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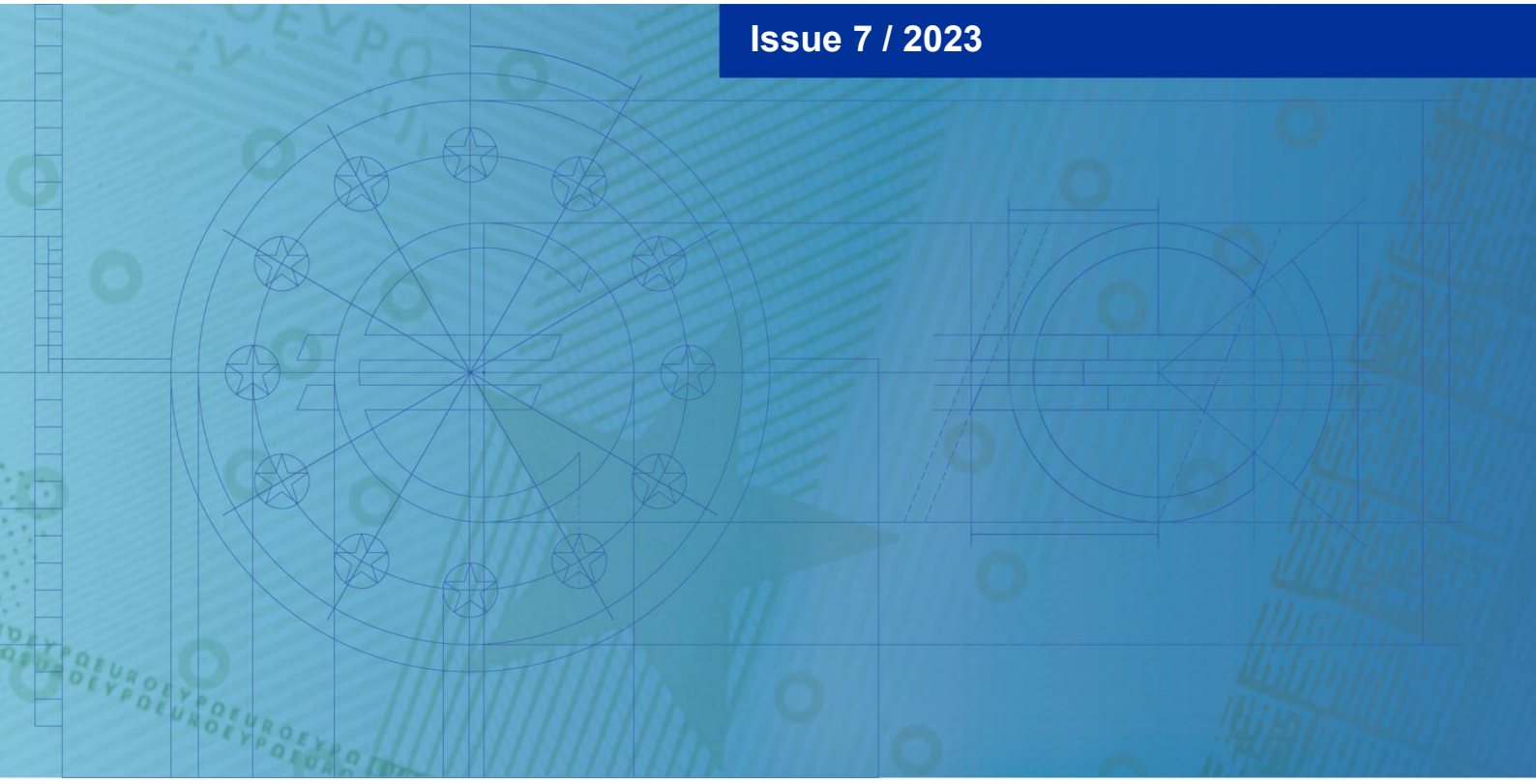

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Update on economic, financial and monetary developments

Summary

The Governing Council decided at its meeting on 26 October 2023 to keep the three key ECB interest rates unchanged. The incoming information has broadly confirmed its previous assessment of the medium-term inflation outlook. Inflation is still expected to stay too high for too long, and domestic price pressures remain strong. At the same time, inflation dropped markedly in September, including due to strong base effects, and most measures of underlying inflation have continued to ease. The Governing Council's past interest rate increases continue to be transmitted forcefully into financing conditions. This is increasingly dampening demand and thereby helps push down inflation.

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

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

Economic activity

The euro area economy remains weak. Recent information suggests that manufacturing output has continued to fall. Subdued foreign demand and tighter financing conditions are increasingly weighing on investment and consumer spending. The services sector is also weakening further. This is mainly because weaker industrial activity is spilling over to other sectors, the impetus from reopening effects is fading and the impact of higher interest rates is broadening. The economy is likely to remain weak for the remainder of 2023. But as inflation falls further, household real incomes recover and the demand for euro area exports picks up, the economy should strengthen over the coming years.

Economic activity has so far been supported by the strength of the labour market. The unemployment rate stood at a historical low of 6.4% in August. At the same time, there are signs that the labour market is weakening. Fewer new jobs are being

created, including in services, consistent with the cooling economy gradually feeding through to employment.

As the energy crisis fades, governments should continue to roll back the related support measures. This is essential to avoid driving up medium-term inflationary pressures, which would otherwise call for even tighter monetary policy. Fiscal policies should be designed to make the euro area economy more productive and to gradually bring down high public debt. Structural reforms and investments to enhance the euro area's supply capacity – which would be supported by the full implementation of the Next Generation EU programme – can help reduce price pressures in the medium term, while supporting the green and digital transitions. To that end, the reform of the EU's economic governance framework should be concluded before the end of this year and progress towards a capital markets union and the completion of the banking union should be accelerated.

Inflation

Inflation dropped to 4.3% in September, almost a full percentage point lower than its August level. In the near term, it is likely to come down further, as the sharp price increases in energy and food recorded in autumn 2022 will drop out of the yearly rates. September's decline was broad-based. Food price inflation slowed again, although it remains high by historical standards. In annual terms, energy prices fell by 4.6% but, most recently, have risen again and become less predictable in view of the new geopolitical tensions.

Inflation excluding energy and food dropped to 4.5% in September, from 5.3% in August. This fall was supported by improving supply conditions, the pass-through of previous declines in energy prices, and the impact of tighter monetary policy on demand and corporate pricing power. Goods and services inflation rates fell substantially, to 4.1% and 4.7% respectively, with services inflation also being pulled down by pronounced base effects. Price pressures in tourism and travel appear to be moderating.

Most measures of underlying inflation continue to decline. At the same time, domestic price pressures are still strong, reflecting also the growing importance of rising wages. Measures of longer-term inflation expectations mostly stand around 2%. Nonetheless, some indicators remain elevated and need to be monitored closely.

Risk assessment

The risks to economic growth remain tilted to the downside. Growth could be lower if the effects of monetary policy turn out stronger than expected. A weaker world economy would also weigh on growth. Russia's unjustified war against Ukraine and the tragic conflict triggered by the terrorist attacks in Israel are key sources of geopolitical risk. This may result in firms and households becoming less confident

and more uncertain about the future, and dampen growth further. Conversely, growth could be higher than expected if the still resilient labour market and rising real incomes mean that people and businesses become more confident and spend more, or the world economy grows more strongly than expected.

Upside risks to inflation could come from higher energy and food costs. The heightened geopolitical tensions could drive up energy prices in the near term, while making the medium-term outlook more uncertain. Extreme weather, and the unfolding climate crisis more broadly, could push food prices up by more than expected. A lasting rise in inflation expectations above the Governing Council's target, or higher than anticipated increases in wages or profit margins, could also drive inflation higher, including over the medium term. By contrast, weaker demand – for example owing to a stronger transmission of monetary policy or a worsening of the economic environment in the rest of the world amid greater geopolitical risks – would ease price pressures, especially over the medium term.

Financial and monetary conditions

Longer-term interest rates have risen markedly since the September 2023 meeting, reflecting strong increases in other major economies. The Governing Council's monetary policy continues to transmit strongly into broader financing conditions. Funding has become more expensive for banks, and interest rates for business loans and mortgages rose again in August, to 5.0% and 3.9% respectively.

Higher borrowing rates, with the associated cuts in investment plans and house purchases, led to a further sharp drop in credit demand in the third quarter, as reported in the October 2023 bank lending survey. Moreover, credit standards for loans to firms and households tightened further. Banks are becoming more concerned about the risks faced by their customers and are less willing to take on risks themselves.

Against this background, credit dynamics have weakened further. The annual growth rate of loans to firms has dropped sharply, from 2.2% in July to 0.7% in August and 0.2% in September. Loans to households remained subdued, with the growth rate slowing to 1.0% in August and 0.8% in September. Amid weak lending and the reduction in the Eurosystem balance sheet, the annual growth rate of M3 fell to -1.3% in August – the lowest level recorded since the start of the euro – and still stood at -1.2% in September.

Monetary policy decisions

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

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

As concerns the pandemic emergency purchase programme (PEPP), the Governing Council intends to reinvest the principal payments from maturing securities purchased under the programme until at least the end of 2024. In any case, the future roll-off of the PEPP portfolio will be managed to avoid interference with the appropriate monetary policy stance.

The Governing Council will continue applying flexibility in reinvesting redemptions coming due in the PEPP portfolio, with a view to countering risks to the monetary policy transmission mechanism related to the pandemic.

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

Conclusion

The Governing Council decided at its meeting on 26 October 2023 to keep the three key ECB interest rates unchanged. The incoming information has broadly confirmed the Governing Council's previous assessment of the medium-term inflation outlook. Inflation is still expected to stay too high for too long, and domestic price pressures remain strong. At the same time, inflation dropped markedly in September, including due to strong base effects, and most measures of underlying inflation have continued to ease. The past interest rate increases continue to be transmitted forcefully into financing conditions. This is increasingly dampening demand and thereby helps push down inflation.

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

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

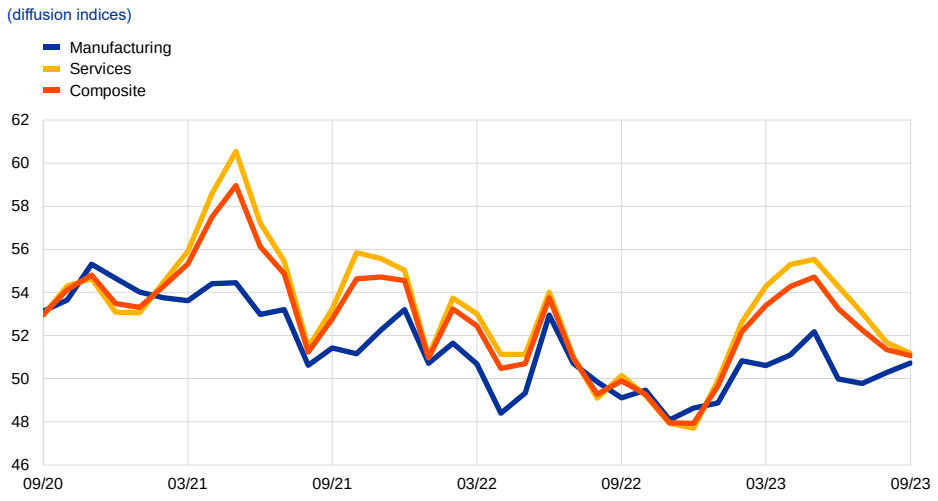
1 External environment

Global economic growth is moderating in the second half of the year. The slowdown in economic activity is particularly pronounced in the services sector, while manufacturing activity remains subdued. The recovery in global trade is ongoing, although recent data suggest that the growth trajectory may be weaker in the coming quarters, in line with the slowdown in economic activity. Pressures on headline inflation have increased slightly at the global level, reflecting rising energy prices. Core inflation continues to decrease.

Global economic activity is moderating. The global composite output Purchasing Managers' Index (PMI) (excluding the euro area) declined in September for the fourth consecutive month but remained above the neutral threshold. After having been boosted by the post-pandemic reopening of the economy, service sector activity is now slowing down and converging towards the level of activity seen in the manufacturing sector (Chart 1). This loss in economic momentum and the convergence of the services and manufacturing sectors may also reflect delayed effects of monetary policy tightening, as still high inflation and tighter credit conditions continue to put pressure on the disposable income of consumers. At the same time, labour markets are expected to remain strong, supporting demand in the near term.

Chart 1

Global composite output PMI (excluding the euro area)



Sources: Markit and ECB staff calculations.
Note: The latest observations are for September 2023.

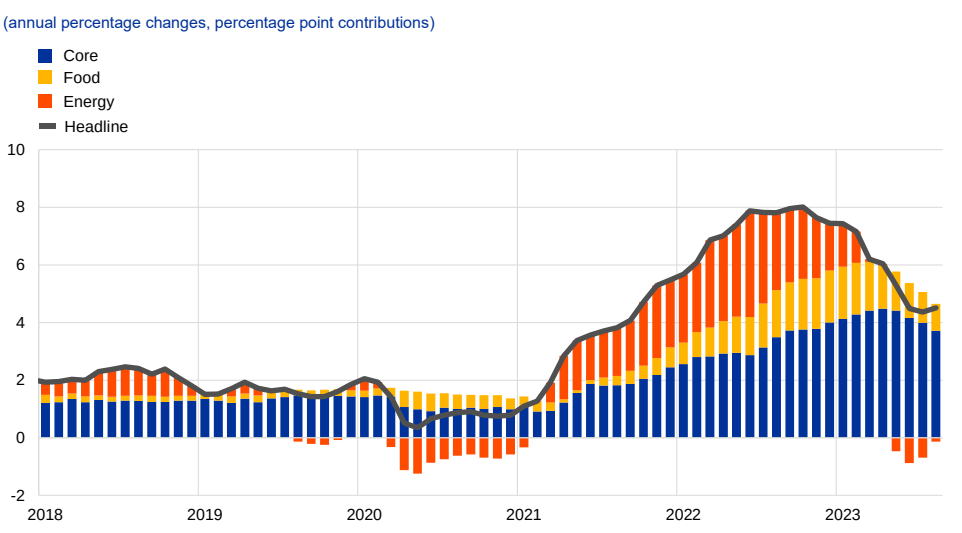
Global trade dynamics remain weak. Global merchandise trade recovered in the second quarter of this year from the low levels seen in the first quarter, as the further easing of supply shortages of electrical items and semiconductors supported trade in key sectors such as the automobile industry. However, the PMI data on new export orders and industrial production point to continued weak goods demand. The weakness of global import growth partly reflects the fact that the composition of

global demand has become less trade-intensive, as demand has been shifting from goods to services, returning to pre-pandemic patterns. Moreover, the supply disruptions that led to a build-up of inventories after the pandemic have since eased, resulting in destocking, which is weighing on trade growth. At the same time, global trade in goods and services has been supported by the rebound in international tourism, with tourist arrivals in most regions returning to their pre-pandemic levels.

Headline inflation across the member countries of the Organisation for Economic Co-operation and Development (OECD) remains on a downward trajectory, but developments in commodity prices are slowing the pace of disinflation. Annual headline inflation across OECD member countries (excluding Türkiye) increased to 4.5% in August, from 4.4% in July, owing to a less negative contribution from energy prices (Chart 2). Overall, recent developments in energy commodity markets suggest that the disinflationary trend in energy prices may have bottomed out. At the same time, annual core inflation in OECD countries (excluding Türkiye) continued to decline, falling to 4.7% in August from 5.0% in July. However, core inflation remains rather persistent, especially in advanced economies, owing to still resilient labour markets and strong wage growth. Looking ahead, the gradual disinflation should continue as the effects of tighter monetary policy pass through to core inflation.

Chart 2

OECD consumer price inflation



Sources: OECD and ECB staff calculations.
Notes: The OECD aggregate excludes Türkiye and is calculated using OECD consumer price index annual weights. Core inflation refers to inflation for all items excluding food and energy. The latest observations are for August 2023.

Energy commodity price developments have been mixed since the Governing Council's meeting in September amid lower oil prices and higher gas prices. Oil prices in US dollars have decreased slightly (by 3.2%) since the September meeting (Chart 3), as tighter oil supply was offset by concerns about global demand amid market expectations of higher-for-longer interest rates and softer global economic activity. On the supply side, Russia and Saudi Arabia reiterated their pledge to cut oil production by 1.3 million barrels per day by the end of the year. Oil prices have been more volatile since the terrorist attacks in Israel

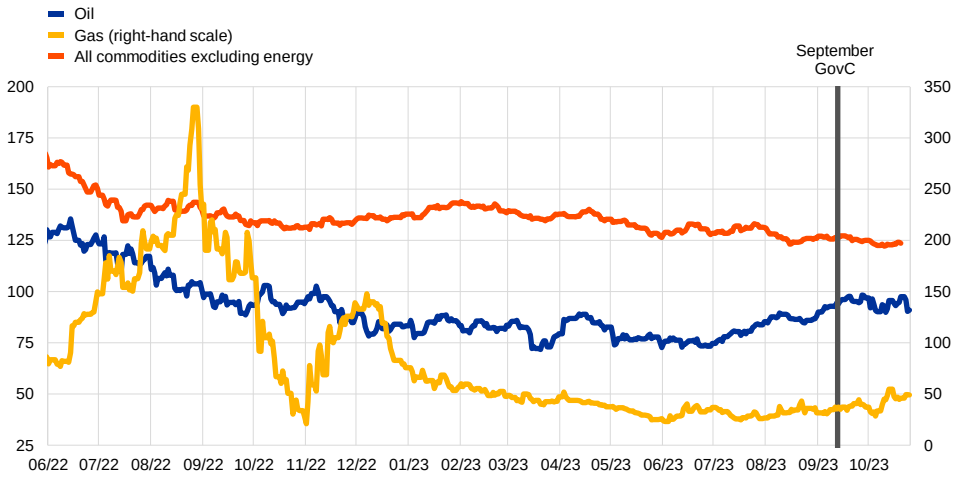
amid rising uncertainty about the implications of the conflict for oil supplies from the Middle East. There was a sharp increase in the aftermath of the attacks (3.8% as at 9 October), but the increase has since slowed to stand at 0.8%. Despite robust EU inventories, European gas prices have increased by 32.5% to around 49.3 EUR/MWh since the September Governing Council meeting. The recent increases in gas prices were driven by growing supply concerns following the closure of an Israeli gas facility, the shutdown of the gas pipeline between Estonia and Finland and the threat of strike action at two liquefied natural gas plants in Australia. While oil and gas futures curves suggest lower prices in the medium term, short-term upside risks remain, reflecting heightened uncertainty over supply conditions.

Non-energy commodity prices decreased slightly. Since the September meeting of the Governing Council, metal prices have declined by 3.6% amid a potential deterioration in the global economic outlook and headwinds to growth in China. Food commodity prices have remained broadly unchanged (+0.25%) amid some heterogeneity in grain food items, with lower wheat prices from increased US wheat supply being offset by higher corn prices.

Chart 3

Commodity price developments

(left-hand scale: USD/barrel (oil), index: 2020 = 100 (all commodities excluding energy); right-hand scale: EUR/MWh (gas))



Sources: Refinitiv, HWWI and ECB calculations.
Notes: Gas refers to the Dutch TTF gas price. The vertical line marks the date of the Governing Council meeting in September 2023. The latest observations are for 25 October 2023 for oil and gas and 20 October 2023 for commodities excluding energy.

In the United States, economic growth remained robust in the first half of 2023, but activity is expected to decelerate towards the end of the year. Real GDP growth surprised to the upside in the second quarter, but some leading indicators, including credit card spending data, signal weaker consumer spending in the third quarter. In the first half of the year spending was supported by households drawing down their excess savings, but this support will be more limited going forward as these excess funds have been largely depleted. Meanwhile, the labour market continues to ease, but remains tight. The vacancy/unemployed ratio, a measure of labour market tightness, is gradually falling but remains well above historical levels, particularly in the services sector. Headline consumer price index (CPI) inflation remained at 3.7% in September, unchanged from August. Core inflation continued to

decline in September, by 0.2 percentage points to 4.1%, with core goods prices also declining in month-on-month terms. By contrast, service prices are accelerating.

The slowdown of the Chinese economy seems to be moderating. Following the strong deceleration of Chinese economic activity in the second quarter, owing to a sharp decline in the housing sector, recent activity indicators show signs of stabilising. In September retail sales growth increased further to 5.5% year on year, from 4.6% the previous month, while industrial production growth stabilised at a year-on-year rate of 4.5%. Accordingly, GDP growth for the third quarter was stronger than expected at 1.3% quarter on quarter, up from a downward-revised rate of 0.5% in the second quarter. In addition, activity data for September point to a two-speed economy in terms of growth drivers: while the contraction in property investment continued to intensify in the third quarter, activity outside the real estate sector remained more robust. Broader consumption spending and the manufacturing sector continue to support growth, for example in the automobile sector. Meanwhile, targeted government measures, which are mainly aimed at supporting housing activity, provide some limited support to the economy. CPI inflation turned positive in August, largely owing to energy price developments. Overall, CPI inflation appears to have bottomed out but is likely to remain subdued amid weak domestic and external demand.

In Japan, economic growth is set to moderate in the third quarter. The latest PMI indicators signal some loss of momentum in the services sector, which is likely to exacerbate the persistent softness in manufacturing activity. These indicators suggest that the divergence between sectors is narrowing. Domestic demand is expected to recover moderately from the weakness observed in the previous quarter, with August data signalling a limited recovery in private consumption levels thus far. By contrast, the recovery in exports appears to have stalled. Headline inflation slowed marginally to 3.2% in August, while core inflation remained unchanged at 2.7%, reflecting both higher accommodation charges and lower household durable goods inflation. Overall, inflation indicators continue to signal a firm underlying price momentum, also reflecting robust wage growth. Nevertheless, annual headline inflation rates are expected to ease somewhat, in line with declining imported cost pressures.

The outlook for the UK economy is weak. Monthly real GDP increased by 0.2% in August, following a 0.6% decline in July, while the latest PMI indicators point to continued weak economic growth. However, business confidence has remained robust and consumer confidence has continued to improve. Consumers continue to benefit from the still solid labour market, while falling inflation is supporting real incomes. Overall, GDP is expected to stagnate in the second half of the year, but a recession should be avoided. Private consumption will continue to be supported by declining inflation and strong wage growth, which underpin real incomes, but high mortgage rates and tight financial conditions will increasingly act as a drag on domestic demand.

2 Economic activity

The euro area economy remains weak. Recent information suggests that manufacturing output has continued to fall. Subdued foreign demand and tighter financing conditions are increasingly weighing on investment and consumer spending. The services sector is also weakening further. This is mainly because weaker industrial activity is spilling over to other sectors, the impetus from reopening effects is fading and the impact of higher interest rates is broadening. The economy is likely to remain weak for the remainder of this year. However, as inflation falls further, household real incomes recover and the demand for euro area exports picks up, the economy should strengthen over the coming years. Economic activity has so far been supported by the strength of the labour market, although there are signs that the labour market is weakening.

Euro area real GDP growth is expected to have weakened in the third quarter of 2023. Following broadly flat growth at the turn of the year and further into the first quarter, euro area GDP edged up by 0.2% in the second quarter (Chart 4). Changes in inventories were the main driver of this growth, while domestic demand contributed only slightly and net trade had a strong negative impact. Incoming data for the third quarter point to continued weak output growth.[1] In July and August, euro area industrial production declined by 1.0% compared with its second-quarter level, largely driven by lower production in the capital goods sector. However, services production rose by 0.3% month on month in July, indicating that the services sector was still holding up relative to manufacturing. More timely survey data for the whole of the third quarter corroborate the picture of slow growth – or even falling output – in that period. The composite output Purchasing Managers' Index (PMI) for the euro area entered contractionary territory in the third quarter, reflecting a decline in the PMI for both manufacturing and services. Business expectations and new orders, at already low levels, deteriorated further, signalling bleak prospects for the industrial sector in the period ahead (Chart 5, panel a). The PMI for services business activity moved below the growth threshold of 50 in the third quarter, hinting at falling activity (Chart 5, panel b). Similar to the slowdown observed in industrial activity, new orders and business expectations also declined.[2]

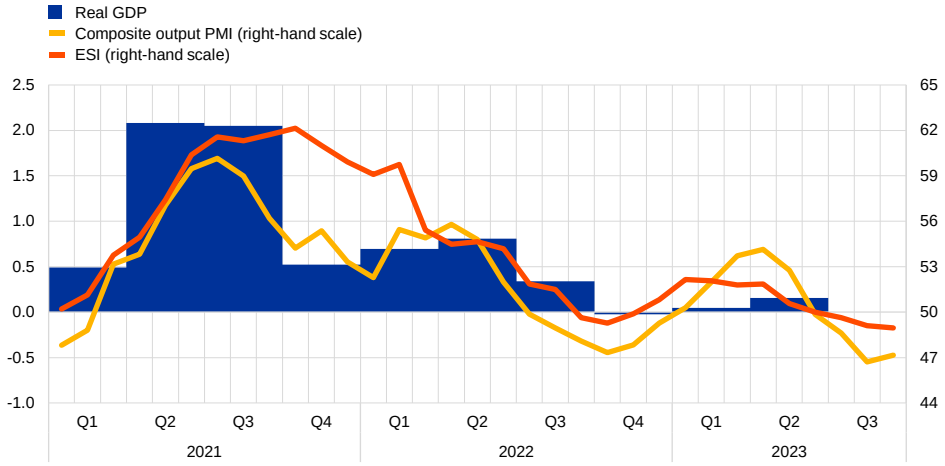
1 According to the preliminary flash estimate released by Eurostat on 31 October, euro area real GDP declined by 0.1% in the third quarter of 2023. This estimate was not available at the time of the October Governing Council meeting.

2 See the box entitled "The drivers of recent developments in business activity expectations across sectors".

Chart 4

Euro area real GDP, composite output PMI and ESI

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

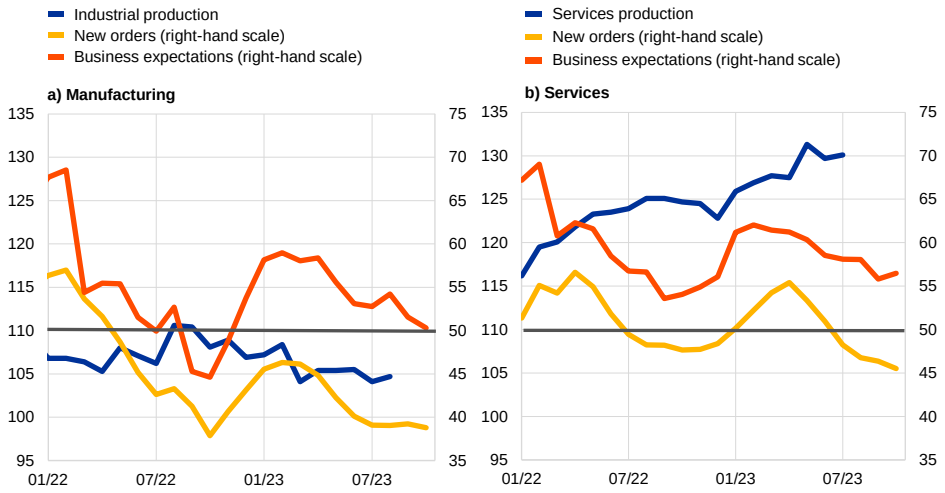


Sources: Eurostat, European Commission, S&P Global Market Intelligence and ECB calculations.
Notes: The two lines indicate monthly developments; the bars show quarterly data. The European Commission's Economic Sentiment Indicator (ESI) has been standardised and rescaled to have the same mean and standard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

Chart 5

Production and PMI indicators across sectors of the economy

(index: 2015 = 100, diffusion index)



Sources: Eurostat and S&P Global Market Intelligence.
Note: The latest observations are for July 2023 for services production, August 2023 for industrial production and October 2023 for the Purchasing Managers' Indices.

Euro area output is expected to show continued weakness in the final quarter of the year. The findings from the contacts held by ECB staff in October with companies operating in the non-financial sector suggest that activity is set to remain weak in the final quarter of the year (Box 6). PMI data for October also show that the manufacturing sector is continuing its contractionary path into the fourth quarter on the back of the growing impact of weak global trade and of strong monetary policy transmission. New orders and business expectations also declined in October for the

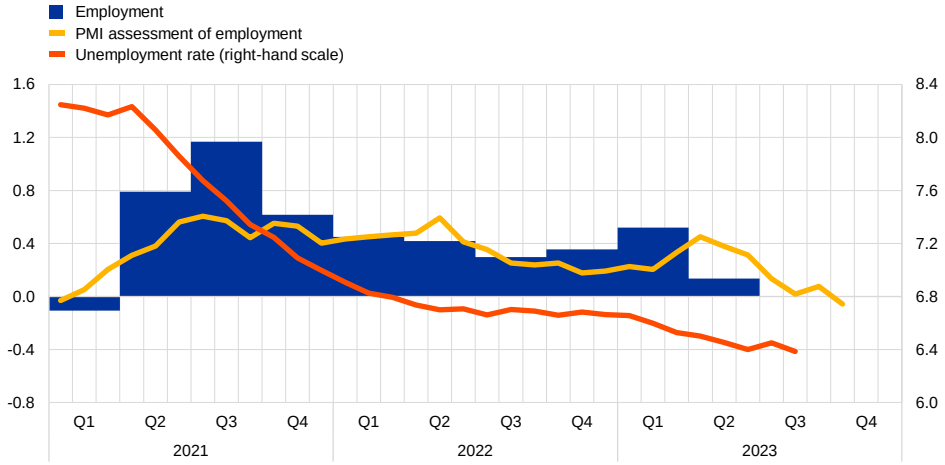
manufacturing sector. The picture is broadly similar for the services sector, with most PMI indicators pointing to a further slowdown in the fourth quarter.

The labour market remains resilient, although more recent indicators suggest signs of cooling following weaker economic activity. Employment growth continued to be robust in the first half of the year, at an average quarterly rate of 0.3%. The unemployment rate decreased to 6.4% in August (Chart 6). These dynamics were supported by an increase in the labour force that was broad-based across demographic groups. The increase in the labour force was particularly strong for older workers and those with high levels of education, although it should also be noted that the participation rate of workers with low levels of education has increased in recent quarters (and also compared with past trends). The large number of people employed in the first half of 2023 masked ongoing suppressed working hours as a result of continued high levels of sick leave and some labour hoarding. In the second half of the year, weaker economic activity is likely to translate into weaker labour market momentum. The unemployment expectations of professional forecasters edged upwards, pointing to the likelihood of an increase in the unemployment rate over the coming year.

Chart 6

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

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



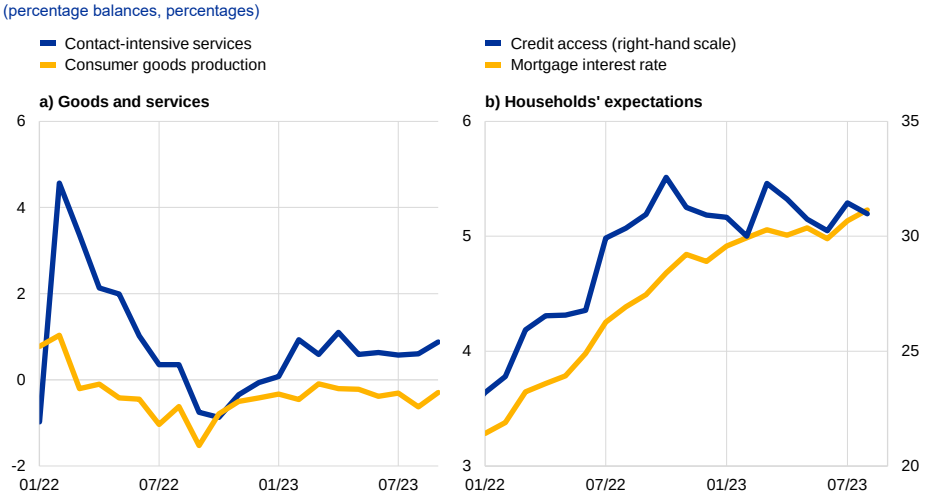
Sources: Eurostat, S&P Global Market Intelligence and ECB calculations.
Notes: The two lines indicate monthly developments; the bars show quarterly data. The Purchasing Managers' Index (PMI) is expressed in terms of the deviation from 50 divided by 10. The latest observations are for the second quarter of 2023 for employment, October 2023 for the PMI assessment of employment and August 2023 for the unemployment rate.

The PMI employment indicator for the whole economy suggests a slowdown in employment dynamics in the second half of the year. The overall PMI indicator stood at 49.4 in October, pointing to a decline in employment for the first time since January 2021. The PMI employment indicator for the manufacturing and construction sectors remained in contractionary territory. For the services sectors, the indicator stood at 50.5 in October, pointing to fewer new jobs being created in these sectors, which, over the past year, have been a major driver of employment growth.

Private consumption is expected to have remained sluggish in the third quarter reflecting a further contraction in spending on goods. In July and August retail sales were, on average, 0.6% lower than their level for the second quarter. At the same time, new passenger car registrations recovered in the third quarter – boosted by sales of electric cars, whose market share exceeded 20% for the first time – mostly reflecting delayed past orders. On the services side, incoming soft data support a stronger outlook for contact-intensive services than for consumer spending on goods, especially in the short term. The European Commission's indicator for consumer confidence declined slightly in October after falling in August and September, remaining well below its long-term average. Expected demand for contact-intensive services had not seen any strong downward correction since May 2023. According to the European Commission's consumer and business survey for September, demand for contact-intensive services remained above its historical average in that month (Chart 7, panel a). By contrast, expected major purchases deteriorated further and, in line with retail trade business expectations, remain below their long-term average levels. The transmission of tighter financing conditions to the real economy is likely to curb household borrowing, keep households' incentives to save high and continue to subdue consumer spending growth in the near term. The ECB's August Consumer Expectations Survey (CES) shows that consumers expect mortgage interest rates to continue to increase and the share of respondents expecting credit to become harder to obtain remains elevated (Chart 7, panel b).

Chart 7

Expected manufacturing production, expected services demand and households' expectations regarding access to credit



Sources: European Commission and the ECB's Consumer Expectations Survey.
Notes: The latest observations are for September 2023 in panel a) and for August 2023 in panel b). Credit access denotes the share of respondents that expect tighter credit conditions.

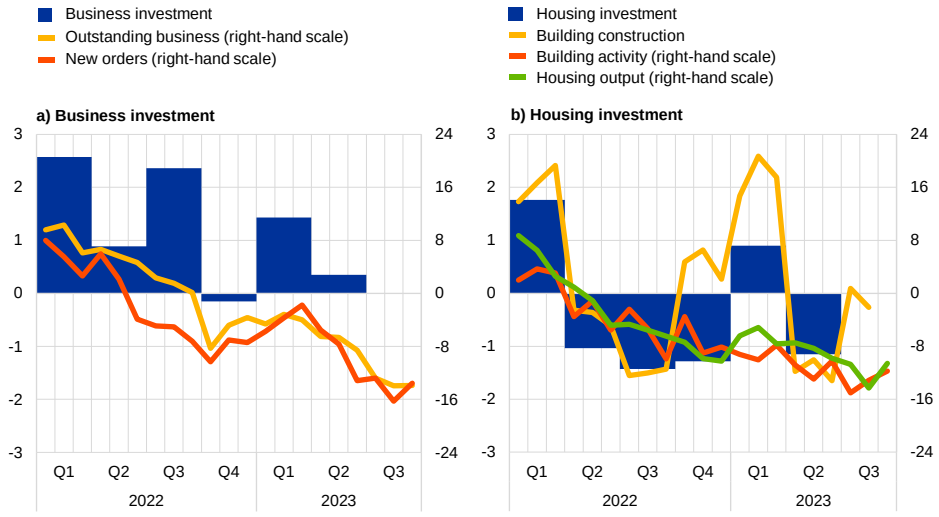
Business investment is expected to have weakened further in the third quarter, with activity dampened by a lack of demand and tighter financing conditions. Quarter-on-quarter headline non-construction investment grew by 0.7% in the second quarter of 2023, but this would have been 0.4% had the volatile data on intangible investment in Ireland been excluded. Available short-term and survey data point to further weakening in the third quarter, as capital goods production declined

in July and August compared with the second quarter. The PMI output, new orders and outstanding business indicators for the capital goods sector continued to decline in the third quarter, to levels below those seen in the previous quarter (Chart 8, panel a). Although manufacturing confidence in the capital goods sector and the PMI new order assessment both improved somewhat in September, they remained in contractionary territory as business investment was constrained by a lack of demand and tighter financing conditions. The October 2023 euro area bank lending survey indicates that demand from firms for loans for fixed investment in the third quarter remained highly subdued. In addition, contacts held by ECB staff in October with companies operating in the non-financial sector suggest that higher interest rates are causing capital investment to be partly postponed, which could lead to lower annual investment in the coming years. Capital and intermediate goods producers also reported that costlier finance was leading to low demand and therefore less need to maintain or extend capacity. In the medium term, investment in sectors such as transportation, electricity, gas and air conditioning, in addition to education, should benefit from longer-term plans for digital and green investments, including measures to improve energy efficiency. These types of investment will also be supported by Next Generation EU funds.

Chart 8

Business and housing investment and short-term indicators

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



Sources: Eurostat, European Commission, S&P Global Market Intelligence and ECB calculations.
Notes: Business investment is proxied by non-construction investment and excludes Irish intellectual property products. Business investment, PMI outstanding business and PMI new orders (European Commission's business confidence survey) for capital goods are expressed as deviations from 50 (1985-2019 average). The latest observations are for the second quarter of 2023 for investment and September 2023 for the other variables. The index for building construction production is computed as the percentage change over the average level in the previous quarter. The European Commission's index for building construction activity over the past three months is calculated as the change from the average level in the fourth quarter of 2021. The Purchasing Managers' Index (PMI) for housing (i.e. residential construction) output is expressed as deviations from 50. The latest observations are for the second quarter of 2023 for investment, August for building construction production and September 2023 for the other variables.

Housing investment is expected to have declined in the third quarter, amid anaemic demand and tight financing conditions. This decline amplifies a cumulative loss in housing investment of around 4% between the first quarter of 2022 and the second quarter of 2023 and has been confirmed by both hard and soft indicators. With regard to hard indicators, the number of residential building permits

issued – a leading indicator of construction activity – has fallen considerably over the past year, reaching an eight-year low in June 2023 (disregarding the pandemic lockdowns of April and May 2020). In addition, the number of new construction companies registered in July and August stood, on average, below the level seen in the second quarter of 2023. Building construction output in July and August fell 0.3% short of its average in the second quarter. With regard to soft indicators, the PMI for residential construction output sank deeper into contractionary territory in the third quarter (Chart 8, panel b). The European Commission's index for building construction activity in the past three months recorded its sixth consecutive decline in the third quarter. This reflected lower demand and tight financial conditions, despite some relief offered by the easing of materials shortages. Looking ahead, ECB surveys suggest subdued activity in the fourth quarter, with rising mortgage rates and elevated construction costs weighing on housing affordability and profitability respectively. According to the CES, households' perception of housing as a good investment bottomed out in January, but it was still downbeat in September. In addition, in the contacts held by ECB staff in October with companies operating in the non-financial sector, construction companies reported declining activity and orders owing to elevated cost pressures and rising interest rates.

Euro area export volumes are expected to grow at a subdued pace in the third quarter as a result of weak global demand. The growth momentum for extra-euro area goods exports (based on three-month-on-three-month growth rates) declined in August as weak global trade dampened demand for euro area goods and persistently high energy prices weighed on competitiveness. The euro's depreciation since July will help to ease competitive pressures but the boost to competitiveness is unlikely to be broad-based. While, on aggregate, firms' unfulfilled orders had already returned to pre-pandemic levels by the summer, some heterogeneity among sectors persists. In several major sectors – motor vehicle, data processing (computers), machinery and electrical equipment – many firms are still reporting supply shortages, suggesting that they are still feeling the impact of past supply shocks. The unwinding of these shocks should bolster export performance. The growth momentum for import volumes declined further in August, reflecting weak domestic demand and low inventories. Forward-looking indicators continue to point to a subdued near-term outlook for euro area export volumes, while survey data for September show that new export orders for goods and services remain in contractionary territory.

Beyond the near term, GDP growth is expected to gradually strengthen. The economy is likely to remain weak for the remainder of this year. However, as inflation falls further, household real incomes recover and the demand for euro area exports picks up, the economy should strengthen over the coming years.

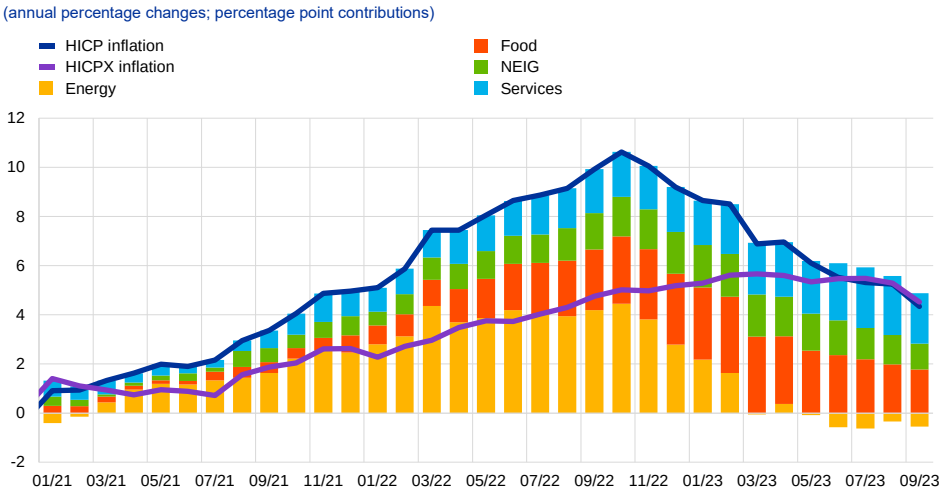
3 Prices and costs

According to the latest figures from Eurostat, inflation decreased from 5.2% in August to 4.3% in September 2023.[3] The decline was broad-based. Inflation is likely to come down further in the near term as the sharp price increases in energy and food recorded in autumn 2022 drop out of the yearly rates. At the same time, energy price developments have become more uncertain in view of the new geopolitical tensions. Inflation excluding energy and food dropped from 5.3% in August to 4.5% in September, supported by improving supply conditions, the pass-through of previous declines in energy prices, and the impact of tighter monetary policy on demand and corporate pricing power. Most measures of underlying inflation have continued to decline, but domestic price pressures are still strong, reflecting also the growing importance of rising wages. Measures of longer-term inflation expectations mostly stand around 2% but some indicators remain elevated and need to be monitored closely.

The headline inflation rate in the euro area, as measured by the Harmonised Index of Consumer Prices (HICP), was 4.3% in September (Chart 9). The drop from 5.2% in August reflects declines in all the main components, partly due to base effects in individual subcomponents, as strong month-on-month dynamics in September 2022 dropped out of the annual rate calculation. The base effects concern energy and food, but also components of core inflation.

Chart 9

Headline inflation and its main components



Sources: Eurostat and ECB calculations.
Notes: NEIG stands for non-energy industrial goods. The latest observations are for September 2023.

Energy inflation remained negative in September, mainly due to downward base effects (Chart 10). The main driver of the more negative annual rate of change (-4.6% after -3.3% in August) was the price of gas (measured in terms of the HICP gas price index), which continued to edge downwards and was 26.6% lower than at

[3] Eurostat's flash estimate for October, released after the cut-off date for this issue of the Economic Bulletin (25 October), saw headline inflation decreasing from 4.3% to 2.9%.

its peak in October 2022. The annual growth rate of electricity prices remained negative, unlike fuel prices, which returned to a positive annual growth rate after surging in recent months. Pipeline pressures for energy prices continued to recede, with annual growth in energy producer prices falling to -30.7% in August 2023, down from a peak of 117.3% in the same month of the previous year.

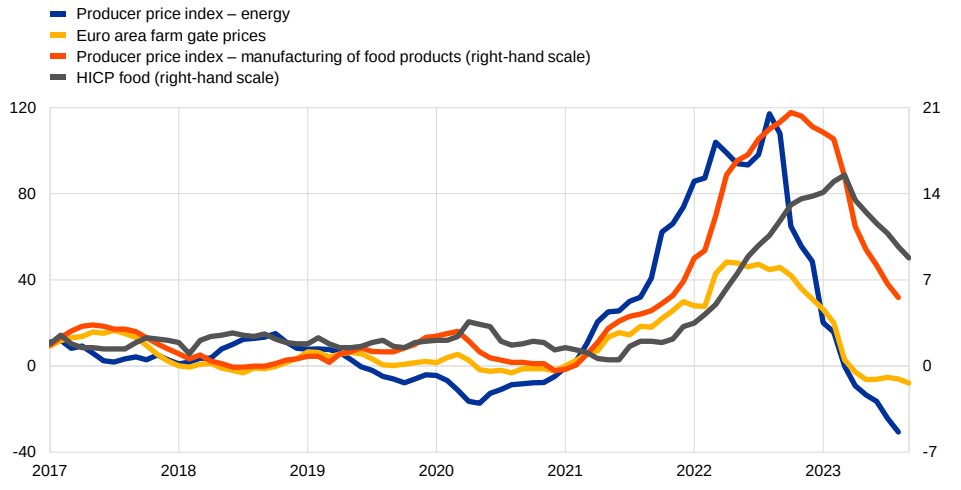
Food inflation declined again, falling from 9.7% in August to 8.8% in September, but remained elevated owing to remaining effects of past shocks (Chart 10). This decrease was driven by slower dynamics in both unprocessed and processed food prices. Processed food price inflation fell from 10.3% in August to 9.4%, while unprocessed food price inflation dropped from 7.8% to 6.6%. The month-on-month changes for unprocessed food are in line with historical average rates for September, while the decrease in processed food was smaller than usual for that month. As the impacts of earlier cost pressures arising from energy and food input prices keep fading, food inflation should continue to moderate.

HICP inflation excluding energy and food (HICPX) decreased from 5.3% in August to 4.5% in September. In terms of components, non-energy industrial goods (NEIG) inflation declined from 4.7% to 4.1%, reflecting the gradually fading impact of past shocks. Services inflation declined from 5.5% in August to 4.7% in September, but this decrease can be partly attributed to the base effects observed due to the rebound in transport prices last year after the subsidised public transport ticket in Germany was discontinued. At the same time, a slowdown in price developments of some contact-intensive services, such as restaurants and accommodation, has also contributed to the decline in services inflation.

Chart 10

Energy and food input costs, and HICP food prices

(annual percentage changes)



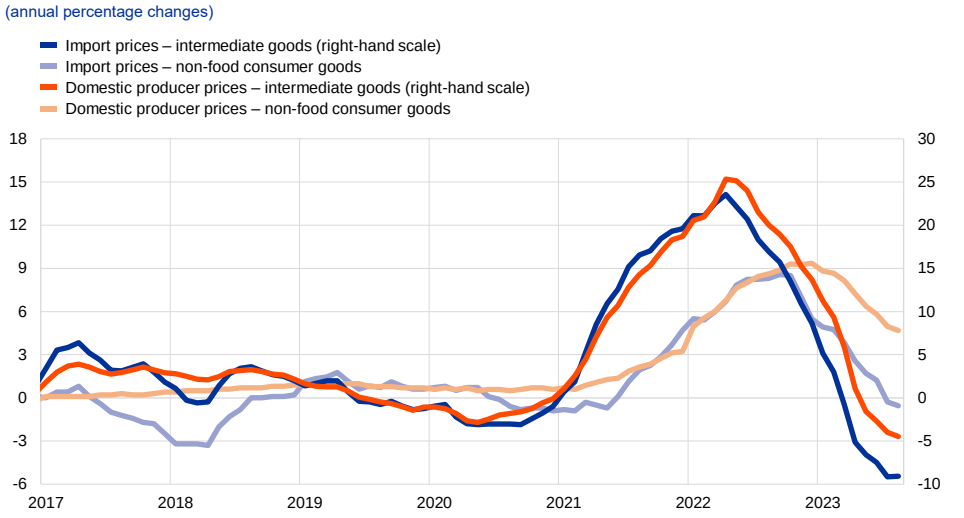
Source: Eurostat.
Note: The latest observations are for August 2023 for the producer price indices and September 2023 for euro area farm gate prices and HICP food.

Inflationary pressures continued to decline throughout the pricing chain (Chart 11). At the early stages, producer price inflation for domestic sales of intermediate goods remained negative in August (-4.5% after -4.0% in July), and the same holds

more strongly for import price inflation for intermediate goods (-9.1% after -9.2% in July). At the later stages, producer price inflation for non-food consumer goods decreased further, from 5% in July to 4.7% in August, and the corresponding import price inflation fell from -0.3% to -0.6%. A similar moderation of producer price and import price dynamics was observed for manufactured food. This confirms the gradual easing of pipeline pressures for consumer prices of both NEIG and processed food items. The strengthening of the euro over recent months continues to affect the magnitude and movement of import price dynamics, in turn contributing to the easing of price pressures.

Chart 11

Indicators of pipeline pressures



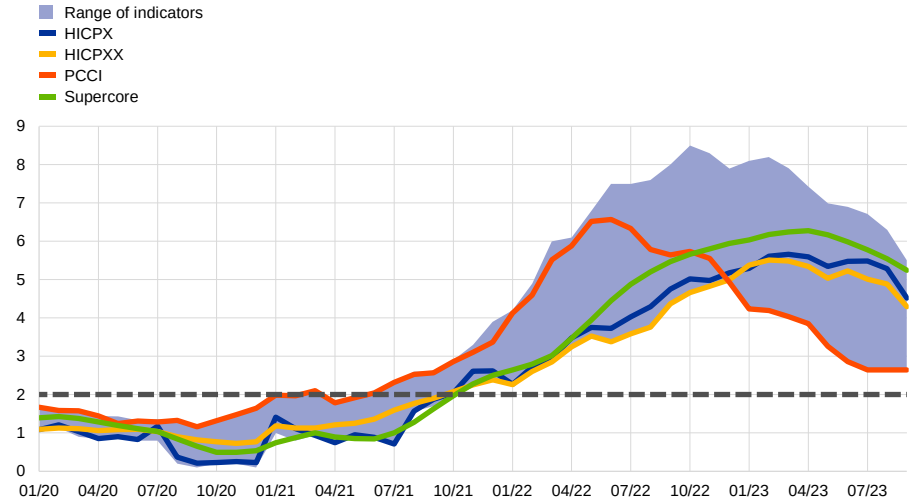
Sources: Eurostat and ECB calculations.
Note: The latest observations are for August 2023.

Most indicators of underlying inflation in the euro area continued to decline, reflecting the diminishing impact of earlier shocks as well as tightened monetary policy (Chart 12). A number of indicators seem to have peaked. The Persistent and Common Component of Inflation (PCCI) measure has plateaued since July, at 2.6%. HICPX decreased from 5.3% in August to 4.5% in September and HICPXX (HICP excluding energy, food, travel-related items, clothing and footwear) also continued to fall, from 4.9% in August to 4.3% in September. The relatively strong declines in these two indicators partly reflect base effects related to transport services prices. The Supercore indicator, which includes cyclically sensitive HICP items, continued to decrease steadily, from 5.5% in August to 5.2% in September. With wage pressures becoming more significant, the domestic inflation rate remained high, but also moderated from 5.4% in August to 5.2% in September. All in all, while the decline in underlying inflation indicators reflects the diminishing impact of earlier shocks, it can increasingly also be attributed to the tightening of monetary policy. Nonetheless, strong domestic price pressures highlight the growing importance of rising wages.

Chart 12

Indicators of underlying inflation

(annual percentage changes)



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

Wage growth remained strong, especially in the services sector, although the labour market shows signs of cooling. The latest available data show that the annual growth rate of negotiated wages remained unchanged at 4.4% in the second quarter of 2023. However, forward-looking wage trackers continue to signal that wage pressures will remain high for the remainder of the year. Actual wage growth, as measured by compensation per employee and compensation per hour, increased in the second quarter of 2023 to 5.6% and 5.4% respectively, up from 5.5% and 4.8% in the first quarter. The contribution of unit profits to domestic price pressures, as measured by the annual growth rate of the GDP deflator, weakened in the second quarter of 2023 from a historical high in the first quarter.

Most survey-based indicators of longer-term inflation expectations in the euro area remained more or less unchanged at around 2%, while market-based measures of inflation compensation declined slightly from the elevated levels observed over the summer (Chart 13). The ECB Survey of Professional Forecasters (SPF) for the fourth quarter of 2023 sees average and median longer-term inflation expectations (for 2028) unchanged at 2.1% and 2.0% respectively. Longer-term inflation expectations also stood at 2.1% in the October 2023 Consensus Economics survey. The median longer-term expectations remained unchanged at 2.0% in the October 2023 ECB Survey of Monetary Analysts (SMA). In the ECB Consumer Expectations Survey (CES) for August 2023, median expectations over the next year increased from 3.4% in July to 3.5% in August, while those for three years ahead rose to 2.5%, up from 2.4%.[4] These higher inflation expectations coincide with very recent increases in fuel prices. Euro area market-based measures of inflation compensation (based on HICP excluding tobacco)

4 See "ECB Consumer Expectations Survey results – August 2023", press release, ECB, 11 October 2023.

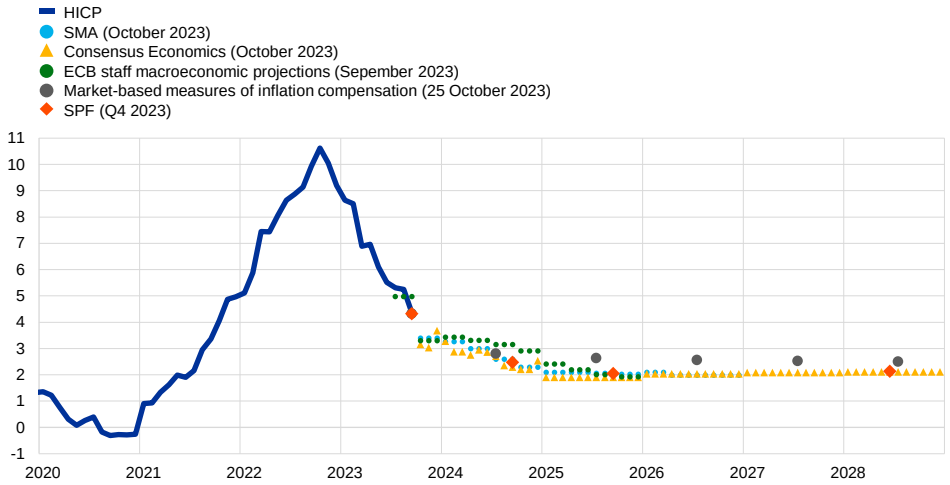
decreased marginally across the term structure over the review period. At the short end, the one-year forward inflation-linked swap (ILS) rate one year ahead stood at around 2.5% in late October, down by 15 basis points from the start of the review period. This is mainly due to decreasing inflation risk premia, as the euro area five-year forward ILS rate five years ahead declined by around 10 basis points to roughly 2.5%, even as comparable measures increased in the United States.

Chart 13

Headline inflation, inflation projections and expectations.

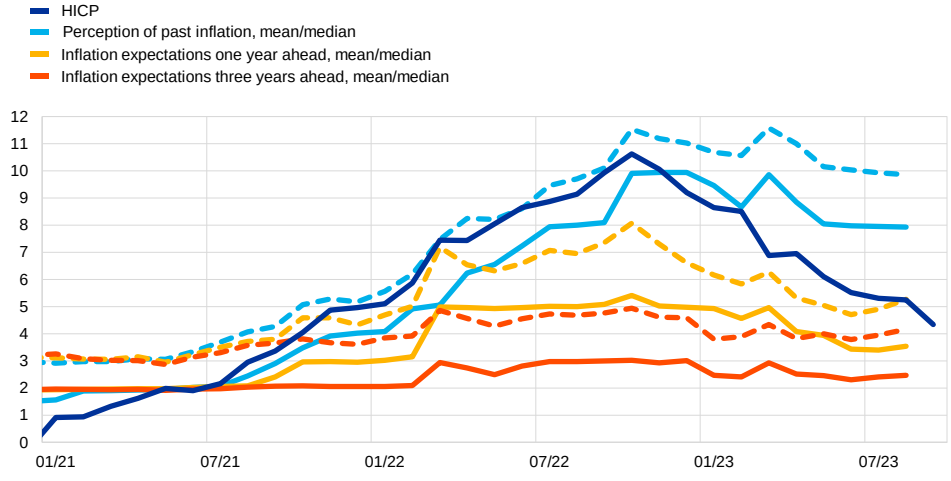
a) Headline inflation, survey-based indicators of inflation expectations, inflation projections and market-based measures of inflation compensation

(annual percentage changes)



b) Headline inflation and ECB Consumer Expectations Survey

(annual percentage changes)



Sources: Eurostat, Refinitiv, Consensus Economics, CES, SPF, SMA, ECB staff macroeconomic projections for the euro area, September 2023, and ECB calculations.
Notes: The market-based measures of inflation compensation series is 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 25 October 2023. The SPF for the fourth quarter of 2023 was conducted between 29 September and 5 October 2023. The cut-off date for the Consensus Economics long-term forecasts was October 2023. For the CES, dashed lines represent the mean and solid lines the median. The cut-off date for data included in the ECB staff macroeconomic projections was 22 August 2023. The latest observations are for September 2023 for HICP and August 2023 for CES.

4 Financial market developments

Over the review period (14 September to 25 October 2023), developments in the euro area financial markets reflected expectations for a stable near-term policy rate path, while longer-term rates increased. Following the Governing Council's monetary policy decision in September to raise the three key ECB interest rates by 25 basis points, the short end of the euro area risk-free curve varied only marginally, reflecting expectations of market participants that policy rates have reached their peak, while euro area longer-term risk-free rates stood noticeably higher than at the time of the September meeting, largely reflecting spillovers from the US market. Sovereign bond yields in the euro area increased in line with risk-free rates, with some widening of spreads recorded for Italian government bond yields. Weighed down by increases in longer-term discount rates, equity prices declined particularly for non-financial corporations, while euro area corporate bond spreads widened somewhat, especially for the high-yield segment. In foreign exchange markets, the euro depreciated in trade-weighted terms. The escalation of tensions in the Middle East since early October, while leading to increased market volatility, had a limited impact overall on the euro area financial markets.

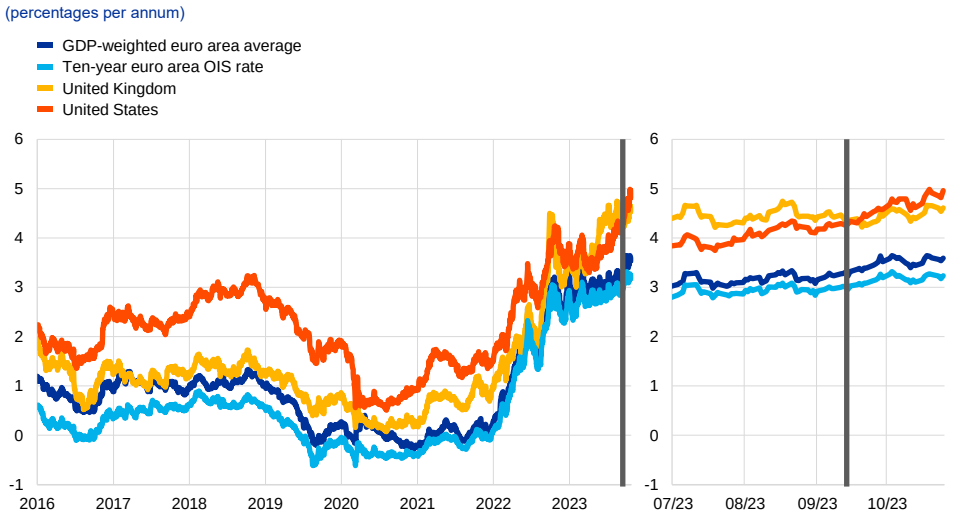
Euro area near-term risk-free rates ended the review period broadly in line with the levels prevailing around the time of the September Governing Council meeting, while longer-term risk-free rates stood noticeably higher. The euro short-term rate (€STR) averaged 387 basis points over the review period. The overnight index swap (OIS) forward curve, which is based on the benchmark €STR, remained broadly stable for short-term maturities after the Governing Council's monetary policy decision in September to raise the three key ECB interest rates by 25 basis points. Over the review period as a whole, near-term forward rates fluctuated within a narrow range. The priced probability of a further rate hike thus continues to be close to zero, reflecting market participants' expectations that policy rates have reached their peak. The curve currently suggests that a first 25 basis point cut is priced in for mid-2024, with an additional two 25 basis point cuts priced in by the end of 2024. While near-term risk-free rates showed little change, euro area longer-term risk-free rates stood higher than at the time of the September meeting, reflecting spillovers from the US market, albeit with some downward pressure following the escalation of tensions in the Middle East in early October. The euro area ten-year nominal risk-free rate, for instance, peaked at 3.3% in early October before slowing down to around 3.2%, ending the review period with an overall increase of around 28 basis points.

Long-term sovereign bond yields moved broadly in line with risk-free rates amid overall stable sovereign spreads (Chart 14). On 25 October the euro area GDP-weighted average ten-year sovereign bond yield stood at around 3.5%, about 25 basis points above its level at the beginning of the review period. Ten-year sovereign bond yields in the euro area moved broadly in line with long-term risk-free rates. Sovereign spread movements were very contained throughout the review period, with the exception of the Italian spread, which widened somewhat, likely reflecting idiosyncratic factors related, inter alia, to domestic fiscal budget news. The increase in euro area long-term rates followed similar dynamics globally; the ten-year

US sovereign bond yield increased by 41 basis points to stand at 4.7%, and the UK sovereign bond yield increased by 20 basis points to 4.5%.

Chart 14

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



Sources: Refinitiv and ECB calculations.
Notes: The vertical grey line denotes the start of the review period on 14 September 2023. The latest observations are for 25 October 2023.

Corporate bond spreads widened somewhat over the review period, with increases most pronounced in the high-yield segment. The spread increase was modest for investment-grade firms, while the widening of spreads was more pronounced for speculative-grade firms, at over 60 basis points, reflecting higher expected default risks and heightened investor risk aversion.

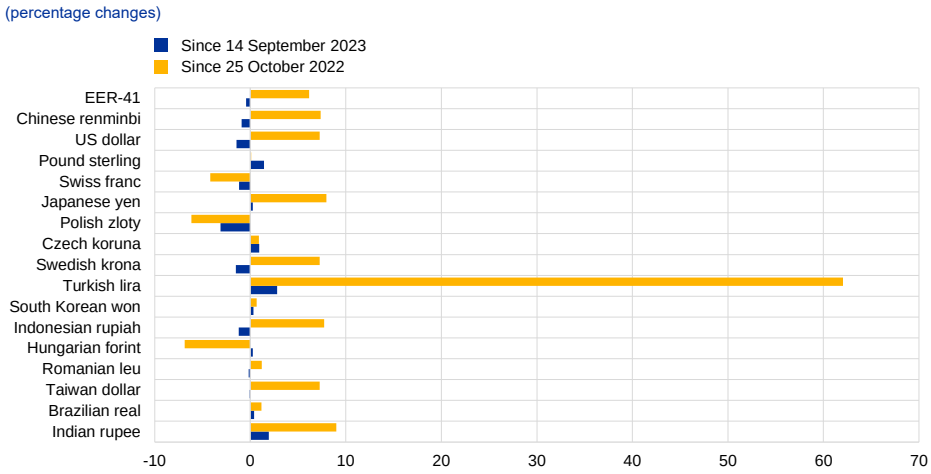
Euro area equity prices declined over the review period, weighed down by increases in longer-term discount rates and the recent intensification of geopolitical risks. Broad stock market indices in both the euro area and the United States fell by more than 6% over the review period amid higher discount rates. Equity price losses in the euro area were relatively broad-based across sectors, with interest rate-sensitive sectors, such as utilities and telecommunications, underperforming, while the financial sector outperformed the broad index. Overall, the equity prices of euro area non-financial corporations decreased by around 6.8%, while euro area banks' equity prices saw a smaller decrease of 3.7% over the review period. In the United States, equity prices declined by around 7% for non-financial corporations and by as much as 9.5% for banks. The escalation of tensions in the Middle East since early October is likely to have weighed on general risk sentiment and stock market volatility, albeit so far with a contained impact overall, as the initial equity price losses broadly retraced thereafter.

In foreign exchange markets, the euro depreciated in trade-weighted terms (Chart 15). 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 – depreciated by 0.4%. In terms of bilateral exchange rate movements against major currencies, the euro depreciated against the US dollar (by 1.4%), as

well as against the Chinese renminbi (by 0.9%) and the Swiss franc (by 1.2%), while it also weakened against the currencies of some non-euro area EU Member States (by 3.1% against the Polish zloty and 1.5% against the Swedish krona). The euro appreciated against the pound sterling (by 1.4%), the Japanese yen (by 0.3%), the Turkish lira (by 2.8%) and the Indian rupee (by 1.9%).

Chart 15

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



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

5 Financing conditions and credit developments

The transmission of the ECB's monetary policy tightening to broader financing conditions has remained strong. Bank funding costs and bank lending rates increased further, reaching their highest levels since 2008 for firms and since mid-2011 for households for house purchase. Over the period from 14 September to 25 October 2023, the significant increase in long-term risk-free rates drove the noticeable rise in the cost to non-financial corporations (NFCs) of both market-based debt and equity financing. The most recent euro area bank lending survey indicates that, in the third quarter of 2023, banks further tightened their credit standards for all loan categories and loan demand from firms and households once again decreased substantially. Weakness in bank lending to firms and households continued in August and September amid higher lending rates, lower loan demand and tighter credit standards. Annual money growth declined further, driven by high opportunity costs, subdued credit growth and the reduction in the Eurosystem balance sheet.

Euro area bank funding costs continued to rise, amid further increases in deposit rates and bank bond yields. The composite cost of debt financing for euro area banks increased moderately in August and reached its highest level in more than ten years, with rising heterogeneity across countries (Chart 16, panel a). In the same month, bond yields decreased slightly, but this was more than offset by further increases in September and October following developments in sovereign bond yields (Chart 16, panel b).[5] Deposit rates continued to rise steadily, with some variation across instruments and sectors. The rates offered to firms remained higher than those to households, though the latter increased more steeply in August. The spread between time and overnight deposit rates continued to widen, reflecting the increase in money market rates that incentivised depositors to shift large volumes of their overnight holdings to time deposits and other instruments with higher remuneration. At the same time, the pass-through from policy to deposit rates has continued to vary significantly across countries and banks, mainly reflecting differences in competition, liquidity needs and regulatory arrangements.

The ongoing phasing-out of targeted longer-term refinancing operations (TLTROs) contributed to a reduction in excess liquidity in an environment of still ample system-wide liquidity. The overall outstanding amount of TLTRO III funds decreased by €1.622 trillion, down to €491 billion, following the settlement on 27 September 2023. This is 77% below the amount outstanding before the October 2022 recalibration of the TLTRO III remuneration (€2.113 trillion).[6] To make up for the lower liquidity provided by the ECB, banks have increased their issuance of debt securities and money market instruments and competed more actively with each other for deposits by increasing the remuneration on these instruments. Savers have moved deposits from banks offering less attractive remuneration to those that have raised their deposit rates at a faster pace. Issuance of bank bonds, which are more expensive for banks than deposits and TLTROs, has increased in volume since

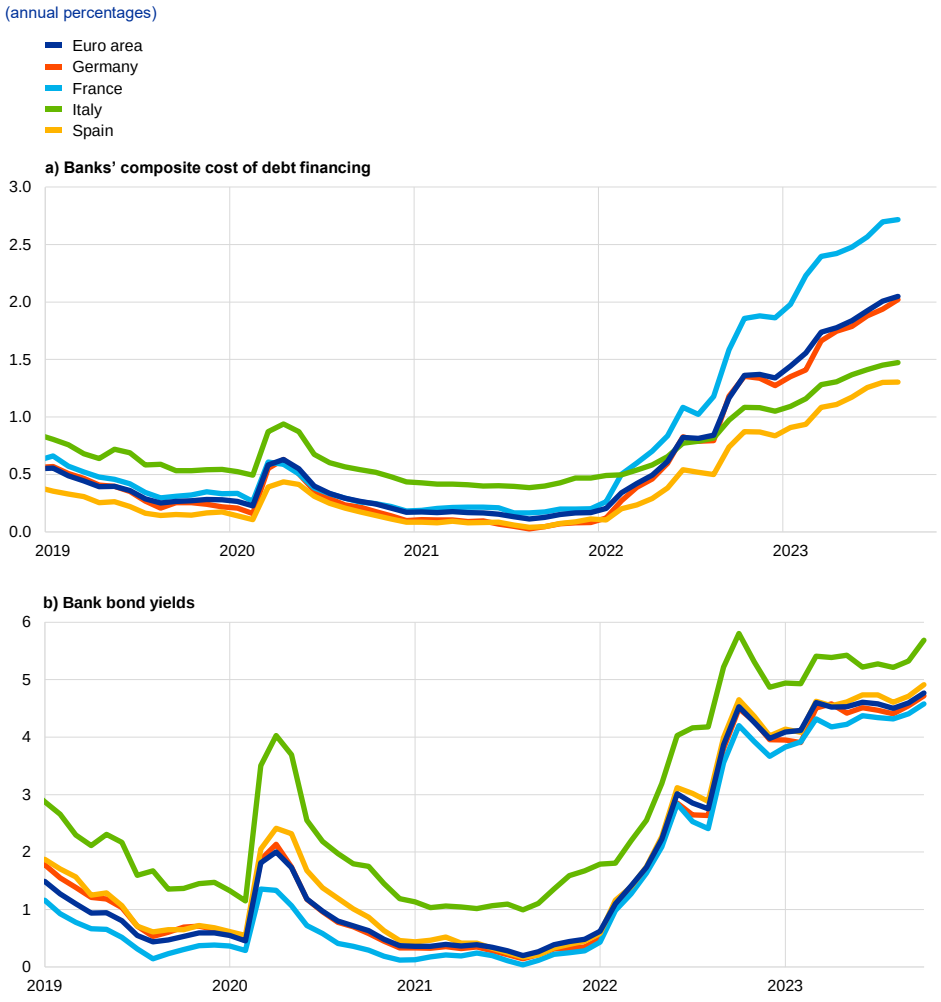
5 If the increase in the cost of interbank borrowing had also been included in the composite bank funding costs calculation, funding costs as a whole would have risen even more steeply since the beginning of the hiking cycle – albeit starting from a lower level.

6 See "ECB recalibrates targeted lending operations to help restore price stability over the medium term", *press release*, ECB, 27 October 2022.

September 2022, amid the winding-down of TLTROs and the decline in overnight deposits.

Chart 16

Composite bank funding costs in selected euro area countries



Sources: ECB, S&P Dow Jones Indices LLC and/or its affiliates, and ECB calculations.
Notes: Composite bank funding costs are a weighted average of the composite cost of deposits and unsecured market-based debt financing. The composite cost of deposits is calculated as an average of new business rates on overnight deposits, deposits with an agreed maturity and deposits redeemable at notice, weighted by their respective outstanding amounts. Bank bond yields are monthly averages for senior-tranche bonds. The latest observations are for August 2023 for banks' composite cost of debt financing and 25 October 2023 for bank bond yields.

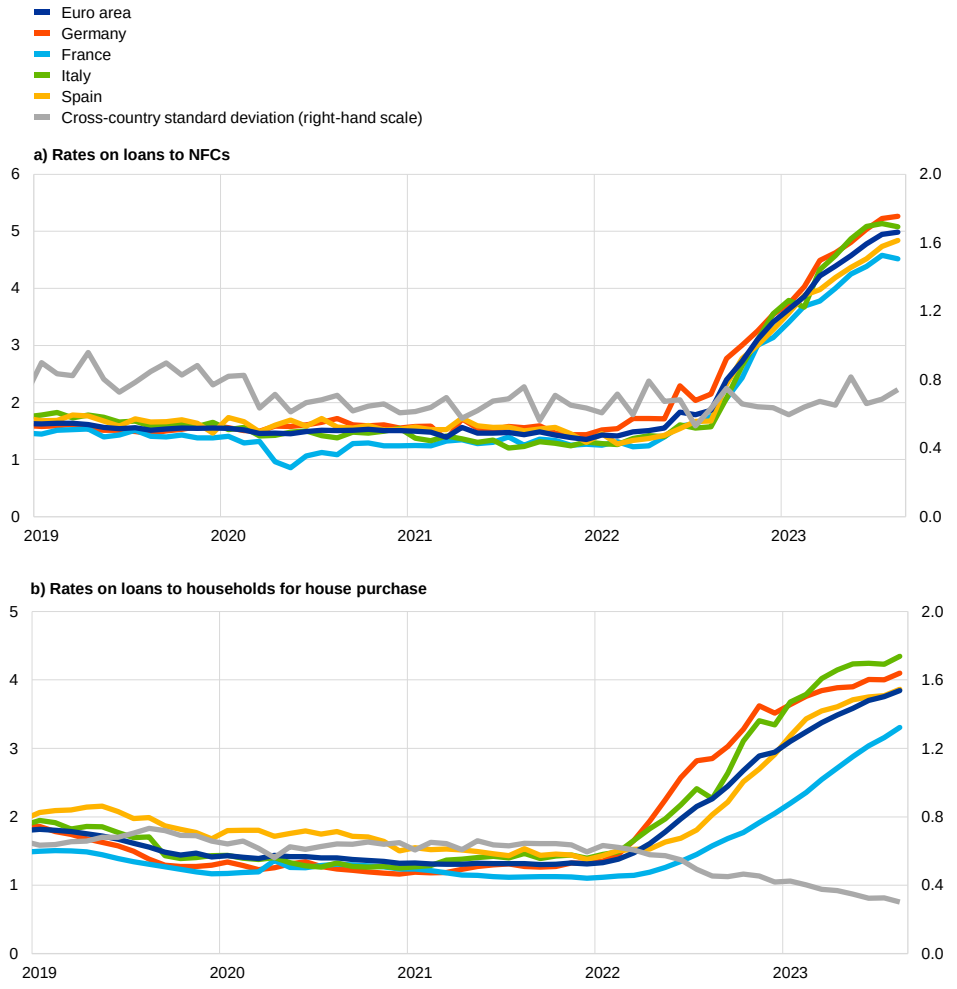
In August, lending rates for firms and households increased further, reflecting higher ECB policy rates and tighter credit standards. ECB policy rates have risen substantially and rapidly, namely by a total of 450 basis points between early July 2022 and September 2023. This has led to lending rates increasing sharply across euro area countries for both firms and households (Chart 17). Bank rates on new loans to NFCs have reached their highest level since the end of 2008, although the increase in August was more contained than in previous months, amid decreasing loan origination and tightening credit standards. Lending rates for firms rose to 4.99%, compared with 4.94% in July 2023 and 1.55% in May 2022 – before the ECB signalled the first rate hike in the current cycle. Loans with an interest rate fixation period of less than one year accounted for the largest increases, while those

with longer fixation periods saw rates decline in August, amid an inversion of the yield curve. Bank rates on new loans to households for consumption and other lending also rose further, standing at 7.25% in August – their highest level since late 2008 – compared with 7.07% in July 2023 and 4.68% in May 2022. Lending rates for new loans to households for house purchase also continued to increase, standing at 3.85% in August – their highest level since mid-2011 – compared with 3.76% in July 2023 and 1.78% in May 2022. The rise in August was widespread across countries and stronger for flexible-rate mortgages than for fixed-rate contracts. The results of the August 2023 ECB Consumer Expectations Survey suggest that consumers expect mortgage rates to stabilise somewhat above the current levels over the next 12 months, possibly reflecting the advanced stage of the tightening cycle. A large net percentage of survey respondents perceived credit standards to be tight and expected housing loans to become harder to obtain over that same period. The cross-country dispersion of lending rates remained at a low level for both firms and households (Chart 17, panels a and b).

Chart 17

Composite bank lending rates for NFCs and households in selected countries

(annual percentages; standard deviation)



Source: ECB.
Notes: Composite bank lending rates for non-financial corporations (NFCs) are calculated by aggregating short and long-term rates using a 24-month moving average of new business volumes. The cross-country standard deviation is calculated using a fixed sample of 12 euro area countries. The latest observations are for August 2023.

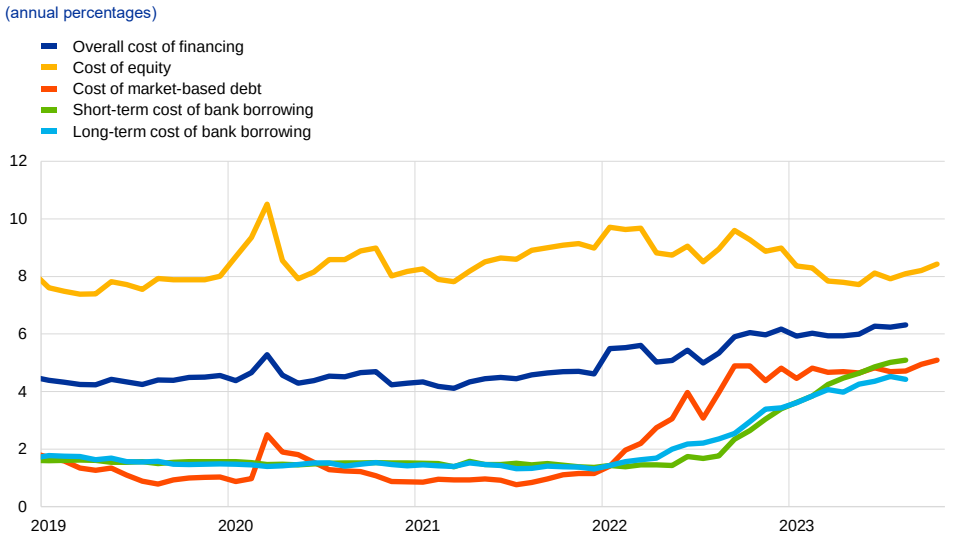
From 14 September to 25 October 2023 the cost to NFCs of both market-based debt and equity financing increased significantly. In August 2023 the overall cost of financing for NFCs – i.e. the composite cost of bank borrowing, market-based debt and equity – rose by 10 basis points compared with the previous month, to stand at 6.3% (Chart 18).[7] This was the result of an increase in the cost of equity and also, to a lesser extent, in both the cost of market-based debt – driven by a widening of bond spreads in both the investment-grade and high-yield segments – and the cost of short-term borrowing from banks. Over the same period the cost of long-term borrowing from banks decreased, thereby partially offsetting the increase in the other components of the cost of financing. As a result, the overall cost of financing in August remained close to the elevated levels that were reached in September 2022 and had previously been seen at the end of 2011. Over the review period the sharp

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

increase in long-term risk-free rates was the main driver behind the noticeable rise in the cost of market-based debt. A further widening of the spreads on bonds issued by non-financial firms, which was most pronounced in the high-yield segment (see Section 4), contributed to the increase in the cost of market-based debt. The significant increase in the cost of equity at the same time was almost entirely attributable to the higher risk-free rate (approximated by the ten-year overnight index swap rate) and, to some extent the slight rise in the equity risk premium.

Chart 18

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



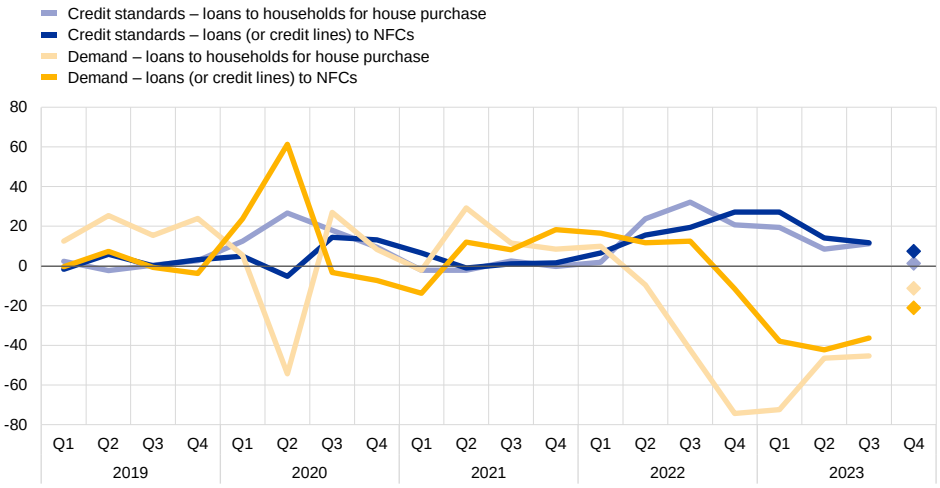
Sources: ECB and ECB estimates, Eurostat, Dealogic, Merrill Lynch, Bloomberg and Thomson Reuters.
Notes: The overall cost of financing for non-financial corporations (NFCs) is based on monthly data and is calculated as a weighted average of the cost of borrowing from banks (monthly average data), market-based debt, and equity (end-of-month data), based on their respective outstanding amounts. The latest observations are for 25 October 2023 for the cost of market-based debt and the cost of equity (daily data), and August 2023 for the overall cost of financing and the cost of borrowing from banks (monthly data).

According to the October 2023 euro area bank lending survey**, credit standards for loans to firms tightened further in the third quarter of 2023 (Chart 19).** The cumulative tightening since the beginning of 2022 has been substantial and is consistent with the ongoing marked weakening in lending dynamics. Risks related to firm-specific situations and the economic outlook remained the main drivers of the tightening of credit standards for firms, reflecting higher credit risks in the context of increasing debt servicing costs for firms and weak economic growth. Banks' lower risk tolerance, higher bank funding costs and worsening bank balance-sheet situations also contributed to the tightening, which was driven mainly by lower liquidity positions. Euro area banks expect credit standards for loans to firms to tighten further in the fourth quarter of 2023, albeit at a moderating pace.

Chart 19

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

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



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

Banks reported a further net tightening of credit standards for loans to households in the third quarter of 2023, which greatly exceeded their previous expectations. For housing loans, the pace of net tightening picked up compared with the second quarter, owing mainly to higher risk perceptions related to the economic outlook and borrower-specific situations, alongside lower risk tolerance on the part of banks. Credit standards for consumer credit and other lending also tightened further, albeit at a slightly moderating pace. For the fourth quarter of 2023, euro area banks expect credit standards for loans to households for house purchase to remain broadly unchanged, while a further net tightening is expected for consumer credit and other loans to households.

Banks reported a substantial decrease in loan demand from firms and households in the third quarter of 2023, which exceeded previous expectations by banks. The drop in demand for loans to firms was driven mainly by higher interest rates and lower fixed investment. For housing loans, the decrease was driven by higher interest rates and, to a lesser extent, by the weakening housing market prospects and low consumer confidence. For the fourth quarter of 2023 banks expect a further, albeit less pronounced, net decrease in demand for loans to firms and housing loans.

Furthermore, banks report that the phasing-out of the ECB's non-standard monetary policy measures has contributed to the weakening lending dynamics owing to its impact on bank funding and liquidity positions. In the third quarter of 2023 banks' access to funding deteriorated in all market segments, especially retail funding. Banks indicated that the reduction of the ECB's monetary policy asset

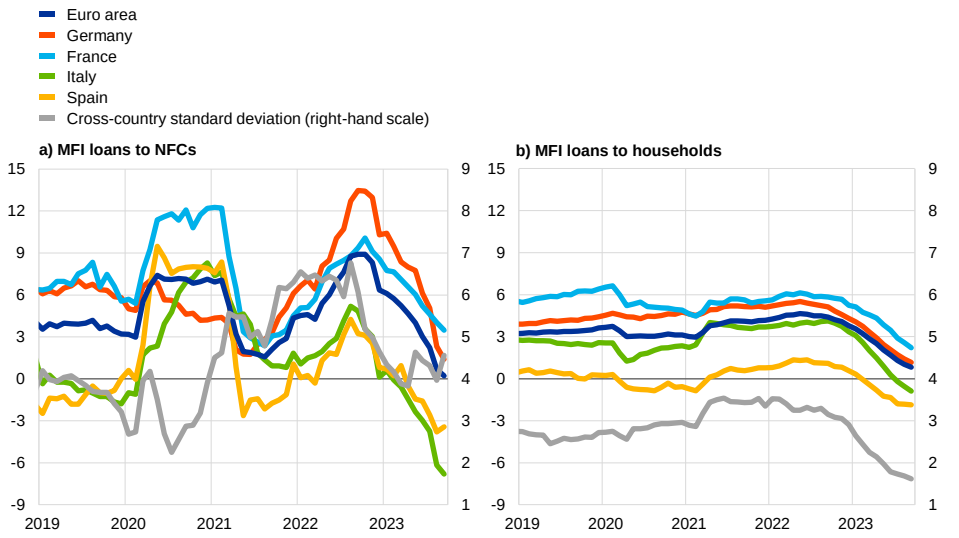
portfolio and the phasing-out of TLTRO III had had a negative impact on their financing and liquidity conditions, resulting in the build-up of further tightening pressure on the supply of credit. This contributed to the tightening of terms and conditions and to downward pressure on loan volumes, both of which are expected to intensify in the coming six months. Meanwhile, banks reported that the impact of the key ECB interest rate decisions on their net interest margins continued to be markedly positive and that the impact of the ECB's monetary policy asset portfolio on profitability was positive overall. However, the positive effects on net interest income are expected to moderate over the next six months, being increasingly offset by capital losses and higher provisioning needs.

Weakness in bank lending to firms and households continued in August and September, amid higher lending rates, lower loan demand and tighter credit standards. The annual growth rate of loans to NFCs declined to 0.2% in September, down from 0.7% in August and 2.2% in July (Chart 20, panel a), amid considerable heterogeneity across countries and maturities. The slowdown reflected the strong decrease in loan demand, in part owing to higher borrowing rates and associated spending plan cuts, as well as the further tightening of credit standards. Monthly flows showed some volatility, with a large net redemption of loans to NFCs in August that was partly reversed in September. On average, monthly flows of loans to NFCs and households have been close to zero since the beginning of 2023. The annual growth rate of loans to households fell to 0.8% in September, down from 1.0% in August and 1.3% in July (Chart 20, panel b), amid negative housing market prospects, a further tightening of banks' credit standards and higher lending rates. The decline was driven mainly by housing loans and loans to sole proprietors (i.e. unincorporated small businesses), while consumer loans remained more resilient, despite tightening credit standards and lower consumer confidence.

Chart 20

MFI loans in selected euro area countries

(annual percentage changes; standard deviation)



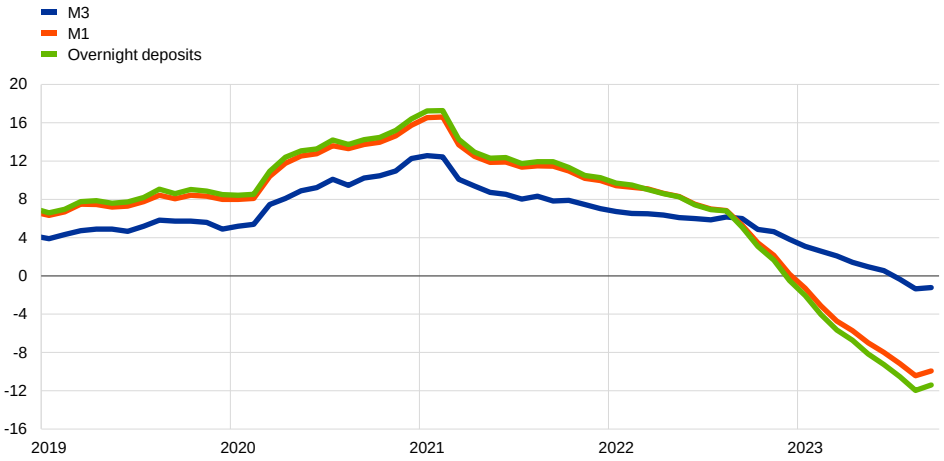
Source: ECB.
Notes: Loans from monetary financial institutions (MFIs) are adjusted for loan sales and securitisation; in the case of non-financial corporations (NFCs), loans are also adjusted for notional cash pooling. The cross-country standard deviation is calculated using a fixed sample of 12 euro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

The reallocation from overnight deposits to time deposits continued in August and September, amid considerable volatility in firm deposits. The annual growth rate for overnight deposits reached new historical lows, standing at -11.4% in September and -12.0% in August, down from -10.5% in July (Chart 21). The rise in interest rates has translated into a widening of the spread between time and overnight deposits given that, in line with previous tightening cycles, interest rates on overnight deposits have adjusted to policy rate changes more slowly than those on time deposits. This has pushed up the opportunity cost of holding liquid assets and is driving the ongoing fund reallocation from overnight to time deposits. Households initially reacted more gradually than firms but have, over the last few months, shifted larger volumes into time deposits and other assets with higher remuneration than into overnight deposits and deposits redeemable at notice, partially in response to government initiatives. The fact that the ECB's policy tightening has been faster than in previous tightening cycles explains the extraordinary volumes being reallocated.

Chart 21

M3, M1 and overnight deposits

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



Source: ECB.
Note: The latest observations are for September 2023.

Annual money growth declined further, driven by high opportunity costs, subdued credit growth and the reduction in the Eurosystem balance sheet. Annual broad money (M3) growth in the euro area reached a new historical low of -1.3% in August and remained close to this level in September, at -1.2%, after standing at -0.4% in July (Chart 21). Monthly flows showed some volatility, with sizeable outflows in July and August virtually offset by a large inflow in September, which was driven by inflows from the rest of the world amid exceptionally high issuance of euro area government bonds. Annual narrow money (M1) growth remained at deeply negative rates, standing at -9.9% in September, after -10.4% in August and -9.2% in July. Overall, several factors continue to weigh on monetary dynamics. First, there has been a virtually zero contribution from loans to the private sector in recent months. Second, the ongoing reduction in the Eurosystem's asset portfolio is draining liquidity from the financial system as government bonds mature, thereby reducing the volume of deposits. Third, TLTRO repayments and the higher opportunity cost to depositors of holding liquid assets are leading banks to issue bonds with longer maturities not included in M3.

Boxes

1 Global production and supply chain risks: insights from a survey of leading companies

Prepared by Maria Grazia Attinasi, Demosthenes Ioannou, Laura Lebastard and Richard Morris

Although geopolitical risks and their effects on global production and trade are much debated, little empirical evidence has emerged of increased fragmentation in global value chains. Disruption caused by the coronavirus (COVID-19) pandemic, the Russian war against Ukraine and increased geopolitical tensions across the board raise questions about whether we are witnessing a trend towards deglobalisation. Most analysis to date does not find evidence of significant changes in aggregate European trade patterns. Nonetheless, the ways that firms are adjusting their trading relations and supply chain management may take time to unfold, given the challenges and costs involved in modifying business models, supply chains and contracts.[1] Survey evidence is therefore helpful to identify new trends. To this end, the European Bank for Reconstruction and Development (EBRD), the Banca d'Italia, the Deutsche Bundesbank and others have recently conducted surveys asking firms about supply chain risks.[2]

This box summarises the findings from a recent ECB survey of leading firms operating in the euro area, focusing on their production-location and input-sourcing decisions, particularly in response to supply chain risks.[3] The firms surveyed are mostly multinationals with significant operations in the EU, while most also have a large share of their activity outside the EU. Table A at the end of this box summarises the sample in terms of extra-EU activity. The questionnaire had three parts, covering questions related to (i) trends in the location of production/operations and their main drivers; (ii) trends in input sourcing, dependency and supply chain risks; and (iii) the implications of these trends for activity, employment and prices.

These large firms expect to become more active in (re)locating operations over the next five years to make their businesses more resilient (Chart A). Companies were asked how the location of their production/operations had changed over the last five years and how they expected it to evolve over the next five years. The replies indicate higher shares of firms expecting to (re)locate more production

1 See the blog posts by Di Sano, M., Gunnella, V. and Lebastard, L., "Deglobalisation: risk or reality?", ECB, 12 July 2023, and Koh, S.-H., MacLeod, C. and Rusticelli, E., "Shifting sands: trade partner patterns since 2018", OECD, 12 July 2023.

2 The EBRD survey focuses on 15 EBRD countries; see "Global supply chains in turbulence", *Transition report 2022-23*, EBRD, 2022. The Banca d'Italia survey focuses on Italian firms; see Bottone, M., Mancini, M. and Padellini, T., "Navigating Fragmentation Risks: China Exposure and Supply Chains Reorganization among Italian Firms", Banca d'Italia, 2023. The Deutsche Bundesbank survey focuses on German firms (data collection completed and analysis forthcoming).

3 The survey was sent to companies with which the ECB maintains regular contact as part of its gathering of information on current business trends. A total of 65 responses were received during July-August 2023. This is a relatively small sample in terms of the overall number of firms, but the aggregate value added of these firms generated globally is equivalent to around 5% of euro area GDP.

both into and out of the EU in the next five years than in the previous five years.[4] But there is still a higher proportion of companies expecting to move production out of the EU than into the EU. A higher share of firms also said that they expected a tendency to (i) relocate more production geographically closer to the final production site or country of sales ("near-shoring"), (ii) diversify operations to a greater extent across countries, and/or (iii) (re)locate more production within/into countries politically closer to the main country of sales ("friend-shoring") in the next five years than in the last five years.[5] The near-shoring of production (or producing "local for local") was already a fairly common trend which is now expected to intensify.[6] The friend-shoring of production, by contrast, had not been so evident in the past but was expected to become much more commonplace – 42% of firms envisage pursuing such a strategy, up from just 11% in the previous five years. Looking at the findings in detail, it is primarily the firms that were already near-shoring or expecting to near-shore that now also anticipate diversifying and friend-shoring some of their operations. Furthermore, these actions are broadly equally associated with firms saying they envisage moving more production into and those saying they envisage moving more production out of the EU.

4 With regard to Brexit, respondents were asked to ignore changes brought about solely by the reclassification of the UK from an EU to a non-EU country if there had been no physical change in the location of production or input sourcing.

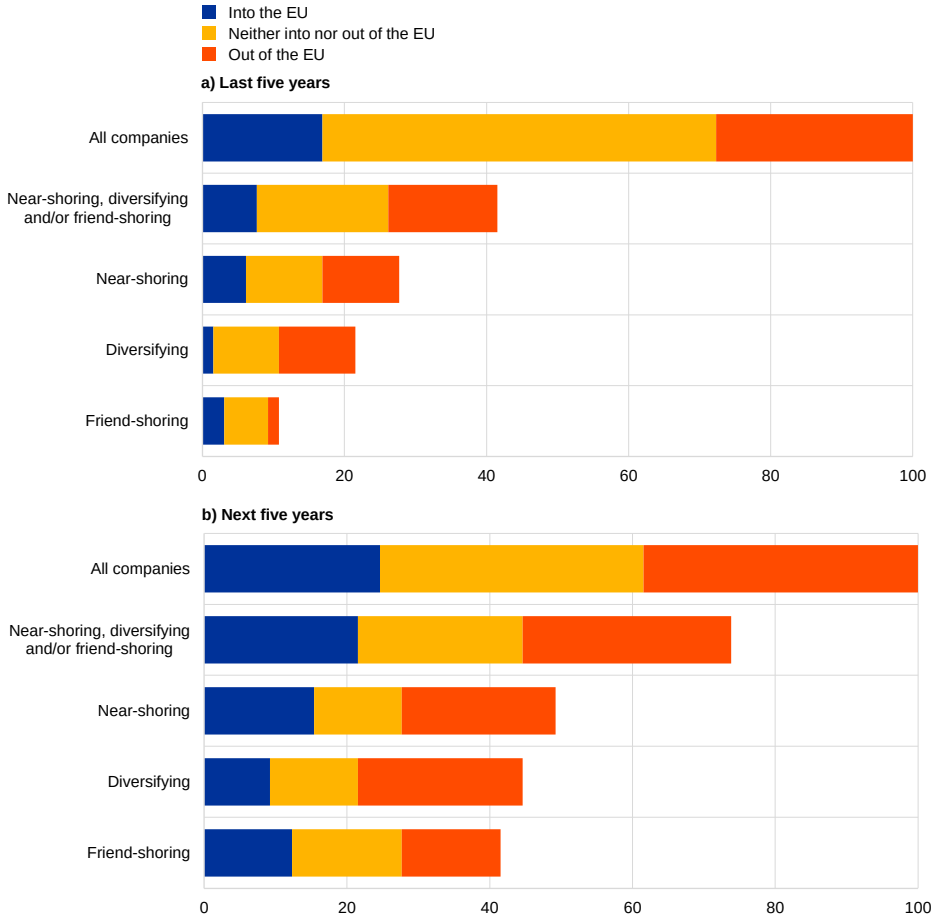
5 42% of firms said they had near-shored, diversified and/or friend-shored production in the last five years, while 74% said they expected to do so in the next five years.

6 28% of firms said they had near-shored production in the last five years, while 49% said they expected to do so in the next five years. It is striking that this first number is identical to the share that, in a similar ECB survey in 2016, replied that it had become more common in the past five years for companies in their sector to produce/operate in the local markets where goods and services are sold. See the box entitled "Global production patterns from a European perspective: insights from a survey of large euro area firms", *Economic Bulletin*, Issue 6, ECB, 2016.

Chart A

Past and future trends in location of production/operations

(percentages of responses)



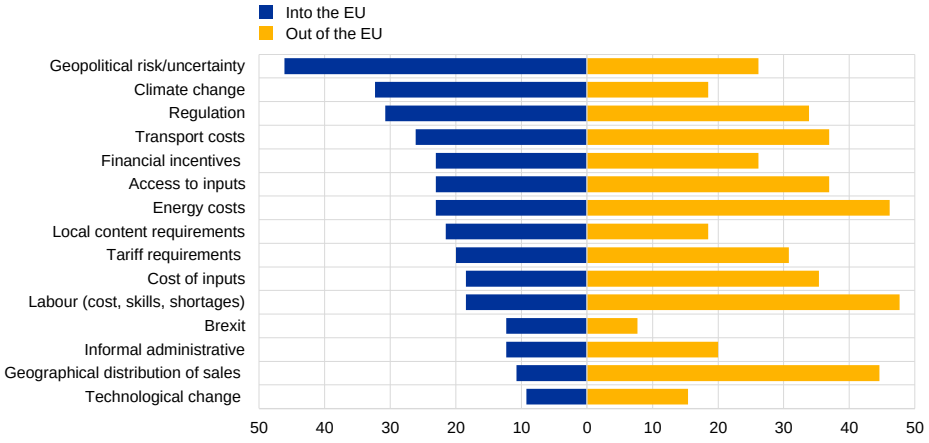
Source: ECB.
Notes: Responses to the question "How has the location of your company's production/operations changed in the last five years and how do you expect it to evolve in the next five years?" Respondents could choose one or more of the following replies: Tendency to (i) move more production/operations into the EU, (ii) move more production/operations out of the EU, (iii) (re)locate more production/operations geographically closer to the final production location or country of sales ("near-shoring"), (iv) diversify production/operations to a greater extent across countries, (v) (re)locate more production/operations to countries politically closer to the main country of sales ("friend-shoring"). The category "Neither into nor out of the EU" captures the responses of firms which did not signal a tendency to move production either into or out of the EU.

Geopolitical risk was the most frequently cited factor behind decisions to (re)locate production into the EU, while demand and cost factors motivate moves out of the EU (Chart B). Firms were given a list of factors and asked which of these were important for them in relation to recent or planned future moves of production/operations into or out of the EU. Almost half cited geopolitical risk/uncertainty as an important factor relating to recent or planned future moves into the EU. This highlights a shift in firms' priorities from simply focusing on cutting costs or improving efficiency to also factoring resilience into their decisions. The next most important factor for moving into the EU was climate change (transition to net zero). Regulation, financial incentives and local content requirements were, broadly speaking, equally likely to be factors relevant for moves into or out of the EU. At the same time, labour (cost/shortages/skills), energy costs and the changing geographical distribution of sales were the main factors for moving production out of the EU.

Chart B

Importance of factors for moving production/operations into or out of the EU

(percentages of responses)



Source: ECB.
Notes: Responses to the question "Which of the following factors do you consider particularly important in relation to recent or planned future moves of production/operations into or out of the EU?" Respondents could choose any of the above replies that applied to their company. Responses are ranked according to the net score ("into the EU" less "out of the EU").

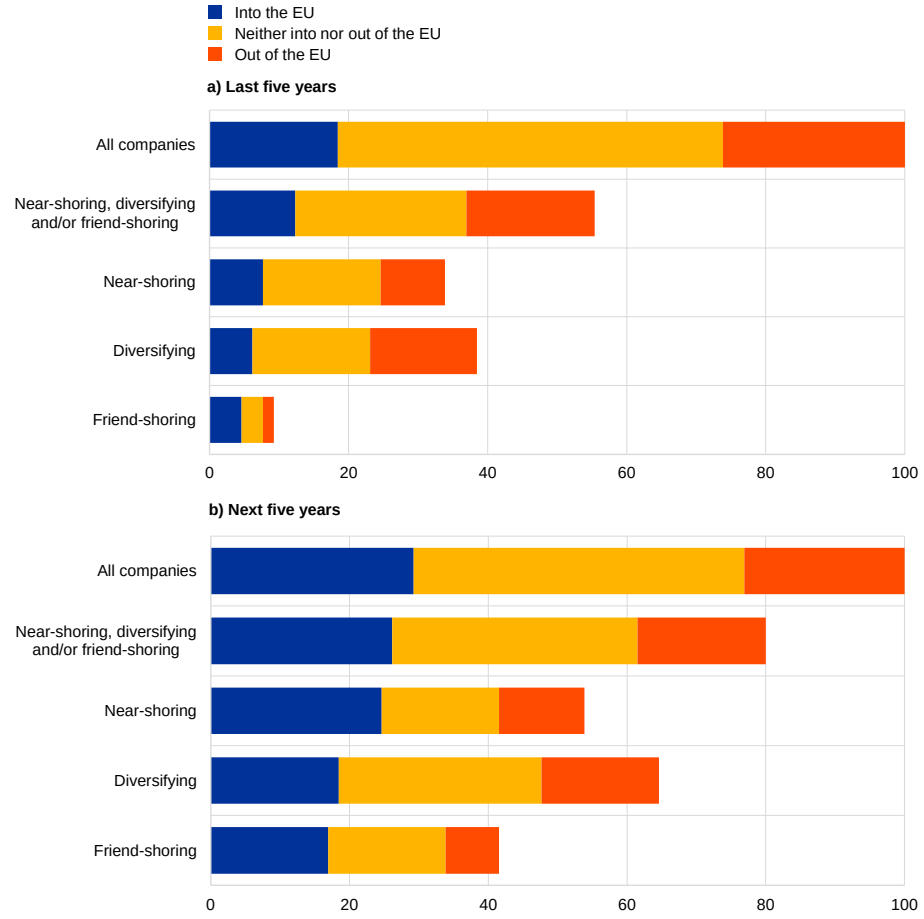
As regards input sourcing, firms expect to increasingly near-shore, diversify and/or friend-shore their supply chains in the next five years, with some increase in the share of sourcing from inside the EU (Chart C). Companies were asked how the geographical distribution of their cross-border sourcing of inputs had changed in the last five years and how they expected it to evolve in the next five years. The replies indicate that a higher share of firms expect to increasingly source inputs from inside the EU in the next five years than in the last five years, while there was no increase in the share of companies saying they expected to source more inputs from outside the EU.[7] A higher share of firms said they expected to increasingly source inputs (i) geographically closer to the country of production ("near-shoring"), (ii) from a more diverse range of suppliers in different countries, and/or (iii) from countries politically closer to the country of sales ("friend-shoring") in the next five years than they had in the last five years (up from 55% to 80%). Diversifying and near-shoring the sourcing of inputs were already fairly common and were expected to become more so in the coming years. By contrast, the friend-shoring of input sourcing had, as was the case with the location of production, not been typical in the past but was expected to become much more so (with 42% of responding firms expecting to pursue such a strategy compared with just 9% having done so in the past). The increase in the share of firms expecting to pursue any or all of these strategies was negligible among firms who also said they envisaged sourcing more inputs from outside the EU, but it was significant for firms who also said they expected to source more inputs from inside the EU. Accordingly, an expected increase in the near-shoring, diversification and/or friend-shoring of input sourcing appears to be tilting these firms, on average, towards greater use of EU suppliers.

7 This result is driven mainly by companies that are truly global (with more than 50% of their sales, production and input sourcing presently outside the EU) and by companies that import (either intermediate or final) products into the EU.

Chart C

Past and future trends in input sourcing

(percentages of responses)



Source: ECB.
Notes: Responses to the question "How has the geographical distribution of your company's cross-border sourcing of inputs changed in the last five years and how do you expect it to evolve in the next five years?" Respondents could choose one or more of the following replies: Tendency to increasingly source inputs (i) from inside the EU, (ii) from outside the EU, (iii) geographically closer to the country of production ("near-shoring"), (iv) from a more diverse range of suppliers in different countries, and (v) from countries politically closer to the country of sales ("friend-shoring"). The category "Neither into nor out of the EU" captures the responses of firms which did not signal a tendency to source a higher share of inputs from within or outside the EU.

China was the dominant source of critical inputs and also the country most frequently mentioned in terms of perceived risks, either to the company's own supply chain or that of its sector (Chart D). In total, 55% of respondents said that their company sourced critical inputs (fully or heavily) from a specific country or countries.[8] Of these, almost all (52% of all respondents) said that the supply of critical inputs from at least one of those countries was subject to elevated risk.[9] In turn, a large majority of these identified China as that country (or one of those

8 In the questionnaire, it was clarified that "By 'critical' inputs we mean goods without which a significant part of your business activity could not be completed or would suffer significant delays or the quality of the good or service produced by your firm would significantly decrease." Respondents were asked to indicate up to five countries, but most named just one or two.

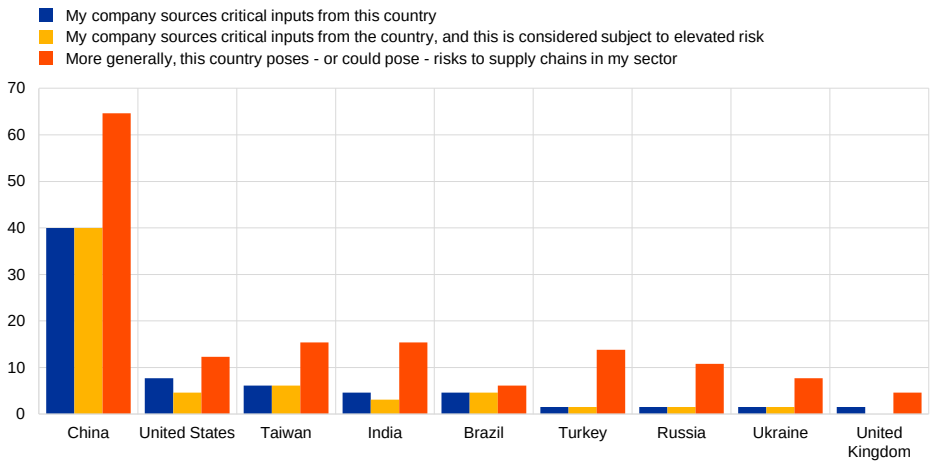
9 In the questionnaire, it was stated that "Such risks could include the risk of sudden escalation of economic or political tensions between countries (e.g. China and the US) resulting in bans on the import or export of specific products, a tightening of local content requirements (e.g. in the context of the EU/UK trade agreement), sourcing from countries at (risk of) conflict, risks stemming from climate change…etc."

countries), with all of them considering this an elevated risk. Coming a distant second, only 8% of respondents said that their company sourced critical inputs from the United States, and only 5% flagged this as a particular risk. As to those countries which posed – or could pose – a risk to supply chains in their sector more generally, two-thirds of all respondents cited China, while the United States, Taiwan, India, Turkey and Russia were also each cited by more than 10% of respondents.

Chart D

Supply chain dependency and risks, by country

(percentages of responses)



Source: ECB.
Notes: Responses to the questions (i) "Does your company presently source critical inputs which depend (fully or heavily) on supply from a specific country; and if so, which one(s)?", (ii) "Do you consider the supply of critical inputs from this country or any of these countries to be subject to elevated risk?", and (iii) "More generally, which countries (if any) pose – or could pose – risks to supply chains in your sector?" Countries mentioned by three or more respondents are included in the chart. Many more countries were mentioned by just one or two respondents.

Most firms said that it would be very hard for them to substitute critical inputs originating from countries deemed to be an elevated risk. Among the respondents who said that their company sourced critical inputs (heavily or fully) from a specific country they considered an elevated risk, almost two-thirds said that if those critical inputs were suddenly no longer available, replacing them with inputs originating from elsewhere would be "very hard", while nearly a third said it would be "hard" (Chart E, panel a). In this context, two-thirds said that their company mainly sourced these critical inputs directly from firms located in the country concerned, and one-sixth said that they mainly sourced them directly from their own facilities in the country concerned, with the remainder sourcing them mainly via distributors.

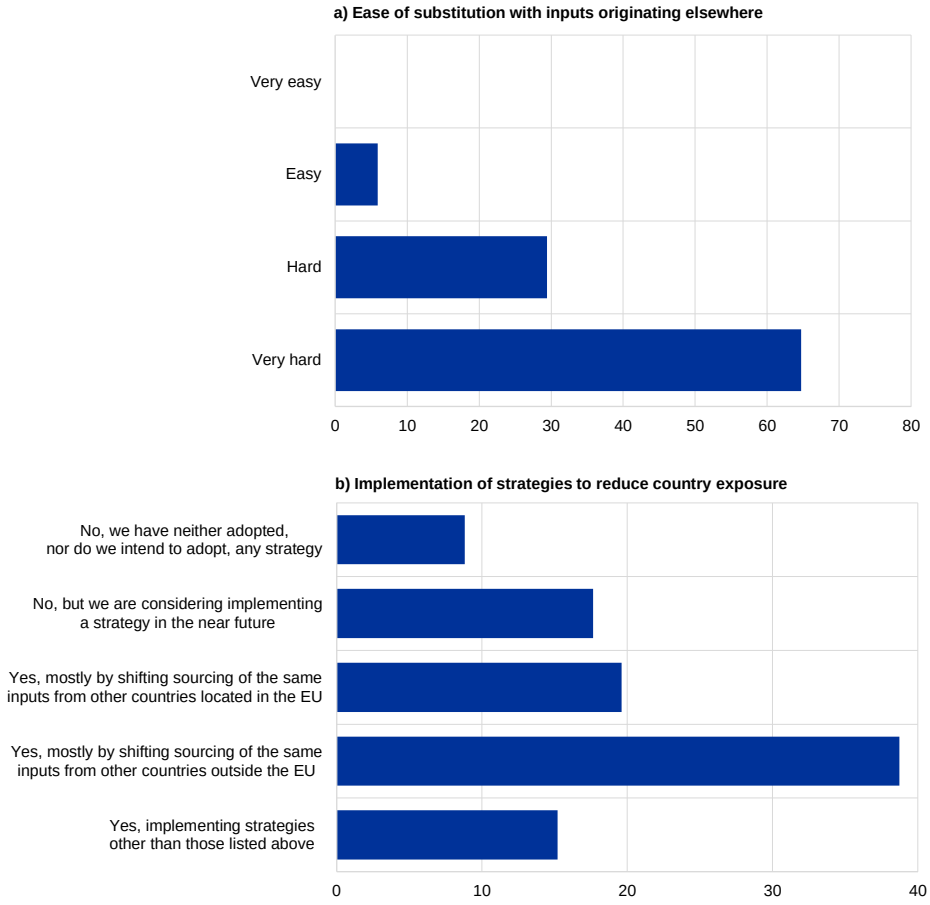
Most companies were, however, implementing strategies to reduce their exposure to the country or countries concerned (Chart E, panel b). Among the same respondents who said that their company sourced critical inputs (heavily or fully) from a specific country they considered an elevated risk, only three said that they had neither adopted, nor intended to adopt, a strategy to reduce their exposure. Almost 40% said that they were pursuing a strategy to mostly source the same inputs from other countries outside the EU, 20% that they were pursuing a strategy to mostly source the same inputs from other countries inside the EU, while 15% said that they were pursuing other strategies, such as holding more inventory, diversifying their input sources, monitoring risk more closely, changing the composition of their

product(s) or closing down some production capacity. Just under 20% had not yet adopted a strategy but were considering doing so in the near future.

Chart E

Ease of substitution of inputs and strategies to reduce country exposure

(percentages of responses)



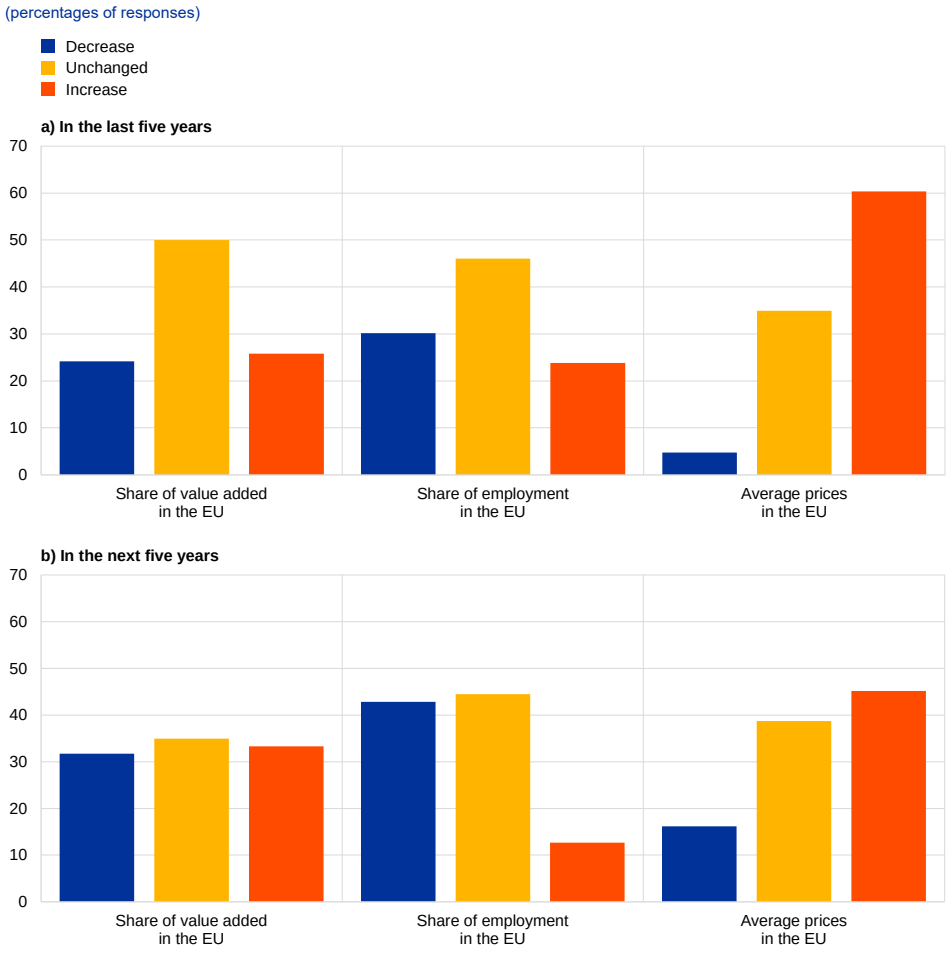
Source: ECB.
Notes: Responses to the questions (i) "In case these inputs were suddenly no longer available, how easy would it be to substitute them with inputs originating elsewhere?" and (ii) "Is your firm implementing or is it planning to implement a strategy to reduce exposure to the country – or countries – concerned?" The percentages of responses refer only to those who said that their company presently sourced critical inputs which depended (fully or heavily) on supply from a specific country and that they considered to be subject to elevated risk. A small number of respondents gave more than one response to question (ii) and these responses have been weighted accordingly.

On balance, the impact of changes in production location and cross-border sourcing of inputs on EU activity was perceived to be limited, while the impact on employment located in the EU was considered significant. Companies were asked to assess the impact of changes in production location and cross-border input sourcing on their company's activity, employment and selling prices in the EU in the last five years (Chart F, panel a) and what they expected in the next five years (Chart F, panel b). In terms of activity, a large share of respondents said that these changes were likely to influence the share of their company's value added generated in the EU in the next five years compared with the last five years. That said, those anticipating higher and lower shares broadly balanced out. Respondents did, however, see the impact of these changes as increasingly negative for the share of their company's employment located in the EU. This would be consistent with

companies citing the cost of – and access to – labour and skills as the most important factor in their recent or planned future decisions to move production or operations out of the EU.

Chart F

Overall impact of production location and input sourcing decisions on activity, employment and prices



Source: ECB.
Note: Responses to the question "What has been/will be the impact of changes in production location and/or cross-border input sourcing on your company's activity, employment and selling prices in the EU?"

Changes in production location and cross-border sourcing of inputs led to higher prices, but this impact was expected to ease slightly in the next five years. 60% of contacts said that changes in production location and/or cross-border input sourcing had pushed up their average prices in the last five years, compared with just 5% who said that their prices had fallen as a result. Looking ahead to the next five years, the share of firms expecting upward pressure on prices was still high (45%) but lower than when looking back at the last five years. One interpretation would be that moves to make business operations and supply chains more resilient are costly per se, but the impact on costs, and therefore prices, can be mitigated if these changes are carefully planned. In this regard, past moves may to a greater extent have been unplanned and sudden (e.g. in response to the pandemic or

Russia's invasion of Ukraine) and therefore more costly than intended future moves to respond to production and supply chain risks.

Table A

Share of company sales, production and input sourcing outside the EU across the survey sample

	Less than 20%	20-50%	More than 50%
Sales	16	27	20
Production	20	24	18
Input sourcing	18	22	22

Source: ECB.
Note: The numbers in the table refer to the number of responding companies in each category.

2 The inversion of the yield curve and its information content in the euro area and the United States

Prepared by Luís Fonseca, Peter McQuade, Ine Van Robays and Andreea Liliana Vladu

Following the rapid rise in short-term interest rates since last year, the risk-free yield curves in the euro area and the United States show the steepest inversion in decades. The spread between the 10-year and the 2-year Overnight Index Swap (OIS) rates in the euro area stood at -0.4 percentage points in September, after rebounding in recent months from -0.8 percentage points, which was its lowest level since 1992 (Chart A, panel a).[1,2] In the United States the slope stood at -0.6 percentage points for the Treasury curve in September, a level not observed since the early 1980s (Chart A, panel b). The inversion of the slope in both jurisdictions has been driven mainly by a stronger increase in short-term rates relative to longer-term rates. Historically, an inverted yield curve has typically preceded recessions, as illustrated in Chart A. The predictive power of the slope of the yield curve for economic downturns over near-term horizons is well documented, although common econometric models remain silent on the depth and length of a potential recession.[3]

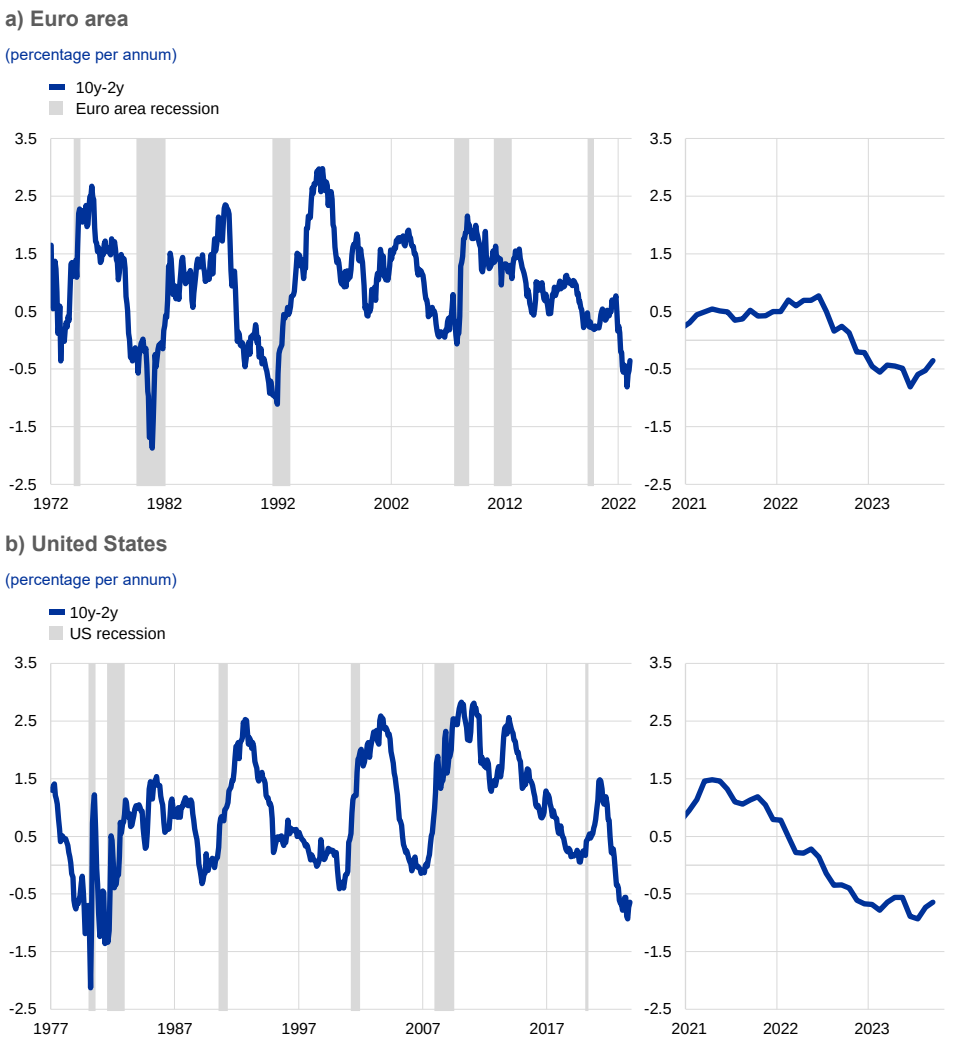
1 The literature has considered various maturities for the slope, but we find little statistical difference in predictive performance for different choices for the euro area.

2 Euro area OIS spot rates before 1999 are backcasted using Bund yields. Results are robust to using Bund yields for the entire sample, as the predictive power in the euro area is found to be driven by core countries; see Sabes, D. and Sahuc, J. G., "Do yield curve inversions predict recessions in the euro area?", *Finance Research Letters*, Vol. 52, 2023.

3 The predictive power of the slope of the yield curve is documented for the euro area and the United States, as well as for other advanced and emerging market economies. One of the earlier leading papers in the literature is Estrella, A. and Hardouvelis, G. A., "The term structure as a predictor of real economic activity", *The Journal of Finance*, Vol. 46, No 2, 1991, pp. 555-576. For more recent surveys, see Haubrich, J. G., "Does the Yield Curve Predict Output?", *Annual Review of Financial Economics*, Vol. 13, 2021, pp. 341-362, and De Backer, B., Deroose, M. and Van Nieuwenhuyze, C., "Is a recession imminent? The signal of the yield curve", *NBB Economic Review*, 2019. Sabes, D and Sahuc, J. G., op. cit., finds that the lead time is six months to one and a half years for the euro area, Germany, France, Italy and Spain.

Chart A

Slope of the risk-free yield curves



Sources: Bloomberg, Haver Analytics, FRED and ECB staff calculations.
Notes: Panel a): pre-1999 OIS rates are extrapolated using Bund yields. Shaded areas indicate periods of euro area recession as defined by the CEPR-EABCN Euro Area Business Cycle Dating Committee; panel b): the slope is computed using monthly averages of daily data, using 2-year and 10-year Treasury note yields at constant maturity. Shaded areas indicate periods of US recession as defined by the NBER Business Cycle Dating Committee. The latest observations for both panels are for September 2023.

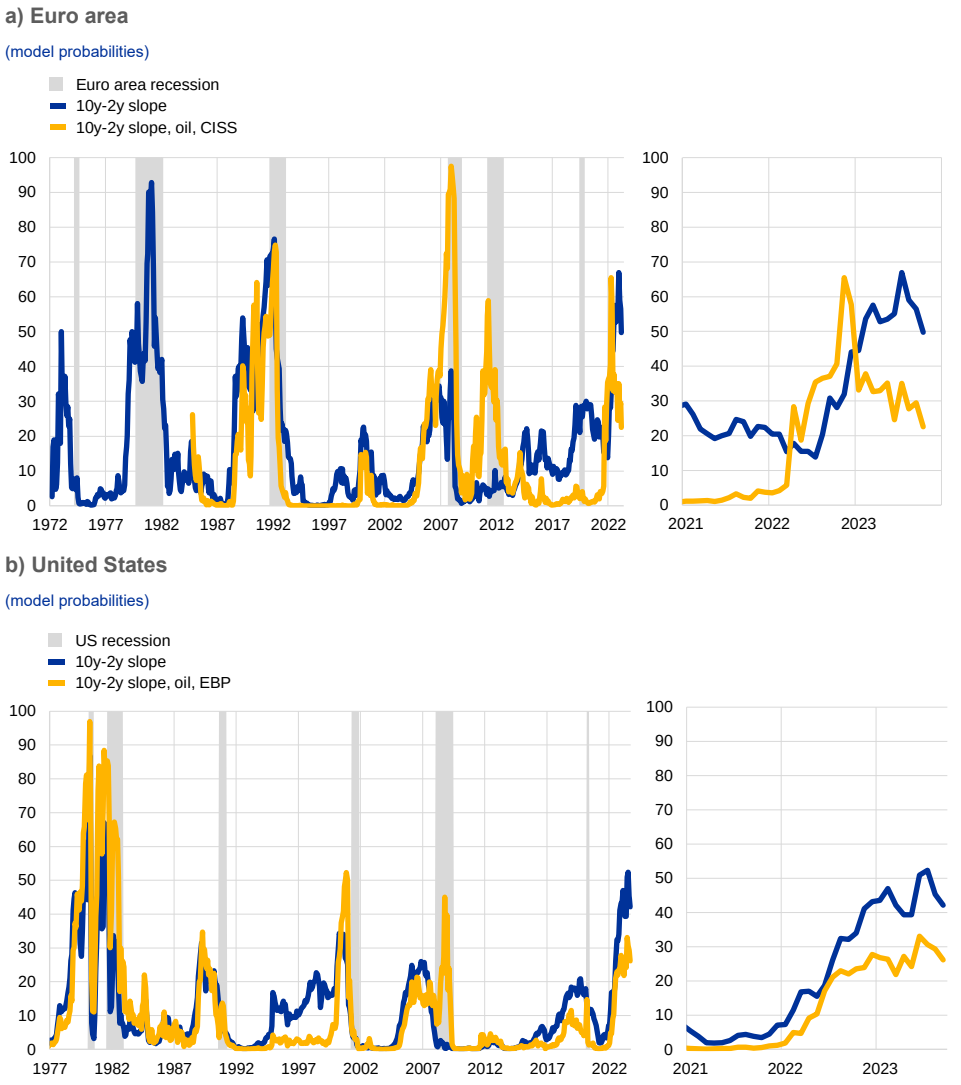
Recession probability models based solely on the yield curve slope currently point to elevated odds of recession in the euro area and the United States in one year's time.[4] Although its yield curve is less steeply inverted than that of the United States, euro area GDP growth is expected to be subdued in the near term, whereas the US economy remains resilient. Probit models quantify the link between the slope of the yield curve and the likelihood of a near-term recession. A simple model using only information from the slope currently estimates a close to 50% probability of a recession in the euro area in one year (Chart B, panel a, blue line),

[4] This analysis focuses on the 12-month horizon, which provides an indicative benchmark. However, estimated probabilities vary depending on the horizon.

while the same model for the United States estimates a recession probability of 40%, which is somewhat lower but still the highest in decades (Chart B, panel b).[5]

Chart B

Probability of recession 12-months ahead based on financial indicators and oil prices



Sources: Bloomberg, Haver Analytics, Refinitiv and ECB calculations.
Notes: Panel a): results of two probit models estimating euro area recession probabilities 12-months ahead. The first model uses only the slope of the yield curve (10y-2y), while the second model includes (linearly-detrended log) oil prices and the level of the euro area Composite Indicator of Systemic Stress (CISS). Bund data extend the sample to before 1999. Shaded areas indicate periods of euro area recession as defined by the CEPR-EABCN Euro Area Business Cycle Dating Committee; panel b): results of two probit models estimating recession probabilities in the United States 12-months ahead. The first model uses only the slope of the yield curve (10y-2y), while the second model includes (linearly-detrended log) oil prices and the excess bond premium (EBP). Shaded areas indicate periods of US recession as defined by the NBER Business Cycle Dating Committee. The latest observations for both panels are for September 2023.

[5] For benchmarking, the probability of a euro area (US) recession in one year with a zero slope is 36% (22%). However, comparing estimated recession probabilities across the two jurisdictions is not straightforward. A negative slope sends a much stronger signal for recession than a low but positive slope because of the non-linear nature of the probit model. The performance of the euro area nominal slope in predicting recessions is robust to controlling for the level of interest rates (i.e. including the 3-month interest rate), which is in line with results for the United States (see Bauer, M. D. and Mertens, T. M., "Information in the yield curve about future recessions", *FRBSF Economic Letter*, Vol. 20, 2018). We use euro area recessions as defined by the CEPR-EABCN Euro Area Business Cycle Dating Committee, and US recessions as defined by the NBER Business Cycle Dating Committee.

Incorporating additional financial indicators and oil prices into the model suggests lower recession risks amid improved forecasting performance. When the recession probability models are extended to include oil prices as well as the Composite Indicator of Systemic Stress (CISS) for the euro area and the excess bond premium for the United States, their ability to predict recessions improves compared with the simple model.[6] As shown in Chart B, these extended models suggest a lower but still elevated probability of a recession in 12 months, at around 25% in both the euro area and the United States. For the euro area, the lower value reflects the reversal of the sharp increase in the CISS in late 2022 and somewhat lower oil prices relative to the peak levels reached in early 2022, which should dampen growth by less than last year.[7]

Another caveat at the present juncture is the fact that the negative nominal slope is currently driven by the real yield curve, which might weaken the signal of the simple model. Understanding why the yield curve slope is informative with regard to recession risks is challenging, as the slope contains information about monetary policy expectations, risks and views on the macroeconomic outlook, all of which are closely interlinked.[8] However, empirical analysis shows that when decomposing the nominal yield curve slope into market-based inflation compensation and real rates, the slope of the inflation compensation curve is the better predictor.[9] This implies that, in most cases, financial markets priced in an inverted inflation curve, which seems to have anticipated a cooling of the economy. Currently, the negative slope in both the euro area and the United States is mostly

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6 When assessed using the same sample period, goodness-of-fit statistics are significantly improved in the extended model, as the model interprets higher oil prices and higher systemic stress as strong predictors of a recession. Chart B, panel a) illustrates that the extended model better anticipates the euro area recessions of 2008 and 2011, which were preceded by high values for both variables. For further discussion of potential improvements to yield curve-based recession probability models, see Ferrari Minesso, M., Lebastard, L. and Le Mezo, H., "Text-Based Recession Probabilities", *IMF Economic Review*, Vol. 71, No 2, 2023, pp. 415-438.

7 We have also estimated the extended model on a shorter sample that ends before the COVID-19 pandemic, since the economic meltdown following March 2020 was unpredictable from the perspective of the yield curve. Specifically, the extended model for the euro area indicates a probability closer to 15% (compared to 25% in the full sample), while the results are almost unchanged for the United States.

8 The risk-free curve captures information on expectations for current and future monetary policy and how it relates to the macroeconomic outlook and the compensation required by market participants for bearing interest rate risk stemming from the uncertainty surrounding both future inflation and real rates, i.e., nominal term premia. A negative slope may therefore reflect investors' expectations that the macroeconomic outlook will worsen, inflation will decline and yields will be lower as growth slows and monetary policy loosens in response. It could also reflect expectations of overtightening and rapid course reversion. A number of other mechanisms could also be at play, such as the expected profitability channel lowering the supply of credit and constraining growth as a negative slope hampers bank profitability by reducing the spread between rates on short-term deposits and long-term loans (see Minoiu, C., Schneider, A. and Wei, M., "Why Does the Yield Curve Predict GDP Growth? The Role of Banks", *Finance and Economics Discussion Series*, Vol. 49, 2023).

9 For the documented results for the United States, see Ajello, A., Benzoni, L., Schwinn, M., Timmer, Y. and Vazquez-Grande, F., "Monetary policy, inflation outlook, and recession probabilities", *FEDS Notes*, 2022, and Neely, C., "What is the probability of a recession? The message from yield spreads", *On The Economy Blog*, Federal Reserve Bank of St. Louis, 7 September 2023. We obtain our results with decompositions since 1992 for the euro area and since 2004 for the United States. The results for the euro area are based on euro area inflation-linked swap (ILS) rates since 2005 and backcasted market-based real rates and inflation compensation measures between 1992 and 2005. For more details, see the box entitled "Backcasting real interest rates and inflation expectations – combining market-based measures with historical data for related variables", *Economic Bulletin*, Issue 2, ECB 2023. These results, while suggestive, therefore warrant additional caution, as they are based on smaller samples, have few periods of high inflation and, in the case of the euro area, rely on less precise measures of inflation compensation in the early part of the sample.

driven by an inversion of the real curve rather than by inflation compensation.[10] Given that the model only processes the overall slope, thus representing an average effect, it can be expected to potentially overstate the current risk of a recession.

The effect of the central bank asset portfolios on yields presents a final qualifier for interpreting the message from the inverted yield curve. Asset holdings tend to reduce the slope of the yield curve, which may lead to distorted signals regarding recession risks.[11] Econometric models can be used to correct for the compression in the slope of the term premia induced by the ECB's asset purchase programme and the pandemic emergency purchase programme.[12] The adjusted slope of the euro area risk-free curve would have remained positive for longer but would have still reached slightly negative values early in the summer. This implies that the latest readings of the non-adjusted yield curve slope might further overestimate recession probabilities.[13] The distortion of the recession risk signal derived from the slope of the yield curve will generally become smaller over time as the balance sheet policies of the ECB and the Federal Reserve System are unwound. However, uncertainty about the size of this effect is high, particularly as quantitative tightening makes estimating the distortion even more challenging than in the phase of balance sheet expansion.

10 Note that the slope referred to here is the 10-year minus 2-year, and that inflation compensation has already priced in a significant decline of inflation towards target levels over the next two years.

11 For more details, see the box entitled "US yield curve inversion and financial market signals of recession", *Economic Bulletin*, Issue 1, 2020, and Bauer, M. D. and Mertens, T. M., op. cit.

12 See Eser, F., Lemke, W., Nyholm, K., Radde, S. and Vladu, A. L., "Tracing the impact of the ECB's asset purchase programme on the yield curve", *International Journal of Central Banking*, Vol. 19, No 3, 2023.

13 Using the estimated coefficients for the probit models with the slope of the yield curve adjusted for asset purchases would decrease the estimated probability of a recession in the euro area in 12 months to around 35% (compared with 50%) for the baseline model and 15% (compared with 25%) for the extended model.

3 Spillovers to the euro area from recent negative inflation in China

Prepared by Martina di Sano, Giacomo Pongetti, Tobias Schuler and Seng Guan Toh

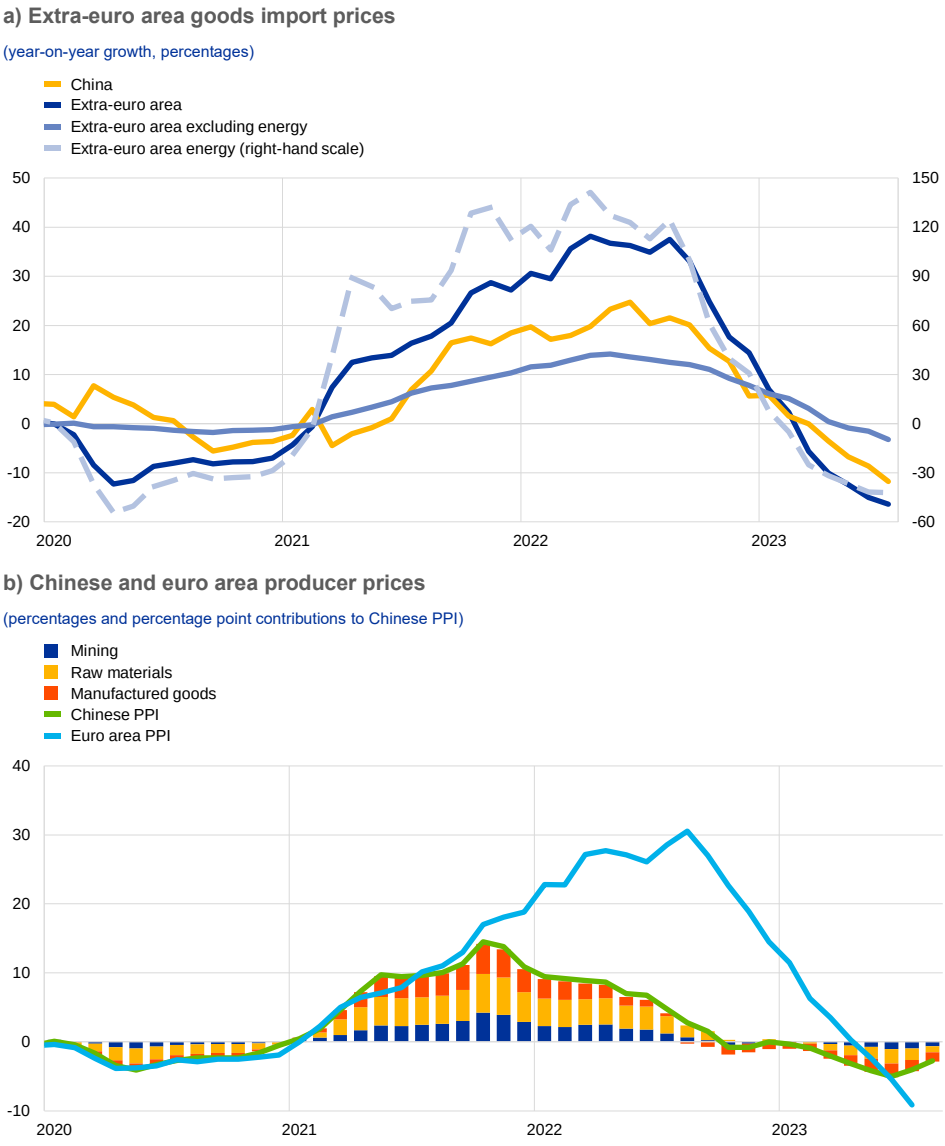
This box discusses potential spillovers from recent negative inflation in China to euro area import prices. Economic developments in China are transmitted to euro area import prices directly via China's export prices and indirectly via China's important role in global demand for commodities and as a key supplier of intermediate and capital goods to the rest of the world. This box finds a tangible impact on euro area import prices, but a more limited impact on the broader euro area inflation environment.[1]

Following a surge in the past two years, euro area import prices have declined in recent months. In June 2023 annual extra-euro area goods import prices declined by 14%, largely owing to the rapid fall in euro area energy import prices. Excluding energy, extra-euro area import prices fell by around 2% (Chart A, panel a). We assess to what extent the stronger decline of import prices from China has reduced inflationary pressures in the euro area, given China's weight in the euro area import basket (21%).

[1] For a forward-looking analysis of the impact of a further China downside risk scenario on the euro area, see Box 3 of "ECB staff macroeconomic projections for the euro area", published on the ECB's website on 14 September 2023.

Chart A

Extra-euro area goods import prices and Chinese producer prices



Sources: Eurostat (for extra-euro area import prices), China National Bureau of Statistics and ECB staff calculations.
Note: The latest observations are for August 2023 for Chinese PPI and July 2023 for all other series.

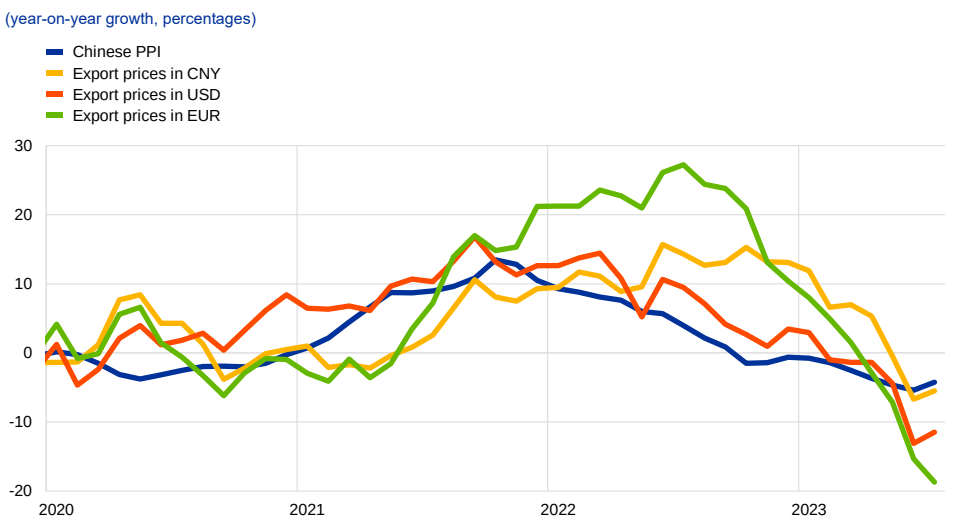
Chinese producer price inflation has been on a downward trend since peaking in the last quarter of 2021, mainly reflecting a normalisation of domestic supply and demand factors during China's recovery from the pandemic. The Chinese producer price index (PPI) rose strongly in 2021 owing to a strong rebound in activity after the 2020 pandemic shock, which pushed the price of coal (the main domestic energy source) sharply upwards as it coincided with government curbs on coal production. Subsequently, various developments suppressed China's domestic PPI trends, while China's export prices in 2021 and 2022 were still buoyed by global supply chain bottlenecks. China's PPI inflation, after peaking in late 2021, declined steadily on the back of lower prices for mining, raw materials and manufactured goods (Chart A, panel b). By July 2023 China's PPI had fallen for ten consecutive months. On the supply side, base effects stemming from China's policy reversal on

coal mining (from curbs to a sudden expansion) contributed significantly to the decrease in the PPI. On the demand side, a deep slump in the residential real estate sector, which further depressed material prices and related household goods prices, contributed to a lowering of producer prices.

Over time, the normalisation of Chinese producer prices has helped to lower euro area goods import prices. A large share of Chinese exports are priced in US dollars, and Chinese export prices in US dollars have fallen alongside the Chinese PPI (Chart B). Translated into euro, Chinese export prices fell by 15% in June compared to the same month in the previous year. While the normalisation of Chinese producer prices is likely to have contributed to the moderation of export prices, Chinese firms also reportedly lowered prices to sustain their sales amidst a slowdown in external demand. A propagation of Chinese export price dynamics through third countries might also have influenced euro area import prices.

Chart B

Chinese producer and export prices



Sources: National Bureau of Statistics of China, Federal Reserve Board, General Administration of Customs of the People's Republic of China (for Chinese export prices) and ECB staff calculations.
Note: The latest observations are for July 2023.

Empirical analysis confirms that Chinese demand and supply shocks may entail sizable spillovers to prices of extra-euro area goods imports. We use a Bayesian vector autoregression (BVAR) model with sign restrictions to quantify the role of Chinese demand and supply shocks in extra-euro area import prices in comparison with other key shocks, such as those related to global demand, supply bottlenecks and commodity supply.[2,3] The results show that the median response to

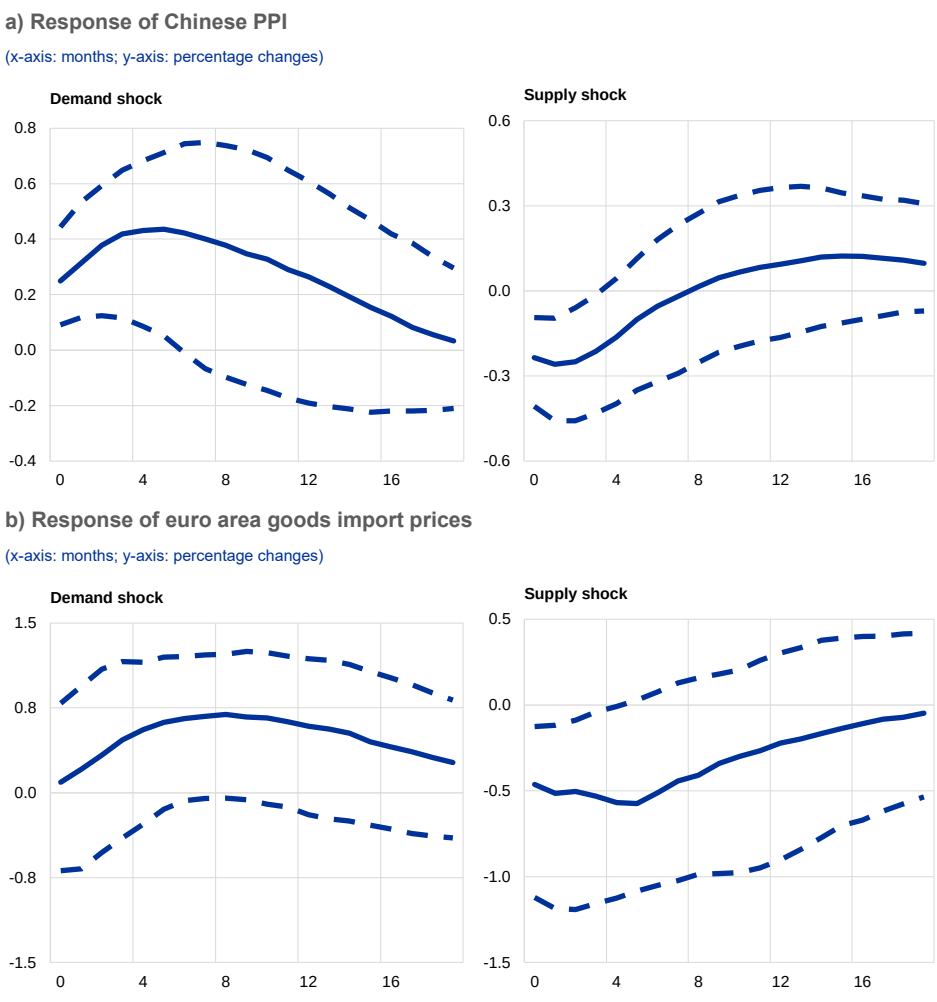
2 The analysis includes extra-euro area import prices, Chinese industrial production and producer prices, commodity prices, the relative growth of industrial production in China and the rest of the world, and a measure of global supply bottlenecks. Chinese demand and supply shocks are identified through their different impacts on Chinese producer prices. Chinese demand and supply shocks are disentangled from global shocks by assuming that the former affect domestic production in China more than in the rest of the world. A positive Chinese supply shock is also assumed to ease global supplier delivery times.

3 The commodity supply shock captures movements in global energy prices that are not explained by global and Chinese demand shocks. The strong movements in euro area gas import prices over the past few years are not identifiable in this setup.

a Chinese demand shock which adds 1 percentage point to Chinese industrial production (IP) has a positive impact on both the Chinese PPI and extra-euro area import prices of around 0.4 percentage points, given the higher amplitude of extra-euro area import prices owing to their higher energy price component. The response of extra-euro area import prices is also affected by the indirect effect of a rise in global energy prices following the demand shock in China. A positive Chinese supply shock appears to lower the Chinese PPI by 0.3 percentage points and extra-euro area import prices by up to 0.5 percentage points, with the effect on extra-euro area import prices peaking after around six months (Chart C).[4]

Chart C

Responses to Chinese demand and supply shocks



Sources: Eurostat, Haver, IMF, CPB, S&P Global and ECB staff calculations.
Notes: All series used in the empirical analysis in year-on-year growth rates except Purchasing Managers' Index global supplier delivery times. Estimation sample from January 2006 to June 2023. Sign restrictions: Chinese demand shock (+: relative growth, Chinese IP, Chinese PPI); Chinese supply shock (0: commodity price; +: relative growth, Chinese IP; -: global supplier delivery times, Chinese PPI, extra-euro area import prices); commodity supply shock (+: commodity price, Chinese PPI, extra-euro area import prices; -: Chinese IP; 0: global supplier delivery times); global demand shock (+: commodity price, Chinese IP, global supplier delivery times; -: relative growth); global supply bottleneck shock (+: relative growth, global supplier delivery times; -: Chinese IP). Restrictions on impact. The size of the shocks is calibrated to add one percentage point to Chinese IP. Broken lines refer to 68% confidence bands.

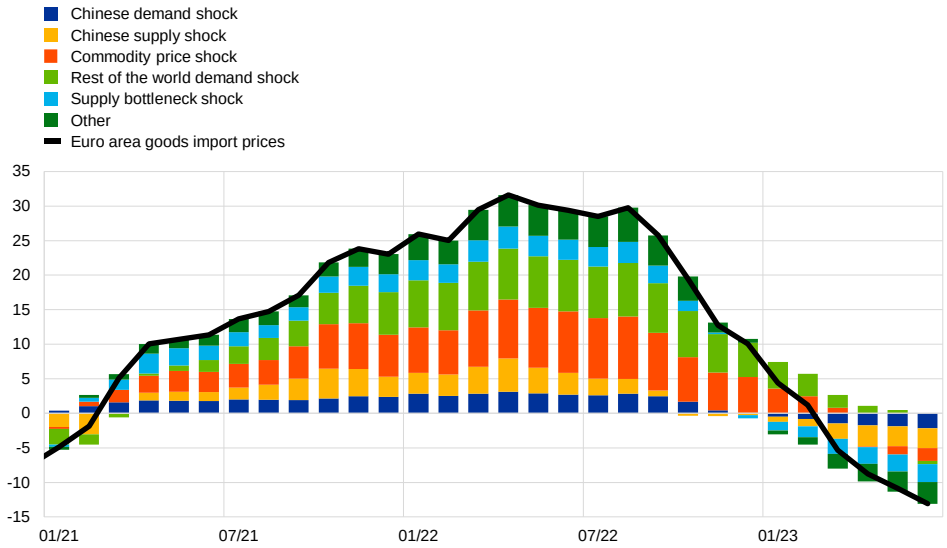
[4] Euro area import price movements generally have a higher amplitude than the Chinese PPI series. The identified China supply shock therefore affects this volatile series more strongly than it affects the Chinese PPI.

Chinese domestic shocks have played a tangible role in the surge in extra-euro area import prices since 2021 and in their reversal in recent months. Empirical results suggest that Chinese demand and supply shocks together contributed up to 8 percentage points to the rise in extra-euro area import prices in that period, which corresponds to about a quarter of the total increase (Chart D). In June 2023 developments in China contributed 5 percentage points to the decline in extra-euro area import prices. The rest of the decline is explained by weaker global demand, the easing of supply bottlenecks and negative commodity supply shocks.

Chart D

Historical shock decomposition of euro area goods import prices

(deviations from steady state, percentages and percentage point contributions)



Sources: Eurostat, Haver, IMF, CPB, S&P Global and ECB staff calculations.

The impact of lower prices in China on euro area headline inflation is more limited. A proper estimation of the impact would require a complex modelling of the product chain from import prices to consumer prices, which is beyond the scope of this box. However, a rough proxy can be derived by using estimates of the import content of euro area consumer prices, which is 29% for non-energy industrial goods (NEIG). This is the harmonised index of consumer prices (HICP) component with the highest import content across the main components (energy, food, services and NEIG) and is likely to be the most affected by developments in key trading partners such as China. This import content would imply a negative 1.5 percentage point peak impact on NEIG inflation. As NEIG accounts for about one quarter of the HICP, this would lower euro area HICP inflation by 0.4 percentage points. These tentative estimates do not provide information on the length of time over which this transmission would materialise, since a sizable share (43%) of imports from China are intermediate goods, and the impact on consumer prices may thus take some time to fully feed through.

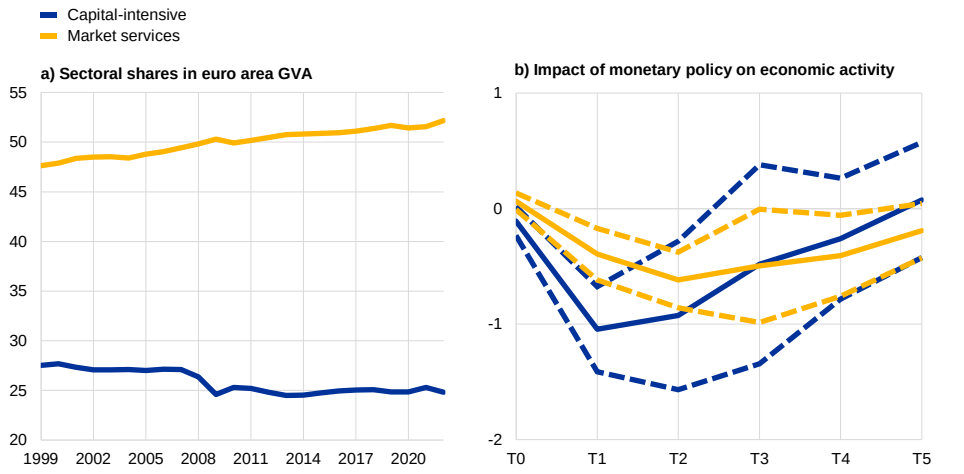
4 Industry structure and the real effects of monetary policy

Prepared by Sebastian Hauptmeier and Fédéric Holm-Hadulla

The service intensity of the euro area economy has increased since the launch of the euro. Between 1999 and 2022, the share of market services in euro area gross value added (GVA) has risen by around 4½ percentage points, from somewhat below 48% to more than 52% (Chart A, panel a). Over the same period, the GVA share of industry (including manufacturing) and construction – typically regarded as relatively capital-intensive sectors – has declined by around 2½ percentage points from around 27½% to around 25%.

Chart A

GVA of capital-intensive and market services sectors – evolution and response to monetary policy



Sources: Eurostat and authors' calculations.
Notes: Panel a): the market services sector includes, among others, wholesale and retail trade, transportation, accommodation and food services, information and communication, and financial and real estate services. The capital-intensive sector includes, among others, mining, manufacturing, energy and water supply, and construction. Panel b) shows the impact of a 25 basis point policy rate hike over a period of five years (T0 to T5). The broken lines indicate 90% confidence intervals.

This box provides new analysis of whether the service intensity of an economy matters for the real transmission of monetary policy. Empirical evidence suggests that the sectoral composition of output has implications for the impact of monetary policy owing to, for example, the higher interest-rate sensitivity of more capital-intensive industries.[1] This analysis uses a fine geographical breakdown of the level and composition of economic activity in the euro area. The data are taken from the European Commission's ARDECO[2] database and refer to the most granular regional disaggregation available (NUTS3, which roughly corresponds to cities and counties). The granularity of the data offers two advantages for an econometric

1 See, for example, Carlino, G. and DeFina, R., "The Differential Regional Effects of Monetary Policy", *The Review of Economics and Statistics*, Vol. 80(4), November 1999, pp. 572-587; and Peersman, G. and Smets, F., "The Industry Effects of Monetary Policy in the Euro Area", *The Economic Journal*, Vol. 115(503), April 2005, pp. 319-342.

2 ARDECO is the "Annual Regional Database of the European Commission".

analysis of the implications of an increased service intensity for the transmission of monetary policy. First, a host of confounding factors that typically complicate the identification of monetary policy effects at the macro level can be incorporated. Second, the residual variation in the level and composition of economic activity at the regional level remains substantial even after controlling for these macro factors. The local projections method is used to estimate the dynamic impact of exogenous changes in monetary policy on regional economic activity.[3]

How observed sectoral shifts affect the transmission of monetary policy is analysed in two steps. First, the effects of monetary policy on GVA in services are compared to the corresponding effects in manufacturing and construction (the capital-intensive sector). Second, the interaction between service intensity and the transmission of monetary policy to overall GVA is estimated. The first step checks for heterogeneity in the response patterns of different types of activity and thus analyses whether monetary policy transmission is different across sectors of the economy. The second shows how relevant this heterogeneity is in shaping the real effects of monetary policy, i.e. to what extent the sectoral composition of the economy affects monetary policy transmission.

The impact of monetary policy on services is significant, albeit weaker and slower than the impact on manufacturing and construction. The response of services becomes visible in the year following the monetary policy shock and, for a 25 basis point tightening, it reaches a trough of around 0.6% in the second year (Chart A, panel b, yellow line).[4] Thus the services response is weaker and more delayed than the response in manufacturing and construction, which reaches its trough in the first year and contracts by around 1% (blue line).[5] This difference is plausible in view of the stronger impact that the interest rate channel of monetary policy has on the more capital-intensive areas of economic activity, and it is qualitatively consistent with related analyses at the aggregate level.[6] At the same time, the estimates confirm that services respond in a statistically and economically significant manner to monetary policy shocks, reflecting the fact that (i) services also often require non-negligible capital inputs and (ii) monetary policy is also transmitted via channels other than the interest rate sensitivity of capital.[7]

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3 For details on data and methodology, see Hauptmeier, S., Holm-Hadulla, F. and Nikalexi, K., "Monetary policy and regional inequality", *Working Paper Series*, No 2385, ECB, March 2020.

4 The model is symmetric, so analogous results apply to a monetary policy easing.

5 A potential limitation is that each of the two sectors (capital-intensive and services) covers a diverse set of economic activities, which in turn may differ in their responsiveness to monetary policy. Breaking these groups down further, the main results described in this box remain intact. However, the most granular breakdown publicly available at regional level still lumps, for instance, accommodation and food services together with transportation and storage, which would typically exhibit quite different capital intensities.

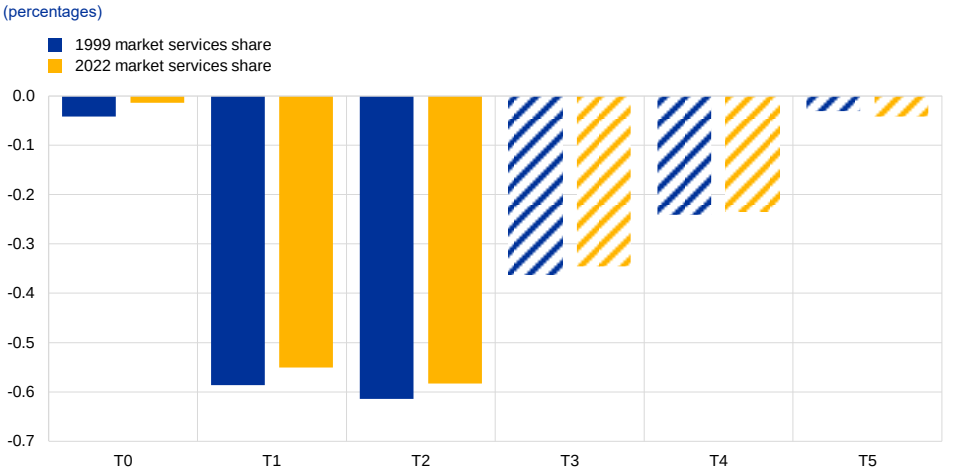
6 Other factors have also seen major changes over the lifetime of the euro and could imply cross-sectoral heterogeneity in transmission. For instance, increased household debt levels might have made monetary policy more powerful (see, for example, Kim, Y. and Lim, H., "Transmission of monetary policy in times of high household debt", *Journal of Macroeconomics,* Vol. 63, March 2020).

7 For instance, the combination of imperfect competition and price rigidities may give rise to stronger real effects of monetary policy in the non-tradable sector (which tends to be made up chiefly of services); see Lane, P.R., "Inflation in open economies", *Journal of International Economics*, Vol. 42(3-4), May 1997, pp. 327-347.

Thus a higher service intensity dampens monetary policy transmission to the real economy in the shorter term, but this dampening effect is moderate. Consistent with the heterogenous responses across sectors, the impact of monetary policy on GDP becomes weaker as the service intensity of the economy increases (Chart B). The effect is statistically significant for roughly two years after the shock, and, at its peak in year 2, it weakens the real effect of a 25 basis point monetary policy tightening by around 1 basis point for every percentage point that is added to the services share. The observed increase in the services share of the euro area economy since the launch of the euro is around 4½ percentage points, implying a dampening impact of around 4 basis points. This is below 10% of the maximum response of GDP to the same shock.[8]

Chart B

Effect of higher service intensity on monetary policy transmission



Sources: ECB, Eurostat and authors' calculations.
Notes: The chart shows the impact of a 25 basis point policy rate hike over a period of five years (T0 to T5), conditional on the services shares prevailing in 1999 and 2022 respectively. This corresponds to the sum of the slope coefficient of the monetary policy rate and the coefficient of an interaction term between the monetary policy rate and the services share. Otherwise, the specification is identical to equation 1 in Hauptmeier, S., Holm-Hadulla, F. and Nikalexi, K., op. cit. Solid bars indicate that the effects are significant to at least a 10% level.

8 For further evidence on the limited role of service intensity in shaping the real transmission of monetary policy, see Coeuré, B., "The rise of services and the transmission of monetary policy", speech at the 21st Geneva Conference on the World Economy, May 2019.

5 The drivers of recent developments in business activity expectations across sectors

Prepared by Niccolò Battistini and Pedro Neves

Business activity expectations have deteriorated since mid-2022, with the decline occurring earlier than the weakening of economic growth in the euro area. According to the European Commission's business survey, near-term expectations for business activity have declined in year-on-year terms since the third quarter of 2022. This deterioration has foreshadowed the subsequent slowdown in euro area economic activity, although the pace of the slowdown has differed across sectors. This box analyses a new bottom-up composite index of business activity expectations across sectors. It also assesses the role played by the structural drivers of the index using disaggregated data on expectations and limits to production from the European Commission's business survey.

The bottom-up composite index of business activity expectations is a good leading indicator of real GDP. This index is calculated as the weighted average of the balance of responses to the survey on near-term expectations for activity in three main sectors: three-month-ahead production expectations for manufacturing, three-month-ahead demand expectations for services and an assessment of order books for construction.[1] The composite index, measured in the first month of each quarter, correlates strongly with the year-on-year growth rate of real GDP in the same quarter, similarly to broader indices such as the European Commission's Economic Sentiment Indicator and S&P Global's Purchasing Manager Index composite output (Table A).[2] At sector level, each component also correlates strongly with sector value added data, and the correlations are similar to those shown in Table A.

Table A

Historical correlations between survey indicators and real GDP growth

Correlation coefficient	Business activity expectations	Economic Sentiment Indicator	Purchasing Manager Index
From the first quarter of 1999 to the second quarter of 2023	0.76	0.79	0.76
From the first quarter of 1999 to the fourth quarter of 2019	0.87	0.91	0.86

Sources: European Commission (DG-ECFIN), S&P Global and ECB calculations.
Notes: The correlation is calculated between the survey indicators at standardised levels in the first month of each quarter and the year-on-year real GDP growth rates for the same quarter. On a related point, not shown in the table, note that the correlation between the year-on-year change in the standardised survey indicators and the year-on-year real GDP growth rate is somewhat lower over the pre-pandemic sample. However, it has increased since the start of the pandemic, providing a relatively good reflection of the year-on-year real GDP growth dynamics in the post-pandemic recovery.

1 The weights are based on sector shares in total gross value added after excluding non-market services activities (included in the NACE Rev. 2 classification as O, P and Q, and corresponding to public administration, defence, education, human health, and social work activities). After being rescaled, the weights correspond to around 22% for manufacturing, 7% for construction and 71% for services.

2 Overall, sentiment and survey-based indices are known for having good correlations with hard data on year-on-year growth rates. See, for instance, the evidence reported by Camacho, M. and Perez-Quiros, G., "Introducing the euro-sting: Short-term indicator of euro area growth", *Journal of Applied Econometrics*, Vol. 25, Issue 4, pp. 663-694, May 2010.

An empirical model is used to assess the impact of structural drivers on business activity expectations. A Bayesian structural vector autoregression (BSVAR) model is estimated for each sector and then aggregated to quantify the impact of the structural drivers of the composite index. The model includes measures of firms' expectations for activity and prices, as well as perceptions about which factors limit production – product demand, financial conditions, labour force shortages, shortages of materials and/or equipment, and/or other factors (related, for instance, to regulatory or – more recently – pandemic developments). It uses sign and magnitude restrictions to identify three demand shocks (product demand, financial conditions and other demand) and three supply shocks (labour, materials and other supply).[3]

The model shows that recent trends in business activity expectations were driven by deteriorating demand, partly offset by recovering supply. Business expectations dipped during the global financial crisis and the euro area sovereign debt crisis, mainly driven by demand factors (Chart A, panel a). More recently, they dropped in 2020 due to the outbreak of the pandemic but recovered in 2021 as the economy reopened (Chart A, panel b). In this instance too, it was mainly demand forces that drove expectations, with supply factors also playing an important role. However, according to the model, business expectations weakened at the end of 2022, mainly as a result of supply-side forces. This drop in expectations foreshadowed the recent moderation in real GDP growth momentum. In the year up to the third quarter of 2023, business expectations were hampered by subdued demand, partly offset by favourable supply. The results generated using this model attribute more importance to demand factors than other studies, which find that supply factors played a stronger role in driving business activity, especially in the wake of the pandemic in 2020. This may reflect different modelling assumptions, the forward-looking nature of expectations-based indicators or the fact that other studies looked at the aggregate economy, which is broader than the sectors covered in this box.[4]

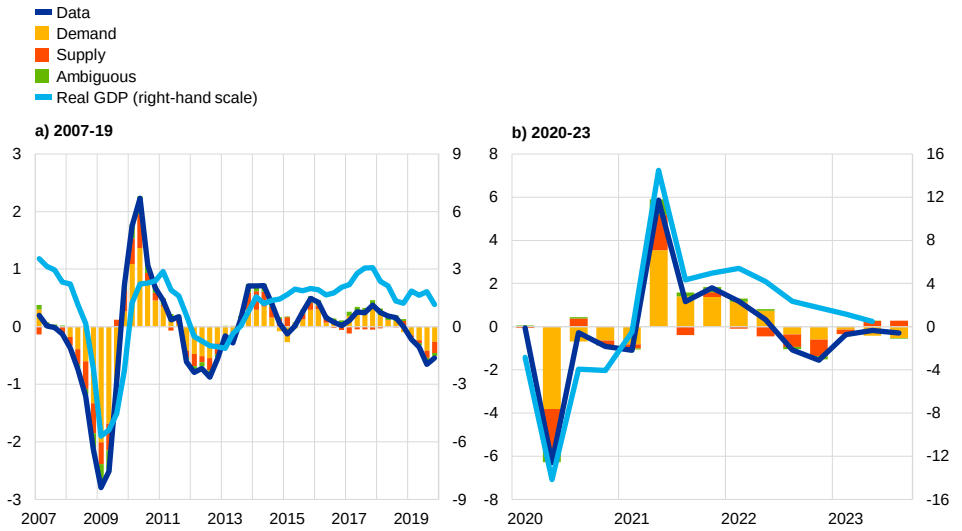
3 All variables are first standardised and then differenced. With regard to the structural shocks, product demand, financial conditions and other demand shocks, which are included in aggregate demand, raise activity and prices. Labour, materials and other supply shocks, which are part of aggregate supply, raise activity but reduce prices. Each shock induces the largest reduction in its factor-specific limit. The BSVAR model is estimated with prior selection, COVID-19 heteroskedasticity adjustment and sign and magnitude restrictions. For details on prior selection, see Giannone, D., Lenza, M. and Primiceri, G.E., "Prior Selection for Vector Autoregressions", *The Review of Economics and Statistics*; Vol. 97, Issue 2, 2015, pp. 436-451. For details on COVID-19 heteroskedasticity adjustment, see Lenza, M. and Primiceri, G.E., "How to estimate a vector autoregression after March 2020", *Journal of Applied Econometrics*, Vol. 37, Issue 4, June/July 2022, pp. 688-699.

4 These reasons – together with differences in the number of variables, the number of restricted shocks, the sample considered and the statistical treatment of the COVID-19 period – explain the difference compared with, for instance, the results presented in the box entitled "A model-based assessment of the drivers of economic activity" in the article entitled "The role of supply and demand in the post-pandemic recovery in the euro area", *Economic Bulletin*, Issue 4, ECB, 2023, and the box entitled "Supply chain disruptions and the effects on the global economy", *Economic Bulletin*, Issue 8, ECB, 2021. However, the results in this box are in line with those presented in studies based on forward-looking data from the European Commission's consumer survey, such as those in the article entitled "Energy prices and private consumption: what are the channels?", *Economic Bulletin*, Issue 3, 2022.

Chart A

Historical drivers of business activity expectations

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



Sources: European Commission (DG-ECFIN) and ECB calculations.
Notes: The composite indicator for activity expectations is calculated as the weighted average of the indices for three-month-ahead production and demand expectations for manufacturing and services respectively and the assessment of order books for construction. The BSVAR model is estimated with prior selection, COVID-19 heteroskedasticity adjustment and sign and magnitude restrictions. The sample is based on euro area data from the first quarter of 1999 to the third quarter of 2023. The latest observations are for the third quarter of 2023.

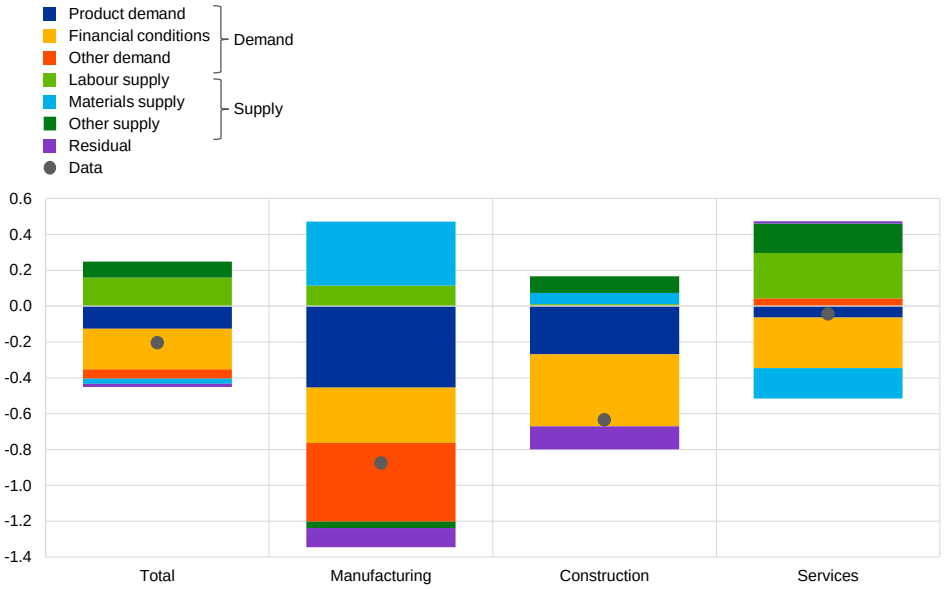
The granular model-based decomposition suggests that tightening financial conditions and flagging product demand were the main drag on business activity expectations in the third quarter of 2023. In year-on-year terms, in the third quarter of 2023 business expectations for manufacturing and construction deteriorated more sharply than those for services. This was mainly due to worsening financial conditions, which affected all three sectors (Chart B). Expectations were also hit by adverse product demand, partly due to continued destocking by industries. However, they were supported by a recovery in supply (of materials in particular) in manufacturing and construction. They also benefited from favourable labour supply and other supply factors linked to persistent reopening effects in the services sector.[5]

[5] These results are in line with the main findings from the ECB's recent contacts with non-financial corporations.

Chart B

Drivers of business activity expectations by sector and breakdown of shocks in the third quarter of 2023

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



Sources: European Commission (DG-ECFIN) and ECB calculations.
Notes: The composite indicator for activity expectations is calculated as the weighted average of the indices for three-month-ahead production and demand expectations for manufacturing and services respectively and the assessment of order books for construction. The BSVAR model is estimated with prior selection, COVID-19 heteroskedasticity adjustment and sign and magnitude restrictions. The sample is based on euro area data from the first quarter of 1999 to the third quarter of 2023.

A deeper analysis across subsectors provides more detailed insights into cross-sector developments. Chart C shows an overview of the model-based decomposition across the main industrial groups and consumer services, estimated separately from the bottom-up aggregation of the composite index, for the third quarter of 2023. All manufacturing groups were affected by tightening financing conditions, whereas low product demand mainly affected intermediate and capital goods (more closely linked to investment) rather than consumer goods (more closely linked to final household consumption).[6] The capital goods subsector was affected by other demand factors, possibly relating to hurdles linked to the green transition in the automotive sector.[7] Consumer services benefited from positive labour supply effects, mainly in accommodation, while they suffered delayed adverse effects from the weak supply of materials, mainly in travel.

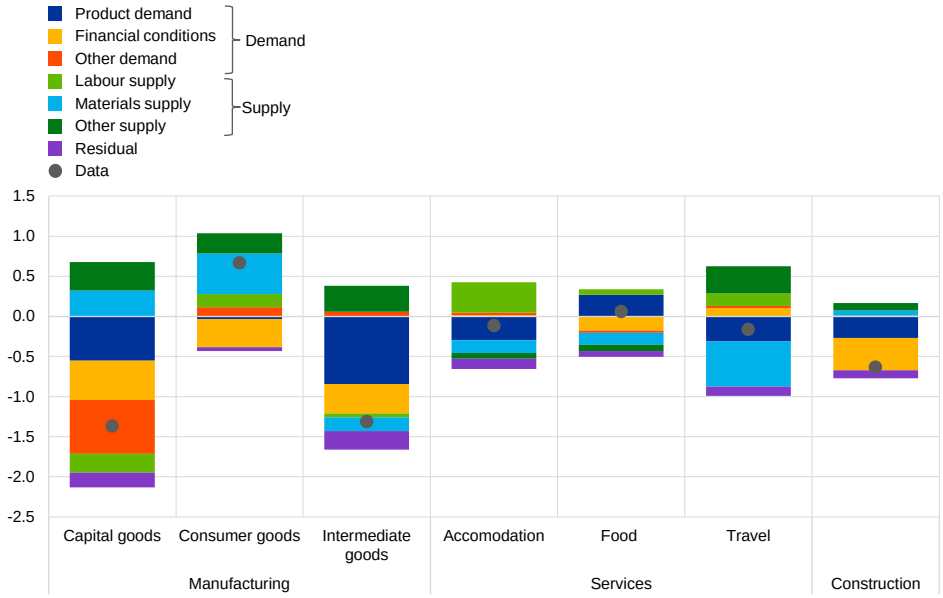
6 In line with the findings from the model, the main findings from the ECB's recent contacts with non-financial corporations show that intermediate goods producers have particularly suffered from decreasing demand since the start of 2023, owing to continued destocking over the supply chain.

7 A model decomposition for the automotive sector shows that the sector has been affected by other demand shocks, which preceded the outbreak of the pandemic and have become predominant since the start of 2023. A deeper analysis on the automotive industry is available in the box entitled "Motor vehicle sector: explaining the drop in output and the rise in prices", *Economic Bulletin*, Issue 7, ECB, 2022.

Chart C

Drivers of business activity expectations by subsector and breakdown of shocks in the third quarter of 2023

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



Sources: European Commission (DG-ECFIN) and ECB calculations.
Notes: The composite indicator for activity expectations is calculated as the weighted average of the indices for three-month-ahead production and demand expectations for manufacturing and services respectively and the assessment of order books for construction. The BSVAR model is estimated with prior selection, COVID-19 heteroskedasticity adjustment and sign and magnitude restrictions. The sample is based on euro area data from the first quarter of 1999 to the third quarter of 2023.

All in all, the model provides an assessment of the factors driving business activity expectations across sectors and the implied path of real GDP growth in the euro area. While improving supply forces should support activity, worsening financial conditions and decreasing demand across industries cloud the manufacturing outlook for the third quarter of 2023. Looking ahead, despite more resilient expectations for services, the gradual decline of favourable reopening effects and the increasing adverse impact of tightening financial conditions are tilting expectations downwards.

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

Prepared by Gwenaël Le Breton, Richard Morris, Moreno Roma, Desislava Rusinova and Octavia Hedwig Zahrt

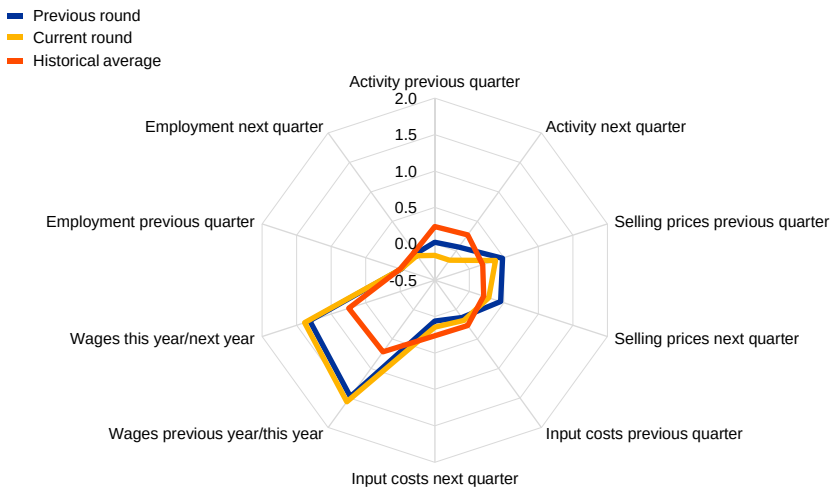
This box summarises the findings of recent contacts between ECB staff and representatives of 56 leading non-financial companies operating in the euro area. The exchanges took place between 25 September and 5 October 2023.[1]

On average, contacts described a worsening of activity, consistent with a mild contraction in output for the third and fourth quarters of 2023, as well as moderating price growth (Chart A). As in recent quarters, there was still a lot of variation in terms of the reported levels and growth of activity. Poorly performing sectors remained weak for longer than expected, while some of the drivers of growth in better performing sectors started to wane. Employment was stable, but the outlook was worsening slightly. Meanwhile price growth continued to moderate against a backdrop of stable input costs, and wage pressures were expected to remain strong despite a slight moderation in wage growth being anticipated for 2024.

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

In the industrial sector, activity was still weak or contracting for intermediate goods, durable consumer goods and construction. Contacts said that sales 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.

consumer electronics and durable household goods were still low or falling, as demand was reduced by the squeeze on household incomes and the fact that purchases of these items had been brought forward during the COVID-19 pandemic. Together with low and contracting activity in the construction sector and ongoing inventory adjustment in parts of the supply chain, this translated into continually weak demand for many intermediate goods. Producers and distributors of steel, chemicals and building materials in particular described business contracting strongly. Activity was more resilient elsewhere in the manufacturing sector. Demand for most non-durable consumer goods was fairly stable and even had pockets of growth. Moreover, production in the automotive and capital goods sectors was still high or growing as order backlogs resulting from past supply disruption were worked through. However, order books were shrinking in some sectors, particularly the automotive sector, raising the prospect of production cuts later in the year or in early 2024 if demand did not increase.

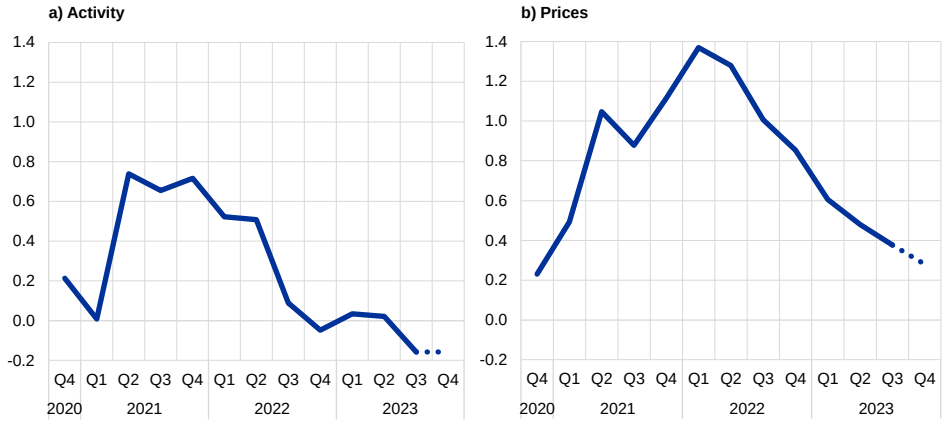
Ongoing weakness in the demand for goods was reflected in subdued transport and retail activity, whereas tourism and digital services continued to grow strongly. Shipping, haulage and warehousing activity declined further in the third quarter as many firms continued to try to reduce working capital. The normal seasonal pick-up in global shipping activity from August to September due to the transportation of goods ahead of Christmas was observed to have been much weaker than usual. Food retailers continued to observe “downtrading”, with consumers favouring discount stores and cheaper products. Some retailers were, nonetheless, more optimistic about a recovery in spending in the latter months of the year, as households are expected to increasingly feel the benefit of rising wages. Contacts in the tourism and passenger air travel industries reported a very positive summer season, with tourism activity having equalled or even exceeded its pre-pandemic levels and supply constraints having eased. In this context, the higher cost of long-distance travel benefited intra-European tourism. Planning for 2024 assumed continued, albeit moderating, growth. Activity in digital services continued to grow strongly, which was partly supported by firms’ increasing desire to implement artificial intelligence solutions to contain rising labour costs, including for skilled office functions. However, even in this rapidly growing sector, there were reports of lengthy sales negotiations and reduced demand from new and smaller firms. Demand for more traditional consultancy services reportedly also fell as customers put projects on hold.

Overall, contacts were quite pessimistic about the outlook for the remainder of 2023 and, in some cases, for 2024 (Chart B, panel a). While tailwinds from the easing of supply constraints moderated, there were continued headwinds from the squeeze on real incomes caused by inflation and rising interest rates. Some contacts therefore pushed their expectations for any significant pick-up in overall activity back to the second half of 2024. Despite many contacts looking out for them, signs of an aggregate recovery in consumer spending had not yet materialised.

Chart B

Evolution of views on developments in and the outlook for activity and 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 activity (sales, production and orders) and prices. Scores range from -2 (significant decrease) to +2 (significant increase). A score of 0 would mean no change. The dotted line refers to expectations for the next quarter.

Contacts described a fairly stable employment environment that also showed signs of weakening in the future. Many contacts reported that firms were cautious about reducing headcount even in sectors where activity was faltering, as it did not make sense to lose skilled staff when the labour market in many countries remained tight. In many cases the adjustment of labour input – where necessary – was instead achieved by resorting less to agency staff, reducing working hours or making use of government-funded short-time work schemes. Employment agencies reported a softening in demand for placements in the manufacturing and logistics sectors especially. Many firms reduced, or planned to reduce, headcount by only replacing a number of staff who retired or left the company. This was especially true for blue-collar and administrative roles.

Growth in selling prices continued to moderate on average in the third quarter, with a further moderation also anticipated for the fourth quarter (Chart B, panel b). The aggregate picture still masked a lot of heterogeneity reflecting different demand and supply conditions and cost pressures across sectors. Prices in sectors where supply had been catching up with demand, including the capital goods, automotive and tourism and travel sectors, continued rising in recent months. However, most contacts in these sectors now saw price growth moderating or prices stabilising as demand and supply came back into balance. By contrast, most contacts in the non-durable consumer goods sectors and in most business and consumer services anticipated further price growth, as increases in input costs, particularly from wages, were passed through to prices to sustain margins. The outlook for agri-food prices was mixed, depending on the extent to which past cost pressures had already been accommodated. However, retail food prices were expected to decline slightly in the coming months. Contacts in many parts of the construction, intermediate goods and durable consumer goods sectors, as well as those involved in the transport of goods, mostly described low and/or falling prices. This was related to low levels of demand as well as declining or stabilising material

costs that reflected the prices for many commodities having fallen since last year. The latter eased the immediate cost pressures faced by input-intensive industries.

Wage growth was still strong but was expected to moderate slightly next year. Taking a simple average of the mid-points of the quantitative indications provided, contacts expected wage growth to decrease from around 5.6% in 2023 to 4.9% in 2024. This was very similar to the average expectations recorded three months earlier. While the delayed effect of past (multiannual) negotiations still put significant upward pressure on wages for next year, the easing of inflation and a subdued demand outlook were anticipated by some to potentially moderate wage requests or to increase the ability of firms to resist them.

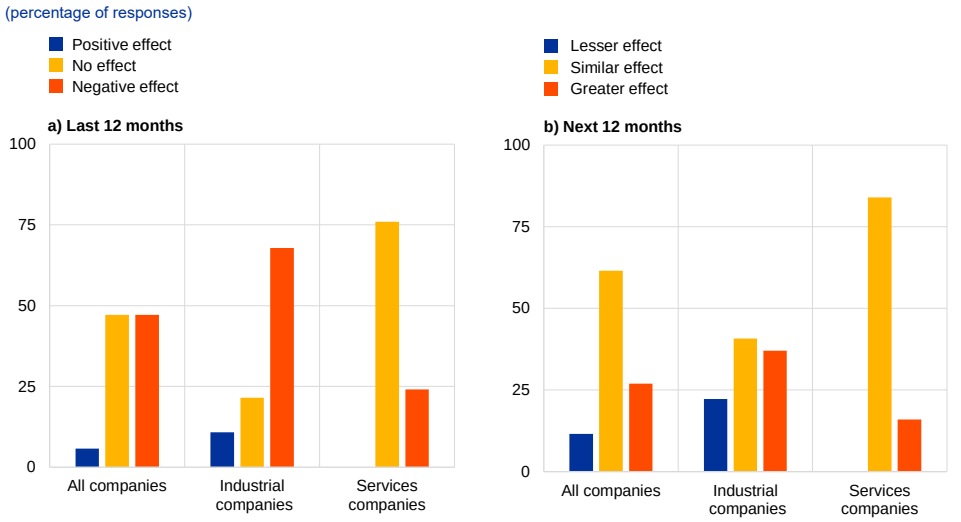
The tightening of financing conditions since last summer has had a much larger effect on the industrial sector than on services (Chart C, panel a). This round, contacts were asked (i) how changes in the cost and availability of funding since mid-2022 had affected their business activity over the past 12 months, (ii) whether they expected these changes to have a greater or lesser effect on activity in the next 12 months and (iii) what the main factors underlying this assessment were. There was an almost even split between contacts who said that financing conditions had not affected the activity of their company and those who said that there had been a negative effect. The former were primarily located in the services sector and the latter in the industrial sector. Those who said that tighter financing conditions had no effect on their activity cited their strong cash positions, limited external financing needs, a slow pass-through of market interest rates to the average cost of debt and a continued willingness of banks to lend at reasonable rates. Two-thirds of contacts in the industrial sector said that tighter financing conditions were having a negative effect on their operations, either directly through their financing or indirectly as a result of reduced demand. Several contacts reported that banks and institutional investors were paying greater attention to credit risk, or that the higher cost of capital raised the required rate of return on investment. Many saw tighter financing conditions as dampening customer demand for their products, especially those in, or those supplying, the construction and capital goods sectors.

On balance, the effect of the tightening of financing conditions on activity was expected to intensify over next 12 months (Chart C, panel b). Most contacts believed that there would be no significant change in how the tightening of financing conditions would affect their firm's activity in the next 12 months compared to the previous 12 months. This included a majority of contacts in the services sector, who expected tightening financing conditions to have no effect at all. Of the contacts who did signal a change, 27% expected tightening financing conditions to have a greater effect on activity, while only 12% expected it to have a lesser effect. Some contacts cited a greater need to access external financing as existing debt matured or large investments projects were carried out. Others stressed how expected future demand acts as the main driver of investment and that downgrades of forecasts due to the present weakness in activity meant it was likely they would reduce their future capital spending (e.g. by spreading the execution of planned investments over time). The decisions of individual firms depended on where they were in the investment cycle. In this context, the disruption caused by the COVID-19 pandemic and the

requirements of the transition to net zero resulted in significant heterogeneity. A broad range of factors also influenced investment decisions, with input costs, subsidies and regulatory uncertainty currently playing a more important role than financing conditions for many firms.

Chart C

Summary of views on the effect of the change in the cost and availability of funding on the activity of firms



Source: ECB.
Notes: Based on conversations with 52 contacts, comprising 27 contacts from firms in the industrial sector and 25 contacts from firms in the services sector.

7 Rent inflation in the euro area

Prepared by Rodolfo Arioli, Elena Bobeica, Moreno Roma and Michel Soudan

The rent component is typically not a prominent driver of developments in euro area HICP, with an average contribution of 0.1 percentage points since 1999. Looking at the period since mid-2022, there has been a notable pick-up in the annual growth rate of euro area actual rental prices for housing, though more muted than the rise in other services prices. Questions on the inflationary impact of rents are largely inspired by developments in the United States, where rent inflation has been a key driver of the post-pandemic inflation surge. When assessing the scope for rents to play a similarly important role in euro area inflation dynamics, measurement issues need to be taken into account, as do the various methodological and regulatory specificities surrounding this particular HICP component.

The limited contribution of rent growth to core inflation in the euro area reflects both moderate dynamics and a comparatively small weight. In August 2023 actual rent inflation was 2.8% in annual terms. This was the highest reading since the launch of the euro and 1.2 percentage points above its long-term average in the period 2000-19. Its contribution to euro area HICP inflation excluding energy and food (HICPX) was 0.24 percentage points, 0.1 percentage point above its long-term average (Chart A, panel a). This relatively low contribution of rents to euro area inflation contrasts with the United States. There, the contribution of actual rents to the core Consumer Price Index (CPI) reading was about three times higher in August 2023, at 0.7 percentage points, some 0.5 percentage points above its 2000-19 average. The high contribution of rising rents to core inflation in the United States partly reflects the unwinding of a federal eviction moratorium. This policy was implemented in 2020 in response to the coronavirus (COVID-19) pandemic and led to much lower growth in US rents. After the moratorium was lifted in late 2021, US rent inflation surged, reaching 8.8% in March 2023. It had moderated only slightly to 7.8% by August, remaining significantly above its long-term average of about 3%.

Rents for new contracts, which should respond faster to market forces, also show sluggish rent growth in the euro area. Data on new rents in the euro area are scarce. Evidence from annual data in Germany – used for illustrative purposes (Chart A, panel b) – shows that rent developments for new lettings are indeed more dynamic than those for existing rents, especially during upturns in the housing market.[1] Yet, as compared with the US housing market, rents in the euro area appear less sensitive to market forces – including house prices.[2] The magnitude and volatility of developments in new rents in the United States are much more

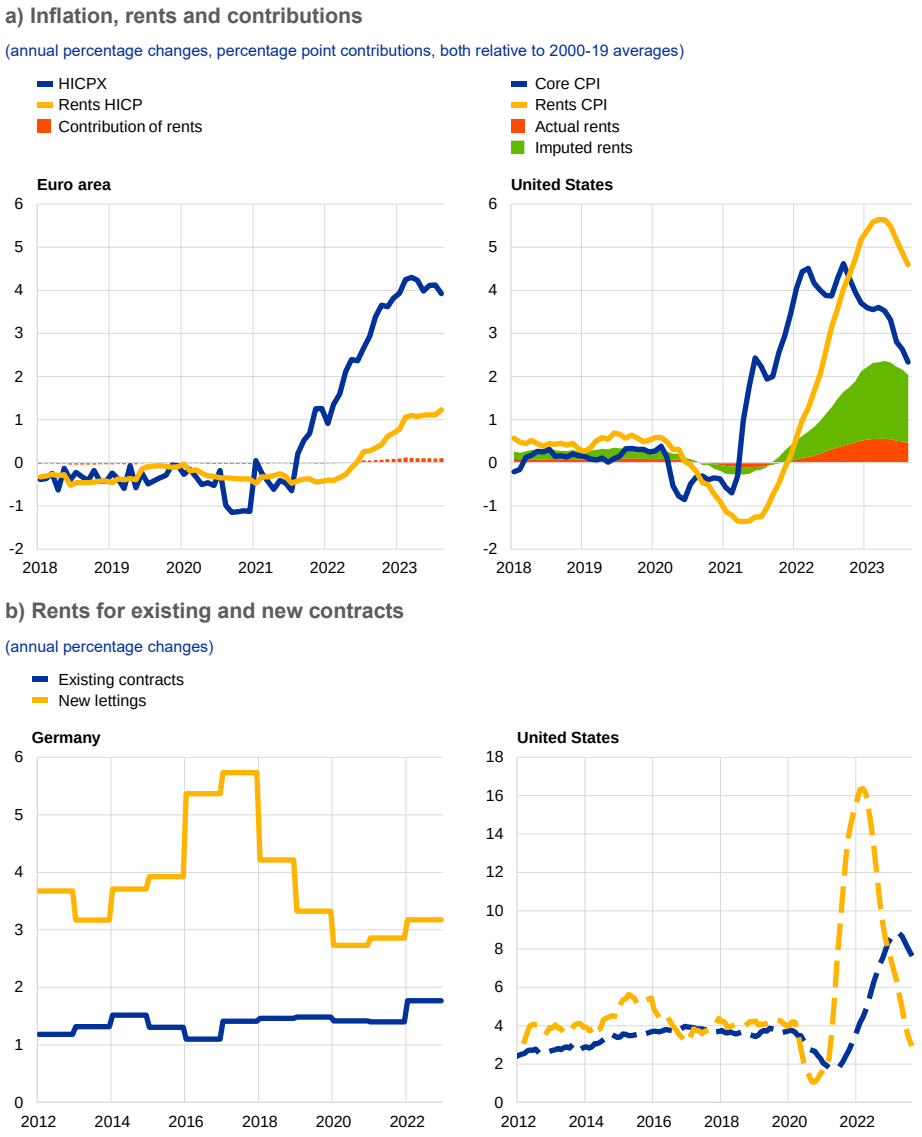
1 Existing estimates for Germany suggested that 10% of households move every year, which would mean that each year approximately 10% of rental prices should consist of new contracts, without considering increases in demand related to population growth.

2 The theoretical long-term relationship between house prices and rents is difficult to observe in the euro area data. For a discussion, see the box entitled "Rent inflation in the euro area since the crisis", *Economic Bulletin,* Issue 4, ECB, 2019.

pronounced and closely follow overall housing market developments. This reflects the low level of rent regulation in the United States. Only a few US states regulate rents, whereas such measures are much more common in the euro area.

Chart A

Rent developments in the euro area, the United States and Germany



Sources: Eurostat, US Bureau of Labor Statistics, Deutsche Bundesbank and ECB staff calculations.
Notes: Panel a: the latest data for the HICP and CPI are for August 2023. Panel b: for Germany, the existing contracts data use Deutsche Bundesbank calculations based on data provided by the German Federal Statistical Office (*Statistisches Bundesamt* – Destatis), to an extent including new lettings. For Germany, the new lettings are transaction-weighted Deutsche Bundesbank calculations based on data provided by bulwiengesa AG. US existing contracts are based on the monthly Zillow observed rent index (seasonally adjusted). Data for Germany refer to 2022. Data for US CPI and existing rents refer to August 2023.

In the United States, the greater contribution of rents to inflationary developments also reflects the higher weight of rents in the CPI and the broader scope of the definition of "shelter". Rents account for less than 6% of the total euro area HICP, which is only slightly below their weight of 7.5% in the US

CPI.[3] [4]In the United States, however, the total shelter component also includes imputed rents of owner-occupiers, as well as lodging away from home. As a result, the shelter component accounts for 35% of the CPI. This is about six times the weight of rents in the euro area. The imputed rent is the implicit rent that owner-occupiers would have to pay if they were renting their homes. In the euro area, the HICP basket does not include imputed rents, but only actual expenditures on rents – together with additional housing costs paid by both tenants and owners. Home ownership is similar in both jurisdictions at around 65%.[5]

Rent regulation in the euro area is generally more widespread than in the United States (Chart B) and has increased since the pandemic. This has tended to diminish the responsiveness of rents to underlying variables such as house prices, construction/renovation costs and inflation. Moreover, in some countries, social rental housing plays an important role. Rents for such homes are usually lower than the market rent, with changes in the level often highly regulated. Among the five largest euro area economies, the Netherlands has the largest share of rental contracts at reduced prices (85%).[6] France also has a large share of contracts at reduced prices. While available rent control indices only provide data up to 2019, several countries, including France and Spain among the largest countries, recently introduced measures to cap price increases in a high-inflation environment (see Table A, column 4 for a list of these features in the largest euro area economies).[7] Once such measures are phased out, rents could rise. In addition, in 2020 some countries introduced support measures in the private rental market in response to the pandemic, ranging from moratoria on evictions to the extension of rental contracts.

3 The weight of rents in the HICP varies considerably across countries, ranging from 9% in Finland to 0.7% in Slovenia, reflecting the different dimensions of the respective rental markets.

4 The rent measure in the US Consumer Price Index is based on contract rents and also includes any additional services that might be provided by the landlord under the rental contract (e.g. utilities). In the euro area, actual rents in the HICP only refer to payments related to actual rents.

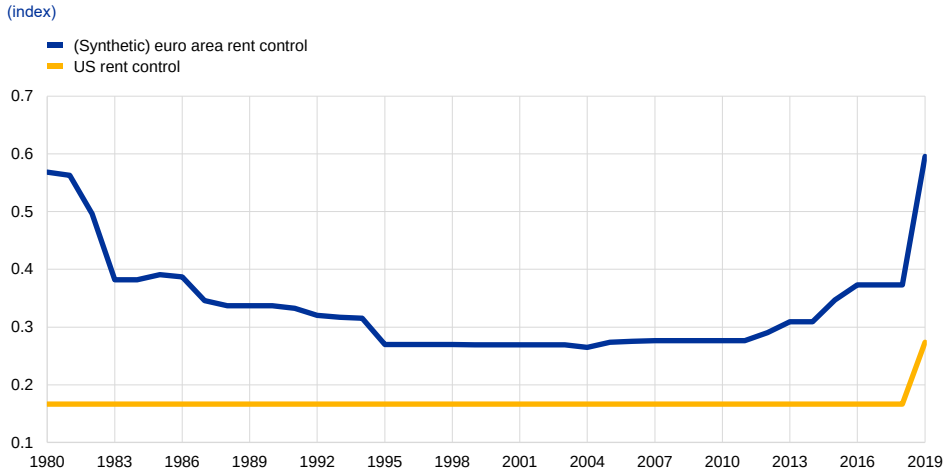
5 The European Statistical System has yet to reach agreement on a satisfactory methodology for including housing costs for homeowners in the HICP. For a discussion, see "Owner-occupied housing and the harmonised index of consumer prices", *Statistical Working Papers*, Eurostat, 2023. A preliminary estimate of the impact of adding imputed rents to the HICP would yield an average fairly similar to official headline inflation for the period until mid-2021; see Chart 8 in "Inflation measurement and its assessment in the ECB's monetary policy strategy review", *Occasional Paper Series*, No 265, ECB, 2021.

6 This share increased significantly from 2021 due to regulatory changes, while the average share in the period 2013-20 was only 2.2%.

7 The rent control index summarises the extent of restrictions on setting the initial rent level, updating it and passing costs (such as renovation) on to tenants.

Chart B

Rent control index



Sources: 2019 OECD Questionnaire on Affordable and Social Housing, Rental Market Regulation Index (ReMaIn) and own calculations.
Notes: The index ranges from 0 (no restrictions) to 1. A higher value of the index indicates greater rent control.

Changes in rents over time are affected by several methodological and regulatory aspects that make them less sensitive to market forces than other HICP components. First, rents tend to be adjusted less often than other prices – in general not more than once a year. Second, contracts are typically renewed sluggishly and with a backward-looking perspective, which contributes to rental price growth being particularly slow-moving. From a methodological point of view, the frequency of rent data collection varies across countries. Prices are sampled monthly in most cases, but once per year in the Netherlands for instance (Table A). Additionally, as discussed above, the rent basket mostly covers existing rents, which tend to catch up with market forces with a lag. Rents for temporary accommodation would be a good indication of market pressures, but these are included in the HICP accommodation services component and not in rents.

Table A

Rental market characteristics in the largest euro area economies

Country	Data source	Frequency of price collection	Latest regulations in place related to "high cost of living"	Index of rent control[1)]	Share of overall rental market at reduced price or free[2)]
DE	Survey starting from the latest census data on dwellings	Quarterly[3)]	n/a	0.75	12.6
FR	Survey starting from the census data on dwellings (free market) or from the directory of rental housing in the social sector (social housing)	Quarterly	Rent increases capped at 3.5% until March 2024	0.53	57.1
IT	Administrative data from the Real Estate Market Observatory of the Tax Office	Quarterly[4)]	No	n/a	35.4
ES	In-person or phone survey	Monthly	Rent increases capped at 2% until December 2023	0.57	35.4
NL	Landlords	Yearly	No	0.47	86.4

Sources: Eurostat, OECD and ECB staff calculations.
1) The rent control index ranges from 0 (no restrictions) to 1 (all types of restrictions) according to answers to the 2019 OECD Questionnaire on Affordable and Social Housing.
2) Refers to 2022 data from the EU statistics on income and living conditions (EU-SILC).
3) In Germany, collection of monthly rents is carried out quarterly, for three months in advance.
4) In Italy, monthly data collection started regularly from the beginning of 2023 in parallel with quarterly collection, with a plan to switch to the monthly data source in the near future.

Some indexation to inflation is present, but such clauses are not widespread across all private market rental contracts and jurisdictions. In Italy, for example, only certain types of contract are linked to inflation. In Belgium, a health index derived from the national CPI (excluding tobacco, alcohol and fuel products) is used for the indexation of existing contracts. However, the indexation of rental contracts is not possible for properties with a low degree of energy efficiency. In France and Spain, rent increases through indexation have recently been capped at 3.5% and 2% respectively. In Germany, rents are generally linked to a reference rent for similar-quality dwellings in the same locality, established at regular intervals (usually every four to six years). This makes the adjustments generally quite sluggish. However, some indexation also exists in Germany and is triggered by certain thresholds for CPI changes being crossed. Recent increases in inflation are likely to result in a higher share of contracts reaching these thresholds.

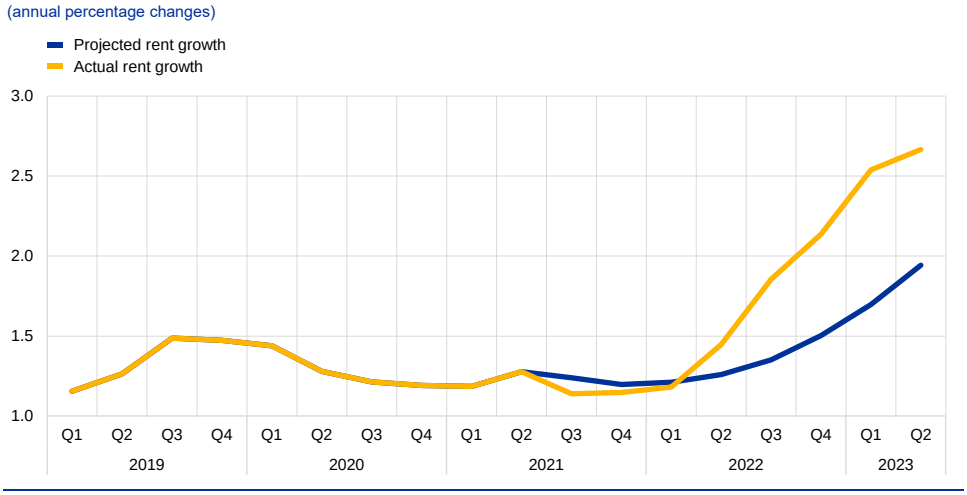
The recent growth in euro area rents is somewhat stronger than implied by a model using historical regularities. A single-equation model accounting for the strong inertia in rent inflation, including the link with past inflation and the residential investment deflator, would have captured the upward trend in rent inflation after end-2021 but underestimated its speed and strength (Chart C).[8] Looking ahead, there are two challenges to forecasting euro area rents: first, the sharp increase in inflation in the latter part of the estimation sample, and second, the possibility that euro area countries will limit the pass-through to rents to preserve housing affordability. More

8 A real-time forecast evaluation exercise indicates that a single-equation model slightly outperforms a random walk up to six quarters ahead and also outperforms a Bayesian vector autoregression (BVAR) including additional housing market-related variables. The single equation selected includes lagged rent (with a one-quarter lag) and inflation, as well as the residential investment deflator (with four-quarter lags). The addition of house prices worsened the performance of the models. The variables selected are widely used in the literature on rent projections; see, for example, Appendix 2 in John Muellbauer's contribution to the 2022 ECB Forum on Central Banking, "Real Estate Booms and Busts: Implications for Monetary and Macroprudential Policy in Europe", ECB, June 2022.

generally, rent regulation in a broader sense is not included in the explanatory variables of reduced-form models such as the one considered here. Such regulation may therefore lead to overprediction of rent developments going forward.

Chart C

Euro area projected and actual rent growth



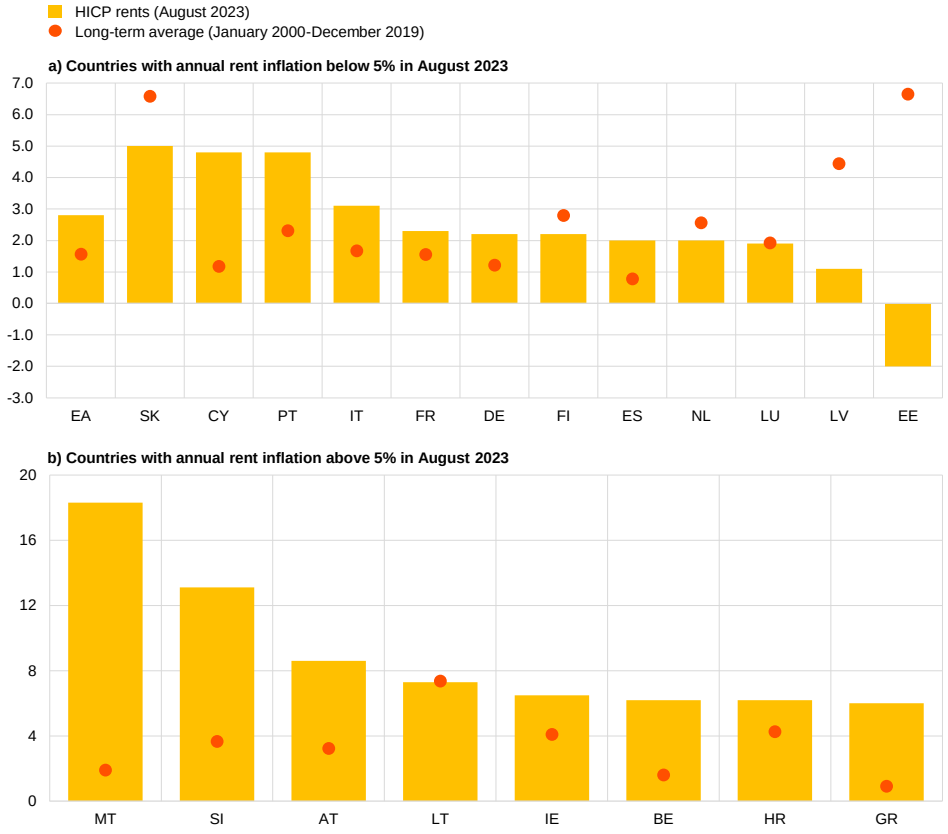
Sources: Eurostat and ECB staff calculations.
Notes: See footnote 8 for a description of the model. The model is estimated for the period from the first quarter of 1999 to the second quarter of 2021. Rent projections start in the third quarter of 2021. The latest observations are for the second quarter of 2023.

Although rent inflation varies greatly across euro area countries, the latest readings for most countries are higher than one year ago and exceed long-term averages (Chart D). Idiosyncratic national characteristics of the housing markets across euro area countries account for the large diversity observed in rent inflation. Annual changes ranged from 18.3% in Malta to -2.0% in Estonia in August 2023 (Chart D, panel b). Such idiosyncrasies relate among other things to national regulation, different statistical recording and sampling, the indexation of rental contracts to inflation (see above), the size and depth of the private rental market compared with the share at a reduced price or free, and the size of the overall rental market, which differs substantially across euro area countries.

Chart D

Rent developments across the euro area

(annual percentage changes, averages)



Sources: Eurostat and ECB staff calculations.
Notes: For Spain, the long-term average starts in January 2016 due to methodological changes in the data collection. EA stands for euro area.

Upward pressures on rent inflation are likely to persist, although some institutional features may act as mitigating factors. Upward pressures are particularly strong at present and relate to both supply and demand for housing. Higher construction costs as well as higher costs for the maintenance and repair of dwellings are contributing to a reduction in the profitability of property ownership in real terms. Meanwhile, tighter financing conditions are limiting the supply of housing.[9] In some countries, additional pressures exist due to both an increasing number of rental units being used for short-term tourist rentals and strong inflows of foreign workers. On the demand side, past increases in house prices, coupled with increasing financing costs, have reduced housing affordability. This tends to lead to rented accommodation being preferred to home ownership. Despite such upward pressures, the strong inertia embedded in rental prices – partly for institutional reasons – implies a relatively slow adjustment in rents. This would suggest that any risk of pressure on underlying inflation emanating from the euro area rental markets

9 Costs for services and repair of the dwelling increased by 6.8% in annual terms in August 2023, while costs related to major repair and maintenance for owners increased by 9.9% in annual terms in the first quarter of 2023.

is relatively limited. Nonetheless, the situation is country-specific, due to the major idiosyncrasies in the respective housing and rental markets.

Article

1 Happy anniversary, BLS – 20 years of the euro area bank lending survey

Prepared by Petra Köhler-Ulbrich, Maria Dimou, Lorenzo Ferrante and Conor Parle

1 Introduction

Since its launch in 2003, the euro area bank lending survey (BLS) has provided valuable early indications for the assessment of bank lending conditions in the euro area. The BLS is one of the longest existing Eurosystem surveys. It was launched by the Eurosystem in 2003, to enhance the knowledge of bank lending conditions in the euro area.[1] Bank credit standards (that is, their loan approval criteria), actual terms and conditions on new loans, and the demand for loans vary over the economic and monetary policy cycle and may, at times, be driven by financial crises or emergency financing needs. These developments, reported in great detail by banks in the BLS at a quarterly frequency, support the assessment of the drivers of bank lending conditions and provide early indications of bank lending dynamics, which is important for the assessment of the transmission of monetary policy.

The recorded public interest in the BLS has increased significantly over time. Interest in the BLS has traditionally been higher during financial crises and periods of high uncertainty than during quieter periods. In addition, interest in the BLS has increased considerably over time and has been especially high during the monetary policy tightening period since 2022, potentially also reflecting the relevance of soft information to determine the appropriate level and duration of the monetary policy tightening. Specifically, more than 5,000 users visited the BLS publication pages during the first week after the release of the survey for the first quarter of 2023 – a historical peak, according to ECB analysis. In addition to the BLS, which focuses on the perspective of the banks, other ECB surveys provide further soft information on economic developments in the euro area, complementing the information from the BLS.[2]

1 On 15 May 2003 the ECB published, for the first time, the results of its euro area bank lending survey (for the quarters Q4 2002 and Q1 2003), together with the article entitled "A bank lending survey for the euro area", *Monthly Bulletin*, ECB, Frankfurt am Main, April 2003. The Senior Loan Officer Opinion Survey on Bank Lending Practices, conducted by the Federal Reserve System in the United States, was a model for the BLS. Participation in the BLS has increased over time, with additional countries joining the euro area and additional banks being added to adequately represent the structure of the euro area banking sector.

2 See, for instance, the "Survey on the access to finance of enterprises", which focuses on the perspective of firms, and the "Consumer Expectations Survey", which focuses on the perspective of consumers.

This article reviews bank lending conditions and loan demand and their leading indicator properties for loan growth and economic activity for euro area firms and households over the existence of the survey, spanning the last 20 years.[3] Section 2 looks at the early days of the survey, from 2003 to 2007. Section 3 covers the period from 2008 to 2014, which saw the global financial crisis, the sovereign debt crisis and its immediate aftermath. Section 4 analyses the period of unconventional monetary policy measures until 2019. Section 5 takes stock of the BLS during the COVID-19 pandemic from 2020 to 2021. Section 6 analyses the monetary policy tightening period since 2022, and Section 7 concludes by assessing the past, present and future role of the BLS.

2 Loan supply and demand in the early days of the euro area – 2003-2007

The period ahead of the global financial crisis (GFC) was marked by strengthening economic growth, increasing inflationary pressures and double-digit loan growth, to which monetary policy responded with rate hikes. Following a period of weaker growth and monetary accommodation at the beginning of the century, the euro area economy recovered from mid-2004 until 2006, and growth remained solid in 2007. In response to rising risks to price stability in the context of the strengthening of the euro area economy, the ECB started to increase its key policy rate in December 2005, from an initial level of 2.00%, to 4.25% in July 2008.[4]

Loose bank lending conditions contributed to a build-up of risks ahead of the GFC. During most of the monetary policy tightening period ahead of the GFC, banks eased their credit standards in net terms or kept them broadly unchanged for loans to euro area firms and housing loans (Chart 1, panel a), somewhat in contrast to what monetary policy transmission channels would suggest in response to higher bank funding costs (interest rate channel) and rising credit risks of borrowers (balance sheet channel).[5] In fact, the net percentages of credit standards on loans to firms were mostly negative from the third quarter of 2004 until the second quarter of 2007, implying a net easing of bank lending policies. The BLS flagged the limited importance banks were allocating to credit risks during this period, as risk

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3 For a detailed discussion of ECB monetary policy periods, see Rostagno, M., Altavilla, C., Carboni, G., Lemke, W., Motto, R., Saint Guilhem, A. and Yiangou, J., "Monetary Policy in Times of Crisis: A Tale of Two Decades of the European Central Bank", *Oxford University Press*, 2021. See also Köhler-Ulbrich, P., Hempell, H.S. and Scopel, S., "The euro area bank lending survey", *Occasional Paper Series*, No 179, ECB, Frankfurt am Main, September 2016, and the article entitled "What does the bank lending survey tell us about credit conditions for euro area firms?", *Economic Bulletin*, Issue 8, ECB, 2019.

4 Minimum bid rate for the variable rate tender of the ECB main refinancing operations.

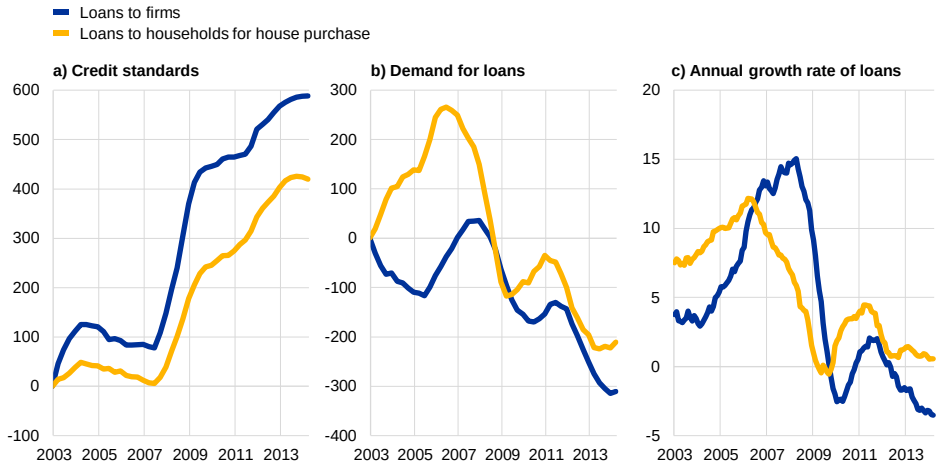
5 See Maddaloni, A. and Peydró, J.-L., "Bank Risk-taking, Securitization, Supervision, and Low Interest Rates: Evidence from the Euro-area and the U.S. Lending Standards", *The Review of Financial Studies* Vol. 24, No 6, 2011, pp. 2121-2165. See also Lane, P.R., "The banking channel of monetary policy tightening in the euro area", Remarks at the Panel Discussion on Banking Solvency and Monetary Policy, NBER Summer Institute 2023 Macro, Money and Financial Frictions Workshop, Cambridge, Massachusetts, 12 July 2023. See also Task Force of the Monetary Policy Committee of the European System of Central Banks, "Housing Finance in the euro area", *Occasional Paper Series*, No 101, ECB, Frankfurt am Main, March 2009, and Task Force of the Monetary Policy Committee of the European System of Central Banks, "Corporate finance and economic activity in the euro area", Structural Issues Report 2013, *Occasional Paper Series*, No 151, ECB, Frankfurt am Main, August 2013.

perceptions had only a small tightening impact on credit standards, while competition had a large easing impact (Chart 2, panel a).[6] Demand for loans, on the other hand, continued to increase over this period (Chart 1, panel b). This is in line with the typically lagging response of lending to rising interest rates, in periods of growing fixed investment, robust mergers and acquisitions activity, favourable housing market prospects and high consumer confidence. This was accompanied by double-digit annual growth rates of loans to euro area firms (peaking in April 2008, at 15%) and of loans to euro area households for house purchase (peaking in March 2006, at 12.2%; Chart 1, panel c). Overall, credit supply and demand developments reported by banks in the BLS clearly signalled that financial stability risks were building up in the euro area banking sector during this period and, more generally, in the euro area economy.[7]

Chart 1

Bank lending conditions, demand for loans and bank lending to firms and households for house purchase, 2003-2014

(panels a) and b): cumulated net percentages of banks; panel c): annual growth rates)



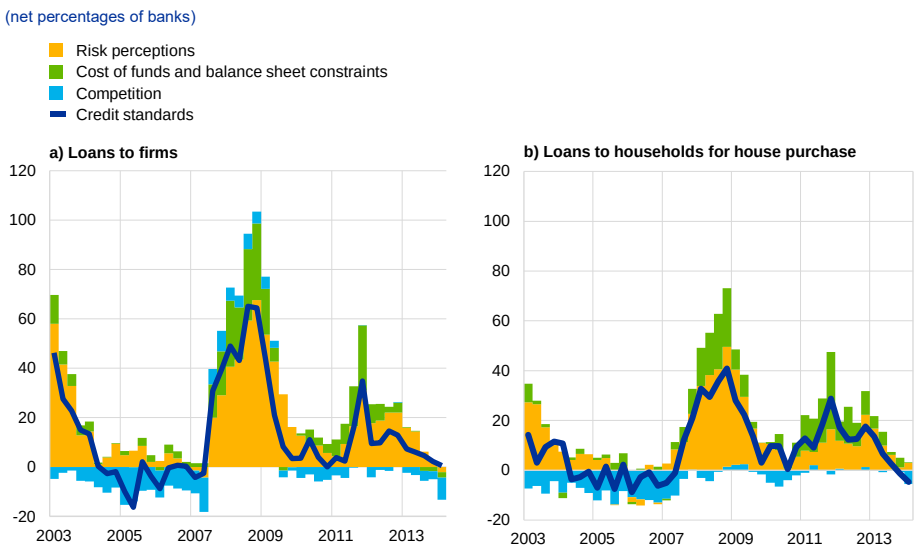
Sources: ECB (BLS and BSI) and ECB calculations.
Notes: Net percentages for credit standards are defined as the difference between the sum of the percentages of banks responding "tightened considerably" and "tightened somewhat" and the sum of the percentages of banks responding "eased somewhat" and "eased considerably". Net percentages for the questions on demand for loans 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". Cumulation starting in the first quarter of 2003 (base period = Q4 2002). For credit standards, the cumulation is affected by the fact that the historical average of the series is above zero (9% for loans to firms and 7% for housing loans). Monthly data on loans to firms are adjusted for seasonal and working day effects as well as for sales, securitisation and cash pooling from 2004 onwards. Monthly data on loans to households for house purchase are adjusted for seasonal and working day effects from 2004 onwards. The latest observations are for the first quarter of 2014.

6 The cumulation of credit standards helps to proxy the level of credit standards over time, although banks' tendency to report more often a tightening than an easing of credit standards limits the determination of the level of credit standards.

7 See, for instance, European Central Bank, *Financial Stability Review*, June 2008.

Chart 2

Importance of factors having an impact on credit standards, 2003-2014



Source: ECB (BLS).
Notes: See the notes to Chart 1. The net percentages for responses to questions relating to contributing factors are defined as the difference between the percentages of banks reporting that the given factor contributed to tightening credit standards and the percentages of banks reporting that it contributed to easing credit standards. The latest observations are for the first quarter of 2014.

3 Risk perceptions and financial frictions at work – 2008-2014

Banks reacted to the GFC with an abrupt change in risk perceptions, leading to sharp spikes in the tightening of bank credit standards. Following the first warning signs of the end of the housing market boom in the summer of 2007, the US subprime crisis escalated in September 2008 with the bankruptcy of the US investment bank Lehman Brothers and spilled over dramatically to the euro area. While the ECB, along with other central banks, cut its key policy rates and provided liquidity assistance, the crisis led to unprecedented spikes in the tightening of banks' credit standards (Chart 2).[8] From the third quarter of 2008 until the second quarter of 2009, a high net percentage of banks reported a tightening of their credit standards on loans to firms (with a peak of 65% in the third quarter of 2008) and on housing loans (with a peak of 41% in the fourth quarter). As in later crisis periods, the BLS provided valuable early indications about the size of the shock to the euro area economy via the bank lending channel, in line with its leading indicator properties which help to predict loan growth.[9] Following the start of the net tightening of credit standards and stagnating loan demand for firms in the third quarter of 2007, loan growth to firms decelerated substantially (Chart 1, panel c), and quarterly loan

8 The ECB cut the interest rate on its main refinancing operations by 325 basis points between October 2008 and May 2009, switching to a fixed rate allotment during this time.

9 Tightening credit standards in a given quarter tend to lead to weaker loan growth for firms around five to six quarters later (around two quarters for housing loans), while lower demand for loans to firms tends to lead to weaker loan growth for firms around three quarters later (three to four quarters for housing loans). The co-movement of the BLS indicators with net loan growth is weaker for housing loans than for loans to firms, likely related to temporarily high housing loan repayments around ten years after the pre-GFC housing market boom. These repayments dampened net housing loan growth. See the box entitled "What information does the euro area bank lending survey provide on future loan developments?", *Economic Bulletin*, Issue 8, ECB, 2022.

growth came to a halt in the first quarter of 2009 before turning negative. For housing loans, actual loan growth started to weaken earlier compared with loan growth to firms, already slowing in 2007. The net tightening of credit standards in the autumn of 2008 for both loans to firms and housing loans was largely driven by a surge in the perception of risks, which tends to be the main driving factor at the aggregate level in tightening episodes related to the economic outlook and borrowers' creditworthiness.[10]

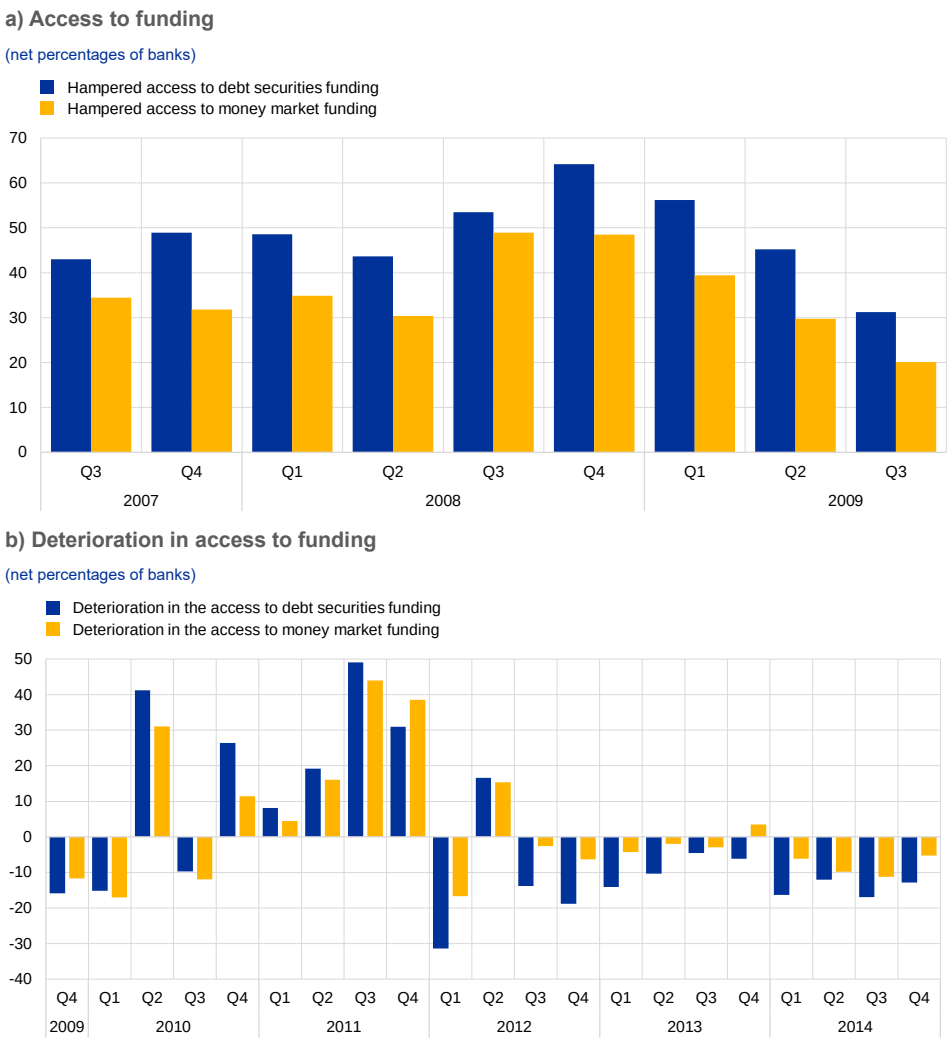
During the GFC, the BLS also provided evidence of bank balance sheet constraints and hampered access to funding leading to restrictions in credit supply. On top of rising risk perceptions, euro area banks reported a substantial tightening impact stemming from their cost of funds and balance sheet position on their credit standards (Chart 2), reflecting the environment of high financial stress. This pointed to serious problems in the bank-based transmission of monetary policy to bank lending conditions. The difficult situation in the banking sector was also reflected in a freeze of the money markets and a significant rise in bank bond spreads, resulting in overall impaired access to market-based funding. This worrisome development for the bank-based transmission of monetary policy warranted the introduction of one of the first ad hoc questions in the BLS questionnaire, related to banks' access to funding. Euro area banks reported that the financial market turmoil had hampered their access to unsecured interbank money market and debt securities funding, especially between the third quarter of 2008 and the first quarter of 2009 (Chart 3, panel a). This reflected high uncertainty among market participants and banks alike about the actual health of the banking system. The BLS proved helpful in collecting early evidence on the impact of the financial turmoil and the GFC with respect to its effect on bank capital, loan margins (defined as the spread over relevant market reference rates) and lending. The survey also shed light on the mitigating effects of some governments' announcements of recapitalisation support and state guarantees on banks' access to wholesale funding, as well as bank recapitalisation measures and bank balance sheet cleaning operations in the decade following this crisis (Section 4).[11]

10 See Köhler-Ulbrich, P. et al., op. cit.

11 See "The euro area bank lending survey – October 2008", ECB, 7 November 2008, and "The euro area bank lending survey – January 2009", ECB, 6 February 2009.

Chart 3

Financial frictions and banks' access to funding



Source: ECB (BLS).
Notes: Panel a): Access to funding based on the BLS ad hoc question "As a result of the situation in the financial markets, has your market access been hampered when tapping your usual sources of wholesale funding?", which was included in the BLS from the third quarter of 2007 until the third quarter of 2009. Panel b): From the fourth quarter of 2009 onwards, access to funding based on the revised current version of the question asking for the change (deterioration or improvement) in banks' access to funding. "Money market funding" refers to unsecured interbank money market funding. The latest observations for panel b) are for the fourth quarter of 2014.

In the period from 2009-2011, the BLS provided supporting evidence of an uneven recovery across euro area countries, and heterogeneity built up further during the sovereign debt crisis. While the euro area economy showed some signs of improvement in 2010 and early 2011, accompanied by a brief and overall modest increase in euro area loan growth, BLS developments signalled an uneven recovery across euro area countries. In Germany and France, banks' credit standards and margins on average loans to firms eased on average over the period from the third quarter of 2009 until the second quarter of 2011. In Italy and Spain, meanwhile, credit standards for firms continued to tighten and margins on average and riskier loans mostly widened for loans to firms, as signs indicating the risks of a sovereign debt crisis emerged and then intensified. The distribution of lending rates for firms across euro area countries confirmed the elevated heterogeneity in lending

conditions.[12] For housing loans, the net tightening of credit standards diminished in all four of these euro area countries, but margins on average and riskier housing loans widened further in Italy and Spain. In addition, housing loan demand remained subdued, especially in Spain, following the burst of the housing market overvaluation and the pre-GFC mortgage lending bubble.

The substantial divergence in sovereign bond yields across the euro area countries also had repercussions on bank access to funding and bank lending conditions. The widening of sovereign yield spreads during the sovereign debt crisis resulted in more severe difficulties for banks to collect liquidity in the wholesale market and ultimately led to diverging lending conditions across countries. In this context, euro area banks reported a net deterioration in their access to funding across all market segments over the period 2011-2012, identifying sovereign tensions as the main cause (Chart 3, panel b and Chart 4). Consistent with this interpretation, monetary policy measures adopted in the early phase of the sovereign debt crisis, such as the fixed rate full allotment of the main refinancing operation tenders and the two very long-term refinancing operations (VLTROs) in 2011 and 2012, helped to mitigate the dampening effect of the crisis on loan growth but did not impede loan contraction in late 2011 and the first half of 2012.[13] It was only with the "Whatever it takes" speech by President Draghi on 26 July 2012 and the announcement of the Outright Monetary Transactions on 2 August 2012 that the root causes of the fragmentation in lending conditions started to be forcefully addressed (Chart 4).

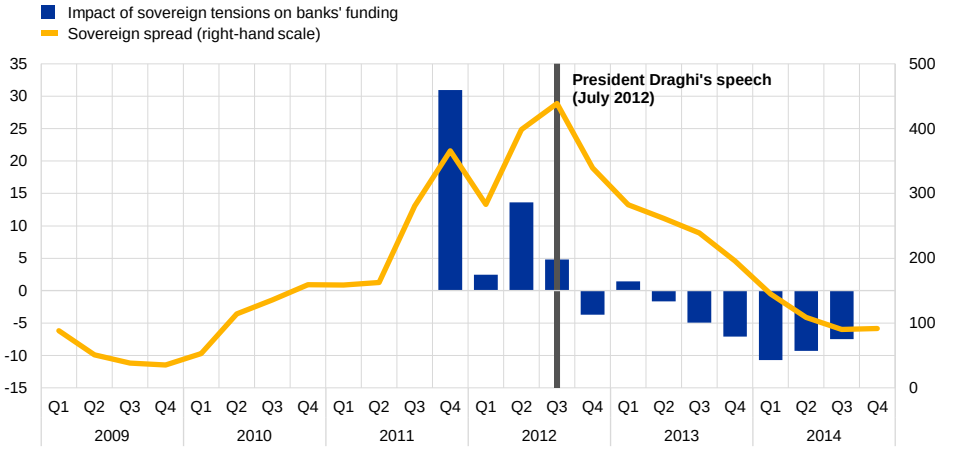
[12] See also Altavilla, C., Canova, F. and Ciccarelli, M., Mending the broken link: Heterogeneous bank lending rates and monetary policy pass-through, *Journal of Monetary Economics*, Vol. 110, 2020, pp. 81-98.

[13] See Ciccarelli, M., Maddaloni, A. and Peydró, J.-L., "Heterogeneous transmission mechanism – Monetary policy and financial fragility in the euro area", *Working Paper Series*, No 1527, ECB, Frankfurt am Main, March 2013. On the impact of the VLTROs on credit supply, see Darracq Paries, M. and De Santis, R., "A non-standard monetary policy shock – The ECB's 3-year LTROs and the shift in credit supply", *Working Paper Series*, No 1508, ECB, Frankfurt am Main, January 2013.

Chart 4

Impact of sovereign tensions on bank funding

(left-hand scale: net percentages of banks; right-hand scale: basis points per annum)



Sources: ECB (BLS), Refinitiv and ECB calculations.
Notes: The sovereign spread is the average five-year yield in Italy and Spain minus the average yield in Germany and France, at quarterly frequency. Aggregate net percentages based on a BLS ad hoc question on the effect of specific factors (e.g. direct exposure to sovereign debt, value of sovereign collateral available for wholesale market transactions), given the tensions in the European sovereign debt market, on banks' funding conditions. The latest observations are for the third quarter of 2014 for the impact of sovereign tensions on bank funding and for the fourth quarter of 2014 for the sovereign spread.

4 The impact of unconventional monetary policy and supervisory requirements on bank lending conditions – 2014-2019

The BLS reflected, in a timely manner, the important role of the ECB's additional unconventional monetary policy (UMP) measures in reinforcing bank-based transmission.[14] In response to the persistently weak inflation outlook, in early 2014 the ECB reinforced the monetary policy toolkit to ease its monetary policy and enhance the transmission of its accommodative stance. This consisted of introducing a negative interest rate policy (NIRP) in June 2014, three series of targeted longer-term refinancing operations (TLTROs) and the purchase of securities under its asset purchase programme (APP) starting in October 2014.[15] Bank replies in the survey documented the workings of each UMP tool in supporting credit supply. Banks reported a significant increase in lending volumes linked to TLTROs, which helped to further ease banks funding costs.[16] Support to credit supply was also attributed to the negative deposit facility rate (DFR) and the APP (Chart 5), thus confirming the ability of these measures to spur loan originations and contribute to

14 For a detailed explanation of the events and rationale surrounding the introduction of the ECB's UMP measures, see Rostagno, M. et al., op. cit. See also the explanations of the ECB's UMP measures on the ECB's website, especially for the asset purchase programmes and the TLTROs.

15 A first series of TLTROs was announced on 5 June 2014, a second series (TLTRO II) on 10 March 2016 and a third series (TLTRO III) on 7 March 2019.

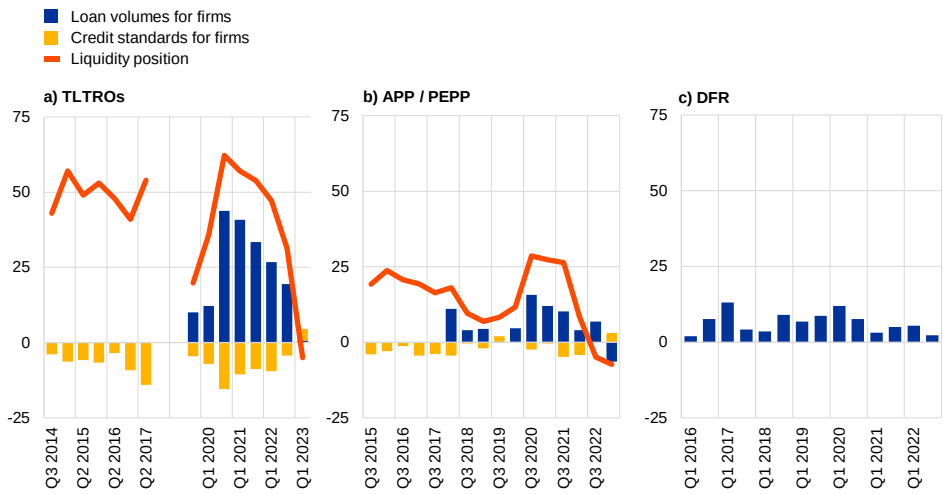
16 On the substantial support of TLTROs to lending conditions, see the article entitled "TLTRO III and bank lending conditions", *Economic Bulletin*, Issue 6, ECB, 2021. See also Altavilla, C., Barbiero, F., Boucinha, M. and Burlon, L., "The Great Lockdown: Pandemic response policies and bank lending conditions", *European Economic Review*, Vol. 156, 2023, and Andreeva, D.C. and García-Posada, M., "The impact of the ECB's targeted long-term refinancing operations on banks' lending policies: The role of competition", *Journal of Banking and Finance*, Vol. 122, 2021.

the easing of monetary policy also via bank-based transmission.[17] The APP further complemented the accommodative policy stance by improving banks' liquidity position (Chart 5) through an increase in customer deposits and sales of marketable assets. This was accompanied by a decrease in banks' holdings of sovereign bonds, thus documenting the APP's role in increasing the relative attractiveness of credit creation.[18] Consistent with their replies on credit supply, a substantial net percentage of banks also linked UMP tools to narrowing loan margins and easing credit standards (Chart 5).[19]

Chart 5

Impact of the ECB's unconventional monetary policy instruments on bank lending, credit standards and liquidity position

(net percentages of banks reporting an increase in loan volumes, an easing of credit standards or an improvement in their liquidity position)



Source: ECB (BLS).
Notes: The time periods shown on the x-axes refer to the respective periods covered by the biannual questions – e.g. Q1 2023 for the period Q4 2022 - Q1 2023. Impact of the first and second series of targeted longer-term refinancing operations (TLTROs), from Q3 2014 to Q2 2017, based on a one-sided question asking only for the easing impact on credit standards. Impact of the third series of TLTROs from Q3 2019 to Q1 2023. Impact on credit standards and liquidity position not available for DFR. Impact on loan volumes not available for TLTRO II, and for APP/PEPP before Q1 2018. The latest observations are for the first quarter of 2023 for TLTROs, the APP and the pandemic emergency purchase programme (PEPP, introduced in March 2020), and for the third quarter of 2022 for the DFR.

The BLS also provided early indications on the implications of UMP tools on bank profitability. Overall, estimates indicate that UMP measures had a broadly neutral impact on bank profitability between 2014 and 2019 (see Section 6 for the

17 On the BLS evidence of the impact of NIRP, see also the article entitled "Negative rates and the transmission of monetary policy", *Economic Bulletin*, Issue 3, ECB, 2020. On the impact of the APP, see Altavilla, C., Boucinha, M., Holton, S. and Ongena, S., "Credit Supply and Demand in Unconventional Times", *Journal of Money, Credit and Banking*, Vol. 53, No 8, 2021, pp. 2071-2098, and Albertazzi, U., Becker, B. and Boucinha, M., "Portfolio rebalancing and the transmission of large-scale asset purchase programs: Evidence from the euro area", *Journal of Financial Intermediation*, Vol. 48, 2021.

18 For banks' replies regarding the evolution of their sovereign bond holdings in connection to the APP, see, for instance, the BLS website reports for the first quarter of 2016, the third quarter of 2016, the first quarter of 2017 and the third quarter of 2017.

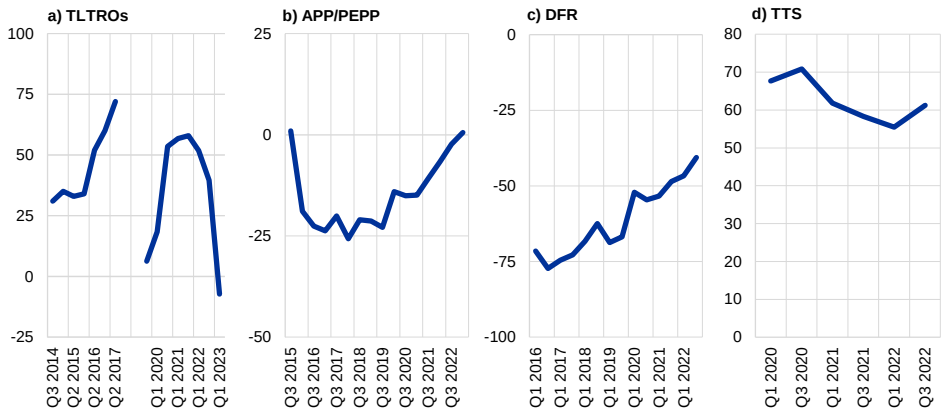
19 For banks' replies documenting the easing impact of TLTROs on their terms and conditions see, for instance, the BLS website reports for the fourth quarter of 2014 (TLTRO I), the fourth quarter of 2016 (TLTRO II), the fourth quarter of 2019 (TLTRO III) and the first quarter of 2021 (TLTRO III). For results documenting the easing impact of the expanded asset purchase programme (APP) on banks' terms and conditions and net interest margins see, for instance, the BLS website reports for the first quarter of 2016, the first quarter of 2017 and the third quarter of 2020.

impact of monetary policy tightening on banks' financial situation). On the one hand, UMP had a significant positive effect coming from increased loan volumes and reduced provisioning and impairment costs, as well as more short-lived impacts related to capital gains.[20] On the other hand, in their replies BLS banks associated NIRP and APP with a deterioration in their overall profitability (Chart 6), likely reflecting first and foremost the overall compression of margins induced by the easing of monetary policy near the effective lower bound, but also the mechanical adverse impact on their profitability of the negative interest charge on outstanding excess liquidity.[21] The importance of the negative remuneration on excess reserves in banks' replies also implied that the introduction of the two-tier system (TTS), which was explicitly adopted to support the bank-based transmission of monetary policy while preserving the positive contribution of negative rates to the accommodative stance, led to the vast majority of the respondent banks reporting a beneficial effect.[22] In parallel, TLTROs also supported bank profitability to some extent, by compressing bank funding costs and enabling a large credit expansion.

Chart 6

Impact of the ECB's unconventional monetary policy instruments on bank profitability

(net percentages of banks reporting an improvement)



Source: ECB (BLS).
Notes: The time periods shown on the x-axes refer to the respective periods covered by the biannual questions – e.g. Q1 2023 for the period Q4 2022 - Q1 2023. Impact of the first and second series of targeted longer-term refinancing operations (TLTROs) from Q3 2014 to Q2 2017. Impact of the third series of TLTROs from Q3 2019 until Q1 2023. Impact on profitability not available for DFR and TTS; instead, impact on net interest income is shown for these instruments. The latest observations are for the first quarter of 2023 for TLTROs, the APP and the PEPP, and for the third quarter of 2022 for the DFR and the TTS.

Banks' replies to the set of UMP-related ad hoc questions show the rich evidence the BLS has been able to provide on the impact of the ECB's

[20] See Altavilla, C., Lemke, W., Linzert, T., Tapking, J., and von Landesberger, J., "Assessing the efficacy, efficiency and potential side effects of the ECB's monetary policy instruments since 2014", *Occasional Paper Series*, No 278, ECB, Frankfurt am Main, December 2021.

[21] On the channels through which conventional and unconventional measures impact bank net interest income and other components of bank profitability within a low interest rate environment, see Altavilla, C., Boucinha, M. and Peydró, J.-L., "Monetary policy and bank profitability in a low interest rate environment", *Economic Policy*, Vol. 33, Issue 96, 2018, pp. 531-586.

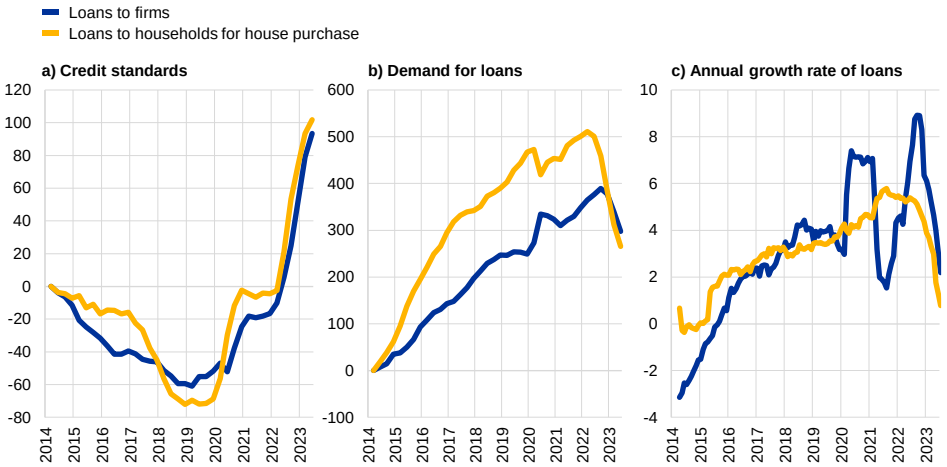
[22] The two-tier system (TTS) was applied by the ECB from September 2019 until September 2022. It introduced a different rate of remuneration for part of a credit institution's current account holdings in excess of minimum reserve requirements. In particular, the two-tier system was used to exempt part of these holdings from the deposit facility rate (DFR) when the rate was negative. See Boucinha, M., Burlon, L., Corsi, M., Della Valle, G., Eisenschmidt, J., Marmara, I., Pool, S., Schumacher, J. and Vergote, O., "Two-tier system for remunerating excess reserve holdings", *Occasional Paper Series*, No 302, ECB, Frankfurt am Main, September 2022.

monetary policy measures on the financial situation of banks, bank lending conditions and loan volumes. In response to the monetary policy accommodation over the period, banks mostly eased their credit standards on new loans to firms and housing loans from the second quarter of 2014 until the first quarter of 2019. This was accompanied by a recovery in loan demand and actual loan growth to firms and housing loans (Chart 7).

Chart 7

Bank lending conditions, demand for loans and bank lending to firms and households for house purchase, 2014-2023

(panels a) and b): cumulated net percentages of banks; panel c): annual growth rates)



Sources: ECB (BLS and BSI) and ECB calculations.
Notes: See the notes to Chart 1. Cumulation starting in the second quarter of 2014 (base period = Q1 2014). The latest observations are for the second quarter of 2023.

Supervisory actions and regulatory requirements induced banks to accumulate capital and adopt more prudent lending practices while not impeding the transmission of the monetary policy easing to lending conditions. Banks reported increased capital positions and a reduction in risk-weighted assets, in their quest to comply with supervisory requirements (Chart 8, panel a) in the context of the reform of Basel II requirements.[23] In the first years following the announcement of measures to reform Basel II requirements and to set up a Single Supervisory Mechanism in the European Union (2011-2013), bank replies in the BLS pointed to a tightening impact of supervisory requirements on their credit standards, reflecting their intensified efforts towards capital accumulation and balance sheet clean-up.[24] Consistent with the prudential nature of the requirements, the decrease in banks' risk-weighted assets stemmed from a relative reduction in riskier loans. This is in line with the broadly neutral impact of supervisory requirements on credit standards over the period 2014-2019, after the tightening

[23] The European Parliament published its resolution on Basel II and the revision of the Capital Requirements Directives on 7 October 2010. The complete Basel III framework was published by the BIS in December 2010 and updated in June 2011. Basel III requirements were incorporated into EU law via the CRR/CRD IV package, comprising of the Capital Requirements Regulation (CRR, 575/2013/EU) and the Capital Requirements Directive (CRD, 2013/36/EU), applicable as of January 2014. The full implementation of Basel III requirements underwent several extensions, until its full enforcement as of 1 January 2023. The Single Supervisory Mechanism Regulation (1024/2013/EU) was published by the European Parliament in October 2013.

[24] See also Köhler-Ulbrich, P. et al., op. cit.

impact earlier on.[25] In other words, data from the BLS suggest that stricter supervisory and regulatory requirements did not impede the transmission of the monetary policy accommodation after 2014 in itself, but rather contributed to containing unwarranted levels of risk-taking by banks.[26]

[25] See the article entitled "What does the bank lending survey tell us about credit conditions for euro area firms?", *Economic Bulletin*, Issue 8, ECB, 2019. Banks indicated a tightening impact on credit standards and a decrease in average loans in connection to supervisory requirements over the quarters up to the fourth quarter of 2013, which coincided with broad-based deleveraging and tightening in credit standards amid lower levels of risk tolerance.

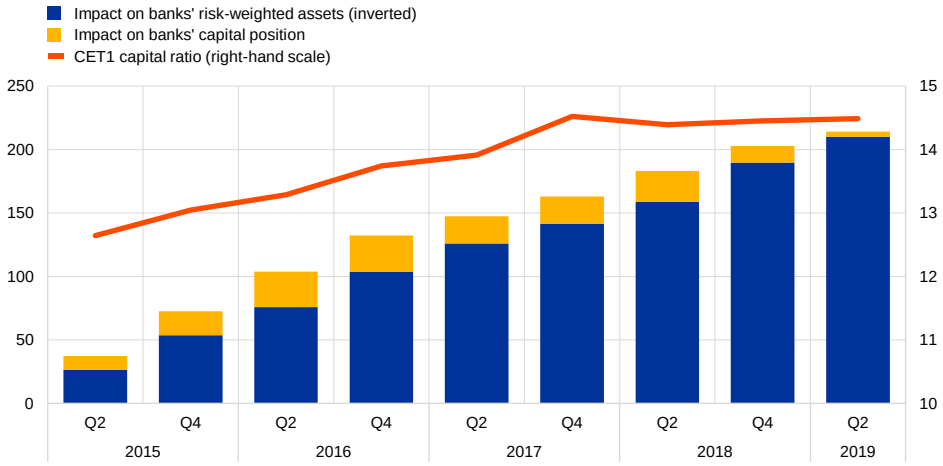
[26] See also, for instance, Altavilla, C., Boucinha, M., Peydró, J.-L. and Smets, F., "Banking supervision, monetary policy and risk-taking: big data evidence from 15 credit registers", *Working Paper Series*, No 2349, ECB, Frankfurt am Main, January 2020, and Albertazzi, U. et al., "Monetary policy and bank stability: the analytical toolbox reviewed", *Working Paper Series*, No 2377, ECB, Frankfurt am Main, February 2020.

Chart 8

Impact of supervisory and regulatory requirements and of banks' NPL ratios

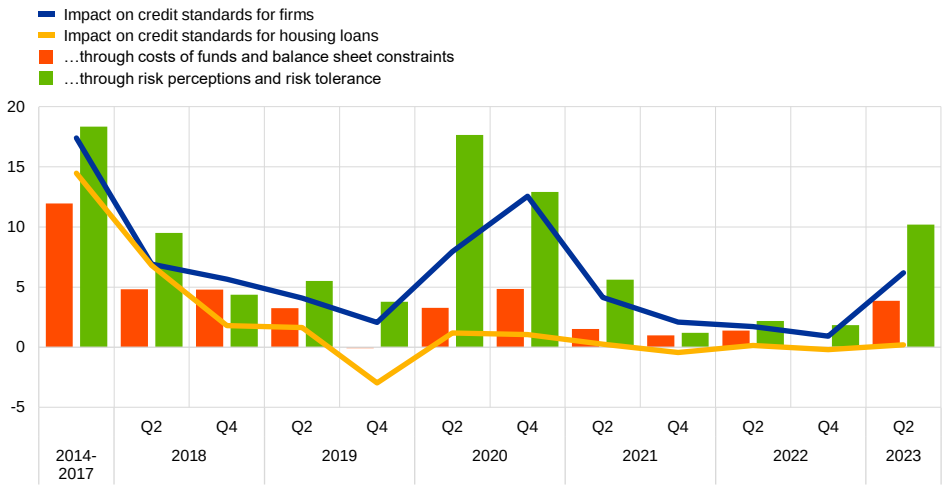
a) Impact of supervisory and regulatory requirements and evolution of banks' actual CET1 capital ratios

(left-hand scale: cumulated net percentages of banks reporting an increase; right-hand scale: percentages of risk-weighted assets)



b) Impact of NPL ratios

(net percentages of banks reporting a tightening impact of NPL ratios)



Sources: ECB (BLS and Consolidated Banking Data).
Notes: Panel a), left-hand scale: BLS net percentages on impact on risk-weighted assets are inverted, so decreases in risk-weighted assets are shown as positive contributions to banks' capital ratios. Panel a), right-hand scale: Consolidated banking data on banks' CET1 capital ratio. Panel b): The impact of NPL ratios on banks' credit standards for firms and for loans to households for house purchase. The item "through costs of funds and balance sheet constraints" is the unweighted average of: (a) costs related to banks' capital position; (b) costs related to banks' balance sheet clean-up operations; (c) pressure related to supervisory or regulatory requirements. The item "through risk perceptions and risk tolerance" is the unweighted average of these two factors. NPL ratios are defined as non-performing loans and advances gross of impairments as a share of total loans and advances. The latest observations are for the second quarter of 2019 for panel a) and for the second quarter of 2023 for panel b).

Riskier legacy assets on bank balance sheets exerted tightening pressure on their lending policies. This was through the increased cost of funds and balance sheet constraints (higher-NPL banks tend to face less favourable market conditions and also bear the cost burden of any clean-up processes), and lower levels of risk tolerance (the opportunity cost of lending is higher for higher-NPL banks) (Chart 8, panel b). Over time, this tightening impact diminished, reflecting the gradual decrease in realised NPL ratios. The latter was supported by the generalised improvement in borrower quality as a result of monetary policy accommodation, as well as active clean-up processes through sales and securitisations by banks.

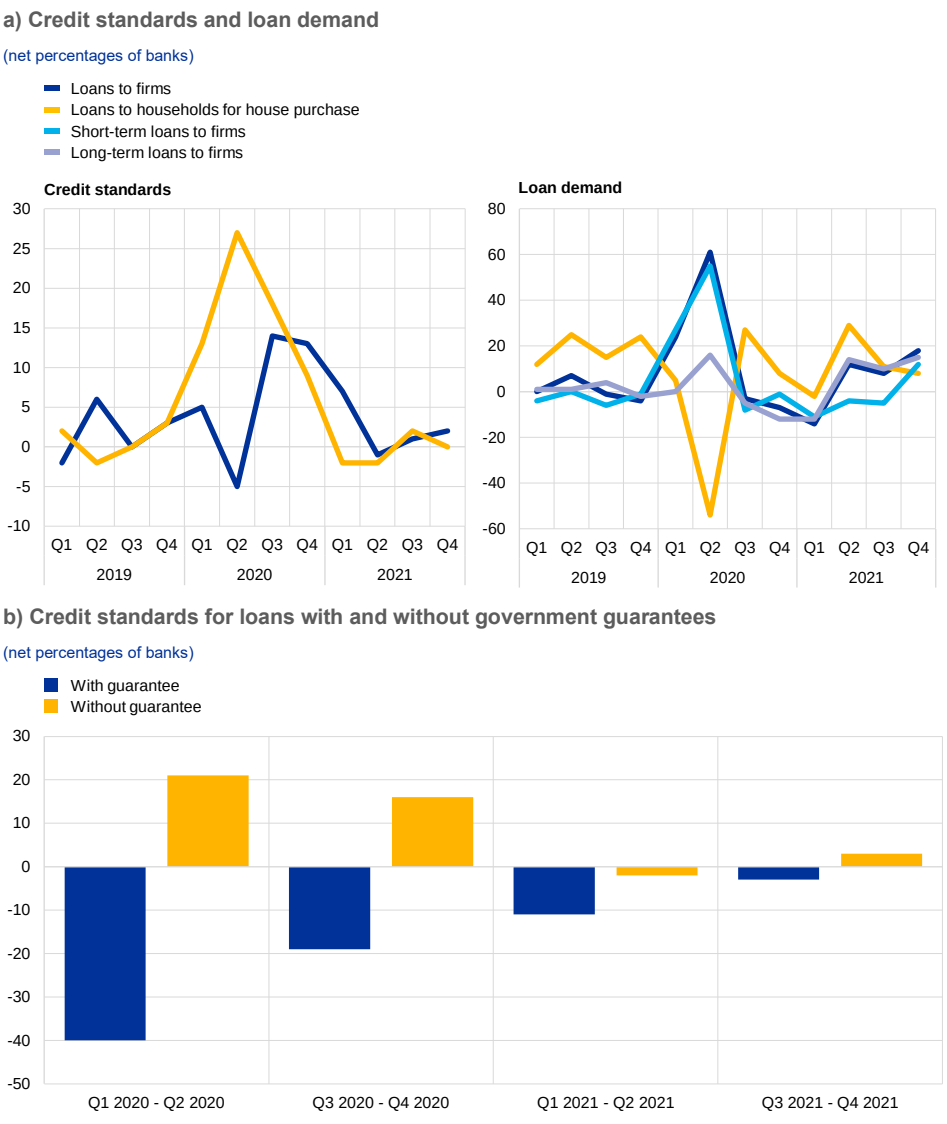
5 Bank lending during the COVID-19 pandemic – 2020-2021

The BLS provided some of the first insights into developments in credit conditions in response to the outbreak of the COVID-19 pandemic. The timing of the April 2020 BLS allowed for a very early snapshot of credit conditions, and to see how banks reacted to the imposition of societal restrictions, new accommodative monetary policy and expansionary fiscal policy measures, and the high uncertainty. Early indications in the first quarter of 2020 showed that credit standards tightened to a smaller extent on loans to firms than on loans to households (Chart 9, panel a). The more contained tightening of credit standards on loans to firms in the first quarter and the expected easing in the second quarter of 2020 provided an early insight into the impact of the large public schemes announced to support firms already in the early stages of the pandemic, whereas credit standards on loans to households were expected to tighten further, driven by risk perceptions. During the initial stages of the pandemic, in the first and especially the second quarter of 2020, loan demand by firms surged against the backdrop of a large-scale "dash for cash", and higher demand for short term loans, at a time when revenues in some sectors started to collapse.[27]

[27] See the box entitled "Drivers of firms' loan demand in the euro area – what has changed during the COVID-19 pandemic?", *Economic Bulletin*, Issue 5, ECB, 2020.

Chart 9

Net tightening of credit standards during the COVID-19 pandemic and net increase in loan demand by loan categories



Source: ECB (BLS).
Notes: Panel b): Banks' replies are based on a BLS ad hoc question on changes in banks' credit standards and demand for loans with pandemic-related government guarantees and for loans without government guarantees. This ad hoc question was included in the survey from the January 2021 BLS, providing information on the first and second half of 2020, until the January 2022 BLS, providing information on the second half of 2021. The latest observations are for the fourth quarter of 2021.

Reflecting the peculiarities of the pandemic, the BLS also showed different dynamics regarding demand for loans between firms and households and between short and long-term loans. In contrast with the surge in demand for loans to firms, households' loan demand decreased rapidly in the early stages of the pandemic (Chart 9, panel a). High uncertainty about income prospects and a related deep fall in consumer confidence and actual consumption, coupled with a lack of opportunities to realise housing investments in the context of containment measures, led to this large drop in loan demand. In addition, firms' demand for short-term loans spiked by much more than for long-term loans, reflecting a strong need for shorter-term finance as revenues fell sharply at the beginning of the pandemic. Interestingly,

during this period, firms' demand for longer-term loans was initially still positive, albeit more moderate than for short-term loans, therefore decoupling from developments in fixed investment, which declined significantly. Historically, demand for loans for fixed investment correlated strongly with demand for long-term loans. During the pandemic, however, demand for long-term loans increased somewhat, bolstered by favourable credit conditions, while financing needs for fixed investment declined strongly, reflecting the accompanying steep fall in business investment. This indicated an environment in which capital expenditure was being postponed by firms to compensate for perceived longer-term revenue losses.

BLS ad hoc questions helped to highlight the important support provided by fiscal, monetary and supervisory authorities against the backdrop of widespread uncertainty. At the peak of the COVID-19 pandemic, the ECB announced widespread measures to support the functioning of credit markets, such as a recalibration of conditions for TLTRO III operations with highly accommodative conditions for banks, the expansion of the APP and the commencement of the PEPP. Results from the BLS allowed early anticipation of the easing effect that these measures have provided throughout the pandemic. In addition, support from fiscal authorities was highlighted in a BLS ad hoc question on the differences in lending conditions for loans to firms with and without pandemic-related government guarantees. Guaranteed loans saw a net easing of credit standards, particularly during the early phases of the pandemic, while non-guaranteed loans recorded a net tightening of credit standards (Chart 9, panel b).[28]

6 Monetary policy tightening and the shifts in credit supply and demand since 2022

Against the backdrop of the recent monetary policy tightening, the information provided by the BLS has become particularly important for assessing credit supply and demand in the euro area. In view of the sharp increase in inflation in 2021 and 2022 and the expectation of too-high inflation for some time, the extent and speed of the ECB's policy rate hikes since July 2022 have been exceptional, aiming to bring inflation down to the ECB's 2% target in a timely manner.[29] In addition, the end of the ECB's net asset purchases under the PEPP and APP in March 2022 and June 2022 respectively, the discontinuation of reinvestments under the APP as of July 2023, the recalibration of the conditions on TLTRO III in October 2022 as well as maturing TLTRO III operations have added tightening pressure to bank lending conditions. In this environment, credit standards for lending to firms have tightened substantially since early 2022 (Chart 10, panel a), reflecting the speed and extent of monetary policy tightening and its corresponding transmission through banks. At the same time, the cumulated extent of tightening registered by the BLS has remained below the tightening observed during the GFC (Chart 7, panel

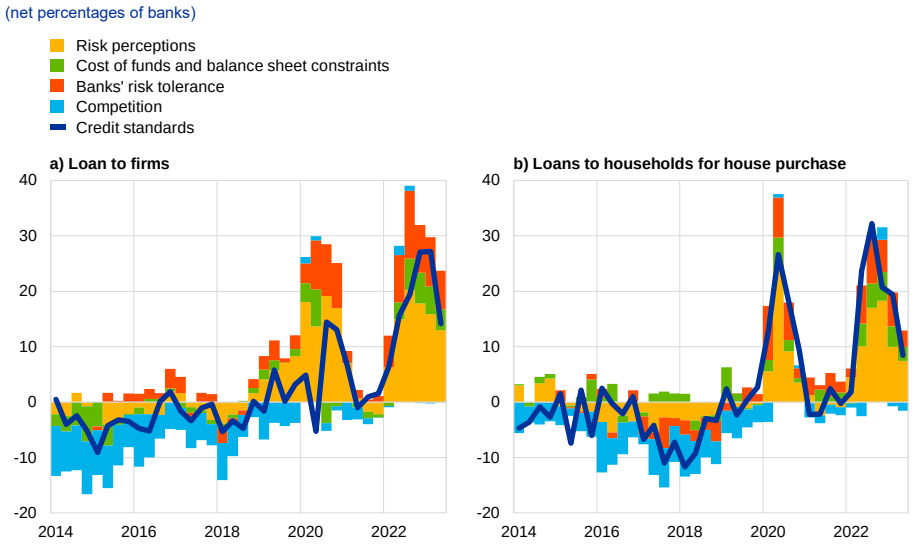
[28] See the BLS website reports in which this ad hoc question was included, for instance for the fourth quarter of 2020. See also Falagiarda, M. and Köhler-Ulbrich, P., "Bank Lending to Euro Area Firms – What Have Been the Main Drivers During the COVID-19 Pandemic?", *European Economy – Banks, Regulation, and the Real Sector*, 2021.

[29] See, for instance, the ECB's monetary policy statements on 21 July 2022 and on 14 September 2023.

a, compared with Chart 1), partly related to the different roles of the BLS contributing factors in the two tightening periods.

Chart 10

Importance of factors having an impact on credit standards, 2014-2023



Source: ECB (BLS).
Notes: See the notes to Chart 2. "Banks' risk tolerance" was introduced in the survey questionnaire in the first quarter of 2015. The latest observations are for the second quarter of 2023.

Higher risk perceptions of banks, a decline in their risk tolerance and, to a lesser extent, their balance sheet situation have been the main drivers of banks' credit standards in the tightening cycle since 2022. The relevance of risk perceptions and declining risk tolerance at the current juncture partly reflects the broad transmission of the monetary policy tightening, given banks' concerns related to borrowers' refinancing or repayment risks, especially for highly indebted, low-liquidity and low-income firms in a context of higher interest rates and high inflation (Chart 10, panel a). In this context, NPL ratios re-emerged as a tightening factor for bank lending conditions for loans to firms (Chart 8, panel b), albeit so far in a relatively subdued way. At the same time, the smaller contribution of banks' balance sheet situation, compared with its elevated contribution to tightening during the GFC (Chart 10, compared with Chart 2), likely reflects the overall more solid capital position of euro area banks as a result of the harmonised and strengthened regulatory and supervisory framework, as well as the presence of monetary policy tools specifically designed to prevent unwarranted fragmentation, such as the Transmission Protection Instrument (TPI).

The evidence of the recent tightening episode shows that a substantial tightening of credit standards, which is associated with a restriction in the supply of credit, does not need to be associated with an episode of a banking crisis, and it may prevail even in a period of recovery of banks' income. A tightening of credit standards can prevail even in a period of solid bank capitalisation and sound bank profitability. The tightening of credit standards is a general feature that accompanies a phase of tightening of monetary policy and affects the supply of credit through a number of channels, such as the interest rate channel, the bank

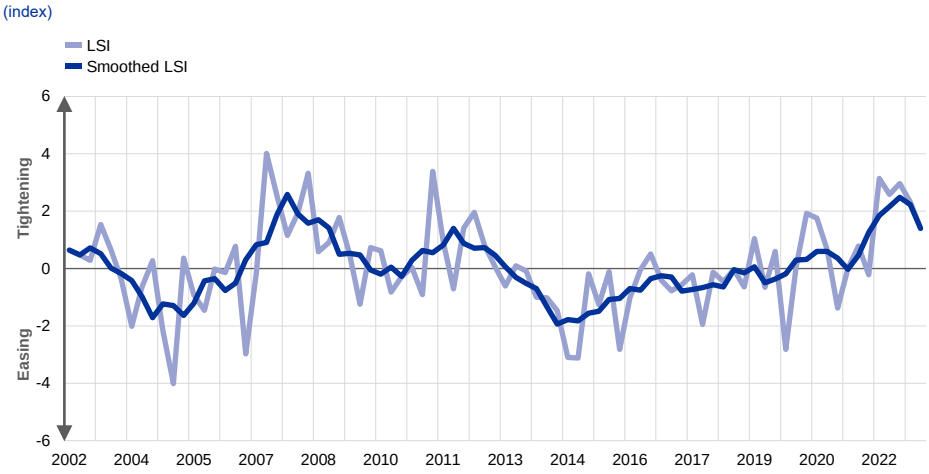
lending channel (referring to the increase in banks' funding costs and willingness to lend), the balance sheet channel (referring to the creditworthiness of the borrowers), and the risk-taking channel (referring to banks' willingness to tolerate risks).

Rising interest rates in the context of tighter monetary policy have been a major factor driving the decrease in demand for loans to firms and housing loans. Loan demand has fallen strongly since 2022, especially for housing loans, for which the net decrease started in the second quarter of 2022, and somewhat later (due to the surge in demand in the context of the energy crisis), in the fourth quarter of 2022, for firms (Chart 7, panel b). This followed an extended period of net increases in loan demand since 2014, interrupted by the pandemic period. It reflects in part the broader role of the interest rate channel of monetary policy, as the tightening of monetary policy induces higher borrowing costs (including via an inward shift of the loan supply curve), thereby dampening economic growth and loan demand (which would manifest as a downward shift of the loan demand curve). The particularly stark response of demand for loans for house purchase strongly reflects the high elasticity of demand to higher borrowing costs. The downward pressure on loan demand from higher interest rates has been accompanied by deteriorating housing market prospects, signalling the interconnectedness of these factors and the recent decline in euro area house prices.

In line with the leading indicator properties of the BLS, both tightening credit standards and decreasing loan demand have signalled, at an early stage, a substantial weakening of loan growth. The early indications from the BLS were confirmed by the actual loan growth developments (Chart 7, panel c). The BLS helps to disentangle credit supply and demand, which have both shifted in response to the monetary policy tightening since 2022. One example of this is the so-called loan supply indicator (LSI), which purges BLS credit standards from changes in loan demand at the bank level and from prevailing macroeconomic conditions. Based on the LSI, one can gauge how much of the observed tightening in credit conditions is due to supply effects over and above the changes in loan demand and macroeconomic conditions (Chart 11).[30] While disentangling credit supply and demand is important for understanding the effects of monetary policy and the emergence of supply constraints, it is important to bear in mind that the impact of tighter monetary policy on credit supply and demand is interdependent. Higher interest rates do not only dampen loan demand but also increase interest burdens and raise refinancing risks of borrowers. Alongside this, via the dampening impact of tighter monetary policy on economic activity, higher interest rates lower corporate profits and potentially lead to higher bankruptcies, which in turn suppresses supply as a result of the elevated risk environment. The indicator of adjusted credit standards shows a marked tightening of credit supply since 2022 at a rate in line with that observed during the GFC, while the raw net percentages of banks reporting a tightening of credit standards appear to have increased less than during the GFC (Charts 2 and 10).

[30] For details on the construction of the LSI, see Altavilla, C., Darracq Paries, M. and Nicoletti, G. "Loan supply, credit markets and the euro area financial crisis", *Journal of Banking & Finance*, Vol. 109, 2019. See also Lane, P.R., op. cit.

Chart 11
Loan supply indicator



Source: ECB (BLS).
Notes: Loan supply indicator (LSI) for bank lending to firms, as in Altavilla, Darracq Paries and Nicoletti (2019). The smoothed series is a five quarter-centred moving average. Positive values indicate a tightening, while negative values indicate an easing. The latest observations are for the second quarter of 2023.

The ad hoc questions of the BLS can shed light on the challenges faced by banks in the current monetary policy tightening period, notwithstanding banks' solid capital position. A new BLS question on the impact of ECB interest rate hikes on bank profitability has highlighted that while there was a positive impact stemming from higher net interest margins, the rate hikes weighed negatively on profitability through lower lending volumes, higher provisioning needs and, on occasions, capital losses on banks' security portfolios.[31] In addition, while the impact of the ECB's asset purchases and TLTROs on banks' market financing positions, liquidity positions and lending volumes was positive during UMP times (Section 4), they have begun to weigh negatively on these items as they are phased out – for example, with the end of the ECB's asset purchases (except for reinvestments in the PEPP) and the declining outstanding TLTRO liquidity due to maturing operations and early repayments. The effects of these measures, in addition to the impact of ECB policy rate hikes, have passed through to lower lending volumes and tighter credit standards (Chart 5).

The BLS also sheds light on the existence of pockets of vulnerabilities in the context of rising interest rates, especially in some economic sectors and for riskier borrowers. Changes in banks' terms and conditions provide evidence of a stronger tightening of bank lending conditions for loans to riskier firms. First, loan margins have widened substantially more for riskier loans to firms since the fourth quarter of 2021 than for average loans (Chart 12, panel a). Second, cumulated overall terms and conditions have tightened more over this period for loans to small and medium-sized enterprises (SMEs) than to large firms, with the former generally assessed as riskier due to their more opaque balance sheet situation. Third, in line with this development, there has been a stronger increase in collateral requirements

[31] A biannual ad hoc question on the impact of the ECB's key interest rate decisions on bank profitability was introduced in the BLS for the first quarter of 2023.

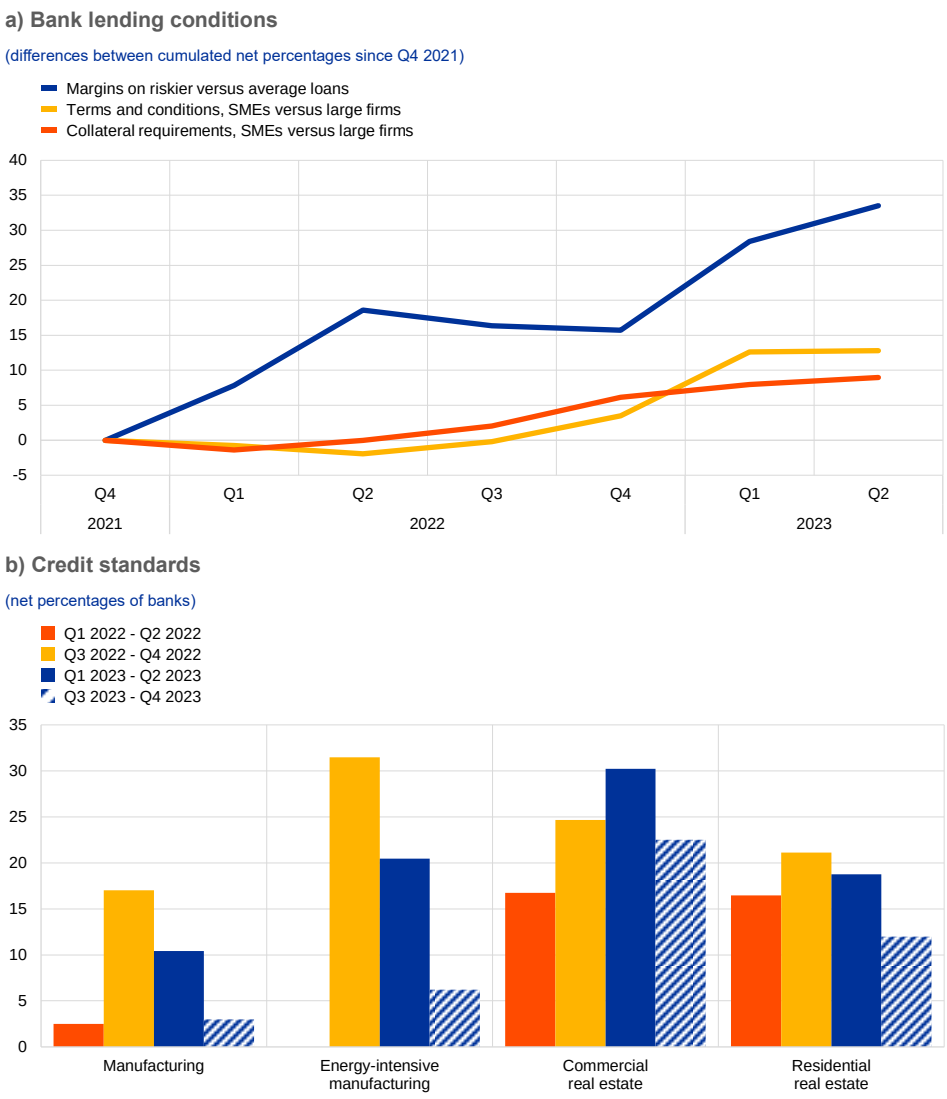
for SMEs compared with large firms. Empirical analysis based on bank-firm level data confirms and further extends this evidence, showing that less well capitalised banks adjust their credit standards in response to an increase in bank funding costs more strongly compared with better capitalised banks, especially for firms with a higher default risk.[32] In addition, credit risks in banks' loan portfolios tend to be larger for some economic sectors, such as the real estate sector. According to data from the BLS, credit standards for loans to the commercial and residential real estate sectors have tightened more than in the other main economic sectors since the start of 2022, consistent with the decline in house prices and related higher risks to collateral values (Chart 12, panel b).[33] Similarly, against the backdrop of continued elevated risks surrounding the energy sector, energy-intensive manufacturing has seen a larger net tightening of credit standards relative to the overall manufacturing sector. This highlights the broad value of the BLS, as it indicates pockets of risk at an early stage.

[32] See Faccia, D., Huennekes, F. and Köhler-Ulbrich, P., "What drives banks' credit standards? An analysis based on a large bank-firm panel", *Working Paper Series*, ECB, Frankfurt am Main, forthcoming.

[33] Compared with the manufacturing, construction, wholesale and retail trade, and services sectors. Energy-intensive manufacturing is not included in this comparison as this breakdown was only introduced in the period Q3 2022 - Q4 2022.

Chart 12

Bank lending conditions across selected loan categories for firms and credit standards for selected main economic sectors



Source: ECB (BLS).
Notes: Panel a): Differences between cumulated net percentages of margins on riskier loans versus average loans and differences between cumulated net percentages of bank lending conditions for loans to SMEs versus loans to large firms. Panel b): "Energy-intensive manufacturing" is a breakdown of the manufacturing sector which was introduced in the period Q3 2022 - Q4 2022. The latest observations are for the second quarter of 2023 and expectations are for Q3 2023 - Q4 2023.

7 Conclusions

Over the past 20 years, the BLS has become an important tool for analysing bank lending conditions in the euro area and informing monetary policy on changes in credit supply and demand. The survey has contributed to a better understanding of bank lending conditions in the euro area and has provided early indications of developments in loan growth some quarters ahead. In addition, it has shed light on the impact of the ECB's monetary policy measures on bank lending, as well as other important factors affecting bank-based transmission, such as

supervisory actions or fiscal measures. Through the lens of the survey, euro area banks appear to have responded to the tightening of monetary policy started in 2022 with an immediate and substantial net tightening of their credit standards on loans to firms and households. This contrasts with the late tightening of credit standards related to low risk perceptions in the monetary policy tightening period ahead of the GFC. In addition, the pass-through of ECB rate hikes has led to a deep fall in loan demand.

The BLS is continuing to evolve and adapt to new policy concerns; most recently, the survey included a new ad hoc question on the impact of climate change on bank lending to firms. Looking ahead, the BLS will continue to take up new topics of interest for monetary policy, thereby helping to deepen the understanding of the development of bank lending conditions in the euro area.

Statistics

Contents

Further information

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

Conventions used in the tables

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

1 External environment

1.1 Main trading partners, GDP and CPI

	GDP [1] (period-on-period percentage changes)						CPI (annual percentage changes)						
	G20	United States	United Kingdom	Japan	China	Memo item: euro area	OECD countries		United States	United Kingdom (HICP)	Japan	China	Memo item: euro area [2] (HICP)
							Total	excluding food and energy					
	1	2	3	4	5	6	7	8	9	10	11	12	13
2020	-3.0	-2.2	-10.4	-4.2	2.2	-6.1	1.3	1.7	1.2	0.9	0.0	2.6	0.3
2021	6.5	5.8	8.7	2.2	8.1	5.9	4.0	3.0	4.7	2.6	-0.3	0.9	2.6
2022	3.2	1.9	4.3	1.0	3.0	3.4	9.6	6.8	8.0	9.1	2.5	1.9	8.4
2022 Q3	1.3	0.7	-0.1	-0.3	3.2	0.3	10.4	7.3	8.3	10.0	2.9	2.7	9.3
Q4	0.4	0.6	0.1	0.1	0.5	0.0	10.1	7.6	7.1	10.8	3.8	1.8	10.0
2023 Q1	1.0	0.6	0.3	0.8	2.2	0.0	8.6	7.2	5.8	10.2	3.6	1.3	8.0
Q2	0.7	0.5	0.2	1.2	0.8	0.2	6.5	6.9	4.0	8.4	3.3	0.1	6.2
2023 Apr.	-	-	-	-	-	-	7.3	7.1	4.9	8.7	3.5	0.1	7.0
May	-	-	-	-	-	-	6.5	6.9	4.0	8.7	3.2	0.2	6.1
June	-	-	-	-	-	-	5.7	6.6	3.0	7.9	3.3	0.0	5.5
July	-	-	-	-	-	-	5.9	6.7	3.2	6.8	3.3	-0.3	5.3
Aug.	-	-	-	-	-	-	6.4	6.8	3.7	6.7	3.2	0.1	5.2
Sep.	-	-	-	-	-	-	.	.	3.7	6.7	3.0	.	4.3

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
2020	47.5	48.8	46.5	42.4	51.4	44.0	48.5	46.3	45.3	-4.1	-4.1	-4.0
2021	54.9	59.6	55.9	49.4	52.0	54.9	53.7	55.2	52.1	11.3	9.9	12.8
2022	50.6	50.7	53.0	50.3	48.2	51.4	49.9	51.0	47.8	2.6	4.3	0.9
2022 Q1	52.2	54.9	58.3	48.7	48.0	54.2	51.0	52.6	49.1	0.8	2.8	-1.3
Q2	51.6	54.0	55.0	52.1	44.9	54.2	50.2	52.1	48.8	-0.2	-0.2	-0.2
Q3	50.0	47.2	50.3	50.2	51.8	49.0	49.9	50.1	47.6	0.6	-0.4	1.7
Q4	48.4	46.5	48.5	50.1	47.9	48.2	48.7	48.3	47.0	-1.8	-1.9	-1.7
2022 July	50.9	47.7	52.1	50.2	54.0	49.9	50.7	51.0	48.6	1.1	0.6	1.8
Aug.	49.3	44.6	49.6	49.4	53.0	49.0	49.8	49.1	47.5	1.0	-0.4	2.5
Sep.	49.9	49.5	49.1	51.0	48.5	48.1	49.1	50.1	46.5	0.6	-0.4	1.7
Oct.	49.3	48.3	48.2	51.8	48.3	47.3	49.5	49.2	47.3	-0.1	-0.8	0.7
Nov.	48.0	46.4	48.2	48.9	47.0	47.8	48.1	47.9	47.0	-0.9	-1.4	-0.4
Dec.	47.9	45.0	49.0	49.7	48.3	49.3	48.6	47.7	46.7	-1.8	-1.9	-1.7

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

2 Economic activity

2.1 GDP and expenditure components

(quarterly data seasonally adjusted; annual data unadjusted)

	GDP											
	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 construction	Total machinery	Intellectual property products				
	1	2	3	4	5	6	7	8	9	10	11	12
	Current prices (EUR billions)											
2020	11,517.2	11,106.0	5,951.3	2,579.7	2,534.3	1,236.1	689.6	601.8	40.6	411.2	5,222.9	4,811.6
2021	12,475.1	11,979.7	6,351.9	2,737.3	2,728.4	1,390.4	761.2	570.3	162.0	495.4	6,171.6	5,676.2
2022	13,491.9	13,248.3	7,062.8	2,899.4	3,019.7	1,561.8	847.0	603.7	266.5	243.6	7,436.1	7,192.5
2022 Q3	3,390.3	3,363.3	1,796.5	727.6	767.6	394.0	217.6	154.1	71.7	27.0	1,918.5	1,891.5
Q4	3,457.1	3,382.0	1,826.1	742.8	775.0	398.4	219.3	155.5	38.0	75.1	1,911.0	1,835.9
2023 Q1	3,525.4	3,391.5	1,852.9	740.4	784.1	405.6	223.5	153.2	14.0	133.9	1,901.9	1,767.9
Q2	3,575.3	3,433.1	1,869.9	754.8	790.9	407.0	225.9	156.1	17.5	142.2	1,870.6	1,728.4
	as a percentage of GDP											
2022	100.0	98.2	52.3	21.5	22.4	11.6	6.3	4.5	2.0	1.8	-	-
	Chain-linked volumes (prices for the previous year)											
	quarter-on-quarter percentage changes											
2022 Q3	0.3	0.9	1.0	-0.1	1.2	-0.9	3.5	3.0	-	-	1.0	2.2
Q4	0.0	-0.5	-0.7	0.5	-0.2	-0.4	-0.7	0.8	-	-	-0.1	-1.1
2023 Q1	0.0	-0.5	0.2	-0.6	0.4	0.9	1.8	-2.5	-	-	0.0	-1.1
Q2	0.2	0.6	0.0	0.4	0.1	-0.6	0.1	1.6	-	-	-0.9	-0.2
	annual percentage changes											
2020	-6.1	-5.7	-7.7	1.0	-5.9	-3.4	-11.6	-3.9	-	-	-9.1	-8.5
2021	5.9	4.7	4.4	4.2	3.5	5.9	8.0	-6.5	-	-	11.5	9.2
2022	3.4	3.5	4.2	1.6	2.6	1.4	4.9	2.8	-	-	7.2	7.9
2022 Q3	2.4	3.3	2.2	0.6	4.6	0.8	9.5	7.3	-	-	7.7	10.2
Q4	1.8	1.1	1.1	0.7	0.9	-0.2	7.1	-3.9	-	-	4.6	3.2
2023 Q1	1.2	0.6	1.3	-0.4	1.9	-1.0	5.7	3.7	-	-	2.9	1.9
Q2	0.5	0.5	0.4	0.2	1.4	-1.0	4.7	2.8	-	-	-0.2	-0.2
	contributions to quarter-on-quarter percentage changes in GDP; percentage points											
2022 Q3	0.3	0.9	0.5	0.0	0.2	-0.1	0.2	0.1	0.1	-0.5	-	-
Q4	0.0	-0.5	-0.4	0.1	-0.1	0.0	0.0	0.0	-0.1	0.4	-	-
2023 Q1	0.0	-0.5	0.1	-0.1	0.1	0.1	0.1	-0.1	-0.6	0.6	-	-
Q2	0.2	0.6	0.0	0.1	0.0	-0.1	0.0	0.1	0.5	-0.4	-	-
	contributions to annual percentage changes in GDP; percentage points											
2020	-6.1	-5.5	-4.1	0.2	-1.3	-0.4	-0.8	-0.2	-0.3	-0.6	-	-
2021	5.9	4.8	2.4	1.0	0.9	0.7	0.5	-0.3	0.6	1.4	-	-
2022	3.4	3.5	2.2	0.4	0.6	0.2	0.3	0.1	0.3	0.0	-	-
2022 Q3	2.4	3.2	1.2	0.1	1.0	0.1	0.6	0.3	0.9	-0.8	-	-
Q4	1.8	1.0	0.6	0.1	0.2	0.0	0.4	-0.2	0.1	0.8	-	-
2023 Q1	1.2	0.6	0.7	-0.1	0.4	-0.1	0.4	0.2	-0.4	0.5	-	-
Q2	0.5	0.5	0.2	0.0	0.3	-0.1	0.3	0.1	-0.1	0.0	-	-

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)											Taxes less subsidies on products
	Total	Agriculture, forestry and fishing	Manufacturing energy and utilities	Const-ruction	Trade, transport, accom-modation and food services	Infor-mation and com-munica-tion	Finance and insurance	Real estate	Professional, business and support services	Public ad-ministration, education, health and social work	Arts, enter-tainment and other services	
	1	2	3	4	5	6	7	8	9	10	11	12
	Current prices (EUR billions)											
2020	10,378.7	175.2	2,009.2	549.4	1,807.4	546.9	486.6	1,210.9	1,203.5	2,066.4	323.2	1,138.5
2021	11,191.9	186.6	2,220.3	594.6	2,021.6	598.5	515.1	1,247.2	1,297.7	2,173.0	337.6	1,283.1
2022	12,152.7	213.2	2,456.7	655.3	2,330.1	633.3	523.5	1,304.0	1,396.7	2,269.6	370.4	1,339.2
2022 Q3	3,055.6	54.8	614.3	164.6	593.8	160.0	130.1	325.6	350.7	568.2	93.3	334.7
Q4	3,133.8	55.7	639.0	169.2	600.6	161.5	138.2	335.6	360.1	579.8	94.1	323.3
2023 Q1	3,198.9	56.0	664.2	178.1	604.8	164.2	144.1	344.4	364.9	581.5	96.6	326.6
Q2	3,236.7	54.0	664.9	180.4	612.7	167.8	148.9	349.0	370.6	590.1	98.2	338.6
	as a percentage of value added											
2022	100.0	1.8	20.2	5.4	19.2	5.2	4.3	10.7	11.5	18.7	3.0	-
	Chain-linked volumes (prices for the previous year)											
	quarter-on-quarter percentage changes											
2022 Q3	0.5	-0.5	0.5	-1.2	0.6	1.8	0.1	0.2	0.4	0.5	1.7	-0.7
Q4	0.0	0.3	-0.1	-0.1	-0.7	0.4	0.3	0.2	0.4	0.3	-1.2	-0.1
2023 Q1	0.1	0.8	-1.1	2.0	0.1	1.2	-0.4	0.9	0.3	-0.1	1.9	-0.7
Q2	0.0	-0.2	-0.3	-0.6	-0.3	1.2	0.5	-0.2	0.4	0.1	0.6	1.5
	annual percentage changes											
2020	-5.9	-1.8	-6.0	-5.3	-13.9	2.2	-0.5	-0.9	-5.4	-2.9	-18.1	-7.3
2021	5.8	1.1	8.8	2.9	7.9	9.3	5.5	1.9	6.6	3.5	4.3	7.1
2022	3.5	-3.2	1.3	1.1	7.5	5.8	0.1	2.3	4.7	1.9	11.9	2.5
2022 Q3	2.6	-4.1	1.7	0.4	4.4	7.2	-0.5	2.0	3.8	1.4	7.1	0.3
Q4	2.1	-3.1	1.5	-0.5	2.8	4.2	0.3	1.7	3.0	2.0	7.4	-0.9
2023 Q1	1.6	-0.3	-0.2	0.7	2.3	5.3	0.1	1.9	2.0	1.3	6.5	-2.5
Q2	0.6	0.3	-0.9	0.1	-0.3	4.7	0.5	1.1	1.5	0.9	3.1	-0.1
	contributions to quarter-on-quarter percentage changes in value added; percentage points											
2022 Q3	0.5	0.0	0.1	-0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	-
Q4	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.1	0.0	-
2023 Q1	0.1	0.0	-0.2	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.1	-
Q2	0.0	0.0	-0.1	0.0	-0.1	0.1	0.0	0.0	0.0	0.0	0.0	-
	contributions to annual percentage changes in value added; percentage points											
2020	-5.9	0.0	-1.2	-0.3	-2.6	0.1	0.0	-0.1	-0.6	-0.5	-0.6	-
2021	5.8	0.0	1.8	0.2	1.4	0.5	0.3	0.2	0.8	0.7	0.1	-
2022	3.5	-0.1	0.3	0.1	1.4	0.3	0.0	0.3	0.5	0.4	0.4	-
2022 Q3	2.6	-0.1	0.3	0.0	0.8	0.4	0.0	0.2	0.4	0.3	0.2	-
Q4	2.1	-0.1	0.3	0.0	0.5	0.2	0.0	0.2	0.4	0.4	0.2	-
2023 Q1	1.6	0.0	0.0	0.0	0.4	0.3	0.0	0.2	0.2	0.2	0.2	-
Q2	0.6	0.0	-0.2	0.0	0.0	0.2	0.0	0.1	0.2	0.2	0.1	-

Sources: Eurostat and ECB calculations.

2 Economic activity

2.3 Employment [1)]

(quarterly data seasonally adjusted; annual data unadjusted)

	Total	By employment status		By economic activity										
		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													
2020	100.0	86.0	14.0	3.0	14.6	6.2	24.4	3.0	2.4	1.0	13.8	24.8	6.6
2021	100.0	86.1	13.9	3.0	14.4	6.3	24.1	3.1	2.4	1.0	14.0	25.0	6.6
2022	100.0	86.2	13.8	2.9	14.2	6.4	24.4	3.2	2.3	1.0	14.1	24.8	6.5
annual percentage changes													
2020	-1.4	-1.5	-1.1	-2.5	-1.9	0.7	-3.9	1.9	0.4	0.7	-2.0	1.0	-3.0
2021	1.4	1.6	0.4	0.2	0.0	3.2	0.3	4.5	0.6	0.4	2.9	2.1	0.9
2022	2.3	2.4	1.2	-0.9	1.2	3.1	3.4	5.8	0.0	2.9	3.0	1.6	1.4
2022 Q3	1.8	1.9	1.4	-1.2	1.2	3.2	2.0	6.3	-0.3	3.7	2.5	1.5	0.5
Q4	1.5	1.6	0.8	-1.3	1.0	2.1	1.8	4.6	0.5	3.2	2.0	1.3	0.9
2023 Q1	1.6	1.6	1.4	-1.5	1.2	1.5	2.2	4.5	1.2	2.6	2.0	1.2	1.0
Q2	1.3	1.3	1.4	-2.3	1.0	0.6	1.9	3.7	1.1	2.8	2.0	1.1	0.2
Hours worked													
as a percentage of total hours worked													
2020	100.0	82.0	18.0	4.3	15.1	7.0	24.1	3.3	2.6	1.1	13.7	23.1	5.7
2021	100.0	81.8	18.2	4.1	15.0	7.3	24.3	3.4	2.5	1.1	14.0	22.6	5.8
2022	100.0	81.9	18.1	3.9	14.6	7.3	25.2	3.5	2.4	1.1	14.1	22.0	5.9
annual percentage changes													
2020	-8.0	-7.3	-11.2	-3.5	-7.6	-6.1	-14.7	-1.8	-2.2	-5.4	-8.2	-2.0	-12.7
2021	5.9	5.7	6.7	1.1	5.1	9.8	6.8	7.9	3.0	5.9	8.2	3.9	6.5
2022	3.4	3.5	3.0	-1.5	0.9	3.2	7.5	5.9	-0.1	4.6	4.0	0.6	5.8
2022 Q3	2.6	2.8	1.4	-1.2	1.8	3.4	3.5	7.5	0.5	5.0	3.5	1.2	2.3
Q4	2.1	2.2	1.9	-1.2	1.1	3.0	3.1	4.9	1.3	3.8	2.9	1.0	2.6
2023 Q1	2.0	2.3	0.6	-1.1	1.7	1.4	3.0	4.1	1.4	2.1	2.3	1.3	2.1
Q2	1.4	1.6	0.9	-2.8	1.2	1.0	1.7	3.6	1.4	2.2	2.2	1.5	0.9
Hours worked per person employed													
annual percentage changes													
2020	-6.7	-5.9	-10.2	-0.9	-5.8	-6.7	-11.3	-3.7	-2.6	-6.0	-6.4	-3.1	-10.0
2021	4.4	4.1	6.3	0.9	5.1	6.4	6.4	3.2	2.3	5.4	5.1	1.7	5.6
2022	1.1	1.1	1.7	-0.5	-0.3	0.1	4.0	0.2	-0.1	1.7	1.0	-0.9	4.3
2022 Q3	0.8	1.0	0.0	0.1	0.6	0.2	1.5	1.1	0.9	1.3	1.1	-0.2	1.8
Q4	0.6	0.5	1.1	0.1	0.2	0.8	1.3	0.3	0.8	0.6	0.9	-0.3	1.7
2023 Q1	0.4	0.7	-0.8	0.4	0.4	-0.1	0.8	-0.4	0.3	-0.5	0.3	0.1	1.1
Q2	0.1	0.2	-0.4	-0.4	0.2	0.5	-0.1	-0.1	0.3	-0.6	0.1	0.4	0.7

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-employ-ment, % of labour force	Unemployment [1]											Job vacancy rate [3]
			Total		Long-term unemploy-ment, % of labour force [2]	By age				By gender				
						Adult		Youth		Male		Female		
			Millions	% of labour force		Millions	% of labour force	Millions	% of labour force	Millions	% of labour force	Millions	% of labour force	% of total posts
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
% of total in 2020			100.0			80.1		19.9		51.2		48.8		
2020	162.758	3.5	12.964	8.0	3.0	10.381	7.0	2.584	18.2	6.644	7.6	6.320	8.3	1.8
2021	165.051	3.4	12.787	7.8	3.2	10.303	6.9	2.483	16.9	6.517	7.4	6.270	8.1	2.4
2022	167.815	3.1	11.338	6.8	2.7	9.080	6.0	2.259	14.6	5.687	6.4	5.651	7.2	3.1
2022 Q3	167.984	3.0	11.431	6.8	2.5	9.062	5.9	2.370	15.2	5.747	6.4	5.684	7.2	3.1
Q4	168.610	3.0	11.205	6.6	2.5	8.947	5.9	2.258	14.4	5.592	6.2	5.613	7.1	3.1
2023 Q1	169.441	3.0	11.102	6.6	2.5	8.909	5.8	2.193	13.9	5.580	6.2	5.522	7.0	3.1
Q2	169.791	3.0	10.962	6.5	2.3	8.714	5.7	2.248	14.1	5.532	6.1	5.430	6.8	3.0
2023 Mar.	-	-	11.069	6.5	-	8.860	5.8	2.209	14.0	5.569	6.2	5.501	6.9	-
Apr.	-	-	11.037	6.5	-	8.824	5.7	2.213	13.9	5.563	6.2	5.475	6.9	-
May	-	-	10.963	6.5	-	8.729	5.7	2.234	14.0	5.513	6.1	5.450	6.8	-
June	-	-	10.874	6.4	-	8.678	5.6	2.196	13.8	5.510	6.1	5.364	6.7	-
July	-	-	10.963	6.5	-	8.744	5.7	2.218	13.9	5.569	6.2	5.394	6.8	-
Aug.	-	-	10.856	6.4	-	8.662	5.6	2.194	13.8	5.514	6.1	5.342	6.7	-

Sources: Eurostat and ECB calculations.

1) Where annual and quarterly Labour Force Survey data have not yet been published, they are estimated as simple averages of the monthly data. There is a break in series from the first quarter of 2021 due to the implementation of the Integrated European Social Statistics Regulation. Owing to technical issues with the introduction of the new German system of integrated household surveys, including the Labour Force Survey, the figures for the euro area include data from Germany, starting in the first quarter of 2020, which are not direct estimates from Labour Force Survey microdata, but based on a larger sample including data from other integrated household surveys.

2) Not seasonally adjusted.

3) The job vacancy rate is equal to the number of job vacancies divided by the sum of the number of occupied posts and the number of job vacancies, expressed as a percentage. Data are non-seasonally adjusted and cover industry, construction and services (excluding households as employers and extra-territorial organisations and bodies).

2.5 Short-term business statistics

	Industrial production						Con-struction produc-tion	Retail sales				Services production [1]	New passenger car regis-trations
	Total (excluding construction)		Main Industrial Groupings					Total	Food, beverages, tobacco	Non-food	Fuel		
		Manu-facturing	Inter-mediate goods	Capital goods	Consumer goods	Energy							
	1	2	3	4	5	6	7	8	9	10	11	12	13
% of total in 2015	100.0	88.7	32.1	34.5	21.8	11.6	100.0	100.0	40.4	52.5	7.1	100.0	100.0
annual percentage changes													
2020	-7.7	-8.2	-7.2	-11.2	-4.3	-4.4	-5.3	-0.8	3.7	-2.3	-14.4	-9.8	-24.3
2021	8.9	9.8	9.6	11.7	8.1	1.4	6.0	5.1	0.9	7.8	9.6	8.1	-2.9
2022	2.3	3.0	-1.3	5.5	5.4	-3.7	2.4	0.7	-2.7	2.5	6.3	10.0	-4.3
2022 Q1	1.6	2.1	1.0	0.3	6.3	-1.4	6.1	6.0	-1.5	11.4	12.4	12.4	-12.3
Q2	2.0	2.6	-0.3	4.5	3.3	-1.8	2.7	1.1	-2.8	3.2	7.5	13.3	-16.2
Q3	3.4	4.0	-1.7	9.9	3.1	-1.7	0.8	-0.6	-1.5	-0.7	3.0	9.1	1.5
Q4	2.1	3.5	-4.4	7.2	8.9	-9.3	0.3	-2.8	-5.1	-1.9	3.4	6.3	15.3
2023 Apr.	-0.1	0.8	-6.2	8.5	-0.8	-8.1	0.3	-2.8	-4.4	-1.3	-2.3	4.7	19.4
May	-2.3	-1.9	-5.6	2.5	-3.0	-6.7	0.3	-2.1	-2.7	-1.5	-1.1	6.5	20.3
June	-1.0	-0.4	-6.3	4.9	-0.4	-7.3	-0.6	-0.8	-2.6	0.7	-1.0	5.0	19.0
July	-2.2	-1.9	-5.1	0.5	-1.1	-6.0	1.2	-1.0	-2.2	1.0	-2.3	5.1	16.5
Aug.	-5.1	-4.9	-5.2	-7.0	-2.0	-6.3	-0.1	-2.1	-3.2	-0.2	-7.7	.	23.6
Sep.	.	.	.	.	.	.	.	.	.	.	.	.	8.8
month-on-month percentage changes (s.a.)													
2023 Apr.	1.2	1.6	-0.8	13.0	-2.1	-0.1	-0.4	0.0	0.4	0.3	-2.2	-0.2	-1.3
May	0.0	0.1	0.4	0.7	0.2	-2.1	0.4	0.4	0.4	0.5	0.6	3.0	-0.4
June	0.1	1.2	-1.0	0.0	-1.2	0.4	-1.2	0.0	0.1	0.2	-0.3	-1.2	2.4
July	-1.3	-4.0	0.2	-3.1	0.7	1.2	1.0	-0.1	0.0	0.2	-0.6	0.3	3.6
Aug.	0.6	0.2	-0.3	0.3	0.7	-0.9	-1.1	-1.2	-1.2	-0.9	-3.0	.	4.5
Sep.	.	.	.	.	.	.	.	.	.	.	.	.	0.1

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	-4.3	80.7	-10.7	-12.4	-7.0	7.3	-	51.4	52.5	52.7	52.6
2020	88.1	-13.2	74.3	-14.2	-7.0	-12.6	-15.9	86.3	48.6	48.0	42.5	44.0
2021	110.7	9.4	81.8	-7.4	4.2	-1.8	8.3	87.7	60.2	58.3	53.6	54.9
2022	101.9	4.8	82.0	-21.9	5.2	-3.8	9.3	90.1	52.1	49.3	52.1	51.4
2022 Q4	95.3	-1.0	81.4	-24.5	3.2	-4.8	5.0	90.4	47.1	45.9	49.0	48.2
2023 Q1	99.2	0.0	81.3	-19.7	1.2	-1.0	9.4	90.0	48.2	49.8	52.8	52.0
Q2	96.9	-5.1	80.7	-17.0	-0.8	-4.1	7.4	90.2	44.7	46.4	54.5	52.3
Q3	93.8	-9.3	.	-16.3	-5.1	-5.1	4.6	.	43.2	43.1	49.2	47.5
2023 May	96.4	-5.2	-	-17.4	-0.4	-5.3	7.0	-	44.8	46.4	55.1	52.8
June	95.3	-7.1	-	-16.1	-2.7	-5.9	5.7	-	43.4	44.2	52.0	49.9
July	94.6	-9.1	80.2	-15.1	-3.7	-4.5	5.4	90.6	42.7	42.7	50.9	48.6
Aug.	93.6	-9.9	-	-16.0	-5.4	-5.1	4.3	-	43.5	43.4	47.9	46.7
Sep.	93.3	-9.0	-	-17.8	-6.2	-5.7	4.0	-	43.4	43.1	48.7	47.2
Oct.	.	.	-	-17.9	.	.	.	-	43.0	43.1	47.8	46.5

Sources: European Commission (Directorate-General for Economic and Financial Affairs) (col. 1-8) and Markit (col. 9-12).

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

	Households							Non-financial corporations					
	Saving rate (gross)	Debt ratio	Real gross disposable income	Financial investment	Non-financial investment (gross)	Net worth [2]	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
2020	19.6	95.5	-0.1	4.2	-1.5	5.6	4.9	45.8	24.6	78.6	3.7	-11.9	2.5
2021	17.5	95.2	2.0	3.7	19.3	8.4	8.8	49.1	27.1	76.1	5.5	9.8	3.4
2022	13.5	92.9	-0.3	2.5	11.6	1.4	7.0	48.9	24.8	71.7	3.0	8.7	2.0
2022 Q3	13.9	94.3	-0.4	2.7	9.6	3.0	9.3	49.2	25.2	73.7	4.2	23.7	2.9
Q4	13.5	92.9	-0.7	2.5	7.4	1.4	7.0	48.9	24.8	71.7	3.0	-0.4	2.0
2023 Q1	13.4	91.0	1.0	2.4	7.0	2.7	5.5	48.5	24.8	69.8	2.4	-1.7	1.4
Q2	13.7	89.5	1.2	2.1	2.5	4.3	4.4	48.0	24.6	68.8	1.7	17.3	0.9

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

2 Economic activity

2.8 Euro area balance of payments, current and capital accounts

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

	Current account											Capital account [1]	
	Total			Goods		Services		Primary income		Secondary income			
	Credit	Debit	Balance	Credit	Debit	Credit	Debit	Credit	Debit	Credit	Debit	Credit	Debit
	1	2	3	4	5	6	7	8	9	10	11	12	13
2022 Q3	1,372.8	1,438.1	-65.4	760.6	814.0	321.1	297.4	248.3	238.6	42.8	88.0	25.7	11.2
Q4	1,377.4	1,384.8	-7.4	755.1	756.4	313.0	268.8	266.1	277.0	43.2	82.5	58.8	34.0
2023 Q1	1,390.3	1,352.7	37.6	752.5	697.3	324.0	299.2	273.2	281.1	40.6	75.1	36.0	30.9
Q2	1,394.1	1,332.8	61.3	721.6	668.0	326.9	294.8	301.9	285.0	43.7	85.0	25.2	21.3
2023 Mar.	468.6	451.4	17.2	255.6	225.4	108.7	105.0	91.7	94.4	12.6	26.7	17.6	13.1
Apr.	444.3	435.8	8.5	225.7	216.4	107.3	99.4	97.2	91.5	14.1	28.5	7.1	8.0
May	470.7	455.0	15.7	244.2	229.4	110.2	99.2	100.9	98.6	15.4	27.7	5.8	6.4
June	479.1	442.0	37.0	251.6	222.2	109.3	96.2	103.9	94.9	14.3	28.7	12.2	7.0
July	443.0	422.0	21.0	232.4	207.5	102.7	93.0	94.1	93.4	13.8	28.0	7.9	6.1
Aug.	471.1	443.4	27.7	251.9	217.0	105.6	99.4	99.7	99.9	13.9	27.2	8.4	4.4
12-month cumulated transactions													
2023 Aug.	5,538.9	5,412.8	126.1	2,971.3	2,816.8	1,279.4	1,155.7	1,119.2	1,114.1	169.0	326.2	148.5	101.0
12-month cumulated transactions as a percentage of GDP													
2023 Aug.	39.7	38.8	0.9	21.3	20.2	9.2	8.3	8.0	8.0	1.2	2.3	1.1	0.7

1) The capital account is not seasonally adjusted.

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

(seasonally adjusted, unless otherwise indicated)

	Total (n.s.a.)		Exports (f.o.b.)					Imports (c.i.f.)					
			Total				Memo item:	Total				Memo items:	
	Exports	Imports		Intermediate goods	Capital goods	Consump-tion goods	Manu-facturing		Intermediate goods	Capital goods	Consump-tion goods	Manu-facturing	Oil
	1	2	3	4	5	6	7	8	9	10	11	12	13
Values (EUR billions; annual percentage changes for columns 1 and 2)													
2022 Q3	20.2	47.6	730.7	366.3	133.4	217.8	592.6	859.7	532.2	117.5	169.4	535.6	108.0
Q4	15.0	20.2	734.1	362.0	139.5	221.5	605.6	798.7	482.5	114.4	169.8	518.9	97.2
2023 Q1	8.7	1.1	721.7	346.9	138.0	224.0	595.4	727.8	427.9	114.1	161.4	502.9	78.5
Q2	-1.9	-13.6	708.0	331.2	143.5	216.6	587.1	706.8	409.5	113.2	165.0	502.1	74.1
2023 Mar.	7.7	-7.2	241.6	115.8	46.9	74.1	199.9	232.6	135.5	37.3	53.3	165.1	24.0
Apr.	-3.5	-11.8	233.3	109.6	47.2	71.9	193.5	240.9	141.0	37.8	55.3	169.0	25.5
May	-2.3	-13.0	238.2	110.3	49.3	72.7	195.8	237.3	137.1	39.1	55.6	169.2	24.1
June	0.0	-15.9	236.4	111.3	46.9	72.0	197.8	228.6	131.4	36.3	54.1	163.8	24.5
July	-2.9	-18.3	232.3	109.0	46.2	71.3	194.4	228.8	131.5	37.6	54.0	164.5	26.7
Aug.	-3.9	-24.6	236.0	.	.	.	194.9	224.1	.	.	.	160.0	.
Volume indices (2000 = 100; annual percentage changes for columns 1 and 2)													
2022 Q3	2.8	14.8	106.7	104.8	106.1	114.8	106.4	124.0	121.8	123.9	121.2	123.1	140.1
Q4	1.6	3.6	107.3	104.0	109.8	114.7	106.9	119.7	116.1	120.4	121.8	120.7	145.0
2023 Q1	1.4	-0.7	106.2	102.1	105.8	117.0	105.8	115.8	112.9	120.5	116.5	117.7	144.2
Q2	-2.9	-4.7	104.7	99.7	108.5	113.2	105.1	116.9	113.3	122.6	118.7	119.9	157.8
2023 Feb.	-0.6	-0.6	106.7	101.6	105.9	119.0	106.5	116.9	114.1	118.9	117.8	118.4	144.7
Mar.	2.2	-5.1	106.2	102.7	107.4	115.4	106.4	112.7	109.6	119.7	114.4	116.1	136.1
Apr.	-6.2	-4.2	103.0	98.6	107.4	112.3	103.2	118.5	115.1	124.7	119.3	121.4	159.2
May	-3.2	-4.3	106.4	100.3	111.3	114.5	106.8	118.4	113.9	126.2	120.9	121.7	152.4
June	0.5	-5.5	104.8	100.2	106.8	112.9	105.3	113.9	111.0	116.9	115.8	116.7	161.9
July	-1.5	-5.2	102.6	99.6	104.3	110.0	102.5	116.0	112.7	120.5	118.6	119.1	168.8

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 excluding food and energy										
	1	2	3	4	5	6	7	8	9	10	11	12	13
% of total in 2021	100.0	100.0	68.7	58.2	41.8	100.0	16.7	5.1	26.9	9.5	41.8	86.7	13.3
2020	105.1	0.3	0.7	-0.4	1.0	-	-	-	-	-	-	0.2	0.6
2021	107.8	2.6	1.5	3.4	1.5	-	-	-	-	-	-	2.5	3.1
2022	116.8	8.4	3.9	11.9	3.5	-	-	-	-	-	-	8.5	7.8
2022 Q4	120.8	10.0	5.1	14.0	4.3	2.3	3.7	2.9	1.4	4.6	1.5	10.0	9.5
2023 Q1	121.3	8.0	5.5	10.3	4.7	0.8	3.3	2.7	1.6	-6.0	1.2	8.1	7.3
Q2	123.2	6.2	5.5	6.8	5.2	0.6	1.8	0.8	0.7	-4.3	1.3	6.1	6.8
Q3	123.9	5.0	5.1	4.5	5.3	1.0	1.2	1.3	0.8	1.3	1.0	5.0	4.5
2023 Apr.	123.1	7.0	5.6	8.1	5.2	0.2	0.4	-1.6	0.2	-0.9	0.6	7.0	6.4
May	123.2	6.1	5.3	6.8	5.0	-0.1	0.4	-0.5	0.2	-2.1	0.1	6.1	6.2
June	123.5	5.5	5.5	5.5	5.4	0.3	0.4	0.8	0.2	-0.7	0.5	5.2	7.7
July	123.4	5.3	5.5	4.8	5.6	0.3	0.4	1.0	0.3	-0.2	0.3	5.2	6.3
Aug.	124.0	5.2	5.3	4.9	5.5	0.5	0.4	-0.2	0.3	3.3	0.3	5.3	5.2
Sep.	124.4	4.3	4.5	4.0	4.7	0.3	0.4	0.3	0.0	1.5	0.2	4.6	2.2

	Goods						Services					
	Food (including alcoholic beverages and tobacco)			Industrial goods			Housing		Transport	Communication	Recreation and personal care	Miscellaneous
	Total	Processed food	Unprocessed food	Total	Non-energy industrial goods	Energy		Rents				
	14	15	16	17	18	19	20	21	22	23	24	25
% of total in 2021	21.8	16.7	5.1	36.4	26.9	9.5	12.2	7.5	6.5	2.7	11.4	9.0
2020	2.3	1.8	4.0	-1.8	0.2	-6.8	1.4	1.3	0.5	-0.6	1.0	1.4
2021	1.5	1.5	1.6	4.5	1.5	13.0	1.4	1.2	2.1	0.3	1.5	1.6
2022	9.0	8.6	10.4	13.6	4.6	37.0	2.4	1.7	4.4	-0.2	6.1	2.1
2022 Q4	13.5	13.4	13.7	14.2	6.2	33.9	3.0	2.1	5.6	-0.7	7.1	2.8
2023 Q1	14.9	15.4	13.3	7.8	6.7	10.0	3.6	2.5	5.8	0.2	7.2	3.8
Q2	12.5	13.5	9.5	3.7	5.8	-1.8	3.7	2.7	6.1	0.4	7.5	4.1
Q3	9.8	10.3	7.9	1.7	4.6	-4.6	3.7	2.7	5.7	0.0	7.2	4.2
2023 Apr.	13.5	14.6	10.0	5.2	6.2	2.3	3.6	2.6	6.1	0.4	7.7	4.0
May	12.5	13.4	9.6	3.7	5.8	-1.8	3.7	2.7	4.7	0.7	7.6	4.1
June	11.6	12.4	9.0	2.2	5.5	-5.6	3.7	2.7	7.4	0.0	7.2	4.3
July	10.8	11.3	9.2	1.6	5.0	-6.1	3.7	2.7	7.1	0.0	7.5	4.3
Aug.	9.7	10.3	7.8	2.2	4.7	-3.3	3.7	2.8	6.2	0.0	7.3	4.3
Sep.	8.8	9.4	6.6	1.4	4.1	-4.6	3.7	2.7	3.9	0.0	6.7	4.1

Sources: Eurostat and ECB calculations.

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

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

3 Prices and costs

3.2 Industry, construction and property prices

(annual percentage changes, unless otherwise indicated)

	Industrial producer prices excluding construction [1]										Con-struction [2]	Residential property prices [3]	Experimental indicator of commercial property prices [3]
	Total (index: 2015 = 100)	Total		Industry excluding construction and energy						Energy			
			Manu-facturing	Total	Intermediate goods	Capital goods	Consumer goods						
							Total	Food, beverages and tobacco	Non-food				
	1	2	3	4	5	6	7	8	9	10	11	12	13
% of total in 2015	100.0	100.0	77.3	72.1	28.9	20.7	22.5	16.6	5.9	27.9			
2020	102.0	-2.6	-1.7	-0.1	-1.6	0.9	0.9	1.1	0.6	-9.7	1.7	5.3	1.6
2021	114.5	12.3	7.4	5.8	10.9	2.5	2.1	3.3	1.8	32.2	5.6	8.1	0.5
2022	153.8	34.3	16.9	14.1	20.3	7.2	12.1	16.4	7.7	85.2	11.5	7.0	0.6
2022 Q3	163.1	41.1	17.7	14.7	20.2	7.7	14.0	19.0	8.6	107.8	11.9	6.6	0.3
Q4	161.9	27.2	14.5	13.1	15.4	7.6	15.3	19.9	9.3	56.1	11.6	2.9	-2.8
2023 Q1	156.2	10.9	9.0	9.8	8.7	7.2	14.1	17.4	8.5	11.5	10.2	0.3	-4.8
Q2	147.2	-1.4	0.9	3.7	-1.1	5.7	9.4	9.6	6.5	-13.1	7.0	.	-10.0
2023 Mar.	154.4	5.5	5.7	8.1	5.8	6.7	12.9	15.3	8.1	0.0	-	-	-
Apr.	149.3	0.9	3.1	5.1	1.2	6.2	10.6	11.3	7.2	-9.2	-	-	-
May	146.4	-1.6	0.6	3.4	-1.5	5.7	9.4	9.4	6.4	-13.5	-	-	-
June	145.8	-3.4	-1.1	2.5	-2.8	5.3	8.4	8.1	5.8	-16.4	-	-	-
July	145.0	-7.6	-0.8	1.6	-4.0	4.7	7.4	6.6	5.0	-24.2	-	-	-
Aug.	145.9	-11.5	0.0	1.0	-4.5	4.3	6.4	5.6	4.7	-30.6	-	-	-

Sources: Eurostat, ECB calculations, and ECB calculations based on MSCI data and national sources (col. 13).

1) Domestic sales only.

2) Input prices for residential buildings.

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

3.3 Commodity prices and GDP deflators

(annual percentage changes, unless otherwise indicated)

	GDP deflators								Oil prices (EUR per barrel)	Non-energy commodity prices (EUR)					
	Total (s.a.; index: 2015 = 100)	Total	Domestic demand				Exports [1]	Imports [1]		Import-weighted [2]			Use-weighted [2]		
			Total	Private consump-tion	Govern-ment consump-tion	Gross fixed capital formation				Total	Food	Non-food	Total	Food	Non-food
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
% of total										100.0	45.4	54.6	100.0	50.4	49.6
2020	107.3	1.8	1.3	0.6	3.4	1.0	-1.3	-2.7	37.0	1.5	3.3	-0.2	-0.9	-0.3	-1.7
2021	109.7	2.2	2.9	2.2	1.8	3.9	5.9	7.9	59.8	29.6	21.5	37.1	29.2	22.2	37.0
2022	114.8	4.6	6.8	6.7	4.3	7.8	12.5	17.6	95.0	18.4	29.0	9.6	19.6	28.2	10.9
2022 Q4	117.4	5.6	6.8	8.6	5.7	7.6	10.0	12.8	86.6	5.4	13.8	-2.1	5.1	12.2	-2.7
2023 Q1	119.7	6.2	5.5	7.9	4.4	6.5	5.4	3.8	75.8	-10.3	-5.3	-14.6	-10.9	-6.5	-15.6
Q2	121.2	6.2	4.1	6.8	4.9	4.7	0.4	-3.8	71.6	-18.0	-16.0	-19.9	-18.3	-16.1	-20.8
Q3	.	.	.	.	.	.	.	.	79.8	-14.0	-15.1	-12.9	-14.8	-15.2	-14.3
2023 Apr.	-	-	-	-	-	-	-	-	76.7	-19.2	-14.8	-23.3	-19.4	-14.8	-24.4
May	-	-	-	-	-	-	-	-	69.7	-19.1	-17.5	-20.6	-19.4	-17.6	-21.4
June	-	-	-	-	-	-	-	-	69.0	-15.5	-15.6	-15.4	-15.8	-15.7	-16.0
July	-	-	-	-	-	-	-	-	72.5	-13.5	-13.6	-13.4	-14.9	-14.9	-15.0
Aug.	-	-	-	-	-	-	-	-	78.8	-16.2	-16.8	-15.5	-16.6	-16.2	-17.0
Sep.	-	-	-	-	-	-	-	-	88.1	-12.4	-14.9	-9.6	-13.0	-14.7	-10.8

Sources: Eurostat, ECB calculations and Bloomberg (col. 9).

1) Deflators for exports and imports refer to goods and services and include cross-border trade within the euro area.

2) Import-weighted: weighted according to 2009-11 average import structure; use-weighted: weighted according to 2009-11 average domestic demand structure.

3 Prices and costs

3.4 Price-related opinion surveys
(seasonally adjusted)

	European Commission Business and Consumer Surveys (percentage balances)					Purchasing Managers' Surveys (diffusion indices)			
	Selling price expectations (for next three months)				Consumer price trends over past 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
1999-15	4.3	5.7	-	-4.4	32.4	56.7	56.3	-	49.7
2020	-0.3	2.0	-0.6	-5.1	11.5	49.0	52.1	48.7	47.2
2021	31.6	24.0	10.3	19.7	30.4	84.0	61.9	66.8	53.4
2022	48.4	52.9	27.2	42.5	71.6	77.1	75.4	69.6	62.0
2022 Q4	40.2	51.8	29.1	41.7	78.1	65.8	74.3	63.7	62.0
2023 Q1	23.7	43.5	26.0	27.1	78.4	51.3	69.9	57.8	61.2
Q2	7.5	30.0	18.0	11.8	76.9	41.6	64.3	49.2	58.0
Q3	3.4	22.3	16.0	5.8	73.3	39.1	62.0	45.7	55.5
2023 May	6.5	30.0	18.6	12.3	77.4	41.3	64.4	49.0	59.1
June	4.4	25.2	16.0	7.7	74.9	39.5	61.3	47.0	56.3
July	3.4	23.2	16.4	4.9	73.5	35.8	61.0	45.0	56.1
Aug.	3.1	22.8	16.5	6.1	72.9	39.7	62.2	46.2	55.6
Sep.	3.6	20.9	15.3	6.3	73.6	41.9	62.7	45.8	54.7
Oct.	.	.	.	.	.	42.2	62.2	46.0	54.3

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

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

	Total (index: 2020 = 100)	Total	By component		For selected economic activities		Memo item: Indicator of negotiated wages [1]
			Wages and salaries	Employers' social contributions	Business economy	Mainly non-business economy	
	1	2	3	4	5	6	7
% of total in 2020	100.0	100.0	75.3	24.7	69.0	31.0	
2020	100.0	3.1	3.6	1.5	2.8	3.9	1.8
2021	101.0	1.0	1.1	0.6	0.9	1.2	1.3
2022	105.7	4.6	3.9	6.9	4.9	3.9	2.9
2022 Q3	102.1	3.3	2.6	5.4	3.6	3.0	3.0
Q4	114.2	5.9	5.3	7.9	5.8	6.0	3.1
2023 Q1	102.6	5.2	4.9	6.2	5.6	4.4	4.4
Q2	113.8	4.5	4.6	4.0	4.5	4.3	4.4

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

3 Prices and costs

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

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

	Total (index: 2015 =100)	Total	By economic activity									
			Agriculture, forestry and fishing	Manu-facturing, energy and utilities	Con-struction	Trade, transport, accom-modation and food services	Information and commu-nication	Finance and insurance	Real estate	Professional, business and support services	Public ad-ministration, education, health and social work	Arts, enter-tainment and other services
	1	2	3	4	5	6	7	8	9	10	11	12
Unit labour costs												
2020	110.3	4.6	2.4	2.0	5.2	7.9	-0.2	0.8	1.3	3.4	6.2	16.7
2021	110.1	-0.2	1.8	-3.7	5.6	-1.9	1.2	-1.5	5.0	1.1	0.9	-0.1
2022	113.8	3.4	7.4	3.5	6.2	2.1	3.2	2.9	4.7	3.5	3.4	-3.0
2022 Q3	114.1	3.4	8.3	2.1	6.5	2.5	1.9	3.0	6.0	3.4	3.9	-0.7
Q4	116.5	4.7	7.7	3.0	7.8	4.3	4.0	3.3	4.2	5.0	4.9	-1.3
2023 Q1	118.9	5.9	4.9	7.1	5.4	6.8	4.2	6.0	4.5	6.9	3.8	0.3
Q2	119.7	6.5	3.4	7.3	6.1	8.3	4.7	5.3	5.4	6.7	5.4	3.5
Compensation per employee												
2020	107.1	-0.3	3.2	-2.3	-1.0	-3.3	0.0	-0.2	-0.2	-0.2	2.1	-1.5
2021	111.6	4.2	2.7	4.7	5.2	5.5	5.8	3.3	6.6	4.7	2.3	3.3
2022	116.6	4.5	5.0	3.6	4.1	6.2	3.3	3.0	4.2	5.2	3.8	7.0
2022 Q3	117.1	4.0	5.2	2.7	3.7	4.9	2.8	2.8	4.3	4.8	3.8	5.8
Q4	119.1	5.0	5.7	3.5	5.0	5.4	3.6	3.1	2.6	6.1	5.6	5.0
2023 Q1	121.1	5.5	6.1	5.6	4.5	6.9	5.0	4.9	3.8	7.0	3.9	5.8
Q2	121.9	5.6	6.3	5.2	5.5	6.0	5.8	4.7	3.8	6.2	5.2	6.4
Labour productivity per person employed												
2020	97.1	-4.7	0.8	-4.2	-5.9	-10.4	0.2	-0.9	-1.5	-3.5	-3.9	-15.6
2021	101.4	4.4	0.9	8.8	-0.3	7.5	4.6	4.9	1.5	3.6	1.3	3.4
2022	102.5	1.1	-2.3	0.1	-2.0	4.0	0.1	0.1	-0.5	1.7	0.3	10.3
2022 Q3	102.7	0.6	-2.9	0.5	-2.7	2.4	0.8	-0.2	-1.6	1.3	-0.1	6.6
Q4	102.3	0.3	-1.8	0.5	-2.6	1.0	-0.4	-0.2	-1.5	1.0	0.7	6.5
2023 Q1	101.8	-0.4	1.2	-1.4	-0.8	0.1	0.8	-1.0	-0.6	0.0	0.1	5.5
Q2	101.8	-0.8	2.8	-2.0	-0.5	-2.1	1.0	-0.6	-1.6	-0.5	-0.2	2.8
Compensation per hour worked												
2020	114.0	5.9	5.9	3.3	5.1	7.6	3.1	1.8	4.9	5.9	4.9	7.1
2021	114.1	0.1	0.5	-0.1	-0.5	-0.6	2.7	1.2	2.2	0.1	0.8	-1.5
2022	118.0	3.4	6.3	3.9	4.4	1.9	3.2	3.1	2.9	3.9	4.8	3.4
2022 Q3	118.4	3.0	5.7	2.0	3.3	2.9	1.7	1.6	3.3	3.1	4.0	4.2
Q4	120.7	4.5	7.2	3.3	4.3	3.9	3.5	2.6	1.7	5.2	6.0	3.8
2023 Q1	122.0	4.8	5.1	5.1	4.4	5.5	5.2	4.7	3.8	6.2	3.7	4.7
Q2	122.7	5.4	6.7	4.9	5.2	6.1	5.6	4.5	4.3	6.0	4.8	5.2
Hourly labour productivity												
2020	104.7	2.1	1.7	1.6	0.8	1.0	4.1	1.7	4.8	3.1	-0.9	-6.2
2021	104.7	0.0	0.0	3.5	-6.3	1.0	1.3	2.5	-3.7	-1.5	-0.4	-2.1
2022	104.7	0.0	-1.7	0.4	-2.1	0.0	-0.1	0.3	-2.3	0.7	1.3	5.8
2022 Q3	104.9	-0.2	-2.9	-0.1	-2.9	0.9	-0.2	-1.1	-2.8	0.2	0.2	4.7
Q4	104.5	-0.3	-1.9	0.3	-3.4	-0.3	-0.7	-0.9	-2.0	0.2	1.1	4.6
2023 Q1	103.7	-0.8	0.9	-1.8	-0.6	-0.7	1.2	-1.3	-0.2	-0.3	0.0	4.3
Q2	103.6	-0.9	3.2	-2.1	-1.0	-1.9	1.1	-0.9	-1.0	-0.7	-0.6	2.1

Sources: Eurostat and ECB calculations.

4 Financial market developments

4.1 Money market interest rates

(percentages per annum; period averages)

	Euro area [1]					United States	Japan
	Euro short-term rate (€STR)	1-month deposits (EURIBOR)	3-month deposits (EURIBOR)	6-month deposits (EURIBOR)	12-month deposits (EURIBOR)	Secured overnight financing rate (SOFR)	Tokyo overnight average rate (TONAR)
	1	2	3	4	5	6	7
2020	-0.55	-0.50	-0.43	-0.37	-0.31	0.36	-0.04
2021	-0.57	-0.56	-0.55	-0.52	-0.49	0.04	-0.02
2022	-0.01	0.09	0.35	0.68	1.10	1.63	-0.03
2023 Mar.	2.57	2.71	2.91	3.27	3.65	4.64	-0.02
Apr.	2.90	2.95	3.17	3.50	3.74	4.81	-0.02
May	3.08	3.15	3.37	3.68	3.86	5.02	-0.05
June	3.24	3.34	3.54	3.83	4.01	5.06	-0.07
July	3.40	3.47	3.67	3.94	4.15	5.10	-0.05
Aug.	3.64	3.63	3.78	3.94	4.07	5.30	-0.06
Sep.	3.75	3.76	3.88	4.03	4.15	5.31	-0.05

Source: Refinitiv and ECB calculations.

1) Data refer to the changing composition of the euro area, see the General Notes.

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
2020	-0.75	-0.76	-0.77	-0.72	-0.57	0.19	0.80	0.32	-0.77	-0.77	-0.60	-0.24
2021	-0.73	-0.72	-0.68	-0.48	-0.19	0.53	1.12	0.45	-0.69	-0.58	-0.12	0.24
2022	1.71	2.46	2.57	2.45	2.56	0.09	-0.84	-0.24	2.85	2.48	2.47	2.76
2023 Mar.	2.75	2.80	2.62	2.35	2.41	-0.39	-1.16	-0.52	2.67	2.25	2.27	2.58
Apr.	2.88	2.94	2.68	2.37	2.44	-0.50	-1.36	-0.60	2.74	2.20	2.30	2.65
May	3.07	3.02	2.64	2.29	2.38	-0.63	-1.55	-0.53	2.65	2.02	2.23	2.65
June	3.39	3.45	3.12	2.58	2.51	-0.94	-1.59	-0.96	3.21	2.45	2.25	2.56
July	3.48	3.42	3.02	2.53	2.54	-0.87	-1.43	-0.86	3.04	2.31	2.33	2.70
Aug.	3.46	3.38	2.95	2.52	2.57	-0.81	-1.30	-0.80	2.96	2.24	2.39	2.77
Sep.	3.70	3.51	3.16	2.78	2.88	-0.64	-0.89	-0.63	3.14	2.56	2.69	3.17

Source: ECB calculations.

1) Data refer to the changing composition of the euro area, see the General Notes.

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
2019	373.6	3,435.2	731.7	270.8	183.7	111.9	155.8	650.9	528.2	322.0	294.2	772.7	2,915.5	21,697.2
2020	360.0	3,274.3	758.9	226.8	163.2	83.1	128.6	631.4	630.2	347.1	257.6	831.9	3,217.3	22,703.5
2021	448.3	4,023.6	962.9	289.8	183.0	95.4	164.4	819.0	874.3	377.7	279.6	886.3	4,277.6	28,836.5
2023 Mar.	448.5	4,201.7	968.8	292.2	175.7	116.6	182.1	809.6	834.4	358.9	296.7	797.0	3,968.6	27,693.2
Apr.	460.9	4,358.3	990.6	305.7	184.2	120.7	183.3	817.9	843.4	383.5	305.9	843.0	4,121.5	28,275.8
May	456.4	4,319.3	975.3	301.8	180.5	116.0	178.9	824.6	858.8	379.9	296.5	835.4	4,146.2	30,147.5
June	455.5	4,324.4	952.1	302.2	170.0	112.7	179.3	835.9	904.5	376.5	277.4	806.2	4,345.4	32,754.5
July	460.1	4,364.5	964.7	305.9	172.9	111.0	185.8	838.3	899.6	375.8	277.8	814.8	4,508.1	32,694.1
Aug.	453.9	4,296.8	966.3	297.6	167.8	115.8	188.6	816.5	867.9	362.6	269.1	828.5	4,457.4	32,167.4
Sep.	447.3	4,227.2	963.8	286.2	161.2	123.9	189.5	787.3	835.7	363.4	280.6	825.2	4,409.1	32,725.6

Source: Refinitiv.

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					
	Overnight	Redeemable at notice of up to 3 months	With an agreed maturity of:				By initial period of rate fixation		APRC [3)]		By initial period of rate fixation				APRC [3)]	Composite cost-of-borrowing indicator
			Up to 2 years	Over 2 years			Floating rate and up to 1 year	Over 1 year			Floating rate and up to 1 year	Over 1 and up to 5 years	Over 5 and up to 10 years	Over 10 years		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2022 Sep.	0.02	0.71	0.63	1.27	5.23	15.83	6.48	5.96	6.57	3.09	2.26	2.59	2.84	2.25	2.67	2.45
Oct.	0.03	0.73	0.93	1.60	5.56	15.97	6.76	6.21	6.87	3.55	2.66	2.82	3.05	2.41	2.90	2.67
Nov.	0.04	0.75	1.21	1.81	5.79	15.97	6.27	6.55	7.11	3.96	2.95	3.04	3.30	2.55	3.11	2.89
Dec.	0.07	0.80	1.42	1.91	5.92	15.90	6.51	6.42	6.98	4.00	3.08	3.16	3.29	2.61	3.18	2.95
2023 Jan.	0.09	0.86	1.60	2.08	6.32	15.99	7.20	6.97	7.58	4.28	3.47	3.32	3.39	2.77	3.39	3.10
Feb.	0.11	1.17	1.91	2.20	6.54	16.08	7.21	7.08	7.78	4.58	3.67	3.48	3.52	2.94	3.55	3.24
Mar.	0.14	1.21	2.11	2.26	6.71	16.07	7.63	7.23	7.90	4.69	3.88	3.78	3.56	3.14	3.72	3.37
Apr.	0.17	1.25	2.28	2.42	6.97	16.25	8.06	7.43	8.11	4.91	4.13	3.85	3.61	3.19	3.81	3.48
May	0.21	1.31	2.47	2.48	7.14	16.34	8.16	7.60	8.31	5.08	4.24	3.98	3.65	3.31	3.93	3.58
June	0.23	1.37	2.71	2.59	7.27	16.35	7.02	7.49	7.99	5.15	4.40	4.07	3.71	3.41	4.05	3.70
July	0.27	1.43	2.82	2.86	7.49	16.40	8.41	7.73	8.41	5.24	4.55	4.14	3.72	3.45	4.09	3.76
Aug. [(p)]	0.31	1.51	3.03	3.10	7.60	16.47	8.70	7.85	8.50	5.40	4.68	4.21	3.79	3.51	4.15	3.85

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
	Overnight	With an agreed maturity of:			up to EUR 0.25 million			over EUR 0.25 and up to 1 million			over EUR 1 million			
		Up to 2 years	Over 2 years		Floating rate and up to 3 months	Over 3 months and up to 1 year	Over 1 year	Floating rate and up to 3 months	Over 3 months and up to 1 year	Over 1 year	Floating rate and up to 3 months	Over 3 months and up to 1 year	Over 1 year	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2022 Sep.	0.06	0.70	1.79	2.23	2.48	2.91	3.24	2.31	2.55	2.45	2.31	2.34	2.38	2.40
Oct.	0.08	0.92	1.83	2.54	2.96	3.52	3.62	2.74	3.02	2.75	2.45	2.76	2.82	2.72
Nov.	0.15	1.49	2.34	2.90	3.34	3.76	4.01	3.12	3.37	3.06	2.89	3.30	3.29	3.11
Dec.	0.19	1.80	2.61	3.20	3.74	3.99	4.19	3.47	3.55	3.28	3.29	3.59	3.29	3.41
2023 Jan.	0.23	1.99	2.72	3.57	4.13	4.20	4.39	3.77	3.92	3.45	3.41	3.75	3.39	3.63
Feb.	0.31	2.30	2.81	3.81	4.40	4.54	4.71	4.06	4.09	3.69	3.69	3.54	3.58	3.86
Mar.	0.41	2.57	2.95	4.12	4.70	4.83	4.88	4.33	4.48	3.84	4.08	4.32	3.88	4.22
Apr.	0.44	2.80	3.11	4.39	4.87	4.74	4.96	4.60	4.58	3.98	4.32	4.37	3.69	4.39
May	0.49	2.96	3.13	4.56	5.04	5.07	5.16	4.76	4.84	4.01	4.47	4.58	4.01	4.57
June	0.55	3.20	3.10	4.78	5.24	5.43	5.27	4.95	4.99	4.17	4.71	4.88	4.12	4.78
July	0.60	3.31	3.58	4.89	5.52	5.52	5.43	5.13	5.02	4.32	4.86	5.01	4.32	4.94
Aug. [(p)]	0.65	3.42	3.53	5.02	5.46	5.65	5.56	5.24	5.16	4.42	5.00	4.90	4.01	4.99

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	FVCs	Non-financial corporations		of which central government			Financial corporations other than MFIs	FVCs	Non-financial corporations		of which central government
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Short-term														
2020	1,488.7	429.7	126.2	51.5	96.7	836.1	722.5	.	.	.	.	.	.	.
2021	1,406.7	427.1	127.0	50.1	87.9	764.7	674.9	387.1	138.3	79.1	26.3	32.1	137.6	104.8
2022	1,371.9	467.2	143.1	50.2	94.6	667.0	621.7	481.8	182.4	117.4	48.0	48.1	133.9	97.1
2023 Apr.	1,454.7	564.1	134.6	47.7	102.3	653.7	603.5	509.7	216.5	100.9	31.4	60.2	132.2	103.3
May	1,461.8	581.3	140.0	50.7	103.6	636.9	599.7	518.7	243.6	119.3	38.3	54.4	101.6	86.7
June	1,486.0	585.4	134.0	49.4	93.7	672.9	634.3	519.0	225.2	115.7	36.0	45.7	132.4	107.1
July	1,487.6	581.6	136.2	50.4	99.2	670.6	634.6	509.3	186.9	119.0	36.5	56.6	146.8	122.5
Aug.	1,513.4	595.1	139.8	50.4	98.8	679.6	647.8	518.8	231.1	121.9	40.1	40.5	125.3	108.2
Sep.	1,519.1	590.3	132.5	46.1	87.5	708.8	675.7	501.2	206.9	111.7	37.8	42.6	140.0	123.1
Long-term														
2020	19,270.8	4,077.8	3,086.6	1,256.4	1,545.1	10,561.2	9,774.3	.	.	.	.	.	.	.
2021	19,909.6	4,183.0	3,368.8	1,341.9	1,599.3	10,758.5	9,937.5	316.9	67.9	84.2	34.3	23.1	141.8	128.3
2022	17,888.1	3,973.8	3,251.5	1,340.8	1,396.2	9,266.6	8,554.7	299.2	78.4	73.6	29.1	16.6	130.6	121.2
2023 Apr.	18,408.0	4,118.7	3,276.7	1,338.8	1,418.1	9,594.5	8,874.2	308.9	72.8	76.7	34.0	16.4	143.1	137.2
May	18,576.3	4,191.7	3,332.1	1,373.8	1,426.2	9,626.3	8,908.9	373.6	100.2	101.6	55.9	27.3	144.5	136.2
June	18,675.5	4,203.9	3,343.6	1,379.7	1,428.5	9,699.4	8,979.4	404.5	113.8	86.9	30.9	31.2	172.6	160.9
July	18,762.5	4,301.0	3,346.2	1,368.1	1,433.9	9,681.3	8,961.2	351.4	140.7	59.9	13.7	18.8	132.0	127.2
Aug.	18,787.5	4,316.5	3,332.4	1,351.2	1,429.6	9,709.0	8,986.5	208.8	53.0	48.4	11.9	8.5	98.8	95.4
Sep.	18,653.8	4,305.6	3,370.3	1,360.3	1,433.6	9,544.3	8,830.6	362.8	89.9	104.9	19.9	30.2	137.7	127.9

Source: ECB.

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

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

(EUR billions and percentage changes; market values)

	Debt securities							Listed shares			
	Total	MFIs	Non-MFI corporations			General government		Total	MFIs	Financial corporations other than MFIs	Non-financial corporations
			Financial corporations other than MFIs	FVCs	Non-financial corporations		of which central government				
	1	2	3	4	5	6	7	8	9	10	11
Outstanding amount											
2020	20,759.5	4,507.5	3,212.8	1,307.8	1,641.8	11,397.3	10,496.8	8,514.7	473.8	1,334.0	6,705.9
2021	21,316.4	4,610.0	3,495.9	1,392.0	1,687.2	11,523.2	10,612.4	10,550.9	600.0	1,696.7	8,253.1
2022	19,260.0	4,440.9	3,394.6	1,391.0	1,490.9	9,933.6	9,176.5	8,732.8	525.0	1,348.2	6,858.9
2023 Apr.	19,862.7	4,682.7	3,411.3	1,386.5	1,520.3	10,248.3	9,477.7	9,683.9	566.5	1,430.0	7,686.9
May	20,038.1	4,773.0	3,472.1	1,424.5	1,529.8	10,263.2	9,508.7	9,404.7	545.5	1,384.7	7,474.0
June	20,161.5	4,789.4	3,477.5	1,429.1	1,522.2	10,372.3	9,613.7	9,651.6	587.4	1,457.6	7,606.1
July	20,250.1	4,882.7	3,482.4	1,418.5	1,533.1	10,351.9	9,595.8	9,812.0	619.2	1,512.5	7,679.8
Aug.	20,300.8	4,911.6	3,472.2	1,401.6	1,528.4	10,388.6	9,634.3	9,542.5	582.3	1,484.9	7,474.7
Sep.	20,172.9	4,895.9	3,502.8	1,406.4	1,521.1	10,253.1	9,506.3	9,178.5	576.2	1,419.2	7,182.6
Growth rate [1]											
2023 Feb.	4.2	7.8	3.6	-0.4	1.6	3.3	3.9	0.1	-2.4	0.7	0.2
Mar.	3.9	7.1	2.8	-1.5	-0.1	3.4	4.0	0.0	-2.4	0.5	0.1
Apr.	4.4	8.2	2.0	-1.4	0.5	4.1	4.8	0.0	-2.2	0.5	0.1
May	4.5	9.2	2.9	1.7	0.6	3.6	4.5	-0.2	-2.6	0.5	-0.1
June	5.3	10.3	3.9	2.8	0.8	4.3	5.1	-1.0	-2.4	1.0	-1.3
July	6.0	12.2	3.6	1.3	1.7	4.7	5.3	-1.0	-2.1	0.9	-1.2
Aug.	5.9	12.2	3.5	0.8	1.0	4.7	5.3	-1.0	-2.0	1.0	-1.2
Sep.	6.3	10.4	5.1	2.8	1.3	5.6	6.3	-0.7	-3.1	2.5	-1.1

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
2020	99.7	93.7	93.8	90.0	75.0	88.4	119.2	93.9
2021	99.6	93.7	93.5	89.2	69.2	86.6	120.5	94.3
2022	95.3	90.8	93.4	84.1	64.4	81.7	116.1	90.9
2022 Q4	95.7	91.9	95.0	84.9	63.6	82.3	116.7	91.8
2023 Q1	97.1	92.8	96.8	86.6	66.8	84.5	119.4	93.1
Q2	98.2	93.5	98.0	87.7	66.0	84.9	121.4	94.3
Q3	98.9	94.5	98.5	.	.	.	123.5	95.6
2023 Apr.	98.4	93.8	98.1	-	-	-	121.5	94.6
May	98.0	93.2	97.7	-	-	-	120.9	93.9
June	98.2	93.5	98.1	-	-	-	121.8	94.5
July	99.2	94.6	99.0	-	-	-	123.7	95.9
Aug.	99.0	94.7	98.5	-	-	-	123.7	95.9
Sep.	98.5	94.2	97.9	-	-	-	123.0	95.1
Percentage change versus previous month								
2023 Sep.	-0.5	-0.6	-0.6	-	-	-	-0.6	-0.8
Percentage change versus previous year								
2023 Sep.	5.0	4.9	5.2	-	-	-	8.0	6.4

Source: ECB.

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

4.9 Bilateral exchange rates

(period averages; units of national currency per euro)

	Chinese renminbi	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
2020	7.875	26.455	7.454	351.249	121.846	4.443	0.890	4.8383	10.485	1.071	1.142
2021	7.628	25.640	7.437	358.516	129.877	4.565	0.860	4.9215	10.146	1.081	1.183
2022	7.079	24.566	7.440	391.286	138.027	4.686	0.853	4.9313	10.630	1.005	1.053
2022 Q4	7.258	24.389	7.438	410.825	144.238	4.727	0.870	4.9208	10.938	0.983	1.021
2023 Q1	7.342	23.785	7.443	388.712	141.981	4.708	0.883	4.9202	11.203	0.992	1.073
Q2	7.644	23.585	7.450	372.604	149.723	4.537	0.869	4.9488	11.469	0.978	1.089
Q3	7.886	24.126	7.453	383.551	157.254	4.499	0.860	4.9490	11.764	0.962	1.088
2023 Apr.	7.556	23.437	7.452	375.336	146.511	4.632	0.881	4.9365	11.337	0.985	1.097
May	7.595	23.595	7.449	372.371	148.925	4.534	0.870	4.9477	11.370	0.975	1.087
June	7.765	23.695	7.449	370.602	153.149	4.461	0.859	4.9600	11.677	0.976	1.084
July	7.948	23.892	7.451	379.035	155.937	4.443	0.859	4.9411	11.634	0.966	1.106
Aug.	7.910	24.108	7.452	385.047	157.962	4.460	0.859	4.9411	11.812	0.959	1.091
Sep.	7.797	24.380	7.457	386.429	157.795	4.598	0.862	4.9656	11.842	0.960	1.068
Percentage change versus previous month											
2023 Sep.	-1.4	1.1	0.1	0.4	-0.1	3.1	0.3	0.5	0.3	0.1	-2.1
Percentage change versus previous year											
2023 Sep.	12.2	-0.8	0.3	-4.4	11.5	-3.0	-1.5	1.1	9.8	-0.4	7.9

Source: ECB.

4 Financial market developments

4.10 Euro area balance of payments, financial account

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

	Total [1]			Direct investment		Portfolio investment		Net financial derivatives	Other investment		Reserve assets	Memo: Gross external debt
	Assets	Liabilities	Net	Assets	Liabilities	Assets	Liabilities		Assets	Liabilities		
	1	2	3	4	5	6	7	8	9	10	11	12
Outstanding amounts (international investment position)												
2022 Q3	32,497.3	31,721.3	776.0	12,907.8	10,554.4	11,264.6	12,769.9	-7.0	7,196.3	8,397.1	1,135.7	16,518.1
Q4	31,113.6	30,686.5	427.1	12,289.8	10,057.5	11,089.5	12,826.2	17.9	6,602.1	7,802.8	1,114.3	15,563.0
2023 Q1	31,606.4	31,412.5	193.9	12,285.4	9,990.2	11,322.8	13,397.1	-9.7	6,874.4	8,025.2	1,133.6	15,891.6
Q2	31,778.3	31,512.8	265.5	12,191.5	9,855.5	11,702.8	13,712.2	-35.7	6,813.9	7,945.2	1,105.7	15,876.2
Outstanding amounts as a percentage of GDP												
2023 Q2	227.7	225.8	1.9	87.4	70.6	83.9	98.3	-0.3	48.8	56.9	7.9	113.8
Transactions												
2022 Q3	-63.8	-38.9	-24.9	12.5	-24.2	-174.4	6.5	38.2	52.6	-21.2	7.3	-
Q4	-514.7	-579.8	65.1	-249.8	-282.3	90.8	88.8	0.2	-365.2	-386.3	9.3	-
2023 Q1	404.4	369.2	35.2	50.0	15.3	63.5	161.0	15.6	293.7	193.0	-18.4	-
Q2	29.3	-39.2	68.5	-98.1	-117.7	203.5	136.7	-5.1	-72.8	-58.2	1.9	-
2023 Mar.	140.8	96.0	44.8	16.3	12.8	-8.1	94.2	5.7	125.4	-11.0	1.6	-
Apr.	14.7	8.1	6.6	-36.5	-32.2	67.6	1.9	-1.5	-13.0	38.5	-1.9	-
May	-9.9	0.8	-10.8	-54.2	3.6	37.2	-11.5	7.4	-1.7	8.8	1.4	-
June	24.5	-48.1	72.6	-7.4	-89.1	98.7	146.3	-11.0	-58.2	-105.4	2.4	-
July	126.0	119.2	6.8	-10.3	19.1	40.4	27.5	-0.8	96.3	72.6	0.4	-
Aug.	95.9	53.4	42.5	8.7	0.2	23.6	24.1	9.0	53.4	29.0	1.3	-
12-month cumulated transactions												
2023 Aug.	-127.7	-320.7	193.0	-367.5	-516.5	306.7	489.5	32.6	-97.3	-293.7	-2.1	-
12-month cumulated transactions as a percentage of GDP												
2023 Aug.	-0.9	-2.3	1.4	-2.6	-3.7	2.2	3.5	0.2	-0.7	-2.1	0.0	-

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				
	M1			M2-M1								
	Currency in circulation	Overnight deposits		Deposits with an agreed maturity of up to 2 years	Deposits redeemable at notice of up to 3 months			Repos	Money market fund shares	Debt securities with a maturity of up to 2 years		
	1	2	3	4	5	6	7	8	9	10	11	12
Outstanding amounts												
2020	1,363.7	8,906.6	10,270.3	1,026.7	2,449.4	3,476.1	13,746.4	101.8	627.0	4.4	733.1	14,479.5
2021	1,469.7	9,831.3	11,301.0	916.1	2,506.4	3,422.5	14,723.5	118.0	647.2	21.5	786.7	15,510.2
2022	1,538.5	9,768.4	11,306.9	1,377.8	2,581.5	3,959.3	15,266.2	123.3	649.9	46.4	819.7	16,085.9
2022 Q4	1,538.5	9,768.4	11,306.9	1,377.8	2,581.5	3,959.3	15,266.2	123.3	649.9	46.4	819.7	16,085.9
2023 Q1	1,544.1	9,427.4	10,971.5	1,644.5	2,566.0	4,210.5	15,182.0	103.2	681.3	93.4	877.9	16,059.8
Q2	1,534.7	9,176.0	10,710.7	1,871.3	2,534.4	4,405.7	15,116.4	113.2	697.3	86.8	897.3	16,013.7
Q3 [p]	1,535.2	9,019.3	10,554.5	2,069.9	2,484.2	4,554.1	15,108.6	132.1	708.8	67.9	908.8	16,017.4
2023 Apr.	1,536.8	9,352.5	10,889.3	1,702.9	2,554.2	4,257.1	15,146.4	101.5	677.0	86.2	864.8	16,011.1
May	1,537.1	9,259.9	10,797.0	1,766.3	2,544.7	4,311.0	15,108.0	111.9	686.4	96.7	895.0	16,003.0
June	1,534.7	9,176.0	10,710.7	1,871.3	2,534.4	4,405.7	15,116.4	113.2	697.3	86.8	897.3	16,013.7
July	1,534.1	9,087.7	10,621.8	1,915.7	2,527.0	4,442.7	15,064.5	122.3	692.0	79.3	893.6	15,958.0
Aug.	1,533.9	9,020.1	10,554.0	1,976.8	2,501.1	4,477.8	15,031.9	121.0	696.2	87.0	904.2	15,936.1
Sep. [p]	1,535.2	9,019.3	10,554.5	2,069.9	2,484.2	4,554.1	15,108.6	132.1	708.8	67.9	908.8	16,017.4
Transactions												
2020	139.2	1,265.5	1,404.7	-33.8	86.3	52.5	1,457.3	19.6	111.0	1.2	131.7	1,589.0
2021	107.4	915.6	1,023.0	-121.6	66.7	-54.9	968.1	12.1	20.9	14.4	47.3	1,015.4
2022	68.8	-46.8	22.0	427.4	57.3	484.7	506.6	3.7	3.1	77.3	84.1	590.7
2022 Q4	0.3	-362.1	-361.8	212.6	14.5	227.1	-134.7	4.8	52.0	-1.7	55.0	-79.7
2023 Q1	4.3	-380.5	-376.2	261.1	-10.5	250.6	-125.6	-20.6	31.2	48.7	59.3	-66.3
Q2	-9.4	-249.8	-259.1	222.0	-31.6	190.4	-68.7	10.1	15.9	-4.3	21.7	-47.0
Q3 [p]	0.4	-166.1	-165.6	201.9	-50.2	151.7	-14.0	18.3	11.3	-19.9	9.7	-4.3
2023 Apr.	-7.3	-70.3	-77.6	57.2	-11.8	45.5	-32.1	-1.5	-4.2	-5.7	-11.3	-43.4
May	0.3	-100.1	-99.8	59.6	-9.6	50.0	-49.8	9.8	9.3	8.9	28.0	-21.8
June	-2.4	-79.3	-81.7	105.2	-10.3	94.9	13.2	1.7	10.8	-7.5	5.0	18.2
July	-0.7	-85.3	-86.0	45.9	-7.3	38.6	-47.4	9.4	-5.4	-6.6	-2.6	-50.0
Aug.	-0.2	-74.9	-75.1	65.3	-26.0	39.3	-35.7	-1.7	4.3	6.0	8.6	-27.1
Sep. [p]	1.3	-5.8	-4.5	90.7	-16.9	73.7	69.2	10.6	12.4	-19.4	3.7	72.9
Growth rates												
2020	11.4	16.4	15.7	-3.2	3.7	1.5	11.8	24.4	21.3	-	21.8	12.3
2021	7.9	10.3	10.0	-11.8	2.7	-1.6	7.0	12.0	3.3	371.3	6.5	7.0
2022	4.7	-0.5	0.2	45.7	2.3	14.0	3.4	3.0	0.5	517.7	11.3	3.8
2022 Q4	4.7	-0.5	0.2	45.7	2.3	14.0	3.4	3.0	0.5	517.7	11.3	3.8
2023 Q1	1.5	-5.7	-4.7	68.8	1.4	20.1	1.1	-17.5	15.3	516.8	23.7	2.1
Q2	0.4	-9.3	-8.0	85.5	-0.2	24.0	-0.5	-2.6	14.5	328.2	22.6	0.5
Q3 [p]	-0.3	-11.4	-9.9	76.6	-3.0	22.0	-2.2	10.6	18.5	49.4	19.1	-1.2
2023 Apr.	1.0	-6.7	-5.7	73.3	0.9	21.0	0.5	-13.7	13.2	348.3	20.1	1.4
May	0.7	-8.2	-7.0	81.0	0.3	22.6	-0.1	-10.9	14.6	416.1	23.1	0.9
June	0.4	-9.3	-8.0	85.5	-0.2	24.0	-0.5	-2.6	14.5	328.2	22.6	0.5
July	0.1	-10.5	-9.1	85.2	-0.8	23.9	-1.4	-1.5	16.5	226.4	21.1	-0.4
Aug.	-0.3	-12.0	-10.4	86.3	-2.2	23.7	-2.4	-1.4	16.9	157.2	20.5	-1.3
Sep. [p]	-0.3	-11.4	-9.9	76.6	-3.0	22.0	-2.2	10.6	18.5	49.4	19.1	-1.2

Source: ECB.

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

5 Financing conditions and credit developments

5.2 Deposits in M3 [1)]

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

	Non-financial corporations [2)]					Households [3)]					Financial corporations other than MFIs and ICPFs [2)]	Insurance corporations and pension funds	Other general government [4)]
	Total	Overnight	With an agreed maturity of up to 2 years	Redeemable at notice of up to 3 months	Repos	Total	Overnight	With an agreed maturity of up to 2 years	Redeemable at notice of up to 3 months	Repos			
	1	2	3	4	5	6	7	8	9	10	11	12	13
Outstanding amounts													
2020	2,966.0	2,514.2	308.2	140.2	3.3	7,665.3	4,967.4	437.0	2,260.1	0.9	1,120.6	235.3	497.3
2021	3,231.5	2,807.0	288.9	128.7	6.9	8,090.7	5,384.0	372.6	2,333.4	0.7	1,275.5	227.8	546.3
2022	3,362.5	2,725.2	495.9	135.5	5.9	8,392.7	5,541.1	442.9	2,407.8	0.9	1,300.8	235.0	560.0
2022 Q4	3,362.5	2,725.2	495.9	135.5	5.9	8,392.7	5,541.1	442.9	2,407.8	0.9	1,300.8	235.0	560.0
2023 Q1	3,342.6	2,600.5	600.8	132.9	8.4	8,387.4	5,423.7	568.4	2,394.3	0.9	1,202.8	231.7	576.6
Q2	3,338.1	2,507.7	686.3	132.5	11.7	8,377.9	5,305.8	705.1	2,366.1	0.9	1,182.0	231.8	565.2
Q3 [p]	3,317.7	2,435.8	733.8	132.7	15.3	8,379.0	5,219.9	843.6	2,314.6	0.8	1,230.0	212.0	566.8
2023 Apr.	3,336.5	2,571.7	622.8	131.9	10.1	8,373.4	5,378.9	608.5	2,385.1	0.9	1,213.7	227.0	560.5
May	3,305.7	2,529.4	632.5	132.3	11.6	8,375.7	5,341.6	657.6	2,375.6	0.9	1,218.7	226.9	555.8
June	3,338.1	2,507.7	686.3	132.5	11.7	8,377.9	5,305.8	705.1	2,366.1	0.9	1,182.0	231.8	565.2
July	3,305.4	2,463.1	699.6	132.0	10.7	8,375.8	5,260.9	756.5	2,357.6	0.8	1,191.7	215.4	564.4
Aug.	3,291.7	2,431.9	716.3	132.8	10.7	8,375.2	5,239.3	803.1	2,332.0	0.8	1,175.7	217.4	558.8
Sep. [p]	3,317.7	2,435.8	733.8	132.7	15.3	8,379.0	5,219.9	843.6	2,314.6	0.8	1,230.0	212.0	566.8
Transactions													
2020	510.9	465.4	55.3	-6.8	-3.0	612.8	561.8	-53.8	105.0	0.0	160.2	20.6	33.1
2021	251.7	276.8	-21.4	-6.9	3.3	424.5	412.7	-65.0	77.0	-0.2	159.4	-9.5	46.6
2022	120.2	-90.0	205.6	6.0	-1.4	298.7	169.0	74.1	55.5	0.1	0.4	7.6	14.7
2022 Q4	11.7	-100.4	113.0	1.6	-2.6	25.2	-61.7	74.3	12.7	-0.1	-168.1	-7.4	8.4
2023 Q1	-29.1	-135.4	104.7	-0.9	2.6	-34.5	-146.1	120.1	-8.6	0.1	-97.6	-2.1	12.7
Q2	-4.1	-91.3	84.3	-0.4	3.3	-9.4	-117.7	136.6	-28.3	-0.1	-21.9	0.2	-14.1
Q3 [p]	-23.7	-73.9	46.4	0.3	3.5	-0.9	-91.3	141.8	-51.5	0.0	47.8	-20.7	1.5
2023 Apr.	-4.2	-27.7	22.6	-0.9	1.8	-13.5	-44.5	40.4	-9.3	-0.1	14.3	-4.4	-18.6
May	-35.5	-45.0	7.9	0.3	1.2	0.8	-38.2	48.4	-9.5	0.1	-0.1	-0.5	-5.0
June	35.6	-18.6	53.7	0.2	0.3	3.2	-35.0	47.8	-9.5	-0.1	-36.1	5.1	9.4
July	-30.7	-43.3	13.8	-0.4	-0.9	-1.4	-44.5	51.6	-8.5	0.0	11.9	-16.3	-0.8
Aug.	-15.4	-32.4	16.3	0.7	0.0	-2.1	-26.7	50.2	-25.6	0.0	-15.7	1.7	-5.7
Sep. [p]	22.4	1.8	16.3	0.0	4.4	2.6	-20.1	40.1	-17.4	0.0	51.6	-6.1	8.0
Growth rates													
2020	20.6	22.5	21.5	-4.5	-46.6	8.7	12.8	-10.9	4.9	-5.4	16.0	9.5	7.1
2021	8.5	11.0	-7.0	-4.9	99.4	5.5	8.3	-14.9	3.4	-18.3	14.2	-4.0	9.4
2022	3.7	-3.2	70.0	4.6	-17.2	3.7	3.1	20.0	2.4	20.0	0.3	3.4	2.7
2022 Q4	3.7	-3.2	70.0	4.6	-17.2	3.7	3.1	20.0	2.4	20.0	0.3	3.4	2.7
2023 Q1	1.3	-9.4	106.0	3.2	-19.3	2.0	-1.3	56.8	1.5	-10.7	-8.7	0.6	3.5
Q2	0.8	-12.6	125.1	2.2	10.3	1.1	-4.5	97.2	-0.2	20.8	-14.2	1.0	-2.0
Q3 [p]	-1.3	-14.1	90.4	0.4	82.2	-0.2	-7.4	127.1	-3.2	-14.6	-16.2	-12.3	1.5
2023 Apr.	1.2	-10.1	108.1	2.7	7.8	1.7	-2.5	68.8	1.0	-7.0	-9.0	1.0	-1.4
May	0.2	-11.9	119.0	2.3	12.1	1.3	-3.6	83.3	0.4	18.9	-10.0	-1.2	-3.2
June	0.8	-12.6	125.1	2.2	10.3	1.1	-4.5	97.2	-0.2	20.8	-14.2	1.0	-2.0
July	-0.6	-14.1	118.2	2.1	13.5	0.7	-5.8	111.7	-0.9	6.3	-15.4	-9.5	-1.7
Aug.	-2.3	-15.7	107.4	1.0	37.6	0.2	-6.7	124.0	-2.3	-1.0	-18.8	-7.5	-2.5
Sep. [p]	-1.3	-14.1	90.4	0.4	82.2	-0.2	-7.4	127.1	-3.2	-14.6	-16.2	-12.3	1.5

Source: ECB.

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

2) In accordance with the ESA 2010, in December 2014 holding companies of non-financial groups were reclassified from the non-financial corporations sector to the financial corporations sector. These entities are included in MFI balance sheet statistics with financial corporations other than MFIs and insurance corporations and pension funds (ICPFs).

3) Including non-profit institutions serving households.

4) Refers to the general government sector excluding central government.

5 Financing conditions and credit developments

5.3 Credit to euro area residents [1)]

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

	Credit to general government			Credit to other euro area residents								
					Loans						Debt securities	Equity and non-money market fund investment fund shares
					Total							
	Total	Loans	Debt securities	Total		Adjusted loans [2)]	To non-financial corporations [3)]	To households [4)]	To financial corporations other than MFIs and ICPFs [3)]	To insurance corporations and pension funds		
	1	2	3	4	5	6	7	8	9	10	11	12
Outstanding amounts												
2020	5,906.9	998.1	4,896.9	14,323.0	11,911.0	12,289.7	4,706.6	6,132.9	904.7	166.8	1,547.5	864.5
2021	6,542.7	996.6	5,544.3	14,802.7	12,332.1	12,716.3	4,861.3	6,373.6	937.6	159.7	1,582.4	888.1
2022	6,374.0	1,007.3	5,341.6	15,387.5	12,981.3	13,177.5	5,126.9	6,633.2	1,074.7	146.5	1,569.9	836.3
2022 Q4	6,374.0	1,007.3	5,341.6	15,387.5	12,981.3	13,177.5	5,126.9	6,633.2	1,074.7	146.5	1,569.9	836.3
2023 Q1	6,358.0	995.7	5,337.4	15,415.3	13,013.9	13,204.4	5,131.0	6,666.0	1,078.5	138.5	1,552.0	849.4
Q2	6,269.7	986.0	5,258.3	15,425.4	12,979.0	13,205.8	5,130.7	6,633.4	1,071.0	144.0	1,576.4	869.9
Q3 [p]	6,211.5	991.4	5,195.0	15,445.0	12,994.7	13,218.3	5,118.5	6,636.0	1,101.7	138.5	1,576.8	873.4
2023 Apr.	6,319.0	981.7	5,312.2	15,422.6	13,000.7	13,202.3	5,124.9	6,666.7	1,064.5	144.6	1,564.3	857.7
May	6,262.1	990.6	5,245.9	15,445.4	13,000.6	13,228.2	5,134.9	6,631.4	1,092.7	141.6	1,582.5	862.3
June	6,269.7	986.0	5,258.3	15,425.4	12,979.0	13,205.8	5,130.7	6,633.4	1,071.0	144.0	1,576.4	869.9
July	6,228.4	983.1	5,219.8	15,443.1	12,993.1	13,219.5	5,135.4	6,626.3	1,095.9	135.5	1,572.2	877.8
Aug.	6,253.5	987.7	5,240.8	15,417.3	12,967.5	13,188.1	5,118.4	6,632.5	1,085.8	130.8	1,572.3	877.5
Sep. [p]	6,211.5	991.4	5,195.0	15,445.0	12,994.7	13,218.3	5,118.5	6,636.0	1,101.7	138.5	1,576.8	873.4
Transactions												
2020	1,040.0	13.5	1,026.4	733.6	534.7	555.5	287.6	209.3	20.7	17.1	170.7	28.2
2021	665.6	-0.4	675.6	561.9	473.9	507.3	175.9	261.8	46.4	-10.2	78.9	9.2
2022	177.1	9.9	166.4	634.6	623.2	680.1	268.5	242.3	125.4	-13.0	17.8	-6.4
2022 Q4	44.3	4.1	39.7	3.6	-31.7	11.5	-17.3	27.3	-27.5	-14.2	22.6	12.7
2023 Q1	-80.5	-19.8	-60.6	-6.1	6.8	3.3	-2.9	14.1	3.4	-7.8	-20.9	8.0
Q2	-85.4	-9.6	-76.2	10.7	-29.6	4.3	4.1	-29.9	-9.2	5.5	23.9	16.4
Q3 [p]	-13.1	4.7	-17.4	26.6	21.7	19.7	-4.7	5.0	26.9	-5.5	1.1	3.8
2023 Apr.	-34.4	-14.0	-20.5	7.8	-9.5	2.4	-2.7	1.9	-14.8	6.2	12.2	5.1
May	-63.3	8.9	-72.7	18.3	-5.3	18.9	7.7	-35.4	25.4	-3.1	17.0	6.7
June	12.3	-4.5	17.1	-15.5	-14.8	-17.1	-0.9	3.6	-19.9	2.4	-5.3	4.6
July	-40.4	-3.0	-37.6	20.8	18.5	17.2	7.2	-6.2	26.0	-8.5	-4.5	6.8
Aug.	22.6	4.0	19.1	-25.4	-24.7	-30.1	-15.6	6.3	-10.6	-4.8	0.0	-0.7
Sep. [p]	4.7	3.7	1.1	31.1	27.9	32.6	3.7	4.9	11.5	7.7	5.5	-2.3
Growth rates												
2020	22.1	1.4	27.8	5.3	4.7	4.7	6.4	3.5	2.3	10.2	11.4	3.4
2021	11.3	0.0	13.8	3.9	4.0	4.1	3.7	4.3	5.1	-4.6	5.2	1.1
2022	2.8	1.0	3.1	4.3	5.0	5.4	5.5	3.8	13.4	-7.9	1.1	-0.6
2022 Q4	2.8	1.0	3.1	4.3	5.0	5.4	5.5	3.8	13.4	-7.9	1.1	-0.6
2023 Q1	-0.1	-1.4	0.2	2.9	3.5	3.9	4.5	2.9	4.9	-9.8	-1.4	1.9
Q2	-2.5	-2.3	-2.5	1.5	1.4	2.0	2.4	1.1	0.5	-12.1	1.0	4.4
Q3 [p]	-2.1	-2.0	-2.1	0.2	-0.3	0.3	-0.4	0.3	-0.6	-13.8	1.7	4.9
2023 Apr.	-0.8	-2.9	-0.5	2.5	2.9	3.3	3.8	2.6	2.7	-9.5	-1.3	3.0
May	-2.2	-1.7	-2.3	2.2	2.1	2.8	3.2	1.5	3.3	-13.0	2.3	2.5
June	-2.5	-2.3	-2.5	1.5	1.4	2.0	2.4	1.1	0.5	-12.1	1.0	4.4
July	-2.9	-2.3	-3.0	1.3	1.1	1.6	1.7	0.7	3.2	-15.1	1.1	5.4
Aug.	-2.1	-2.0	-2.1	0.6	0.1	0.7	0.1	0.5	0.6	-14.1	1.6	5.2
Sep. [p]	-2.1	-2.0	-2.1	0.2	-0.3	0.3	-0.4	0.3	-0.6	-13.8	1.7	4.9

Source: ECB.

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

2) Adjusted for loan sales and securitisation (resulting in derecognition from the MFI statistical balance sheet) as well as for positions arising from notional cash pooling services provided by MFIs.

3) In accordance with the ESA 2010, in December 2014 holding companies of non-financial groups were reclassified from the non-financial corporations sector to the financial corporations sector. These entities are included in MFI balance sheet statistics with financial corporations other than MFIs and insurance corporations and pension funds (ICPFs).

4) Including non-profit institutions serving households.

5 Financing conditions and credit developments

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

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

	Non-financial corporations [2)]					Households [3)]				
	Total		Up to 1 year	Over 1 and up to 5 years	Over 5 years	Total		Loans for consumption	Loans for house purchase	Other loans
		Adjusted loans [4)]					Adjusted loans [4)]			
	1	2	3	4	5	6	7	8	9	10
Outstanding amounts										
2020	4,706.6	4,828.7	893.8	1,009.1	2,803.6	6,132.9	6,402.6	700.7	4,725.1	707.1
2021	4,861.3	4,993.1	885.3	1,005.5	2,970.5	6,373.6	6,638.4	698.5	4,971.1	703.9
2022	5,126.9	5,135.6	963.3	1,079.3	3,084.3	6,633.2	6,832.7	717.6	5,215.0	700.7
2022 Q4	5,126.9	5,135.6	963.3	1,079.3	3,084.3	6,633.2	6,832.7	717.6	5,215.0	700.7
2023 Q1	5,131.0	5,144.8	939.9	1,093.0	3,098.1	6,666.0	6,871.4	723.6	5,236.1	706.3
Q2	5,130.7	5,144.1	924.7	1,086.5	3,119.5	6,633.4	6,866.2	725.5	5,207.7	700.2
Q3 [p)]	5,118.5	5,134.9	909.1	1,087.4	3,122.0	6,636.0	6,865.8	732.9	5,211.2	691.8
2023 Apr.	5,124.9	5,142.4	929.8	1,094.3	3,100.7	6,666.7	6,871.9	725.1	5,237.6	704.0
May	5,134.9	5,145.6	924.5	1,096.0	3,114.4	6,631.4	6,870.1	726.0	5,204.3	701.2
June	5,130.7	5,144.1	924.7	1,086.5	3,119.5	6,633.4	6,866.2	725.5	5,207.7	700.2
July	5,135.4	5,147.1	922.7	1,087.9	3,124.8	6,626.3	6,857.9	727.1	5,203.7	695.4
Aug.	5,118.4	5,125.6	903.4	1,084.3	3,130.7	6,632.5	6,863.2	729.8	5,209.5	693.2
Sep. [p)]	5,118.5	5,134.9	909.1	1,087.4	3,122.0	6,636.0	6,865.8	732.9	5,211.2	691.8
Transactions										
2020	287.6	324.9	-53.5	138.5	202.6	209.3	193.7	-11.6	210.8	10.2
2021	175.9	208.0	-1.4	2.4	174.9	261.8	267.2	10.7	255.0	-3.9
2022	268.5	308.3	78.4	77.6	112.5	242.3	249.8	22.7	218.5	1.1
2022 Q4	-17.3	7.6	-38.1	18.2	2.7	27.3	36.0	5.2	21.9	0.2
2023 Q1	-2.9	3.3	-21.1	10.9	7.2	14.1	21.5	4.2	14.7	-4.9
Q2	4.1	1.8	-13.7	-4.7	22.4	-29.9	-3.4	3.4	-27.9	-5.4
Q3 [p)]	-4.7	-1.2	-14.9	0.7	9.5	5.0	2.6	9.3	3.8	-8.1
2023 Apr.	-2.7	0.6	-8.9	3.0	3.2	1.9	2.5	2.0	1.7	-1.9
May	7.7	0.5	-6.6	1.2	13.1	-35.4	-3.5	1.3	-33.8	-2.9
June	-0.9	0.7	1.8	-8.9	6.1	3.6	-2.3	0.1	4.1	-0.7
July	7.2	4.8	-0.7	1.6	6.2	-6.2	-7.2	2.5	-3.9	-4.8
Aug.	-15.6	-19.9	-20.4	-3.4	8.1	6.3	5.3	3.0	5.6	-2.3
Sep. [p)]	3.7	14.0	6.2	2.4	-4.9	4.9	4.5	3.9	2.0	-1.0
Growth rates										
2020	6.4	7.1	-5.6	15.9	7.7	3.5	3.1	-1.6	4.7	1.5
2021	3.7	4.3	-0.1	0.2	6.2	4.3	4.2	1.5	5.4	-0.5
2022	5.5	6.4	8.8	7.7	3.8	3.8	3.8	3.3	4.4	0.2
2022 Q4	5.5	6.4	8.8	7.7	3.8	3.8	3.8	3.3	4.4	0.2
2023 Q1	4.5	5.2	4.0	9.1	3.0	2.9	2.9	3.1	3.3	-0.7
Q2	2.4	3.0	-1.9	6.3	2.5	1.1	1.7	2.5	1.3	-1.7
Q3 [p)]	-0.4	0.2	-8.8	2.4	1.4	0.3	0.8	3.1	0.2	-2.6
2023 Apr.	3.8	4.7	1.6	8.6	2.9	2.6	2.5	3.1	3.0	-1.0
May	3.2	4.0	-0.7	8.2	2.7	1.5	2.0	2.8	1.8	-1.5
June	2.4	3.0	-1.9	6.3	2.5	1.1	1.7	2.5	1.3	-1.7
July	1.7	2.2	-3.1	5.1	2.0	0.7	1.3	2.5	0.8	-2.1
Aug.	0.1	0.7	-7.8	2.6	1.8	0.5	1.0	3.0	0.5	-2.5
Sep. [p)]	-0.4	0.2	-8.8	2.4	1.4	0.3	0.8	3.1	0.2	-2.6

Source: ECB.

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

2) In accordance with the ESA 2010, in December 2014 holding companies of non-financial groups were reclassified from the non-financial corporations sector to the financial corporations sector. These entities are included in MFI balance sheet statistics with financial corporations other than MFIs and insurance corporations and pension funds (ICPFs).

3) Including non-profit institutions serving households.

4) Adjusted for loan sales and securitisation (resulting in derecognition from the MFI statistical balance sheet) as well as for positions arising from notional cash pooling services provided by MFIs.

5 Financing conditions and credit developments

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

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

	MFI liabilities						MFI assets			
	Central government holdings [2)]	Longer-term financial liabilities vis-à-vis other euro area residents					Net external assets	Other		
		Total	Deposits with an agreed maturity of over 2 years	Deposits redeemable at notice of over 3 months	Debt securities with a maturity of over 2 years	Capital and reserves		Total	Repos with central counter-parties [3)]	Reverse repos to central counter-parties [3)]
	1	2	3	4	5	6	7	8	9	10
Outstanding amounts										
2020	723.2	6,955.9	1,913.6	42.2	1,990.8	3,009.2	1,441.4	487.3	136.7	141.1
2021	762.6	6,886.1	1,837.3	37.1	1,997.2	3,014.4	1,377.7	435.9	128.5	136.8
2022	683.4	6,736.6	1,780.8	31.0	2,119.3	2,805.6	1,333.6	410.9	137.8	147.6
2022 Q4	683.4	6,736.6	1,780.8	31.0	2,119.3	2,805.6	1,333.6	410.9	137.8	147.6
2023 Q1	580.0	6,899.6	1,792.7	39.2	2,171.2	2,896.5	1,434.9	331.2	152.1	165.8
Q2	477.6	6,969.7	1,807.5	44.3	2,232.3	2,885.5	1,472.4	293.6	168.6	172.6
Q3 [p]	452.6	7,123.8	1,826.2	53.2	2,368.1	2,876.3	1,632.3	305.0	153.5	163.3
2023 Apr.	586.5	6,911.4	1,807.4	40.0	2,168.6	2,895.4	1,448.2	319.2	153.3	161.9
May	483.7	6,983.4	1,806.0	41.8	2,213.1	2,922.5	1,472.5	290.0	174.0	184.1
June	477.6	6,969.7	1,807.5	44.3	2,232.3	2,885.5	1,472.4	293.6	168.6	172.6
July	457.5	7,081.6	1,807.0	46.7	2,319.9	2,907.9	1,552.7	272.9	153.8	156.4
Aug.	426.6	7,121.1	1,806.5	50.2	2,339.8	2,924.5	1,570.5	242.4	165.9	161.8
Sep. [p]	452.6	7,123.8	1,826.2	53.2	2,368.1	2,876.3	1,632.3	305.0	153.5	163.3
Transactions										
2020	299.6	-35.8	-15.1	-8.0	-101.1	88.3	-66.4	145.6	-43.6	-47.5
2021	40.0	-37.2	-75.1	-5.0	-39.7	82.5	-110.7	-98.7	-8.3	-4.3
2022	-76.0	29.3	-89.8	-5.2	15.4	108.8	-71.2	-196.5	10.5	17.9
2022 Q4	40.8	59.9	-15.2	0.3	56.5	18.3	52.2	-79.2	-10.2	1.0
2023 Q1	-110.1	85.3	8.3	3.6	63.7	9.7	72.2	-76.6	15.0	18.9
Q2	-102.1	94.1	13.9	5.1	61.6	13.5	91.5	-71.9	16.5	6.7
Q3 [p]	-25.1	92.4	17.7	8.9	43.6	22.2	117.1	-67.6	-13.2	-6.0
2023 Apr.	6.5	21.8	15.4	0.8	4.0	1.6	29.2	-17.8	1.2	-3.9
May	-102.7	42.5	-4.1	1.8	31.4	13.4	5.7	-42.6	20.7	22.2
June	-5.9	29.7	2.6	2.5	26.1	-1.5	56.6	-11.4	-5.4	-11.5
July	-20.2	30.0	0.2	2.4	15.3	12.1	39.5	-60.1	-14.8	-16.2
Aug.	-30.9	24.6	-0.5	3.4	14.5	7.2	13.4	-44.0	12.1	5.4
Sep. [p]	25.9	37.8	18.0	3.0	13.9	2.9	64.2	36.5	-10.6	4.8
Growth rates										
2020	84.6	-0.5	-0.8	-15.8	-4.7	3.0	-	-	-24.2	-25.2
2021	5.5	-0.5	-3.9	-11.9	-2.0	2.8	-	-	-6.0	-3.0
2022	-10.0	0.4	-4.8	-14.3	0.6	3.8	-	-	7.9	12.7
2022 Q4	-10.0	0.4	-4.8	-14.3	0.6	3.8	-	-	7.9	12.7
2023 Q1	-22.6	2.2	-3.3	-1.3	4.9	3.7	-	-	-4.2	1.3
Q2	-37.7	3.4	-2.2	26.9	8.7	2.8	-	-	1.7	10.2
Q3 [p]	-30.4	4.9	1.4	52.3	10.9	2.2	-	-	5.5	14.1
2023 Apr.	-23.9	2.3	-2.3	1.7	5.0	3.0	-	-	-16.0	-5.3
May	-35.0	3.1	-2.5	17.9	7.5	3.3	-	-	-4.2	8.2
June	-37.7	3.4	-2.2	26.9	8.7	2.8	-	-	1.7	10.2
July	-39.0	3.8	-1.5	35.7	9.7	2.5	-	-	-10.9	-1.6
Aug.	-35.1	4.4	-0.4	42.1	10.2	2.8	-	-	5.9	11.5
Sep. [p]	-30.4	4.9	1.4	52.3	10.9	2.2	-	-	5.5	14.1

Source: ECB.

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

2) Comprises central government holdings of deposits with the MFI sector and of securities issued by the MFI sector.

3) Not adjusted for seasonal effects.

6 Fiscal developments

6.1 Deficit/surplus

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

	Deficit (-)/surplus (+)					Memo item: Primary deficit (-)/ surplus (+)
	Total	Central government	State government	Local government	Social security funds	
	1	2	3	4	5	6
2019	-0.6	-1.0	0.1	0.1	0.3	1.0
2020	-7.1	-5.8	-0.4	0.0	-0.9	-5.5
2021	-5.2	-5.2	0.0	0.1	0.0	-3.8
2022	-3.6	-3.9	0.0	0.0	0.3	-1.9
2022 Q3	-3.2	.	.	.	.	-1.6
Q4	-3.6	.	.	.	.	-1.9
2023 Q1	-3.7	.	.	.	.	-2.0
Q2	-3.8	.	.	.	.	-2.1

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						
	Total	Current revenue				Capital revenue	Total	Current expenditure					Capital expenditure
			Direct taxes	Indirect taxes	Net social contributions				Compen-sation of employees	Intermediate consumption	Interest	Social benefits	
	1	2	3	4	5	6	7	8	9	10	11	12	13
2019	46.3	45.8	12.9	13.1	15.0	0.5	46.9	43.2	9.9	5.4	1.6	22.4	3.8
2020	46.4	45.9	12.9	12.7	15.5	0.5	53.5	48.9	10.6	5.9	1.5	25.3	4.6
2021	47.0	46.2	13.2	13.1	15.1	0.8	52.2	47.2	10.2	5.9	1.5	23.9	5.0
2022	46.9	46.1	13.5	12.9	14.8	0.8	50.5	45.4	9.9	5.9	1.7	22.8	5.1
2022 Q3	47.1	46.4	13.6	13.1	14.9	0.7	50.3	45.4	9.9	5.9	1.6	22.9	4.9
Q4	46.9	46.1	13.5	12.9	14.8	0.8	50.5	45.4	9.9	5.9	1.7	22.8	5.1
2023 Q1	46.7	45.9	13.5	12.8	14.8	0.8	50.3	45.3	9.8	5.8	1.7	22.7	5.1
Q2	46.5	45.7	13.4	12.7	14.8	0.8	50.3	45.2	9.8	5.8	1.7	22.7	5.1

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

6.3 Government debt-to-GDP ratio

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

	Total	Financial instrument			Holder			Original maturity		Residual maturity			Currency	
		Currency and deposits	Loans	Debt securities	Resident creditors	MFIs	Non-resident creditors	Up to 1 year	Over 1 year	Up to 1 year	Over 1 and up to 5 years	Over 5 years	Euro or participating currencies	Other curren-cies
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2019	84.1	3.0	13.2	67.8	45.8	30.8	38.3	7.7	76.3	15.6	27.9	40.6	82.7	1.3
2020	97.2	3.2	14.5	79.5	54.6	39.1	42.5	11.1	86.0	18.9	30.9	47.3	95.5	1.7
2021	94.7	3.0	13.8	77.9	55.2	41.3	39.5	9.8	84.9	17.5	30.1	47.1	93.3	1.4
2022	90.9	2.7	13.2	75.0	53.4	40.2	37.5	8.8	82.1	16.5	28.7	45.7	90.0	0.9
2022 Q3	92.2	2.9	13.5	75.8	.	.	.	.	.	.	.	.	.	.
Q4	90.9	2.7	13.2	75.0	.	.	.	.	.	.	.	.	.	.
2023 Q1	90.7	2.5	12.8	75.3	.	.	.	.	.	.	.	.	.	.
Q2	90.3	2.5	12.5	75.3	.	.	.	.	.	.	.	.	.	.

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

6 Fiscal developments

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

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

	Change in debt-to-GDP ratio [2)]	Primary deficit (+)/ surplus (-)	Deficit-debt adjustment								Interest-growth differential	Memo item: Borrowing requirement
			Total	Transactions in main financial assets					Revaluation effects and other changes in volume	Other		
				Total	Currency and deposits	Loans	Debt securities	Equity and investment fund shares				
	1	2	3	4	5	6	7	8	9	10	11	12
2019	-2.0	-1.0	0.1	0.2	0.1	0.0	0.0	0.2	-0.1	0.0	-1.2	0.9
2020	13.1	5.5	2.2	2.5	2.0	0.4	-0.1	0.1	-0.3	0.0	5.3	9.6
2021	-2.4	3.8	-0.2	0.6	0.4	0.1	0.0	0.1	-0.1	-0.7	-6.0	5.1
2022	-3.8	1.9	-0.3	-0.2	-0.7	0.2	0.1	0.2	0.6	-0.6	-5.4	2.7
2022 Q3	-4.5	1.6	-0.2	0.1	-0.4	0.3	0.0	0.2	0.4	-0.6	-6.0	2.6
Q4	-3.8	1.9	-0.3	-0.2	-0.7	0.2	0.1	0.2	0.6	-0.6	-5.4	2.7
2023 Q1	-3.8	2.0	-0.7	-0.7	-1.1	0.1	0.1	0.1	0.7	-0.7	-5.1	2.3
Q2	-3.1	2.1	-0.8	-1.0	-1.4	0.2	0.2	0.1	0.7	-0.5	-4.5	2.3

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

6.5 Government debt securities [1)]

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

	Debt service due within 1 year [2)]					Average residual maturity in years [3)]	Average nominal yields [4)]						
	Total	Principal		Interest			Outstanding amounts					Transactions	
			Maturities of up to 3 months		Maturities of up to 3 months		Total	Floating rate	Zero coupon	Fixed rate		Issuance	Redemption
											Maturities of up to 1 year		
	1	2	3	4	5	6	7	8	9	10	11	12	13
2020	14.9	13.5	4.2	1.4	0.4	7.6	2.0	1.2	-0.1	2.2	2.1	0.0	0.8
2021	14.0	12.8	4.2	1.3	0.3	7.9	1.6	1.1	-0.4	1.9	1.9	-0.1	0.5
2022	13.2	11.9	4.2	1.3	0.3	8.0	1.6	1.2	0.4	1.8	1.9	1.1	0.5
2022 Q2	13.5	12.3	4.4	1.3	0.3	8.0	1.6	1.1	-0.2	1.9	1.8	0.1	0.4
Q3	13.0	11.8	3.7	1.3	0.3	8.1	1.6	1.1	0.0	1.9	1.9	0.6	0.4
Q4	13.2	11.9	4.2	1.3	0.3	8.0	1.6	1.2	0.4	1.8	1.9	1.1	0.5
2023 Q1	13.6	12.3	4.3	1.2	0.3	8.1	1.8	1.3	1.0	1.9	2.0	2.1	0.7
2023 Apr.	13.4	12.2	4.0	1.3	0.3	8.1	1.8	1.3	1.1	1.9	2.0	2.4	0.9
May	13.4	12.1	3.4	1.3	0.3	8.2	1.8	1.3	1.2	1.9	2.0	2.6	1.0
June	13.7	12.4	3.6	1.3	0.3	8.1	1.9	1.3	1.4	1.9	2.0	2.8	1.1
July	13.7	12.3	4.0	1.3	0.3	8.1	1.9	1.3	1.5	2.0	1.9	3.0	1.2
Aug.	13.6	12.2	4.0	1.3	0.3	8.1	1.9	1.3	1.6	2.0	1.9	3.2	1.4
Sep.	13.9	12.5	3.8	1.3	0.3	8.1	1.9	1.2	1.8	2.0	1.9	3.3	1.5

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

6 Fiscal developments

6.6 Fiscal developments in euro area countries

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

	Belgium	Germany	Estonia	Ireland	Greece	Spain	France	Croatia	Italy	Cyprus
	1	2	3	4	5	6	7	8	9	10
	Government deficit (-)/surplus (+)									
2019	-2.0	1.5	0.1	0.5	0.9	-3.1	-3.1	0.2	-1.5	0.9
2020	-8.9	-4.3	-5.4	-5.0	-9.7	-10.1	-9.0	-7.3	-9.6	-5.7
2021	-5.4	-3.6	-2.5	-1.5	-7.0	-6.7	-6.5	-2.5	-8.8	-1.9
2022	-3.5	-2.5	-1.0	1.7	-2.4	-4.7	-4.8	0.1	-8.0	2.4
2022 Q3	-3.5	-1.8	-0.3	1.6	-3.1	-4.1	-4.3	0.4	-7.7	2.4
Q4	-3.5	-2.5	-1.0	1.7	-2.4	-4.7	-4.8	0.1	-8.0	2.4
2023 Q1	-4.0	-3.1	-1.3	2.1	-2.5	-4.3	-4.5	-0.2	-8.1	3.1
Q2	-4.1	-3.4	-1.7	2.2	-2.4	-4.4	-4.7	-0.4	-8.0	3.4
	Government debt									
2019	97.6	59.6	8.5	57.1	180.6	98.2	97.4	70.9	134.2	93.0
2020	111.8	68.8	18.6	58.1	207.0	120.3	114.6	86.8	154.9	114.9
2021	108.0	69.0	17.8	54.4	195.0	116.8	112.9	78.1	147.1	99.3
2022	104.3	66.1	18.5	44.4	172.6	111.6	111.8	68.2	141.7	85.6
2022 Q3	105.6	66.8	15.9	48.5	175.9	114.0	113.5	69.8	143.1	89.7
Q4	104.3	66.1	18.5	44.4	171.4	111.6	111.8	68.2	141.7	85.6
2023 Q1	106.4	65.7	17.2	43.6	168.6	111.2	112.4	69.1	140.9	83.1
Q2	106.0	64.6	18.5	43.1	166.5	111.2	111.9	66.5	142.4	85.3

	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Austria	Portugal	Slovenia	Slovakia	Finland
	11	12	13	14	15	16	17	18	19	20
	Government deficit (-)/surplus (+)									
2019	-0.5	0.5	2.2	0.5	1.8	0.6	0.1	0.7	-1.2	-0.9
2020	-4.5	-6.5	-3.4	-9.6	-3.7	-8.0	-5.8	-7.6	-5.4	-5.6
2021	-7.2	-1.1	0.6	-7.5	-2.2	-5.8	-2.9	-4.6	-5.2	-2.8
2022	-4.6	-0.7	-0.3	-5.7	-0.1	-3.5	-0.3	-3.0	-2.0	-0.8
2022 Q3	-4.3	0.8	0.6	-5.4	-0.3	-3.0	1.0	-3.0	-2.7	-0.8
Q4	-4.6	-0.7	-0.3	-5.7	-0.1	-3.5	-0.3	-3.0	-2.0	-0.8
2023 Q1	-4.3	-1.2	-0.6	-4.9	-0.1	-3.5	0.1	-3.2	-2.6	-0.9
Q2	-3.0	-1.3	-0.8	-4.3	-0.2	-4.1	0.0	-3.1	-3.4	-1.5
	Government debt									
2019	36.7	35.8	22.4	40.0	48.6	70.6	116.6	65.4	48.0	64.9
2020	42.2	46.2	24.6	52.2	54.7	83.0	134.9	79.6	58.9	74.7
2021	44.0	43.4	24.5	54.0	51.7	82.5	124.5	74.4	61.1	72.5
2022	41.0	38.1	24.7	52.3	50.1	78.4	112.4	72.3	57.8	73.3
2022 Q3	40.1	37.0	24.7	51.9	48.2	81.3	118.4	74.4	57.5	71.8
Q4	41.0	38.1	24.7	52.3	50.1	78.4	112.4	72.3	57.8	73.3
2023 Q1	43.0	38.1	28.4	52.4	48.3	80.3	112.4	72.0	58.0	73.3
Q2	39.5	38.1	28.2	50.7	46.9	78.6	110.1	70.5	59.6	74.6

Source: Eurostat.

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

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