitment or administrative capacity.

The European Commission has proposed several new policies for 2025 and beyond. These include the creation of an EU Critical Raw Material (CRM) platform to serve as a coordination hub with a view to enhancing CRM supply chain monitoring, and to further support joint procurement and stockpiling. In addition, the Commission has proposed the creation of a European Sovereignty Fund, aimed at addressing investment asymmetries between Member States and at bolstering EU-level support for strategic sectors. Lastly, new strategic partnerships in CRM and clean technologies are under negotiation with countries in Latin America, Africa and South-East Asia.

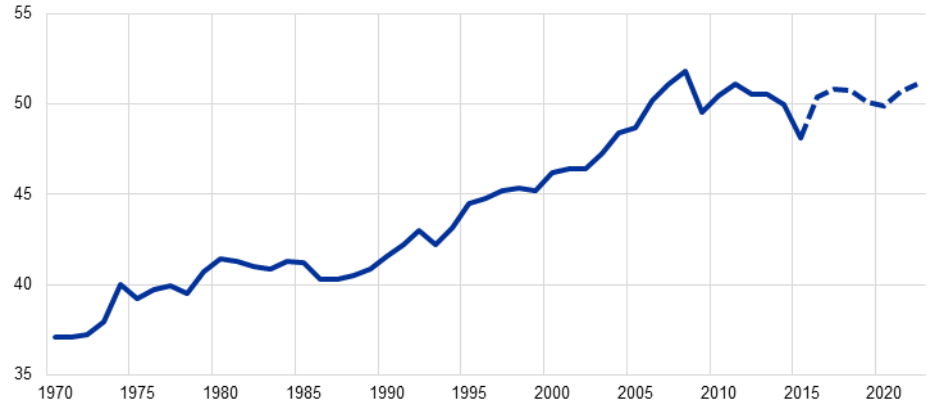
Recent data point to a reconfiguration of trade along geopolitical fault lines for some products of strategic relevance, though the situation remains fluid. Aggregate indicators of trade integration, such as participation in global value chains, suggest that integration has plateaued rather than declined (Chart 2, panel a). At the same time, as shown in Attinasi et al. (2024), aggregate trends mask some reconfiguration of trade along geopolitical fault lines, particularly for goods of strategic importance from a national security standpoint, such as advanced technology products (e.g. integrated circuits, biotechnology devices). This reconfiguration, as evidenced by a sharp drop in US imports from China and a steep decline in EU imports from Russia, has accelerated since 2021, notably as a result of western sanctions on Russia (Conteduca et al., 2024; Airaudo et al., 2025). Moreover, the recent imposition by the United States of higher tariffs on its main trading partners might reshape global trade flows more significantly.

Chart 2

Trade integration and firms' de-risking strategies

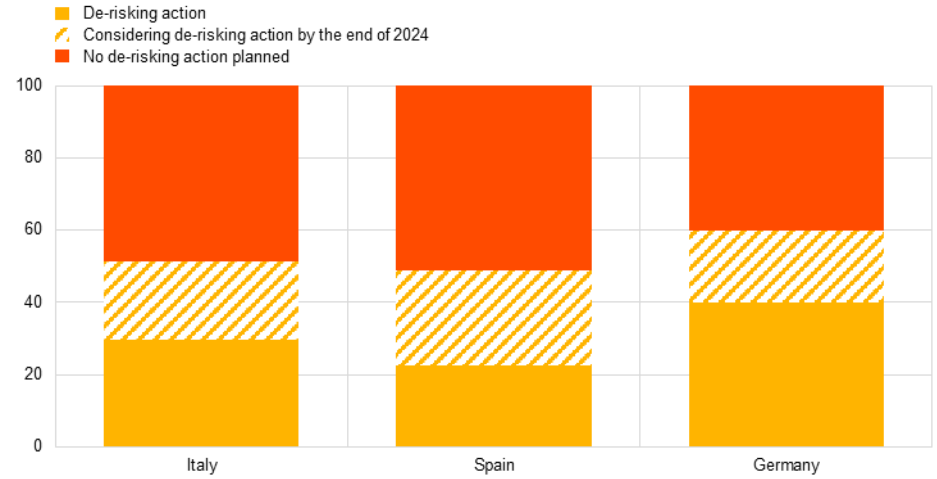
a) Trade along global value chains

(percentage of total trade)



b) Actions to reduce exposure to China

(percentage of firms surveyed relying on critical Chinese inputs)



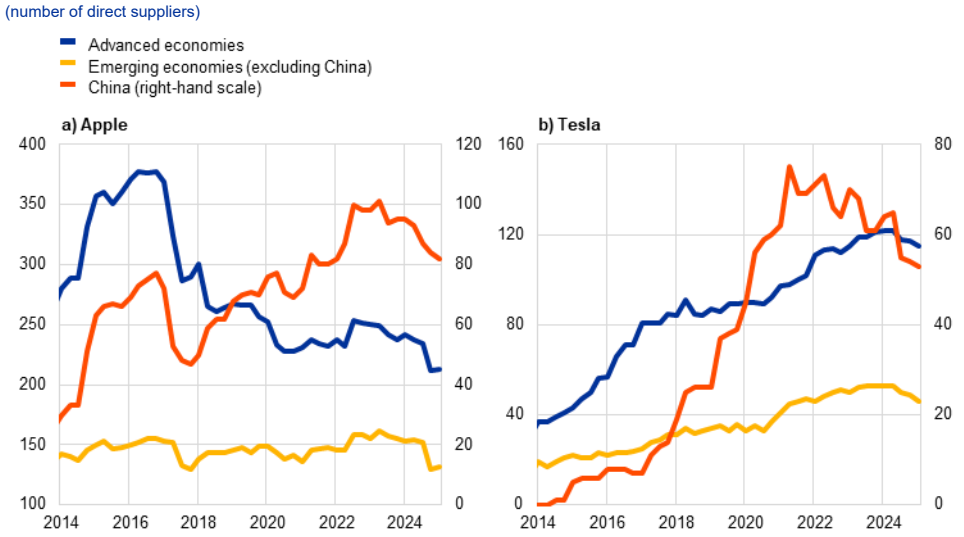
Sources: Attinasi et al. (2024), Balteanu et al. (2024) and ECB staff calculations.
Notes: Panel a): trade along global value chains refers to merchandise trade crossing more than one border. Panel b): the surveys were conducted in 2023 and covered only manufacturing firms.

Surveys of manufacturing firms and supply chain analysis reveal a trend towards de-risking and supplier diversification strategies, notably among top US technological firms. Multinational companies report plans to relocate production owing to geopolitical tensions (HSBC, 2024), including in the euro area, where firms express a desire to implement more de-risking strategies in the future (Attinasi et al., 2023). This is particularly the case for firms relying on geopolitical rivals for key inputs. According to surveys conducted in 2023, in selected euro area countries, around half of the manufacturing companies sourcing inputs deemed critical from China had already implemented strategies to reduce supply chain risks, or were planning to do so by the end of 2024 (Chart 2, panel b). Beyond surveys, an analysis of supply chain data points to key US technological firms adjusting their supplier networks to reduce reliance on China. Both Apple and Tesla have significantly decreased their numbers of China-based suppliers since 2022 (Chart 3). While Chinese suppliers were replaced

to some extent by firms in South-East Asia, the decline in the total number of suppliers would suggest that both firms consolidated their input providers into fewer but more reliable suppliers.

Chart 3

Evolution of suppliers by origin



Sources: Bloomberg and ECB staff calculations.

This article sheds light on the evolution and economic relevance of critical dependencies across the United States, the euro area and China. Critical dependencies are defined as goods with limited import diversification, meaning that any disruption to their supply could have a severe impact on strategic sectors. We complement this *importer* perspective with a network analysis focused on *exports* in order to assess supply concentration and potential disruption risks if a few dominant players restrict access to critical dependencies. Lastly, we conduct a model-based analysis to examine the extent to which sudden supply disruptions to critical dependencies could entail significant economic costs despite their small share in total trade.

2 Evolution of critical dependencies

Critical dependencies are identified as strategically important inputs for which there is heavy reliance on a small number of foreign suppliers. This article identifies critical dependencies following the framework of Arjona et al. (2023) for the EU, which we adapt to cover the United States, China and the euro area (see Box 2).[7] The methodology relies on product-level trade data to single out critical dependencies from 5,000 commodities by identifying products with a low *import diversification*, a *scarcity* of global supply and a limited presence of *domestic capacity*. Products that

[7] While there are other methodologies (Korniyenko et al., 2017; Bonneau and Nakaa, 2020), we use Arjona et al. (2023) because of its: (1) comprehensiveness, as it combines several methods used separately in the literature, notably import concentration and export network analyses; (2) robustness, as it leverages multiple indicators; and (3) high granularity.

have those three characteristics and feature in a pre-defined list of strategic sectors (European Commission, 2021), such as health products, batteries, hydrogen and electronic chips, are pinpointed as “critical dependencies”.

Box 2
A data-driven methodology for identifying critical dependencies

Prepared by Bernardo de Castro Martins, Rinalds Gerinovics and Lisa Gerland

Identifying critical dependencies is essential because disruptions to key inputs can pose significant risks to strategic sectors. However, the breadth of global trade – spanning many goods and partners – makes their identification challenging. We leverage the BACI dataset (Gaulier and Zignago, 2010) covering 5,000 goods and 238 regions, and follow the methodology of Arjona et al. (2023), originally developed for the EU, which we adapt to a global perspective. The methodology consists of three steps: (1) computing core dependency indicators (CDIs); (2) filtering for products with high levels of dependency; and (3) selecting products belonging to strategic sectors. The result is a set of goods with high import concentration, elevated external reliance and limited domestic substitutability.

Step 1: Computing CDIs

The first indicator measures **import diversification**. For country i and product k, this is the sum of squared import shares as follows:

$$CDI_1 = \sum_{j=1}^{n} \left(\frac{M_{j \to i}^k}{M_i^k} \right)^2$$

where $M_{j \to i}^k$ are country i’s imports of product k from country j, and M_i^k are country i’s total imports of product k. The threshold for selecting products with low import diversification is 0.4, as in Arjona et al. (2023), which means filtering for products where imports originate from fewer than three countries.

The second indicator accounts for **scarcity of global supply**. For each product k, we calculate the ratio of a country’s imports (M_i^k) over global imports (M^k):

$$CDI_2 = \frac{M_i^k}{M^k}$$

and apply country-specific thresholds: a product is filtered out if a country’s share in global imports for that product is higher than the country’s share in global imports across all imported products.[8]

The third indicator is a proxy for **domestic capacity**. It assesses the degree to which imports can be substituted with domestic production, using the ratio of the country’s imports of product k (M_i^k) to exports of that same product (X_i^k):

$$CDI_3 = \frac{M_i^k}{X_i^k}$$

As in Arjona et al. (2023), we select products for which CDI_3 is above 1 – meaning if a country imports more than it exports.

[8] For the EU, Arjona et al. (2023) use the ratio of extra-EU imports over total EU imports. Given our global perspective, we modify this indicator slightly.

Step 2: Filtering for highly dependent products

We identify dependencies by applying the thresholds defined above. The main benefit of this method is simplicity, though the threshold choices might seem arbitrary. Hence, we use a complementary approach in line with Arjona et al. (2023) by filtering for products in the top 10% of the aggregate core dependency, computed as a simple average of ranks across the three CDIs. The final selection meets both conditions – CDIs exceeding thresholds and ranking in the top 10% of the aggregate core dependency.

Step 3: Identifying products in strategic sectors

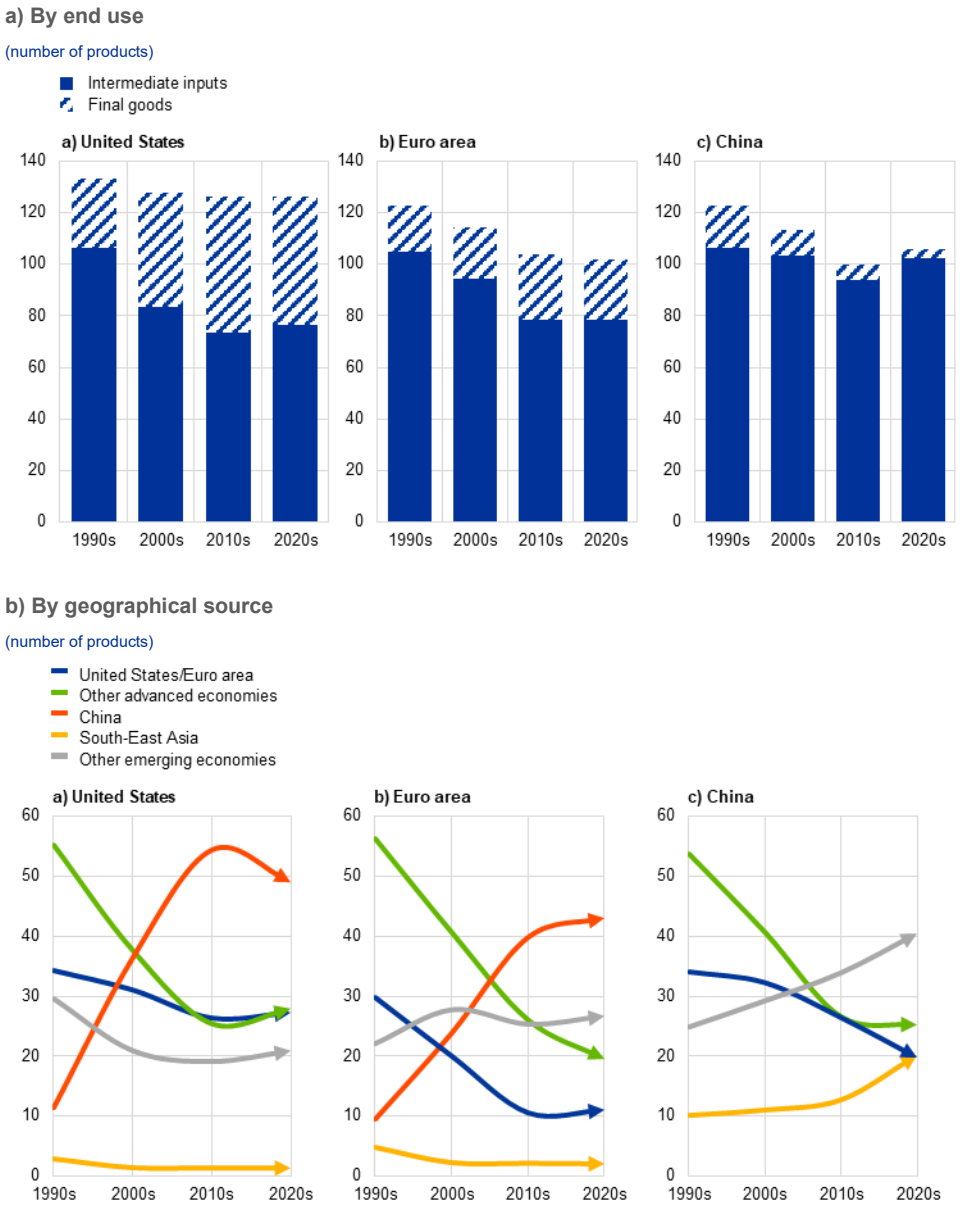
The final step cross-checks the list of highly dependent products against the list of products of strategic importance. The classification of strategically important products is based on the list of sensitive ecosystems established by European Commission (2021) and used in Arjona et al. (2023). It includes products such as batteries, electronic chips and critical raw materials.[9] Although strategic sectors may differ across economies, using a common definition facilitates comparability.

Over the past 30 years, the number of critical dependencies has declined slightly for the euro area and China, and remained comparatively high for the United States. In the 2020s the number of critical dependencies was around 100 for the euro area and China, and 120 for the United States (Chart 4, panel a), representing, on average, 7% of total imports.[10] Since the 1990s the composition of critical dependencies has varied across economies, reflecting differences in industrial policies and the positioning along global value chains. For the United States, the overall number of critical dependencies has remained largely unchanged, as reduced dependencies on intermediate inputs were offset by a steep rise in dependencies on final goods, especially consumer electronics (e.g. radios, televisions). The euro area has followed a similar pattern, albeit to a lesser extent, with fewer critical dependencies on intermediate goods and increasing dependencies on final products. In 2023 critical dependencies for the euro area included critical raw materials (e.g. uranium, manganese), pharmaceuticals (e.g. hormones, antibiotics) and household appliances (e.g. toasters, vacuum cleaners). By contrast, China saw a steady decline in critical dependencies between the 1990s and the 2010s, mainly on account of final goods, as the country expanded its manufacturing base and made efforts to reduce reliance on foreign partners (e.g. “Made in China 2025” plan in 2015, Dual Circulation Strategy in 2020). In the 2020s there was a slight rebound, driven mainly by rising demand for minerals (e.g. copper, nickel, beryllium) used in the rapidly developing technology sector.

9 The fourth list of critical raw materials includes rare earth minerals and 28 other materials (e.g. bauxite, tungsten).

10 The number of critical dependencies for the euro area (around 100) is lower than the 200 reported in Arjona et al. (2023). This is due to: (1) differences in geographical scope, i.e. EU in Arjona et al. (2023) and euro area in this article; (2) adjustments to the methodology; (3) the fact that, in order to facilitate comparability over the period 1995-2023, we use the 1992 version of Harmonized System (HS) codes, covering around 5,000 goods, while Arjona et al. (2023) uses the 2017 version, covering 10% more goods; and (4) the use of TRADE-FIGARO-EUROSTAT data in Arjona et al. (2023), which corrects for re-exports extensively for the EU but to a lesser extent for third countries, while this article uses BACI data, which are uncorrected for re-exports but ensure a symmetric treatment of EU countries and third countries such as the United States and China. For Arjona et al. (2023), using BACI data results in around 30% fewer critical dependencies than when using TRADE-FIGARO-EUROSTAT data.

Chart 4
Evolution of critical dependencies



Sources: BACI (HS 92, 6-digit level), OECD and ECB staff calculations.
Notes: Averages over decades ("1990s" refers to the period 1995-99 and "2020s" refers to the period 2020-23 owing to data availability). The euro area is treated as a single entity, abstracting from intra-euro area trade. Panel a): the classification is based on the OECD Bilateral Trade in Goods by Industry and End-use database. Panel b): geographical source is defined as the main source of imports.

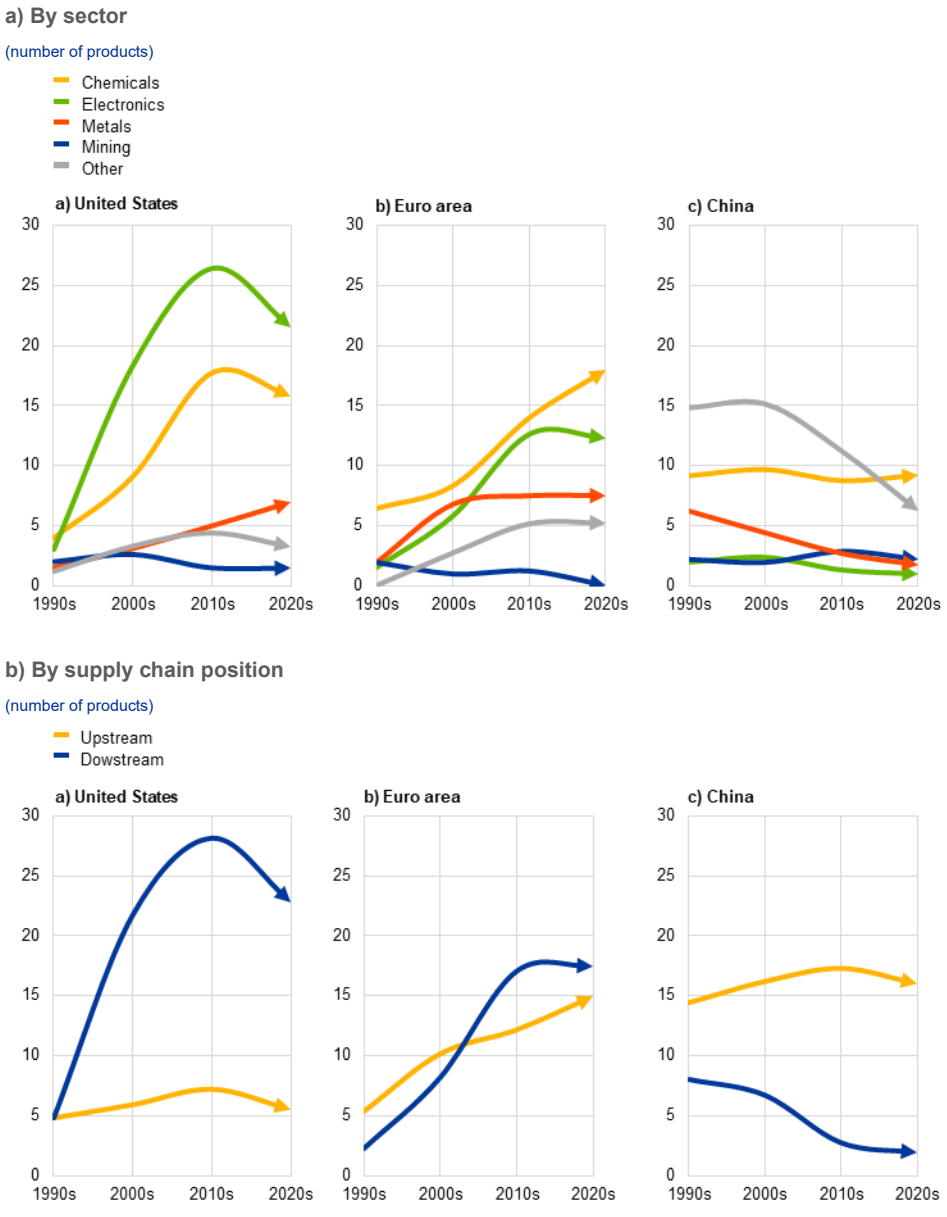
The limited variation in total dependencies masks a reshuffling along the geographical dimension. Breaking down dependencies by origin shows that China has reduced reliance on advanced economies, while increasing reliance on emerging economies, notably Indonesia, Thailand and Russia (Chart 4, panel b). This reflects the expansion of the Chinese manufacturing sector, which has lowered its dependency on industrial products from advanced economies (e.g. electric motors, machinery) but increased reliance on raw minerals (e.g. nickel, zinc) from emerging economies. At the same time, both the United States and the euro area saw a marked increase in critical dependencies from China in the 2000s and 2010s and a move

away from other advanced economies. In the 2020s signs of a trend reversal emerged in the United States, while in the euro area there was a plateauing of critical dependencies from China. To some extent, these developments reflect a strategic reconfiguration of supply chains as the United States tried to curb its exposure to China (e.g. 2018-19 trade war, the Inflation Reduction Act of 2022 targeting inputs from non-allied countries). Given the importance of geopolitical considerations, the remainder of this article focuses on reciprocal dependencies between western economies and China.

The dependence of the United States and the euro area on China increased the most in the electronics and chemicals sectors, reflecting China's growing role as a global manufacturing hub (Chart 5, panel a). For most of the products in these sectors, the United States was not critically dependent in the 1990s, but progressively became so as China gained a central position as an exporter of items such as graphite, plastics and consumer electronics. For the euro area, critical dependencies from China followed a broadly similar pattern, although it was more pronounced for chemicals than electronics. At the product level, the United States and the euro area share some similar critical dependencies from China, in particular consumer electronics and health products (e.g. vitamins and hormones, cooking appliances, data storage units). For China, critical dependencies from the euro area and the United States are lower, decreasing and less concentrated. This partly reflects China's position as a manufacturing superpower, as well as the Chinese government's efforts to gain strongholds in strategic sectors (Baldwin, 2024). For instance, China significantly reduced its dependencies on vehicles, machinery and aircraft.

Chart 5

Critical dependencies between China and western economies



Sources: BACI (HS 92, 6-digit level) and ECB staff calculations.
Notes: For the euro area and the United States, the chart shows dependencies from China, while for China it shows dependencies from both the euro area and the United States. Averages over decades ("1990s" refers to the period 1995-99 and "2020s" refers to the period 2020-23 owing to data availability). The euro area is treated as a single entity, abstracting from intra-euro area trade. Geographical source of critical dependencies is defined as the main source of imports. Panel a): the sector classification is based on the United Nations International Standard Industrial Classification of All Economic Activities (ISIC) Rev. 4. "Chemicals" refers to divisions 19-22, "Electronics" to 26-27, "Metals" to 24-25 and "Mining" to 3-5. Panel b): the supply chain position is based on upstreamness indices from Antràs et al. (2012) with "Downstream" and "Upstream" corresponding to the lower 33 and upper 67 percentiles of the distribution of indices respectively.

From a supply chain perspective, the United States and the euro area have become increasingly reliant on Chinese downstream products (Chart 5, panel b). This is most noticeable in the United States, where dependence on downstream goods has grown fivefold since the 1990s, while reliance on upstream products has remained relatively constant, meaning that the critical exposure of the United States to China is mainly in consumption goods, in particular consumer

electronics. By contrast, for the euro area, dependencies on upstream and downstream products have increased in a broadly similar way. In the meantime, China has lowered its dependency on downstream products from the euro area and the United States. This signals a shift in supply chains and shows how China has become a key hub for the assembly of consumer goods shipped to advanced economies.

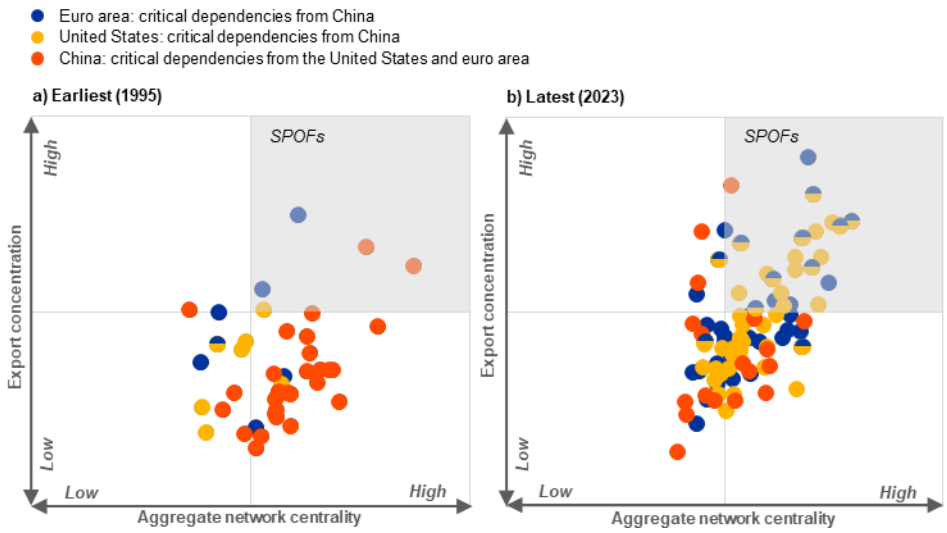
3 Risk of supply disruptions: a network analysis

A network analysis complements the assessment of critical dependencies by identifying exporters with the capacity to influence access to critical goods. While the analysis of critical dependencies focused on the *importer perspective*, the network analysis looks at the *exporter* perspective, capturing whether some countries hold dominant positions in the supply of critical products. In line with Arjona et al. (2023), we rely on two metrics: export concentration and network centrality (see Box 3). The two complement each other, as looking at export concentration alone does not necessarily fully capture a country's influence within the global production network. In fact, while a country with a high share of global exports would be in an influential position, countries that act as distribution intermediaries can play an equally important role. For this reason, considering both metrics facilitates a more accurate identification of what Arjona et al. (2023) refer to as "single point of failures" (SPOFs), which are the nodes in trade networks where supply disruptions can be the most harmful. We first document risks for critical dependencies in general and then zoom in on critical raw materials.

Chart 6

Single point of failures among critical dependencies between China and western economies

(concentration and centrality indices for each product deemed a critical dependency)



Sources: BACI (HS 92, 6-digit level) and ECB staff calculations.
Notes: SPOFs stands for single point of failures. Each dot represents a critical dependency. For the euro area and the United States, the chart shows only dependencies from China, while for China it shows dependencies from both the euro area and United States. The euro area is treated as a single entity, abstracting from intra-euro area trade.

For the euro area and the United States, around 30% and 40% respectively of critical dependencies from China were at risk of being SPOFs in 2023. Critical dependencies at risk of being SPOFs are those products that have both high export concentration and high network centrality (top right-hand quadrants of panels a) and b) in Chart 6). Focusing on critical dependencies from China in 2023 (panel b), SPOFs are identified in 30% and 40% of cases for the euro area and the United States (blue and yellow dots) respectively. Notably, the high-risk products include health products (e.g. antibiotics, vitamins) and consumer electronics (e.g. radios). The number of SPOFs for critical dependencies from China has grown substantially since 1995 (panel a), reflecting both the increase in critical dependencies from China and the more central role played by China in global trade. By contrast, China managed to eliminate almost all of its high-risk critical dependencies from the euro area and the United States – with the exception of some key industrial chemicals (e.g. cellulose, hexamethylenediamine).

Box 3
A complementary network analysis

Prepared by Bernardo de Castro Martins and Rinalds Gerinovics

The identification of critical dependencies is complemented by a network analysis that pinpoints key bottlenecks in the global supply of strategic goods. The evaluation follows Arjona et al. (2023) and relies on two metrics: (1) concentration of global exports and (2) network centrality.

Export concentration is measured using a Herfindahl-Hirschman Index (HHI). It is formally measured as follows:

$$HHI^k = \sum_{i=1}^{n} \left(\frac{X_i^k}{X^k} \right)^2$$

where X_i^k are exports of product k from country i, and X^k are global exports of product k. The higher the HHI, the more concentrated is the global market, suggesting the market power is split among only a few countries.

We complement the HHI with a measure of **network centrality** that assesses whether a country acts as a key hub. As in Barrat et al. (2004), the centrality of country i in the global trade network for product k relies on the market share of country i in imports of other countries. The formula is:

$$C_i^k = \frac{1}{n^k - 1} \sum_{j \neq i} \left(\frac{X_{i \to j}^k}{M_j^k} \right)$$

where $X_{i \to j}^k$ are exports of product k from country i to country j, and M_j^k are total imports of product k by country j. Since the number of importing countries (n^k) can differ across products and time, for comparability we normalise by the maximum centrality ($n^k - 1$), which is an extreme situation where one country serves all the others.[11] The index is bounded between 0 and 100, indicating low and high influence respectively. Changes in centrality are driven by either the *extensive*

[11] If a country does not import product k, we normalise by n^k since it would be the maximum number of foreign destinations. While conceptually similar, our index differs from Arjona et al. (2023) because (1) we use market shares instead of export values divided by average value of imports, and (2) we normalise the index as in de Benedictis et al. (2014).

margin (if a country trades with more partners) or the *intensive* margin (if it deepens its market share in existing partners).[12]

Lastly, we compute the **aggregate network centrality** of a product as the standard deviation of network centrality indices across all countries, as in Korniyenko et al. (2017). A higher standard deviation indicates a more centralised network where a few countries dominate.

Since the 2000s China has expanded its role as a key hub for critical raw materials. China dominates the supply chain of minerals that are essential for modern technologies. It refines around 73% of the cobalt and 40% of the lithium in the world (Vivoda, 2023) and accounts for over 95% of global rare earth production. As a result, China's central role in the supply chain of critical minerals makes the country a key player in the security of supply.

Regarding critical raw materials, a key concern has been the supply security of dual-use minerals, such as cobalt, magnesium and lithium. Dual-use minerals are those that have both military and civilian applications. For instance, the uses of cobalt include battery technology for electric vehicles and in the defence sector – and the euro area relies on Asia for 75% of its cobalt imports. Magnesium, a critical component in the defence, aerospace and automotive sectors, is sourced mainly from China for the euro area (85% of imports) and from Israel for the United States (58% of imports). In the case of lithium, which is vital for clean energy and defence, the United States is dependent mainly on Chile (94% of imports), while the euro area is dependent on Chile and China (39% and 18% of imports respectively).[13] The evolution of trade in these dual-use minerals provides an illustration of the relevance of network centrality, with China having secured a dominant position in each case.

- **China's network centrality for cobalt does not stem from high export concentration.** The cobalt supply is highly concentrated in the Democratic Republic of the Congo (DRC), which dominates global exports (Chart 7, panel a). However, China has emerged as a key distribution intermediary despite its limited domestic extraction capacities (Chart 7, panel b), as the DRC exports mostly to China – its share in the DRC's cobalt exports rose from below 10% in the 1990s to 75% in the 2020s.[14] By re-exporting to a growing number of partners, China has become as central a player as the DRC and now rivals the United States, despite the latter's dominance in the 1990s (Chart 7, panel c).[15]

- **Over time China has expanded its central position in exports of magnesium.** In the 1990s China was already a key exporter of unwrought magnesium, with a 30% global share. Since then it has significantly increased its export share, to 75% in the 2020s, leading to a sharp rise in export concentration

12 There is a third effect from changes in the number of importing countries (n^k), but it is generally small and therefore allocated proportionally to other channels in our analysis.

13 Its high share in US and euro area lithium imports notwithstanding, Chile's centrality is low as it exports to only a few countries.

14 China's high share in the DRC's cobalt exports is due to Chinese ownership of major cobalt mines in the DRC and China's dominant position in refining.

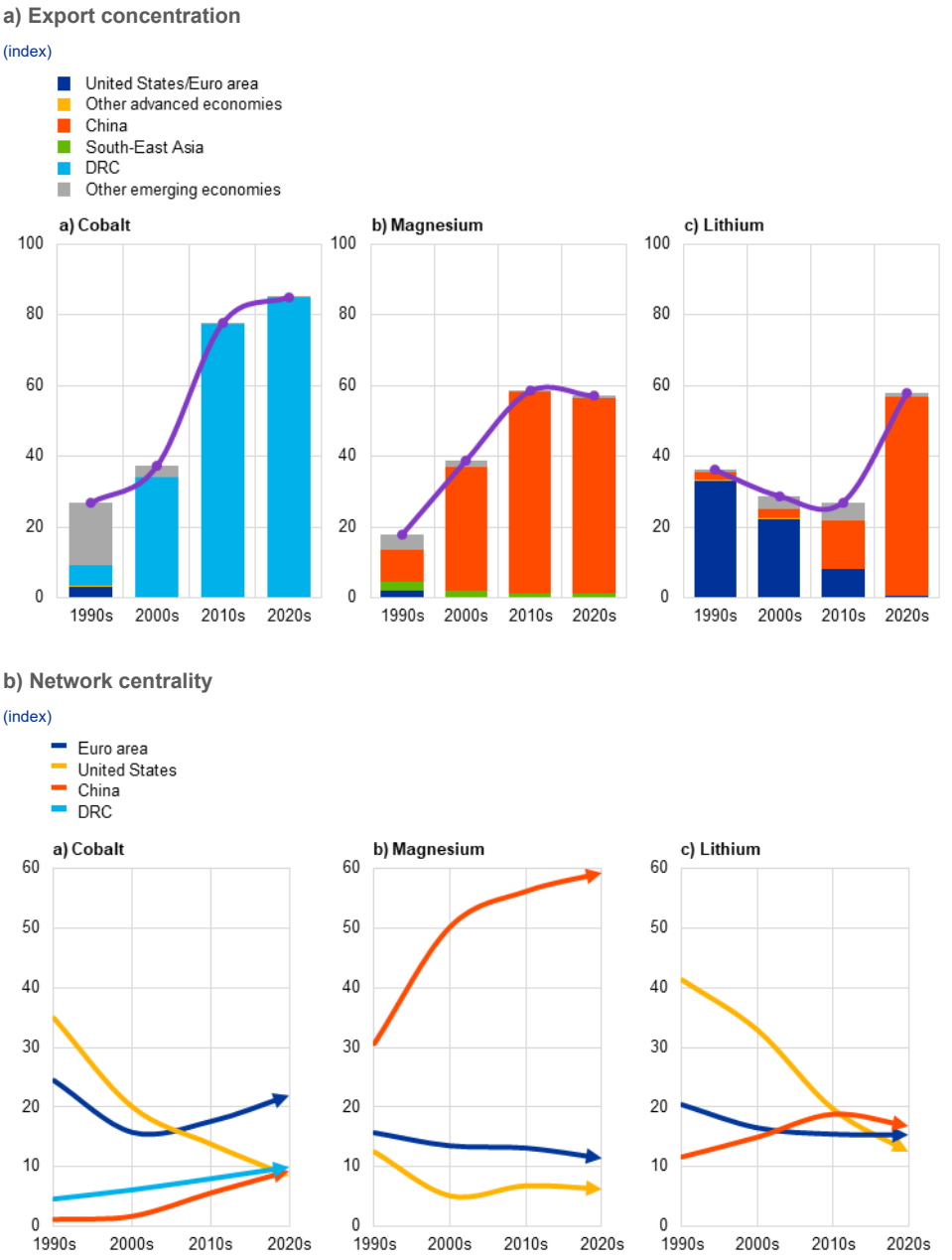
15 The euro area's role in the global cobalt network is mostly due to Finland's cobalt refining activities.

(Chart 7, panel a). China has also consolidated its central position in the network to much higher levels than those of the United States and the euro area (Chart 7, panel b). This increase in centrality is explained by both penetration of new markets and the strengthening of existing trade links (Chart 7, panel c).

- **China has consolidated its dominant position in exports of lithium in more recent years.** During the 1990s China was a marginal exporter of lithium, whereas in the 2020s its share in global lithium exports rose to 75%, overtaking that of western suppliers (Chart 7, panel a). Until the 2010s this diversification meant that export concentration was limited, but China's growing dominance pushed concentration to record levels in the 2020s owing to massive production and refining expansion which, to some extent, has crowded out other producers. Starting from a low network centrality (Chart 7, panel b), China expanded its trade network and deepened ties with existing partners (Chart 7, panel c) to become the most central global player by the 2020s, displacing the United States.

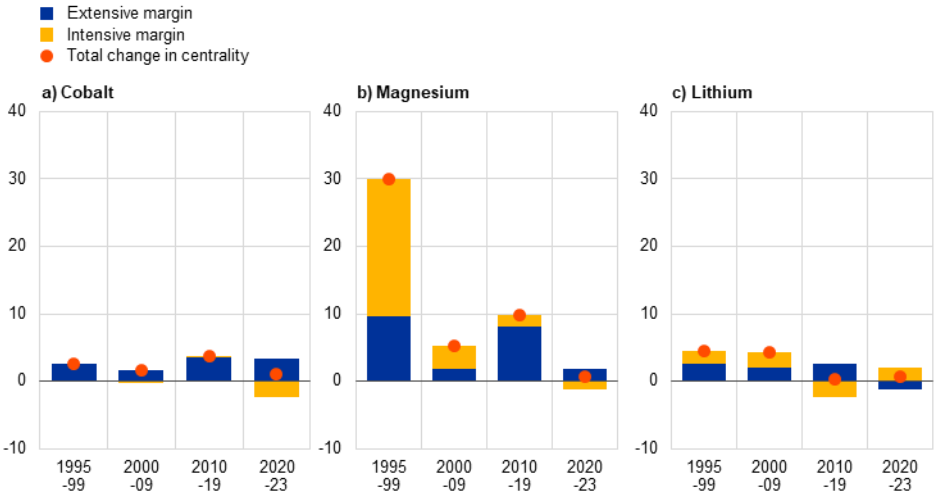
Chart 7

Network analysis of selected critical raw minerals



c) Changes in China's network centrality

(index)



Sources: BACI and ECB staff calculations.
Notes: DRC stands for Democratic Republic of the Congo. The euro area is treated as a single entity, abstracting from intra-euro area trade. Panels a) and b): averages over decades ("1990s" refers to the period 1995-99 and "2020s" refers to the period 2020-23 owing to data availability). Panel b): the DRC is singled out only for cobalt because of the large share of cobalt in the country's exports.

4 Costs of critical dependencies: a model-based assessment

We model the economic costs of potential disruptions to the supply of critical dependencies using the multi-country, multi-sector model of Baqaee and Farhi (2024). The model simulates the effects of supply shocks and their propagation through global production networks, including to downstream consumers and suppliers, also taking into account non-linear effects of shocks across countries and sectors. To allow for the low degree of substitutability of critical inputs, the Baqaee-Farhi model is calibrated as in Attinasi et al. (2024), which notably embeds low elasticities of substitution from Boehm et al. (2023).

To model the impact of shocks related to shortages of critical dependencies, we rely on a new methodology for building granular input-output (IO) tables. Models such as Baqaee-Farhi are usually calibrated with standard IO tables, which have a high level of sectoral aggregation, making it challenging to simulate shocks to specific products such as those identified in the analysis of critical dependencies. For example, a standard IO table bundles cobalt with many non-critical commodities (e.g. marble, sandstone) in a "mining and quarrying" sector, hence making it impossible to simulate targeted shocks and subsequent propagation across sectors and countries. To overcome these limitations, Conteduca et al. (2025) propose a data-driven methodology to disaggregate IO tables and isolate relevant niche products. We apply this methodology to build an IO table tailored to the dependencies identified in Box 2.

For each country, we study a sudden halt to the supply of products for which that country is critically dependent on foreign suppliers. The simulations assume a large increase in the trade costs of imports from the China-led eastern bloc for the

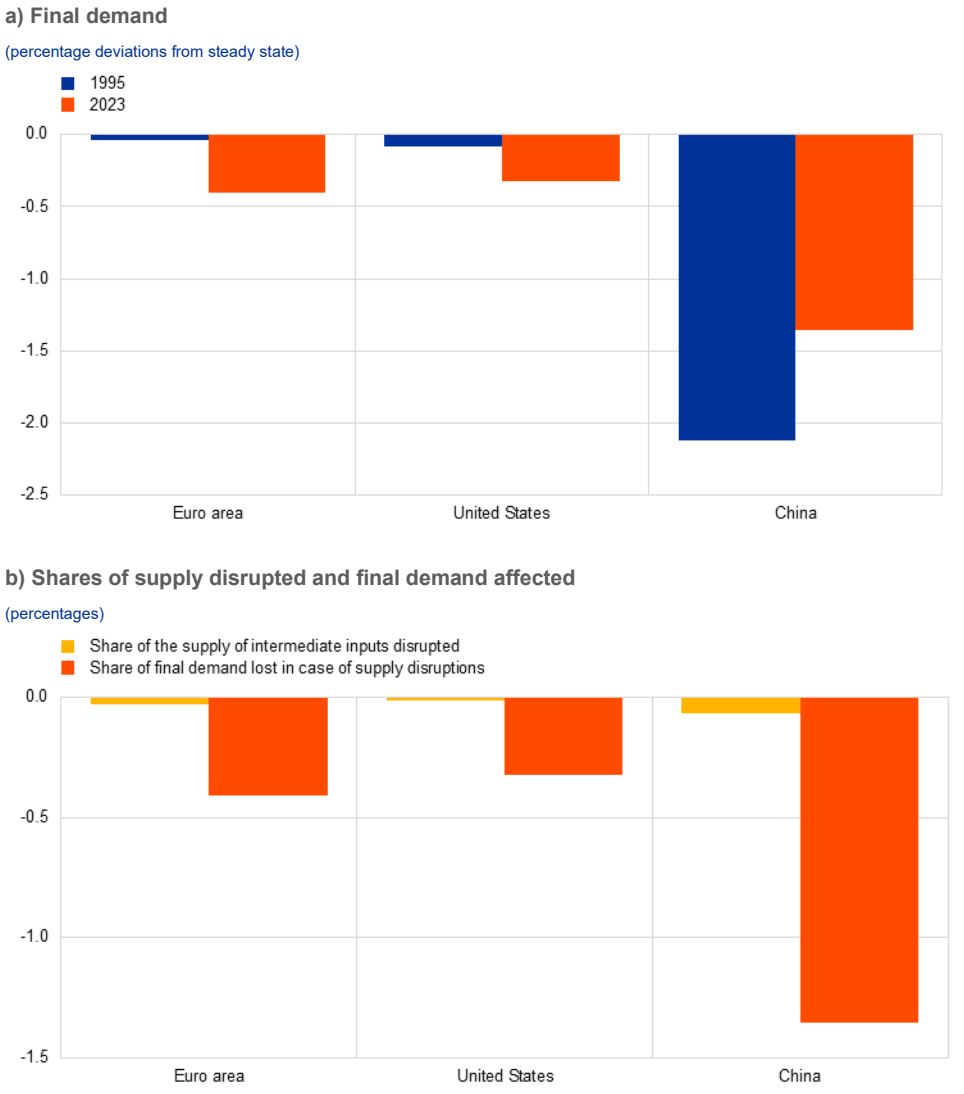
United States or the euro area, and vice versa.[16] To gauge how the economic significance of these critical dependencies has evolved over time, we run this scenario twice for each country, using the dependencies and IO tables for 1995 and 2023.

Over time the costs of a sudden halt to the supply of critical dependencies has risen for the euro area and the United States but declined for China, although they remain much higher for China (Chart 8, panel a). While China remains more vulnerable to western supply disruptions to critical dependencies, its push for self-reliance (see Section 2) has reduced its vulnerability over the past 30 years. Losses in Chinese final demand from a sudden halt to the supply of western-produced critical dependencies is estimated to have decreased from 2.1% in 1995 to 1.4% in 2023. However, the opposite holds for the euro area and the United States. Since 1995 losses in final demand owing to a sudden halt to the supply of critical dependencies from the eastern bloc have risen tenfold in the euro area (from 0.04% to 0.41%), driven by a higher dependency on Chinese inputs and a more widespread use of these inputs in production. Such losses also increased significantly for the United States (from 0.08% to 0.32%), although to a lesser extent than in the euro area given the higher starting point and efforts by US Administrations to curb dependency on China. At the same time, losses in Chinese final demand from a sudden halt to the supply of critical dependencies remain well above final demand losses in the euro area and the United States.

[16] For completeness, it should be noted that for this analysis, it is assumed that the world is divided into the three geopolitical blocs (western, eastern and neutral) along the lines of Attinasi et al. (2024). The scenario simulations are based on the list of critical dependencies without filtering for strategic sectors, as in step 3 in Box 2.

Chart 8

Impact of a supply shock to critical dependencies



Sources: Baqaee and Farhi (2024), Conteduca et al. (2025), BACI, OECD and ECB staff calculations.
Note: Panel b): values refer to 2023.

The key role of critical dependencies as production inputs, as well as their low degree of substitutability, amplifies the effects of sudden shortages. While critical dependencies represent only a tiny fraction of the total intermediate inputs used for production (0.01% in the United States and 0.07% in China), the impact of a sudden halt to their supply on final demand is disproportionate, being around 20 times larger than the proportion of inputs that is disrupted (Chart 8, panel b).

The model-based results are likely lower-bound estimates. Results from the Baqaee-Farhi model abstract from short-term amplification mechanisms, especially if disruptions to the supply of critical inputs give rise to uncertainty or to episodes of financial turmoil. In addition, the loss of critical inputs can cause temporary production stoppages, which are not taken into account in the model. Lastly, elasticities of substitution for highly specialised inputs (e.g. rare earth minerals) might be smaller

than assumed in our calibration. Irrespective of the list of critical dependencies, all these effects would exacerbate losses.

5 Conclusions

This article sheds light on the economic risks associated with critical dependencies. Since the 1990s trade liberalisation and specialisation of production across geographically dispersed networks have enabled substantial efficiency gains. However, this has resulted in asymmetric dependencies because some countries have secured dominant positions in global supply chains (e.g. China in strategic raw minerals such as lithium, magnesium and cobalt), while others have become acutely reliant on foreign inputs. These dependencies create strategic vulnerabilities, as their disruption by geopolitical rivals can entail significant economic costs.

As advanced economies have deepened their exposure to foreign inputs, the impact of trade disruptions has intensified considerably. Trade conflicts now have far greater economic repercussions than in earlier decades, as the euro area and the United States have seen rising costs associated with their dependencies on Chinese inputs.[17] Conversely, China has reduced its dependence on foreign inputs.

In the wake of recent global shocks, governments are reassessing their approach to trade, which is increasingly subject to geopolitical influence. Focus is placed on critical inputs which, though small in value, are difficult to replace and to which supply disruptions can severely amplify inflation and dampen demand.

Despite these risks, the macroeconomic costs of a full decoupling of geopolitical blocs would likely exceed those associated with critical dependencies – while failing to eliminate them. Model simulations suggest that a comprehensive decoupling of geopolitical blocs could reduce global GDP by up to 12% in the long run and temporarily push up inflation by as much as 4 percentage points in the first year (Goes and Bekkers, 2022; Attinasi et al., 2025a; 2025b). These costs stem from output losses, rising input prices and inefficiencies due to fragmented trade flows. Moreover, protectionist measures may prove ineffective at eliminating dependencies, as trade often reroutes through neutral third countries (Attinasi et al., 2024).

Policymakers therefore face a trade-off between strengthening supply chain resilience and preserving the benefits of openness. To navigate this dilemma, rather than resorting to blanket protectionism, governments should adopt targeted and coordinated de-risking strategies. Such strategies should aim to address specific vulnerabilities while preserving the economic gains of global integration. This balanced approach is key to ensuring both resilience and long-term prosperity. To help in the tailoring of policies to relevant dependencies, the type of data-driven analysis carried out in this article provides some insight into how to unveil critical dependencies that are not visible in aggregate data.

[17] This is also the case for prices, which are not covered here. They are, however, shown in López et al. (2024) for the Russian gas shock.

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2 Activity and price discovery in euro area inflation-linked swap markets

Prepared by Benjamin Böninghausen

1 Introduction

Inflation-linked swap (ILS) rates are an important measure of private agents' inflation expectations. Inflation expectations play a central role in the conduct of monetary policy at the ECB, whose primary objective is to maintain price stability in the euro area. These expectations matter as they influence private agents' consumption and investment decisions, wage and price setting and consequently actual inflation. Among the different measures of private agents' inflation expectations that are monitored by the ECB, the inflation compensation required by informed investors in financial markets plays an important role. As informed investors use financial products to hedge their exposure to, or express their views on, future inflation, the prices for those products can provide useful and particularly timely indications of possible shifts in the inflation outlook. In the euro area, the rates on ILS contracts – i.e. products that exchange a fixed payment in return for realised inflation over a given horizon in the future – are the most prominent market-based measures of inflation compensation in the monitoring toolkit for monetary policy purposes.[1]

Euro area ILS rates have been remarkably stable of late, following their most protracted period of high and volatile readings on record (Chart 1). ILS rates in the euro area started to increase rapidly across maturities in late 2021 to either reach, or fall only marginally short of, all-time highs in the period of high inflation in the two subsequent years, before retracing amid significant volatility that lasted well into 2023. Following these large and volatile moves, euro area ILS rates have remained remarkably stable and close to the ECB's inflation target since 2024, including throughout the ECB's monetary policy easing cycle.

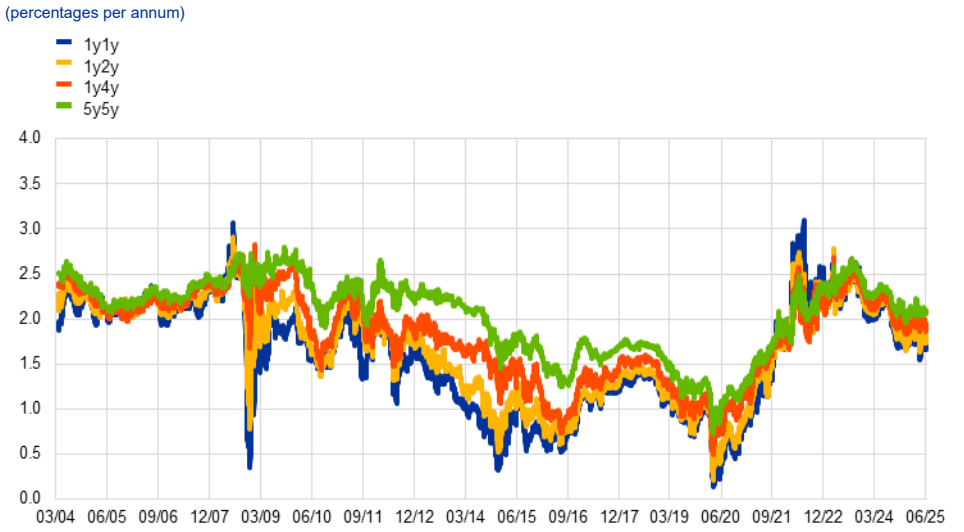
This article presents evidence on activity and price discovery in – and hence the information content of – the euro area ILS market, in particular during the recent period of high inflation. The exceptional developments in inflation seen between 2021 and 2023 resulted in greater attention being paid to inflation expectations, and hence to euro area ILS rates, which displayed equally exceptional dynamics. While the latter might readily be rationalised by the parallel developments in realised inflation, some observers expressed concerns about the information content of ILS markets in the euro area. Specifically, such concerns related to market imperfections and "technical" factors that might have a negative impact on the quality of price signals received from euro area ILS markets. Such technical factors were summarised previously and, using an indirect approach, found to generally possess little explanatory power for euro area ILS rates (Munch Grønlund et al., 2024). This article adds to and supports those previous findings by drawing direct evidence from

[1] For a fuller discussion, see Böninghausen et al. (2018).

transactions data, based on aggregate market activity and the implications of underlying sectoral activity patterns for price discovery.[2]

Chart 1

Euro area ILS forward rates, selected maturities



Sources: LSEG and ECB calculations.
Notes: The 1y4y ILS rate denotes the one-year forward rate starting in four years. The other ILS forward rates are defined accordingly. The latest observations are for 9 July 2025.

2 EMIR: evidence on euro area inflation-linked swap markets from derivatives transactions data

The analysis in this article uses transactions data collected under the European Market Infrastructure Regulation (EMIR).[3] EMIR was adopted by the EU in 2012 to increase transparency in derivatives markets by imposing mandatory reporting requirements on all EU-located entities for both over-the-counter and exchange-traded derivatives transactions. The data are reported centrally to the European Securities and Markets Authority. Relevant subsets are then distributed to various authorities within the EU, depending on their mandate and jurisdiction. The regulation on access to EMIR data means that, in ECB analysis and hence for the

2 This article considers ILS rates to have information content if they reflect, at any given point in time, the prevailing views on future inflation of informed investors. In turn, this is deemed to be more likely if these investors trade the associated contracts frequently and in response to relevant news. As such, the assessment of information content does not hinge on the historical inflation forecasting properties of ILS rates – see Chahad et al. (2024) for a comparison of the forecast performance of euro area inflation-linked products and ECB/Eurosystem staff projections. However, to the extent that investors have "skin in the game", ILS rates that reflect investors' views in timely fashion should also be expected to perform well in forecasting inflation.

3 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories (OJ L 201, 27.7.2012, p. 1).

purposes of this article, all transactions considered involve at least one counterparty, trading venue or central clearing counterparty domiciled in the euro area.[4]

Following enrichment of EMIR data with complementary information, the dataset used here makes it possible to assess how both activity and price discovery in the euro area ILS market have evolved over time. The scope of the subset of EMIR data available to the ECB means that trades conducted entirely between non-euro area counterparties are not visible to the ECB. This limitation is important, as market intelligence suggests that a non-negligible share of activity in euro area inflation-linked (and other) derivatives is intermediated by non-euro area entities, most prominently counterparties based in the United Kingdom. It is therefore not possible to provide an exact picture of the full level of euro area ILS market activity.[5] However, even after an extensive and conservative procedure of filtering and cleaning, a substantial amount of euro area ILS trading activity remains visible, in the form of more than 200,000 transactions used in this analysis. This makes it possible to draw meaningful conclusions on any significant changes in activity overall and – after enrichment with complementary data – on the product, maturity and sector of the counterparties involved.[6]

The article benchmarks the period of higher and more volatile euro area ILS rates since 2021 against the calmer period that preceded it. Specifically, the article considers data from January 2018 to April 2024. The start date in January 2018 reflects the fact that it took some time for data quality to reach a satisfactory level after the EMIR reporting obligation came into force in 2014. The end date in April 2024 was chosen to ensure consistency over time, as reporting requirements changed when the EMIR Refit entered into force on 29 April 2024. While the choice of sample period thus partly reflects technical considerations, it also aims to broadly cover two economically distinct subperiods: (i) that of relatively low and more stable ILS rates until 2020; and (ii) that of higher and/or more volatile ILS rates since 2021.

3 Market activity

Overall activity in euro area ILS markets has increased considerably since around 2021 (Chart 2). This is evidenced by the notional amount involved in new euro area ILS transactions, which represents the most basic metric of aggregate activity (alongside the number of transactions). The metric did not show much of a structural increase between early 2018 and late 2020. It then picked up markedly alongside the significant rise in realised inflation rates in 2021 and remained

4 Commission Delegated Regulation (EU) No 151/2013 of 19 December 2012 supplementing Regulation (EU) No 648/2012 of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories, with regard to regulatory technical standards specifying the data to be published and made available by trade repositories and operational standards for aggregating, comparing and accessing the data (OJ L 52, 23.3.2013, p. 33).

5 In fact, and at the latest following the United Kingdom's exit from the EU, this caveat also applies to the full EU-wide EMIR dataset.

6 In short, the extensive filtering and cleaning of the data is followed by (i) matching traded rates with quoted ILS rates to identify the type of ILS contract, and (ii) enrichment with company data from the Global Legal Entity Identified Foundation (GLEIF) and the ECB's Register of Institutions and Affiliates (RIAD) databases as well as Bloomberg to eliminate intragroup transactions and allow for sectoral activity analysis.

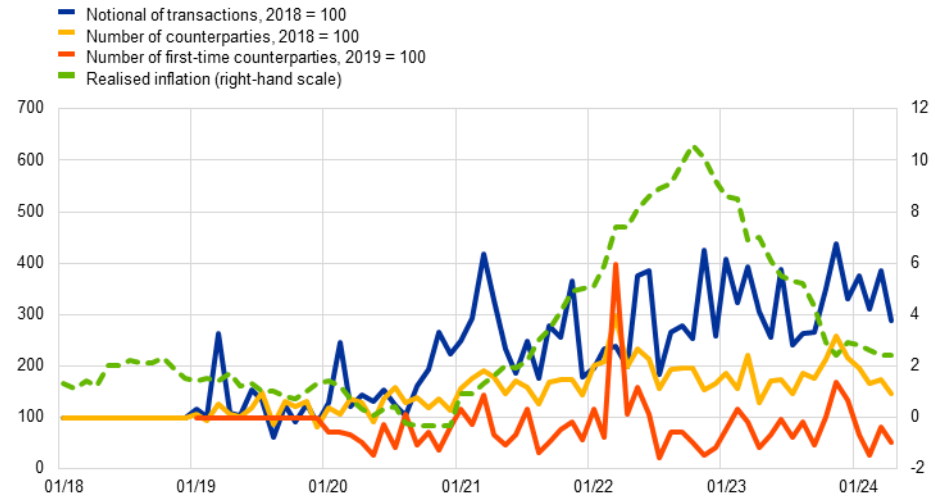
consistently elevated up to April 2024. To give a sense of magnitude, at the respective peaks of activity, the (measured) monthly notional traded in euro area ILS contracts exceeded €150 billion, roughly quadrupling from its 2018 average.[7]

Moreover, the breadth and depth of participation in the market have recently been consistently greater than earlier in the sample. This conclusion is drawn from two observations. First, the number of identifiable counterparties involved in at least one transaction in a given month has risen over time and remained at a visibly higher level after 2021. Second, the number of counterparties that conducted their first in-sample transaction in a given month – a rough proxy for "market entry" – did not show a trend decline despite the passage of time.[8] In fact, this proxy even peaked in early 2022, coinciding with − and potentially related to − the volatility in commodities markets in the wake of Russia's full-scale invasion of Ukraine. Taken together, these patterns suggest that euro area ILS markets saw a trend increase in activity that was rooted in ever wider investor participation.

Chart 2

Indicators of euro area ILS market activity and realised inflation

(left-hand scale: index, right-hand scale: percentages per annum)



Sources: ECB (EMIR), Eurostat and ECB calculations.
Notes: The gross notional amount and the number of counterparties with at least one transaction in a given month are indexed to 100, where 100 represents the average monthly level in 2018. For the number of first-time counterparties, the indexing is based on the monthly average over 2019. The latest observations are for April 2024.

Further information about the maturity of the market can be obtained by breaking down activity across different ILS product types and maturities. Euro area ILS contracts fall into three broad categories. First, in a spot contract, the cash flows of the floating leg of the transaction depend on the average rate of inflation over

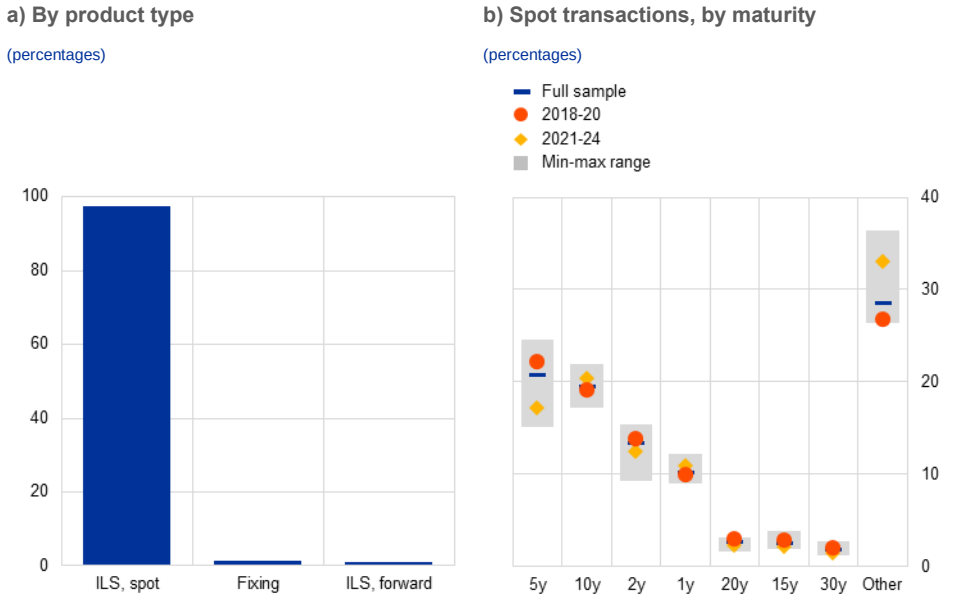
7 The stated notional amount represents a probably considerable underestimation as the filtering procedure is conservative and euro area ILS trades conducted entirely between non-euro area counterparties are not included (see above).

8 The probability of observing a counterparty transact for the first time in-sample declines with every passing month. With the sample starting in January 2018, a very significant number of counterparties will, by definition, be first observed in that month. An elevated number of transactions identified as coming from "first timers" are to be expected in the immediately ensuing months. The actual data confirm these expectations, as the "rate of entry" starts stabilising around mid-2018. To account for this mechanical effect, Chart 2 indexes the number of first-time counterparties to 2019 levels rather than the 2018 levels used in the other series.

often a number of years, starting from the date of execution. Second, in a forward contract, cash flows equally depend on the average rate of inflation over up to a number of years, but start from an effective date (notably) later than the date of execution. Third, in a short-term inflation "fixing" contract, cash flows depend on the year-on-year rate implied by upcoming inflation releases.[9] As a new element of the ECB's analysis of the ILS market, this article first reports the shares of activity in euro area ILS markets accounted for by these three categories.[10] This may help assess whether the notable increase in overall activity should be seen as taking place in a mature market or as simply one of many parameters in flux in a market that is still developing. In the first case, activity shares across products and the respective underlying maturities might be expected not to change too much and/or too rapidly over time, whereas in the second case more significant changes would be expected.

Chart 3

Share of gross notional traded in the euro area ILS market



Sources: ECB (EMIR), LSEG and ECB calculations.
Notes: Panel a) shows the distribution of gross notional traded across ILS spot, forward and inflation fixing transactions between January 2018 and April 2024. Panel b) zooms in on the largest of the three categories (i.e. ILS spot transactions) by maturity, sorted by importance and relevance. Other maturities, some of which command a higher share of activity than the 20-year, 15-year and 30-year points, are subsumed in the related category. The minimum-maximum range is based on yearly shares of gross notional traded.

Euro area ILS market activity almost exclusively comprises spot transactions, with the lion's share of activity concentrated in maturities that feature prominently in monitoring for monetary policy purposes. Chart 3, panel a) shows that, structurally, trading in euro area ILS markets focuses almost entirely on spot transactions, with the corresponding notional accounting for around 98% of total

9 Strictly speaking, inflation fixing contracts are thus a form of spot or forward ILS contract. However, plain-vanilla ILS spot or forward contracts tend to have tenors and forward horizons in multiples of years measured from the execution date, whereas a fixing contract can be thought of as trading inflation rates anywhere between zero and less than 12 months (or more than 12 and less than 24 months) after the execution date.

10 See also Boneva et al. (2019), which presents initial findings on ILS market activity in the euro area based on an earlier, lower-quality snapshot of EMIR data. For instance, the less granular analysis did not address activity in inflation fixing contracts.

notional over the full sample. By contrast, outright forward and inflation fixing transactions represent only very small shares of around 1% each. Crucially, the fact that market participants hardly trade forward contracts outright does not make key euro area ILS forward rates that are being monitored for monetary policy purposes any less useful. In fact, among spot ILS contracts (Chart 3, panel b), activity is centred on the five-year, ten-year, two-year and one-year maturities (in that order, based on full-sample notional shares). Forwards derived from these spot maturities – e.g. the five-year/five-year and one-year/one-year forward rates that serve as proxies for the anchoring of long-term inflation expectations and expectations for medium-term inflation, respectively – can therefore be considered particularly informative.

The stability in activity across both product types and maturities suggests that euro area ILS trading bears the hallmarks of a mature market. The observation that trading almost exclusively reflects spot transactions also holds true for individual years, as the respective notional shares deviate only marginally from their full-sample averages (not shown). Moreover, the rankings among the most active maturities in the spot category have remained relatively similar over time. This is the case when comparing the 2018-20 and 2021-24 subperiods, as well as when looking at the variation of activity shares across maturities across the individual years in the sample (see the min-max range in Chart 3, panel b). It therefore seems that, within a market that has been in existence for around two decades, participants in euro area ILS transactions flock to established products and maturities to hedge their exposure to, or express their views on, future inflation.

Trading activity in inflation fixing contracts represents a notable exception, having increased disproportionately during the period of high inflation. While inflation fixing contracts accounted for less than 2% of traded notional on average, their share of activity roughly doubled across the 2018-20 and 2021-24 subperiods amid increasing overall activity. As a result, total fixing contract activity is estimated to have increased about fivefold, compared with other ILS transactions roughly doubling.[11] The particularly pronounced increase for fixing contracts likely reflects a heightened focus and potential for speculation on specific inflation releases that are seen as a bellwether in an environment of high and volatile inflation. At the very least, significantly higher fixing contract activity suggests that price discovery for these products improved during the period of high inflation.

4 Price discovery

The increases in a number of activity metrics may be considered encouraging also from the point of view of price discovery, but a more robust assessment of the process requires further evidence. Price discovery, loosely understood as the

[11] Note the emphasis on the increase in fixing contracts activity in particular being an estimate. In the absence of an identifier distinguishing fixing from other ILS contracts, there is considerable uncertainty about the true change in activity in any smaller segment of the overall market. To address this issue, the article employs a type of “radius matching” procedure of traded rates against quoted rates to identify those transactions that likely refer to inflation fixing contracts. While this procedure yields plausible results, notably larger variation in inflation compensation in recent years may play some role in a larger share of transactions being identified as fixing contracts. Due to this uncertainty, the article does not present more granular results on fixing contracts.

process by which buyers and sellers establish the “appropriate” price of a security or contract, likely benefits from an increase in the number and volume of transactions, all else equal.[12] In particular, the rise in the breadth and depth of investor participation in euro area ILS markets may be considered positive in this regard. For a more stringent assessment, however, one might wish to consider at least two additional dimensions. First, the stronger the relationship between activity levels and instances of repricing, the more sound the price discovery process may be deemed to be.[13] Second, the more prominent the role played by “informed” investors for a given level of activity, the more prices might be expected to reflect “fundamentals”.[14]

Aggregate activity patterns point to healthy price discovery, as days with the most significant changes in euro area ILS rates command a disproportionate share of activity. This is the finding from an empirical test that analyses the distribution of traded notional in euro area ILS markets across buckets capturing the strength of daily changes in euro area ILS rates. Specifically, Chart 4 sorts the days in the sample by the respective changes in the euro area five-year ILS spot rate – in ascending order from decreases to increases – before assigning these changes to buckets based on various percentiles.[15] The chart shows that the 1% of days in-sample with, respectively, the most pronounced decreases and increases of euro area ILS rates each account for around 2% of notional traded. This implies a ratio of the share of notional to the share of days of close to two for each of these two buckets. Intuitively, higher ratios imply relatively more robust support from underlying activity. Looking at wider buckets of successively less pronounced daily changes in ILS rates, that ratio declines before falling visibly below one for the bucket containing the least eventful 50% of daily changes in ILS rates. This reflects the fact that those days between the 25th and 75th percentiles of the distribution of daily changes in the euro area five-year ILS rate represent less than 40% of notional traded. Overall, this suggests there is a reasonably strong relationship between activity levels and instances of repricing, and thus a healthy price discovery process.

12 According to O’Hara (2003), price discovery is one of the two principal functions of financial markets, alongside providing liquidity. In spite of this, there are differences and a lack of precision in definitions of price discovery (Putniņš, 2013).

13 This notion is consistent with the “mixture-of-distributions” hypothesis set out by Clark (1973), Epps and Epps (1976) and Harris (1986). This hypothesis postulates that prices and trading volumes (i.e. activity levels) jointly depend on a common underlying variable, namely the rate of information flow. As new information arrives, traders react by both revising the appropriate price of the security in question and increasing their trading volume.

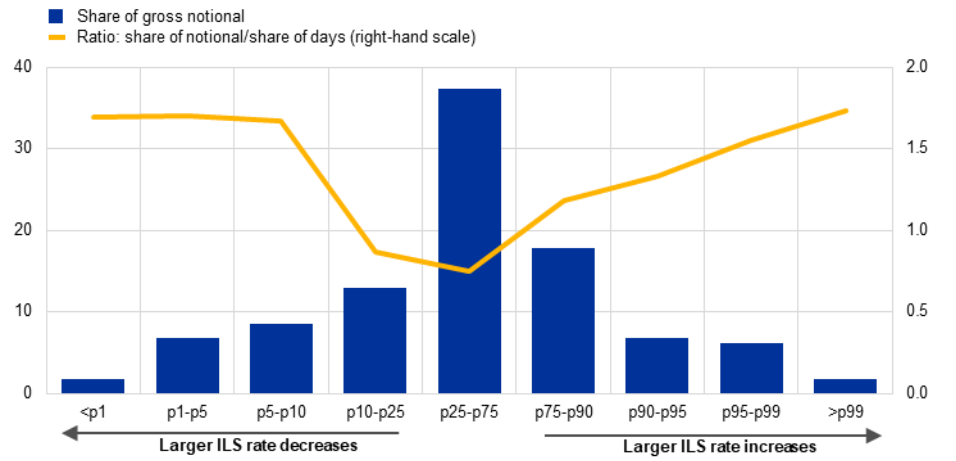
14 For a theoretical model on the beneficial role of informed traders, see, for instance, Kyle (1985).

15 Days are sorted by changes in the five-year euro area ILS rate because this is the single most actively traded maturity (Chart 3) and because ILS rate changes are highly correlated across maturities. This makes changes at the five-year maturity a good proxy for the strength of repricing in euro area ILS markets more generally.

Chart 4

Share of gross notional traded, by size of daily change in euro area ILS rates

(left-hand scale: percentages, right-hand scale: ratios)



Sources: ECB (EMIR), LSEG and ECB calculations.
Notes: The chart divides the January 2018 to April 2024 sample into buckets of daily changes in the euro area five-year ILS rate, sorted by size. The "<p1" bucket contains the 1% of observations with the largest daily decreases, while the ">p99" bucket contains the 1% of observations with the largest daily increases. Blue bars show the share of full-sample gross notional traded in euro area five-year ILS contracts that is accounted for by each of the buckets, while the yellow line shows the ratio of that share to the share of days in each bucket (i.e. 1% for <p1, 4% for p1-p5, etc.).

Sectoral activity analysis further strengthens the case for price discovery in line with "fundamentals" in the period of high inflation, as the share of activity stemming from more informed and responsive counterparties increased markedly. The intuition for analysing the sectoral composition of activity is that prices are more likely to reflect fundamentals – understood here in the broad sense of any information relating to the inflation outlook – the higher the share of activity coming from investors that closely follow macroeconomic developments and trade swiftly upon re-assessing their inflation outlook.[16] In an environment where that share is high, the "marginal investor" in a given trade is more likely to be an informed and responsive counterparty that helps anchor the acceptable price around an up-to-date assessment of the inflation outlook.

In this respect, the hedge fund sector is of particular interest. Conventional wisdom suggests that, among the different sets of counterparties active in the euro area ILS market, (global macro) hedge funds and, to a lesser extent, investment funds are most likely to be both attentive and responsive to macroeconomic developments. This hypothesis receives empirical support from the evidence presented in Box 1, which examines differences in the activity of counterparty sectors in the euro area ILS market in response to "fundamental" shocks of varying strength.

16 As such, the inflation outlook as understood here is not limited to "genuine" expectations priced into ILS rates, but also includes the inflation risk premium. For a discussion of genuine inflation expectations and risk premia, see Böninghausen et al. (2018). For more information on model-based decompositions of ILS rates into these two components, see Burban et al. (2022).

Box 1
The responsiveness of counterparties in the euro area inflation-linked swap market

Conceptually, counterparties active in the euro area inflation-linked swap (ILS) market (and financial markets more generally) can be ranked along a spectrum of responsiveness. At one end of this spectrum, highly responsive counterparties follow the flow of macroeconomic and general news closely and at high frequency, but these are also prepared to trade swiftly in response. At the other end, even counterparties that might well follow the news flow similarly closely will trade to a more regular schedule, such that their responses only reflect any possible changes in assessment due to incoming information with a meaningful lag.

In a stylised view, conventional wisdom would see hedge funds populating the responsive end of this spectrum, whereas insurance corporations and pension funds represent the less responsive end, with most investment funds sitting somewhere in between. Depending on the financial market and counterparties involved, however, the sorting of counterparties into sectors may prove noisy. In other words, counterparties whose name suggests they belong to one sector may demonstrate behaviour that would generally be associated with another sector.[17]

This box shows that, in the dataset used in the associated article, counterparty behaviour across sectors does align reasonably well with the stylised priors. The identification strategy behind this conclusion is as follows:

The fact that days with more significant changes in euro area ILS rates tend to account for a disproportionate share of aggregate activity (see Chart 4 and the associated discussion in the main text of this article) suggests that both ILS rate changes and activity levels are driven by a common "fundamental" shock. Accordingly, the strength of ILS rate changes can serve as a rough "instrument" proxying for the relevance of the shock. Then, as any differences in responsiveness across counterparties should be particularly visible in the case of more relevant shocks, one would expect the activity of sectors hypothesised as more responsive to pick up disproportionately on days with more pronounced changes in ILS rates.

The stylised priors are confirmed from two angles.[18]

First, on days for which the strength of euro area ILS rate changes points to particularly relevant shocks (i.e. below the 10th and above the 90th percentiles), the notional traded by identified non-bank counterparties stems mainly from the hedge fund sector (Chart A).[19] This contrasts markedly with days of less pronounced ILS rate changes and hence presumably less relevant shocks. It is also worth noting that, in a mirror image of the shares accounted for by the hedge fund sector across buckets, those of insurance corporations and pension funds are inversely related to shock relevance.

17 See also Boneva et al. (2019).

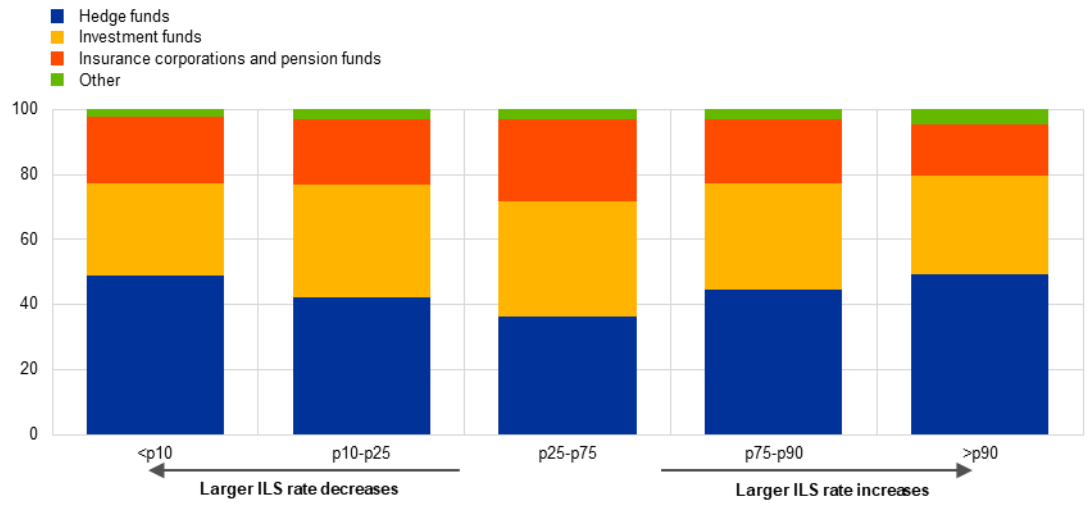
18 The results of additional counterparty-level panel regressions are consistent with the findings reported here. Concretely, the hedge fund sector is the one whose ILS market activity most consistently increases on days of macroeconomic shocks and inflation releases, compared with other days. This sector's activity also tends to increase by more than that of other (non-bank) sectors, such as investment funds or insurance corporations and pension funds.

19 While in Charts A and B the sample is sorted into buckets covering daily euro area five-year ILS rate changes of different magnitudes, the breakdown is less granular than in Chart 4 in the associated article. This is because Charts A and B take an additional sector point of view, which would lead to noisy results if, say, the 1st and 99th percentiles were considered.

Chart A

Sectoral composition of gross notional traded, by size of daily change in euro area ILS rates

(percentages)



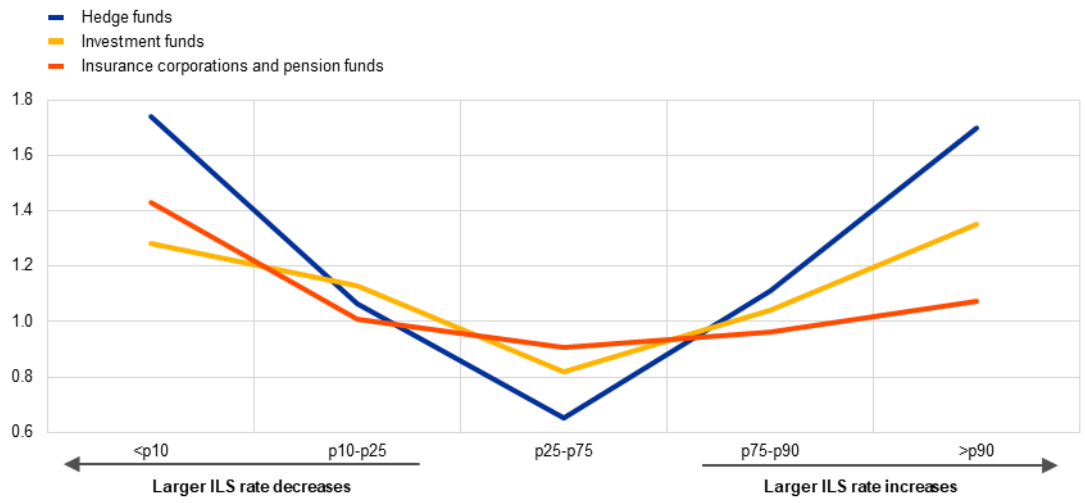
Sources: ECB (EMIR, RIAD), GLEIF, Bloomberg and ECB calculations.
Notes: The chart divides the January 2018 to April 2024 sample into buckets of daily changes in the euro area five-year ILS rate, sorted by size. The "<p10" bucket contains the 10% of observations with the largest daily decreases, while the ">p90" bucket contains the 10% of observations with the largest daily increases. Stacked bars show, for each bucket, the shares of notional accounted for by the different sectors in transactions of all euro area ILS contracts on days belonging to the bucket. Shares rescaled following the exclusion of notional traded by banks and unidentified counterparties in the sample.

Second, in an arguably more stringent test of sectoral responsiveness, Chart B shows an activity profile for each sector. This profile is obtained by computing, for each ILS rate change bucket, the ratio of (i) the share of a sector's total in-sample notional that was traded on days belonging to the bucket, and (ii) the share of days covered by the bucket. Consistent with the thinking on aggregate price discovery, sectors thought to be more responsive should exhibit a more V-shaped profile. This is indeed the case, as the profile of the hedge fund sector is clearly the most V-shaped, followed by that of the investment fund sector and that of the insurance corporation and pension fund sector.

Chart B

Relative activity profiles, by sector and by size of daily change in euro area ILS rates

(ratios)



Sources: ECB (EMIR, RIAD), GLEIF, Bloomberg and ECB calculations.
Notes: The chart divides the January 2018 to April 2024 sample into buckets of daily changes in the euro area five-year ILS rate, sorted by size. The "<p10" bucket contains the 10% of observations with the largest daily decreases, while the ">p90" bucket contains the 10% of observations with the largest daily increases. Lines show, for each sector, the profile of a ratio calculated as follows for each bucket: the share of the sector's total in-sample notional that was traded in all euro area ILS contracts on days belonging to the bucket, divided by the share of days covered by the bucket.

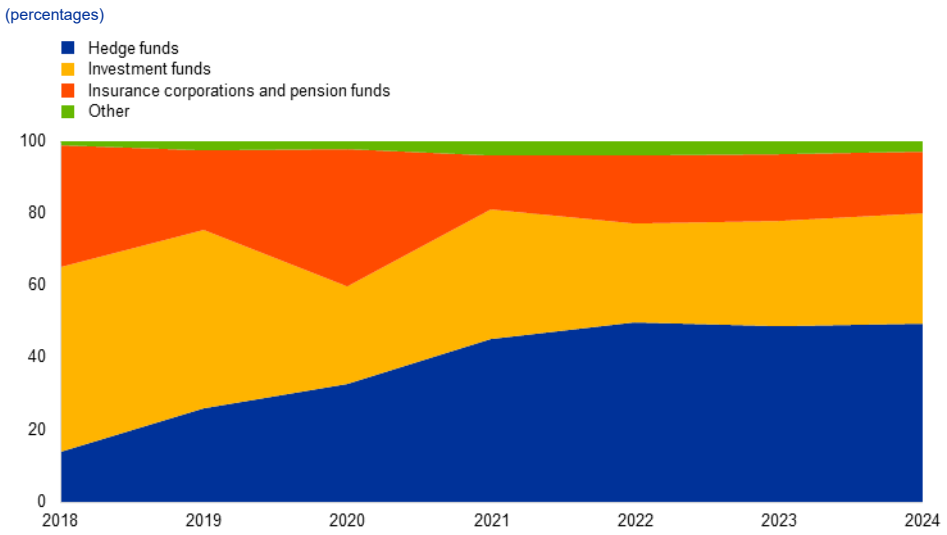
The hedge fund sector is also the one that has significantly increased its share of activity in the euro area ILS market in recent years. Chart 5 shows the evolution of activity shares attributable to different counterparty sectors. For the purposes of this discussion, the chart excludes two types of counterparty: banks, through which almost all euro area ILS market activity continues to be intermediated; and unidentified counterparties.[20] Leaving aside these two, the share of remaining gross notional accounted for by hedge funds has risen significantly, from less than 20% in 2018 to around 50% from 2021 onwards. Hence, an increasing share of activity in the euro area ILS market has come from investors that more frequently update their views on the inflation outlook and swiftly execute transactions based on those views. This means that, if anything, the information content of euro area ILS rates is likely to have risen in recent years.[21]

[20] Banks are dropped in the representation because their intermediation function makes them account for a dominant share of overall activity, which would make it harder to trace the evolution of activity by non-banks. Moreover, the (economically more interesting) part of bank activity that reflects position-taking based on views on the inflation outlook cannot be distinguished from intermediation activity on the basis of the available data.

[21] Increasing hedge fund participation is not necessarily driven entirely by "absolute" pricing motives, i.e. where a hedge fund trades an ILS contract based on its views on future inflation. It may also be driven by "relative" pricing motives, i.e. where a hedge fund trades an ILS contract based on its assessment of the corresponding ILS rate relative to the price of a similar asset, such as an inflation-linked government bond. The significant increase in the trading of short-term inflation fixing contracts – in which hedge funds represent virtually all identifiable non-bank activity and which do not readily lend themselves to being priced relative to (generally longer-dated) inflation-linked bonds – is a clear sign that absolute pricing activity has risen. It seems plausible, however, that relative pricing motives may have played at least some role in the pick-up in hedge fund activity in euro area ILS markets, seeing as this sector has also substantially increased its trading activity in euro area government bond markets in recent years (Ferrara et al., 2024). Ultimately, the "true" motivation behind a trade is untestable, at least for as long as (matchable) data on transactions in the euro area cash government bond market remain unavailable. In this context, see Barria and Pinter (2023) on the arbitrage activity of hedge funds across ILS and government bond markets in the United Kingdom.

Chart 5

Share of gross notional traded, by sector



Sources: ECB (EMIR, RIAD), GLEIF, Bloomberg and ECB calculations.
Notes: The chart shows the gross notional traded in the euro area ILS market in a full given year (January to April in the case of 2024) by counterparties stemming from the hedge fund, investment fund, insurance corporation and pension fund, and other sectors. Shares rescaled following the exclusion of notional traded by banks and unidentified counterparties in the sample.

5 Conclusions

Derivatives transactions data suggest that the information content of euro area ILS markets is considerable and has, if anything, improved in recent years. This article presents the results of a detailed analysis of data reported under EMIR that provide first-hand, detailed evidence on the activity of counterparties in euro area ILS markets. The aim is to assess the information content of euro area ILS rates as measures of inflation compensation. The data point to a considerable increase in both the breadth and the depth of overall activity. The price discovery process resulting from trading activity appears healthy overall, and the sectoral composition of activity has shifted towards counterparties that can be deemed more responsive to changes in the inflation outlook. In particular, the share of activity attributable to the hedge fund sector has risen. All of this means that an increasing proportion of transactions in euro area ILS markets seems to have been underpinned by the continuous updating of views on the inflation outlook.

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3 Cash is alive… and somewhat young? Decoupling age, period and cohort from euro cash use

Prepared by Rebecca Clipal and Alejandro Zamora-Pérez

1 Introduction

A central puzzle motivating modern payments research is the divergence between decades of predictions about a cashless society and the empirical reality of the enduring role cash plays. This persistence of cash is paradigmatic in the case of the euro. The value of euro cash circulation reached €1.59 trillion by the end of 2024, representing around 10% of euro area GDP (a similar share to that of a decade earlier). [1] While the transactional use of cash – estimated to account for roughly 20% of this circulation (Zamora-Pérez, 2021) – has clearly diminished with ongoing digitalisation, this trend has been slower than predicted and the demise of cash has not materialised. To the contrary, evidence shows that cash was used in about 50% of physical point-of-sale transactions in 2024, remaining people's most frequently used payment method with the widest merchant acceptance (European Central Bank, 2024a; European Central Bank, 2024b). This resilience contradicts decades of predictions about the death of cash (Shy, 2023), which suggest that other factors beyond simple transactional efficiency influence overall demand for physical currency.

What explains this rarely anticipated persistence of cash and what are the future prospects of cash? Early predictions appear to have underestimated several overlapping factors: (1) the imperfect substitutability of cash with electronic payment methods (Alvarez, et al., 2022, Brown, et al., 2022), (2) the stickiness of payment habits, owing to the costs associated with adopting new means of payment (Van der Cruijsen et al., 2016; Nocciola and Zamora-Pérez, 2024), and (3) the continued relevance of cash for varied demographic groups and payment scenarios (Bagnall, et al., 2016), including for users with full access to digital payments in advanced economies (Zamora-Pérez et al., 2024) and groups at risk (Van der Cruijsen and Reijerink, 2024).[2] Forecasts also focused solely on the payment function of cash and underappreciated other roles of cash, such as its use as a tangible store of value, which has been increasing. [3] Beyond these explanations for the overall resilience of cash, another key factor is the differentiated use of varied functions of cash across age groups. This remains a less explored area and offers an opportunity for deeper insight,

1 See the ECB dashboard.

2 Relatedly, recent academic literature has increasingly illuminated previously underappreciated costs of abolishing or heavily restricting cash, for example with a focus on the role played by cash in tempering banks' market power (Lagos and Zhang, 2022), the social costs of demonetising large denominations (Chodorow-Reich et al., 2020), or the forgone consumer surplus of having different payment methods (Alvarez and Argente, 2022). In general, in some instances, social costs of heavily taxing cash have been found to outweigh social benefits (Alvarez, et al., 2022).

3 Recent euro cash developments entail an apparent paradox where the overall cash circulation increased alongside a decreasing transactional role in relative terms (Zamora-Pérez, 2021).

particularly by systematically analysing interactions between ageing processes and broad societal changes, like digitalisation.

This article contributes to the discussion by examining the current role played by cash across three of its functions, decoupling period, age and cohort effects for each of them. This article focuses on cash in everyday transactions, its function as a store of value and the importance individuals place on retaining cash as an option (sometimes referred to as latent cash demand). These are key indicators of the vitality of cash in the euro area. Using data from the Eurosystem SPACE survey (2019, 2022 and 2024), we decouple period effects (such as general digitalisation trends or singular events like the pandemic) from age-specific patterns and the life-cycle dynamics of distinct birth cohorts, with the aim of understanding the underlying drivers of the persistent – albeit evolving – relevance of cash. Our findings show clear period effects and stable age patterns over the last five years: younger individuals engage with cash across all functions, particularly holding it for precautionary reasons, whereas older groups use it for transactions more frequently than other age groups. The perceived importance of cash has risen for all age groups.

2 A descriptive overview of cash functions by age and period (2019-24)

A first look at the descriptive data suggests that cash use is not monolithic – the ways cash is used vary depending on temporal trends and people's age. We draw on the 2019, 2022 and 2024 editions of the SPACE survey.[4] Our analysis encompasses approximately 110,000 adults across 15 euro area countries and – via representative payment diaries and questionnaires – incorporates rich cross-sectional data on payment choices, cash holdings and attitudes.[5]

The share of cash in everyday payments (including physical and online transactions) decreased across all age groups between 2019 and 2024. Chart 1 reveals a uniform decline between 2019 and 2022 which was particularly pronounced, likely reflecting shifts driven by the pandemic. There was more variation from 2022 to 2024. Younger age groups, for example 18–22 and 23–27 years, saw a steady decline in cash use over the three years, whereas for middle and older age groups, the trend was more moderate, with a less pronounced drop in both volume and value between 2022 and 2024. Throughout all periods, older age groups consistently maintained a higher share of cash transactions compared with younger cohorts – these increasingly favoured online cashless payments. For most younger and middle-aged groups, the combined share of online and physical cashless transactions surpassed that of cash

4 In the main text, we only refer to the reference year of each edition, i.e. 2019, 2022 and 2024. However, for 2022 and 2024, part of the fieldwork was conducted in autumn of the year prior (2021 and 2023, respectively).

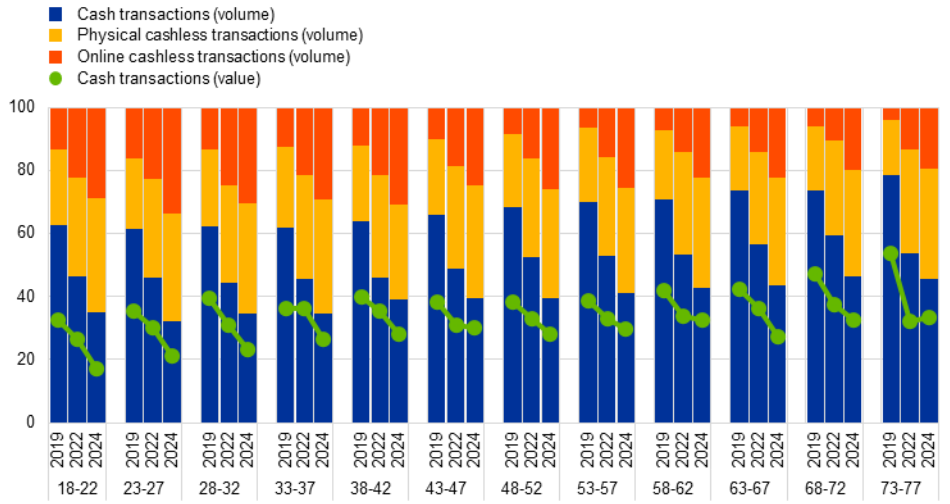
5 The countries included in the analysis are Belgium, Estonia, Ireland, Greece, Spain, France, Italy, Latvia, Lithuania, Luxembourg, Austria, Portugal, Slovenia, Slovakia and Finland. Although the SPACE surveys usually include all euro area countries (European Central Bank 2024a), our analysis covers 15 euro area countries for which data were centrally collected by the ECB using a fully harmonised questionnaire. Germany and the Netherlands are excluded because they conduct the survey with different questionnaires. Malta and Cyprus are also excluded because of comparability issues arising from slight methodological differences in survey mode and diary length in 2019, and Croatia only joined the euro area in 2023.

by 2024, with online transactions rivalling cash for some young demographics, e.g. 23-32 years. These findings point to persistent age-related preferences, as well as strong period effects driving digitalisation.

Chart 1

Payment methods in everyday transactions by age group and year

(age and period; percentage)



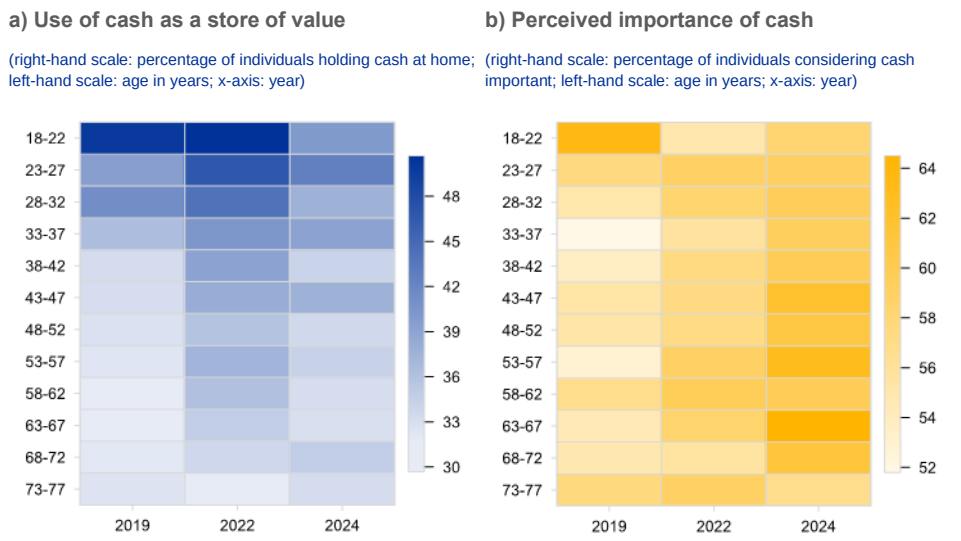
Source: ECB staff calculations using SPACE data (2019-24).
Notes: The chart includes representative survey data from 15 euro area countries. The "Physical cashless" category includes physical cards, mobile phone payments, bank cheques, credit transfers and direct debits. The "Cash" category refers to transactions made with physical cash, including person-to-person payments.

Beyond payments, cash is increasingly used as a store of value and its reported importance among consumers is also on a distinct upward trend.

Chart 2 presents two heatmaps where darker shading signifies a higher proportion of individuals within a given age-period cell. Panel a) displays the shares of individuals with precautionary cash reserves held at home. It shows a visible increase across all age groups in 2022, suggesting a strong period effect likely linked to the pandemic. Additionally, younger individuals (18-22 and 23-27 years) consistently report higher levels of precautionary cash holdings across all three waves, which indicates a distinct age effect. Panel b) shows a clear increase in the perceived importance of cash as a payment option from 2019-24 across age groups, indicating a period effect. However, the youngest and oldest cohorts display slightly different patterns, suggesting a more nuanced age effect. By 2024, cash is perceived as important by a wide majority of individuals across all age groups.

Chart 2

Reported use of cash as a store of value and the perceived importance of cash by age and survey



Source: ECB staff calculations based on SPACE survey data (2019-24).
Note: Darker shading indicates a higher proportion of individuals within a specific cohort, in relative terms.

3 Period, age and cohort effects decoupled

To disentangle the influences observed above, this article applies an age-period-cohort analytical framework to data from three editions of the SPACE survey. While the surveys do not track individual consumers over time, the methodology allows for the statistical decomposition of observed patterns into three key components. These components are: (1) age effects that capture variations linked to individuals' life stages, (2) period effects that reflect shocks or trends affecting all individuals at a given point in time, such as the pandemic or ongoing digitalisation, and (3) cohort effects that refer to persistent differences between people born around the same time who may develop distinct behavioural patterns shaped by shared experiences.[6]

The age-period-cohort decomposition, though not widely applied to the analysis of retail payments, is crucial for understanding that an apparent uniform shift in cash use can mask diverse underlying mechanisms. This framework first calculates an overall average, i.e. a grand mean, of cash use across all respondents and survey years. It then isolates the effects of age and period by

6 This methodology (called age-period-cohort-interaction or APC-I and described in Luo and Hodges, [2022]) overcomes previous statistical challenges from the traditional age-period-cohort (APC) literature (decoupling these three factors is technically difficult because "cohort" can be expressed as "period" minus "age", which is often an identification problem). It also enables the use of repeated cross-sectional data, such as that of the SPACE survey, to assess how payment and store-of-value behaviour evolved over time and across age and cohorts. (The nature of SPACE survey data makes standard panel econometric techniques impossible.) The model mathematically fits a full two-way ANOVA (all age dummies × all period dummies) and then decomposes the interaction matrix into (i) linear life-course slopes and (ii) average deviations for each cohort, thereby avoiding the classic identification problem in traditional APC setups.

measuring how each deviates from this baseline. Importantly, it also detects cohort-specific behaviours by examining whether a given cohort consistently uses cash more or less than would have been expected based on their age or the period alone.

This section focuses on the main period and age effects influencing cash use and attitudes, before examining cohort-specific dynamics. We assess three key indicators: transactional cash demand, cash held as a store of value and the subjective importance attributed to having cash as a payment option. Each of the three indicators is presented in a two-panel chart, displaying both period and age effects.[7] In addition to the baseline effects, we also test the influence of a set of demographic, financial, technological, payment-related and persistent country-related factors and variables to understand what might be driving the patterns.[8]

3.1 The baseline: period and age effects

Cash use for everyday transactions

The share of cash in day-to-day payments (physical and online) has fallen over time (from 2019-24), yet it follows a distinct age-related pattern that dips in the mid-twenties and climbs in later years.[9] Panel a) in Chart 3 shows a strong period effect with respect to the grand mean depicted by the horizontal zero line, and it is statistically significant. The black error bar for each year does not intersect the zero line. The solid blue line is well above zero in 2019 and far below zero in 2024. This signals a large, statistically systemic fall in cash use over time, which we normally refer to as overall digitalisation in payments. Panel b) shows that the youngest age groups show average levels of cash use for transactions. This falls for individuals from their late twenties to late forties (indicating lower than average cash use) and rises clearly above the mean for those older than 60.

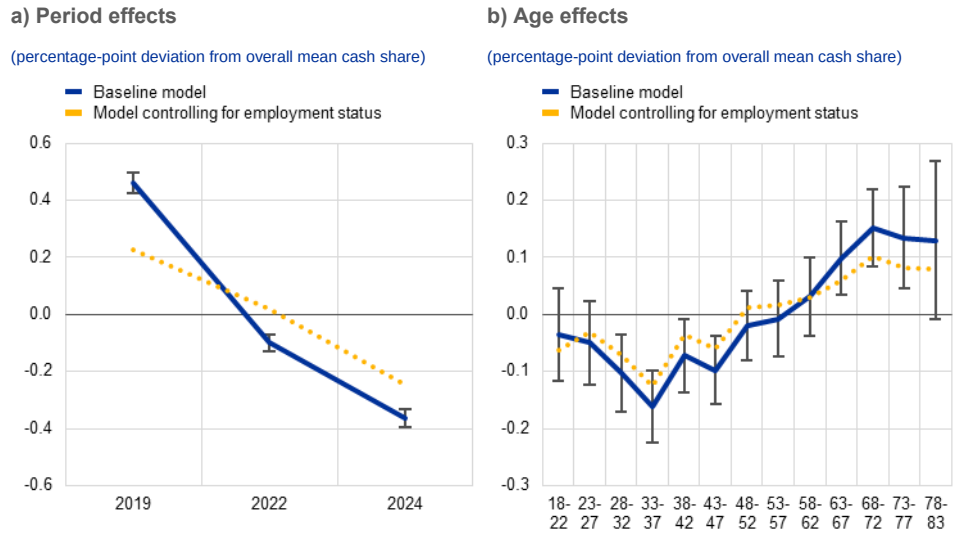
7 Country-specific APC-I models were also estimated for the 15 countries analysed. While individual euro area country models generally follow similar age and period trajectories as the euro area model, cross-country heterogeneity exists, particularly in the levels of cash use and attitudes estimates. Some countries exhibit markedly different trends: Finland, for instance, shows increasing period effects for cash storage and decreasing effects for cash importance, contrasting with broader euro area patterns. France displays a unique period dynamic for cash payments, while age profiles for cash payments also vary, notably in Greece (steeper decline from high youth usage) and Italy (more stable across ages).

8 All results include country fixed effects. Overall, the reported results hold within countries, and are not driven by persistent, country-specific factors such as differences in cash infrastructure, regulation or cultural payment preferences.

9 To account for the increasing role of online commerce, this indicator includes both physical and online payments. This embeds a two-stage decision: (1) the choice of transaction channel (online vs physical) and (2) the payment method for physical transactions (cash vs cashless). For simplicity, we use a single combined indicator rather than a two-stage model. Restricting the analysis to the share of cash in physical transactions yields very similar baseline results, suggesting that physical payments dominate the observed pattern.

Chart 3

Estimated period and age effects on transactional cash share in everyday payments



Source: ECB staff calculations using SPACE survey data (2019-24) and APC-I models.
Notes: The dots above or below the zero line show how far a given year or age group sits from the grand average (average for all individuals and periods), expressed in percentage points. Each dot is accompanied by an error bar representing an approximate 95% confidence interval. If an error bar crosses the zero line, the effect for that specific age group or period is not statistically distinguishable from the average; if it stands clear of the zero line, the gap is large enough to call a statistically significant period or age effect.

There is a sharp observed decline across periods significantly driven by the surge in online transactions, while the V-shaped "tick" age pattern is influenced by life-cycle factors. The period-driven decline in transactional cash share in panel a) of Chart 3 was most acute between 2019 and 2022, largely reflecting the rapid adoption of online and contactless payments accelerated by the pandemic. A further, though less steep, reduction in cash share occurred by 2024, even as online payments also began to replace physical cashless methods (see Chart 1). Regarding the age dimension, the tick pattern suggests typical life-cycle transitions: younger individuals exhibit average cash reliance, individuals in their prime working years make greater use of digital and physical cashless methods, and people of older age discernibly use cash more.[10]

Controlling for employment status (the dotted lines in Chart 3) noticeably flattens both the period and age effect curves, indicating its relevance for understanding age and group effects. As regards periods, the findings suggest that employment – encompassing factors like income regularity, workplace payment norms and the transition into retirement – mediates cash usage. A decrease from 2019 in aggregate unemployment levels across periods likely changed the composition and behaviours of employed payers, which contributes to the overall period trend in cash use.[11] With regard to age, younger individuals entering

[10] These age-specific deviations remain statistically significant even after accounting for the strong net period effect, which confirms the robustness of the life-cycle pattern over the five-year period analysed.

[11] The unemployment rate in the euro area decreased from approximately 7.5% in 2019 to around 6% to 6.5% in 2024, following a pandemic peak. This development changed the overall representative composition of unemployed respondents throughout the three survey editions and could partly explain the observed pattern.

employment earlier might use cash less than their student peers, while employed older individuals might use cash more than retirees in the same age bracket.

Using cash as a store of value

Immediately after the pandemic, more people kept some cash at home, and this habit is surprisingly most prevalent among the youngest age groups.[12] Panel a) of Chart 4 shows a *one-off period effect*: the baseline jumps well above the zero reference line in 2022 and drops below it in 2024, with error bars clear of the line at both dates. Panel b) depicts the *age effects*: the baseline model (solid line) shows that the youngest age groups (18-37 years) have a strikingly high and statistically significant propensity to store cash at home. This tendency diminishes rapidly and significantly through early adulthood, reaching its lowest point for those in their late 60s to late 70s, before trending upwards for the oldest cohort whose behaviour is indistinguishable from the mean.

High uncertainty (between 2019 and 2022) and higher opportunity cost (between 2022 and 2024) mostly explain the period shifts in store of value, while youth-specific factors explain the age pattern. The pronounced peak in cash hoarding in 2022 likely reflects a flight to perceived safety and liquidity during the acute phase of the pandemic, as noted in previous literature (Tamele, et al., 2021). Its subsequent decline by 2024 may be attributable to a normalisation of perceived risk and (more critically) the rising opportunity cost of holding non-interest-bearing cash as the ECB began increasing interest rates from July 2022 onwards.[13] The persistent and significant cash hoarding among the youngest adults is particularly noteworthy. This could stem from several interlinked factors: lower engagement with formal financial institutions, receipt of part of income, gifts or allowances in cash rather than from wage accounts, and strong parental reliance, e.g. because of the high average age at which people leave their parental homes in Europe, and in some euro area countries specifically.[14]

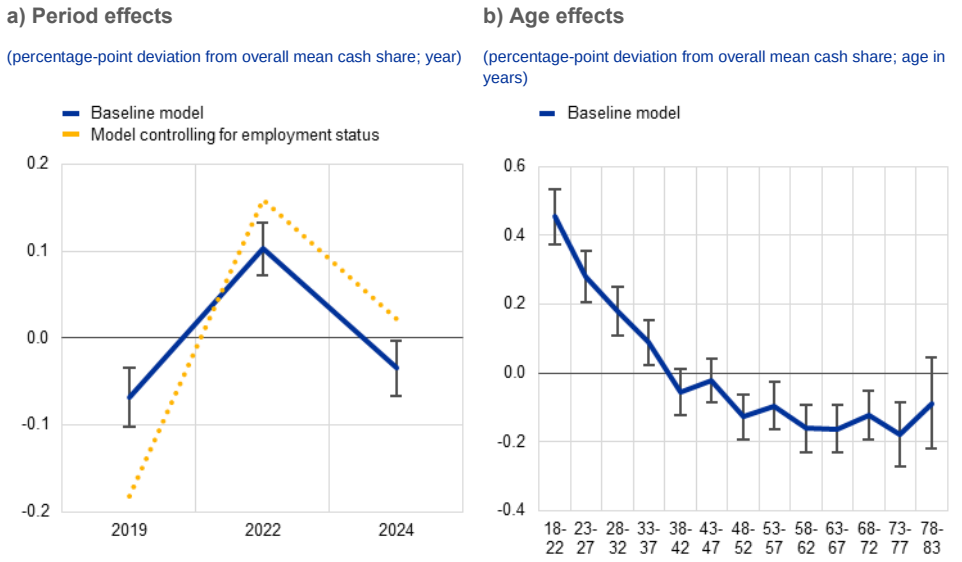
[12] It is important to remember that these charts depict the share of individuals engaging in this behaviour, not the amounts stored, and highlight statistically significant deviations from the overall sample mean.

[13] The 2022 edition only covers spring 2022, so it did not capture the effects of the subsequent decrease in interest rates.

[14] In 2023 young age groups across the EU left their parental homes on at the age of 26.3 year on average; in southern countries such, as Italy, Spain, Portugal or Greece, this age jumps to around 30 years (Eurostat, 2024).

Chart 4

Estimated period and age effects on reported use of cash as a store of value



Source: ECB staff calculations using SPACE survey data (2019-24) and APC-I models.
Notes: The dots above or below the zero line show how far a given year or age group sits from the grand average (average for all individuals and periods), expressed in percentage points. Each dot is accompanied by an error bar representing an approximate 95% confidence interval. If an error bar crosses the zero line, the effect for that specific age group or period is not statistically distinguishable from the average; if it stands clear of the zero line, the gap is large enough to call a statistically significant period or age effect.

Employment status accentuates the pandemic spike but hardly moves the age curve, and no other covariate we tested changes the picture. Interestingly, controlling for employment status – the dotted line in Chart 4, panel a) – significantly exacerbates the 2022 peak in the period effect. This suggests that those not in employment may have had an even stronger precautionary motivation to hoard cash. Our analysis found that no other demographic, financial, technological, or payment-related factors significantly altered the fundamental age pattern observed in panel b). This robustness points to the age effect being a deeply entrenched behavioural characteristic, reflecting distinct life-cycle stages and attitudes towards financial management, rather than being easily explained by more conventional socioeconomic indicators.

The importance of being able to pay with cash

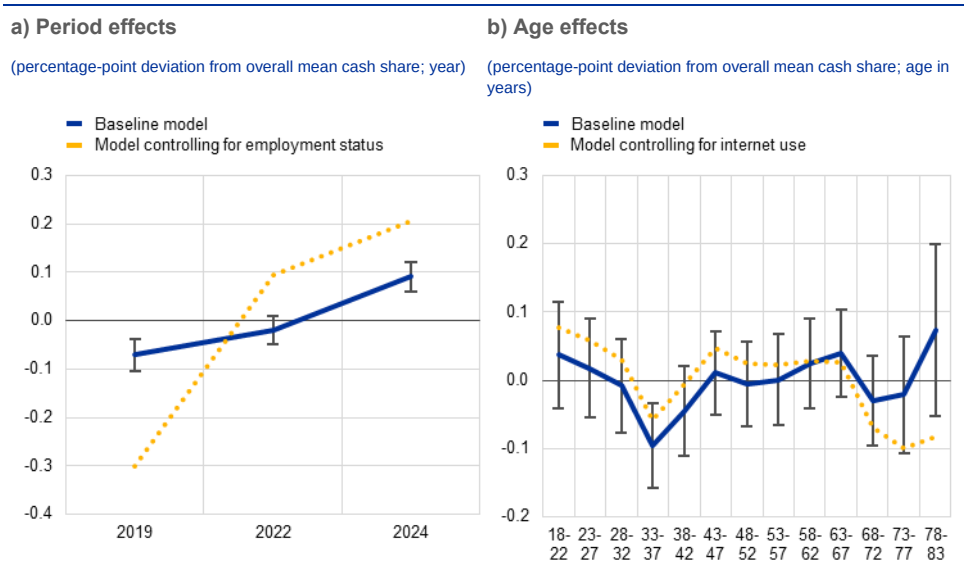
The perceived importance of cash as a payment option has risen in every edition of the SPACE survey, and this rise is common across age groups.[15] Across the observed periods, individuals increasingly report that having the option to pay with cash is important. Panel a) of Chart 5 depicts this period effect: the solid line starts significantly below the mean in 2019, crosses the zero line to become statistically indistinguishable from the mean in 2022 and rises to a statistically significant positive deviation by 2024. However, this indicator shows no age effect,

[15] This question in the survey was identical in the 2022 and 2024 editions but was asked differently in 2019, asking respondents to rate cash importance from 1 to 10. We consider that they deemed cash to be important if they provided scores in the upper part of the scale (6-10). Robustness checks, such as excluding 2019, and different techniques to dichotomise the results yield similar findings.

suggesting that the sentiment is broadly shared across age groups with no statistically significant age-specific deviations – see panel b). Only the 33-37 age group displays a statistically significant deviation from the grand mean. This suggests a growing perception that cash is important; it is a widespread phenomenon, not strongly differentiated by age.

Chart 5

Estimated period and age effects on the perceived importance of cash



Source: ECB staff calculations using SPACE survey data (2019-24) and APC-I models.
Notes: The dots above or below the zero line show how far a given year or age group sits from the grand average (average for all individuals and periods), expressed in percentage points. Each dot is accompanied by an error bar representing an approximate 95% confidence interval. If an error bar crosses the zero line, the effect for that specific age group or period is not statistically distinguishable from the average; if it stands clear of the zero line, the gap is large enough to call a statistically significant period or age effect.

Several hypotheses could also account for the broad rise in the perceived importance of cash. Increased societal awareness of vulnerabilities of digital systems and cyber threats might bolster the appeal of cash attributes.[16] These vulnerabilities and threats include misuse of data shared with third parties, privacy breaches related to digital transaction traces, and the impact of online fraud. Furthermore, it is possible that the impact of recent crises (such as pandemic-related disruptions, Russia's invasion of Ukraine, power outages or other non-systemic failures affecting digital payments) could be reinforcing the view that cash is a resilient and relevant backup (Faella and Zamora-Pérez, 2025). All these are potential explanations for the observed period trend, as our direct controls do not capture such specific sentiments.

Only two observable factors do notably change the baseline effects. Controlling for *employment status* – the dotted line in panel a) – significantly exacerbates the upward period trend. This suggests that, conditional on employment, the perceived importance of cash grew even more strongly. When controlling for *internet use* – the dotted line in panel b) – the previously flat age pattern transforms. The line now slopes significantly downwards from younger to older age groups, indicating that, among

16 The European Union Agency for Cybersecurity reports increased awareness of data misuse and cyber threats – see European Union Agency for Cybersecurity (2024).

individuals with similar levels of internet use, younger people report cash as being of significantly higher importance than is reported by older internet users. This suggests that for people who use the internet heavily (a group that tends to be disproportionately younger) the stated importance of cash might be a conscious counterpoint or a retained value despite their digital immersion, whereas for older internet users, their digital engagement might more fully supplant the perceived need for a cash option. No other demographic, financial or payment covariate shifts the picture. This highlights that the period effect is broad-based and the age effect genuinely small.[17]

3.2 Cohort effects: does any specific generation deviate?

In addition to period and age effects, we also assess if specific generational cohorts (people born around the same time) display unique behavioural or attitudinal trajectories. This involves assessing two key considerations: (1) whether a specific birth cohort consistently behaves differently to other cohorts of the same age and in the same period (inter-cohort effect) and (2) whether their behaviour has changed as they age (intra-cohort effect)?[18] Identifying these two cohort effects matters, as it ensures that patterns primarily driven by generational differences are not misattributed solely to age or period. This ultimately enables more accurate decomposition of the observed developments.[19]

Our model-based estimates identify, at best, weak cohort-specific deviations for cash transaction and store-of-value behaviour, which further emphasises the relevance of period and age effects. Most of the changes in cash transactions are explained by age and the period, as cohort effect patterns were not globally significant. For precautionary cash holdings at home, weak cohort differences emerge, mainly driven by the youngest generational group – those born in the early 2000s – who stored less cash than expected for their age (inter-cohort effect). Visible intra-cohort effects are also observed. For example, the share of people born in the

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17 To understand the combined influence of observable characteristics, we re-estimated the models with the full set of covariates (demographic, financial, technological, payment-related and country fixed effects). Overall, this control strategy confirms the robustness of the primary age and period effects. For cash holding, the pattern of declining use with age persisted strongly, while temporal variations (period effects) appeared to be mostly absorbed by the added individual controls. Similarly, for perceived cash importance, the general increase in importance over time remained evident, and the consistently high valuation across age groups was also maintained. This suggests that unobserved factors may explain these patterns. For the share of cash in everyday payments, the inclusion of all covariates rendered the period effect non-significant and markedly flattened its trend, suggesting these variables collectively explain much of the observed digitalisation. The age effects for transactional cash, however, generally retained their characteristic pattern. These outcomes suggest the need for further research into the specific causes of the remaining unexplained age and period variations.

18 Inter-cohort differences are captured by the cohort average component, representing average deviations from the main age and period effects for each cohort, while the linear intra-cohort dynamic is represented by the cohort slope estimated by the APC-I model. Cohort effects were assessed using APC-I model outputs and confirmed where applicable by global F-tests for age-by-period interactions. These tests did not indicate significant cohort-related variation for transactional cash use. However, for both cash held as a store of value and the perceived importance of having cash, the global tests supported the presence of some cohort deviations.

19 The delineation of birth cohorts into five-year intervals aligns with established conventions in APC analytical frameworks. This grouping strikes a balance between providing sufficient observations within each cohort for robust estimation and maintaining a granular enough distinction to capture meaningful generational shifts. (Ryder, 1985; Yang and Land, 2013).

mid-to-late 1990s who have cash holdings at home has significantly decreased over five years relative to the age-period baseline. This suggests unobserved factors are uniquely affecting the life-cycle dynamic of this specific cohort.

The perceived importance of cash exhibits the clearest cohort effects. Our previous analysis showed that the importance people place on having cash as an option has risen over time (a period effect), as most age groups appear to share this increasing sentiment somewhat uniformly (with no overarching age effect). However, when we look at generational cohorts, more complicated patterns are observed, with no simple young versus old pattern. This suggests that the year a person is born significantly shapes how they perceive cash, possibly because stated preferences are more malleable than ingrained payment or saving habits, which often exhibit more stable age-related patterns. For example, the oldest cohort (born in the late 1940s) and the cohort born in the late 1990s consistently value cash more highly than average. In contrast, some cohorts (like those born in the early 1950s and early 2000s) place less importance on cash. Beyond these baseline generational stances, we also observe attitudinal shifts within cohorts as they age.[20] Hence, the rising importance of cash as an option appears less tied to age effects and more reflective of the shifting attitudes of different birth cohorts.

3.3 A visual summary of the results

Combining age, period and cohort effects, we can visually track how cash behaviours and attitudes of specific birth cohorts evolve as they age across editions of the survey. Chart 6 visualises these dynamics, showing model-predicted probabilities for our three indicators.[21] Each curve represents a different birth cohort (the youngest, born in the late 1990s, in yellow, and the oldest, born in the 1940s, in blue) as they age through the five years we have analysed. In this chart, the period, age and cohort effects that we disentangled above are combined, so only the overall summary effect can be seen clearly.

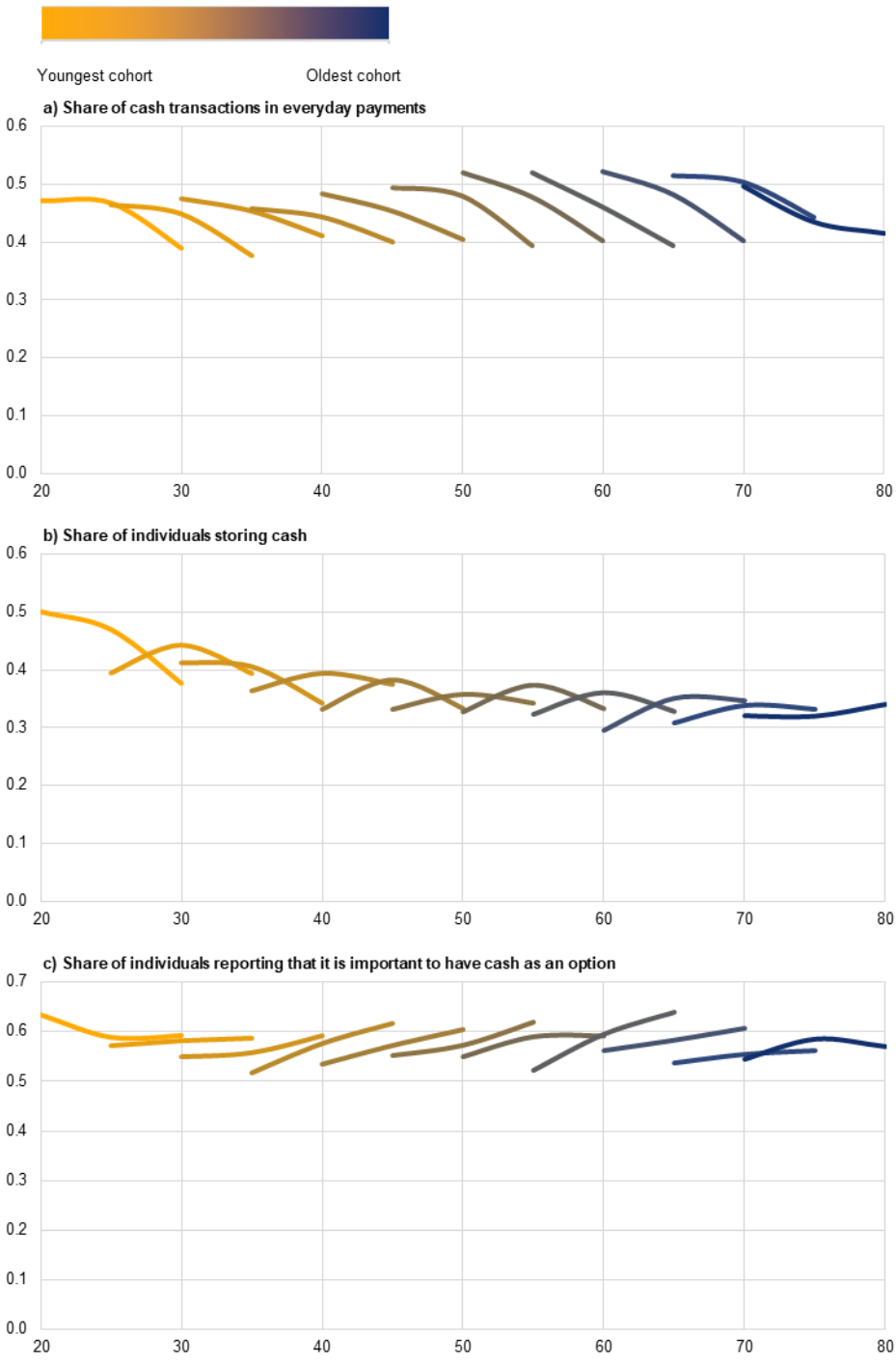
[20] For example, several groups (those born, for instance, in the early 1970s, early 1980s and early 1990s) reported an increasing importance of cash as they got older during the study. Interestingly, one cohort (born in the late 1990s), while initially valuing cash highly, came to see it as less important over time.

[21] The predicted probabilities are derived from the APC-I model and estimated using a synthetic panel constructed from repeated cross-sectional surveys. While these data are not longitudinal at the individual level, the APC framework is specifically designed to disentangle age, period, and cohort effects by tracking the average experiences of birth cohorts across different survey periods as they age. The predicted probabilities thus represent the model-smoothed life-course and inter-cohort trajectories based on these aggregate-level cohort experiences, rather than individual-level longitudinal tracking (Yang and Land, 2013).

Chart 6

How cash habits change as we age: a model-based view across birth cohorts

(predicted probabilities)



Source: ECB staff calculations using SPACE survey data (2019-24) and APC-I models.
Notes: Each coloured line follows one five-year birth group ("cohort") through the 2019, 2022 and 2024 editions of the survey. Points are plotted at the mid-age of each five-year band, e.g. 20 equals ages 18-22. The vertical scale shows the predicted share of people – estimated with an age-period-cohort statistical model – that, in panel a) pay with cash, in panel b) keep cash at home, or in panel c) say cash is important. Because survey editions are only roughly three years apart, neighbouring birth ranges overlap. This is why we include the birth cohorts corresponding to the 2022 period but every respondent stays on one coloured line.

Cash transactions tend to be higher for older generations (except for the youngest) and all birth cohorts decreased their cash use over time at different speeds. Chart 6, panel a) shows an overall upward trend, indicating that older generations tended to maintain a higher share of cash transactions at any given age compared with younger generations. The youngest birth cohort is an exception to this pattern, as it is predicted to use cash slightly more often than the second youngest cohort, partly reflecting the tick age pattern discussed above. Simultaneously, a general decline in the cohort lines across the three periods points to a decreasing overall use of cash over time indicating the overall trend towards digitalisation. The predicted cash shares tend to converge, showing how digitalisation affects generations differently.

Younger cohorts stored cash more often than older ones. Panel b) illustrates the probability of individuals storing cash. It reveals that younger generations start more likely to store cash, but this declines sharply with age. The common bell shape across cohort lines also points to increased cash hoarding during the pandemic, with more varied cohort trajectories suggesting some generation-specific responses.[22]

Generally, all cohorts increasingly view cash as important, albeit at varying celerity. The perceived importance of cash, as seen in panel c), shows consistently high valuation across all ages (ranging from above 50% to around 65%) and generally increasing over time. Most cohort lines also trend upwards, indicating cash increasingly being seen as important, especially for intermediate cohorts.

4 Cash use in a digital-analogue hybrid future

The differentiated but enduring cash demand highlighted by this article suggests that payment policy frameworks need to remain cash-compatible in the future. Our analysis of granular data, across transactional and store-of-value functions and perceived importance, reveals that cash fulfils persistent roles in a different manner for different age groups. Given this assessment, it is likely that the demand for different functions of cash will continue to evolve across demographics in the coming decade.

Our findings on age effects – for example, younger groups exhibiting notable engagement across the three analysed dimensions – can help inform policy by offering a better understanding of the ways people use and think about cash. The age patterns for transactions, the tendency for younger adults to store cash at home, and the shared perception (potentially heightened for online younger people) that it is important to have cash as an option, challenge narratives of a unidirectional shift towards a cashless society. Age is clearly associated with variations in cash use. As younger people enter the labour market, establish independent living and manage

[22] In Chart 6, cohort-specific deviations cannot be clearly determined as three effects are overlayed. However, one could intuitively understand that big changes in specific cohort curves (for example, having different starting levels, different slopes [rates of change with age], or non-parallel and less predictable trajectories) could indicate that the experience of being born in a particular year has a distinct influence.

early-career finances, cash appears to serve important functions.[23] Middle-aged groups display distinctive transactional patterns, in particular a stronger decrease in cash transactions than is the case for other cohorts during the five years analysed. Older age groups consistently demonstrate higher transactional cash use, lower store-of-value behaviour and similar views as the other cohorts on the importance of cash, which tend to remain robust or increase.

While our findings suggest the role of cash is evolving, future demand for cash is difficult to forecast because of interacting demographic and economic trends, uncertain one-off events and the regulatory stance toward cash. Observed age effects suggest that future generations may continue to rely on cash as they do today, which would mean cash is more likely to continue being used. However, euro area population ageing patterns mean that the behaviours of middle-aged and especially older cohorts will carry increasing weight in aggregate cash demand (Eurostat, 2025).[24] This may reveal a trend that counteracts the ongoing, mostly universal, shift towards digitalisation, based purely on demographic considerations and findings linked to stable age effects of older individuals. However, unforeseen events, such as heightened geopolitical uncertainty, concerns about cybersecurity or data privacy associated with digital payments, or even significant disruptions to digital infrastructures, could substantially shift public perceptions and cash use during specific periods (Faella and Zamora-Pérez, 2025). In this context, the regulatory stance regarding cash (such as imposing payment limits) and the positioning of the industry (such as closing or opening cash access points) will also play an important role. Policies focused on ensuring cash remains universally accepted, and that support solutions which preserve ease of use and access it, will significantly influence the ways cash is used in the future.

Given these dynamics, a key challenge for both public and private sectors is to ensure the continued viability and accessibility of the cash infrastructure, even when transaction volumes potentially decrease. Declining cash transaction volumes, if they were to continue unabated, could pose challenges to the cost-effectiveness of maintaining the existing infrastructure and day-to-day operations when it comes to cash. Yet, the findings presented in this article underscore the continuing importance of cash in ensuring payment choice across age groups, in contributing to financial inclusion and in serving as a resilient failsafe means of payment. This is reflected in the Eurosystem cash strategy (European Central Bank, 2025), which acknowledges the enduring appeal of cash to different population

[23] Our APC-I model isolates age, period and cohort effects net of other covariates. While income level is undoubtedly correlated with overall financial and payment behaviour (in particular relating to cash use and preferences), its inclusion as a control variable in broader regression models (not detailed here but part of robustness checks) did not fundamentally alter the main age, period and cohort patterns identified by the APC-I model for these indicators. This suggests that the observed age, period and cohort effects are robust and capture influences beyond simple income stratification, possibly reflecting life-cycle cash flow management, access to diverse financial tools or ingrained preferences that operate independently of income quintile. For example, even higher-income young adults might store some cash for convenience or emergency, while lower-income individuals might rely on it for want of alternatives.

[24] Eurostat's 2023 population projections indicate significant aging in the EU by 2100. The population pyramid is expected to become more top-heavy, with the share of those aged 80 years or above projected to increase 2.5-fold, from 6.1% in 2024 to 15.3% in 2100 (Eurostat, 2025).

segments for specific uses in a range of circumstances.[25] As discussions about promoting digitalisation and innovation continue, the evidence presented here suggests that such initiatives should be framed to accommodate the likely future persistence of physical cash use. This would help acknowledge the unique benefits of cash while embracing the full range of innovation in payments. It is an approach that would foster a robust, efficient payment ecosystem that serves everyone at all times and in all situations.

Strategic policy approaches are therefore warranted to ensure cash remains a viable, accessible and affordable option, while also seeking to avoid unnecessarily increasing the costs associated with handling cash. An instructive example is Sweden, where an accelerated cash decline – partly attributed to policies such as strict cash changeovers and measures to combat tax evasion (Sveriges Riksbank, 2020) – led to public concerns and parliamentary debates. These concerns ultimately prompted actions aimed at legislating to preserve access to, and ensure the acceptance of, cash (Sveriges Riksdag, 2023; Sveriges Riksbank, 2025). This speaks in favour of: (1) monitoring the cost and geographic reach of the cash-circulation cycle, fostering solutions to make access remains feasible even if volumes drift lower (Zamora-Pérez, 2022); (2) reviewing crisis preparedness strategies, incorporating cash as an analogue backup tool and developing business-continuity plans in case digital channels are disrupted; (3) understanding the adverse effects of policies that restrict cash use; and (4) clarifying how legal-tender rules apply, i.e. whether merchants or public services are allowed to adopt card-only models.[26] Findings on the use of cash by younger people likewise suggest that financial inclusion and education initiatives might still benefit from covering physical money alongside digital tools. Finally, the fact that households continue to hold cash as a safe asset, despite not bearing interest, is worth keeping in mind for monetary and payment policy discussions (Faella and Zamora-Pérez, 2025).

5 Conclusion

The evidence from three editions of the SPACE survey and our age-period-cohort framework offer new findings on the evolving (transactional and store-of-value) use of cash and its perceived importance. Overall trends, like digitalisation or an increased perception that cash is important, and one-off events, like the pandemic, can markedly alter people's behaviour. Furthermore, age effects and life-cycle dynamics of specific generations are critical for understanding evolving cash use and perceptions. The temporary surge in cash hoarding during the pandemic illustrates how long-standing preferences or perceptions can manifest themselves strongly under certain conditions.

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25 See the ECB's website for information on the Eurosystem cash strategy (European Central Bank, 2025). Discussions surrounding a potential digital euro often acknowledge this duality, positioning a central bank digital currency as a complement to, rather than a replacement for, physical cash.

26 See Zamora-Pérez (2022) for how the Eurosystem monitors access to cash. In the past, ECB pronouncements have considered national policies disproportionate because of a potentially adverse impact on the cash payment system. (See the Greek [CON/2019/39] or Spanish [CON/2019/4] cases on cash payment limits. See also the regulation proposal for euro cash as legal tender [COM(2023)364]).

An important point for understanding present and future cash demand is that cash serves multiple functions and its utility varies significantly across age groups. While ongoing payment digitalisation is reducing cash transactions, cash concurrently exhibits sustained and period-driven fluctuations in its rising perceived importance and its role as a store of value. Predictions from 20 years ago regarding the swift or complete replacement of cash have not yet materialised, partly because these did not consider the varied ways cash would continue to be useful to people. In this article, we show that all these indicators of cash preferences display unique age patterns that can contribute to a better understanding of the persistence in cash use across different functions.

For example, younger people's high engagement with cash suggests that new generations may continue to find cash useful as they enter the job market, although the effects of an ageing population should also be considered. Younger people notably use cash across its three functions – exhibiting average transactional use, playing a leading role in precautionary cash storage and expressing a strong view that cash is important. This indicates that cash is considered useful during the early stages of financial independence. Simultaneously, it may be the case that the higher volume of cash transactions observed among older generations in ageing euro area populations is a trend that pushes back against the speed of digitalisation. Even if every cohort were to retire with a lower intensity of cash use than its predecessor (period effect), demographic considerations (age effects) may imply a slowing – not accelerating – aggregate decline. All this sheds further doubt on the maximalist position that expects a steep decline in the use of cash in the coming years.

A prudent payment policy stance must understand the utility that cash provides to society and plan for a long phase of coexistence, in which banknotes and coins circulate alongside electronic, physical and online payment methods. Alongside the undeniable benefits of digitalisation and its potential to enhance financial inclusion, policies or industry strategies that unduly restrict access to cash or make its use more expensive, risk disadvantaging parts of the population and weakening systemic resilience; conversely, ignoring digital progress would miss efficiency gains. Balanced strategies that safeguard essential cash infrastructure and encourage competitive digital options, while remaining attentive to demographic diversity, will best serve the euro area as payment habits evolve.

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Explanations of terms and abbreviations can be found in the ECB’s statistics glossary:	https://www.ecb.europa.eu/home/glossary/html/glossa.en.html

Conventions used in the tables

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

1 External environment

1.1 Main trading partners, GDP and CPI

	GDP [1] (period-on-period percentage changes)						CPI (annual percentage changes)						
							OECD countries						
	G20	United States	United Kingdom	Japan	China	Memo item: euro area	Total	excluding food and energy	United States	United Kingdom (HICP)	Japan	China	Memo item: euro area [2] (HICP)
	1	2	3	4	5	6	7	8	9	10	11	12	13
2022	3.5	2.5	4.8	0.9	3.0	3.5	9.5	6.8	8.0	9.1	2.5	2.0	8.4
2023	3.5	2.9	0.4	1.4	5.2	0.6	6.8	7.0	4.1	7.4	3.3	0.2	5.4
2024	3.2	2.9	1.1	0.2	5.0	0.9	5.2	5.7	2.9	2.5	2.7	0.2	2.4
2024 Q3	0.9	0.8	0.0	0.2	1.4	0.4	4.9	5.3	2.6	2.0	2.8	0.5	2.2
Q4	0.9	0.6	0.1	0.6	1.6	0.3	4.6	5.0	2.7	2.5	2.9	0.2	2.2
2025 Q1	0.8	-0.1	0.7	0.0	1.2	0.6	4.5	4.7	2.7	2.8	3.8	-0.1	2.3
Q2	.	.	.	.	.	.	.	.	2.4	3.5	3.5	.	2.0
2025 Jan.	-	-	-	-	-	-	4.7	4.8	3.0	3.0	4.0	0.5	2.5
Feb.	-	-	-	-	-	-	4.5	4.7	2.8	2.8	3.7	-0.7	2.3
Mar.	-	-	-	-	-	-	4.2	4.5	2.4	2.6	3.6	-0.1	2.2
Apr.	-	-	-	-	-	-	4.2	4.6	2.3	3.5	3.6	-0.1	2.2
May	-	-	-	-	-	-	4.0	4.4	2.4	3.4	3.5	-0.1	1.9
June	-	-	-	-	-	-	.	.	2.7	3.6	3.3	.	2.0

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
2022	-	-	-	-	-	-	-	-	-	3.1	4.6	1.7
2023	-	-	-	-	-	-	-	-	-	0.4	-3.7	4.4
2024	52.9	53.7	52.5	51.3	52.1	50.1	50.7	53.1	49.0	4.2	3.6	4.7
2024 Q3	52.9	54.3	53.1	52.5	50.9	50.3	49.8	53.4	48.4	1.4	1.6	1.3
Q4	53.0	54.8	50.9	50.1	51.8	49.3	49.9	53.3	48.4	1.0	1.1	0.9
2025 Q1	52.0	52.6	50.8	50.6	51.5	50.4	50.9	52.1	49.7	3.2	8.7	-1.7
Q2	51.4	52.2	50.3	51.0	50.6	50.4	50.3	51.6	48.2	.	.	.
2025 Jan.	52.0	52.7	50.6	51.1	51.1	50.2	50.7	52.2	49.4	1.9	4.3	-0.2
Feb.	51.7	51.6	50.5	52.0	51.5	50.2	51.5	51.5	49.6	2.6	6.5	-0.8
Mar.	52.3	53.5	51.5	48.9	51.8	50.9	50.4	52.6	50.1	3.2	8.7	-1.7
Apr.	50.9	50.6	48.5	51.2	51.1	50.4	50.5	50.9	47.3	1.9	4.0	0.0
May	51.5	53.0	50.3	50.2	49.6	50.2	49.0	52.1	48.0	.	.	.
June	51.9	52.9	52.0	51.5	51.3	50.6	51.3	51.9	49.3	.	.	.

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

2 Economic activity

2.1 GDP and expenditure components

(quarterly data seasonally adjusted; annual data unadjusted)

	GDP											
	Total	Domestic demand								External balance [1]		
		Total	Private consumption	Government consumption	Gross fixed capital formation				Changes in inventories [2]	Total	Exports [1]	Imports [1]
					Total	Total construction	Total machinery	Intellectual property products				
	1	2	3	4	5	6	7	8	9	10	11	12
	Current prices (EUR billions)											
2022	13,722.7	13,445.0	7,234.6	2,943.6	3,012.1	1,555.4	870.0	580.5	254.7	-277.7	7,420.3	7,142.6
2023	14,602.2	14,079.8	7,729.4	3,096.3	3,198.8	1,645.2	924.0	623.2	55.3	-522.3	7,388.8	6,866.5
2024	15,175.0	14,492.6	8,008.4	3,270.9	3,199.7	1,652.4	917.4	623.3	13.6	-682.4	7,515.4	6,833.1
2024 Q2	3,772.4	3,586.2	1,992.1	813.4	784.6	411.0	231.2	140.8	-4.0	-186.3	1,901.5	1,715.2
Q3	3,807.5	3,648.1	2,010.5	824.3	802.3	411.3	228.2	161.1	11.1	-159.4	1,878.8	1,719.4
Q4	3,852.7	3,687.3	2,025.7	833.1	812.3	417.4	230.6	162.7	16.2	-165.4	1,891.0	1,725.6
2025 Q1	3,886.0	3,724.4	2,050.4	837.8	835.5	423.2	231.2	179.4	0.8	-161.6	1,932.9	1,771.3
	as percentage of GDP											
2024	100.0	95.5	52.8	21.6	21.1	10.9	6.0	4.1	0.1	-4.5	-	-
	Chain-linked volumes (prices for the previous year)											
	quarter-on-quarter percentage changes											
2024 Q2	0.2	0.0	0.1	1.0	-2.4	-0.4	0.9	-12.5	-	-	2.0	1.7
Q3	0.4	1.4	0.6	0.7	1.6	-0.5	-2.1	13.9	-	-	-1.5	0.4
Q4	0.3	0.2	0.4	0.5	0.5	0.8	0.6	-0.4	-	-	-0.1	-0.3
2025 Q1	0.6	0.4	0.3	-0.1	2.7	0.5	0.4	11.8	-	-	2.2	2.0
	annual percentage changes											
2022	3.5	3.8	5.0	1.1	1.9	-0.2	4.0	4.4	-	-	7.4	8.4
2023	0.6	0.2	0.5	1.5	2.0	1.0	2.0	4.7	-	-	-0.9	-1.7
2024	0.9	0.5	1.1	2.5	-1.8	-1.4	-1.9	-2.8	-	-	0.8	-0.1
2024 Q2	0.6	-0.5	0.6	2.7	-3.1	-1.9	-0.9	-9.6	-	-	1.7	-0.5
Q3	1.0	1.1	1.1	2.8	-1.6	-1.9	-3.6	2.5	-	-	1.3	1.4
Q4	1.3	1.4	1.6	2.4	-2.0	-0.5	-0.9	-7.1	-	-	0.9	1.0
2025 Q1	1.5	2.1	1.4	2.1	2.4	0.5	-0.2	10.9	-	-	2.5	3.8
	contributions to quarter-on-quarter percentage changes in GDP; percentage points											
2024 Q2	0.2	0.0	0.1	0.2	-0.5	0.0	0.1	-0.5	0.2	0.2	-	-
Q3	0.4	1.4	0.3	0.2	0.3	-0.1	-0.1	0.5	0.6	-1.0	-	-
Q4	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.0	-0.2	0.1	-	-
2025 Q1	0.6	0.4	0.1	0.0	0.6	0.1	0.0	0.5	-0.3	0.2	-	-
	contributions to annual percentage changes in GDP; percentage points											
2022	3.5	3.7	2.6	0.3	0.4	0.0	0.2	0.2	0.4	-0.2	-	-
2023	0.6	0.2	0.3	0.3	0.4	0.1	0.1	0.2	-0.9	0.4	-	-
2024	0.9	0.5	0.6	0.5	-0.4	-0.2	-0.1	-0.1	-0.2	0.5	-	-
2024 Q2	0.6	-0.5	0.3	0.6	-0.7	-0.2	-0.1	-0.4	-0.7	1.1	-	-
Q3	1.0	1.0	0.6	0.6	-0.3	-0.2	-0.2	0.1	0.2	0.0	-	-
Q4	1.3	1.3	0.8	0.5	-0.4	-0.1	-0.1	-0.3	0.4	0.0	-	-
2025 Q1	1.5	2.0	0.7	0.4	0.5	0.1	0.0	0.5	0.3	-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 Economic activity

2.2 Value added by economic activity

(quarterly data seasonally adjusted; annual data unadjusted)

	Gross value added (basic prices)											
	Total	Agriculture, forestry and fishing	Manufacturing energy and utilities	Construction	Trade, transport, accommodation and food services	Information and communication	Finance and insurance	Real estate	Professional, business and support services	Public administration, education, health and social work	Arts, entertainment and other services	Taxes less subsidies on products
	1	2	3	4	5	6	7	8	9	10	11	12
Current prices (EUR billions)												
2022	12,336.7	217.2	2,409.7	647.8	2,338.2	637.0	544.8	1,341.4	1,492.5	2,326.8	381.5	1,386.0
2023	13,205.4	218.6	2,591.4	721.8	2,451.2	687.2	598.9	1,463.3	1,598.0	2,462.8	412.0	1,396.8
2024	13,660.9	225.9	2,535.7	743.1	2,543.1	726.7	632.1	1,539.9	1,672.3	2,609.9	432.1	1,514.1
2024 Q2	3,398.4	55.8	630.4	185.3	634.1	179.9	157.1	384.0	416.3	647.7	107.8	374.0
Q3	3,425.5	56.8	632.6	185.4	635.9	182.2	158.9	386.3	420.5	657.7	109.2	382.0
Q4	3,465.8	57.9	646.8	187.6	643.3	185.7	160.1	387.6	424.0	663.8	109.1	386.9
2025 Q1	3,494.4	58.6	654.7	190.4	646.7	187.7	160.6	388.2	426.1	671.4	110.0	391.6
as percentage of value added												
2024	100.0	1.7	18.6	5.4	18.6	5.3	4.6	11.3	12.2	19.1	3.2	-
Chain-linked volumes (prices for the previous year)												
quarter-on-quarter percentage changes												
2024 Q2	0.2	-1.7	0.6	-0.8	0.1	-0.3	-0.3	0.2	0.6	0.3	0.4	0.2
Q3	0.3	-0.6	0.2	-0.4	0.0	1.3	0.3	0.0	0.2	0.7	1.5	1.7
Q4	0.3	0.8	0.1	0.6	0.5	1.5	-0.4	0.4	0.0	0.4	-1.1	0.3
2025 Q1	0.6	1.9	2.0	0.7	0.4	0.9	0.0	0.2	0.4	0.1	0.0	-0.2
annual percentage changes												
2022	3.8	-1.0	-0.1	-0.3	8.6	5.9	-1.7	2.8	6.0	2.9	17.1	0.7
2023	0.9	-0.4	-0.9	1.9	0.4	5.2	-1.8	1.4	1.4	1.2	4.0	-2.0
2024	1.0	-1.1	-0.4	-1.1	0.8	3.1	1.6	1.8	1.6	1.6	1.5	0.6
2024 Q2	0.8	-2.3	-0.6	-1.6	0.6	2.0	1.1	1.8	2.1	1.5	1.2	-1.1
Q3	1.1	-1.3	0.7	-1.7	0.6	2.9	1.5	1.9	1.5	1.8	1.5	0.5
Q4	0.9	-0.7	-0.9	-0.9	1.3	3.3	1.9	1.7	0.9	1.8	1.7	4.8
2025 Q1	1.4	0.4	3.0	0.1	0.9	3.4	-0.4	0.8	1.2	1.5	0.8	2.1
contributions to quarter-on-quarter percentage changes in value added; percentage points												
2024 Q2	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	-
Q3	0.3	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	-
Q4	0.3	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	-
2025 Q1	0.6	0.0	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	-
contributions to annual percentage changes in value added; percentage points												
2022	3.8	0.0	0.0	0.0	1.6	0.3	-0.1	0.3	0.7	0.6	0.5	-
2023	0.9	0.0	-0.2	0.1	0.1	0.3	-0.1	0.2	0.2	0.2	0.1	-
2024	1.0	0.0	-0.1	-0.1	0.2	0.2	0.1	0.2	0.2	0.3	0.0	-
2024 Q2	0.8	0.0	-0.1	-0.1	0.1	0.1	0.0	0.2	0.3	0.3	0.0	-
Q3	1.1	0.0	0.1	-0.1	0.1	0.2	0.1	0.2	0.2	0.3	0.0	-
Q4	0.9	0.0	-0.2	0.0	0.2	0.2	0.1	0.2	0.1	0.3	0.1	-
2025 Q1	1.4	0.0	0.6	0.0	0.2	0.2	0.0	0.1	0.1	0.3	0.0	-

Sources: Eurostat and ECB calculations.

2 Economic activity

2.3 Employment [1)]

(quarterly data seasonally adjusted; annual data unadjusted)

	Total	By employment status		By economic activity									
		Employees	Self-employed	Agriculture forestry and fishing	Manufacturing, energy and utilities	Construction	Trade, transport, accommodation and food services	Information and communication	Finance and insurance	Real estate	Professional, business and support services	Public administration, education, health and social work	Arts, entertainment and other services
	1	2	3	4	5	6	7	8	9	10	11	12	13
Persons employed													
as a percentage of total persons employed													
2022	100.0	86.0	14.0	2.9	14.2	6.4	24.2	3.3	2.3	1.1	14.2	24.9	6.6
2023	100.0	86.1	13.9	2.8	14.1	6.4	24.3	3.3	2.3	1.1	14.2	24.8	6.6
2024	100.0	86.1	13.9	2.8	14.0	6.4	24.4	3.4	2.3	1.0	14.2	25.0	6.5
annual percentage changes													
2022	2.3	2.5	1.5	-0.7	1.2	3.5	3.1	5.8	0.1	3.3	3.8	1.5	1.1
2023	1.4	1.5	0.8	-2.3	0.9	1.3	2.0	3.6	0.4	1.9	1.7	1.3	1.6
2024	1.0	1.0	0.8	0.0	0.2	1.1	1.1	2.0	0.8	-0.9	0.6	1.7	0.6
2024 Q2	1.0	1.0	1.0	0.5	0.5	1.2	0.7	2.1	0.7	-1.6	0.7	1.8	0.8
Q3	1.0	1.0	1.0	0.2	0.3	0.8	1.0	1.7	0.9	-1.9	1.0	1.8	0.8
Q4	0.7	0.8	0.1	-1.0	0.0	0.8	1.1	1.3	0.9	-0.3	0.0	1.6	0.0
2025 Q1	0.7	0.8	-0.3	-1.4	-0.3	0.6	0.7	0.8	1.4	2.7	0.5	1.4	0.9
Hours worked													
as a percentage of total hours worked													
2022	100.0	81.7	18.3	3.8	14.7	7.4	25.0	3.5	2.4	1.1	14.2	22.0	5.9
2023	100.0	81.9	18.1	3.7	14.6	7.3	25.1	3.6	2.4	1.1	14.2	22.1	5.9
2024	100.0	82.0	18.0	3.6	14.5	7.3	25.1	3.7	2.4	1.1	14.2	22.2	5.9
annual percentage changes													
2022	3.6	3.7	3.2	-1.3	1.2	4.3	7.3	6.1	-0.7	5.4	4.6	1.0	4.8
2023	1.5	1.7	0.4	-2.0	0.7	0.9	1.9	3.5	0.4	1.7	1.8	1.6	2.2
2024	1.1	1.1	0.7	-0.5	0.3	1.2	1.1	2.3	0.6	-1.3	1.2	1.6	0.9
2024 Q2	0.9	0.9	0.9	0.1	0.4	1.1	0.5	2.2	0.4	-2.3	1.0	1.7	1.2
Q3	0.6	0.7	0.0	-0.8	-0.1	0.2	0.6	1.5	0.6	-2.5	0.9	1.1	0.6
Q4	0.9	1.2	-0.1	-0.9	0.1	1.0	1.1	1.7	0.2	0.2	0.8	1.8	0.9
2025 Q1	0.4	0.7	-0.9	-1.8	-0.7	0.3	0.2	0.8	1.2	1.7	0.4	1.4	1.4
Hours worked per person employed													
annual percentage changes													
2022	1.2	1.2	1.7	-0.7	0.0	0.8	4.0	0.2	-0.8	2.0	0.7	-0.5	3.6
2023	0.0	0.1	-0.4	0.3	-0.2	-0.4	-0.1	-0.1	0.0	-0.2	0.1	0.3	0.6
2024	0.1	0.1	-0.1	-0.5	0.1	0.1	0.0	0.3	-0.2	-0.4	0.6	0.0	0.4
2024 Q2	-0.1	-0.1	-0.1	-0.4	0.0	-0.2	-0.2	0.1	-0.3	-0.7	0.4	-0.1	0.4
Q3	-0.4	-0.3	-1.0	-1.0	-0.3	-0.5	-0.4	-0.2	-0.4	-0.6	0.0	-0.6	-0.2
Q4	0.2	0.3	-0.2	0.1	0.1	0.2	0.0	0.4	-0.7	0.6	0.7	0.2	0.9
2025 Q1	-0.3	-0.1	-0.6	-0.4	-0.4	-0.3	-0.4	0.0	-0.2	-1.0	-0.1	-0.1	0.5

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

2 Economic activity

2.4 Labour force, unemployment and job vacancies

(seasonally adjusted, unless otherwise indicated)

	Labour force, millions	Under-employment, % of labour force	Unemployment [1]											Job vacancy rate [3]
			Total		Long-term unemploy-ment, % of labour force [2]	By age				By gender				
						Adult		Youth		Male		Female		
			Millions	% of labour force		Millions	% of labour force	Millions	% of labour force	Millions	% of labour force	Millions	% of labour force	% of total posts
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
% of total in 2020			.			.		.		.		.		
2022	167.404	3.1	11.369	6.8	2.7	9.124	6.0	2.245	14.6	5.718	6.4	5.652	7.2	3.2
2023	169.703	2.9	11.166	6.6	2.4	8.875	5.8	2.292	14.5	5.644	6.3	5.522	6.9	3.1
2024	171.292	2.8	10.918	6.4	2.1	8.596	5.5	2.322	14.6	5.591	6.1	5.328	6.6	2.6
2024 Q2	171.207	2.8	11.012	6.4	2.2	8.680	5.6	2.332	14.7	5.604	6.2	5.408	6.7	2.6
Q3	171.427	2.8	10.858	6.3	1.9	8.489	5.5	2.368	14.9	5.640	6.2	5.218	6.5	2.5
Q4	171.649	2.8	10.633	6.2	2.0	8.359	5.4	2.274	14.4	5.466	6.0	5.167	6.4	2.5
2025 Q1	172.691	2.8	10.973	6.4	2.1	8.620	5.5	2.354	14.8	5.602	6.1	5.371	6.6	2.4
2024 Dec.	-	-	10.756	6.3	-	8.477	5.4	2.279	14.4	5.511	6.0	5.245	6.5	-
2025 Jan.	-	-	10.878	6.3	-	8.555	5.5	2.323	14.6	5.556	6.1	5.322	6.6	-
Feb.	-	-	10.874	6.3	-	8.541	5.5	2.333	14.7	5.523	6.0	5.351	6.6	-
Mar.	-	-	11.007	6.4	-	8.651	5.5	2.356	14.8	5.645	6.2	5.362	6.6	-
Apr.	-	-	10.776	6.3	-	8.509	5.4	2.268	14.3	5.506	6.0	5.270	6.5	-
May	-	-	10.830	6.3	-	8.549	5.5	2.281	14.4	5.574	6.1	5.256	6.5	-

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

2.5 Short-term business statistics

	Industrial production						Construc-tion production	Retail sales				Services produc-tion [1]	New passenger car regis-trations
	Total (excluding construction)		Main Industrial Groupings										
	Total	Manu-facturing	Inter-mediate goods	Capital goods	Consumer goods	Energy		Total	Food, beverages, tobacco	Non-food	Fuel		
	1	2	3	4	5	6	7	8	9	10	11	12	13
% of total in 2021	100.0	88.7	32.4	33.2	22.5	11.9	100.0	100.0	38.1	54.4	7.5	100.0	100.0
annual percentage changes													
2022	1.8	2.5	-1.3	3.7	5.9	-3.4	2.1	1.1	-2.7	3.5	4.5	9.9	-4.3
2023	-1.7	-1.2	-6.2	3.2	-1.0	-5.0	2.0	-1.9	-2.6	-1.0	-1.7	2.2	14.6
2024	-3.0	-3.3	-3.9	-5.0	0.0	-0.2	-1.0	1.2	0.5	1.7	0.7	1.7	-0.1
2024 Q2	-3.9	-4.3	-5.4	-6.6	0.6	-0.4	-1.7	0.3	0.3	0.5	0.2	1.5	2.8
Q3	-1.8	-2.0	-3.7	-3.9	2.5	1.0	-2.2	2.1	0.8	2.9	2.4	1.0	-9.0
Q4	-1.5	-1.8	-2.5	-4.0	2.6	0.1	-0.1	2.2	1.0	3.0	0.9	2.3	-1.9
2025 Q1	1.4	1.4	-1.1	-1.7	9.2	0.7	-0.5	2.0	1.3	2.7	1.4	2.0	-2.5
2024 Dec.	-1.7	-2.0	-2.1	-7.3	6.1	0.8	0.2	2.2	0.7	3.6	0.2	2.0	-1.3
2025 Jan.	-0.5	-0.3	-1.4	-3.5	5.7	-1.6	0.4	1.9	1.4	2.7	0.2	2.4	-3.6
Feb.	0.8	0.3	-2.5	-2.3	7.5	2.3	-0.6	2.0	1.7	2.2	1.8	1.0	1.2
Mar.	3.6	4.0	0.6	0.3	14.0	1.9	-1.4	2.1	0.8	3.1	2.1	2.5	-4.9
Apr.	0.2	0.4	-0.8	-0.9	4.2	-1.6	4.7	2.7	2.6	2.7	4.2	0.7	4.9
May	3.7	3.8	-1.8	4.5	10.3	2.6	2.9	1.8	0.5	2.4	2.8	.	6.1
month-on-month percentage changes (s.a.)													
2024 Dec.	-0.4	-1.0	-1.2	-1.7	5.6	1.2	0.3	-0.1	-0.4	0.3	-0.3	-0.2	-1.8
2025 Jan.	0.4	0.8	1.0	-0.4	-2.3	-1.2	0.6	0.0	0.5	-0.1	0.1	-0.1	-1.2
Feb.	1.4	1.1	0.5	0.9	1.8	1.0	-1.1	0.3	0.2	0.2	0.5	-0.2	3.4
Mar.	1.8	2.0	1.2	2.3	2.4	-0.5	-0.2	0.4	0.0	0.6	0.8	0.8	-1.7
Apr.	-2.2	-2.0	-0.8	-1.3	-5.0	-2.8	4.3	0.3	0.8	-0.1	1.3	-0.3	3.0
May	1.7	1.4	-1.7	2.7	7.2	3.7	-1.7	-0.7	-0.7	-0.6	-1.3	.	-1.4

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

2 Economic activity

2.6 Opinion surveys
(seasonally adjusted)

	European Commission Business and Consumer Surveys (percentage balances, unless otherwise indicated)								Purchasing Managers' Surveys (diffusion indices)			
	Economic sentiment indicator (long-term average = 100)	Manufacturing industry		Consumer confidence indicator	Construction confidence indicator	Retail trade confidence indicator	Service industries		Purchasing Managers' Index (PMI) for manufacturing	Manufacturing output	Business activity for services	Composite output
		Industrial confidence indicator	Capacity utilisation (%)				Services confidence indicator	Capacity utilisation (%)				
	1	2	3	4	5	6	7	8	9	10	11	12
1999-20	99.7	-4.2	80.1	-11.0	-12.6	-6.7	6.4	.	-	-	-	-
2022	102.3	5.0	82.4	-21.9	5.2	-3.6	9.3	89.9	-	-	-	-
2023	96.2	-6.1	80.7	-17.4	-1.3	-4.2	6.7	90.4	-	-	-	-
2024	95.7	-11.0	78.4	-14.0	-4.5	-6.9	6.3	90.1	45.9	46.2	51.5	50.1
2024 Q3	96.1	-10.9	78.2	-13.0	-5.0	-8.6	5.9	90.2	45.5	45.4	52.1	50.3
Q4	95.2	-12.6	77.4	-13.4	-3.8	-5.7	5.7	90.4	45.4	45.1	50.9	49.3
2025 Q1	95.5	-11.4	77.3	-14.1	-3.3	-5.8	4.4	90.3	47.6	48.8	51.0	50.4
Q2	94.2	-11.2	77.5	-15.7	-3.4	-7.9	2.2	89.8	49.3	51.3	50.1	50.4
2025 Jan.	95.2	-12.4	77.3	-14.1	-2.9	-5.3	5.7	90.3	46.6	47.1	51.3	50.2
Feb.	96.2	-11.1	.	-13.6	-3.4	-5.2	5.2	.	47.6	48.9	50.6	50.2
Mar.	95.1	-10.7	.	-14.5	-3.6	-7.0	2.4	.	48.6	50.5	51.0	50.9
Apr.	93.8	-11.1	77.5	-16.6	-4.0	-8.9	1.8	89.8	49.0	51.5	50.1	50.4
May	94.8	-10.4	.	-15.1	-3.5	-7.2	1.8	.	49.4	51.5	49.7	50.2
June	94.0	-12.0	.	-15.3	-2.8	-7.5	2.9	.	49.5	50.8	50.5	50.6

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

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

	Households							Non-financial corporations					
	Saving rate (gross)	Debt ratio	Real gross disposable income	Financial investment	Non-financial investment (gross)	Net worth [2]	Housing wealth	Profit rate [3]	Saving rate (gross)	Debt ratio [4]	Financial investment	Non-financial investment (gross)	Financing
	Percentage of gross disposable income (adjusted) [1]		Annual percentage changes					Percentage of gross value added		Percentage of GDP	Annual percentage changes		
	1	2	3	4	5	6	7	8	9	10	11	12	13
2022	13.6	91.0	0.5	2.2	12.6	2.1	7.7	37.7	4.9	73.1	4.9	9.4	3.4
2023	14.3	85.0	1.2	1.9	2.8	3.7	1.2	36.3	5.0	69.1	1.7	2.3	0.8
2024	15.4	82.0	2.3	2.5	-2.2	4.4	3.1	33.9	2.8	67.5	1.8	-3.0	1.0
2024 Q2	15.0	83.2	1.9	2.3	-2.2	3.7	2.0	34.8	3.7	68.4	1.9	-8.4	0.9
Q3	15.3	82.5	2.4	2.4	-1.4	5.5	2.5	34.1	3.3	67.9	1.9	2.1	1.0
Q4	15.4	82.0	2.2	2.5	-1.6	4.4	3.1	33.9	2.8	67.5	1.8	1.5	1.0
2025 Q1	15.4	81.7	0.7	2.5	0.5	4.4	4.3	33.9	2.4	67.3	2.0	4.6	1.3

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
2024 Q2	1,483.8	1,359.8	124.0	708.9	614.0	390.6	338.5	337.2	316.9	47.1	90.4	23.4	21.9
Q3	1,468.7	1,385.4	83.3	701.1	619.3	376.1	342.2	341.8	331.2	49.8	92.9	20.7	16.1
Q4	1,480.8	1,406.5	74.3	704.4	621.9	383.7	339.1	344.6	342.1	48.1	103.4	34.6	22.5
2025 Q1	1,549.7	1,474.9	74.7	759.8	643.4	394.0	364.7	346.1	377.8	49.8	89.1	31.9	26.5
2024 Dec.	498.2	466.0	32.2	236.2	208.5	131.8	113.7	115.5	108.4	14.8	35.4	20.3	13.1
2025 Jan.	509.0	486.6	22.4	246.4	206.4	129.4	120.7	117.4	129.4	15.7	30.2	12.8	12.0
Feb.	516.0	496.1	19.8	250.0	217.2	133.8	122.5	116.0	128.9	16.2	27.6	7.7	6.5
Mar.	524.7	492.2	32.5	263.4	219.8	130.8	121.5	112.6	119.5	17.9	31.4	11.4	8.1
Apr.	489.9	471.2	18.6	238.9	207.7	126.7	120.0	108.3	111.4	16.0	32.1	5.6	3.7
May	494.9	462.6	32.3	237.5	204.7	128.9	115.5	113.0	111.0	15.5	31.4	5.6	3.8
12-month cumulated transactions													
2025 May	5,977.7	5,644.8	332.9	2,876.7	2,499.1	1,541.3	1,395.6	1,364.1	1,369.4	195.6	380.8	108.1	78.4
12-month cumulated transactions as a percentage of GDP													
2025 May	39.0	36.8	2.2	18.8	16.3	10.1	9.1	8.9	8.9	1.3	2.5	0.7	0.5

1) The capital account is not seasonally adjusted.

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

(seasonally adjusted, unless otherwise indicated)

	Total (n.s.a.)		Exports (f.o.b.)					Imports (c.i.f.)					
			Total				Memo item:	Total				Memo items:	
	Exports	Imports	Total	Intermediate goods	Capital goods	Consumption goods	Manufacturing	Total	Intermediate goods	Capital goods	Consumption goods	Manufacturing	Oil
	1	2	3	4	5	6	7	8	9	10	11	12	13
Values (EUR billions; annual percentage changes for columns 1 and 2)													
2024 Q2	1.5	-4.4	717.4	338.9	137.7	224.2	593.8	673.1	385.0	109.9	163.7	481.9	78.9
Q3	2.2	0.3	711.4	338.9	137.5	218.9	590.6	676.1	380.7	112.7	165.4	491.6	75.0
Q4	1.1	2.1	714.9	335.9	139.6	224.2	593.3	683.0	380.9	111.8	171.1	493.2	70.1
2025 Q1	7.9	8.0	769.4	377.0	145.2	231.2	641.2	708.0	399.5	114.4	177.3	507.0	67.6
2024 Dec.	2.9	3.6	240.7	111.9	47.2	75.7	199.0	226.4	124.8	37.3	57.0	162.6	23.0
2025 Jan.	3.0	8.2	245.6	117.8	47.0	76.4	202.6	232.7	131.2	37.3	57.9	166.4	23.8
Feb.	6.3	6.1	257.1	127.0	47.2	76.7	213.5	236.3	133.8	38.5	58.9	168.4	22.8
Mar.	14.0	9.5	266.7	132.2	51.0	78.2	225.1	238.9	134.4	38.6	60.4	172.2	21.1
Apr.	-1.2	-0.2	244.2	113.9	46.4	78.0	203.7	229.2	128.2	38.1	57.8	166.4	20.9
May	0.9	-0.6	243.0	.	.	.	200.3	226.8	.	.	.	161.5	.
Volume indices (2000 = 100; annual percentage changes for columns 1 and 2)													
2024 Q2	-1.2	-4.3	95.7	89.7	92.2	108.4	95.5	98.6	95.0	96.9	105.0	98.3	133.1
Q3	-0.6	-1.1	94.6	88.9	91.0	106.1	94.7	98.7	94.8	99.4	105.5	99.8	129.8
Q4	-2.5	1.3	93.8	87.3	90.5	107.2	94.0	99.8	95.1	96.8	109.4	99.9	133.0
2025 Q1	0.5	2.1	97.7	93.2	94.1	108.1	98.6	100.4	95.9	97.7	110.2	100.7	129.0
2024 Nov.	-5.0	-1.0	95.1	88.2	92.9	108.0	95.2	100.2	96.0	97.6	107.9	99.5	134.8
Dec.	-1.9	0.4	93.6	86.3	89.8	108.7	93.6	98.9	93.1	97.0	110.3	99.0	132.3
2025 Jan.	-3.2	2.4	95.5	88.9	92.5	108.7	95.5	99.3	95.1	94.7	108.8	99.1	127.5
Feb.	-1.5	-0.5	97.7	93.3	92.3	107.0	97.9	100.9	96.2	99.5	109.3	100.8	133.1
Mar.	5.9	4.4	99.9	97.5	97.5	108.7	102.4	100.9	96.2	98.8	112.5	102.4	126.4
Apr.	-5.4	-2.7	93.8	87.2	89.1	107.8	93.9	98.8	94.0	98.0	107.8	99.4	133.8

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

3 Prices and costs

3.1 Harmonised Index of Consumer Prices [1)]

(annual percentage changes, unless otherwise indicated)

	Total					Total (s.a.; percentage change vis-à-vis previous period) [2)]						Administered prices	
	Index: 2015 = 100	Total		Goods	Services	Total	Processed food	Unprocessed food	Non-energy industrial goods	Energy (n.s.a.)	Services	Total HICP excluding administered prices	Administered prices
		Total	Total excluding food and energy										
	1	2	3	4	5	6	7	8	9	10	11	12	13
% of total in 2024	100.0	100.0	70.6	55.1	44.9	100.0	15.1	4.3	25.7	9.9	44.9	88.5	11.5
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
2024	126.1	2.4	2.8	1.1	4.0	-	-	-	-	-	-	2.3	3.3
2024 Q3	126.6	2.2	2.8	0.6	4.0	0.5	0.8	1.0	0.3	-1.4	1.0	1.9	4.0
Q4	126.9	2.2	2.7	0.8	3.9	0.5	0.8	1.7	0.1	-0.6	0.7	2.0	4.3
2025 Q1	127.3	2.3	2.6	1.2	3.7	0.8	0.5	0.6	0.2	2.9	0.8	2.2	3.7
Q2	128.9	2.0	2.4	0.8	3.5	0.2	0.5	1.3	0.1	-4.1	1.0	1.9	3.0
2025 Jan.	126.7	2.5	2.7	1.4	3.9	0.5	0.2	0.1	0.1	3.0	0.3	2.3	4.4
Feb.	127.3	2.3	2.6	1.2	3.7	0.2	0.2	0.6	0.1	-0.3	0.3	2.2	3.3
Mar.	128.0	2.2	2.4	1.1	3.5	0.1	0.2	0.6	0.0	-1.4	0.3	2.0	3.5
Apr.	128.8	2.2	2.7	0.7	4.0	0.1	0.0	0.5	0.0	-2.3	0.7	2.0	3.3
May	128.7	1.9	2.3	0.8	3.2	-0.1	0.5	-0.1	0.0	-1.2	-0.1	1.8	3.0
June	129.1	2.0	2.3	0.9	3.3	0.3	0.1	0.6	0.0	0.2	0.4	1.9	2.8

	Goods						Services					
	Food (including alcoholic beverages and tobacco)			Industrial goods			Housing		Transport	Communication	Recreation and personal care	Miscellaneous
	Total	Processed food	Unprocessed food	Total	Non-energy industrial goods	Energy	Total	Rents				
	14	15	16	17	18	19	20	21	22	23	24	25
% of total in 2024	19.5	15.1	4.3	35.6	25.7	9.9	9.6	5.6	7.4	2.2	16.4	9.3
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
2024	2.9	3.2	1.9	0.0	0.8	-2.2	3.3	2.9	4.2	-0.9	4.9	4.0
2024 Q3	2.3	2.7	1.2	-0.3	0.5	-2.7	3.3	3.0	4.5	-0.9	4.8	4.0
Q4	2.7	2.8	2.3	-0.2	0.6	-2.2	3.3	3.0	5.0	-2.2	4.6	4.0
2025 Q1	2.6	2.6	2.9	0.5	0.6	0.4	3.3	2.9	3.9	-1.9	4.2	4.1
Q2	3.1	2.7	4.6	-0.5	0.6	-3.2	3.3	3.0	4.4	-2.1	3.8	3.9
2025 Jan.	2.3	2.6	1.4	0.9	0.5	1.9	3.3	2.9	4.4	-1.9	4.6	4.1
Feb.	2.7	2.6	3.0	0.4	0.6	0.2	3.3	2.9	3.9	-2.2	4.3	4.1
Mar.	2.9	2.6	4.2	0.2	0.6	-1.0	3.3	2.9	3.4	-1.7	3.8	4.2
Apr.	3.0	2.4	4.9	-0.6	0.6	-3.6	3.3	3.0	5.7	-1.9	4.4	4.0
May	3.2	2.9	4.3	-0.5	0.6	-3.6	3.3	3.0	3.6	-2.6	3.4	3.9
June	3.1	2.6	4.6	-0.3	0.5	-2.6	3.3	3.0	4.0	-1.9	3.5	3.7

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]										Construction [2]	Residential property prices	Experimental indicator of commercial property prices [3]
		Total		Industry excluding construction and energy						Energy			
							Consumer goods						
	Total (index: 2021 = 100)	Total	Manufacturing	Total	Intermediate goods	Capital goods	Total	Food, beverages and tobacco	Non-food				
	1	2	3	4	5	6	7	8	9	10	11	12	13
% of total in 2021	100.0	100.0	77.8	72.3	30.9	19.3	22.2	15.7	6.5	27.7			
2022	132.7	32.7	17.0	13.8	19.8	7.1	12.2	16.6	6.8	81.1	11.9	7.3	0.4
2023	130.0	-2.1	1.9	3.7	-0.2	4.8	8.3	8.4	5.6	-13.3	6.9	-1.2	-8.2
2024	124.6	-4.2	-0.6	-0.1	-2.4	1.6	1.6	0.3	1.2	-12.3	2.2	2.0	-4.5
2024 Q2	122.8	-4.4	-0.2	-0.4	-3.1	1.6	1.1	-0.4	1.1	-12.2	2.5	1.4	-4.8
Q3	124.4	-2.7	-0.6	0.4	-0.9	1.3	1.5	0.5	1.1	-8.9	1.8	2.8	-3.8
Q4	126.2	-1.5	-0.2	0.9	-0.3	1.4	2.0	1.4	1.2	-6.0	0.9	4.1	-1.2
2025 Q1	127.7	2.3	0.7	1.3	0.7	1.7	2.1	1.5	1.6	5.0	1.1	5.4	.
2024 Dec.	127.2	0.0	0.4	1.0	0.0	1.5	2.0	1.4	1.2	-1.7	-	-	-
2025 Jan.	128.2	1.7	1.0	1.3	0.5	1.7	2.2	1.3	1.7	3.4	-	-	-
Feb.	128.6	3.1	0.8	1.4	0.9	1.7	2.1	1.5	1.5	7.8	-	-	-
Mar.	126.4	1.9	0.3	1.3	0.8	1.8	2.0	1.6	1.5	4.0	-	-	-
Apr.	123.6	0.7	-0.4	1.1	0.4	1.7	2.1	2.0	1.4	-0.5	-	-	-
May	122.9	0.3	-0.1	1.1	0.3	1.6	2.2	2.1	1.4	-1.4	-	-	-

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

3.3 Commodity prices and GDP deflators

(annual percentage changes, unless otherwise indicated)

	GDP deflators								Oil prices (EUR per barrel)	Non-energy commodity prices (EUR)					
			Domestic demand				Exports [1]	Imports [1]		Import-weighted [2]			Use-weighted [2]		
	Total (s.a.; index: 2020 = 100)	Total	Total	Private consumption	Government consumption	Gross fixed capital formation				Total	Food	Non-food	Total	Food	Non-food
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
% of total										100.0	45.5	54.6	100.0	50.4	49.6
2022	107.3	5.1	7.0	6.7	4.5	8.1	12.8	17.4	95.0	18.3	28.8	9.5	19.3	27.7	10.8
2023	113.6	5.8	4.6	6.3	3.6	4.2	0.5	-2.2	76.4	-12.8	-11.6	-14.1	-13.7	-12.5	-15.1
2024	116.9	3.0	2.4	2.5	3.1	1.9	0.9	-0.4	77.8	9.4	13.6	5.2	9.2	12.2	5.6
2024 Q3	117.1	2.7	2.2	2.2	2.9	1.8	1.5	0.4	.	10.0	11.6	8.3	10.9	12.4	9.2
Q4	118.2	2.6	1.9	1.8	2.4	1.9	1.8	0.5	.	17.8	23.5	11.9	17.9	22.0	12.9
2025 Q1	118.5	2.3	2.2	2.1	2.6	1.8	2.1	1.9	.	20.1	28.2	11.4	19.3	24.8	12.3
Q2	.	.	.	.	.	.	.	.	.	-2.3	1.2	-6.2	-2.5	0.2	-6.0
2025 Jan.	-	-	-	-	-	-	-	-	.	23.8	36.6	10.8	24.2	34.6	11.7
Feb.	-	-	-	-	-	-	-	-	.	23.1	32.6	13.0	21.4	27.5	13.8
Mar.	-	-	-	-	-	-	-	-	.	13.6	16.3	10.5	12.6	13.3	11.5
Apr.	-	-	-	-	-	-	-	-	.	-3.0	-0.7	-5.7	-2.8	-1.0	-5.3
May	-	-	-	-	-	-	-	-	.	-0.3	6.5	-7.3	-1.1	3.4	-6.7
June	-	-	-	-	-	-	-	-	.	-3.8	-2.0	-5.7	-3.6	-1.6	-6.0

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

3 Prices and costs

3.4 Price-related opinion surveys
(seasonally adjusted)

	European Commission Business and Consumer Surveys (percentage balance)					Purchasing Managers' Surveys (diffusion indices)			
	Selling price expectations (for next three months)				Consumer price trends over past 12 months	Input prices		Prices charged	
	Manu-facturing	Retail trade	Services	Construction		Manu-facturing	Services	Manu-facturing	Services
	1	2	3	4	5	6	7	8	9
1999-20	4.7	5.8	4.0	-3.3	29.0	-	-	-	-
2022	48.5	53.1	27.4	42.1	71.6	-	-	-	-
2023	9.1	28.8	19.6	14.8	74.5	-	-	-	-
2024	6.0	14.5	15.2	4.5	55.1	49.0	59.7	48.8	54.2
2024 Q3	6.9	13.5	13.8	2.9	50.4	52.0	57.9	50.1	53.0
Q4	7.5	13.8	14.8	4.9	48.8	49.2	58.0	48.2	53.3
2025 Q1	10.2	16.8	14.7	4.6	50.3	52.2	60.1	50.0	54.1
Q2	7.9	16.1	13.9	3.2	49.3	48.3	58.2	50.0	52.8
2025 Jan.	10.0	17.3	16.7	6.8	51.6	52.0	60.8	50.0	53.9
Feb.	9.8	16.5	13.9	4.1	49.8	52.2	60.8	49.8	54.7
Mar.	10.9	16.6	13.6	3.0	49.5	52.4	58.7	50.4	53.6
Apr.	10.4	17.1	14.5	4.5	48.7	48.9	58.2	51.3	52.9
May	7.7	15.1	14.1	3.0	50.2	47.8	58.3	49.2	52.6
June	5.6	16.2	13.3	2.0	49.1	48.1	58.1	49.5	53.1

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

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

			By component		For selected economic activities		
	Total (index: 2020=100)	Total	Wages and salaries	Employers' social contributions	Business economy	Mainly non-business economy	Memo item: Indicator of negotiated wages [1]
	1	2	3	4	5	6	7
% of total in 2020	100.0	100.0	75.3	24.7	69.0	31.0	
2022	105.5	4.5	3.7	6.9	5.0	3.4	2.9
2023	110.5	4.7	4.6	5.0	5.0	4.1	4.4
2024	115.6	4.6	4.7	4.5	4.7	4.6	4.5
2024 Q2	119.6	5.1	4.9	5.6	5.0	5.2	3.6
Q3	111.9	4.5	4.3	5.0	4.7	4.2	5.4
Q4	122.4	3.8	4.1	2.7	3.9	3.4	4.1
2025 Q1	112.2	3.4	3.4	3.4	3.8	2.5	2.5

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

3 Prices and costs

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

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

			By economic activity									
	Total (index: 2020 =100)	Total	Agriculture, forestry andfishing	Manu-facturing, energy and utilities	Con-struction	Trade, transport, accom-modation and food services	Information and commu-nication	Finance and insurance	Real estate	Professional, business and support services	Public ad-ministration, education, health and social work	Arts, enter-tainment and other services
	1	2	3	4	5	6	7	8	9	10	11	12
Unit labor costs												
2022	103.0	3.4	4.6	5.3	8.3	0.9	2.6	4.9	5.7	3.6	2.0	-6.7
2023	109.4	6.2	3.9	7.3	4.2	7.3	3.7	7.7	4.1	6.4	4.8	2.8
2024	114.5	4.7	5.4	5.1	6.3	4.7	3.0	3.9	0.7	3.8	4.9	4.1
2024 Q2	113.9	5.3	6.7	5.8	6.6	5.1	4.2	5.5	0.3	3.5	5.4	4.7
Q3	114.7	4.6	5.9	3.7	7.0	5.2	2.8	4.2	-0.5	4.2	4.9	3.6
Q4	115.6	3.5	4.4	4.8	5.6	4.0	2.4	2.2	0.8	3.6	3.8	2.9
2025 Q1	116.3	3.0	2.6	0.0	4.3	3.8	1.5	5.2	4.1	3.8	3.8	3.5
Compensation per employee												
2022	109.1	4.5	4.2	3.9	4.2	6.2	2.8	3.0	5.3	5.8	3.5	8.1
2023	114.9	5.3	5.9	5.4	4.8	5.6	5.3	5.3	3.6	6.2	4.8	5.3
2024	120.1	4.6	4.2	4.4	4.0	4.5	4.2	4.7	3.4	4.9	4.8	5.0
2024 Q2	119.6	4.9	3.7	4.7	3.6	5.0	4.1	5.8	3.8	5.0	5.1	5.1
Q3	120.7	4.6	4.3	4.2	4.4	4.7	4.0	4.7	3.3	4.8	4.9	4.3
Q4	121.8	4.1	4.7	3.9	3.9	4.2	4.4	3.2	2.9	4.5	4.0	4.6
2025 Q1	123.1	3.8	4.5	3.3	3.8	4.0	4.1	3.4	2.2	4.5	3.9	3.5
Labour productivity per person employed												
2022	105.9	1.1	-0.4	-1.3	-3.7	5.3	0.1	-1.9	-0.5	2.1	1.4	15.8
2023	105.0	-0.9	1.9	-1.7	0.6	-1.6	1.5	-2.2	-0.5	-0.2	-0.1	2.4
2024	104.9	-0.1	-1.1	-0.7	-2.2	-0.2	1.1	0.8	2.7	1.0	-0.1	0.9
2024 Q2	104.9	-0.4	-2.8	-1.1	-2.8	-0.1	0.0	0.3	3.5	1.4	-0.3	0.4
Q3	105.1	0.0	-1.5	0.4	-2.4	-0.5	1.2	0.5	3.8	0.6	0.0	0.7
Q4	105.3	0.6	0.4	-0.9	-1.7	0.2	2.0	1.0	2.1	0.9	0.2	1.7
2025 Q1	105.7	0.8	1.8	3.3	-0.5	0.2	2.5	-1.7	-1.8	0.7	0.1	-0.1
Compensation per hour worked												
2022	103.5	3.3	5.6	4.0	4.0	2.1	2.6	3.6	3.8	4.5	3.9	4.8
2023	108.9	5.1	5.2	5.6	5.0	5.5	5.4	5.3	4.4	5.9	4.4	4.3
2024	113.7	4.5	3.8	4.3	4.1	4.3	3.8	4.7	3.4	4.2	4.9	4.8
2024 Q2	112.9	4.9	3.2	4.8	4.2	5.3	3.9	6.0	4.1	4.4	5.3	4.8
Q3	114.1	4.9	3.6	4.6	4.7	4.9	4.1	5.0	2.8	4.7	5.5	4.5
Q4	114.7	3.7	3.3	3.8	4.0	3.6	4.0	3.6	3.3	3.7	3.8	4.2
2025 Q1	116.4	3.9	4.4	3.6	4.2	4.1	3.9	3.5	2.7	4.4	4.0	2.9
Hourly labour productivity												
2022	100.1	-0.1	0.3	-1.3	-4.4	1.2	-0.1	-1.1	-2.4	1.4	1.9	11.8
2023	99.2	-0.9	1.7	-1.6	1.0	-1.5	1.6	-2.2	-0.3	-0.4	-0.4	1.7
2024	99.1	-0.1	-0.6	-0.7	-2.3	-0.2	0.8	1.0	3.1	0.4	0.0	0.5
2024 Q2	98.9	-0.3	-2.4	-1.1	-2.7	0.1	-0.2	0.6	4.2	1.0	-0.2	0.0
Q3	99.2	0.4	-0.5	0.7	-1.9	-0.1	1.4	0.9	4.4	0.6	0.6	0.9
Q4	99.0	0.4	0.3	-1.0	-1.8	0.1	1.7	1.7	1.5	0.2	0.0	0.8
2025 Q1	99.8	1.1	2.2	3.7	-0.3	0.6	2.6	-1.5	-0.9	0.8	0.2	-0.6

Sources: Eurostat and ECB calculations.

4 Financial market developments

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

	Euro area [1]					United States	Japan
	Euro short-term rate (€STR)	1-month deposits (EURIBOR)	3-month deposits (EURIBOR)	6-month deposits (EURIBOR)	12-month deposity (EURIBOR)	Secured overnight financing rate (SOFR)	Tokyo overnight average rate (TONAR)
	1	2	3	4	5	6	7
2022	-0.01	0.09	0.35	0.68	1.10	1.63	-0.03
2023	3.21	3.25	3.43	3.69	3.86	5.00	-0.04
2024	3.64	3.56	3.57	3.48	3.27	5.15	0.12
2025 Jan.	2.92	2.80	2.70	2.61	2.52	4.32	0.29
Feb.	2.69	2.61	2.52	2.46	2.41	4.34	0.48
Mar.	2.50	2.40	2.44	2.39	2.40	4.33	0.48
Apr.	2.34	2.24	2.25	2.20	2.14	4.35	0.48
May	2.17	2.10	2.09	2.12	2.08	4.31	0.48
June	2.01	1.93	1.98	2.05	2.08	4.32	0.48

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
2022	1.71	2.46	2.57	2.45	2.56	0.09	-0.84	-0.24	2.85	2.48	2.47	2.76
2023	3.78	3.05	2.44	1.88	2.08	-0.96	-0.92	-1.20	2.25	1.54	1.76	2.64
2024	2.58	2.18	2.01	2.13	2.45	0.27	0.41	-0.06	1.86	1.89	2.50	2.91
2025 Jan.	2.45	2.17	2.06	2.21	2.53	0.37	0.38	0.11	1.94	2.00	2.59	3.01
Feb.	2.24	2.06	1.97	2.11	2.47	0.41	0.11	0.53	1.90	1.91	2.50	3.03
Mar.	2.18	2.03	1.99	2.27	2.78	0.75	0.18	0.61	1.92	2.03	2.88	3.52
Apr.	1.88	1.74	1.70	1.99	2.56	0.82	0.35	0.81	1.63	1.74	2.65	3.40
May	1.86	1.78	1.78	2.08	2.61	0.83	0.34	0.78	1.73	1.87	2.70	3.42
June	1.86	1.82	1.84	2.16	2.68	0.86	0.32	0.74	1.80	1.96	2.76	3.48

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
2022	414.6	3,757.0	937.3	253.4	171.3	110.0	160.6	731.7	748.4	353.4	283.2	825.8	4,098.5	27,257.8
2023	452.0	4,272.0	968.5	292.7	169.2	119.2	186.7	809.8	861.5	367.8	283.1	803.6	4,285.6	30,716.6
2024	502.8	4,870.4	992.6	299.1	161.1	123.9	231.6	951.6	1,069.3	378.7	301.6	792.1	5,430.7	38,395.3
2025 Jan.	523.1	5,098.1	939.9	292.0	149.6	123.8	258.2	1,024.4	1,103.1	380.9	334.7	859.5	5,979.5	39,298.0
Feb.	553.7	5,420.0	1,008.0	305.6	155.4	128.1	282.1	1,084.2	1,154.8	387.0	364.1	901.7	6,038.7	38,735.3
Mar.	559.1	5,417.7	1,028.5	283.6	160.4	127.6	306.0	1,133.6	1,078.3	407.9	372.4	885.3	5,684.0	37,311.8
Apr.	520.6	4,994.0	938.6	256.5	158.1	118.1	290.6	1,028.5	972.3	428.7	363.4	799.9	5,369.5	34,343.0
May	562.6	5,358.5	991.5	270.2	165.8	126.5	317.9	1,146.4	1,088.5	446.5	374.1	824.3	5,810.9	37,490.5
June	561.8	5,325.1	972.2	257.8	162.5	134.4	317.4	1,161.2	1,110.0	457.0	367.1	801.4	6,030.0	38,458.3

Source: LSEG.

4 Financial market developments

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

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

	Deposits				Revolving loans and overdrafts	Extended credit card credit	Loans for consumption			Loans to sole proprietors and unincorporated partnerships	Loans for house purchase					
			With an agreed maturity of:				By initial period of rate fixation		APRC [3)]		By initial period of rate fixation				APRC [3)]	Composite cost-of-borrowing indicator
	Overnight	Redeemable at notice of up to 3 months	Up tp 2 years	Over 2 years			Floating rate and up to 1 year	Over 1 year			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
2024 June	0.38	1.77	3.03	2.84	8.18	17.01	7.41	7.71	8.45	5.15	4.80	3.95	3.63	3.39	4.03	3.78
July	0.38	1.77	3.01	2.77	8.15	17.00	7.55	7.79	8.49	5.03	4.75	3.93	3.64	3.38	4.00	3.75
Aug.	0.38	1.77	2.97	2.69	8.16	16.99	7.85	7.82	8.60	5.03	4.69	3.87	3.62	3.37	3.99	3.73
Sep.	0.37	1.77	3.00	2.73	8.23	17.04	7.55	7.76	8.53	4.89	4.58	3.79	3.55	3.28	3.89	3.64
Oct.	0.36	1.77	2.73	2.63	8.06	16.89	7.24	7.71	8.46	4.65	4.37	3.69	3.47	3.22	3.79	3.55
Nov.	0.35	1.76	2.61	2.52	7.96	16.84	6.52	7.69	8.41	4.58	4.27	3.62	3.43	3.16	3.72	3.47
Dec.	0.35	1.76	2.45	2.51	7.91	16.84	6.76	7.48	8.26	4.36	4.15	3.57	3.36	3.09	3.65	3.39
2025 Jan.	0.34	1.75	2.33	2.42	7.80	16.77	7.16	7.69	8.50	4.40	4.06	3.49	2.88	2.97	3.34	3.25
Feb.	0.32	1.55	2.20	2.37	7.75	16.69	6.79	7.66	8.38	4.45	4.00	3.52	3.37	3.09	3.61	3.33
Mar.	0.31	1.52	2.10	2.25	7.73	16.63	6.96	7.57	8.28	4.35	3.92	3.50	3.36	3.10	3.58	3.32
Apr.	0.29	1.50	1.97	2.30	7.53	16.58	6.95	7.59	8.31	4.29	3.85	3.48	3.32	3.04	3.52	3.27
May	0.29	1.45	1.86	2.24	7.49	16.50	6.77	7.60	8.33	4.22	3.70	3.42	3.45	3.12	3.58	3.30

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

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

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

	Deposits			Revolving loans and overdrafts	Other loans by size and initial period of rate fixation									Composite cost-of-borrowing indicator
		With an agreed maturity of:			Up to EUR 0.25 million			over EUR 0.25 and up to 1 million			over EUR 1 million			
	Overnight	Up tp 2 years	Over 2 years		Floating rate and up to 3 months	Over 3 months and up to 1 year	Over 1 year	Floating rate and up to 3 months	Over 3 months and up to 1 year	Over 1 year	Floating rate and up to 3 months	Over 3 months and up to 1 year	Over 1 year	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2024 June	0.87	3.54	3.54	5.25	5.33	5.69	5.67	5.24	4.99	4.22	5.02	5.05	4.14	5.08
July	0.87	3.48	3.28	5.21	5.13	5.44	5.50	5.27	4.93	4.17	5.08	4.99	4.12	5.07
Aug.	0.89	3.42	3.12	5.18	5.14	5.40	5.47	5.17	4.85	4.11	5.03	4.78	4.06	5.01
Sep.	0.88	3.28	2.97	5.12	5.03	5.29	5.49	5.02	4.64	4.04	4.73	4.47	3.85	4.79
Oct.	0.82	3.06	2.96	4.89	4.82	5.10	5.29	4.80	4.39	3.92	4.64	4.29	3.85	4.67
Nov.	0.81	2.92	2.65	4.80	4.80	4.99	5.29	4.62	4.26	3.85	4.42	4.20	3.70	4.52
Dec.	0.77	2.80	2.80	4.64	4.63	4.79	5.08	4.47	4.13	3.76	4.31	4.06	3.63	4.36
2025 Jan.	0.76	2.67	2.58	4.48	4.35	4.60	4.82	4.33	4.02	3.75	4.19	3.87	3.65	4.25
Feb.	0.72	2.50	2.73	4.33	4.37	4.54	4.79	4.22	3.81	3.69	3.98	3.75	3.58	4.11
Mar.	0.67	2.33	2.54	4.21	4.02	4.54	4.81	3.97	3.77	3.69	3.67	3.78	3.67	3.94
Apr.	0.60	2.15	2.65	4.03	3.91	4.23	4.78	3.86	3.59	3.70	3.55	3.51	3.66	3.80
May	0.58	2.06	2.56	3.90	3.78	4.25	4.88	3.67	3.49	3.68	3.26	3.48	3.66	3.65

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

4 Financial market developments

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

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

	Outstanding amounts							Gross issues [1]						
	Total	MFIs	Non-MFI corporations			General government		Total	MFIs	Non-MFI corporations			General government	
			Financial corporations other than MFIs		Non-financial corporations	Total	of which central government			Financial corporations other than MFIs		Non-financial corporations	Total	of which central government
			Total	FVCs						Total	FVCs			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Short-term														
2022	1,389.8	484.9	142.8	79.2	95.1	667.0	621.7	480.2	179.9	115.9	76.1	50.6	133.9	97.1
2023	1,572.6	621.3	163.3	102.4	86.3	701.8	659.1	502.5	211.8	114.3	88.0	49.0	127.5	103.8
2024	1,604.1	568.8	224.4	139.2	69.3	741.6	674.7	473.7	180.1	120.5	91.1	38.3	134.7	108.2
2025 Jan.	1,578.1	586.1	206.2	123.8	79.2	706.6	637.1	598.7	266.2	147.1	119.6	41.4	144.1	117.6
Feb.	1,571.2	583.4	209.4	123.2	83.5	694.9	629.8	528.6	231.9	140.9	113.2	36.8	118.9	97.9
Mar.	1,586.4	593.2	213.0	130.8	78.8	701.3	633.1	536.9	221.4	143.6	119.2	36.7	135.3	110.0
Apr.	1,551.2	552.3	204.4	112.5	90.1	704.4	631.9	562.7	226.4	148.7	113.9	53.2	134.5	110.8
May	1,550.4	573.1	191.7	103.0	96.7	688.8	618.8	563.7	254.0	139.1	111.7	46.7	123.9	95.0
June	1,547.5	581.3	179.4	97.0	88.7	698.2	630.7	518.6	225.3	136.4	106.7	39.2	117.8	91.6
Long-term														
2022	17,784.6	3,895.5	3,102.8	1,408.2	1,424.1	9,362.2	8,650.2	295.5	76.5	67.9	31.0	17.2	133.8	124.3
2023	19,420.3	4,438.4	3,244.1	1,437.7	1,541.5	10,196.3	9,456.4	322.1	92.9	67.4	30.9	21.4	140.4	131.9
2024	20,542.4	4,767.9	3,510.0	1,531.7	1,651.7	10,612.7	9,841.0	350.0	89.1	85.9	34.9	27.1	147.9	137.3
2025 Jan.	20,754.3	4,834.4	3,518.6	1,526.7	1,664.6	10,736.6	9,954.2	484.1	163.5	74.8	25.7	30.0	215.7	192.1
Feb.	20,966.8	4,864.6	3,555.7	1,539.0	1,673.1	10,873.5	10,080.1	395.1	96.9	81.1	30.0	23.3	193.9	178.1
Mar.	20,696.3	4,810.2	3,528.6	1,540.3	1,652.3	10,705.1	9,920.1	388.7	94.8	93.1	44.7	30.6	170.2	153.9
Apr.	20,860.9	4,775.5	3,516.8	1,549.4	1,648.4	10,920.1	10,130.8	350.6	57.9	88.2	34.5	25.3	179.2	171.8
May	20,973.7	4,835.7	3,580.3	1,555.7	1,677.5	10,880.1	10,091.1	451.7	114.7	116.2	29.2	48.8	171.9	161.0
June	21,110.4	4,853.2	3,608.7	1,574.9	1,707.1	10,941.3	10,156.0	449.1	110.8	126.1	42.9	37.6	174.7	164.5

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

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

(EUR billions and percentage changes; market values)

	Debt securities							Listed shares			
	Total	MFIs	Non-MFI corporations			General government		Total	MFIs	Financial corporations other than MFIs	Non-financial corporations
			Financial corporations other than MFIs		Non-financial corporations	Total	of which central government				
			Total	FVCs							
	1	2	3	4	5	6	7	8	9	10	11
Outstanding amount											
2022	19,174.4	4,380.5	3,245.6	1,487.4	1,519.1	10,029.2	9,271.9	8,698.6	526.4	1,287.5	6,884.1
2023	20,992.9	5,059.7	3,407.4	1,540.2	1,627.8	10,898.0	10,115.5	9,672.5	620.3	1,418.7	7,632.9
2024	22,146.5	5,336.7	3,734.4	1,670.9	1,721.0	11,354.3	10,515.6	10,155.4	751.0	1,585.8	7,818.1
2025 Jan.	22,332.4	5,420.5	3,724.9	1,650.5	1,743.9	11,443.2	10,591.3	10,846.9	829.9	1,679.3	8,337.2
Feb.	22,538.0	5,448.0	3,765.0	1,662.1	1,756.5	11,568.4	10,709.9	11,107.5	934.2	1,739.8	8,433.1
Mar.	22,282.6	5,403.4	3,741.7	1,671.1	1,731.2	11,406.4	10,553.2	10,618.7	936.9	1,716.6	7,964.8
Apr.	22,412.1	5,327.8	3,721.2	1,661.9	1,738.6	11,624.6	10,762.7	10,533.4	930.9	1,710.5	7,891.5
May	22,524.1	5,408.9	3,772.0	1,658.7	1,774.2	11,569.0	10,709.9	10,988.8	1,010.6	1,780.2	8,197.6
June	22,657.9	5,434.5	3,788.1	1,671.9	1,795.7	11,639.6	10,786.7	10,912.3	1,006.0	1,791.8	8,114.1
Growth rate [1]											
2024 Nov.	4.6	4.3	5.9	5.5	3.4	4.5	4.5	0.2	-2.0	-0.7	0.5
Dec.	4.3	3.7	6.1	5.6	2.7	4.3	4.1	0.1	-2.6	-0.6	0.4
2025 Jan.	4.3	3.3	4.2	2.5	3.3	4.9	4.7	0.1	-2.4	-0.6	0.4
Feb.	4.1	2.8	4.7	3.3	3.1	4.7	4.7	0.0	-2.1	-0.6	0.3
Mar.	3.7	1.9	5.1	3.8	3.1	4.2	4.2	-0.1	-1.9	-0.7	0.2
Apr.	3.6	1.0	5.2	3.6	2.3	4.6	4.5	-0.1	-1.9	-0.4	0.1
May	3.8	2.5	5.2	2.7	3.7	4.0	3.9	-0.1	-1.6	-0.3	0.1
June	4.3	3.8	6.9	3.5	3.2	4.0	3.9	-0.1	-0.8	-0.7	0.0

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

4 Financial market developments

4.8 Effective exchange rates [1)]

(period averages; index: 1999 Q1=100)

	EER-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
2022	95.3	90.8	93.3	84.3	64.8	82.7	116.1	90.9
2023	98.1	94.0	97.8	88.9	67.5	86.3	121.8	94.7
2024	98.4	94.4	97.9	89.5	67.9	87.5	124.1	95.0
2024 Q3	99.0	95.0	98.5	89.9	67.6	88.0	125.1	95.6
Q4	97.6	93.7	96.9	88.9	66.2	86.8	123.6	94.2
2025 Q1	97.1	93.3	96.2	88.4	64.4	86.1	122.9	93.5
Q2	100.6	96.5	100.8	.	.	.	127.7	96.8
2025 Jan.	96.7	92.9	95.6	-	-	-	122.3	93.1
Feb.	96.3	92.6	95.3	-	-	-	121.8	92.7
Mar.	98.3	94.4	97.7	-	-	-	124.5	94.6
Apr.	100.5	96.5	100.3	-	-	-	127.7	96.9
May	100.1	96.0	100.3	-	-	-	127.0	96.2
June	101.3	97.0	101.7	-	-	-	128.5	97.2
Percentage change versus previous month								
2025 June	1.1	1.0	1.3	-	-	-	1.2	1.0
Percentage change versus previous year								
2025 June	2.8	2.6	3.7	-	-	-	3.6	2.3

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

4.9 Bilateral exchange rates

(period averages; units of national currency per euro)

	Chinese renminbi	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
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
2024	7.787	25.120	7.459	395.304	163.852	4.306	0.847	4.9746	11.433	0.953	1.082
2024 Q3	7.870	25.195	7.461	394.101	163.952	4.283	0.845	4.9746	11.451	0.952	1.098
Q4	7.675	25.248	7.459	407.465	162.549	4.307	0.832	4.9754	11.494	0.936	1.068
2025 Q1	7.655	25.082	7.460	405.023	160.453	4.201	0.836	4.9763	11.235	0.946	1.052
Q2	8.197	24.920	7.461	404.114	163.813	4.262	0.849	5.0323	10.955	0.937	1.134
2025 Jan.	7.556	25.163	7.461	411.725	161.921	4.247	0.839	4.9752	11.480	0.941	1.035
Feb.	7.575	25.077	7.459	403.129	158.087	4.172	0.831	4.9770	11.247	0.941	1.041
Mar.	7.835	25.001	7.460	399.805	161.167	4.182	0.837	4.9768	10.968	0.955	1.081
Apr.	8.185	25.039	7.465	406.437	161.671	4.265	0.854	4.9775	10.974	0.937	1.121
May	8.135	24.923	7.460	403.939	163.144	4.254	0.843	5.0714	10.881	0.936	1.128
June	8.270	24.804	7.460	402.078	166.523	4.266	0.850	5.0454	11.009	0.938	1.152
Percentage change versus previous month											
2025 June	1.7	-0.5	0.0	-0.5	2.1	0.3	0.7	-0.5	1.2	0.3	2.1
Percentage change versus previous year											
2025 June	6.0	0.1	0.0	1.9	-1.9	-1.3	0.4	1.4	-2.4	-2.4	7.0

Source: ECB.

4 Financial market developments

4.10 Euro area balance of payments, financial account

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

	Total [1]			Direct investment		Portfolio investment		Net financial derivatives	Other investment		Reserve assets	Memo: Gross external debt
	Assets	Liabilities	Net	Assets	Liabilities	Assets	Liabilities		Assets	Liabilities		
	1	2	3	4	5	6	7	8	9	10	11	12
Outstanding amounts (international investment position)												
2024 Q2	34,402.8	33,276.3	1,126.5	12,521.5	9,862.0	13,600.5	15,608.3	-7.7	7,021.0	7,806.1	1,267.5	16,681.2
Q3	34,708.4	33,395.8	1,312.5	12,289.6	9,645.3	13,930.2	15,947.0	-17.7	7,187.4	7,803.5	1,318.9	16,702.6
Q4	35,949.0	34,170.8	1,778.2	12,735.3	9,953.7	14,678.9	16,511.3	-16.7	7,157.5	7,705.8	1,394.0	16,727.8
2025 Q1	36,085.3	34,476.8	1,608.6	12,651.3	9,921.9	14,381.6	16,521.1	17.9	7,523.4	8,033.8	1,511.0	16,968.0
Outstanding amounts as percentage of GDP												
2025 Q1	235.7	225.2	10.5	82.6	64.8	94.0	107.9	0.1	49.1	52.5	9.9	110.8
Transactions												
2024 Q2	172.4	47.6	124.9	-34.5	-125.1	178.8	272.1	16.7	7.8	-99.4	3.7	-
Q3	443.9	292.0	151.8	-2.4	-15.2	195.5	221.9	-4.6	259.3	85.3	-4.0	-
Q4	54.3	-32.9	87.2	57.7	78.3	219.7	161.2	18.9	-245.9	-272.4	3.7	-
2025 Q1	759.9	704.5	55.4	90.5	66.3	206.1	175.6	-6.3	470.4	462.7	-0.8	-
2024 Dec.	-176.5	-214.6	38.1	30.3	58.7	79.5	63.7	5.4	-294.4	-337.0	2.7	-
2025 Jan.	399.0	389.7	9.2	57.6	26.4	100.6	62.7	9.3	233.0	300.6	-1.5	-
Feb.	284.0	266.5	17.5	47.1	36.9	40.6	79.0	2.5	192.6	150.6	1.3	-
Mar.	77.0	48.3	28.7	-14.1	2.9	65.0	33.9	-18.1	44.8	11.5	-0.6	-
Apr.	132.7	96.7	35.9	45.4	58.3	19.7	-45.2	-8.5	70.9	83.7	5.2	-
May	137.7	95.4	42.4	31.9	2.5	47.1	96.3	15.3	41.2	-3.4	2.3	-
12-month cumulated transactions												
2025 May	1,501.1	1,042.3	458.8	200.3	125.6	758.5	744.5	17.1	517.6	172.2	7.7	-
12-month cumulated transactions as percentage of GDP												
2025 May	9.8	6.8	3.0	1.3	0.8	5.0	4.9	0.1	3.4	1.1	0.1	-

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

5 Financing conditions and credit developments

5.1 Monetary aggregates [1)]

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

	M3											
	M2							M3-M2				Total
	M1			M2-M1			Total					
	Currency in circulation	Overnight deposits	Total	Deposits with an agreed maturity of up to 2 years	Deposits redeemable at notice of up to 3 months	Total		Repos	Money market fund shares	Debt securities with a maturity of up to 2 years	Total	
	1	2	3	4	5	6	7	8	9	10	11	12
Outstanding amounts												
2022	1,538.9	9,758.1	11,297.0	1,366.9	2,565.3	3,932.2	15,229.2	123.0	646.6	49.4	819.0	16,048.2
2023	1,536.2	8,809.4	10,345.6	2,294.1	2,460.4	4,754.6	15,100.2	184.9	740.0	70.5	995.3	16,095.5
2024	1,556.9	9,021.4	10,578.2	2,528.3	2,469.1	4,997.4	15,575.6	255.8	886.5	28.4	1,170.7	16,746.2
2024 Q2	1,533.9	8,796.5	10,330.4	2,536.0	2,422.7	4,958.7	15,289.1	211.2	814.9	60.3	1,086.3	16,375.4
Q3	1,541.7	8,842.6	10,384.4	2,590.7	2,424.8	5,015.5	15,399.9	238.1	858.4	47.6	1,144.1	16,544.0
Q4	1,556.9	9,021.4	10,578.2	2,528.3	2,469.1	4,997.4	15,575.6	255.8	886.5	28.4	1,170.7	16,746.2
2025 Q1 (p)	1,564.3	9,120.0	10,684.3	2,483.0	2,491.0	4,974.1	15,658.3	238.0	909.5	45.6	1,193.0	16,851.3
2024 Dec.	1,556.9	9,021.4	10,578.2	2,528.3	2,469.1	4,997.4	15,575.6	255.8	886.5	28.4	1,170.7	16,746.2
2025 Jan.	1,555.8	9,040.9	10,596.8	2,511.9	2,472.0	4,983.9	15,580.7	267.7	889.0	46.2	1,202.9	16,783.6
Feb.	1,559.5	9,098.7	10,658.2	2,491.1	2,475.0	4,966.1	15,624.3	267.8	920.2	35.1	1,223.0	16,847.3
Mar.	1,564.3	9,120.0	10,684.3	2,483.0	2,491.0	4,974.1	15,658.3	238.0	909.5	45.6	1,193.0	16,851.3
Apr.	1,559.6	9,195.1	10,754.7	2,446.8	2,494.8	4,941.6	15,696.3	255.9	889.0	39.3	1,184.2	16,880.4
May (p)	1,559.7	9,232.1	10,791.8	2,441.9	2,503.0	4,944.8	15,736.7	245.5	901.3	36.2	1,183.0	16,919.7
Transactions												
2022	69.9	-57.3	12.6	425.5	55.6	481.1	493.7	3.6	2.5	76.7	82.8	576.5
2023	-4.1	-969.2	-973.3	920.6	-99.5	821.2	-152.1	40.3	93.8	23.5	157.6	5.5
2024	21.3	167.5	188.8	201.1	9.0	210.2	398.9	76.3	136.0	-37.2	175.2	574.1
2024 Q2	7.7	55.5	63.2	71.5	-4.8	66.8	130.0	16.9	25.8	-13.3	29.4	159.4
Q3	7.8	24.5	32.3	59.4	2.1	61.5	93.8	28.2	39.6	-11.7	56.1	149.9
Q4	15.2	162.4	177.6	-73.9	44.0	-29.9	147.7	20.3	24.8	-20.7	24.4	172.1
2025 Q1 (p)	7.4	117.3	124.8	-39.9	15.0	-24.9	99.8	-16.4	19.8	11.5	14.9	114.7
2024 Dec.	6.0	20.5	26.4	-33.8	35.3	1.4	27.9	15.0	17.5	-8.3	24.2	52.1
2025 Jan.	-1.1	20.4	19.4	-16.2	1.9	-14.2	5.1	11.7	1.4	12.5	25.6	30.7
Feb.	3.7	58.1	61.8	-21.0	3.5	-17.5	44.3	0.1	30.1	-13.1	17.1	61.4
Mar.	4.8	38.8	43.6	-2.7	9.5	6.8	50.4	-28.2	-11.7	12.1	-27.8	22.5
Apr.	-4.8	89.2	84.4	-29.7	3.3	-26.4	58.1	19.6	-2.1	-6.8	10.7	68.8
May (p)	0.2	35.8	35.9	-5.5	8.1	2.5	38.5	-10.7	11.5	-2.0	-1.1	37.4
Growth rates												
2022	4.8	-0.6	0.1	45.9	2.2	14.0	3.4	2.9	0.4	459.5	11.1	3.7
2023	-0.3	-9.9	-8.6	67.0	-3.9	20.9	-1.0	32.7	14.5	44.7	19.3	0.0
2024	1.4	1.9	1.8	8.8	0.4	4.4	2.6	41.7	18.3	-57.5	17.7	3.6
2024 Q2	-0.1	-4.0	-3.4	34.8	-3.6	12.7	1.2	62.8	17.0	-28.9	18.9	2.3
Q3	0.5	-1.6	-1.3	22.9	-1.7	9.6	2.0	61.6	19.3	-34.0	21.8	3.2
Q4	1.4	1.9	1.8	8.8	0.4	4.4	2.6	41.7	18.3	-57.5	17.7	3.6
2025 Q1 (p)	2.5	4.1	3.9	0.7	2.3	1.5	3.1	25.1	13.9	-47.2	11.8	3.7
2024 Dec.	1.4	1.9	1.8	8.8	0.4	4.4	2.6	41.7	18.3	-57.5	17.7	3.6
2025 Jan.	1.5	2.9	2.7	5.7	1.1	3.3	2.9	47.6	16.0	-50.0	16.6	3.7
Feb.	1.7	3.7	3.4	2.2	1.7	2.0	3.0	49.8	18.4	-60.9	18.2	3.9
Mar.	2.5	4.1	3.9	0.7	2.3	1.5	3.1	25.1	13.9	-47.2	11.8	3.7
Apr.	1.8	5.2	4.7	-1.3	2.5	0.6	3.4	27.5	12.5	-55.0	10.7	3.9
May (p)	1.9	5.6	5.1	-3.0	2.9	-0.1	3.4	21.3	14.5	-54.7	11.2	3.9

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

5 Financing conditions and credit developments

5.2 Deposits in M3 [1)]

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

	Non-financial corporations [2)]					Households [3)]							
	Total	Overnight	With an agreed maturity of up to 2 years	Redeemable at notice of up to 3 months	Repos	Total	Overnight	With an agreed maturity of up to 2 years	Redeemable at notice of up to 3 months	Repos	Financial corporations other than MFIs and ICPFs [2)]	Insurance corporations and pension funds	Other general government [4)]
	1	2	3	4	5	6	7	8	9	10	11	12	13
Outstanding amounts													
2022	3,361.5	2,721.2	499.5	134.7	6.2	8,374.2	5,542.6	437.9	2,392.9	0.9	1,282.8	231.5	563.3
2023	3,334.1	2,419.5	771.8	131.3	11.6	8,421.5	5,110.8	1,015.9	2,293.3	1.4	1,223.9	227.0	542.3
2024	3,438.3	2,500.8	792.7	133.7	11.1	8,756.3	5,199.1	1,254.2	2,301.5	1.5	1,299.7	232.1	548.2
2024 Q2	3,381.9	2,410.2	833.8	127.1	10.8	8,529.1	5,062.8	1,203.4	2,261.6	1.3	1,299.8	221.8	533.8
Q3	3,364.9	2,404.7	823.6	125.6	11.0	8,618.7	5,091.3	1,260.2	2,266.2	1.0	1,331.9	230.1	550.8
Q4	3,438.3	2,500.8	792.7	133.7	11.1	8,756.3	5,199.1	1,254.2	2,301.5	1.5	1,299.7	232.1	548.2
2025 Q1 (p)	3,413.5	2,475.5	787.4	140.2	10.6	8,788.9	5,256.0	1,216.1	2,315.7	1.1	1,361.2	229.0	539.3
2024 Dec.	3,438.3	2,500.8	792.7	133.7	11.1	8,756.3	5,199.1	1,254.2	2,301.5	1.5	1,299.7	232.1	548.2
2025 Jan.	3,430.8	2,472.9	809.0	136.0	12.8	8,752.1	5,203.1	1,245.7	2,301.9	1.3	1,330.9	230.0	548.8
Feb.	3,440.0	2,479.8	811.0	136.4	12.8	8,771.8	5,235.5	1,230.2	2,304.9	1.2	1,348.0	232.7	540.1
Mar.	3,413.5	2,475.5	787.4	140.2	10.6	8,788.9	5,256.0	1,216.1	2,315.7	1.1	1,361.2	229.0	539.3
Apr.	3,431.5	2,483.8	794.8	141.4	11.5	8,803.8	5,287.4	1,196.1	2,319.3	0.9	1,378.6	243.5	535.3
May (p)	3,444.0	2,500.5	791.3	142.7	9.5	8,828.5	5,316.3	1,184.7	2,326.4	1.0	1,379.5	230.2	540.2
Transactions													
2022	122.9	-89.2	207.7	5.9	-1.5	295.8	166.8	74.9	54.0	0.1	-10.2	6.2	12.5
2023	-31.6	-306.8	271.1	-1.4	5.6	18.9	-459.8	572.6	-94.5	0.6	-64.2	-3.0	-27.8
2024	94.9	75.8	16.1	2.9	0.2	297.6	55.6	233.8	8.2	0.1	54.2	4.0	3.2
2024 Q2	42.0	28.9	13.6	-0.3	-0.2	72.6	5.6	70.0	-3.3	0.2	34.0	-1.5	-8.0
Q3	-11.0	-1.7	-8.1	-1.7	0.4	60.5	-1.9	57.9	4.7	-0.3	38.9	9.3	16.5
Q4	61.8	88.8	-34.6	8.1	-0.5	133.1	106.7	-9.3	35.2	0.5	-39.3	0.7	-3.4
2025 Q1 (p)	-17.9	-20.6	-3.3	6.2	-0.2	34.0	64.3	-37.4	7.5	-0.4	71.3	-2.2	-9.3
2024 Dec.	26.0	44.8	-20.4	3.9	-2.3	57.0	33.4	-7.4	30.3	0.8	-33.1	2.4	-15.3
2025 Jan.	-7.4	-27.8	16.3	2.3	1.7	-5.2	4.1	-8.5	-0.6	-0.2	31.9	-2.1	0.7
Feb.	9.2	6.9	2.0	0.3	0.0	20.3	32.5	-15.6	3.6	-0.2	17.6	2.8	-9.2
Mar.	-19.6	0.3	-21.6	3.6	-1.9	18.8	27.7	-13.3	4.5	-0.1	21.8	-2.9	-0.8
Apr.	24.9	12.6	9.7	1.3	1.3	17.9	33.9	-18.8	3.0	-0.2	28.2	15.3	-4.0
May (p)	11.8	16.3	-3.7	1.3	-2.0	24.4	28.8	-11.5	7.0	0.2	-0.1	-13.4	4.9
Growth rates													
2022	3.8	-3.2	70.3	4.6	-17.5	3.7	3.1	20.6	2.3	19.9	-0.5	2.8	2.3
2023	-0.9	-11.2	54.2	-1.1	90.8	0.2	-8.3	129.3	-4.0	67.7	-4.9	-1.3	-4.9
2024	2.8	3.1	2.1	2.2	2.0	3.5	1.1	23.0	0.4	6.1	4.4	1.8	0.6
2024 Q2	1.8	-3.3	21.4	-3.0	-8.9	2.0	-4.8	71.5	-3.6	48.4	6.8	-2.1	-5.5
Q3	1.6	-1.0	11.5	-4.2	-15.0	2.8	-2.7	47.9	-1.4	21.7	6.9	10.0	-1.6
Q4	2.8	3.1	2.1	2.2	2.0	3.5	1.1	23.0	0.4	6.1	4.4	1.8	0.6
2025 Q1 (p)	2.2	4.0	-3.9	9.7	-2.8	3.5	3.4	7.2	1.9	5.4	8.3	2.9	-0.8
2024 Dec.	2.8	3.1	2.1	2.2	2.0	3.5	1.1	23.0	0.4	6.1	4.4	1.8	0.6
2025 Jan.	2.8	3.4	0.3	6.2	12.1	3.3	1.7	16.5	0.8	19.1	8.2	3.0	3.0
Feb.	3.0	4.1	-0.6	6.6	3.9	3.4	2.7	10.8	1.5	15.7	9.4	4.3	-0.7
Mar.	2.2	4.0	-3.9	9.7	-2.8	3.5	3.4	7.2	1.9	5.4	8.3	2.9	-0.8
Apr.	2.6	4.4	-3.8	11.2	7.0	3.4	4.0	3.2	2.2	-9.2	10.1	16.0	0.6
May (p)	2.7	4.8	-4.9	12.2	7.3	3.5	4.8	0.1	2.5	4.3	8.8	7.1	2.1

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

5 Financing conditions and credit developments

5.3 Credit to euro area residents [1)]

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

	Credit to general government			Credit to other euro area residents								
	Total	Loans	Debt securities	Total	Loans						Debt securities	Equity and non-money market fund investment fund shares
					Total		To non-financial corporations [3)]	To households [4)]	To financial coprorations other than MFIs and ICPFs [3)]	To insurance corporations and pension funds		
					Total	Adjusted loans [2)]						
	1	2	3	4	5	6	7	8	9	10	11	12
Outstanding amounts												
2022	6,352.0	1,001.3	5,325.7	15,389.8	12,987.6	13,174.9	5,126.5	6,631.8	1,082.5	146.7	1,565.9	836.4
2023	6,305.3	990.6	5,289.3	15,492.9	13,033.8	13,253.1	5,123.2	6,648.1	1,124.5	138.0	1,560.7	898.4
2024	6,258.9	988.5	5,244.4	15,779.7	13,246.5	13,501.8	5,182.6	6,677.2	1,247.3	139.4	1,579.9	953.4
2024 Q2	6,195.6	978.6	5,191.2	15,572.4	13,101.2	13,339.7	5,130.7	6,644.8	1,194.9	130.9	1,553.8	917.3
Q3	6,255.2	975.4	5,254.1	15,633.3	13,143.6	13,377.9	5,139.8	6,661.4	1,209.6	132.8	1,561.0	928.7
Q4	6,258.9	988.5	5,244.4	15,779.7	13,246.5	13,501.8	5,182.6	6,677.2	1,247.3	139.4	1,579.9	953.4
2025 Q1	6,268.4	995.5	5,246.9	15,875.2	13,338.1	13,594.9	5,204.0	6,720.8	1,276.5	136.8	1,560.8	976.3
2024 Dec.	6,258.9	988.5	5,244.4	15,779.7	13,246.5	13,501.8	5,182.6	6,677.2	1,247.3	139.4	1,579.9	953.4
2025 Jan.	6,305.2	996.4	5,282.8	15,834.0	13,280.9	13,526.7	5,192.4	6,696.6	1,255.1	136.8	1,577.8	975.3
Feb.	6,299.6	1,001.5	5,272.2	15,890.8	13,335.0	13,572.7	5,202.4	6,711.1	1,285.6	135.7	1,574.3	981.6
Mar.	6,268.4	995.5	5,246.9	15,875.2	13,338.1	13,594.9	5,204.0	6,720.8	1,276.5	136.8	1,560.8	976.3
Apr.	6,306.3	994.8	5,285.5	15,871.3	13,368.9	13,629.3	5,208.1	6,740.0	1,284.7	136.0	1,564.3	938.1
May	6,289.4	1,008.0	5,255.3	15,889.4	13,383.4	13,639.8	5,207.4	6,754.4	1,283.4	138.2	1,559.5	946.5
Transactions												
2022	173.8	8.5	163.8	636.4	623.8	680.5	269.0	241.8	126.3	-13.3	18.6	-5.9
2023	-161.1	-17.4	-144.0	53.8	24.5	72.3	-5.7	7.7	30.7	-8.2	-16.0	45.4
2024	-63.3	-1.4	-62.4	286.9	228.7	271.0	76.9	44.8	105.9	1.1	10.6	47.6
2024 Q2	-2.8	2.4	-5.4	18.2	37.6	47.7	16.3	5.2	22.5	-6.5	-15.1	-4.3
Q3	-4.4	-3.2	-1.2	68.3	59.8	53.5	18.7	20.0	19.0	2.1	3.7	4.8
Q4	5.7	11.0	-5.4	138.9	100.3	125.2	44.1	22.3	27.6	6.3	13.5	25.1
2025 Q1	32.1	6.6	25.4	116.1	113.9	114.5	35.0	48.4	33.2	-2.7	-17.9	20.1
2024 Dec.	5.4	-2.4	7.7	89.3	72.0	87.3	34.5	8.5	24.3	4.8	3.5	13.8
2025 Jan.	50.1	7.9	42.2	50.2	39.7	29.9	13.7	21.2	7.4	-2.6	-2.8	13.2
Feb.	-14.4	5.1	-19.5	59.1	56.0	48.8	13.1	15.4	29.2	-1.6	-5.4	8.5
Mar.	-3.7	-6.4	2.7	6.8	18.1	35.8	8.2	11.8	-3.4	1.5	-9.7	-1.7
Apr.	10.6	-1.1	11.7	27.7	41.5	43.9	12.1	16.4	13.5	-0.5	4.3	-18.1
May	-16.8	13.2	-30.1	13.2	14.9	10.9	0.3	15.3	-2.9	2.2	-5.4	3.7
Growth rates												
2022	2.7	0.9	3.0	4.3	5.0	5.4	5.5	3.8	13.4	-7.9	1.2	-0.6
2023	-2.5	-1.7	-2.7	0.3	0.2	0.5	-0.1	0.1	2.8	-5.5	-1.0	5.3
2024	-1.0	-0.1	-1.2	1.9	1.8	2.0	1.5	0.7	9.4	0.8	0.7	5.3
2024 Q2	-1.4	-0.4	-1.6	0.8	0.9	1.1	0.3	0.3	8.4	-8.5	-1.8	4.6
Q3	-1.2	-0.9	-1.2	1.2	1.3	1.6	0.8	0.6	8.5	-3.7	-1.5	4.2
Q4	-1.0	-0.1	-1.2	1.9	1.8	2.0	1.5	0.7	9.4	0.8	0.7	5.3
2025 Q1	0.5	1.7	0.3	2.2	2.4	2.6	2.2	1.4	8.8	-0.7	-1.0	4.9
2024 Dec.	-1.0	-0.1	-1.2	1.9	1.8	2.0	1.5	0.7	9.4	0.8	0.7	5.3
2025 Jan.	0.3	1.2	0.2	2.1	2.2	2.3	2.0	1.2	9.5	1.7	-0.9	5.9
Feb.	0.4	1.9	0.1	2.3	2.4	2.4	2.2	1.4	9.8	-0.6	-1.1	6.3
Mar.	0.5	1.7	0.3	2.2	2.4	2.6	2.2	1.4	8.8	-0.7	-1.0	4.9
Apr.	0.5	1.9	0.2	2.4	2.6	2.8	2.5	1.7	8.5	-0.2	0.0	3.5
May	0.6	3.3	0.1	2.5	2.7	2.8	2.4	1.9	7.9	5.7	0.4	3.8

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

5 Financing conditions and credit developments

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

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

	Non-financial corporations [2)]					Households [3)]				
	Total		Up to 1 year	Over 1 and up to 5 years	Over 5 years	Total		Loans for consumption	Loans for house purchase	Other loans
	Total	Adjusted loans [4)]				Total	Adjusted loans [4)]			
	1	2	3	4	5	6	7	8	9	10
Outstanding amounts										
2022	5,126.5	5,126.4	960.0	1,076.9	3,089.6	6,631.8	6,832.5	715.1	5,214.2	702.6
2023	5,123.2	5,138.3	907.2	1,090.3	3,125.8	6,648.1	6,866.2	731.3	5,228.8	688.0
2024	5,182.6	5,203.5	922.4	1,098.1	3,162.1	6,677.2	6,928.7	745.0	5,255.2	676.9
2024 Q2	5,130.7	5,148.1	902.5	1,088.0	3,140.2	6,644.8	6,880.6	737.5	5,227.1	680.1
Q3	5,139.8	5,161.9	912.5	1,089.7	3,137.7	6,661.4	6,899.1	742.3	5,245.1	674.0
Q4	5,182.6	5,203.5	922.4	1,098.1	3,162.1	6,677.2	6,928.7	745.0	5,255.2	676.9
2025 Q1	5,204.0	5,227.6	922.9	1,114.7	3,166.4	6,720.8	6,973.1	750.8	5,293.1	676.9
2024 Dec.	5,182.6	5,203.5	922.4	1,098.1	3,162.1	6,677.2	6,928.7	745.0	5,255.2	676.9
2025 Jan.	5,192.4	5,205.7	925.1	1,101.1	3,166.2	6,696.6	6,941.9	747.3	5,272.5	676.8
Feb.	5,202.4	5,213.8	926.1	1,104.5	3,171.9	6,711.1	6,956.1	747.3	5,286.0	677.8
Mar.	5,204.0	5,227.6	922.9	1,114.7	3,166.4	6,720.8	6,973.1	750.8	5,293.1	676.9
Apr.	5,208.1	5,230.8	927.0	1,109.3	3,171.9	6,740.0	6,990.8	753.6	5,310.1	676.3
May	5,207.4	5,228.4	925.7	1,108.6	3,173.0	6,754.4	7,001.7	754.1	5,323.9	676.4
Transactions										
2022	269.0	308.3	78.0	77.3	113.7	241.8	250.0	23.2	217.7	0.9
2023	-5.7	24.2	-44.0	10.3	27.9	7.7	26.5	18.9	10.1	-21.3
2024	76.9	88.1	21.9	14.1	40.9	44.8	77.0	26.6	28.3	-10.1
2024 Q2	16.3	19.0	17.1	-0.6	-0.2	5.2	10.9	0.4	5.9	-1.1
Q3	18.7	22.7	13.6	4.5	0.6	20.0	20.7	7.1	17.9	-5.1
Q4	44.1	45.5	7.7	10.8	25.6	22.3	36.3	10.7	10.6	1.1
2025 Q1	35.0	35.8	2.3	21.6	11.1	48.4	50.4	8.9	39.2	0.2
2024 Dec.	34.5	39.3	4.0	12.6	17.9	8.5	14.8	5.4	4.6	-1.6
2025 Jan.	13.7	5.7	2.6	4.7	6.4	21.2	15.3	2.8	17.7	0.7
Feb.	13.1	11.0	1.3	5.0	6.9	15.4	15.9	2.0	13.6	-0.3
Mar.	8.2	19.2	-1.5	11.9	-2.2	11.8	19.2	4.1	7.9	-0.2
Apr.	12.1	10.1	7.2	-1.8	6.7	16.4	15.4	2.8	14.2	-0.5
May	0.3	-2.2	-1.2	-0.1	1.5	15.3	12.4	1.1	13.8	0.4
Growth rates										
2022	5.5	6.4	8.8	7.7	3.8	3.8	3.8	3.3	4.4	0.1
2023	-0.1	0.5	-4.6	1.0	0.9	0.1	0.4	2.6	0.2	-3.0
2024	1.5	1.7	2.4	1.3	1.3	0.7	1.1	3.7	0.5	-1.5
2024 Q2	0.3	0.7	-0.8	0.0	0.7	0.3	0.3	2.7	0.4	-2.5
Q3	0.8	1.3	2.0	0.7	0.5	0.6	0.6	2.7	0.6	-2.2
Q4	1.5	1.7	2.4	1.3	1.3	0.7	1.1	3.7	0.5	-1.5
2025 Q1	2.2	2.4	4.6	3.4	1.2	1.4	1.7	3.7	1.4	-0.7
2024 Dec.	1.5	1.7	2.4	1.3	1.3	0.7	1.1	3.7	0.5	-1.5
2025 Jan.	2.0	2.0	4.3	1.6	1.4	1.2	1.3	3.9	1.1	-1.1
Feb.	2.2	2.1	4.6	2.2	1.5	1.4	1.5	3.8	1.3	-0.9
Mar.	2.2	2.4	4.6	3.4	1.2	1.4	1.7	3.7	1.4	-0.7
Apr.	2.5	2.6	5.8	3.4	1.3	1.7	1.9	4.0	1.6	-0.5
May	2.4	2.5	4.6	3.4	1.4	1.9	2.0	4.0	1.9	-0.3

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

5 Financing conditions and credit developments

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

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

	MFI liabilities						MFI assets			
		Longer-term financial liabilities vis-à-vis other euro area residents						Other		
	Central government holdings [2)]	Total	Deposits with an agreed maturity of over 2 years	Deposits redeemable at notice of over 3 months	Debt securities with a maturity of over 2 years	Capital and reserves	Net external assets	Total	Repos with central counter-parties [3)]	Reverse repos to central counter-parties [3)]
	1	2	3	4	5	6	7	8	9	10
Outstanding amounts										
2022	639.4	6,731.2	1,783.0	45.7	2,109.0	2,793.4	1,332.5	344.5	137.2	147.2
2023	447.4	7,327.2	1,827.5	90.2	2,413.8	2,995.6	1,858.1	213.8	152.1	152.6
2024	377.9	7,836.7	1,843.2	116.5	2,588.3	3,288.7	2,694.5	227.7	140.4	136.0
2024 Q2	410.5	7,526.1	1,828.2	109.9	2,526.1	3,061.9	2,243.9	300.1	182.6	176.5
Q3	402.8	7,679.4	1,833.1	114.3	2,541.1	3,190.9	2,490.5	247.2	184.9	188.5
Q4	377.9	7,836.7	1,843.2	116.5	2,588.3	3,288.7	2,694.5	227.7	140.4	136.0
2025 Q1 (p)	366.8	7,939.1	1,834.3	121.1	2,573.6	3,410.1	2,811.4	202.3	183.5	161.3
2024 Dec.	377.9	7,836.7	1,843.2	116.5	2,588.3	3,288.7	2,694.5	227.7	140.4	136.0
2025 Jan.	404.5	7,928.1	1,839.5	117.4	2,593.1	3,378.1	2,765.6	211.4	163.2	146.6
Feb.	425.3	7,953.6	1,842.6	118.5	2,599.8	3,392.8	2,826.9	208.9	196.1	159.7
Mar.	366.8	7,939.1	1,834.3	121.1	2,573.6	3,410.1	2,811.4	202.3	183.5	161.3
Apr.	447.0	7,910.9	1,830.0	123.4	2,537.1	3,420.3	2,838.7	222.1	195.4	173.4
May (p)	471.6	7,957.1	1,829.7	125.9	2,572.4	3,429.0	2,926.3	243.3	181.4	177.6
Transactions										
2022	-93.4	51.9	-88.8	-4.6	13.2	132.2	-68.9	-206.2	10.4	18.0
2023	-198.2	323.8	25.2	40.0	227.1	31.5	456.1	-217.7	17.1	9.0
2024	-69.1	287.7	15.6	26.2	164.1	81.8	572.4	-3.3	-11.7	-16.7
2024 Q2	15.7	42.7	-0.8	6.0	31.8	5.7	149.6	52.8	4.6	2.3
Q3	-7.7	63.0	7.5	4.4	38.3	12.9	172.9	-31.6	2.4	12.0
Q4	-25.4	71.7	4.8	2.2	5.6	59.1	112.2	-38.4	-44.5	-52.6
2025 Q1 (p)	-10.7	29.1	-5.7	5.7	10.8	18.4	6.8	-21.8	43.1	25.3
2024 Dec.	-46.5	53.3	2.2	0.6	0.9	49.6	57.2	-93.0	-36.3	-28.1
2025 Jan.	26.5	26.0	-3.6	1.8	6.7	21.0	-8.2	-8.8	22.8	10.6
Feb.	21.1	4.5	3.4	1.1	5.4	-5.4	35.3	7.0	32.9	13.2
Mar.	-58.3	-1.4	-5.5	2.8	-1.3	2.7	-20.3	-19.9	-12.6	1.6
Apr.	80.3	-15.4	-0.9	2.4	-5.0	-12.0	60.3	35.1	11.9	12.2
May (p)	24.6	35.0	-0.6	2.4	32.8	0.4	73.5	27.0	-13.9	4.2
Growth rates										
2022	-12.7	0.8	-4.8	-13.0	0.5	4.6	-	-	7.8	12.7
2023	-30.8	4.7	1.4	80.3	10.7	1.1	-	-	12.4	6.0
2024	-15.5	3.9	0.9	29.1	6.8	2.6	-	-	-7.7	-10.9
2024 Q2	-16.1	4.4	0.7	78.5	9.8	0.9	-	-	9.6	4.3
Q3	-11.2	3.8	0.0	54.7	9.2	0.5	-	-	20.5	15.4
Q4	-15.5	3.9	0.9	29.1	6.8	2.6	-	-	-7.7	-10.9
2025 Q1 (p)	-7.1	2.7	0.3	17.6	3.5	3.0	-	-	3.1	-7.4
2024 Dec.	-15.5	3.9	0.9	29.1	6.8	2.6	-	-	-7.7	-10.9
2025 Jan.	-10.0	3.3	0.6	23.5	5.5	2.4	-	-	0.0	-8.2
Feb.	-1.0	3.1	0.7	19.0	5.0	2.5	-	-	18.5	-7.9
Mar.	-7.1	2.7	0.3	17.6	3.5	3.0	-	-	3.1	-7.4
Apr.	1.8	2.3	0.4	16.8	2.4	2.9	-	-	19.4	-2.3
May (p)	6.8	2.6	0.5	17.1	3.4	2.8	-	-	14.0	7.6

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

6 Fiscal developments

6.1 Deficit/surplus

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

	Deficit (-)/surplus (+)					Memo item:
	Total	Central government	State government	Local government	Social security funds	Primary deficit (-)/ surplus (+)
	1	2	3	4	5	6
2021	-5.1	-5.1	0.0	0.0	0.0	-3.7
2022	-3.5	-3.7	0.0	0.0	0.3	-1.8
2023	-3.5	-3.5	-0.2	-0.2	0.4	-1.8
2024	-3.1	-2.7	-0.3	-0.2	0.1	-1.2
2024 Q2	-3.4	.	.	.	.	-1.6
Q3	-3.2	.	.	.	.	-1.3
Q4	-3.1	.	.	.	.	-1.2
2025 Q1	-3.0	.	.	.	.	-1.1

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

6.2 Revenue and expenditure

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

	Revenue						Expenditure						
		Current revenue						Current expenditure					
	Total	Total	Direct taxes	Indirect taxes	Net social contribu-tions	Capital revenue	Total	Total	Compen-sation of employ-ees	Inter-mediate consump-tion	Interest	Social benefits	Capital expenditure
	1	2	3	4	5	6	7	8	9	10	11	12	13
2021	46.9	46.2	13.0	13.2	15.0	0.8	52.0	46.9	10.3	6.0	1.4	23.7	5.1
2022	46.5	45.8	13.3	12.9	14.6	0.8	50.0	44.8	9.8	5.9	1.7	22.4	5.2
2023	46.0	45.1	13.2	12.4	14.5	0.8	49.5	44.2	9.8	5.9	1.7	22.3	5.3
2024	46.5	45.7	13.4	12.4	14.8	0.8	49.6	44.6	10.0	6.0	1.9	22.9	5.0
2024 Q2	46.2	45.4	13.3	12.4	14.7	0.8	49.7	44.4	9.9	5.9	1.8	22.6	5.3
Q3	46.4	45.6	13.3	12.4	14.7	0.8	49.7	44.5	10.0	6.0	1.9	22.7	5.1
Q4	46.5	45.8	13.4	12.4	14.8	0.8	49.6	44.6	10.0	6.0	1.9	22.9	5.0
2025 Q1	46.7	45.9	13.4	12.4	14.9	0.8	49.7	44.7	10.0	6.0	1.9	22.9	4.9

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

6.3 Government debt-to-GDP ratio

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

	Total	Financial instrument			Holder			Original maturity		Residual maturity			Currency	
		Currency and de-posits	Loans	Debt securi-ties	Resident creditors		Non-resident credi-tors	Up to 1 year	Over 1 year	Up to 1 year	Over 1 and up to 5 years	Over 5 years	Euro or participating currencies	Other curren-cies
					Total	MFIs								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2021	93.9	2.9	13.9	77.1	54.4	40.9	39.4	9.8	84.1	17.3	29.8	46.8	92.5	1.4
2022	89.5	2.6	13.2	73.7	52.5	39.6	37.0	8.7	80.9	16.0	28.4	45.2	88.6	0.9
2023	87.3	2.4	12.2	72.7	49.3	35.9	38.1	7.8	79.5	15.0	28.1	44.3	86.5	0.8
2024	87.4	2.2	11.8	73.5	46.9	33.9	40.6	7.7	79.7	14.5	28.4	44.5	86.7	0.8
2024 Q2	88.0	2.2	11.8	74.0	.	.	.	.	.	.	.	.	.	.
Q3	88.0	2.2	11.8	74.0	.	.	.	.	.	.	.	.	.	.
Q4	87.4	2.2	11.8	73.4	.	.	.	.	.	.	.	.	.	.
2025 Q1	88.0	2.3	11.7	74.1	.	.	.	.	.	.	.	.	.	.

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
2021	-2.7	3.7	-0.1	0.6	0.4	0.1	0.0	0.1	-0.1	-0.6	-6.2	5.1
2022	-4.3	1.8	-0.2	-0.2	-0.7	0.3	0.1	0.1	0.6	-0.6	-5.9	2.7
2023	-2.2	1.8	-0.3	-0.4	-0.5	-0.2	0.1	0.1	0.6	-0.5	-3.7	2.6
2024	0.1	1.2	0.2	0.0	-0.3	0.0	0.2	0.1	0.3	0.0	-1.3	3.1
2024 Q2	-0.7	1.6	-0.3	-0.5	-0.5	-0.1	0.1	0.1	0.4	-0.1	-2.1	2.8
Q3	-0.3	1.3	0.0	-0.2	-0.3	-0.1	0.1	0.0	0.3	-0.1	-1.7	2.9
Q4	0.0	1.2	0.3	0.0	-0.3	0.0	0.2	0.1	0.3	0.0	-1.4	3.1
2025 Q1	0.2	1.1	0.5	0.3	0.1	0.0	0.1	0.1	0.3	-0.1	-1.3	3.2

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

6.5 Government debt securities [1)]

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

	Debt service due within 1 year [2)]					Average residual maturity in years [3)]	Average nominal yields [4)]						
	Total	Principal		Interest			Outstanding amounts					Transactions	
										Fixed rate			
		Total	Maturities of up to 3 months	Total	Maturities of up to 3 months		Total	Floating rate	Zero coupon	Total	Maturities of up to 1 year	Issuance	Redemption
	1	2	3	4	5	6	7	8	9	10	11	12	13
2022	12.9	11.7	4.1	1.2	0.3	8.0	1.6	1.2	0.4	1.9	2.0	1.1	0.5
2023	12.9	11.5	4.1	1.4	0.4	8.1	2.0	1.2	1.9	2.0	1.6	3.6	1.9
2024	12.4	11.0	4.1	1.4	0.4	8.2	2.1	1.3	2.2	2.1	1.8	3.6	2.9
2024 Q3	12.5	11.1	3.8	1.4	0.4	8.2	2.1	1.3	2.0	2.1	1.7	3.7	2.9
Q4	12.4	11.0	4.1	1.4	0.4	8.2	2.1	1.3	2.2	2.1	1.8	3.6	2.9
2025 Q1	12.4	11.0	3.8	1.5	0.4	8.3	2.1	1.3	1.8	2.2	1.9	3.4	3.0
Q2	12.9	11.4	3.2	1.5	0.4	8.3	2.2	1.3	1.7	2.2	2.0	3.1	2.8
2025 Jan.	12.5	11.0	4.0	1.4	0.4	8.2	2.1	1.3	1.9	2.2	1.9	3.5	3.0
Feb.	12.6	11.2	4.1	1.4	0.4	8.3	2.1	1.3	1.9	2.2	1.9	3.5	2.9
Mar.	12.4	11.0	3.8	1.5	0.4	8.3	2.1	1.3	1.8	2.2	1.9	3.4	3.0
Apr.	13.1	11.6	3.8	1.5	0.4	8.3	2.2	1.3	1.7	2.2	2.0	3.3	2.9
May	12.9	11.4	3.2	1.5	0.4	8.3	2.2	1.3	1.6	2.2	2.0	3.2	2.8
June	12.9	11.4	3.2	1.5	0.4	8.3	2.2	1.3	1.7	2.2	2.0	3.1	2.8

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

6 Fiscal developments

6.6 Fiscal developments in euro area countries

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

	Belgium	Germany	Estonia	Ireland	Greece	Spain	France	Croatia	Italy	Cyprus
	1	2	3	4	5	6	7	8	9	10
	Government deficit (-)/surplus (+)									
2021	-5.4	-3.2	-2.6	-1.4	-7.1	-6.7	-6.6	-2.6	-8.9	-1.6
2022	-3.6	-2.1	-1.1	1.7	-2.5	-4.6	-4.7	0.1	-8.1	2.7
2023	-4.1	-2.5	-3.1	1.5	-1.4	-3.5	-5.4	-0.8	-7.2	1.7
2024	-4.5	-2.8	-1.5	4.3	1.3	-3.2	-5.8	-2.4	-3.4	4.3
2024 Q2	-4.1	-2.7	-3.6	1.5	0.2	-3.2	-5.5	-1.8	-6.2	4.0
Q3	-4.4	-2.8	-3.0	4.4	0.8	-3.0	-5.6	-2.1	-5.3	4.0
Q4	-4.5	-2.7	-1.5	4.1	1.3	-3.2	-5.8	-2.0	-3.4	4.3
2025 Q1	-5.0	-2.4	-1.0	4.1	2.6	-3.1	-5.8	-2.6	-3.5	4.4
	Government debt									
2021	108.5	68.1	18.4	52.6	197.3	115.7	112.8	78.2	145.8	96.5
2022	102.7	65.0	19.1	43.1	177.0	109.5	111.4	68.5	138.3	81.1
2023	103.2	62.9	20.2	43.3	163.9	105.1	109.8	61.8	134.6	73.6
2024	104.7	62.5	23.6	40.9	153.6	101.8	113.0	57.6	135.3	65.0
2024 Q2	106.6	62.0	23.8	40.8	160.1	105.3	112.3	60.0	136.6	70.2
Q3	105.7	62.4	24.0	40.3	158.3	104.4	113.6	59.6	136.2	69.2
Q4	104.7	62.5	23.6	38.7	153.6	101.8	113.2	57.6	135.3	65.1
2025 Q1	106.8	62.3	24.1	34.9	152.5	103.5	114.1	58.4	137.9	64.3

	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Austria	Portugal	Slovenia	Slovakia	Finland
	11	12	13	14	15	16	17	18	19	20
	Government deficit (-)/surplus (+)									
2021	-7.2	-1.2	1.0	-7.0	-2.2	-5.7	-2.8	-4.6	-5.1	-2.7
2022	-4.9	-0.7	0.2	-5.2	0.0	-3.4	-0.3	-3.0	-1.7	-0.2
2023	-2.4	-0.7	-0.8	-4.7	-0.4	-2.6	1.2	-2.6	-5.2	-3.0
2024	-1.8	-1.3	1.0	-3.7	-0.9	-4.7	0.7	-0.9	-5.3	-4.4
2024 Q2	-4.7	-0.9	0.5	-3.5	-0.4	-3.3	1.0	-1.9	-4.9	-3.7
Q3	-2.7	-1.4	0.5	-3.0	-0.3	-3.8	0.7	-1.7	-4.9	-4.3
Q4	-1.8	-1.3	1.0	-3.7	-0.9	-4.6	0.7	-0.9	-5.3	-4.5
2025 Q1	-1.0	-1.5	0.5	-3.1	-1.3	-5.2	0.8	-1.6	-5.1	-4.3
	Government debt									
2021	45.9	43.3	24.2	49.8	50.5	82.4	123.9	74.8	60.2	73.2
2022	44.4	38.1	24.9	49.5	48.4	78.4	111.2	72.7	57.7	74.0
2023	44.6	37.3	25.0	47.9	45.2	78.5	97.7	68.4	55.6	77.5
2024	46.8	38.2	26.3	47.4	43.3	81.8	94.9	67.0	59.3	82.1
2024 Q2	45.9	37.4	26.1	46.6	43.8	82.8	100.3	69.4	60.0	80.7
Q3	47.2	38.4	25.8	45.9	42.6	83.0	97.1	66.7	59.8	82.2
Q4	46.8	38.2	26.3	47.4	43.7	81.4	94.9	67.0	59.3	82.1
2025 Q1	45.6	40.6	26.1	48.1	43.2	84.9	96.4	69.9	62.8	83.7

Source: Eurostat.

Postal address 60640 Frankfurt am Main, Germany
Telephone +49 69 1344 0
Website www.ecb.europa.eu

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

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