EUROPEAN CENTRAL BANK

EUROSYSTEM

Economic Bulletin

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Economic, financial and monetary developments

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Economic activity

The recovery in global economic activity continues, although persisting supply bottlenecks and the spread of the more contagious Delta variant of the coronavirus (COVID-19) cast a shadow over the near-term growth prospects. Recent surveys signal some easing in the growth momentum, particularly among emerging market economies. Compared with the previous projections, the growth outlook for the global economy in the September 2021 ECB staff macroeconomic projections has been slightly revised upwards, especially in 2022. Global real GDP growth (excluding the euro area) is projected to increase to 6.3% this year, before slowing to 4.5% in 2022 and 3.7% in 2023. Euro area foreign demand has been revised upwards compared with the previous projections. It is projected to expand by 9.2% this year and by 5.5% and 3.7% in 2022 and 2023 respectively. This mainly reflects the fact that global imports were stronger at the start of 2021 than previously projected, as well as the greater procyclicality of trade during an economic recovery. The export prices of euro area competitors have been revised upwards for this year amid higher commodity prices and stronger demand. Risks to the baseline projections for the global economy relate mainly to the future course of the pandemic. Other risks to the global outlook are judged to be tilted to the downside for global growth and to the upside for global inflation.

The euro area economy rebounded by 2.2% in the second quarter of the year, which was more than expected, and is on track for strong growth in the third quarter. The recovery builds on the success of the vaccination campaigns in Europe, which have allowed a significant reopening of the economy. With the lifting of restrictions, the services sector is benefiting from people returning to shops and restaurants and from the rebound in travel and tourism. Manufacturing is performing strongly, even though production continues to be held back by shortages of materials and equipment. The spread of the Delta variant has so far not required lockdown measures to be reimposed. But it could slow the recovery in global trade and the full reopening of the economy.

Consumer spending is increasing, although consumers remain somewhat cautious in the light of the pandemic developments. The labour market is also improving rapidly, which holds out the prospect of higher incomes and greater spending. Unemployment is declining and the number of people in job retention schemes has fallen by about 28 million from the peak last year. The recovery in domestic and global demand is further boosting optimism among firms, which is supporting business investment. At the same time, there remains some way to go

before the damage to the economy caused by the pandemic is overcome. There are still more than two million fewer people employed than before the pandemic, especially among the younger and lower skilled. The number of workers in job retention schemes also remains substantial.

After a significant fiscal expansion since the start of the pandemic, only limited additional stimulus measures have been adopted over the last few months, as 2022 budgetary plans are still in preparation and the economic recovery seems to be proceeding somewhat faster than anticipated. As a result, the September 2021 ECB staff macroeconomic projections include a fiscal outlook for the euro area that has improved compared with June. While the deficit ratio is projected to remain high in 2021, at 7.1%, after 7.3% in 2020, the subsequent improvement is foreseen to be swift as the pandemic abates and the economic recovery takes hold. The deficit ratio is thus expected to fall to 3.0% in 2022 and 2.1% at the end of the projection horizon in 2023. Mirroring these developments, euro area debt is projected to peak at just below 99% of GDP in 2021 and to decline to about 94% of GDP in 2023. To support the recovery, ambitious, targeted and coordinated fiscal policy should continue to complement monetary policy. In particular, the Next Generation EU programme will help ensure a stronger and uniform recovery across euro area countries. It will also accelerate the green and digital transitions, support structural reforms and lift long-term growth.

The economy is expected to rebound firmly over the medium term. The September 2021 ECB staff macroeconomic projections foresee annual real GDP growth at 5.0% in 2021, 4.6% in 2022 and 2.1% in 2023. Compared with the June 2021 Eurosystem staff macroeconomic projections, the outlook has improved for 2021, largely on account of stronger than expected outcomes in the first half of the year, and is broadly unchanged for 2022 and 2023.

Inflation

Euro area inflation increased to 3.0% in August. Inflation is expected to rise further this autumn, but to decline next year. The current increase in inflation is expected to be largely temporary, mainly reflecting the strong increase in oil prices since around the middle of last year, the reversal of the temporary VAT reduction in Germany, delayed summer sales in 2020 and cost pressures that stem from temporary shortages of materials and equipment. In the course of 2022 these factors should ease or will fall out of the year-on-year inflation calculation. Underlying inflation pressures have edged up. As the economy recovers further, and supported by the Governing Council's monetary policy measures, underlying inflation is expected to rise over the medium term. This increase is expected to be only gradual, since it will take time for the economy to return to operating at full capacity, and therefore wages are expected to grow only moderately. Measures of longer-term inflation expectations have continued to increase, but these remain some distance from the ECB's 2% target.

This assessment is reflected in the September 2021 ECB staff macroeconomic projections, which foresee annual inflation at 2.2% in 2021, 1.7% in 2022 and 1.5% in 2023, being revised up compared with the previous projections in June. Inflation excluding food and energy price inflation is projected to average 1.3% in 2021, 1.4% in 2022 and 1.5% in 2023, also being revised up from the June projections.

Risk assessment

The Governing Council sees the risks to the economic outlook as broadly balanced. Economic activity could outperform the ECB's expectations if consumers become more confident and save less than currently expected. A faster improvement in the pandemic situation could also lead to a stronger expansion than currently envisaged. If supply bottlenecks last longer and feed through into higher than anticipated wage rises, price pressures could be more persistent. At the same time, the economic outlook could deteriorate if the pandemic worsens, which could delay the further reopening of the economy, or if supply shortages turn out to be more persistent than currently expected and hold back production.

Financial and monetary conditions

The recovery of growth and inflation still depends on favourable financing conditions for all sectors of the economy. Market interest rates have eased over the summer, but reversed recently. Overall, financing conditions for the economy remain favourable.

While the forward curve of the euro overnight index average (EONIA) decreased markedly across medium maturities, the short end of the curve has remained largely unchanged, suggesting no expectations of an imminent policy rate change in the very near term. Over the review period (10 June to 8 September 2021), long-term risk-free rates first decreased, reflecting inter alia the ECB's revised rate forward guidance communicated after the July Governing Council meeting, following the release of the new monetary policy strategy, and subsequently retraced part of this move in the last weeks of the period. Sovereign spreads over the overnight index swap (OIS) rate remained broadly unchanged across jurisdictions. Risk assets showed overall resilience against rising concerns about the spreading of the Delta variant. Equity prices increased, mainly supported by a strong recovery in corporate earnings growth expectations, which was only partly counterbalanced by an increase in equity risk premia. Mirroring the increase in equity prices, euro area corporate bond spreads continued to tighten.

Money creation in the euro area moderated in July 2021, normalising further after the significant monetary expansion associated with the earlier waves of the pandemic. Domestic credit remained the dominant driver of money creation, with Eurosystem asset purchases being the most prominent contributor. Growth in lending to the private sector stabilised close to lower, pre-pandemic, long-term

levels, while financing conditions remained very favourable. Bank lending rates for firms and households are at historically low levels. Lending to households is holding up, especially for house purchases. The somewhat slower growth of lending to firms is mainly due to the fact that firms are still well funded because they borrowed heavily in the first wave of the pandemic. They have high cash holdings and are increasingly retaining earnings, which reduces the need for external funding. For larger firms, issuing bonds is an attractive alternative to bank loans. Solid bank balance sheets continue to ensure that sufficient credit is available.

However, many firms and households have taken on more debt during the pandemic. A deterioration in the economic outlook could threaten their financial health. This, in turn, would worsen the quality of banks' balance sheets. Policy support remains essential to prevent balance sheet strains and tightening financing conditions from reinforcing each other.

Monetary policy decisions

At its monetary policy meeting in September, the Governing Council reviewed its assessment of the economy and its pandemic measures.

Based on a joint assessment of financing conditions and the inflation outlook, the Governing Council judged that favourable financing conditions can be maintained with a moderately lower pace of net asset purchases under the pandemic emergency purchase programme (PEPP) than in the previous two quarters.

The Governing Council also confirmed its other measures to support the ECB's price stability mandate, namely the level of the key ECB interest rates, the Eurosystem purchases under the asset purchase programme (APP), the Governing Council's reinvestment policies and its longer-term refinancing operations.

The Governing Council stands ready to adjust all of its instruments, as appropriate, to ensure that inflation stabilises at the ECB's 2% target over the medium term.

1 External environment

The September 2021 ECB staff macroeconomic projections for the euro area suggest that the recovery in global economic activity continues, although persisting supply bottlenecks and the spread of the more contagious Delta variant of the coronavirus (COVID-19) cast a shadow over the near-term growth prospects. Recent surveys signal some easing in the growth momentum, particularly among emerging market economies. Compared with the previous projections, the growth outlook for the global economy has been revised slightly upwards, especially for 2022. Global real GDP growth (excluding the euro area) is projected to increase to 6.3% this year, before slowing to 4.5% in 2022 and 3.7% in 2023. Euro area foreign demand has also been revised upwards compared with the previous projections. It is projected to expand by 9.2% this year and by 5.5% and 3.7% in 2022 and 2023 respectively. This mainly reflects the fact that global imports were stronger at the start of 2021 than previously projected, the better global growth outlook and the greater procyclicality of trade during an economic recovery. The export prices of competitors of the euro area have been revised upwards for this year amid higher commodity prices and stronger demand. Risks to the baseline projections for the global economy relate mainly to the future course of the pandemic. Other risks to the global outlook for activity are judged to be tilted to the downside for global growth and to the upside for global inflation.

Global economic activity and trade

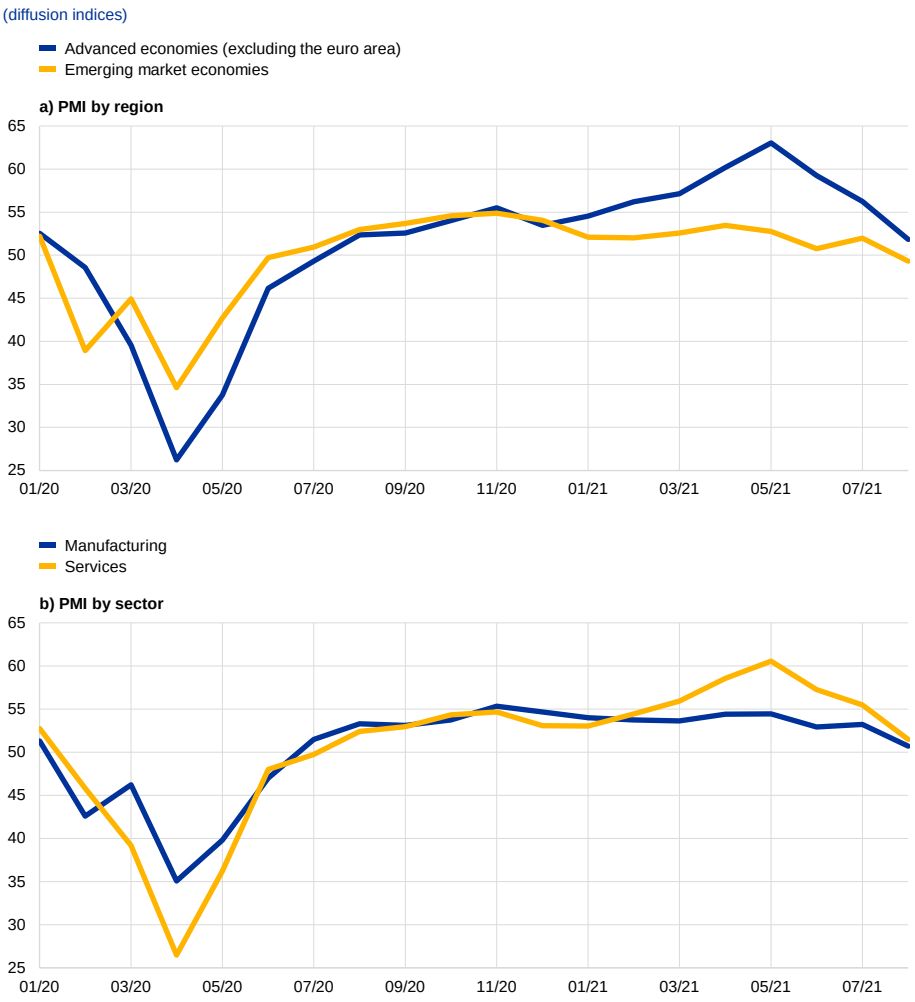
Global economic activity slowed in the first half of 2021 amid rising COVID-19 infections, uneven vaccination progress and the adoption of restrictive measures. Across advanced economies rising new infections led to a tightening of restrictive measures in early 2021. In late spring, a rapid vaccination roll-out allowed some key economies to gradually reopen, thus bringing some relief to the world economy. At the same time, however, the pandemic worsened in emerging market economies, where progress with vaccinations has been slower. As a result, global real GDP growth (excluding the euro area) slowed to 0.8% in the first quarter of the year and to an estimated 0.6% in the second quarter, after 2.5% in the last quarter of 2020. In comparison with the June 2021 Eurosystem staff macroeconomic projections, activity in the second quarter is estimated to have been broadly in line with the projections in emerging market economies but weaker in advanced economies as growth in the United States was less dynamic than projected.

Survey indicators suggest a moderation in the pace of the recovery in global economic activity, particularly among emerging market economies, amid persisting supply bottlenecks. In August the global composite output Purchasing Managers' Index (PMI) decreased for the third consecutive month, falling to 51.3 from 54.9 in July. While the index remains in expansionary territory, it shows some easing in growth compared with the second quarter. The composite output PMI declined for both advanced and emerging market economies, and for the latter it fell below the expansionary threshold for the first time since June 2020 (to 49.3 from 52.0 in July). Across components, the services output PMI dropped sharply from its

peak of 60.5 in May to 51.5, falling particularly for advanced economies. The manufacturing PMI also declined, falling below the expansionary threshold for emerging market economies although remaining slightly above that threshold overall (50.7, down from 53.2). While the global economy continues to face a two-track recovery, with advanced economies recovering at a faster speed than emerging market economies, the recent PMIs point to a narrowing in the divergence between the two regions, and also between sectors (Chart 1).

Chart 1

Global (excluding the euro area) output PMI by regions and sectors



Sources: Markit and ECB calculations.
Note: The latest observations are for August 2021.

Financial conditions continue to be accommodative. Since the cut-off date of the June 2021 Eurosystem staff macroeconomic projections, financial conditions have tightened somewhat in advanced economies, while they have remained broadly stable in emerging market economies. Global financial markets have remained mostly range-bound amid still buoyant economic growth dynamics but rising short-term risks. The resurgence in COVID-19 infections and concerns that central banks, including the Federal Reserve System, will soon start to scale back asset purchases have prompted investors to adopt a more cautious stance. Equity markets have

continued to reach new highs in some advanced economies, but price/earnings ratios – which enter the financial conditions indices – have retreated markedly on the back of the historically strong earnings season in the United States and other advanced economies. Rising concerns that the economic recovery might take longer than anticipated have been also visible in corporate bond spreads, which have edged slightly higher in some economies, in particular emerging markets, albeit from historically low levels. Risk-free government bond markets have remained broadly unchanged at compressed levels, as downward pressure from "safe-haven" inflows of funds associated with concerns over the spread of the Delta variant have been offset by rising expectations of the Federal Reserve starting to reduce the pace of its asset purchases as early as this year.

In the near term, a resurgence in COVID-19 infections casts a shadow over an otherwise robust recovery. Global economic activity is expected to regain momentum in the second half of the year as economies gradually reopen amid declining infection rates and, particularly in advanced economies, rapid vaccination progress. Indeed, while many advanced economies have already managed to vaccinate more than half their populations, vaccination has been much slower in emerging market economies. China is an exception in this respect, as around 70% of the population has reportedly been vaccinated. Recently, the renewed surge in COVID-19 infections on account of the more contagious Delta variant has clouded the outlook. In advanced economies, the surge in cases is still leading to a significant rise in the number of hospitalisations and deaths compared with the lows seen this summer, though they remain lower than those recorded in early 2021. Whereas some countries, notably China and Japan, have again resorted to imposing (local) lockdowns, others have not, preferring to rely on less intrusive measures such as increased mandating of mask wearing. In those countries, the economic consequences of the renewed surge are likely to manifest themselves through changes in consumer behaviour, particularly in the contact-intensive sectors. Progress with vaccinations and greater knowledge as to how to avoid contagion have, however, lessened the economic risks attached to the surge. If authorities are successful in containing the increase in hospitalisations and deaths, its impact is likely to be temporary only and unlikely to derail the ongoing recovery.

Fiscal support is expected to gradually diminish this year across both advanced and emerging market economies. In the International Monetary Fund's Fiscal Monitor of April 2021, fiscal deficits are projected to start declining in 2021 across both advanced and emerging market economies, as pandemic-related measures expire and automatic stabilisers start to operate amid recovering domestic economies. However, countries are likely to differ in the pace at which they start re-balancing their budgets. In the United States, the large fiscal stimulus prepared by the Biden Administration will support the economic recovery in 2021 and help the global economy over the forecast horizon.[1] In the United Kingdom, fiscal deficits are

[1] The American Rescue Plan (ARP), totalling USD 1.9 trillion (8.9% of GDP), includes a renewal of unemployment benefits, additional one-off payments to households and an increase in both local and state spending to finance public health measures and education. The US Administration has also announced two new medium-term fiscal plans, which are also included in the September ECB staff baseline macroeconomic projections, though their impact on economic activity is likely to be more limited than that of the ARP.

expected to be reined in, although some expiring fiscal measures have been extended into September 2021. Consolidation is also expected in Brazil and Russia, while in India some additional fiscal support has recently been approved amid the worsening pandemic situation.

Overall, the growth outlook for the global economy is slightly more favourable than in the previous projections, mainly with regard to 2022. Following a projected growth rate of 6.3% in 2021, world real GDP (excluding the euro area) is projected to increase by 4.5% in 2022 and 3.7% in 2023. The global recovery from the crisis is projected to remain uneven. Advanced economies outside the euro area are projected to reach their pre-pandemic path in early 2022, largely on account of the United States. In China, which was hit by the pandemic first but recovered fastest amid strong policy support, real GDP reached its pre-crisis trajectory already late last year. In other emerging markets the recovery is projected to be sluggish. Compared with the June 2021 Eurosystem staff macroeconomic projections, the growth rate has been revised up by 0.1 percentage points for 2021 and 0.3 percentage points for 2022, while it is unchanged for 2023. The more favourable global growth outlook in 2022 largely reflects the reprofiling of the government spending in the United States[2] and, to a smaller extent, a delayed projected recovery in Japan as high infection rates over the summer of 2021 led to restrictive measures being reintroduced in some large prefectures, including Tokyo.

In the United States, the economy is projected to grow amid strong policy support and the gradual dissipation of supply constraints, though the recent rise in COVID-19 infections undermines the outlook. Economic activity continued to expand in the second quarter of 2021, at an annualised rate of 6.5% (following 6.4% in the first quarter). This was less than projected in the June 2021 Eurosystem staff macroeconomic projections, reflecting weaker than expected government spending and a negative contribution from the changes in inventories. Growth was driven by consumer spending, reflecting income support provided earlier in the year and a rapid loosening of COVID-19-related restrictions. Investment continued to be strong. A recent rise in unfilled orders in certain industries, such as vehicle manufacturing, reflects supply constraints. Congressional negotiations continue on the two fiscal plans which had been incorporated in the June projections, introducing some uncertainty about the outlook. While strong policy support and the assumed gradual dissipation of supply constraints are projected to boost growth in the medium term, the short-term outlook is clouded by the sharp rise in the number of COVID-19 infections due to the more virulent Delta variant, particularly in states with low vaccination rates. As a result consumers, who have driven the recovery so far, seem to have become more cautious: personal consumption expenditures declined by 0.1% in July, while the personal saving rate rose. Employment growth in July was also less than expected, in particular in high-contact industries such as leisure and hospitality. Headline inflation stabilised at a high level in July and is projected to remain around 5% until the end of 2021, owing to supply bottlenecks pushing up

[2] Real US GDP growth has been revised upward for the end of this year and early 2022 following the recent release of Congressional Budget Office projections. This resulted in a less frontloaded profile for government spending (both consumption and investment) than that which had been assumed in the June 2021 projections.

prices for cars and other items, a normalisation of services demand, higher commodity prices and a positive output gap. Inflation is expected to return to close to 2% in 2022-23 as bottlenecks dissipate and business adapts to post-pandemic demand patterns.

In the United Kingdom, the economy is projected to remain on a sustained recovery path despite the recent resurgence in COVID-19 cases. Having contracted sharply in 2020, real GDP rebounded in the second quarter of 2021 and is projected to stay on a recovery path. The advanced vaccination programme is expected to protect large parts of the population from serious COVID 19 infection, even in view of the rise of the Delta variant, making it unlikely that COVID-19-related mobility restrictions affecting economic activity need to be reimposed. Growth is likely to continue to be supported by robust private consumption and private investment on the back of the additional fiscal spending of 2.7% of GDP approved by the government in March. Changes in inventories are still seen as likely to raise output volatility in the short term. Annual consumer price inflation decreased to 2.0% in July from 2.5% in June. Core inflation also declined, to 1.8% from 2.3% in June. The decline in the annual rate of headline inflation was mainly driven by prices for recreation and culture and clothing prices, with higher prices at the end of the lockdown last year resulting in negative base effects this year. This decline is likely to be temporary, with inflation expected to have picked up sharply again in August and to rise further over the following months, to around 4%. Apart from direct effects from energy, accounting for around half the projected increase, goods prices are also expected to rise further, reflecting global price pressures due to higher commodity prices, shipping costs and supply shortages.

In China, growth momentum is facing temporary headwinds in the short term, but economic activity is projected to grow at a robust pace over the medium term. The adoption of stricter containment measures owing to an increase in COVID-19 cases, severe floods and some supply disruptions point to a slowdown in the third quarter. Industrial production, retail sales and investment were below expectations in July, though still growing. The manufacturing PMI dropped to 49.2 in August, the first time it had been in contractionary territory since April 2020, which makes it more likely that this sector slowed in the third quarter. The general services business activity PMI also dropped to 46.7, as a result of the tightening of containment measures. However, in mid-August new local COVID-19 cases started to come down to very low levels, and sufficient policy space exists to boost growth should the economic slowdown accelerate. Annual consumer price inflation declined to 1.0% in July, while annual producer price inflation edged back up to 9% in the same month after a slight decrease to 8.8% in June, mainly on the back of strong price increases in the energy and mining industries. Overall, consumer price inflation remains subdued, largely owing to ongoing food price deflation amid normalising pork prices, while fuel prices have increased.

In Japan, COVID-19-related restrictions have continued to weigh on economic activity, thus pushing the recovery towards the end of 2021. The recovery from the initial COVID-19 shock stalled at the start of 2021 as restrictions were tightened amid rising infections. As a result, real GDP contracted in the first

quarter. Economic activity recovered modestly in the second quarter as the rebound in domestic demand, particularly in private consumption, was firmer than expected given renewed infection control measures in April/May. A rapid surge in COVID-19 cases then triggered the declaration of a fourth state of emergency in a number of prefectures (including Tokyo). While the associated decline in mobility was initially limited, it has recently become more significant, with the August services PMI falling further to 42.9. Industrial production fell in July, and the manufacturing output PMI declined in August to 51. A firmer recovery is expected towards the final quarter, assuming that the pandemic situation gradually improves amid a steady progression of the vaccination campaign, and infection control measures are lifted. Ongoing fiscal and monetary policy support, as well as a continued recovery in external demand, are seen underpinning growth ahead. Annual headline CPI inflation moved from -0.5% to -0.3% in July, whereas core inflation moved to -0.8% (from -1.1% in the previous month). Higher energy prices and accommodation charges have contributed to the rise in inflation and helped to offset the impact of large cuts in mobile phone charges. Underlying inflation excluding special factors is likely to have remained on an uptrend, thus hinting at a more positive momentum than suggested by headline figures.

In central and eastern EU Member States, economic activity is projected to gradually regain momentum, supported by fiscal and monetary stimulus. The recovery in this region slowed in the first half of 2021 as a new wave of COVID-19 infections weighed on activity. Real GDP is expected to rebound again and remain strong over the course of the year, as the continued easing of restrictions and increasing vaccination rates are expected to revive growth. Domestic demand is forecast to be the main driver of the recovery as uncertainty recedes and confidence improves amid robust fiscal and monetary policy support.

In large commodity-exporting countries, a favourable external environment is supporting the recovery in economic activity. In Russia, real GDP has reached its pre-crisis levels and is expected to grow robustly over the projection horizon. Stronger global demand for oil is supporting higher oil production and exports. A projected recovery in consumption and investment is also seen contributing to growth over the period. Persistently high food prices and rising demand have resulted in inflationary pressures, which in turn have prompted a tightening of monetary policy. In Brazil, economic activity has proved resilient to the resurgence in COVID-19 infections, supported by robust export growth and a continued recovery in investment (net of idiosyncratic factors). The relatively quick rebound in consumer confidence and retail sales and the reintroduction, on a smaller scale than in 2020, of transfers to low-income families and employment support schemes will support private consumption in the near term. Monetary policy has started to tighten in response to rising inflationary pressures, as high commodity prices and domestic factors (droughts in some regions, an increase in energy tariffs and recovering demand) are expected to keep inflation high in the near term.

In Turkey, the economy is projected to grow steadily over the medium term. Following the initial COVID-19 shock, the Turkish economy staged a quick recovery and has proved resilient to the subsequent resurgence in new infections. In the

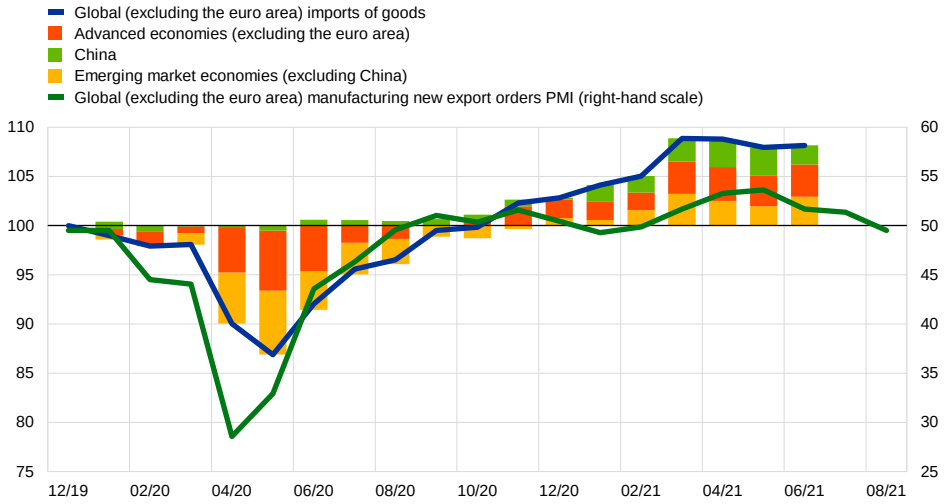
second quarter of 2021 real GDP growth surprised on the upside, at 0.9% quarter on quarter. Growth was primarily supported by household consumption, despite renewed restrictions introduced in May and tighter financial conditions, as well as by net exports. Looking ahead, provided that the recent shift in the direction of policy towards macroeconomic stability is sustained, real GDP growth is likely to remain subdued but become more balanced.

Global trade is projected to grow steadily over the medium term, but signs of moderation in the near term are starting to emerge. Following a dynamic recovery from the COVID-19 shock, global trade returned to its pre-pandemic levels in the first quarter of 2021. Recently, however, signs of moderation in trade growth are emerging, which mainly reflects the impact of the supply bottlenecks indicated by recent data. Merchandise imports slipped further in May but were broadly stable in June, remaining close to the high levels seen in March. Services imports remain well below their pre-pandemic level, and there is little evidence of a broadening of the recovery. High-frequency data on international flights and hotel bookings suggest that tourism and other services-related trade growth has not accelerated further in recent months. The global PMI for new export orders in manufacturing (excluding the euro area) declined again in August, falling just below the expansionary threshold. At the same time, PMI suppliers' delivery times in August were still above the all-time high registered at the peak of the pandemic. Supply bottlenecks have originated mainly from a stronger than expected recovery in the demand for manufactured goods and are assumed to start dissipating at the start of 2022. The demand for manufactured goods has been much more buoyant than the demand for services, which has been still dented by containment measures. Since economies have become more resilient to restrictive measures and as consumers rebalance their purchases towards services, the demand side might play a smaller role in bottlenecks. Currently, though, idiosyncratic factors, such as capacity constraints in the semiconductor industry, COVID-19 outbreaks and extreme weather, are driving supply-side disruptions.

Chart 2

Global (excluding the euro area) imports of goods and new export orders

(left-hand scale: index, December 2019 = 100; right-hand scale: diffusion index)



Sources: Markit, CPB Netherlands Bureau for Economic Policy Analysis and ECB calculations.
Note: The latest observations are for August 2021 for the PMI data and June 2021 for global merchandise imports.

Euro area foreign demand is projected to grow on the back of a more favourable external environment. Euro area foreign demand is projected to expand by 9.2% this year and by 5.5% and 3.7% in 2022 and 2023 respectively. Compared with the June 2021 Eurosystem staff macroeconomic projections, this is an upward revision of 0.6 percentage points for 2021 and 0.3 percentage points per year for both 2022 and 2023. For 2021, this largely reflects the better than expected outturn in global imports in the first quarter of 2021, especially among emerging market economies, as trade remained relatively resilient to the headwinds to economic activity. For both 2022 and 2023, the upward revision stems from the better global growth outlook and reflects the greater procyclicality of trade during an economic recovery. Global imports (excluding the euro area) have also been revised upwards over the projection horizon and are seen increasing by 11.9% in 2021, 5.3% in 2022 and 4.1% in 2023.

Risks to the baseline projections are assessed to be tilted to the downside for global growth and to the upside for global inflation. In line with the previous projection rounds, two alternative scenarios for the global outlook are used to illustrate the uncertainty surrounding the future course of the pandemic. These scenarios reflect the interplay between developments in the pandemic and the associated path of containment measures.[3] In addition, upside risks to global inflation relate mainly to the possibility of the current inflationary pressures becoming more entrenched on the back of more persistent than currently expected supply bottlenecks, and thus feeding into higher inflation expectations. This, in turn, could elicit an earlier and stronger monetary policy tightening. Tighter global financial conditions would risk derailing the fragile economic recovery, particularly in emerging market economies, raising global financial market volatility and accentuating the

[3] For further details, see Box 4 of "ECB staff macroeconomic projections for the euro area, September 2021", published on the ECB's website on 9 September 2021.

negative impact of the high indebtedness on growth. These factors are judged to outweigh upside risks to the outlook, which are related to a larger than expected expansionary effect of the US fiscal stimulus package and a faster than currently projected reduction in accumulated savings. Risks to global growth are therefore no longer assessed to be balanced, as in the previous projections, but are now seen as tilted to the downside.

Global price developments

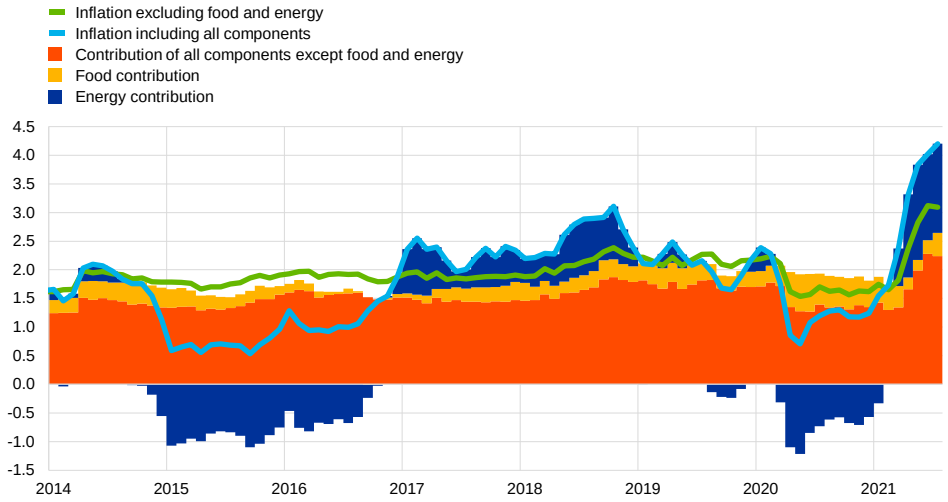
Oil prices have increased somewhat since the previous projection exercise, while the rally in non-oil commodities prices has halted. There has also been renewed volatility in the oil market as disagreement between members of the OPEC+ group temporarily pushed global oil prices higher, amid improving prospects for global oil demand. Market participants expect oil demand to increase in 2021, with mobility gradually returning to pre-pandemic levels. However, prices moderated in early August, reflecting rising new COVID-19 infections and prospects of a US monetary policy tightening weighing on risk sentiment. Spot prices for non-energy commodities were little changed in the September projections compared with levels assumed in the June projections, as recent declines in metal prices against the backdrop of weaker demand and the use of strategic reserves in China halted the rally observed between summer 2020 and late spring 2021.

Global consumer price inflation is projected to increase this year amid base effects, supply bottlenecks and the ongoing recovery in demand, and to decline over the rest of the projection horizon. Higher oil and non-oil commodity prices, surging freight shipping costs and supply chain frictions have added to inflationary pressures. This is particularly visible across advanced economies, where the reopening and sizeable government support have unleashed strong consumer demand. This pushed the latest readings of consumer price inflation in the majority of advanced economies above historical averages. Across member countries of the Organisation for Economic Co-operation and Development (OECD), annual headline CPI inflation increased to 4.2% in July, from 4.0% in June (Chart 3). The July reading marked the ninth consecutive increase and was driven mainly by food price inflation (up from 1.9% to 3.1%), while energy price inflation increased marginally (from 16.9% to 17.4%), still largely reflecting base year effects. OECD CPI inflation excluding food and energy remained unchanged at 3.1%. Headline annual consumer price inflation remained stable in the United States at 5.4%, increased in Canada and slowed down in the United Kingdom. In Japan, after a change in the base year, headline inflation remained negative in July, albeit increasing from the previous month (to -0.3% from -0.5%). Among major non-OECD emerging market economies, annual headline inflation increased to 9.0% in Brazil, while remaining stable in Russia and declining in India. In China it remained stable at around 1%.

Chart 3

OECD consumer price inflation

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



Sources: OECD and ECB calculations.
Note: The latest observations are for July 2021.

Once the higher comparison base for commodity prices kicks in and supply bottlenecks ease (expected in early 2022), global consumer price inflation is projected to decline. A similar pattern is also embedded in projections for euro area competitors' export prices (in national currency), which increased significantly in the first half of this year. Projections for these prices in 2021 have been revised sharply upwards, largely reflecting recent data releases in countries that are key trading partners of the euro area, which surprised on the upside compared with the June 2021 Eurosystem staff macroeconomic projections, and, to a lesser extent, higher oil prices and somewhat stronger demand in advanced economies.

2 Financial developments

While the forward curve of the euro overnight index average (EONIA) decreased across medium maturities, the short end of the curve has remained largely unchanged, suggesting no expectations of an imminent policy rate change in the very near term. Over the review period (10 June to 8 September 2021), long-term risk-free rates first decreased, reflecting inter alia the ECB's revised forward guidance communicated after the July Governing Council meeting following the release of the new monetary policy strategy. Long-term risk-free rates subsequently retraced part of this move in the last weeks of the period amid upside surprises in headline inflation figures and speculation about a slowing of the pace of purchases under the pandemic emergency purchase programme (PEPP). Sovereign spreads over the overnight index swap (OIS) rate remained broadly unchanged across jurisdictions. Risk assets showed overall resilience against rising concerns about the spread of the Delta variant of the coronavirus (COVID-19). Equity prices increased, mainly supported by a strong recovery in corporate earnings growth expectations, which were only partly counterbalanced by an increase in equity risk premia. Mirroring equity prices, euro area corporate bond spreads continued to tighten.

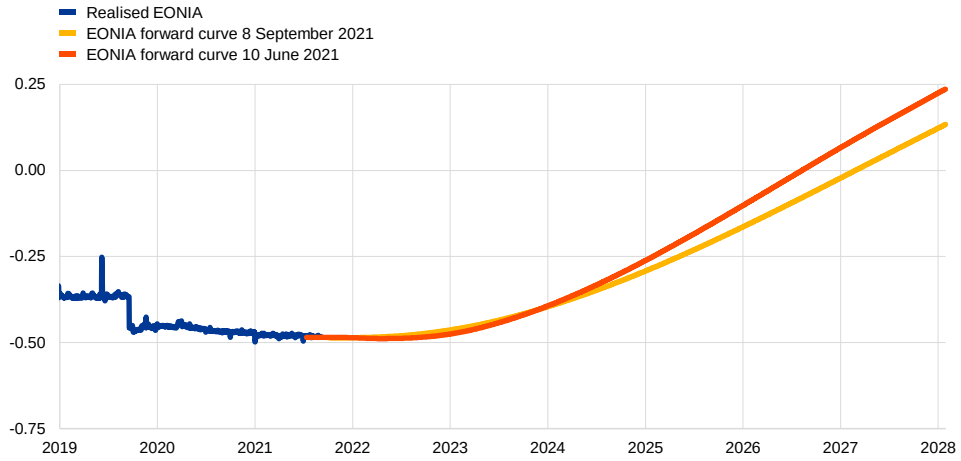
The EONIA and the benchmark euro short-term rate (€STR) averaged −48 and −57 basis points respectively over the review period.[4] Excess liquidity increased by approximately €189 billion to around €4,395 billion, mainly reflecting asset purchases under the PEPP and the asset purchase programme (APP), as well as the €109.83 billion take-up of the eighth TLTRO III operation. This growth in excess liquidity, induced by the increase in monetary policy assets, was mitigated by a net decline in other assets of around €180 billion over the review period.

While the medium-term segment of the EONIA forward curve decreased over the review period, the short end of the curve remained flat (Chart 4). The short end of the EONIA forward curve, up to around the end of 2024, remained broadly unchanged, suggesting that market participants do not expect a policy rate change in the foreseeable future. However, rates of medium-term maturities shifted down. Part of the decline reflects the ECB's revised forward guidance communicated after the July Governing Council meeting, following the release of the new monetary policy strategy earlier in the month.

4 The methodology for calculating the EONIA changed on 2 October 2019; it is now calculated as the €STR plus a fixed spread of 8.5 basis points. See the box entitled "Goodbye EONIA, welcome €STR!", *Economic Bulletin*, Issue 7, ECB, 2019.

Chart 4
EONIA forward rates

(percentages per annum)

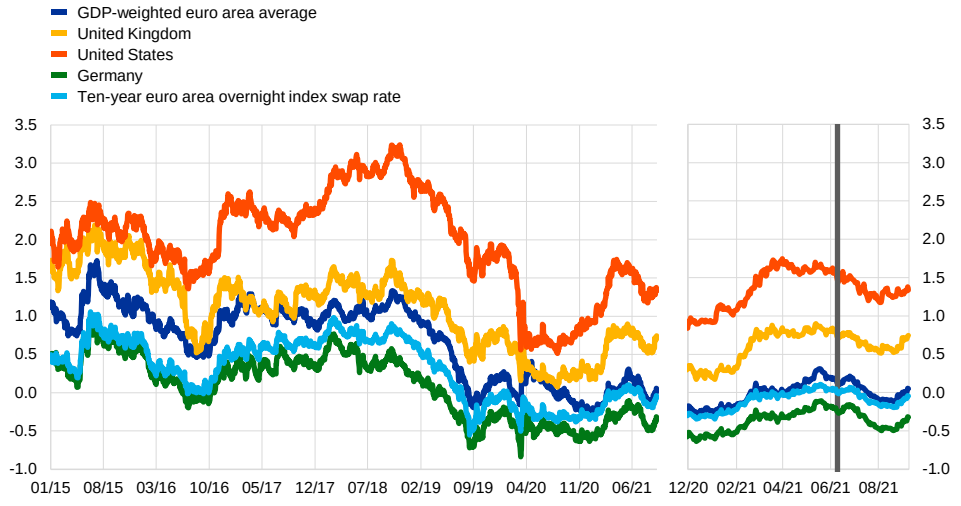


Sources: Refinitiv and ECB calculations.

Euro area sovereign bond yields decreased over the review period amid expectations of continued monetary policy support (Chart 5). Developments in euro area sovereign bond markets closely followed those in risk-free rates, with yields in individual jurisdictions moving in lockstep and approaching their all-time lows in several countries during the review period, while retracing some of this decline in the last weeks of the period. Specifically, GDP-weighted euro area and German ten-year sovereign bond yields decreased by around 7 basis points to -0.05% and -0.32% respectively. A similar decline took place in the United States, where ten-year sovereign bond yields decreased by 10 basis points to 1.34%.

Chart 5
Ten-year sovereign bond yields

(percentages per annum)

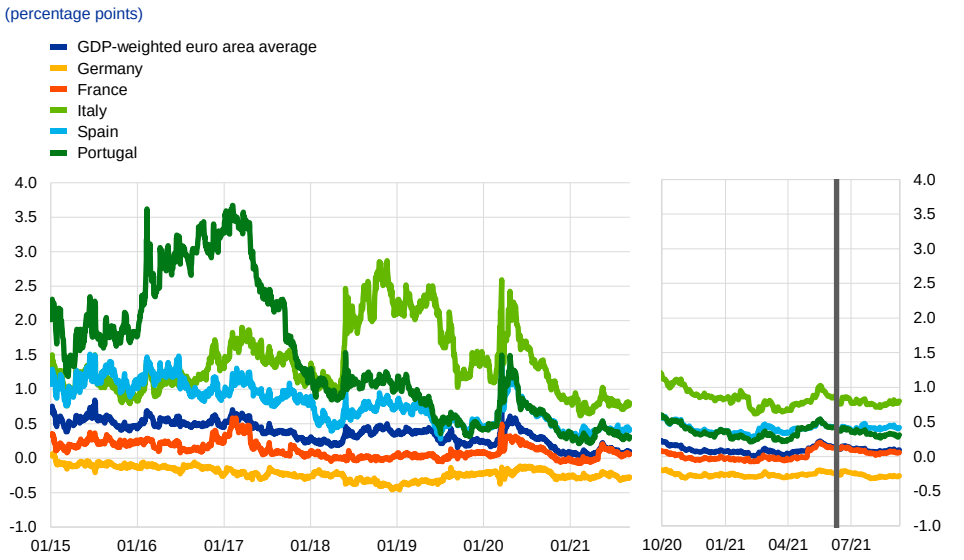


Sources: Refinitiv and ECB calculations.
Notes: The vertical grey line denotes the start of the review period on 10 June 2021. The latest observation is for 8 September 2021.

Long-term spreads of euro area sovereign bonds relative to OIS rates remained broadly unchanged across jurisdictions, supported by monetary policy decisions as well as by the communication following the July Governing Council meeting (Chart 6). Changes in individual sovereign spreads over risk-free rates were very limited, as reflected in the aggregate ten-year euro area GDP-weighted sovereign spread over the corresponding OIS rate, which decreased by 3 basis points to stand at 0.10%. As a result, this metric remains close to the very low levels observed towards the end of 2020, after reversing a temporary increase in the early summer. Overall, there were slight decreases in Portuguese and French ten-year spreads of 9 and 7 basis points respectively to 0.31% and 0.06%. Over the same period, Italian ten-year spreads remained unchanged at 0.80% and Spanish ten-year spreads increased by 3 basis points to 0.42%. These contained movements were probably supported by the June Governing Council decision, confirmed in July, to maintain a significantly higher pace of purchases in the third quarter than earlier in the year. Amid these calm developments in sovereign bond markets, the first issuances under the Next Generation EU (NGEU) programme were successfully placed on the market.

Chart 6

Ten-year euro area sovereign bond spreads vis-à-vis the OIS rate



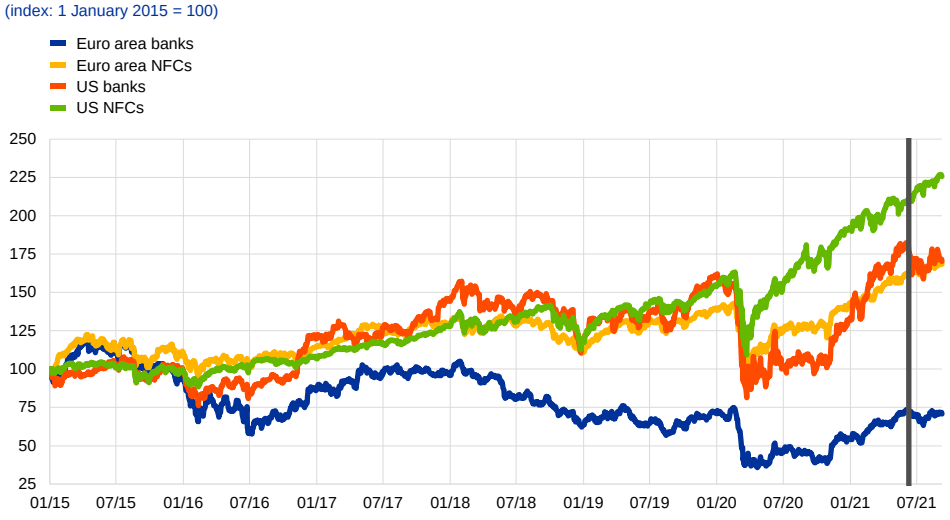
Sources: Refinitiv and ECB calculations.
Notes: The spread is calculated by subtracting the ten-year OIS rate from the ten-year sovereign bond yield. The vertical grey line denotes the start of the review period on 10 June 2021. The latest observation is for 8 September 2021.

Notwithstanding some temporary volatility related to news about the spread of the Delta variant, equity prices increased on both sides of the Atlantic, mainly supported by further improvement in corporate earnings expectations (Chart 7). Stock prices of euro area and US non-financial corporations (NFCs) increased by 3.1% and 6.6% respectively, reaching record highs in the United States. Bank equity prices in the United States declined somewhat, while the equity prices of euro area banks remained broadly unchanged. The increase for NFCs was mainly supported by strong corporate earnings expectations and marginally lower discount rates, which in turn reflected continued support from monetary policy. However, a slight

increase in the equity risk premium, which is the additional return required by investors to hold equities instead of risk-free bonds, contributed negatively to euro area equity prices. The increase in equity prices was broad based, although the coronavirus pandemic has still left an uneven footprint in equity markets across euro area countries.

Chart 7

Euro area and US equity price indices

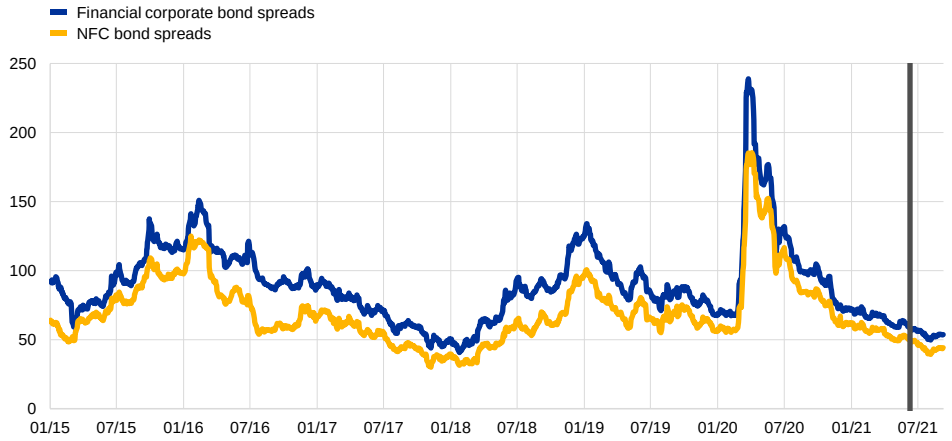


Sources: Refinitiv and ECB calculations.
Notes: The vertical grey line denotes the start of the review period on 10 June 2021. The latest observation is for 8 September 2021.

Euro area corporate bond spreads continued to tighten, confirming the picture of resilient risk asset markets (Chart 8). Mirroring the increase in equity prices, euro area corporate bond spreads continued to decline. Over the review period, the investment-grade NFC bond spread and the financial sector bond spread (relative to the risk-free rate) narrowed by around 5 and 4 basis points, respectively, to stand at pre-pandemic levels. The continued trend decline in recent months can largely be attributed to excess bond premia, i.e. the component of euro area corporate bond spreads that is unexplained by economic, credit and uncertainty-related factors, which in turn may reflect continued policy support. At the same time, pockets of corporate vulnerability continue to exist, and the current level of spreads appears to be predicated on ongoing policy support.

Chart 8

Euro area corporate bond spreads



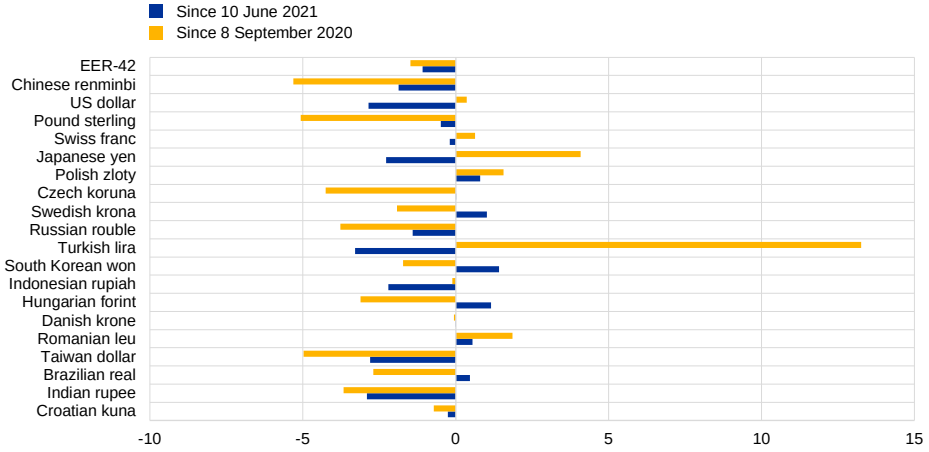
Sources: Markit iBoxx indices and ECB calculations.
Notes: The spreads are the difference between asset swap rates and the risk-free rate. The indices comprise bonds of different maturities (with at least one year remaining) with an investment-grade rating. The vertical grey line denotes the start of the review period on 10 June 2021. The latest observation is for 8 September 2021.

In foreign exchange markets, the euro depreciated somewhat in trade-weighted terms (Chart 9), reflecting a broad-based weakening against all major currencies. Over the review period, the nominal effective exchange rate of the euro, as measured against the currencies of 42 of the euro area's most important trading partners, weakened by 1.1%. The euro depreciated against the US dollar (by 2.9%), reflecting the widening of the short-term interest rate expectations differential between the euro area and the United States, which in turn was due to the expected faster normalisation of US monetary policy. The euro also weakened against other major currencies, including the Japanese yen (by 2.3%), the Chinese renminbi (by 1.9%), the pound sterling (by 0.5%) and the Swiss franc (by 0.2%). Over the same period, the euro strengthened against the currencies of several non-euro area EU Member States, including the Hungarian forint (by 1.2%), the Swedish krona (by 1.0%) and the Polish zloty (by 0.8%).

Chart 9

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

(percentage changes)



Source: ECB.
Notes: EER-42 is the nominal effective exchange rate of the euro against the currencies of 42 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 8 September 2021.

3 Economic activity

The recovery in euro area activity is increasingly advanced. Real GDP rebounded in the second quarter of 2021, but still stands at around 2.5% below its pre-pandemic level of the fourth quarter of 2019. Domestic demand, in particular private consumption, contributed vigorously, benefiting from a progressive lifting of containment measures, while net trade added only slightly to GDP growth. On the production side, value added was mainly supported by a rebound in services, while industry and construction contributed only marginally. The positive outcome for the second quarter marks the start of a rebound in economic activity following the two quarters of contraction that accompanied the reimposition of stronger containment measures following the resurgence of the coronavirus (COVID-19) pandemic over the winter months.

At the start of the second half of the year business and consumer surveys and high-frequency indicators pointed to further strong growth into the third quarter, despite the ongoing pandemic and supply-side bottlenecks. Business surveys continue to indicate a strong recovery in services activity, as further progress with vaccination campaigns has helped contain hospitalisations despite increases in infections, enabling greater normalisation of high-contact activities. By contrast, manufacturing and construction activities continue to be constrained by ongoing supply-side bottlenecks, although confidence remains at high levels.

After an expected strong third quarter, the pace of recovery is anticipated to gradually normalise, as progress on vaccination campaigns should allow for further relaxation of containment measures and supply-side bottlenecks are expected to recede. Over the medium term the recovery in the euro area economy is expected to be increasingly supported by strong global demand alongside increasingly firm domestic demand, as well as by continued support from both monetary and fiscal policy. This assessment is broadly reflected in the baseline scenario of the September 2021 ECB staff macroeconomic projections for the euro area, which envisage annual real GDP growth over the projection horizon at 5.0% in 2021, 4.6% in 2022 and 2.1% in 2023, and a return to pre-pandemic quarterly levels of activity by the end of the year. Compared with the June 2021 Eurosystem staff macroeconomic projections, the outlook for economic activity has been revised upwards for 2021, largely on account of stronger-than-expected outcomes in the first half of the year, while it remains broadly unchanged for 2022 and 2023.

Overall, the risks surrounding the outlook for euro area growth are assessed as broadly balanced. On the one hand, an even faster recovery could be expected if the pandemic-driven increased stock of household savings unwinds more quickly than expected, prospects for global demand improve further or current supply-side bottlenecks ease faster than anticipated. On the other hand, growth could underperform if the pandemic intensifies as a result of the spread of new virus variants or if supply-side disruptions continue to be more persistent and limit production more than anticipated.

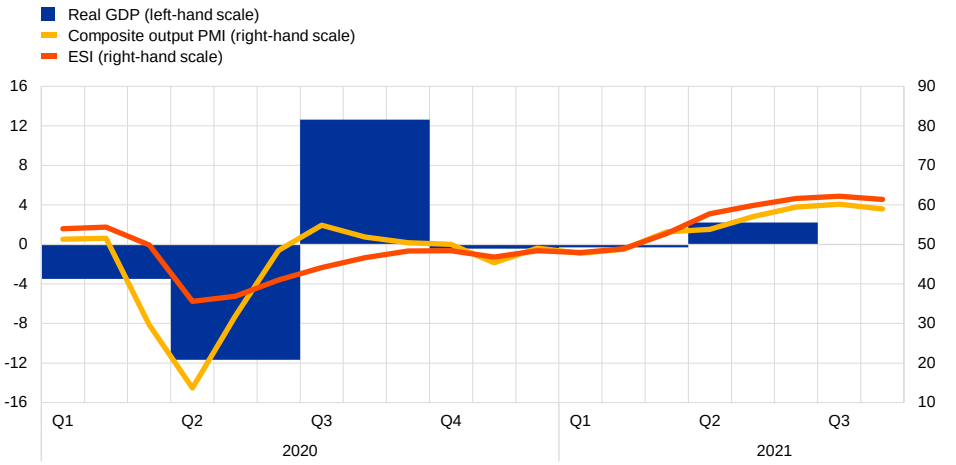
Economic activity in the euro area rebounded in the second quarter, growing at 2.2% quarter on quarter and signalling that a strong recovery is underway

despite headwinds from supply bottlenecks. After the technical recession around the turn of the year, real GDP returned to growth territory in the second quarter, even though containment measures were in place for much of the period (Chart 10). The second-quarter outcome was stronger than anticipated in the June 2021 Eurosystem staff macroeconomic projections, reflecting a waning sensitivity of economic activity to COVID-19 restrictions, and brought quarterly activity to within 2.5% of the pre-pandemic levels seen at the end of 2019. Second-quarter growth was largely driven by a strong rebound in domestic demand, in particular private consumption, with net trade contributing only modestly and inventories slightly detracting from headline growth.

Chart 10

Euro area real GDP, the composite PMI and the ESI

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



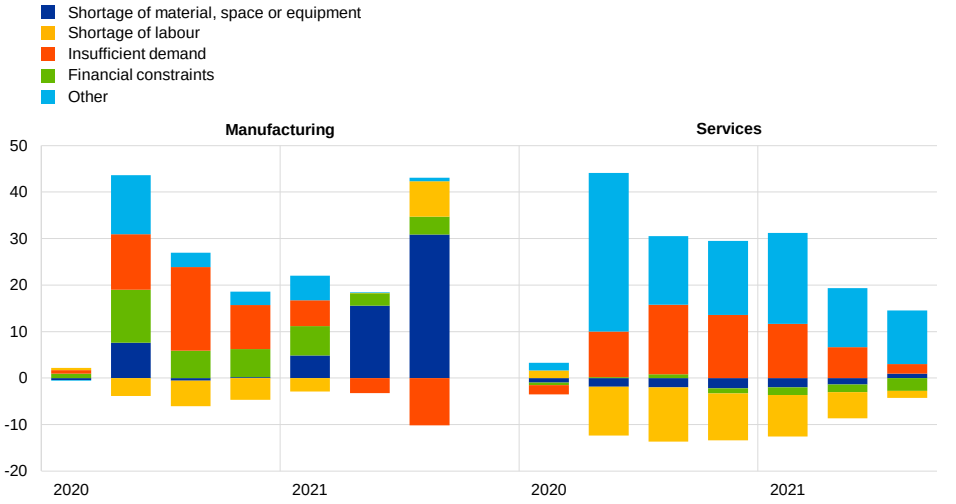
Sources: Eurostat and Markit.
Notes: Euro area GDP is shown in quarter-on-quarter growth rates, while the Purchasing Managers' Index (PMI) and Economic Sentiment Index (ESI) indicators are shown at monthly frequency. The latest observations are for the second quarter of 2021 for GDP and August 2021 for the PMI and the ESI.

Supply-side bottlenecks are likely to have held back industrial production to a greater degree than services in the second quarter. Value added in the industrial and construction sectors contributed only marginally to second quarter growth owing to ongoing supply-side disruptions (Chart 11), including broad-based shortages of raw materials (including semiconductors, metals and plastics) and continuing transport bottlenecks. However, services activity bounced back strongly, reflecting a progressive relaxation of containment measures, which has bolstered consumer confidence and spending.

Chart 11

Factors limiting production in the euro area

(percentages of respondents, difference relative to long-term average)



Source: European Commission.
Notes: The long-term average is computed for the period between 2003 and 2019. Quarterly survey carried out in the first month of the quarter. The latest observations are for July 2021.

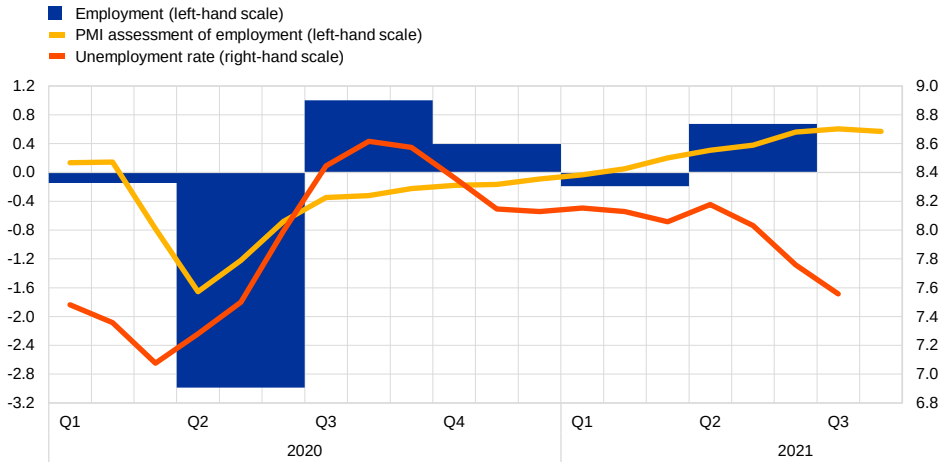
The euro area labour market improved in the second quarter of 2021, while still supported by job retention schemes. Employment and total hours worked increased by 0.7% and by 2.7% quarter on quarter respectively in the second quarter of 2021 (Chart 12). Compared with the pre-pandemic fourth quarter of 2019, employment and total hours worked were down by 1.3% and 4.2% respectively, showing a larger adjustment in hours worked than in employment owing to the employment support provided by the job retention schemes in place.[5] The unemployment rate declined to 7.6% in July, while the number of workers in job retention schemes were estimated at 2.7% of the labour force in the same month, which is a substantial decrease in relation to the average of 6.2% in the first five months of this year, reflecting the easing of restrictions. Nevertheless, the share of workers in job retention schemes is still substantial, highlighting that the adjustment of the labour market is still some way from complete.

5 See the article entitled "Hours worked in the euro area" in this issue of the Economic Bulletin.

Chart 12

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, Markit and ECB calculations.
Notes: The PMI employment index and the unemployment rate are shown at a monthly frequency; employment is shown at a quarterly frequency. The PMI is expressed as a deviation from 50 divided by 10. The latest observations are for the second quarter of 2021 for employment, August 2021 for the PMI and July 2021 for the unemployment rate.

Short-term indicators point to continuing improvements in the labour market. The monthly composite PMI employment indicator, encompassing industry and services, decreased slightly to 55.7 in August, from 56.1 in July, but remains well above the threshold level of 50 that indicates an expansion in employment. The PMI employment index has fully recovered since its all-time low in April 2020 and is currently still close to its level in July 2021, the highest level since March 2000.

Consumers remain cautiously optimistic as their financial situation improves despite an environment of lingering uncertainty related to the pandemic. Private consumption rebounded strongly in the second quarter of 2021 (by 3.7% quarter on quarter) and is expected to continue growing at a high rate in the third quarter given the ongoing relaxation of containment measures, positive labour income developments and signs of a normalisation in households' propensity to save. Consumer confidence remains elevated. After five consecutive months of increases, the European Commission's consumer confidence indicator declined slightly in July and August, down to -5.3 - albeit remaining above its long-term average of -10.6 since 1990 and its pre-pandemic level of -6.4 in February 2020. While car registrations in June were still 20% below their pre-pandemic level, it is likely that the subdued spending on cars reflects ongoing supply constraints rather than weak consumer demand. This is suggested by the elevated industrial confidence but subdued industrial production in the automotive sector.[6] After two months of positive growth, the volume of retail trade fell in July, by 2.3% month on month, but remains 2.6% above its February 2020 level.

[6] See the box entitled "The impact of supply bottlenecks on trade" in this issue of the *Economic Bulletin*.

Real household disposable income is estimated to have grown strongly in the second quarter of 2021 and is expected to strengthen further in the third quarter. It is supported by labour compensation, which typically entails a higher propensity to consume than other sources of income. This is corroborated by the monthly information on household bank deposit flows, which points towards some normalisation in the period April-July 2021. Nevertheless, analysis of the drivers of the pandemic-related surge in household savings flows does not suggest a high likelihood that these accumulated savings will be reabsorbed immediately for consumption purposes.[7] This assessment is confirmed by recent survey data from the European Commission suggesting that households expect their major purchases over the next 12 months to be comparable to pre-crisis levels. Furthermore, given the ongoing pandemic-related uncertainty, respondents to the ECB's August 2021 Consumer Expectations Survey do not expect a return to normal economic and social interactions before spring 2022.

Corporate (non-construction) investment improved in the second quarter of 2021, and short-term indicators point to strong demand for capital goods going forward. Euro area non-construction investment increased by 1.0% quarter on quarter in the second quarter of 2021, following a similar contraction in the previous quarter, but remains 17% below its pre-pandemic level of the last quarter of 2019. Among the largest euro area countries, non-construction investment increased in Germany, France and Italy, while it declined in Spain and remained broadly stable in the Netherlands in the second quarter. Moreover, investment in transport equipment contracted in the euro area for a second consecutive quarter, probably related to input shortages as a result of the ongoing supply-chain disruptions, while the non-transport equipment component remained relatively resilient. Short-term indicators for the third quarter of 2021 suggest a strong demand for capital goods, despite persistent supply-chain bottlenecks: new orders of capital goods are on the rise, with the PMI in July and August remaining clearly in growth territory, while suppliers' delivery times improved somewhat, but continued to be elevated. As a result, production expectations improved in August. However, firms in the capital goods sector are currently reporting shortages of materials and equipment as a key factor limiting supply in the euro area, while the share of firms reporting demand issues remains small. Labour shortages are currently flagged as being well above their long-term average, but only for a relatively small share of firms in this sector. Recent information in the Bank Lending Survey is also in line with an improving investment outlook.[8] Banks reported an increase in loan demand for fixed investment purposes in the second quarter of 2021 and expected demand for long-term loans (typically used in financing investment) to improve in the third quarter of 2021. While some medium-term risks to the investment outlook remain from potential corporate vulnerabilities,[9] a progressive reduction in supply-side bottlenecks expected over the coming quarters should support investment prospects.

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7 See the recent box entitled "COVID-19 and the increase in household savings: an update", *Economic Bulletin*, Issue 5, ECB, 2021.

8 See the "July 2021 Euro area Bank Lending Survey".

9 For a broader overview of the financial situation of non-financial firms during the pandemic, see the box entitled "Non-financial corporate health during the pandemic" in this issue of the Economic Bulletin.

Housing investment continued to increase in the second quarter and is expected to remain buoyant, despite increasing supply-side headwinds. Housing investment increased by 0.9% quarter on quarter in the second quarter to exceed its pre-crisis level of the last quarter of 2019 by 1.2%. Housing investment in the euro area is expected to continue on a positive trend in the second half of 2021, despite a further tightening of supply constraints. While the European Commission's indicator for recent trends in construction production declined slightly in the first two months of the third quarter, it remained well above its long-run average. The Purchasing Managers' Index (PMI) for housing activity increased in August compared with the previous month, rising further into positive growth territory. According to the European Commission's survey data, demand for housing has been robust until recently, as reflected in both the high level of consumers' short-term intentions to buy or build a house and a further significant increase in companies' assessments of the overall level of orders. While the expiry of some crisis-related government support measures may lead to some normalisation in housing demand, currently the development of housing investment is particularly affected by supply constraints. These have continued to tighten, with further increases in perceived limits to construction production as a result of shortages of materials and labour in July and August, following already sharp rises in the second quarter. Supply-side bottlenecks are also reflected in the PMI surveys for the construction sector, which show very long supplier delivery times. Overall, these supply constraints are likely to pose some risks to the ongoing strength in housing investment in the near term.

Euro area export growth continued to be moderate in the second quarter of 2021. Euro area exports increased by 2.2% in the second quarter of 2021, affected by sluggish manufacturing exports, as shipping and input-related constraints continued to exert a drag.[10] Nominal data on exports in goods posted a 0.7% month-on-month contraction in June. The decline was across the board, with Turkey, North America and Mexico being the only exceptions among major export destinations. Looking ahead, order-based indicators for goods exports signal a strong, albeit moderating momentum as global activity and trade normalise. Services exports are expected to improve further, with an easing of restrictions on mobility supporting travel services exports. Euro area goods imports and intra-euro area trade, which had displayed marked rates of growth driven by the strong recovery in domestic demand, weakened in June. As total imports increased by 2.3% quarter on quarter, net trade delivered a slightly positive (0.1 percentage point) contribution to GDP in the second quarter of 2021.

Incoming information points to a further improvement in euro area activity in the second half of the year. While survey data have recently moderated from their late-June highs, they remain consistent with continued robust growth in the third quarter of 2021, albeit subject to ongoing and broadening supply constraints, particularly in manufacturing (Chart 11). The composite output PMI increased further, averaging 59.6 over July and August, albeit with a modest levelling off in August, compared with 56.8 in the second quarter. This mainly reflects the further strengthening in services activity, while activity in the manufacturing sector, although

[10] For further details, see the box entitled "The impact of supply bottlenecks on trade" in this issue of the Economic Bulletin.

still strong, continues to be affected by supply-side bottlenecks. The European Commission's Economic Sentiment Indicator is also consistent with stronger third-quarter growth, despite a modest decline in August from the historical high seen in July. Consumer confidence remains at elevated levels following the lifting of most restrictions on leisure activities as solid progress with vaccination campaigns has helped contain hospitalisations and deaths despite some resurgences in infection numbers in recent months. Investment intentions continue to improve, and progress with the implementation of Next Generation EU funds and an accommodative monetary policy continues to support the recovery and broader financial stability. However, uncertainty remains high – not least with respect to the spread of new and more contagious variants and persisting constraints on production from ongoing supply-side bottlenecks – and it is not yet clear that all sectors will recover soon or fully from the impact of the pandemic.

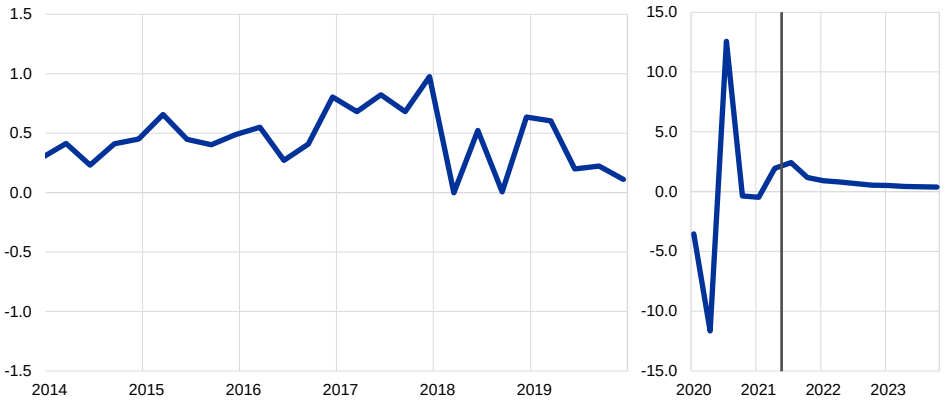
The ongoing COVID-19 pandemic continues to pose challenges to the outlook, yet the recovery remains on track. Notwithstanding modest extensions of localised containment measures and ongoing production bottlenecks in some euro area countries, the growth outlook remains buoyant as a result of a broadening of the rebound in euro area activity across the main sectors, continued progress on vaccination campaigns, a benign labour market, pandemic-related learning effects and strong foreign demand, as well as ongoing support from monetary and fiscal policy. This is reflected in the September 2021 ECB staff macroeconomic projections for the euro area, which foresee annual real GDP growth of 5.0% in 2021, 4.6% in 2022 and 2.1% in 2023 (Chart 13). The 0.4 percentage point upward revision in growth for 2021 largely reflects the stronger-than-expected outcomes in the first two quarters of the year than in the June projections, with some offset to the quarter-on-quarter growth envisaged for the second half of the year. The growth profile for 2022 and 2023 remain broadly unchanged. Euro area activity is projected to return to quarterly pre-pandemic levels by the final quarter of 2021, one quarter earlier than envisaged in the June 2021 projections, driven by a successive firming up of domestic demand, given an assumed continuing relaxation of containment measures over the coming quarters, a resolution of supply-side bottlenecks by early 2022, a further strengthening of the global recovery and ongoing substantial policy support.[11]

[11] See the article entitled "ECB staff macroeconomic projections for the euro area, September 2021", published on the ECB's website on 9 September 2021.

Chart 13

Euro area real GDP growth (including projections)

(quarter-on-quarter percentage changes, seasonally and working day-adjusted quarterly data)



Sources: Eurostat and the article entitled "ECB staff macroeconomic projections for the euro area, September 2021", published on the ECB's website on 9 September 2021.
Notes: Data are seasonally and working day-adjusted. Historical data may differ from the latest Eurostat publications due to data releases after the cut-off date for the projections. The vertical line indicates the start of the projection horizon. This chart does not show ranges around the projections. This reflects the fact that the standard computation of the ranges (based on historical projection errors) would not capture the elevated uncertainty related to the COVID-19 pandemic. Instead, alternative scenarios based on different assumptions regarding the future evolution of the COVID-19 pandemic, the associated containment measures and the degree of economic scarring are provided in Box 4 of the article entitled "ECB staff macroeconomic projections for the euro area, September 2021".

4 Prices and costs

According to Eurostat's flash estimate, euro area annual HICP inflation increased further, to 3.0% in August, up from 2.2% in July and 1.9% in June 2021. Inflation is expected to rise further this autumn but to decline next year. The temporary upswing in inflation mainly reflects the strong increase in oil prices since around the middle of last year, the reversal of the temporary VAT reduction in Germany, delayed summer sales in 2020 and cost pressures that stem from temporary shortages of materials and equipment. In the course of 2022, these factors should ease or will fall out of the year-on-year inflation calculation. Underlying inflation pressures have edged up. As the economy recovers further, underlying inflation is expected to rise over the medium term, supported by monetary policy measures. This increase is expected to be only gradual, since it will take time for the economy to return to operating at full capacity, and therefore wages are expected to grow only moderately. Measures of longer-term inflation expectations have continued to increase but remain some distance from the 2% target. This assessment is reflected in the September 2021 ECB staff macroeconomic projections for the euro area, which foresee annual HICP inflation at 2.2% in 2021, at 1.7% in 2022 and at 1.5% in 2023 and annual HICP inflation excluding energy and food at 1.3% in 2021, 1.4% in 2022 and 1.5% in 2023. Compared with the June 2021 Eurosystem staff macroeconomic projections, the outlook for inflation was revised upwards for both headline HICP inflation and HICP inflation excluding energy and food.

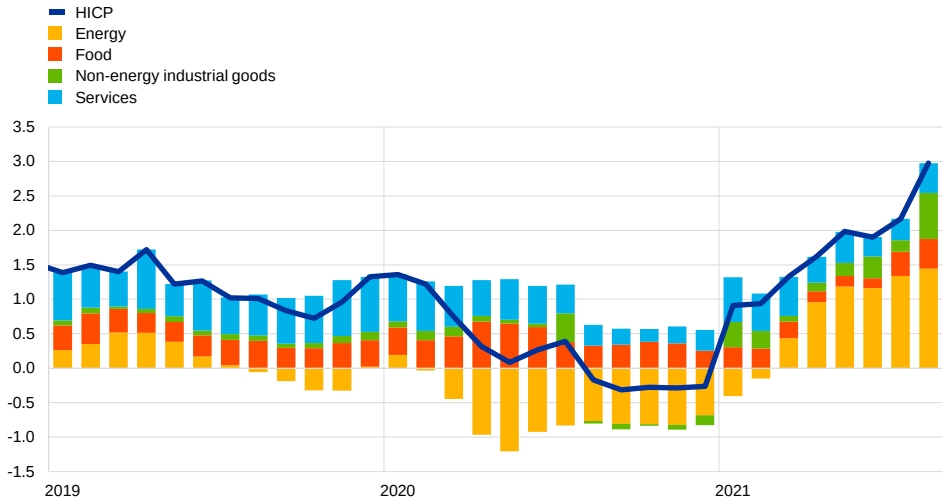
Annual HICP inflation increased in July and August, owing largely to temporary factors. According to Eurostat's flash estimate, HICP inflation stood at 3.0% in August, up from 2.2% in July and 1.9% in June (Chart 14). An acceleration in energy prices due to positive base effects and strong month-on-month price increases – amounting to an annual rate of change of 15.4% in August – was a major driver of recent inflation increases. Food price dynamics also strengthened, from 0.5% year on year in June to 1.6% in July and further to 2.0% in August. HICP inflation excluding energy and food (HICPX) reached 1.6% in August, after having declined from 0.9% in June to 0.7% in July. The recent volatility in HICPX inflation was mainly shaped by movements in the non-energy industrial goods (NEIG) component, where prices increased sharply in August compared with one year earlier. The share of items for which prices were imputed remained at the low level reached in June, keeping at bay the uncertainty surrounding the signal for underlying price dynamics compared with the early months of the year.[12]

[12] The share of price imputations for the HICP items stands at 3% in July and at 4% in August, compared with 13% in January. The share of price imputations for the HICPX remains low, at 3% in July and 5% in August, compared with 18% in January.

Chart 14

Headline inflation and its components

(annual percentage changes; percentage point contributions)



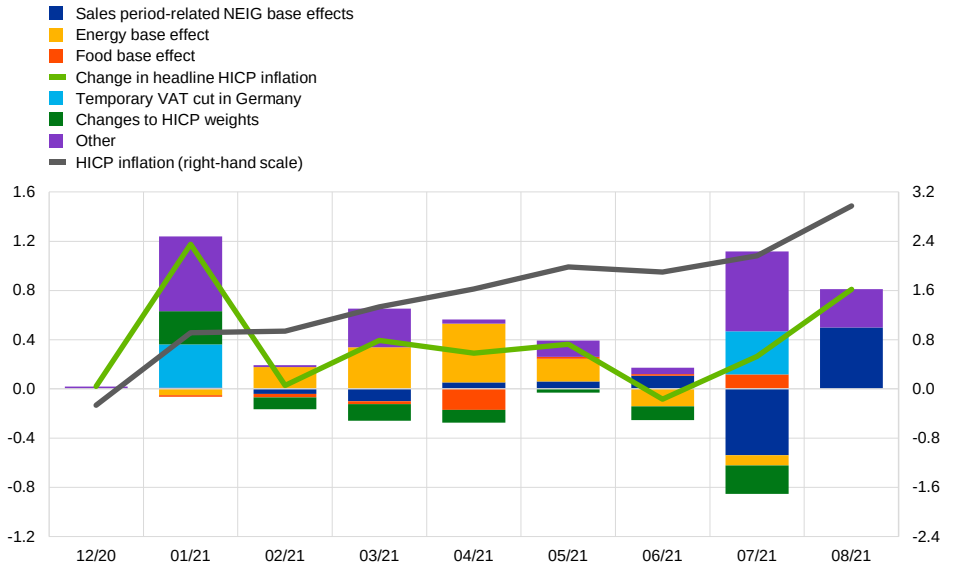
Sources: Eurostat and ECB calculations.
Notes: The latest observations are for August 2021 (flash estimate).

In addition to the upward impact of energy prices, headline inflation has continued to be influenced by other temporary factors (Chart 15). These factors have been shaping the inflation profile in recent months. The reversal in January 2021 of the temporary VAT cut in Germany in the second half of 2020 implies upward base effects for the second half of this year. Changes in the timing and scope of sales periods in shops in some euro area countries had a strong upward impact on the year-on-year rate of change in NEIG prices (2.7% in August, up from 0.7% in July), pushing it well above its 0.6% long-term average. Base effects related to sales periods accounted for around 0.5 percentage points in the increase in NEIG inflation from July to August. That said, recent increases were also partly related to price pressures along the supply chain stemming from delivery and production bottlenecks. Estimates suggest that there was no further impact from the change in the 2021 HICP weights in August (Chart 15), implying that the downward impact on the annual inflation rate in August was of the same magnitude as in July. Net of the effects of changes in HICP weights, headline inflation and HICPX inflation are estimated to have been almost half a percentage point higher in August. HICP weight effects are expected to imply some volatility over the coming months. Most factors currently driving headline inflation can be expected to fade out from annual growth rates in early 2022. This holds true particularly for the VAT impact and the currently very high energy inflation rate of more than 10% since April 2021.

Chart 15

Contributions of base effects and other temporary factors to monthly changes in annual HICP inflation

(percentage point changes and contributions)



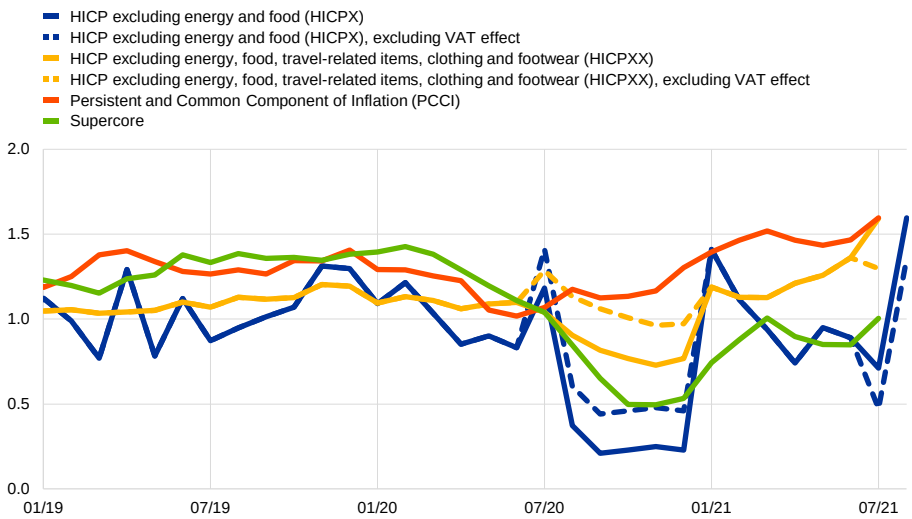
Sources: Eurostat, Deutsche Bundesbank, September NIPE and ECB calculations.
Notes: The contribution made by the temporary VAT cut in Germany is based on estimates provided in the Deutsche Bundesbank's November 2020 Monthly Report. The effects of weights in August are assumed to be equal to the effects in July but these may change with the final HICP release once proper estimates can be calculated. The latest observations are for August 2021.

Most measures of underlying inflation moved upwards recently and, in some cases, stood above the rates observed prior to the coronavirus (COVID-19) pandemic (Chart 16). Except for HICPX, the latest available data point for measures of underlying inflation is July 2021. HICPXX inflation, i.e. HICPX excluding clothing and travel-related items, increased to 1.6% in July, from 1.4% in June. The model-based Persistent and Common Component of Inflation (PCCI), which is less affected by changes in weights and the temporary VAT cut in Germany, increased to 1.6% in July, from 1.5% in June. The Supercore measure increased in July to 1.0%, from 0.8% in June. The share of items in the HICPX with price changes above 2% increased to 36% in July, thus standing higher than in the pre-pandemic period. However, measures of underlying inflation remain clearly below 2% at the current juncture.[13]

[13] For further information on these measures of underlying inflation, see Boxes 2 and 3 in the article entitled "Measures of underlying inflation for the euro area", *Economic Bulletin*, Issue 4, ECB, 2018.

Chart 16
Measures of underlying inflation

(annual percentage changes)



Sources: Eurostat and ECB calculations.
Notes: The contribution made by the temporary VAT cut in Germany is based on estimates provided in the Deutsche Bundesbank's November 2020 Monthly Report. The latest observations are for August 2021 for the HICPX (flash estimate) and for July 2021 for all other measures.

Pipeline price pressures for NEIG items have continued to increase over recent months. Domestic producer price inflation for sales of non-food consumer goods, which is an indicator of price pressures at the later stages of the supply chain, edged up to 1.9% in July – from 1.4% in June and 1.3% in May – reaching levels well above its long-term average of 0.6%. The corresponding annual rate of import price inflation turned positive, standing at 1.2% in July and 0.1% in June, up by 2.0 percentage points and 0.9 percentage points from its May level, respectively. This may in part reflect some upward pressure from the recent depreciation of the euro effective exchange rate. Earlier in the domestic pricing chain, intermediate goods prices rose at annual rates of 12.6% in July and 10.7% in June, up by 3.3 percentage points and 1.4 percentage points from May, respectively. Import price inflation also rose, from 10.6% in May to 12.5% in June and 13.8% in July. Additional upward pressures on NEIG inflation from recent input cost developments could therefore still be expected in the months ahead. However, the magnitude and timing of the pass-through to final production stages and consumer prices remain uncertain. They will mainly depend on how persistent the global input cost shocks turn out to be over the coming quarters.

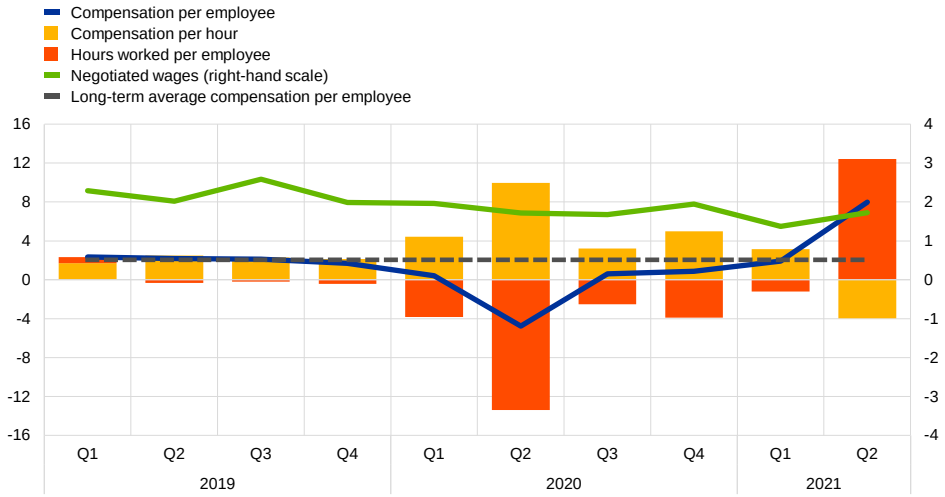
Wage growth measures in the euro area are influenced by temporary factors. Annual growth in compensation per employee increased to 8.0% in the second quarter, from 1.9% in the first quarter (Chart 17). This strong increase is driven by the annual growth rate of hours worked per employee, which rose to 12.4% in the second quarter, resulting from pandemic-related base effects. The annual growth in compensation per hour decreased to -3.9% in the second quarter, from 3.1% in the previous quarter, with the increase in hours worked per employee outweighing the increase in compensation per employee. Negotiated wages increased by 1.7% in the

second quarter of the year, compared with 1.4% in the first quarter of 2021, mainly driven by pandemic-related one-off payments in individual countries.

Chart 17

Contributions made by components of compensation per employee

(annual percentage changes; percentage point contributions)



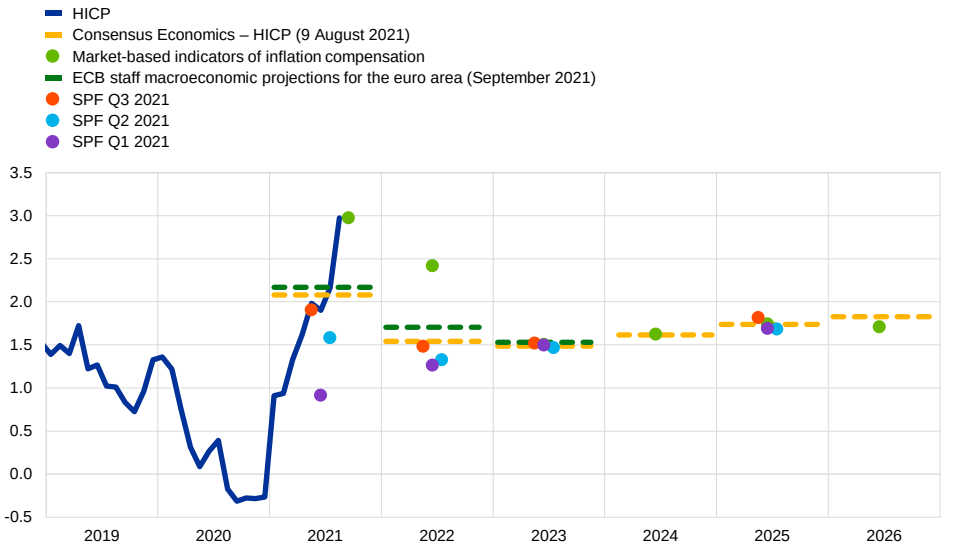
Sources: Eurostat and ECB calculations.
Notes: The long-term average growth rate of compensation per employee is computed starting from the first quarter of 1999. The latest observations are for the second quarter of 2021.

Market-based indicators of longer-term inflation compensation increased, while survey-based measures of inflation expectations reaffirm signs of an inflection point across different time horizons. Longer-term inflation-linked swap (ILS) rates have risen since the middle of July 2021. For instance, the euro area five-year/five-year forward ILS rate increased by around 10 basis points over the review period, to reach 1.7% for the first time in almost three years. A gradual internalisation by market participants of the ECB's new definition of its inflation target, and of subsequent revisions to forward guidance in this regard, may have contributed to this pick-up in market-based inflation compensation. According to the ECB Survey of Professional Forecasters (SPF) for the third quarter of 2021 and the latest releases from Consensus Economics, survey-based longer-term inflation expectations have been revised upwards compared with the second quarter of the year (Chart 18).

Chart 18

Survey-based indicators of inflation expectations and market-based indicators of inflation compensation

(annual percentage changes)



Sources: Eurostat, Thomson Reuters, Consensus Economics, ECB (SPF) and ECB calculations.
Notes: The market-based indicators of the inflation compensation series are based on the one-year spot inflation rate and the one-year forward rate one year ahead, the one-year forward rate two years ahead, the one-year forward rate three years ahead and the one-year forward rate four years ahead. The latest observations for market-based indicators of inflation compensation are for 8 September 2021. The ECB Survey of Professional Forecasters (SPF) for the third quarter of 2021 was conducted in July 2021. The cut-off date for the ECB staff macroeconomic projections for the euro area was 26 August 2021 (and 16 August 2021 for assumptions).

The September 2021 ECB staff macroeconomic projections foresee headline inflation continuing to increase moderately until the end of this year, before falling back in the first half of 2022, with a gradual strengthening towards the end of the projection horizon. Projections for headline HICP inflation point to an average of 2.2% in the course of 2021, peaking in the fourth quarter of 2021 due to various prominent base effects. Headline inflation is projected to decrease to 1.7% in 2022 and to 1.5% in 2023 (Chart 19). Compared with the June 2021 Eurosystem staff macroeconomic projections, HICP inflation rates have been revised upwards by 0.3 percentage points for 2021, by 0.2 percentage points for 2022 and by 0.1 percentage points for 2023. This reflects higher figures seen in recent data for both inflation and economic activity, as well as increased supply-side pressures stemming from global disruptions to the supply chain. Looking through the temporary surge in inflation in 2021, the inflation profile over the medium term suggests increasing upward price pressures from the recovery in economic activity and demand, while supply-side upward price pressures are expected to wane. HICP inflation excluding energy and food is expected to reach 1.3% in 2021, 1.4% in 2022 and 1.5% in 2023, with upward revisions by 0.2 percentage points in 2021, 0.1 percentage points in 2022 and 0.1 percentage points in 2023 compared with the June 2021 Eurosystem staff macroeconomic projections.

Chart 19

Euro area HICP inflation (including projections)

(annual percentage changes)

Sources: Eurostat and the article entitled "ECB staff macroeconomic projections for the euro area, September 2021", published on the ECB's website on 9 September 2021.
Notes: The vertical line indicates the start of the projection horizon. The latest observations are for the second quarter of 2021 (data) and the fourth quarter of 2023 (projections). The cut-off date for data included in the projections was 26 August 2021 (and 16 August 2021 for assumptions).

5 Money and credit

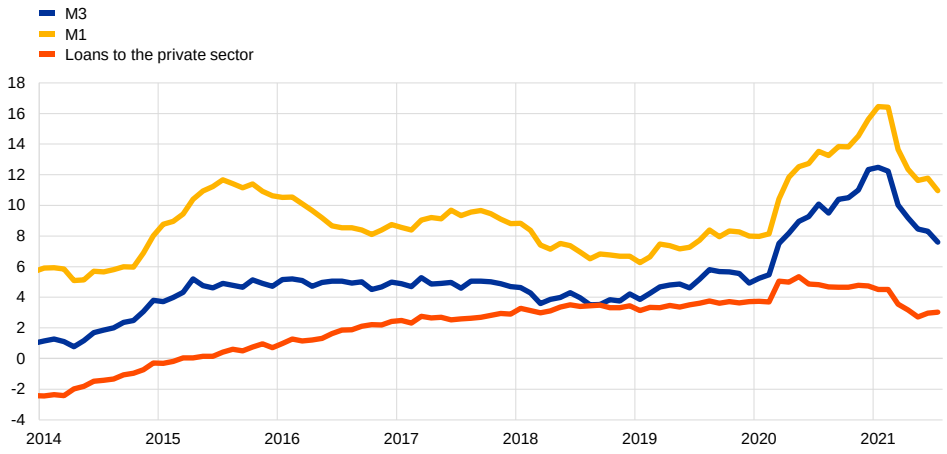
Money creation in the euro area moderated in July 2021, normalising further after the significant monetary expansion associated with the earlier waves of the coronavirus (COVID-19) pandemic. Domestic credit remained the dominant driver of money creation, with Eurosystem asset purchases being the most prominent contributor. Loan growth to the private sector stabilised close to lower, pre-pandemic, long-term levels, while financing conditions remained very favourable. The total volume of external financing for firms moderated in the second quarter of 2021. Compared with April 2021, the overall cost of firms' external financing increased somewhat in July 2021, mainly on account of higher cost of equity, with the cost of market-based debt declining slightly and the cost of bank lending remaining broadly unchanged.

Broad money growth moderated in July 2021. The annual growth rate of M3 fell to 7.6% in July, down from 8.3% in June (Chart 20), as it continued to be affected by negative base effects linked to the exceptionally high liquidity needs in the first half of 2020. The quarterly pace of money growth reverted to its longer-term average, with shorter-run dynamics of broad money reflecting a robust pace of money creation on the back of significant policy support. On the components side, the main driver of the high level of M3 growth was the narrow aggregate M1, which includes the most liquid components of M3. The annual growth rate of M1 fell to 11.0% in July, down from 11.8% in June, mainly as a result of slowing growth in overnight deposits made by firms and households. While the contribution of other short-term deposits remained negative in July, marketable instruments continued to make a small contribution to annual M3 growth, given the low level of interest rates and search-for-yield behaviour displayed by investors.

Chart 20

M3, M1 and loans to the private sector

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



Source: ECB.
Notes: Loans are adjusted for loan sales, securitisation and notional cash pooling. The latest observations are for July 2021.

Growth in overnight deposits moderated further. The annual growth rate of overnight deposits fell to 11.3% in July, down from 12.2% in June, driven mainly by firms and households. Money holders' strong preference for overnight deposits

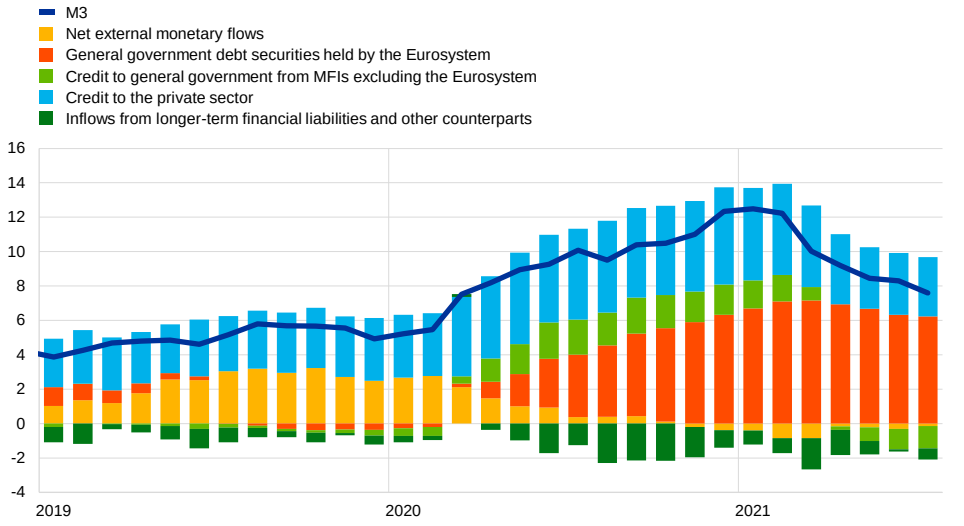
during the pandemic had largely reflected precautionary motives. Over recent months, amid progress on vaccination and a rebound of economic activity, the accumulation of bank deposits by firms and households has returned to the lower pre-pandemic pace. Growth in deposit holdings by firms has varied across countries, reflecting differences in liquidity needs and national fiscal support measures. Meanwhile, the annual growth rate of currency in circulation, which declined in May, remained broadly stable at 8.9% in July.

Money creation continued to be driven by Eurosystem asset purchases. As in previous months, the largest contribution to M3 growth came from the Eurosystem's net purchases of government securities under the asset purchase programme (APP) and the pandemic emergency purchase programme (PEPP) (red portion of the bars in Chart 21). Further support for M3 growth came from credit to the private sector (blue portion of the bars). Bank credit to general government made a negative contribution to money creation, owing to sales of government bonds and reduced issuance of government securities (light green portion of the bars), while net external monetary flows had a broadly neutral effect on money creation (yellow portion of the bars). Furthermore, other counterparts continued to dampen broad money growth (dark green portion of the bars), while favourable conditions for targeted longer-term refinancing operations (TLTROs) continued to support the substitution of bank funding away from longer-term liabilities.

Chart 21

M3 and its counterparts

(annual percentage changes; contributions in percentage points; adjusted for seasonal and calendar effects)



Source: ECB.
Notes: Credit to the private sector includes loans to the private sector by monetary financial institutions (MFIs) and MFIs' holdings of debt securities issued by the euro area private non-MFI sector. As such, it also covers purchases by the Eurosystem of non-MFI debt securities under the corporate sector purchase programme (CSPP). The latest observations are for July 2021.

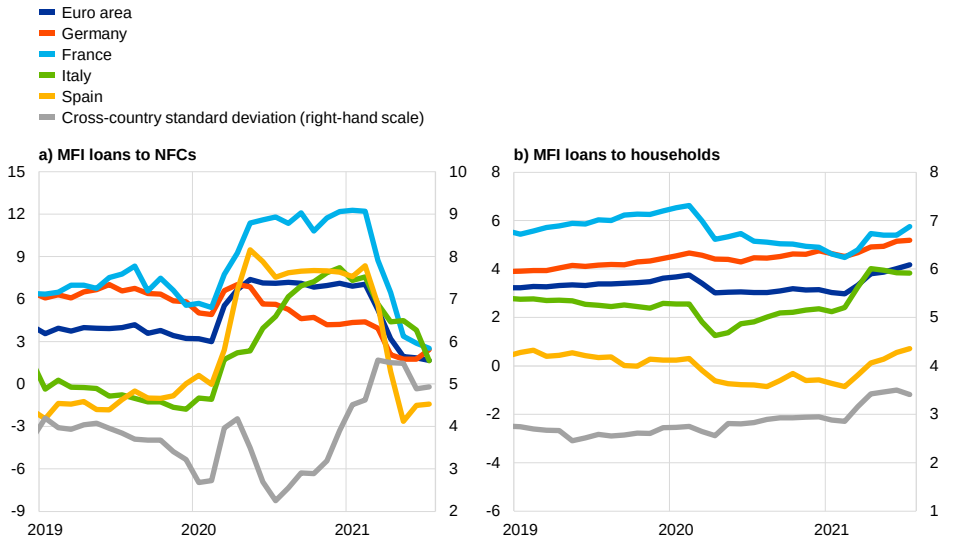
Loan growth to the private sector stabilised close to lower, pre-pandemic levels. The annual growth rate of bank loans to the private sector stood at 3.0% in July (Chart 20). Lending to firms and households continued to benefit from favourable financing conditions and the ongoing economic recovery. The annual growth rate of loans to firms weakened slightly to 1.7% in July, down from 1.8% in

June, while the growth rate for loans to households increased to 4.2%, up from 4.0% in June, driven by mortgage lending (Chart 22). The somewhat slower growth of lending to firms is mainly due to the fact that firms are still well funded because they borrowed heavily in the first wave of the pandemic. They have high cash holdings and are increasingly retaining earnings, which reduces the need for external funding. Overall, these developments mask considerable differences across countries, which among other things reflects the uneven progress of the economic recovery.

Chart 22

MFI loans in selected euro area countries

(annual percentage changes; standard deviation)



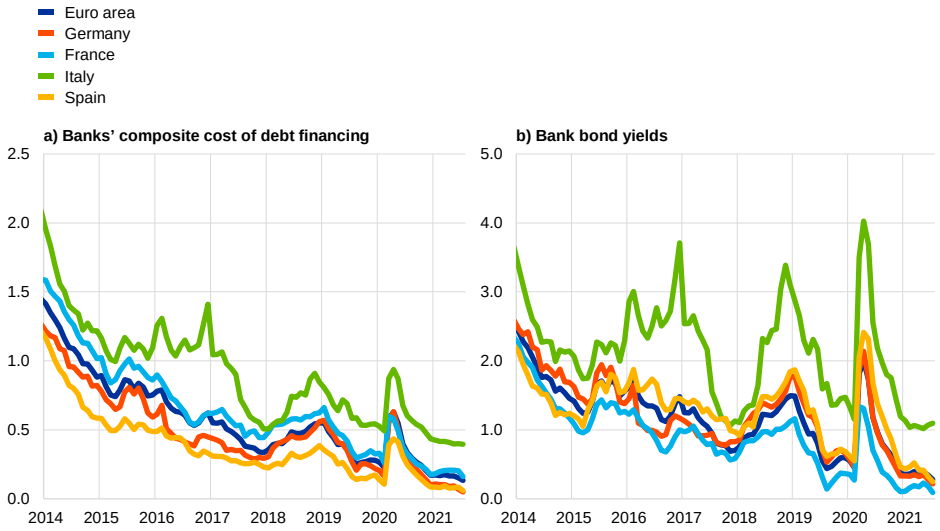
Source: ECB.
Notes: Loans are adjusted for loan sales and securitisation; in the case of non-financial corporations (NFCs), loans are also adjusted for notional cash pooling. The cross-country dispersion is calculated on the basis of minimum and maximum values using a fixed sample of 12 euro area countries. The latest observations are for July 2021.

Debt funding costs for euro area banks remained below pre-pandemic levels, supported by the ECB's monetary policy measures. The composite cost of debt financing declined further to new lows (Chart 23) on the back of several factors. First, a steepening of the yield curve, which had led to an increase in the cost of bond financing in the first half of 2021, has been reabsorbed. Second, euro area banks have, since the onset of the pandemic, charged negative interest rates on an increasing share of corporate deposits, while the share of negative rates to households has also increased, albeit from relatively small levels owing to their stickiness. Third, available targeted longer-term refinancing operations (TLTRO III), which provide banks with liquidity at very favourable conditions, contributed to a further easing of overall funding conditions. Fourth, the ECB's APP and PEPP continue to help reduce the divergences in funding conditions across countries, risk classes and maturities to levels observed before the pandemic. The Next Generation EU programme is also supportive, as it should contribute to a stronger and more uniform recovery across the euro area, leading to a compression or credit risk across the euro area. Finally, prices for covered bank bonds are directly supported by the ECB's third covered bond purchase programme (CBPP3).

Chart 23

Banks' composite cost of debt financing

(composite cost of deposits and unsecured market-based debt financing; percentages per annum)



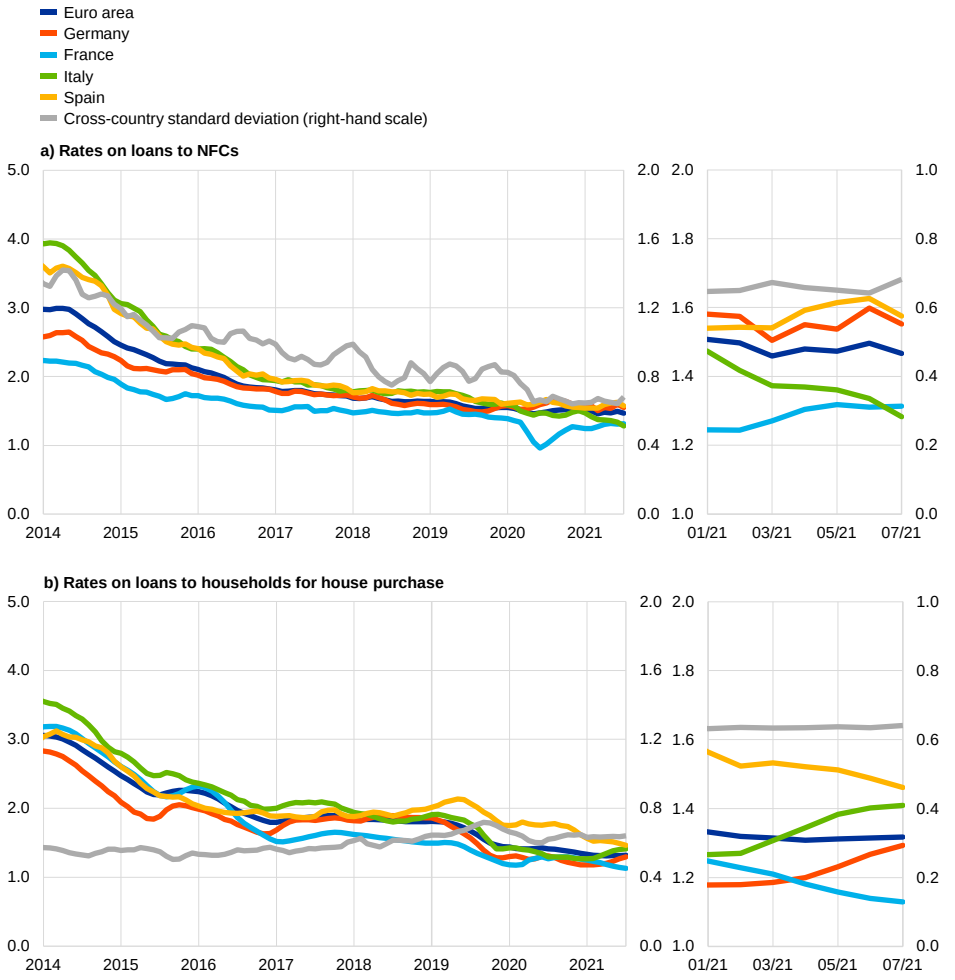
Sources: ECB, Markit iBoxx and ECB calculations.
Notes: The composite cost of deposits is calculated as an average of new business rates on overnight deposits, deposits with an agreed maturity and deposits redeemable at notice, weighted by their corresponding outstanding amounts. Bank bond yields refer to monthly averages of senior-tranche bonds. The latest observations are for July 2021.

Bank lending rates remained close to their historic lows. In July 2021 the composite bank lending rates for loans to non-financial corporations (NFCs) and to households for house purchase remained broadly unchanged at 1.47% and 1.32% respectively (Chart 24). These developments, which mask some differences across the largest euro area countries, maturity buckets and loan sizes, reflect the ongoing impact of the ECB's monetary policy measures. The spread between bank lending rates on very small loans and on large loans has stabilised further at pre-pandemic levels. Despite the considerable uncertainty regarding the pandemic's longer-term impact on the economy, policy support measures prevented a broad-based tightening of financing conditions which could have amplified the initial adverse economic impact.

Chart 24

Composite bank lending rates in selected euro area countries

(percentages per annum (three-month moving averages); standard deviation)



Source: ECB.
Notes: These indicators of the total cost of bank lending 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 July 2021.

The total volume of external financing for firms moderated in the second quarter of 2021. The annual growth rate of external financing decreased from 4.3% in March to 2.2% in June (Chart 25, panel a), although external financing flows continued to benefit from favourable financing conditions. In the second quarter of 2021, the net issuance of listed shares surged while lower external financing flows mostly stem from the moderation of bank loans to firms. This deceleration appears to reflect benign developments linked to higher cash holdings and retained earnings, sizeable liquidity buffers, attractive conditions for market-based debt and the lower loan intensity of the sectors driving the recovery. Nevertheless, in an environment of abundant cash reserves and sustained policy support, firms have increasingly replaced short-term financing by instruments with longer maturities. This change in maturity supports the view that interest in using external finance for business investment, as opposed to liquidity buffers, has increased.

The total nominal cost of external financing for NFCs (comprising bank lending, debt issuance in the market and equity finance) has increased since April 2021. The cost of external financing stood at 4.4% in July (Chart 25, panel b), around 70 basis points below the peak seen in March 2020 and 35 basis points higher than the historic low recorded in March 2021. The increase observed in July 2021 largely stemmed from the higher cost of equity, which reflected an increase in the equity risk premium that overrode the overall decline in risk-free rates. That decline, in combination with further compression of corporate bond spreads especially in the high-yield segment, resulted in a slight further decrease in the cost of market-based debt, which reached values close to its historic low recorded in January 2021. The overall cost of financing is estimated to have remained virtually unchanged between July and 8 September. While the cost of equity was generally stable during this period, the cost of market-based debt exhibited greater volatility, falling to a historic low in August before returning to its July level on the back of rising risk-free rates.

Chart 25

External financing of euro area NFCs

(annual percentage changes)

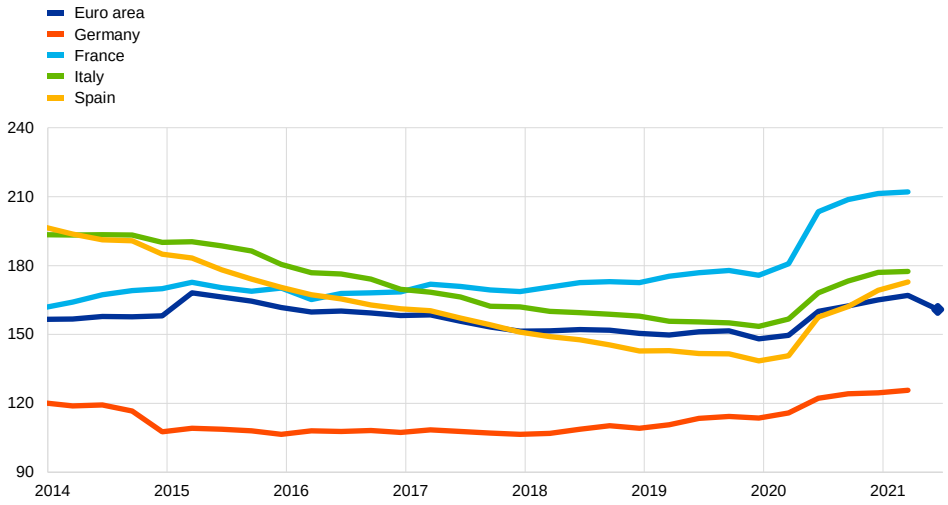
Sources: Eurostat, Dealogic, ECB, Merrill Lynch, Bloomberg, Thomson Reuters and ECB estimates.
Notes: Panel a): n(()Tj 0.004baRtlBC11 (l)baRon o lCBBBpecoCBom:nd6 (B)l,e9, 0.6 (eur)T:22 (at-57.42x 1.2 0.004d) (,)2 k11CanbiB,limat(s-0 0)]TJ 0

shocks may still be high, to the extent that liquidity buffers differ across sectors. At the same time, fiscal policy measures have prevented firms from having a large negative funding shortfall amid strong negative gross savings. Overall, these developments suggest that the resilience of firms and their ability to increase business investment depend largely on an ongoing recovery and continued policy support.

Chart 26

Gross indebtedness of NFCs in selected euro area countries

(percentages of NFC gross value added)



Sources: ECB, Eurostat and ECB estimates.
Notes: Debt is defined as the sum of total loans granted to NFCs net of intra-sectoral lending, debt securities issued and pension liabilities. The blue diamond indicates the nowcast for the second quarter of 2021. Otherwise the latest observations are for the first quarter of 2021.

6 Fiscal developments

After a significant fiscal expansion since the start of the coronavirus (COVID-19) pandemic, only limited additional stimulus measures have been adopted over the last few months as 2022 budgetary plans are still in preparation and the economic recovery seems to be proceeding somewhat faster than anticipated. As a result, the September 2021 ECB staff macroeconomic projections include a fiscal outlook for the euro area that has improved compared with June. While the deficit ratio is projected to remain high in 2021, at 7.1%, after 7.3% in 2020, the subsequent improvement is foreseen to be swift as the pandemic abates and the economic recovery takes hold. The deficit ratio is thus expected to fall to 3.0% in 2022 and 2.1% at the end of the projection horizon in 2023. Mirroring these developments, euro area debt is projected to peak at just below 99% of GDP in 2021 and to decline to about 94% of GDP in 2023. Nonetheless, an ambitious and coordinated fiscal stance remains crucial, as a premature withdrawal of fiscal support would risk weakening the recovery and amplifying the longer-term scarring effects. At the same time, fiscal measures should remain temporary and countercyclical, while ensuring that they are sufficiently targeted in nature to address vulnerabilities effectively and to support a swift recovery in the euro area economy. As a complement to national fiscal measures, the Next Generation EU (NGEU) package is expected to play a key role by contributing to a faster, stronger and more uniform recovery.

According to the September 2021 ECB staff macroeconomic projections, the euro area general government budget balance will improve only marginally in 2021 but should recover strongly as of 2022.[14] The general government deficit ratio for the euro area was 7.3% of GDP in 2020, the largest deficit since the introduction of the euro. It is projected to decline only marginally in 2021 to 7.1% of GDP but then more strongly to 3.0% in 2022 and 2.1% in 2023 (Chart 27). The rise in the budget deficit in 2020 was largely attributable to a deterioration in the cyclically adjusted primary balance on the back of economic support measures in response to the pandemic amounting to around 4.2% of GDP. The crisis and recovery support is now projected to increase to about 4.6% of GDP in 2021. This reflects the fact that governments have prolonged emergency measures, gradually expanded their size and/or adopted new ones to support the recovery, including measures to be funded through the NGEU.[15] The deficit increase last year was also partly the result of a large negative cyclical component, which is expected to start declining, albeit only moderately, in 2021. The more significant improvement in the budget balance from 2022 onwards is projected to be driven by a higher cyclically adjusted primary balance, as a large share of the emergency measures (which are not funded by NGEU grants) will expire. Moreover, the negative contribution from the economic cycle is expected to fade swiftly as of 2022, turning positive in 2023. To a lesser

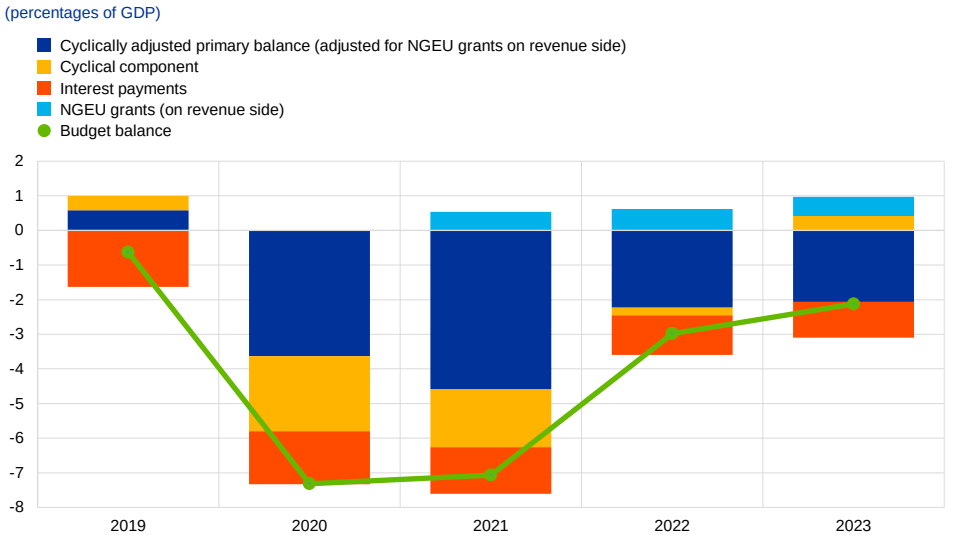
14 See the "ECB staff macroeconomic projections for the euro area, September 2021", published on the ECB's website on 9 September 2021.

15 NGEU grants amount to around 0.6% of GDP in each year of the projection horizon. Together with a limited amount of loans, they are assumed to finance about 1.5% of GDP of additive stimulus, cumulatively over the period 2021-23. This stimulus is broadly unrevised compared with the June 2021 Eurosystem staff macroeconomic projections.

extent, but over the whole projection horizon, the improvement in the budget balance will also be helped by gradually falling contributions from interest payments.

Chart 27

Budget balance and its components



Sources: ECB and September 2021 ECB staff macroeconomic projections.
Note: The data refer to the aggregate general government sector of euro area countries.

The euro area aggregate fiscal stance was highly expansionary in 2020 and is projected to remain expansionary in 2021.[16] From these very high levels of support, a tightening of the fiscal stance is expected to take place in 2022, as the fiscal support fades along with the expiry of pandemic and temporary support measures. In 2023 the fiscal stance is projected to be broadly neutral.[17] This notwithstanding, the level of fiscal support to the economic recovery remains large over the whole projection horizon, which is reflected in the overall primary fiscal balance remaining firmly negative.

In addition to the fiscal support for their economies, euro area countries have provided sizeable loan guarantee envelopes to bolster the liquidity positions of firms. In total, these guarantee envelopes amount to around 19% of GDP for the euro area in 2021. The cumulative take-up of these guarantees over the period 2020-21 is estimated at 5% of GDP, broadly unchanged compared with the June 2021 Eurosystem staff macroeconomic projections. It should be noted that these figures mask significant differences in both the envelope and the take-up rate across

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

17 The euro area aggregate fiscal stance is assessed at -4.3 percentage points of GDP in 2020 and is projected to be -1.1, +2.3 and +0.2 percentage points of GDP in 2021, 2022 and 2023, respectively, after adjustment for revenues related to NGEU grants.

countries. The loan guarantees are contingent liabilities for governments and any calls on the guarantees will therefore constitute additional public spending that increases government debt.

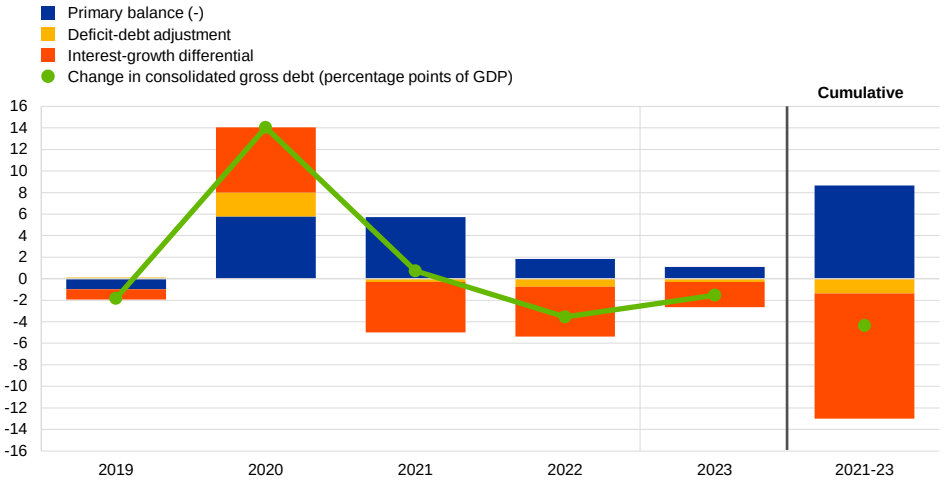
The budget balance in 2021 is foreseen to be close to the June 2021 Eurosystem staff macroeconomic projections, while the outlook for 2022 and 2023 has been revised more strongly upwards. Specifically, the euro area general government budget balance as a share of GDP has been revised up by 0.1 percentage points for 2021 and by 0.4 and 0.5 percentage points, respectively, for the subsequent two years. These revisions are mainly due to an improved cyclical component and, to a lesser extent, lower interest payments.

Following a large increase in the euro area aggregate government debt-to-GDP ratio in 2020, it is projected to peak at just below 99% in 2021, before declining gradually to about 94% in 2023. After a 14 percentage point increase in the debt ratio in 2020, in 2021 a still high primary deficit will be only partly compensated by a significant debt-reducing contribution from the interest-growth differential. In 2022 and 2023, however, the debt ratio will start falling as smaller primary deficits are more than offset by favourable contributions from interest-growth differentials and, to a lesser extent, by negative deficit-debt adjustments (Chart 28). As a result, at the end of the projection horizon in 2023, the debt-to-GDP ratio is expected to be almost 10 percentage points above its pre-crisis level. It should, however, be noted that the COVID-19 crisis has had a somewhat smaller adverse impact on the debt path than was generally expected in the initial phase of the crisis.[18]

Chart 28

Drivers of change in euro area government debt

(percentages of GDP, unless otherwise indicated)



Sources: ECB and September 2021 ECB staff macroeconomic projections.
Note: The data refer to the aggregate general government sector of euro area countries.

[18] For instance, in the September 2020 ECB staff macroeconomic projections, the debt-to-GDP level at the end of 2022 was projected to stand about 4 percentage points higher than in the current projections.

National fiscal policies should continue to provide critical, timely and sufficiently targeted support to the firms and households most exposed to the ongoing pandemic. A premature withdrawal of fiscal support would risk weakening the recovery and amplifying the longer-term scarring effects. At the same time, fiscal measures should remain temporary and countercyclical, while ensuring that they are sufficiently targeted in nature to address vulnerabilities effectively and to support a swift recovery in the euro area economy. The gradual reduction of budgetary imbalances, once economic activity has sufficiently recovered, can be amplified by a decisive shift towards a more growth-friendly composition of public finances and structural reforms that raise the growth potential of euro area economies. The NGEU's Recovery and Resilience Facility can provide important support in this respect, not least by accelerating the green and digital transitions.

Boxes

1 Comparing recent inflation developments in the United States and the euro area

Prepared by Gerrit Koester, Jakob Nordeman and Michel Soudan

After having declined in 2020, headline inflation has increased strongly in both the United States and the euro area over recent months (Chart A). Base effects related to the recovery of energy prices from last year's fall have played an important role in this increase – both in the United States and the euro area.[1]

However, the recent increase in headline inflation has been substantially more pronounced in the United States than in the euro area, which is also reflected in development of price levels in the United States and in the euro area. The indices for headline inflation and inflation excluding energy and food stand in the euro area just around 2% higher than before the coronavirus (COVID-19) pandemic (December 2019), while in the United States they stand around 6% higher (Chart B).

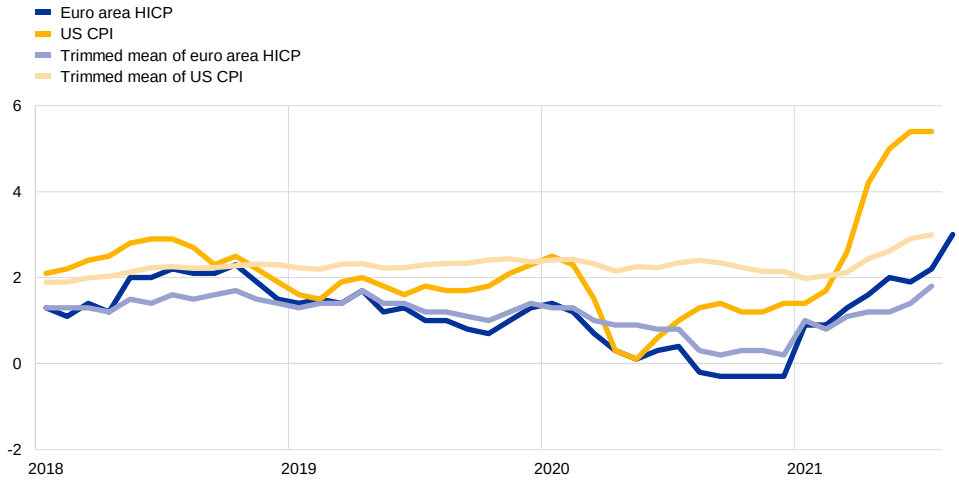
Developments in headline inflation over recent months have, especially in the United States, been driven by a relatively small number of items with very high inflation rates – including energy prices. This can be illustrated, for example, by the "trimmed means" of US CPI and euro area HICP inflation, which exclude the items with the highest and the lowest inflation rates (Chart A). Trimmed mean headline inflation increased from January to July 2021 by around 1.0 percentage points for the US CPI and 0.8 percentage points for euro area HICP. By contrast, untrimmed US headline CPI inflation increased by 4.0 percentage points over that period, while in the euro area HICP inflation rose by 1.3 percentage points.

[1] See also the box entitled "Recent dynamics in energy inflation: the role of base effects and taxes", *Economic Bulletin*, Issue 3, ECB, 2021.

Chart A

Headline inflation and trimmed means

(annual percentage changes)

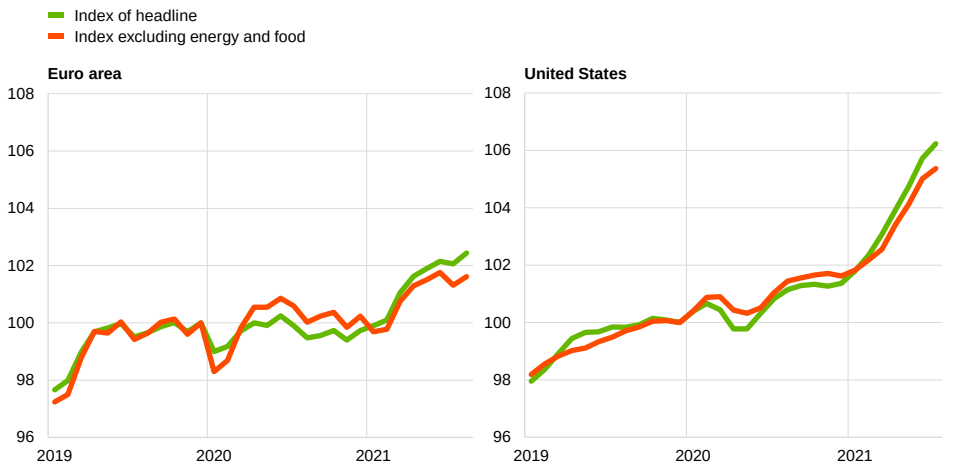


Sources: Eurostat, Federal Reserve Bank of Cleveland and ECB.
Notes: HICP stands for Harmonised Index of Consumer Prices and CPI for Consumer Price Index. The trimmed mean excludes 16% of items for the US CPI (calculation by the Federal Reserve Bank of Cleveland) and 15% of items for the euro area HICP (based on ECB calculations). The trimmed means remove around 8% from each tail of the distribution of price changes in the euro area HICP and the US CPI each month. The annual rates of change are calculated using rescaled weights. The latest observations are for July 2021, except for euro area HICP, for which the latest observation is for August 2021.

Chart B

Index levels for HICP in the euro area and CPI in the United States

(index: December 2019 = 100)



Sources: Eurostat, Federal Reserve Bank of Cleveland and ECB.
Notes: HICP stands for Harmonised Index of Consumer Prices and CPI for Consumer Price Index. Inflation excluding energy and food refers to the HICP excluding energy and food for the euro area and CPI less food and energy for the United States.The latest observations are for July 2021 for the United States and August 2021 for the euro area.

While in the United States CPI inflation less food and energy is now significantly higher than before the pandemic, in the euro area HICP inflation excluding energy and food (HICPX) has remained lower than before the

pandemic (Chart C).[2] In the euro area, HICPX inflation stood at 0.7% in July 2021, compared with 1.2% in February 2020. In contrast, CPI inflation less food and energy in the United States started from a substantially higher level (2.4% in February 2020) and stood at 4.3% in July 2021. In addition to the still larger amount of slack in the euro area, these differences in inflation developments can be attributed to several factors. First, US prices for used cars and trucks soared during the second quarter of 2021 for a number of reasons: new cars, a close substitute, were less available because of a slowdown in production stemming from semiconductor shortages, rental car companies reduced sales of their used cars amid stronger demand for car rentals as the economy re-opened, preferences shifted away from public to private transport, and household disposable income was boosted by fiscal stimuli – pushing up demand for used cars in the United States. The rise in prices for used cars and trucks alone represented, at 1.5 percentage points, around half the increase in US CPI inflation less food and energy from 1.4% in January 2021 to 4.3% in July 2021. In the euro area, by contrast, there has been some increase in prices for new cars in recent months – partly linked to supply chain bottlenecks – but prices for used cars did not on average rise very markedly in the absence of very strong increases in demand. Furthermore, the weight of used cars in headline HICP is considerably smaller (1.1% compared with around 3% in the United States). Second, US prices for travel-related and transportation services rose strongly following the easing of containment measures, which has led to a substantial positive contribution to CPI inflation over the last few months. In the euro area, containment measures were lifted later, and thus the response of transportation and travel-related services has lagged behind that in the United States.[3] Rents have slightly moderated the divergence between inflation developments in the United States and the euro area. Whereas they have been a drag on inflation less food and energy in the United States, this has not been the case in the euro area, reflecting a larger weight in the US consumption basket and stickier euro area rents during the pandemic. There are, however, some common features in the US and euro area core inflation developments. Both exhibited an increasing contribution from consumer goods excluding volatile items such as clothing and footwear and used cars (Chart D). This likely reflects a combination of factors, such as the recovery of demand after lockdowns, but also some pass-through of global pipeline pressures triggered by higher input prices (including for commodities), shipping costs and bottlenecks for some inputs.[4]

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2 Changes to HICP weights in 2021 have also affected developments in HICPX inflation in the euro area since the start of 2021. These have had a negative impact on the most recent developments in HICPX inflation – taking into account these effects would bring HICPX inflation in the euro area much closer to the level recorded in February 2020. For details see Section 4 and especially Chart 8 of *Economic Bulletin*, Issue 5, ECB, 2021.

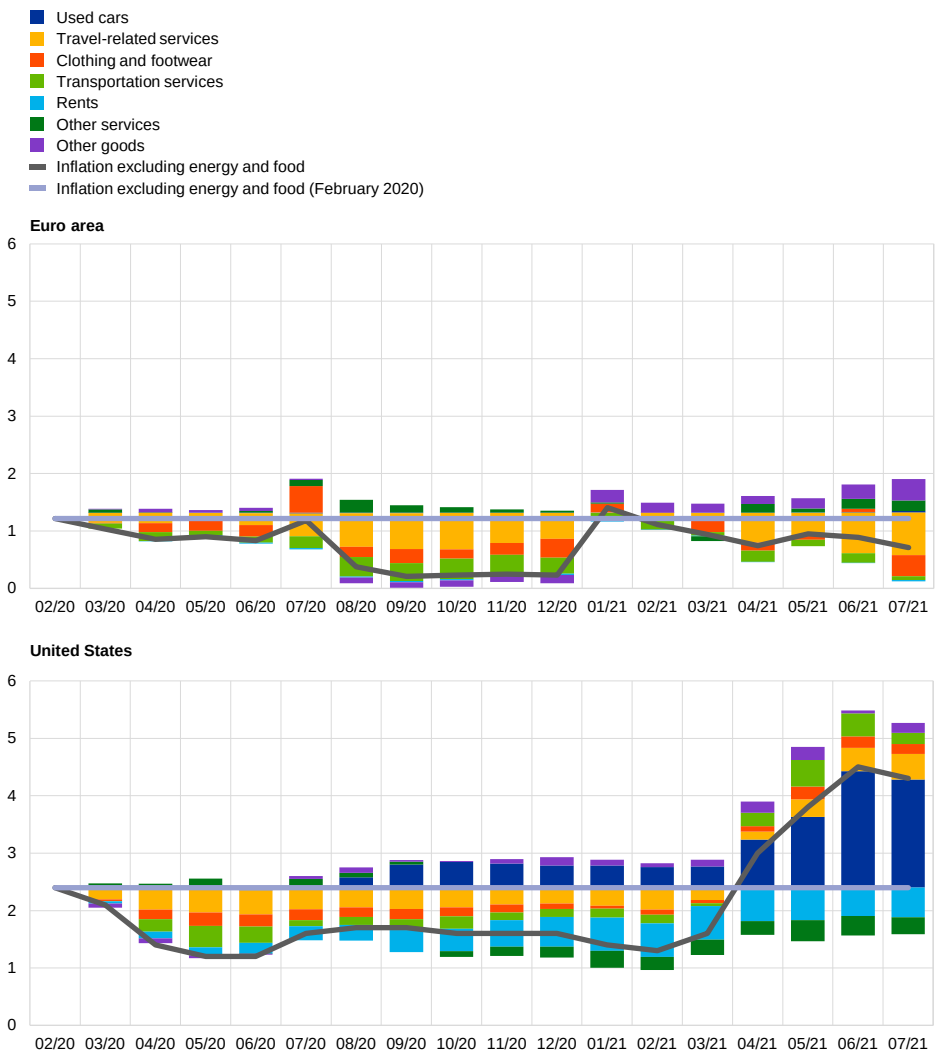
3 Additionally, changes in 2021 HICP weights have had a negative effect on inflation rates especially in these services (see previous footnote).

4 See also the boxes entitled "What is driving the recent surge in shipping costs?", *Economic Bulletin*, Issue 3, ECB, 2021, "The semiconductor shortage and its implication for euro area trade, production and prices", *Economic Bulletin*, Issue 4, ECB, 2021 and "Recent developments in pipeline pressures for non-energy industrial goods inflation in the euro area", *Economic Bulletin*, Issue 5, ECB, 2021.

Chart C

Contributions to inflation excluding energy and food in the euro area and the United States

(annual percentage changes; percentage point contributions compared with February 2020)



Sources: Haver Analytics, Eurostat and ECB staff calculations.
Notes: HICP stands for Harmonised Index of Consumer Prices and CPI for Consumer Price Index. Contributions to HICP excluding energy and food for the euro area and CPI less food and energy for the United States. Euro area developments were affected by the temporary VAT cut in Germany in the second half of 2020. Airline fares are included in travel-related services for both the euro area and the United States and excluded from transport services. The latest observations are for July 2021.

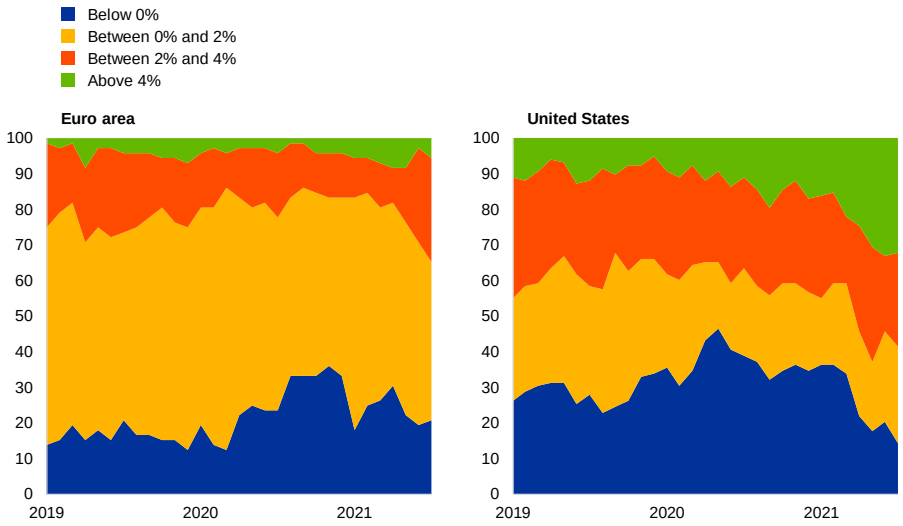
Price pressures are more broad-based in the United States than in the euro area (Chart D). While a few items with especially high inflation rates (including energy inflation) played a crucial role in the strong increase in headline inflation over recent months, price pressures in the United States have increased more broadly across the distribution of items included in CPI less food and energy. Zooming in on the distributions of price changes for items included in this index in the United States, the share of items with annual price increases above 4% has increased sharply (to approximately one-third in July 2021), while at the same time the share of items with negative inflation rates has decreased substantially (from around one-third in January to 14% in July). In the euro area, by contrast, the shares of items with very low inflation (below zero) and high inflation (above 4%) have remained relatively

stable. The share of items with inflation rates between 2% and 4% increased from around 10% at the beginning of the year to around 30% in July, while the share of items with inflation rates between 0% and 2% decreased by a similar amount but remained the dominant category in the euro area. As a result the share of items in the US core inflation basket with inflation rates above 2% – which can be seen as an indicator for the broadness of price pressures – has increased recently to close to two-thirds from less than half in the year before the pandemic. In the euro area, this share has been much lower and has only very recently increased to around one-third (in July).

Chart D

Distribution of inflation rates across items included in inflation excluding energy and food

(share of items by inflation rate in euro area HICPX and US CPI less food and energy; percentages)



Sources: Haver Analytics, Eurostat and ECB calculations.
Notes: HICP stands for Harmonised Index of Consumer Prices and CPI for Consumer Price Index. HICP excluding energy and food for the euro area and CPI less food and energy for the United States. The shares are computed as a unit count of the components of US core CPI and euro area HICPX inflation. For the euro area 72 items are included, for the United States 118 items are included. The latest observations are for July 2021.

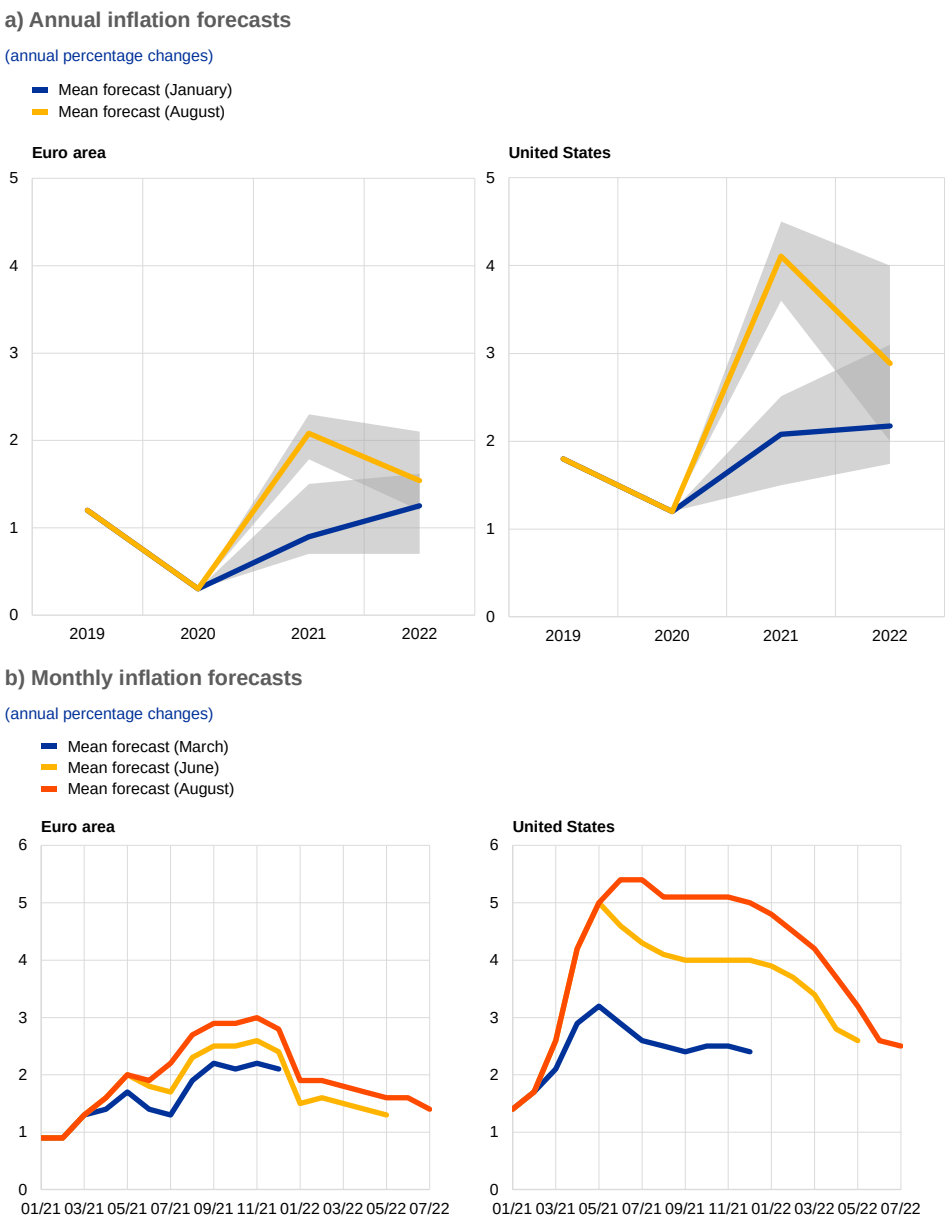
Recent increases in inflation have pushed up the inflation expectations of professional forecasters (Chart E). Compared with the beginning of the year, inflation expectations for 2021 have been revised upwards for the euro area and even more so for the United States (1.2 percentage points for the euro area and 2.0 percentage points for the United States – Chart E, panel a). For 2022 the upward revision has been substantial for the United States but only moderate for the euro area (0.7 percentage points for the United States and 0.3 percentage points for the euro area). In the latest survey by Consensus Economics (August 2021), mean forecasts see US headline CPI inflation reaching 4.1% in 2021 before falling back to 2.9% in 2022. For the euro area, headline inflation is expected to rise to 2.1% in 2021 before falling back to 1.5% in 2022 – a path comparable to that projected in the September ECB staff macroeconomic projections. According to Consensus Economics, while US headline inflation is expected overall to stand quite substantially above pre-crisis levels in 2022, euro area inflation is expected to fall back in 2022 to levels that are only somewhat above those recorded in 2019. At the

same time, judging from the range of projections included in the Consensus Economics forecasts, uncertainty about inflation developments in 2022 seems to remain substantially higher in the United States than in the euro area.

Upside surprises in inflation data releases over recent months have been substantially stronger for the United States than for the euro area.
Developments in Consensus Economics forecasts at a monthly frequency (Chart E, panel b – starting with forecasts from March 2021) show that inflation developments have been higher than forecast in recent months in the euro area and even more so in the United States. Looking ahead, Consensus Economics forecasts see headline inflation remaining elevated over the coming months, but falling to 2.5% in the United States and to 1.4% in the euro area by July 2022 – bringing inflation back to the levels observed in spring 2021 before the recent strong increases in inflation rates in both regions.

Chart E

Inflation expectations from Consensus Economics for US headline CPI and euro area headline HICP inflation



Sources: Consensus Economics, Eurostat, Haver Analytics and ECB calculations.
Notes: Grey areas reflect the ranges of forecasts included in Consensus Economics surveys. Monthly forecasts from March 2021 are available up to December 2021 only; the August forecast vintage includes forecasts up to July 2022.

Overall, a substantial part of the strong increases in inflation and the upside inflation surprises over recent months in the United States and the euro area can be attributed to special factors that are likely to be of a temporary nature. For a more permanent increase in inflation, price pressures would usually need to become more broad-based (especially in the euro area) and also reflect increasing labour cost pressures. However, there is so far no firm indication of the latter once the effects of changes in the composition of employment and of job retention schemes are taken into account. At the same time, the recovery from the pandemic

represents a unique situation with considerable irregularities for inflation developments, which require close monitoring and add to the uncertainty surrounding the inflation outlook.

2 Liquidity conditions and monetary policy operations from 28 April to 27 July 2021

Prepared by Elvira Fioretto and Svetla Daskalova

This box describes the ECB's monetary policy operations and liquidity developments during the third and fourth reserve maintenance periods of 2021. Together, these two maintenance periods ran from 28 April to 27 July 2021 (the "review period").

Excess liquidity in the euro area banking system continued to rise during the review period, reaching a record level of €4,191.5 billion. This was largely due to the asset purchases conducted under the pandemic emergency purchase programme (PEPP) and the asset purchase programme (APP), as well as the settlement of the eighth operation of the third series of targeted long-term refinancing operations (TLTRO III.8). The increase in the outright portfolios accelerated following the 11 March and 10 June Governing Council decisions to conduct purchases under the PEPP at a significantly higher pace over the second and third quarters than during the first months of the year. The Governing Council reaffirmed these decisions at its meeting on 22 July.

Liquidity needs

The average daily liquidity needs of the banking system, defined as the sum of net autonomous factors and reserve requirements, increased by €88.8 billion to €2,119.4 billion in the review period. This significant increase compared with the previous two maintenance periods was almost totally imputable to an €86.8 billion increase in net autonomous factors, which reached €1,970.6 billion (see the section of Table A entitled "Other liquidity-based information"). The minimum reserve requirements increased only marginally, by €1.9 billion to €148.9 billion.

Liquidity-absorbing autonomous factors in the review period increased mainly on account of banknotes in circulation, while government deposits declined slightly. Banknotes in circulation increased in the review period by €35 billion to €1,475 billion. Declining only marginally by €1.3 billion, government deposits remained very high at €616.9 billion, although this figure is below the record high of €729.8 billion recorded in the sixth maintenance period of 2020. In total, liquidity-absorbing autonomous factors increased by €46.9 billion to €2,996.3 billion.

Liquidity-providing autonomous factors decreased by €39.9 billion.[1] This consisted of a €28.6 billion drop in net assets denominated in euro and a €11.2 billion drop in net foreign assets. Table A provides an overview of the autonomous factors discussed above and changes to them over the review period.

[1] For further details on autonomous factors, see "The liquidity management of the ECB", *Monthly Bulletin*, ECB, May 2002.

Table A

Eurosystem liquidity conditions

Liabilities

(averages; EUR billions)

	Current review period: 28 April 2021 to 27 July 2021						Previous review period: 27 January 2021 to 27 April 2021	
	Third and fourth maintenance periods		Third maintenance period: 28 April to 15 June		Fourth maintenance period: 16 June to 27 July		First and second maintenance periods	
Autonomous liquidity factors	**2,996.3**	**(+46.9)**	**2,943.8**	**(-27.9)**	**3,057.4**	**(+113.6)**	**2,949.4**	**(+28.4)**
Banknotes in circulation	1,475.0	(+35.0)	1,465.8	(+18.0)	1,485.8	(+20.0)	1,440.0	(+23.4)
Government deposits	616.9	(-1.3)	586.7	(-57.8)	652.3	(+65.6)	618.3	(+29.6)
Other autonomous factors (net)[1)]	904.3	(+13.2)	891.4	(+11.9)	919.4	(+28.0)	891.1	(-24.5)
Current accounts above minimum reserve requirements	**3,471.2**	**(+338.8)**	**3,443.9**	**(+170.3)**	**3,502.9**	**(+59.0)**	**3,132.3**	**(+282.0)**
of which exempted excess reserves under the two-tier system	887.1	(+13.1)	879.5	(+2.7)	894.8	(+15.3)	874.1	(+14.9)
of which non-exempted excess reserves under the two-tier system	2,586.3	(+317.9)	2,564.5	(+167.6)	2,608.1	(+43.6)	2,268.4	(+277.2)
Minimum reserve requirements[2)]	**148.9**	**(+1.9)**	**147.7**	**(+0.3)**	**150.2**	**(+2.4)**	**146.9**	**(+2.2)**
Exempt allowance[3)]	**893.2**	**(+11.6)**	**886.4**	**(+1.7)**	**901.1**	**(+14.7)**	**881.6**	**(+13.0)**
Deposit facility	**720.4**	**(+86.2)**	**706.5**	**(+30.1)**	**736.6**	**(+30.1)**	**634.2**	**(+73.0)**
Liquidity-absorbing fine-tuning operations	**0.0**	**(+0.0)**	**0.0**	**(+0.0)**	**0.0**	**(+0.0)**	**0.0**	**(+0.0)**

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

Assets

(averages; EUR billions)

	Current review period: 28 April 2021 to 27 July 2021						Previous review period: 27 January 2021 to 27 April 2021	
	Third and fourth maintenance periods		Third maintenance period: 28 April to 15 June		Fourth maintenance period: 16 June to 27 July		First and second maintenance periods	
Autonomous liquidity factors	**1,026.1**	**(-39.9)**	**1,042.5**	**(-20.8)**	**1,007.0**	**(-35.4)**	**1,066.0**	**(+26.2)**
Net foreign assets	815.3	(-11.2)	809.8	(-7.0)	821.7	(+12.0)	826.5	(-30.3)
Net assets denominated in euro	210.8	(-28.6)	232.7	(-13.9)	185.3	(-47.4)	239.5	(+56.5)
Monetary policy instruments	**6,311.0**	**(+513.8)**	**6,199.9**	**(+193.6)**	**6,440.6**	**(+240.7)**	**5,797.2**	**(+359.5)**
Open market operations	6,311.0	(+513.8)	6,199.9	(+193.6)	6,440.6	(+240.7)	5,797.2	(+359.5)
Tender operations	2,148.2	(+234.4)	2,107.2	(+52.3)	2,196.1	(+88.9)	1,913.8	(+139.9)
MROs	0.1	(-0.2)	0.2	(-0.1)	0.1	(-0.1)	0.4	(-0.0)
Three-month LTROs	0.1	(-0.4)	0.2	(-0.1)	0.1	(-0.1)	0.5	(-0.4)
TLTRO II operations	0.0	(-9.7)	0.0	(-2.6)	0.0	(+0.0)	9.7	(-12.8)
TLTRO III operations	2,120.7	(+244.3)	2,079.8	(+55.1)	2,168.5	(+88.6)	1,876.5	(+152.3)
PELTROs	27.2	(+0.5)	27.0	(+0.1)	27.4	(+0.4)	26.7	(+0.8)
Outright portfolios	4,162.8	(+279.4)	4,092.7	(+141.3)	4,244.5	(+151.7)	3,883.4	(+219.6)
First covered bond purchase programme	0.4	(-0.0)	0.4	(-0.0)	0.4	(-0.0)	0.5	(-0.0)
Second covered bond purchase programme	2.4	(-0.2)	2.4	(-0.1)	2.4	(-0.0)	2.6	(-0.2)
Third covered bond purchase programme	291.6	(+2.1)	290.7	(+1.0)	292.6	(+1.9)	289.5	(+2.2)
Securities markets programme	17.2	(-8.4)	17.3	(-6.5)	17.1	(-0.2)	25.6	(-3.0)
Asset-backed securities purchase programme	28.4	(-0.3)	28.6	(-0.1)	28.3	(-0.3)	28.7	(-1.0)
Public sector purchase programme	2,412.0	(+37.7)	2,403.8	(+19.9)	2,421.5	(+17.7)	2,374.3	(+37.2)
Corporate sector purchase programme	279.3	(+15.9)	275.6	(+7.6)	283.6	(+8.0)	263.4	(+13.5)
Pandemic emergency purchase programme	1,131.4	(+232.6)	1,073.9	(+119.7)	1,198.5	(+124.7)	898.8	(+170.9)
Marginal lending facility	0.0	(-0.0)	0.0	(+0.0)	0.0	(-0.0)	0.0	(-0.0)

Source: ECB.
Notes: All figures in the table are rounded to the nearest €0.1 billion. Figures in brackets denote the change from the previous review or maintenance period.

Other liquidity-based information

(averages; EUR billions)

	Current review period: 28 April 2021 to 27 July 2021						Previous review period: 27 January 2021 to 27 April 2021	
	Third and fourth maintenance periods		Third maintenance period: 28 April to 15 June		Fourth maintenance period: 16 June to 27 July		First and second maintenance periods	
Aggregate liquidity needs[1)]	2,119.4	(+88.8)	2,049.5	(-6.8)	2,201.0	(+151.5)	2,030.7	(+4.4)
Net autonomous factors[2)]	1,970.6	(+86.8)	1,901.7	(-7.1)	2,050.8	(+149.1)	1,883.7	(+2.2)
Excess liquidity[3)]	4,191.5	(+425.0)	4,150.4	(+200.5)	4,239.5	(+89.1)	3,766.5	(+355.1)

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

Interest rate developments

(averages; percentages)

	Current review period: 28 April 2021 to 27 July 2021						Previous review period: 27 January 2021 to 27 April 2021	
	Third and fourth maintenance periods		Third maintenance period: 28 April to 15 June		Fourth maintenance period: 16 June to 27 July		First and second maintenance periods	
MROs	0.00	(+0.00)	0.00	(+0.00)	0.00	(+0.00)	0.00	(+0.00)
Marginal lending facility	0.25	(+0.00)	0.25	(+0.00)	0.25	(+0.00)	0.25	(+0.00)
Deposit facility	-0.50	(+0.00)	-0.50	(+0.00)	-0.50	(+0.00)	-0.50	(+0.00)
EONIA[1)]	-0.480	(-0.001)	-0.480	(+0.001)	-0.481	(-0.001)	-0.480	(-0.005)
€STR	-0.565	(-0.001)	-0.565	(+0.001)	-0.566	(-0.001)	-0.565	(-0.005)

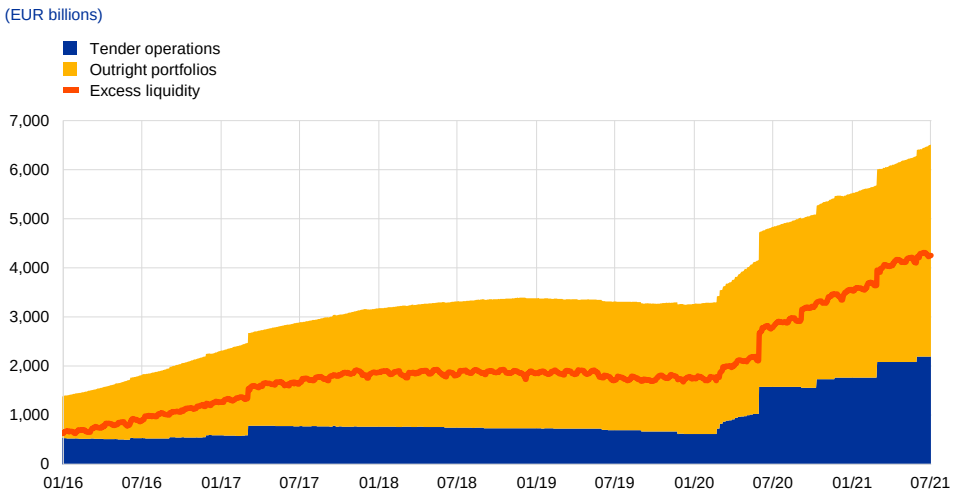
Source: ECB.
Notes: Figures in brackets denote the change from the previous review or maintenance period.
1) Computed as the euro short-term rate (€STR) plus 8.5 basis points since 1 October 2019. Differences in the changes shown for the euro overnight index average (EONIA) and the €STR are due to rounding.

Liquidity provided through monetary policy instruments

The average amount of liquidity provided through monetary policy instruments increased by €513.8 billion to €6,311 billion during the review period (see Chart A). Around 54% of the increase was the result of ongoing net purchases under the asset purchase programmes, primarily the PEPP, while the remaining 46% originated from credit operations, in this context almost exclusively TLTRO III operations.

Chart A

Evolution of liquidity provided through open market operations and excess liquidity



Source: ECB.
Note: The latest observation is for 27 July 2021.

The average amount of liquidity provided through credit operations increased by €234.4 billion during the review period. This increase was mainly driven by the effect of the €330.5 billion allotted in the seventh operation of the TLTRO III series at the end of March and the €109.8 billion injected via the eighth operation settled in June. An additional €0.5 billion in liquidity was added in the second operation of the four additional pandemic emergency long-term refinancing operations (PELTRO) announced in December and settled in June. The main refinancing operations (MROs) and three-month LTROs continued to play a marginal role, with the average recourse to both regular refinancing operations decreasing by €0.2 billion and €0.4 billion respectively compared with the previous review period, to a new record low of €0.1 billion each.

At the same time, outright portfolios increased by €279.4 billion to €4,162.8 billion, owing to net purchases under the PEPP and the APP. Average holdings in the PEPP increased by €232.6 billion to €1,131.4 billion compared with the average holdings in the previous review period. Purchases under the PEPP represented the largest increase by far across all asset purchase programmes, followed by the public sector purchase programme (PSPP) and the corporate sector purchase programme (CSPP), which increased by €37.7 billion to €2,412 billion and by €15.9 billion to €279.3 billion respectively. A reduction of €8.6 billion was related to maturing securities held in non-active programmes.

Excess liquidity

Average excess liquidity increased by €425 billion, reaching a new record high of €4,191.5 billion (see Chart A). Excess liquidity is the sum of banks' reserves above the reserve requirement and the recourse to the deposit facility net of any recourse to the marginal lending facility. It reflects the difference between the total

liquidity provided to the banking system and banks' liquidity needs. Banks' current account holdings in excess of minimum reserve requirements grew by €338.8 billion to €3,471.2 billion, whereas the average recourse to the deposit facility increased by €86.2 billion to €720.4 billion.

Excess reserves exempted from the negative deposit facility rate under the two-tier system[2] rose by €13.1 billion to €887.1 billion. Non-exempted reserves increased by €317.9 billion, reaching €2,586.3 billion as excess liquidity continued to grow. The aggregate utilisation rate of the exemption allowance, i.e. the ratio between exempted reserves and the maximum exempted amount[3], has remained above 98% since the third maintenance period of 2020 and rose marginally from 99.1% to 99.3%. The share of exempted excess reserves out of total excess liquidity stood at 21.2% compared with 23.2% in the previous review period.

Interest rate developments

The average €STR remained broadly unchanged at -56.5 basis points during the review period. The increase in excess liquidity did not affect the €STR, which continues to be relatively inelastic even to substantial fluctuations in liquidity. As of October 2019 the EONIA is calculated as the €STR plus a fixed spread of 8.5 basis points. The EONIA therefore moved, and will continue to move, in lockstep with the €STR until it is discontinued on 3 January 2022. ECB policy rates – the rates on the deposit facility, MRO and marginal lending facility – were left unchanged during the review period.

2 More information about the two-tier system for remunerating excess reserve holdings is available here.

3 The maximum exempted amount is measured as the sum of the minimum reserves and the allowance, which is equal to six times the minimum reserves amount.

3 Non-financial corporate health during the pandemic

Prepared by Gabe de Bondt, Arne Gieseck, Giulio Nicoletti and Mika Tujula[1]

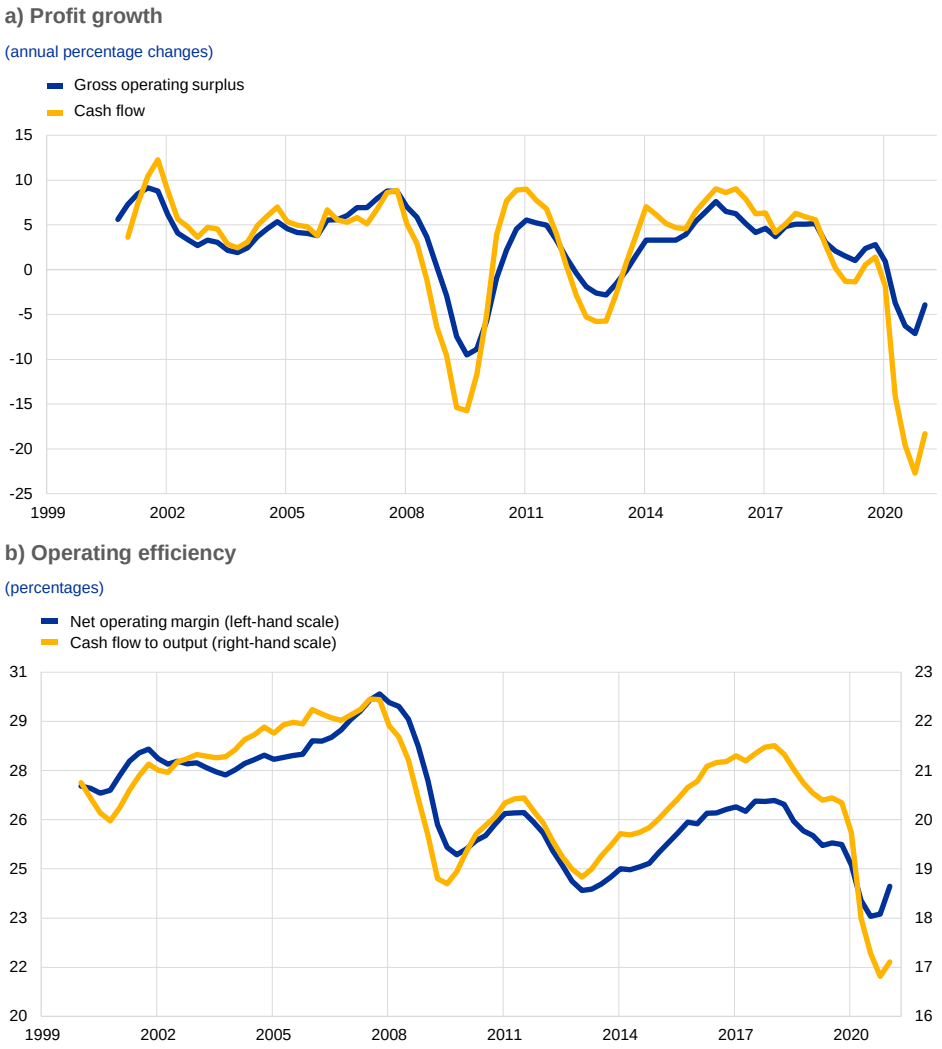
This box takes stock of the impact of the coronavirus (COVID-19) pandemic on the health of the euro area non-financial corporate sector. It also assesses the extent to which policy support measures have alleviated corporate financing strains and dampened upward pressure on their vulnerabilities. The analysis is based on quarterly sectoral accounts data for the euro area aggregate. Accordingly, the box provides an aggregate picture of the non-financial corporate sector, without distinguishing between individual countries, economic sectors, industries or firms.

The pandemic threatened the profitability and operating efficiency of the euro area non-financial corporate sector. Profitability and operating efficiency are essential for a company's health. While companies can survive for a long time without being profitable if they have the goodwill of creditors and investors, to survive in the long run they must eventually attain and maintain profitability. Profit growth, as measured by gross operating surplus and cash flow growth, has been negative since the start of the pandemic (Chart A, panel a). Gross operating surplus has declined at similar rates to those seen during the global financial crisis, while the decline in cash flow has been more severe than during that period. A similar picture emerges when looking at the net operating surplus to value added ratio and the cash flow to output ratio (Chart A, panel b).

[1] We would also like to thank A. Consolo and V. Botelho for their contributions on policy support measures.

Chart A

Non-financial corporate profit growth and operating efficiency in the euro area



Sources: Eurostat, ECB and authors' calculations.
Notes: Net operating margin is calculated as net operating surplus as a percentage of net value added. Cash flow is calculated as gross value added minus wages paid, consumption of fixed capital and net interest payments. Output refers to gross value added. The latest observations are for the first quarter of 2021.

The liquidity of the non-financial corporate sector has been heavily supported by policy measures.[2] Facing a deterioration in internally generated funds in 2020 compared with 2019, non-financial corporations (NFCs) not only started to hoard cash for precautionary purposes, but also received about €550 billion in government support. Without these measures, corporate savings net of capital depreciation would have been significantly negative in 2020. Total credit to NFCs, used by firms both to avoid a liquidity crisis and to further hoard cash, increased by about €240 billion more in 2020 than in 2019, with the increase being particularly marked in the first half of 2020.[3] Firms' access to credit and their financing conditions received

2 For information on how the fiscal packages have been used to help firms' liquidity needs, see De Santis, R.A., Ferrando, A. and Gabbani, E.S., "The impact of fiscal support measures on the liquidity needs of firms during the pandemic", *Economic Bulletin*, Issue 4, ECB, 2021.

3 Here, we only consider firms' borrowing from banks and their net issuance of debt securities in 2020 compared with 2019.

substantial support from the new targeted longer-term refinancing operations (TLTROs), the pandemic emergency purchase programme (PEPP), government loan guarantees and supervisory measures.[4] Cash holdings rose strongly as firms massively increased their recourse to debt financing to compensate for the decline in earnings. For precautionary reasons, they parked a major part of the funds they obtained in deposits to brace for possible cash shortages and to pre-fund working capital needs, as has also been the case during previous crisis periods.

In addition to policy support measures, firms' own efforts also improved their liquidity conditions. In times of crisis a company's ability to meet its short-term obligations becomes its top priority. An important aspect of liquidity is a company's ability both to sell assets quickly to raise cash, and to swiftly reduce all types of costs and expenditures.[5,6] The latter includes delaying and cancelling investment projects to the extent possible. All in all, NFC cash holdings increased by about €400 billion more in 2020 than in 2019 – also mirroring the increased recourse to credit – with the increase concentrated mainly in the second quarter of 2020. The net outcome of the reduction in costs and investment is reflected in the net lending position (or financing gap) of NFCs (Chart B, panel a). In terms of gross value added, savings increased and investment decreased, leading to net lending increasing and actually turning positive in the second quarter of 2020. The cancellation of investment projects may, however, leave longer-term scars in the economy by hampering future growth potential.

The amount of cash firms have available to pay their interest expenses is currently at comfortable levels. Cash coverage, i.e. the ratio of cash and deposit holdings to gross interest payments, has increased very significantly since 2010 and this increase accelerated during the COVID-19 crisis (Chart B, panel b). Higher cash positions and lower gross interest payments have both played a decisive role. Gross interest payments continued to decline during the pandemic – despite the strong increase in debt – also thanks to the policy response in the form of the PEPP, TLTROs, government loan guarantees and supervisory measures.

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4 For an estimate of the impact of monetary and prudential policies on firms' employment, see Altavilla, C., Barbiero, F., Boucinha, M. and Burlon, L., "The great lockdown: pandemic response policies and bank lending conditions", *Working Paper Series*, No 2465, ECB, September 2020.

5 Euro area firms significantly reduced their granting of loans to the rest of the world in the first quarter of 2020 and of loans to other financial institutions (i.e. financial corporations other than MFIs, insurance corporations and pension funds) in the second quarter of 2020. They also notably reduced their holdings of money market fund shares/units in the first quarter of 2020 and of listed shares in the second quarter of 2020.

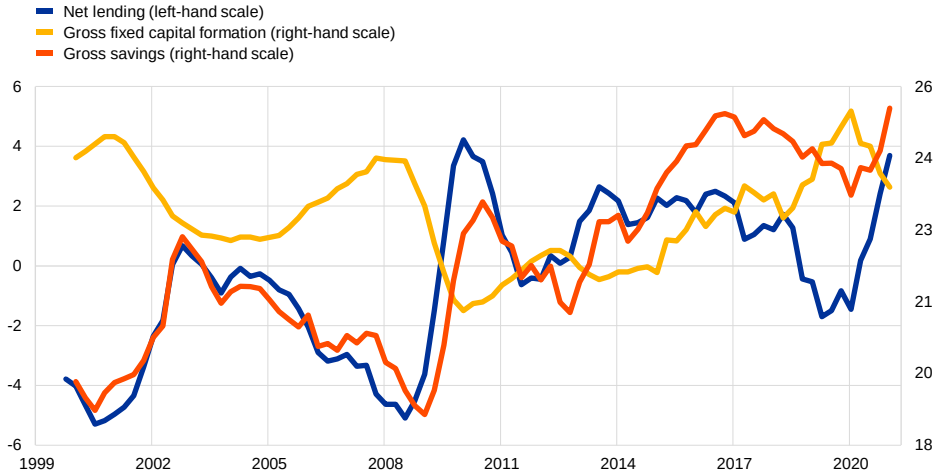
6 See Panetta, F., "Cash still king in times of COVID-19", keynote speech at the Deutsche Bundesbank's 5th International Cash Conference – "Cash in times of turmoil", 15 June 2021. This is also confirmed by the ECB's July 2021 bank lending survey, which reported a steep rise in working capital needs in the initial stages of the COVID-19 crisis. For evidence at the industry and country levels, see "European corporates: Cash-rich sectors get richer", *Economic Insights*, Euler Hermes, 19 April 2021.

Chart B

Non-financial corporate saving/investment balance and cash coverage in the euro area

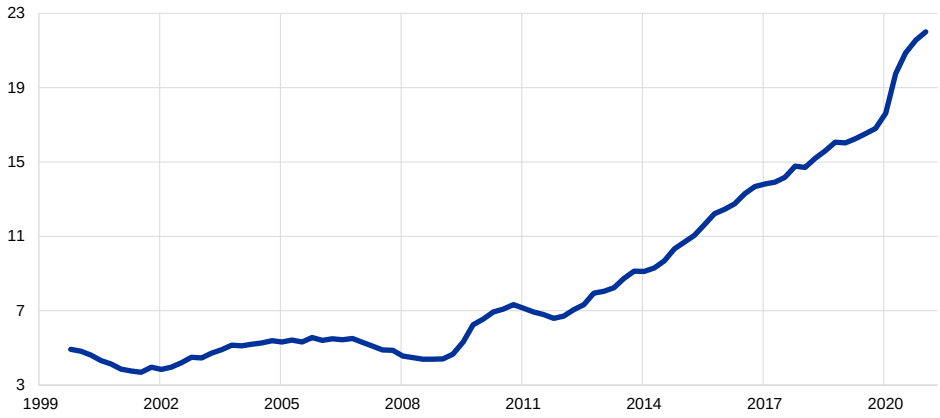
a) Saving, investment and net lending

(four-quarter moving sums as a percentage of gross value added)



b) Cash coverage

(cash as a percentage of four-quarter moving sums of gross interest payments)



Sources: Eurostat, ECB and authors' calculations.
Notes: Cash includes currency and deposits. Gross interest payments are calculated before financial intermediation services indirectly measured. The latest observations are for the first quarter of 2021.

The decline in the euro area NFC gross debt ratio since 2015 has been fully reversed since the COVID-19 pandemic outbreak. Firms' consolidated gross indebtedness has increased by 18.9 percentage points since the end of 2019, reaching 167.0% of their gross value added in the first quarter of 2021, which is only 1.1 percentage points below the record high level reached in early 2015 (Chart C, panel a).[7] 57% of the increase in the gross debt ratio since the end of 2019 can be explained by the marked declines in economic activity and turnover (the denominator effect), while the rest is attributable to greater recourse to debt financing. This implies

[7] For further information, see "Corporate solvency challenges could weigh on sovereigns, households and creditors", *Financial Stability Review, ECB, May 2021*. For developments at the industry and country levels, see "The business insolvency paradox in Europe: Miracle and mirage", *Economic Publications*, Coface, 16 March 2021.

that only part of the increase in the debt ratio can be expected to passively reverse in the coming years if the economy returns to a more normal growth path. However, as the situation normalises, a decline in cash holdings could support a reduction of gross debt, as suggested by net debt developments.

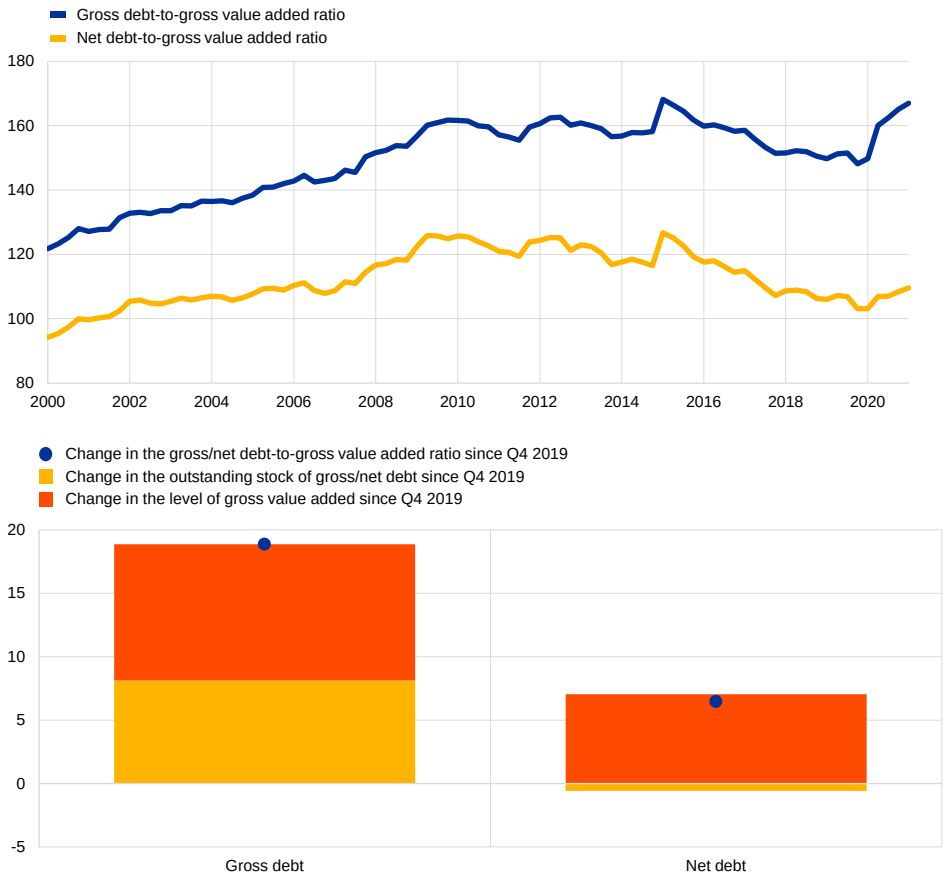
Due to the large amount of accumulated liquid assets, the net debt ratio has increased much less than gross indebtedness. Net debt currently stands below the level it reached at the end of 2019 (Chart C, panel a). Cash can act as a mitigating factor for companies' high debt, provided that it is the firms that have high debt levels that are holding this high level of liquidity. At the peak of the COVID-19 pandemic, large companies increased their cash and debt levels simultaneously (Chart C, panel b). However, for smaller (listed) firms, cash accumulation was not as effective in mitigating their increase in indebtedness. The correlation between cash and debt increases started to normalise after the peak of the COVID-19 pandemic.

Chart C

Non-financial corporate balance sheets in the euro area

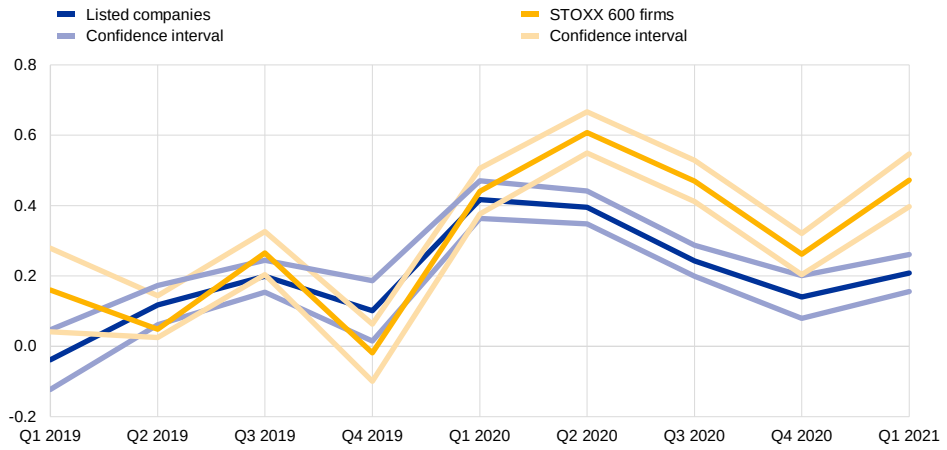
(percentages of gross value added; percentage points)

a) Aggregate level: consolidated debt



b) Firm level: elasticity of gross debt to cash

(x-axis: quarter of observation; y-axis: regression)



Sources: Eurostat, ECB, Refinitiv and authors' calculations.
Notes: Panel a – consolidated gross debt is defined as the sum of total loans granted to NFCs net of intra-sectoral lending, debt securities issued and pension liabilities. Consolidated net debt is defined as consolidated gross debt net of currency and deposit holdings. The latest observations are for the first quarter of 2021.
Panel b – each quarter, firm-level cross-sections of balance sheets are used to compare the change in debt to the change in liquid asset holdings. All variables are measured relative to total assets. Companies in the panel are euro area NFCs that are included in the STOXX 600 index and all listed companies available via Refinitiv. The latest observations are for the first quarter of 2021.

It is likely that the impact of the pandemic on NFC vulnerabilities will be long-lasting, given the high level of heterogeneity in cash holdings between firms. Firms' vulnerabilities – as measured by the composite vulnerability index – increased sharply in the wake of the pandemic, exceeding the levels observed in the aftermath of the global financial crisis (Chart D, panel a).[8] The rise in NFC vulnerabilities was largely driven by declining sales, lower profitability and an increase in leverage and indebtedness. However, since the middle of 2020 the improvement in economic activity and in firms' actual and expected profits has contributed to a decrease in the vulnerability index and an improvement in the corporate leverage situation. The vulnerabilities in early 2021 were close to their average historical levels and their levels at the end of 2019, while the gross debt ratio remained high and cash holdings were mainly concentrated in large listed companies, as highlighted above. However, the vulnerabilities of small and medium-sized enterprises remain high and also mask significant heterogeneity across countries and sectors.[9]

The far-reaching monetary, fiscal and supervisory policy measures have limited the increase in corporate vulnerabilities. These measures have prevented financing and rollover risks from materialising by providing direct liquidity support, improving access to credit, keeping debt servicing costs at historical lows and allowing the maturity of outstanding debt to be extended. A counterfactual exercise also shows that, without these measures, the vulnerability index would have reached a significantly higher value in the middle of 2020, and in early 2021 it would have remained slightly below the level it reached during the European sovereign debt crisis (Chart D, panel a).[10]

The number of bankruptcies declined in 2020, despite the sharp fall in the level of economic activity during the COVID-19 pandemic. In the past, firm insolvencies have been closely correlated with real GDP growth. This relationship broke down during the pandemic (Chart D, panel b). Low debt financing costs, government support measures including bankruptcy moratoria, and the closing of courts prevented the deterioration in corporate health from leading to a surge in defaults at the height of the crisis. However, it cannot be excluded that many firms, particularly those in sectors more affected by the pandemic, could still be forced to

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8 See also Gardó, S., Klaus, B., Tujula, M. and Wendelborn, J., "Assessing corporate vulnerabilities in the euro area", *Financial Stability Review*, ECB, November 2020.

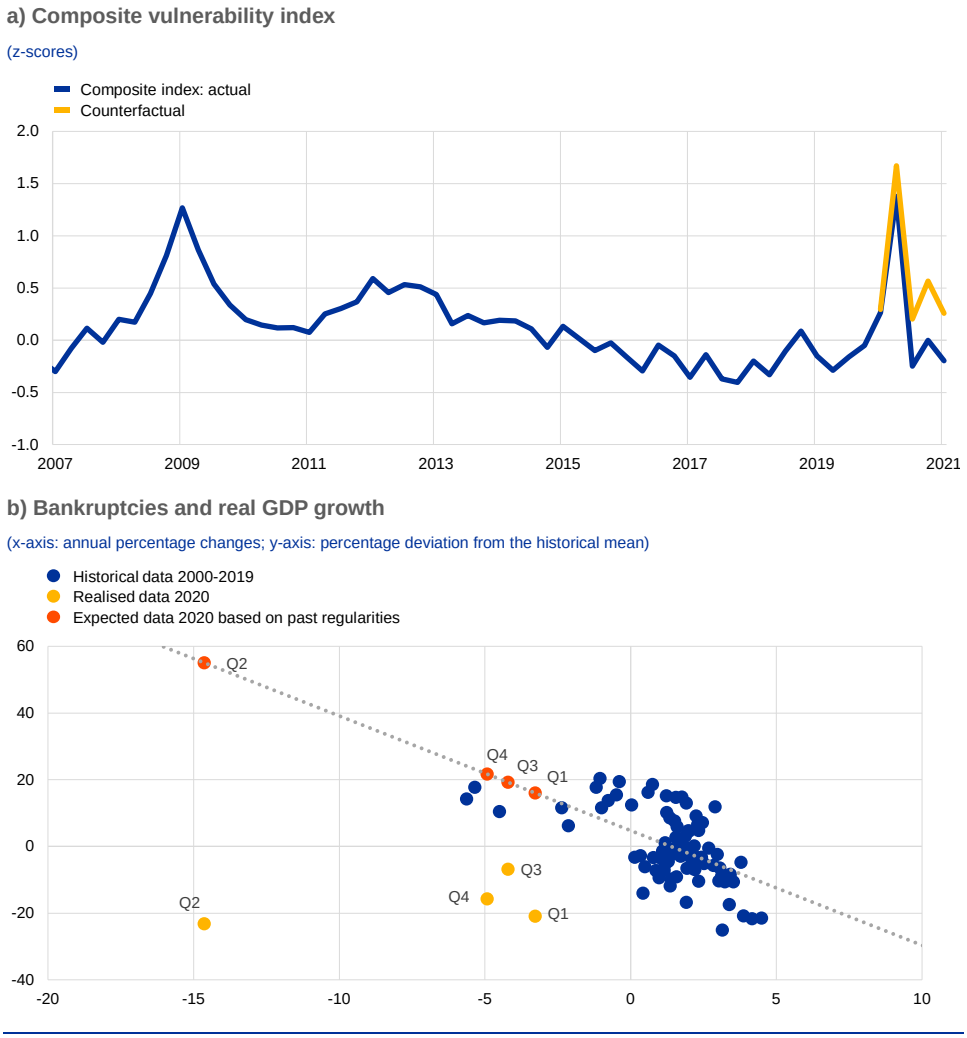
9 See also "Survey on the Access to Finance of Enterprises in the euro area, October 2020 to March 2021", ECB, and Battistini, N. and Stoevsky, G., "The impact of containment measures across sectors and countries during the COVID-19 pandemic", *Economic Bulletin*, Issue 2, ECB, 2021.

10 The counterfactual exercise assumes an economy without firms' cost relief measures from governments, TLTRO III, PEPP, government loan guarantees and supervisory measures. With no cost relief from governments, NFCs would have had to increase their debt financing by €550 billion in 2020 to compensate for their revenue shortfalls. In the corporate vulnerability index this would have translated into higher corporate leverage and gross interest payments and a reduction in internally generated funds. Additionally, in the absence of the additional monetary policy and supervisory measures and government loan guarantees, the effective interest rate on firms' outstanding debt and the share of long-term debt in total debt would have remained at the levels they reached at the end of 2019. These effects were mapped back into the counterfactual index using accounting identities while keeping the shares of interest payments and long-term debt in total debt fixed.

file for bankruptcy, especially if the support measures are lifted too early or bank lending conditions tighten significantly.[11]

Chart D

Corporate vulnerabilities and bankruptcies for euro area NFCs



Sources: Eurostat, ECB, Merrill Lynch, Refinitiv and authors' calculations.
Notes: Panel a – the composite vulnerability index is based on a broad set of indicators along five different dimensions: debt service capacity (measured by interest coverage ratio, corporate savings and revenue generation); leverage/indebtedness (debt-to-equity ratio, net debt-to-earnings before interest, taxes and depreciation ratio, and gross debt-to-income ratio); financing/rollover (short-term debt to long-term debt ratio, quick ratio, overall cost of debt financing and credit impulse); profitability (return on assets, profit margin and market-to-book ratio); and activity (sales growth, trade creditors ratio and change in accounts receivable turnover). Quick ratio is defined as current financial assets divided by current financial liabilities. Credit impulse is calculated as $CI_t = 100 * ((C_t - C_{t-1}) / GDP_{t-1} - (C_{t-4} - C_{t-5}) / GDP_{t-5})$, where C is the notional stock of total credit granted to NFCs and GDP is nominal gross domestic product at market prices. NFCs' total credit is defined as total liabilities of NFCs minus equity issued by NFCs. The indicators are standardised by transforming them into z-scores, i.e. they are converted into a common scale with a mean of zero and a standard deviation of one. Composite sub-indicators are computed for each of the five dimensions by taking the simple arithmetic average of the respective underlying z-scores of the individual indicators. Finally, the overall composite indicator is obtained by equally weighting the composite z-scores of the five sub-categories. Positive values indicate higher vulnerability, negative values indicate lower vulnerability. The latest observations are for the first quarter of 2021.
Panel b – expected data for 2020 based on a linear interpolation of the past relationship between bankruptcies and real GDP. The latest observations are for the fourth quarter of 2020.

To summarise, the COVID-19 pandemic has had a marked impact on corporate health in the euro area. Firms made a substantial effort to build up their cash

[11] There is some evidence, though, that the longer-term scarring effects of epidemic crises are smaller than those of financial crises or wars. See Martín Fuentes, N. and Moder, I., "The scarring effects of past crises on the global economy", *Economic Bulletin*, Issue 8, ECB, 2020.

buffers which, coupled with massive support from the monetary, fiscal, and supervisory authorities, averted a liquidity crisis. At the same time, non-financial corporate profitability, operating efficiency and solvency came under pressure during the lockdowns. Looking ahead, the uneven high level of gross and net indebtedness across countries, sectors and firm size could limit the strength of economic growth over the medium term and increase the risk of a rise in firm defaults.

4 The impact of supply bottlenecks on trade

Prepared by Erik Frohm, Vanessa Gunnella, Michele Mancini and Tobias Schuler

Shipping disruptions and input shortages are leading to considerable bottlenecks in global supply chains. During the recovery phase of the coronavirus (COVID-19) pandemic, households increased their purchases of certain products, such as electronics and home improvement equipment, which caused a stronger-than-expected surge in demand, especially in some sectors. This rise in demand coupled with events beyond the reasonable control of suppliers (owing to force majeure), such as coronavirus outbreaks in ports, accidents at plants and adverse weather conditions, led to bottlenecks in the transport sector and caused shortages in specific inputs such as plastics, metals, lumber and semiconductors.[1] As inventories fell at the onset of the pandemic owing to the running-down of stocks and shortages of inputs resulting from closures and conservative inventory policies, companies struggled to keep up with the swift rise in demand and the replenishing of depleted stocks. This demand and supply imbalance is evidenced by the unprecedented lengthening of suppliers' delivery times, especially in sectors relying on transportation and inputs from sectors experiencing shortages, namely computer and electronic equipment, machinery and equipment, wood products, motor vehicles and chemicals. Overall, in June the global PMI suppliers' delivery times index dropped to an all-time low (meaning longer delivery times) since records began in 1999.

Shipping volumes have recovered since the trough in mid-2020 (Chart A). In the first half of 2021, temporary disruptions, such as the Suez Canal incident in March, led to severe strains in global shipping but did not halt the positive growth dynamics, as reflected in the global (total) and European North Range ports' throughput indicators. European air cargo traffic was more severely affected by the pandemic as a result of the unprecedented reduction in passenger flights, which decreased cargo capacity.[2] However, by the start of 2021 air cargo traffic had once again reached its pre-crisis level thanks to firms partly switching from sea freight to air transport.

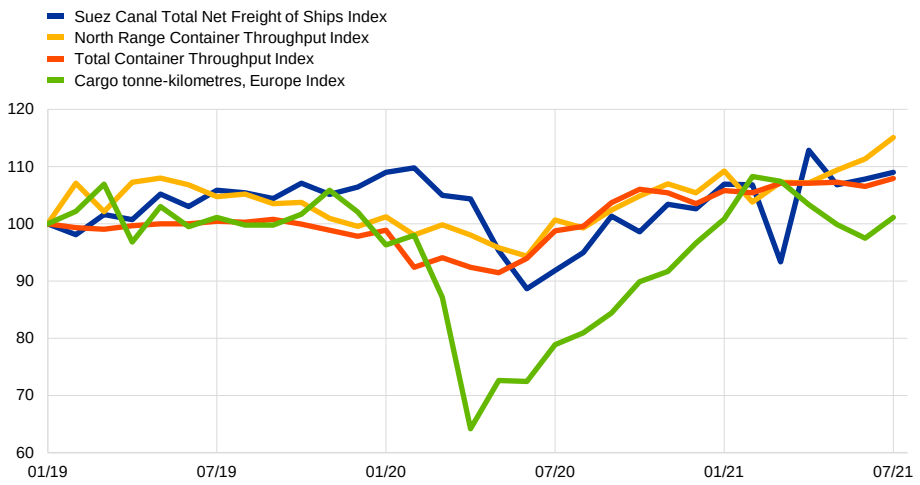
1 See the box entitled "What is driving the recent surge in shipping costs", *Economic Bulletin*, Issue 3, ECB, 2021; and the box entitled "The semiconductor shortage and its implication for euro area trade, production and prices", *Economic Bulletin*, Issue 4, ECB, 2021.

2 Companies tried to mitigate the drop in cargo capacity by converting passenger aircraft into freighters and continued to use passenger aircraft capacity to carry cargo in cabins. Nevertheless, total available capacity fell dramatically in 2020, as evidenced by Chart B.

Chart A

Shipping and air cargo volumes

(seasonally adjusted indices: January 2019 = 100)



Sources: Suez Canal Authority, RWI/ISL, IATA and ECB staff calculations.
Note: The latest observations are for July 2021.

The shipping routes experiencing the most severe strains are those from Asia to North America and from Asia to Europe (Chart B), leading to extraordinary increases in shipping costs.[3] Shipping capacities on the Asia to North America route rebounded more strongly from the pandemic than on the Asia to Europe route, partly on account of increased capacity driven by the robust recovery pattern observed in the United States. Given the relatively inelastic supply of shipping capacity and disruptions in the transport sector, spot (short-term) container freight rates for Asian outbound routes have soared to record levels, particularly for routes to North America.[4] This has also led to a redirection of capacity towards this more lucrative route at the expense of other routes.[5] The shipping business relies mainly on fixed long-term contracts. In the current environment, the negotiation of new long-term contracts has probably been affected, resulting in a remarkable, albeit less strong, increase in freight rates for long-term contracts than for contracts based on spot rates.[6]

3 The HARPEX, an index of global container shipping costs, was more or less stable at comparatively lower levels in the years running up to the outbreak of the COVID-19 pandemic. However, in the first quarter of 2021 it surged above its last peak, which dates back to the second quarter of 2005, and by the third quarter it had reached a level more than twice as high as that last peak.

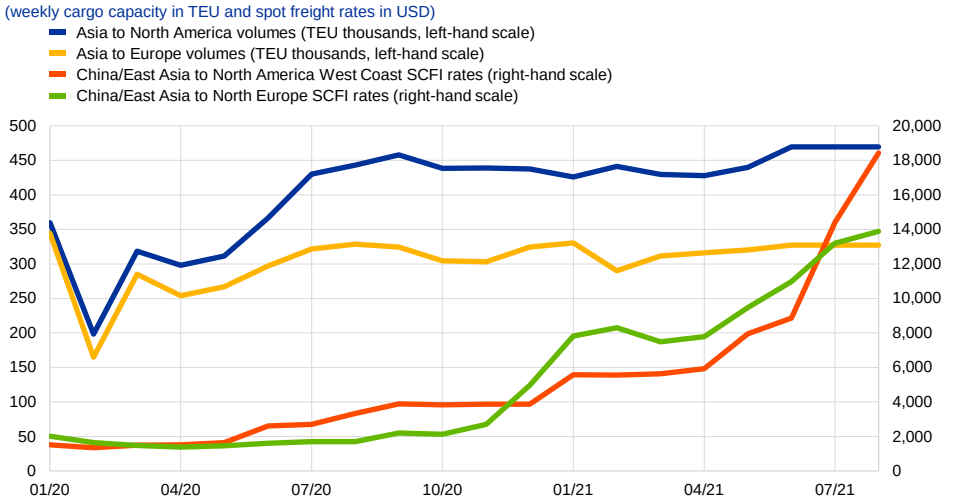
4 According to an econometric analysis based on a structural vector autoregressive model, the rise in shipping costs at the start of 2020 was driven by supply constraints, while the increase at the end of 2020 was due mainly to the strong recovery in global demand. For further details, see the box entitled "What is driving the recent surge in shipping costs", *Economic Bulletin*, Issue 3, ECB, 2021.

5 See Khasawneh, R. and Xu, M., "China-U.S. container shipping rates sail past $20,000 to record", Reuters, August 2021.

6 See Sand, P., "Container shipping: records keep falling as industry enjoys best markets ever", BIMCO, June 2021.

Chart B

Shipping capacities and freight rates

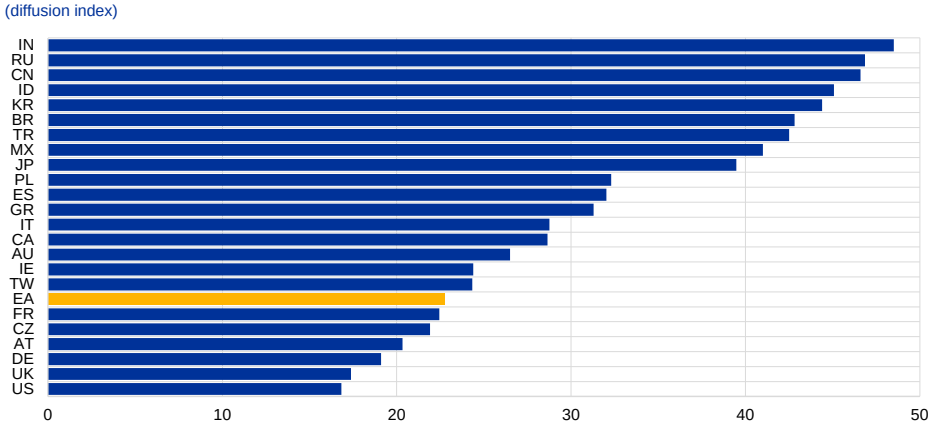


Sources: CTS, Bloomberg, Freightos and ECB staff calculations.
Notes: "TEU" stands for "twenty-foot equivalent unit of cargo capacity" and "SCFI" stands for "Shanghai Containerized Freight Index". The latest observations are for August 2021.

Euro area and EU countries are among those countries most affected by the shipping and input-related bottlenecks, as shown by the PMI suppliers' delivery times index. Chart C shows that suppliers' delivery times remained lengthy in almost all countries in August, with EU countries, the United States, the United Kingdom and Taiwan being particularly affected. The country ranking reflects a multitude of factors: (1) product composition tilted towards affected industries (e.g. automotive for the euro area, electronics in Taiwan); (2) strong demand conditions; (3) severity of transport and logistics issues; (4) specific adverse events, such as extreme weather conditions in some countries; (5) inventory policies (e.g. China's stockpiling of chips and metals).

Chart C

Suppliers' delivery times by country



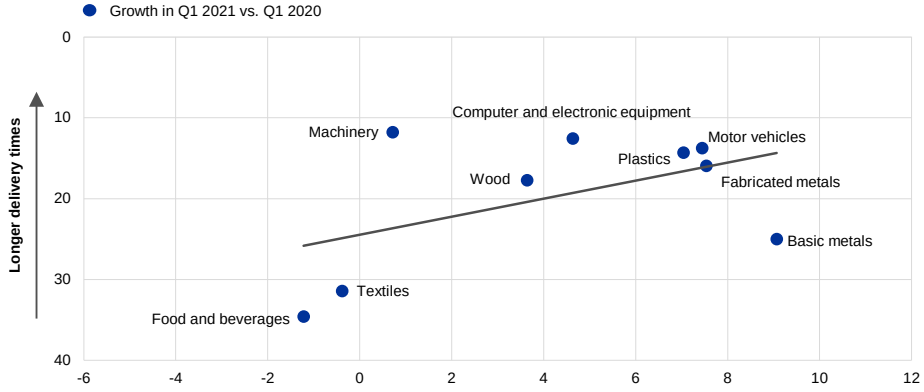
Source: Markit.
Notes: The chart shows the values for August 2021. The lowest-ranked country is the country with the longest suppliers' delivery times. "EA" stands for "euro area".

In the euro area, export sectors that experienced the fastest recovery are facing higher supply shortages (Chart D). In particular, exports of motor vehicles, electronics and fabricated metals, which had expanded considerably up to the first quarter of 2021 compared with the first quarter of 2020, were affected by supply constraints which slowed the continued expansion of these sectors. This underlies the role played by strong demand in the lengthening of suppliers' delivery times. The delays also extended to the machinery sector, which relies on electronic equipment and fabricated metals as inputs.

Chart D

Extra-euro area exports and suppliers' delivery times by sector

(year-on-year percentage growth in values, PMI diffusion index)



Sources: Eurostat, Markit and ECB staff calculations.
Notes: A smaller value on the vertical axis indicates a longer delivery time. For exports the values are for the first quarter of 2021 and for suppliers' delivery times the values are for May 2021. The regression line represents the relationship between the values of suppliers' delivery times and the growth of these sectors between the first quarter of 2020 and the first quarter of 2021.

An empirical analysis utilising country-level panel data identifies and quantifies the impact of supply bottlenecks on export growth beyond the role played by demand conditions. Monthly growth rates of export volumes for a panel of 23 countries are regressed on a measure approximating bottlenecks. The PMI suppliers' delivery times index is used to capture the extent of supply bottlenecks, and imports of intermediate inputs from sectors experiencing bottlenecks are used to measure each country's exposure to supply disruptions. To assess the impact on export growth, the PMI index, the share of imported inputs from sectors experiencing bottlenecks and their interaction are included in a regression (with country and time fixed effects) to account for the effects of supply chain disruptions. Country-specific PMI indices of new export orders (to measure foreign demand) and lags in the dependent variable are also included.[7] Moreover, only countries whose PMI suppliers' delivery times deviate substantially from the average level of the index are considered to be materially affected by the bottlenecks. This set-up makes it possible to verify whether the bottlenecks in imported inputs are having a negative impact on export growth. In a nutshell, a country's exports are expected to be negatively affected by lengthy suppliers' delivery times and this impact is expected to be

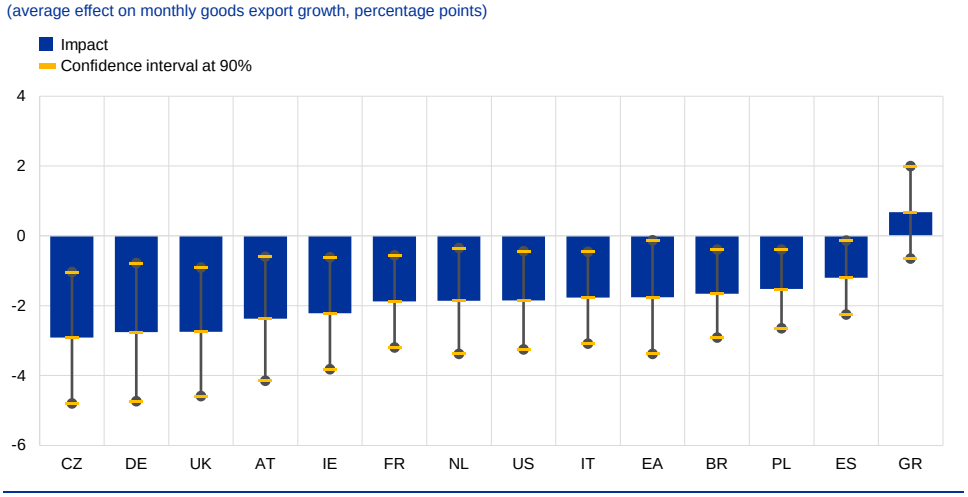
[7] Asian Development Bank input-output tables are used to compute the share of directly and indirectly imported inputs from sectors experiencing bottlenecks in relation to total imported inputs. Sectors affected by supply disruptions are machinery, electrical and optical equipment, transport equipment, inland transport, water transport, air transport and other transport activities.

magnified when the share of intermediate input imports from sectors experiencing bottlenecks is higher.

The estimates confirm that supply bottlenecks have negatively affected goods export growth, and the impact is greater for countries that have larger exposure to the sectors experiencing bottlenecks. Chart E highlights the effects of the supply bottlenecks across countries. The ranking reflects both the severity of bottlenecks (e.g. the lengthening of delivery times) and the extent of the exposure to the sectors experiencing bottlenecks. Most of the countries are in the EU, with the more adverse estimated effects being on large euro area countries and non-euro area EU countries, the latter most likely being affected by supply chain linkages in severely affected sectors (e.g. the automotive sector).

Chart E

Impact of supply bottlenecks on affected countries



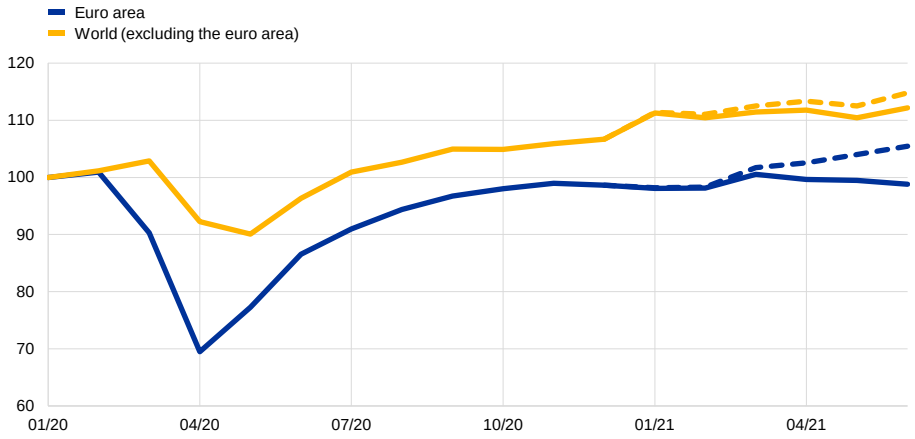
Sources: CPB, Markit, Asian Development Bank multi-regional input-output tables and ECB staff calculations.
Note: "EA" stands for "euro area".

The estimated cumulated shortfall for the level of goods exports amounts to 6.7% for the euro area and 2.3% globally. Chart F shows the counterfactual evolution of extra-euro area and world exports (excluding the euro area). According to the analysis, euro area goods exports would have been 6.7% higher if they had not been affected by supply bottlenecks. Global goods exports (excluding the euro area) would have been 2.3% higher. Although consumers have started to rebalance their purchases towards services as economies have gradually reopened, supply-side disruptions are not yet showing signs of normalising. In addition, the resurgence of COVID-19 cases in Asia is putting further pressure on shipping and cargo handling, as well as on industries already strained by supply bottlenecks, such as the semiconductor and automotive sectors.

Chart F

Estimated goods export losses

(index: January 2020 = 100)



Sources: CPB, Markit, Asian Development Bank multi-regional input-output tables and ECB staff calculations.
Note: The dotted lines show the estimated evolution of exports in the absence of supply bottlenecks.

5 EU emissions allowance prices in the context of the ECB's climate change action plan

Prepared by Giovanna Bua, Daniel Kapp, Friderike Kuik and Eliza Lis

In its climate change action plan, the ECB committed to accelerating the development of new models and conducting theoretical and empirical analyses to monitor the implications of climate change and related policies for the economy.[1] As a first step in its detailed roadmap of climate-related actions, the ECB envisages the inclusion of technical assumptions on carbon pricing in Eurosystem/ECB staff projections.[2] Complementing the current technical assumptions in this way will provide the basis for expanding economic models used in the projections. Against this backdrop, this box summarises the genesis and basic features of the EU emissions trading system (ETS), the system setting the carbon price in the EU.

The EU ETS is the market on which EU emissions allowances – each giving the holder the right to emit one tonne of carbon dioxide (CO2) equivalent – are traded. It constitutes a key EU policy tool for cutting greenhouse gas (GHG) emissions, covering approximately 10,000 companies in the power sector and manufacturing industry as well as airlines operating between airports located in the European Economic Area (EEA). All in all, around 40% of the EU's GHG emissions are subject to the EU ETS. In July 2021, a revision of the EU ETS was proposed in the context of the ambitious "Fit for 55" package, which aims – together with other policy measures – to cut 55% of all GHG emissions by 2030 compared with 1990 levels.[3]

The EU ETS is a "cap and trade" system, where a cap is set on the total amount of GHGs that can be emitted annually by the economic actors covered by the system. The level of the cap determines the number of emissions allowances available in the system and is being reduced over time with the aim of enforcing a gradual decline in emissions and achieving carbon-neutrality by 2050. Within the limits set by the cap, emissions allowances are allocated to participants either for free or through auctions. Each year, corporations and other economic entities must "return" one allowance for every tonne of CO2 equivalent they emit that year. If a participant's emissions exceed its allocated allowances, it must purchase additional allowances on the EU ETS market.

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1 See "ECB presents action plan to include climate change considerations in its monetary policy strategy", press release, ECB, 8 July 2021. Please also see "Climate change and monetary policy in the euro area", *Occasional Paper Series*, No 271, ECB, September 2021, which summarises staff input into the Governing Council's deliberations in the context of the ECB's monetary policy strategy review.

2 See "Detailed roadmap of climate change-related actions", annex to the ECB press release presenting its action plan to include climate change considerations in its monetary policy strategy, ECB, 8 July 2021.

3 See Commission Communication "'Fit for 55': delivering the EU's 2030 Climate Target on the way to climate neutrality" (COM(2021)/550 final) for an overview of the package; and Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading within the Union, Decision (EU) 2015/1814 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading scheme and Regulation (EU) 2015/757 (COM(2021)/551 final) for the proposed revisions to the EU ETS.

Conversely, if a participant reduces its emissions to below its permitted/allocated levels, it can either keep its surplus allowances to cover future needs or sell these on the EU ETS market.[4]

The EU ETS began operating in 2005 and has been implemented in different "phases", gradually reducing the cap while increasing the scope of the system – geographically, by sector and by type of GHG emissions covered (Table A).[5] While the first two phases were characterised by a large number of free allocations and often also by demand-supply mismatches, in particular due to the great financial crisis starting in 2008, the two more recent phases were accompanied by an increase in the share of auctioned rather than allocated allowances, a harmonisation of rules, a reduction in the annual emissions cap, and market reforms to adjust for oversupply through a backloading of excess allowances, meaning a postponement of auctions without reducing the total number of allowances to be auctioned, and the absorption of allowances into a Market Stability Reserve (MSR). In this respect, the revised EU ETS Directive[6] announced in 2018 entailed a substantial reduction in the emissions allowance surplus.

4 For more detailed information on the EU ETS, see the Carbon Market Reports published annually by the European Commission.

5 For more information on the development of the EU ETS, see "Development of EU ETS (2005-2020)", European Commission.

6 Directive (EU) 2018/410 of the European Parliament and of the Council of 14 March 2018 amending Directive 2003/87/EC to enhance cost-effective emission reductions and low-carbon investments, and Decision (EU) 2015/1814 (OJ L 76, 19.3.2018, p. 3). See also Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC (OJ L 275, 25.10.2003, p. 32).

Table A

The four phases of the EU ETS

PHASE 1: 2005-2007	PHASE 2: 2008-2012
• Geography: EU27 • Cap: no reduction path • Allowances: free • Sectors: power and heat, oil refineries, coke ovens, iron and steel, production of cement, glass, lime, bricks, ceramics, pulp, paper and cardboard • Characterised by oversupply of allowances, with prices collapsing to zero at the end of the phase	• Geography: EU27 + Norway, Iceland and Liechtenstein • Cap: no reduction path • Allowances: mainly free • Sectors: aviation added in 2012 • The financial crisis in 2008 reduced industrial activity and emissions from EU countries, leading to a demand-supply imbalance
PHASE 3: 2013-2020	**PHASE 4: 2021-2030**
• Geography: Croatia joined the EU ETS • Cap: EU-wide cap, reduced by 1.74% each year • Allowances: progressive shift toward auctions; free allowances distributed via harmonised benchmarks ("greener" companies obtain free allowances) • Sectors: carbon capture and storage installations, production of petrochemicals, ammonia, non-ferrous and ferrous metals, gypsum, aluminium, and nitric, adipic and glyoxylic acids (at various thresholds) included • Introduction of market mechanisms to correct for demand-supply imbalances (backloading of excess allowances until 2019-2020, unallocated allowances transferred to an MSR) • Revised EU ETS Directive for the fourth phase entered into force	**In place:** • Geography: the United Kingdom left the EU ETS • Cap: annual reduction factor increased from 1.74% to 2.2% • Doubling of the intake for the MSR (from 12% to 24%) until 2023 • Starting in 2023, allowances held in the MSR are limited, excess volumes become invalid **Proposed under the "Fit for 55" package:** • Cap: reduction factor raised from 2.2% to 4.2% • Allowances: maintaining conditionality for free allowances based on decarbonisation efforts; gradual reduction in free allowances • Sectors: inclusion of maritime transport in the EU ETS • Introduction of a separate emissions trading system for building and transport emissions • Intake of the MSR maintained at 24%

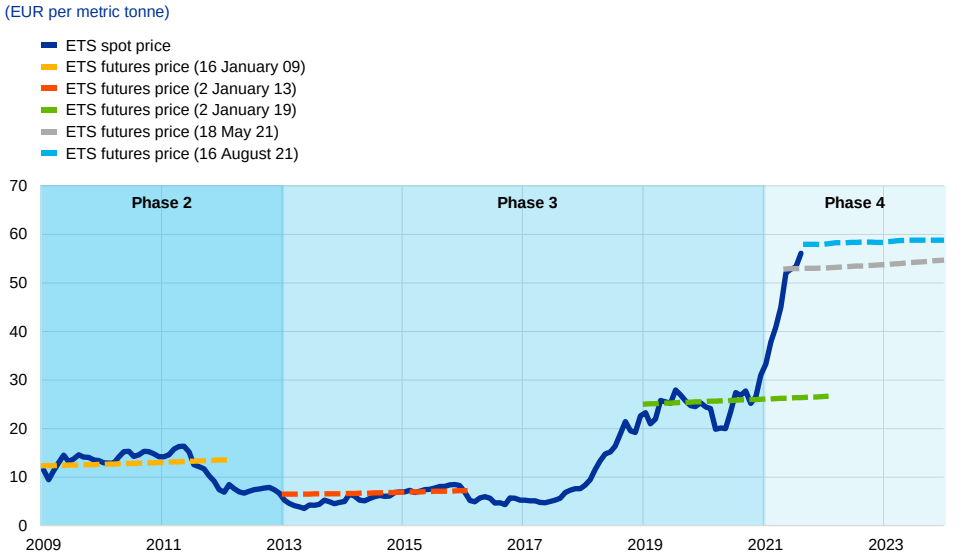
The price of emissions allowances traded on the EU ETS has increased from €8 per tonne of CO2 equivalent at the beginning of 2018 to around €60 more recently (Chart A). Important medium-term price drivers have included the introduction of the MSR and a faster reduction in the number of EU emissions allowances available to businesses covered by the EU ETS. Also, as mentioned above, the 2018 revision of the EU ETS Directive – which set the framework for the fourth trading period from 2021 to 2030 – appears to have increased the credibility of the scheme. More recently, a perceived shift towards more stringent climate policies globally and the likelihood of an earlier end to the free allocation of emissions allowances, as outlined in the "Fit for 55" package, are likely to have contributed to price increases. The announcement of the European Green Deal[7] and subsequent postponements of EU ETS auctions in 2021 also supported higher prices. Beyond these market design changes, the price surge may also reflect a rise in energy demand due to weather patterns and a re-opening of the economy following the ending of coronavirus (COVID-19) pandemic-related restrictions, as well as speculation by some market actors who are taking long positions in the EU ETS market in anticipation of further price increases over the coming months. So far, futures prices have been relatively flat, albeit sloping slightly upward. The main reason for this is that surplus allowances can be kept to cover future needs, creating a strong link between spot and futures prices. The cost of storing such allowances is

7 See "A European Green Deal", European Commission.

small and there is no apparent benefit to holding allowances as there is for physical commodities. Therefore, the main difference between a spot and a future emissions allowance is the opportunity cost of money paid for the spot allowance.[8]

Chart A

EU emissions allowances – ETS spot and futures prices



Sources: Refinitiv, Bloomberg and ECB calculations.
Notes: Yearly EU ETS futures prices are calculated as averages of the quarterly futures prices for any given year. Latest observation: August 2021 for EU ETS spot prices (monthly data) and December 2023 for EU ETS futures prices (quarterly data).

So far, emissions allowance prices are likely to have affected only HICP energy inflation – in particular electricity prices – owing to free allowances in other sectors and the still limited sector coverage. In 2020, across countries, the majority of allowances for industrial installations in the manufacturing sector and EEA aviation were allocated effectively for free, while the majority of emissions allowances for fossil fuel combustion were auctioned (Chart B). The recent spike in emissions allowance prices is seen as one cause of recent increases in electricity prices in some euro area countries. This is particularly the case where electricity prices are not, or only partly, regulated and where households opt for variable tariffs.[9] In other countries, electricity prices are likely to react with a delay due to price regulation or are less affected due to the use of low-carbon electricity generation.[10] In the longer term, the direct impact of emissions allowance prices on inflation will also depend on the pace of decarbonisation, including the transition from

8 There is the possibility that the slope of the curve may shift in the future. This could happen, for example, if the currently slightly negative convenience yield turned more negative. This might be the case if holders of physical allowances were concerned about changes to the rules which reduce the value of physical allowances, but not the value of futures contracts. A concern which some market participants appear to have in this respect is that regulators could restrict the right to carry over allowances from one year to the next. See also Bredin, D. and Parsons, J., "Why is Spot Carbon so Cheap and Future Carbon so Dear? The Term Structure of Carbon Prices", *The Energy Journal*, Vol. 37, No 3, 2016.

9 See Pacce, M., Sánchez, I. and Suárez-Varela, M., "Recent developments in Spanish retail electricity prices: the role played by the cost of CO2 emission allowances and higher gas prices", *Occasional Paper*, No 2120, Banco de España, 2021.

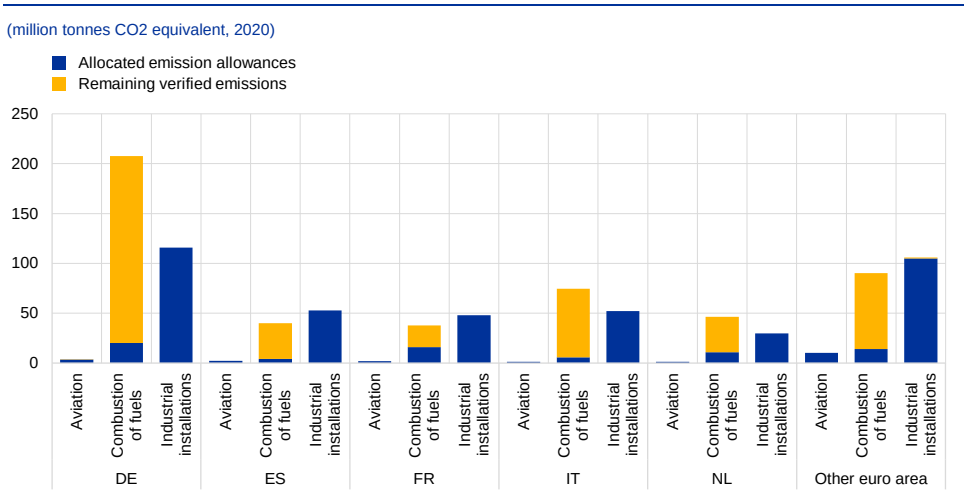
10 The share of electricity generated from low-carbon renewable or nuclear energy varies substantially between different euro area countries, and consequently also the share of electricity produced from fossil fuels. See, for example, Energy, transport and environment statistics, Eurostat, 2020.

electricity produced using carbon-intensive fossil fuels to electricity from carbon-neutral sources. According to Eurostat data, the share of fossil fuels used in electricity generation in the EU decreased from around 45% in 2018 to 40% in 2020, but the share varied substantially across countries. However, this year, coal-fired electricity generation has increased, despite the rise in emissions allowance prices, which probably reflects the currently high gas prices. Overall, the risk that emissions allowance prices under the current EU ETS may translate into significantly higher headline inflation in the near term appears limited, because so far mainly HICP energy has been affected.

Looking forward, in line with the ECB's recently announced action plan, these and other climate change mitigation polices will need to be further explored with regard to their implications for inflation and output. This will require the further development of macroeconomic modelling, which will be essential to support the conduct of monetary policy.

Chart B

Allocated emissions allowances and remaining emissions for which allowances need to be purchased, by sector



Sources: European Environment Agency and ECB calculations.
Notes: Remaining verified emissions are calculated as total verified emissions minus allocated emissions allowances. Emissions from industrial installations are the sum of emissions from all included industrial sectors. The coverage of verified emissions by allocated allowances varies between industrial sectors: some sectors' emissions are not fully covered by their allocated allowances, while other sectors' emissions are below their allocated allowances.

Articles

1 Hours worked in the euro area

Prepared by Vasco Botelho, Agostino Consolo and António Dias da Silva

1 Introduction

This article analyses the evolution of hours worked per worker in the euro area, given their relevance for the labour contribution to the production of goods and services and for the capacity of the labour market to adjust to macroeconomic developments.[1] First, it analyses the factors behind the trend decline in hours worked per worker over the last 25 years. Second, it analyses the importance of hours worked per worker for labour market adjustment during economic expansions and recoveries. The long-term decline in hours worked per worker may affect labour input, depending on its interplay with labour market participation. Cyclical movements in hours worked per worker allow flexibility during downturns, as firms can adjust labour costs by reducing hours instead of employment (labour hoarding) in the event of adverse shocks to the profitability of the firms concerned. The contribution of average hours to the cyclical adjustment affects the measurement of labour market strength and slack. This is an important determinant of the dynamics of wage and price inflation, making it relevant for the conduct of monetary policy.

The decline in hours worked per worker is a long-term phenomenon. Annual hours worked per worker declined by more than a thousand hours in France, Germany, Italy and the Netherlands between 1870 and 1973.[2] Similar developments occurred in other countries, such as Australia, Canada, Japan, the United Kingdom and the United States. The pace of the decline decelerated somewhat after 1973 and became more uneven across countries. There are several reasons for the long-term decline in hours worked per person, with technological progress as a common factor or even enabler.[3] In fact, technological progress over the last 150 years changed the nature of production work and led to the creation of large numbers of

1 Two main data sources for hours worked per worker are used throughout the article. The first is the Eurostat national accounts dataset, which contains information on total employment and total hours worked. Hours worked per worker are obtained by dividing total hours worked by total employment. The second is the European Union Labour Force Survey (EU-LFS). The EU-LFS collects data on "number of hours usually worked per week" and "number of hours actually worked during the reference week". The number of hours usually worked per week comprises all hours including extra hours (either paid or unpaid) that a person normally works. The number of hours actually worked during the reference week covers all hours including extra hours regardless of whether they were paid or not.

2 Data collected in Maddison, A., *The World Economy: A Millennial Perspective*, OECD, 2001. More specifically, annual hours worked per person employed in 1870 were 2,945 in France, 2,841 in Germany, 2,886 in Italy and 2,964 in the Netherlands. By 1973, hours worked per person employed had declined to 1,804 in Germany, 1,771 in France, 1,612 in Italy and 1,751 in the Netherlands.

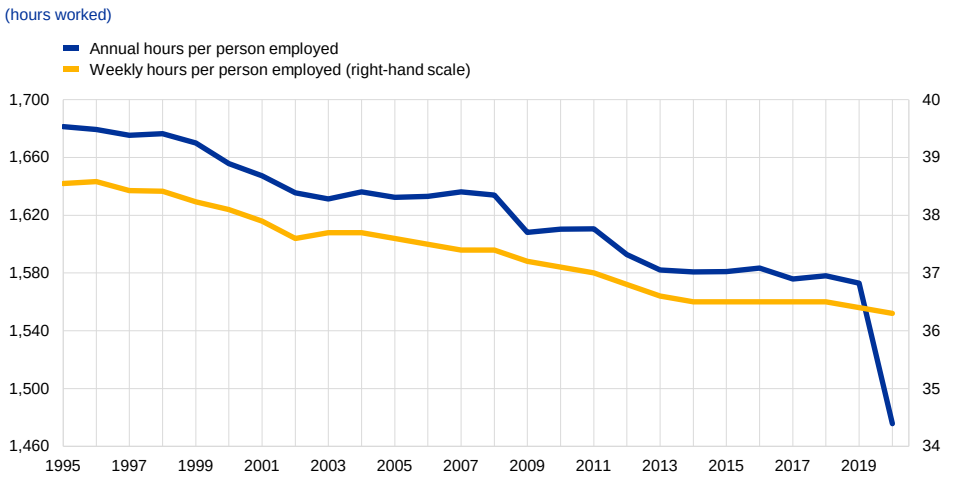
3 Boppart, T. and Krusell, P., "Labor Supply in the Past, Present, and Future: A Balanced-Growth Perspective", *Journal of Political Economy*, Vol. 128, No 1, 2020. The authors argue that the key to falling hours is that the income effect allowed by productivity slightly overweights the substitution effect.

jobs in the services sector. Fast productivity gains allowed wages to increase and the cost of leisure activities to decrease, changing the optimal allocation of time between work and leisure. This article zooms in on the last 25 years for a detailed analysis of the evolution of hours worked per worker in the euro area.

Between 1995 and 2019, annual hours worked per worker in the euro area declined by more than a hundred hours. On a weekly basis, hours worked per worker in the euro area declined from 38.6 in 1995 to 36.4 in 2019 (Chart 1). The decline in hours worked per worker was particularly large in 2020, on account of the COVID-19 pandemic, although most of this decline is expected to be only temporary. Moreover, while the pandemic affected the number of hours effectively worked in the euro area, it has not led to significant changes in the usual duration of the work week for the average worker during 2020, compared to the period preceding the pandemic.

Chart 1

Hours worked per worker



Source: Authors' calculations based on Eurostat data. Latest observation: 2020.
Notes: See footnote 1 for the definition of the two measures of hours worked used in this chart. The discrepancy in the path of hours worked per worker between the two measures in 2020 may reflect the temporary impact of the COVID-19 pandemic on the euro area labour market.

The decline in hours worked per worker in the euro area over the last 25 years is mainly associated with trends in labour force participation and part-time work. From a theoretical perspective, the reduction in hours worked per worker could entail a reduction in hours worked in full-time or part-time jobs as well as an increase in the share of part-time work. The main factor behind the decline in hours worked per worker in the euro area over the last 25 years is an increase in the share of part-time workers. From a household perspective, a higher labour force participation increases aggregate income and may lead to lower average hours worked due to income effects, i.e. the income is higher with two members of the household working, who may decide to work less hours on average.. At the same time, joint taxation systems may discourage the labour supply of second earners,

leading to a higher likelihood of the second earner working part time.[4] Both the income effects and the joint taxation systems may trigger lower hours worked per worker. Moreover, changes in regulations and workers' preferences affect working time. For example, there were changes in working time regulations (e.g. the introduction of the 35 hour week in France in the early 2000s) coupled with preference shifts, with workers calling for a reduction of the weekly hours worked instead of negotiating for higher wages.[5] The increase in labour force participation and in the share of part-time employment have mainly been driven by a higher female labour force participation, as women are also more likely to take up part-time jobs. The increase in female participation results in part from a shift of home production to the market economy (known as marketisation of home production), a phenomenon that is considered to have occurred later in Europe and to a more limited extent than in the United States.[6]

Developments in hours worked per worker are important to gauge the strength of the euro area labour market over the business cycle. The fallout from the global financial crisis and the euro area sovereign debt crisis has had a lasting effect on labour input as measured by total hours worked. During the crisis period, labour hoarding by reducing hours worked limited the increase in unemployment in the euro area. The adjustment in hours worked is an important part of any comprehensive analysis of the strength and timing of labour market recoveries, as the unemployment rate may not fully reflect the state of the labour market. For example, the number of hours worked per worker became even more important for the capacity of the labour market to adjust to the coronavirus (COVID-19) pandemic, as euro area countries deployed job retention schemes to protect employment (Chart 2).[7]

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4 For explanations on hours worked per worked based on taxation, see, for example, Prescott, E.C., "Why Do Americans Work So Much More Than Europeans?", *Quarterly Review*, Federal Reserve Bank of Minneapolis, Vol. 28, No 1, 2004; Ohanian, L., Raffo, A. and Rogerson, R., "Long-term changes in labor supply and taxes: Evidence from OECD countries, 1956-2004", *Journal of Monetary Economics*, Vol. 55, Issue 8, 2008, pp. 1353-1362; and Bick, A., Brüggemann, B., Fuchs-Schündeln, N. and Paule-Paludkiewicz, H., "Long-term Changes in Married Couples' Labor Supply and Taxes: Evidence from the US and Europe Since the 1980s", *Journal of International Economics*, Vol.118, Issue C, 2019. See also Eckstein, Z. and Wolpin, K.I, "Dynamic Labour Force Participation of Married Women and Endogenous Work Experience", *Review of Economic Studies*, Vol. 56, No 3, 1989, pp. 375-390.

5 This includes more flexibility in terms of the duration of the work week and annual leave plans. Other regulations facilitated the use of part-time work, for example the Framework Agreement on part-time work (Directive 97/81/EC).

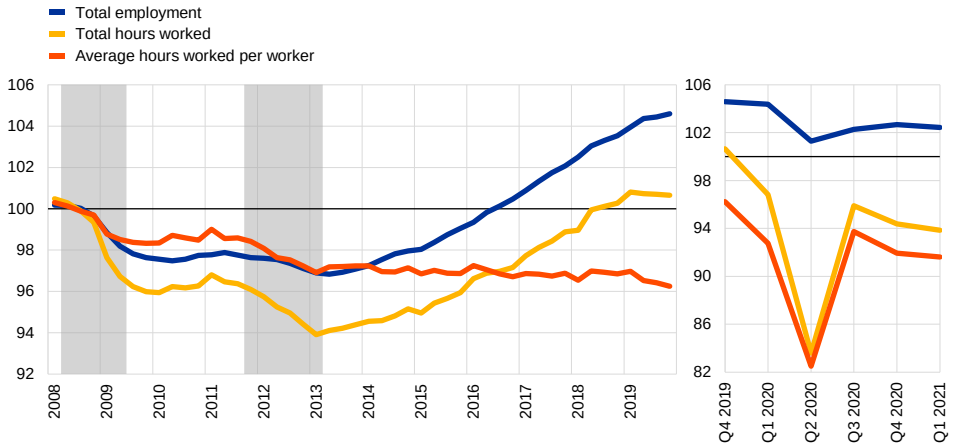
6 Marketisation of home production refers to the shift of traditional household production to the market. This includes, for example, food preparation, childcare, elderly care and house cleaning. See, for example, Freeman, R.B. and Schettkat, R., "Marketization of household production and the EU-US gap in work", *Economic Policy*, Vol. 20, No 41, 2005, pp. 5-50; Fang, L. and McDaniel, C., "Home hours in the United States and Europe", *The B.E. Journal of Macroeconomics*, Vol. 17, Issue 1, 2017, pp. 1-27; and Bridgman, B., Duernecker, G. and Herrendorf, B., "Structural transformation, marketization, and household production around the world", *Journal of Development Economics*, Vol. 133, Issue C, 2019, pp. 102-126.

7 See the article entitled "The impact of the COVID-19 pandemic on the euro area labour market", *Economic Bulletin*, Issue 8, ECB, 2020.

Chart 2

Hours worked and employment since the global financial crisis

(index, 2008=100)



Source: Authors' calculations based on Eurostat data.
Note: The shaded areas in the left panel represent recessions in the euro area as defined by the CEPR business cycle dating committee. The latest observation is for the fourth quarter of 2019 in the left panel, and for the first quarter of 2021 in the right panel.

2 Long-term developments in hours worked

Structural changes over the last 25 years had a considerable impact on hours worked per worker. These transformations include an increased share of employment in the services sectors, increased female labour force participation, an increased share of part-time work and an ageing society.[8] The increase in labour market participation contributed to higher total hours worked and higher hours worked per capita.[9] However, to the extent that new labour market entrants worked fewer hours, they contributed to a decrease in hours worked per worker. This section analyses developments in hours worked per worker in the euro area in the last 25 years. It concludes that the main driver of the decline is higher labour market participation by women, which is also reflected in an increased employment-to-population ratio.

Hours worked per worker declined across all sectors, while shifts towards services put further downward pressure on this metric. A shift-share analysis shows that most of the secular decline in average hours worked in the euro area is driven by within-sector dynamics, as average hours worked declined in most sectors. However, composition effects play a role, accounting for roughly 20% of the decline in hours worked per worker in the euro area since 1995 (Chart 3). These composition effects are driven by a decline in the employment share of agriculture and industry and a corresponding increase in the employment share of professional services and administrative and support activities. The shift from manufacturing to services is often labelled as the "servitisation" of the economy, with manufacturing

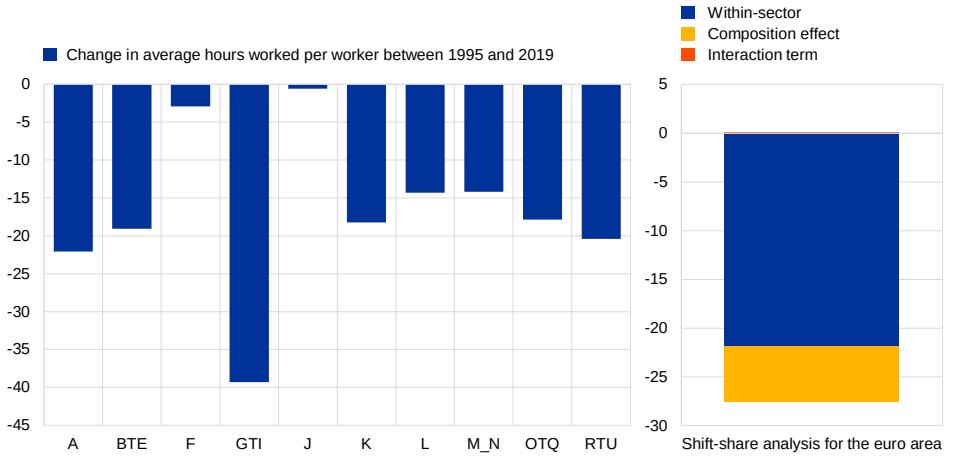
8 Other changes include labour market polarisation. See, for example, Dias da Silva, A., Laws, A. and Petroulakis, F., "Hours of work polarisation?", *Working Paper Series*, No 2324, ECB, 2019.

9 Between 1995 and 2019, annual hours worked per capita in the euro area increased from 696 to 738.

firms changing their business models to start selling both goods and services.[10] More broadly, sectoral differences in hours worked per worker are also related to technological differences across the different sectors and to the different conditions offered by employers across sectors. The technological channel implies differences in hours worked per worker across sectors resulting from differences in the production methods used at the firm level in different sectors. The different conditions offered by employers across sectors is driven instead by changes in labour demand and in the bargaining power of workers as they negotiate their labour contracts.

Chart 3

Decline in hours worked per worker at the sectoral level – shift-share analysis



Source: Authors' calculations based on Eurostat data.
Notes: A – agriculture, BTE – industry, F – construction, GTI – wholesale and retail trade, J – information and communication technologies, K – financial activities, L – real estate, M_N – professional services and administrative and support activities, OTQ – public services, including health and education, RTU – other services, including recreation and personal services.

The decline in hours worked per worker in the euro area was accompanied by a corresponding increase in the employment-to-population ratio. Chart 4 (panel a) compares the employment-to-population ratio with the quarterly hours worked per worker in the euro area. It shows that in the last 25 years, the significant decline in hours worked was accompanied by higher labour market participation (about 8 percentage points), hinting at a substitution effect in the labour market as more people started participating with fewer hours. Taken together, the increase in the employment-to-population ratio and the decline in average hours worked also suggest the existence of income effects and long-term changes in labour supply decisions taken by households in the euro area. Such a substitutability between average hours worked and labour market participation is a feature of the euro area as this is not present in the data for the United States in this period. In the United States, employment and hours worked per worker tend to co-move and depend

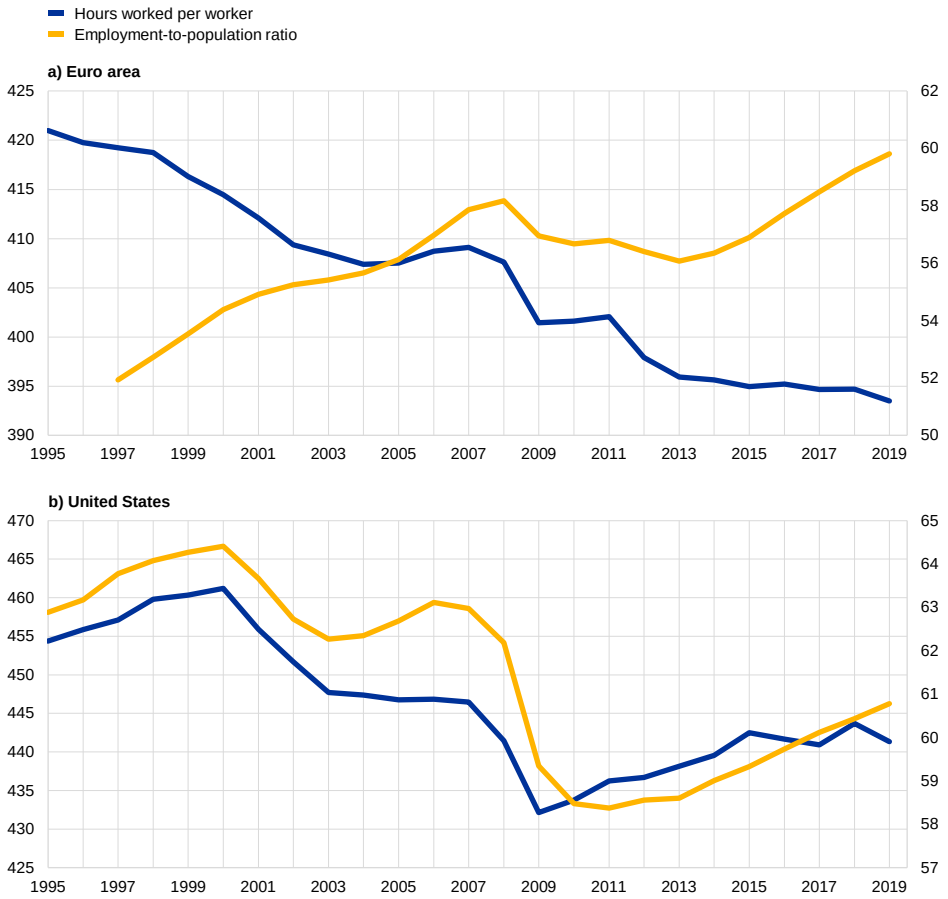
[10] The structural transformation in the industry structure of the economy, from agriculture and manufacturing to services, is documented in the handbook chapter of Herrendorf, B., Rogerson, R. and Valentinyi, A., "Growth and Structural Transformation", *Handbook of Economic Growth*, Vol 2, 2014, pp. 855-941. See also Crozet, M. and Milet, E., "The Servitization of French Manufacturing Firms", in Fontagné, L. and A. Harrison (eds.) "The Factory-Free Economy: Outsourcing, Servitization, and the Future of Industry", Chapter 4, 2017 for further details on the "servitisation" of French manufacturing firms.

mostly on business cycle conditions (Chart 4, panel b).[11] Also, the reduction in hours worked per worker during the last 25 years was smaller in the United States than in the euro area. Such differences highlight the importance of careful analysis of hours worked per worker when assessing the euro area labour market.

Chart 4

Quarterly hours worked per worker and employment-to-population ratio

(left-hand scale: quarterly hours worked per worker; right-hand scale: percentages)



Source: Authors' calculations based on Eurostat data.

The largest euro area countries share a secular decline in hours worked per worker, although the level of hours worked varies and is negatively related to the employment-to-population ratio. Chart 5 shows that countries with relatively fewer hours worked per worker have a relatively higher employment-to-population ratio (e.g. Germany) and countries with higher levels of quarterly hours worked per worker have lower employment-to-population ratios (e.g. Italy and Spain). Beyond differences in the level of average hours worked and employment-to-population ratios, both variables face a common trend across countries. Larger declines in

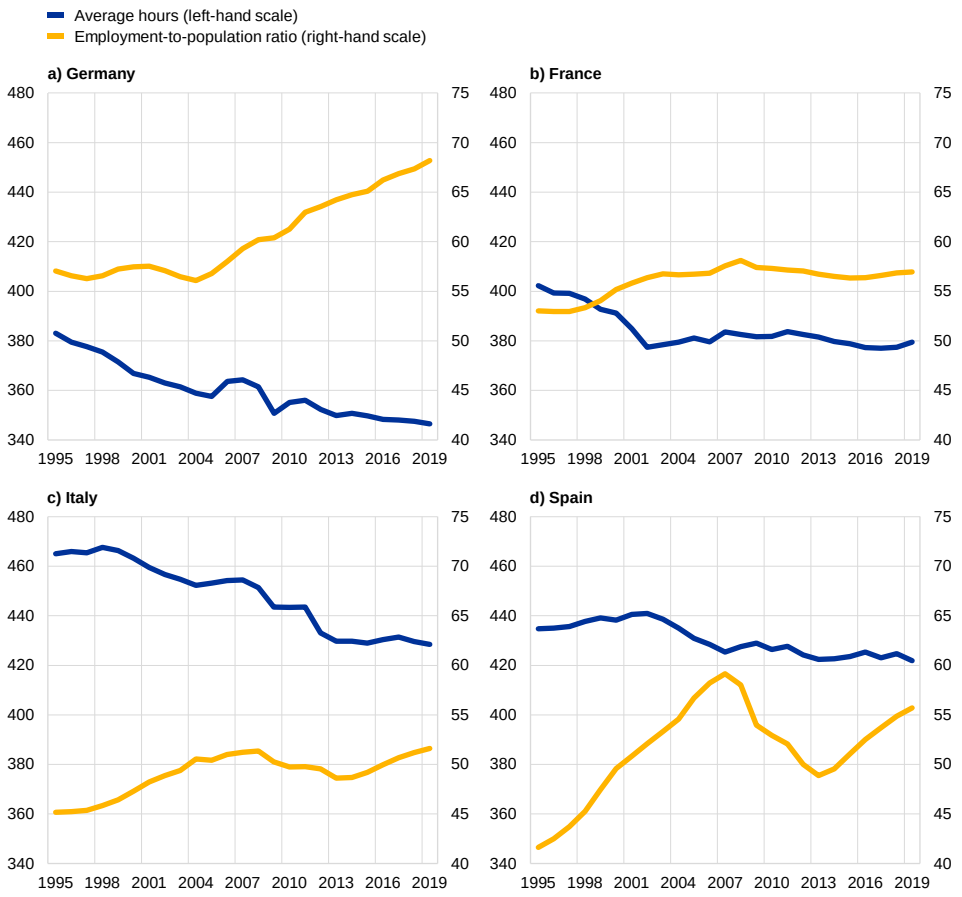
[11] Despite the long-term trends in the employment-to-population ratio and hours worked per worker in the euro area and the lack of those trends in the United States, the cyclical adjustment of average hours worked is more marked for the euro area countries than for the United States. See Dossche, M., Lewis, V. and Poilly, C., "Employment, hours and the welfare effects of intra-firm bargaining", *Journal of Monetary Economics*, Vol 104, 2019, pp. 67-84. for more details on this comparison. The cyclical adjustment of average hours worked in the euro area is considered further in Section 3 of this article.

average hours tend to be associated with larger increases in employment-to-population ratios. France, Germany and Italy contributed the bulk of the decline in average hours worked in the euro area (around 78%) over the last 25 years.

Chart 5

Quarterly hours worked per worker and employment-to-population ratio in the four largest euro area countries

(left-hand scale: quarterly hours worked per worker; right-hand scale: percentages)



Source: Authors' calculations based on Eurostat data.
Note: The latest observation is for the fourth quarter of 2019.

The higher labour market participation of women is the main driver behind the increase in the employment-to-population ratio in the euro area. The euro area labour force participation rate was 59.8% in 2000, rising to 64.6% in 2019.[12] The increase in labour force participation in the euro area was mostly driven by women participating more in the labour market, with their rate increasing by around 9 percentage points over the last two decades to reach 59.4% in 2019. Thus,

[12] The difference between the employment-to-population ratio and the labour force participation rate relates to the number of unemployed workers. While unemployment fluctuates with business cycles, usually decreasing during upturns and increasing during downturns, there has been no major structural change in the unemployment rate in the euro area in the last three decades, as documented in "How does the current employment expansion in the euro area compare with historical patterns?", *ECB Economic Bulletin*, Issue 6/2019. As such, structural changes in labour force participation are the main drivers of long-term movements in the employment-to-population ratio in the euro area.

increased female participation contributed 90% of the increase in labour force participation in the euro area between 2000 and 2019.[13]

The increase in female labour force participation is also associated with an increase in part-time employment.[14] Women are more likely to work part-time than men.[15] In the euro area, women make up a disproportionate share of part-time workers, accounting for more than 75% of part-time employment. 29% of employed women and 5% of employed men worked part-time in 2000, rising to 36% of employed women and 10% of employed men in 2019. Most of part-time employment is voluntary and allows for more people to participate in the labour market at any given point in time (see also Chart 16 in Section 3).[16] Yet some institutional features, such as insufficient child care arrangements, may hamper the availability of some workers to work full time.

The increase in part-time employment is the main factor behind the decline in hours worked per worker. Conceptually, hours worked per worker can decrease either when full-time or part-time workers work less hours or when there is an increase in the share of part-time work in the economy. Over the last two decades, the average full-time worker in the euro area saw their average hours worked fall by about half an hour per week, while the average part-time worker saw their average hours worked increase by slightly more than half an hour per week (Chart 6, panel a).[17] These developments did not contribute much to the decline in average hours

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13 The increase in the labour force participation for women in euro area can be linked to several factors, such as: (1) behavioural differences between generations regarding labour supply decisions at the household level, as in Vlasblom, J. and Schippers, J,, "Increases in Female Labour Force Participation in Europe: Similarities and Differences", *European Journal of Population*, Vol 20, 2004, pp. 375-392 (2) the marketisation of home production, as described by Buera, F. and Kaboski, J., "The Rise of the Service Economy", *American Economic Review*, Vol 102, 2012, pp. 2540-2569, Ngai, R. and Petrongolo, B., "Gender Gaps and the Rise of the Service Economy", *American Economic Journal: Macroeconomics*, Vol 9, 2017, pp. 1-44, Bridgman, B., Duernecker, G., and Herrendorf, B., "Structural transformation, marketization, and household production around the world", *Journal of Development Economics*, Vol 133, 2018, pp. 102-126 and Reimers, P., "Industry Structure and the Composition of Men's and Women's Productive Time", *mimeo*, 2020; (3) changes in labour market institutions, as argued by Cipollone, A., Patacchini, E., and Vallanti, G., "Female labour market participation in Europe: novel evidence on trends and shaping factors", *IZA Journal of European Labor Studies*, Vol 3, 2014 and Kelly, S., Watt, A., Lawson, J., and Hardie, N., "Disentangling the drivers of labour force participation by sex – a cross country study.", *CEPR Discussion Paper 15661*, 2021; or (4) changes in tax wedges on second earners and single parents, as discussed in Bick, A. and N. Fuchs-Schundeln, "Taxation and Labour Supply of Married Couples across Countries: A Macroeconomic Analysis", The Review of Economic Studies, Vol 85, 2018, pp. 1543-1576, and Bick, A., Brüggemann, Fuchs-Schundeln, N., and Paule-Paludkiewicz, H., "Long-term changes in married couples' labor supply and taxes: Evidence from the US and Europe since the 1980s", Journal of International Economics, Vol 118, 2019, pp. 44-62.

14 In the EU-LFS, the distinction between full-time and part-time work is generally based on a spontaneous response by the respondent. The main exception among euro area countries is the Netherlands, where a 35-hour threshold is applied.

15 The reasons for taking up part-time work differ between men and women. According to data from the EU labour force survey, the two most important reasons for men to work part-time are "Person could not find a full-time job" and "Person is undergoing school education or training". For women, the single most important reason is "Looking after children or incapacitated adults", followed by "Person could not find a full-time job" and "Other family or personal reasons".

16 Changes in regulations were an important element in the increase in part-time work. Other regulation affecting working time appears to have been less important, as there is no significant long-term difference between usual and actual hours worked, which could indicate an increase in annual leave days.

17 The patterns shown in Chart 6 (panel a) are also similar when splitting the sample by gender, with the average hours worked by a full-time worker and by a part-time worker remaining broadly constant over time, and with the share of part-time employment increasing over time. Moreover, new hires are more likely to work part-time than workers that remain with their employers for more than one year. In 2019 about 28% of new hires worked part-time, while around 20% of tenured workers worked part-time.

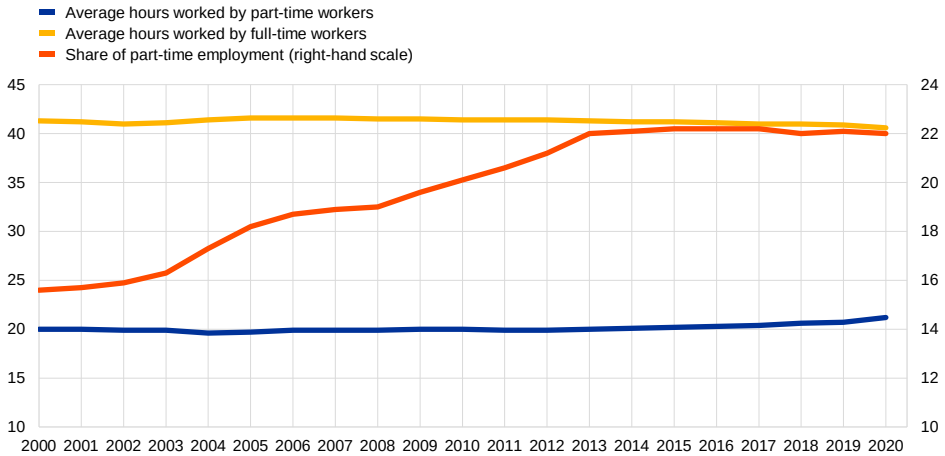
worked in the euro area. By contrast, the euro area has faced a remarkable increase in part-time work, with the share of part-time employment in the euro area increasing from 15.4% in 2000 to 22.1% in 2019.[18] While workers are traditionally more likely to work part-time in some countries (such as Germany or the Netherlands) than in others (such as Italy or Spain), the increase in part-time employment is common to all the larger euro area countries (Chart 6, panel b)).[19]

Chart 6

Relation between average hours worked and part-time employment

a) Average hours worked by part-time and full-time workers, and share of part-time employment

(left-hand scale: hours per week; right-hand scale: percentages)



b) Average hours worked and part-time employment - cumulative change from 2000

(percentages)

Source: Authors' calculations based on Eurostat data.
Notes: Panel a): hours worked for full-time and part-time workers measured as usual weekly hours worked, as recorded in the European Union Labour Force Survey. Panel b): the chart comprises changes in part-time employment and average hours worked to their average values in 2000, with average hours worked taken from the Eurostat national accounts data. The sample in panel b) comprises the period between the first quarter of 1997 and the fourth quarter of 2019, and changes are measured with respect to the average in 2000 for consistency with the data presented in panel a), which is only available from 2000 onwards. Part-time employment is calculated as a share of total employment, and average hours worked are at quarterly frequency.

18 See also "Labour supply and employment growth", *Economic Bulletin*, Issue 1, ECB, 2018.

19 Between 2000 and 2019, the share of part-time employment increased by 10.5 percentage points in Italy, 9.6 percentage points in the Netherlands, 8.8 percentage points in Germany, 6.7 percentage points in Spain and 1.4 percentage points in France.

The negative relationship between hours worked per worker and part-time employment is a long-term feature of the euro area labour market. The growth rate of average hours worked is lower as part-time employment increases during both expansions and recessions. However, this relation is asymmetric with the business cycle, with changes in part-time employment having a stronger impact on the growth of average hours worked during recessions than during expansions. Table 1 proposes a set of reduced-form regressions quantifying the negative relationship between average hours worked and the share of part-time employment. To account for cross-sectoral variability across countries, panel data across all euro area countries are used to estimate the relationship between the year-on-year growth rate of average hours worked and the year-on-year changes in the share of part-time employment. An increase of one percentage point in the share of part-time employment serves to slow year-on-year growth in average hours worked by 0.12 percentage points during expansions and by 0.57 percentage points during recessions.[20] The cyclical conditions of the labour market are also an important factor contributing to the dynamics of average hours worked. Year-on-year changes in the unemployment rate also impact the growth rate of average hours worked asymmetrically with the business cycles. During expansions, decreases in the unemployment rate lead to a higher growth rate of average hours worked.[21] By contrast, increases in the unemployment rate during recessions also lead to increases in the growth rate of average hours worked, as workers who work fewer hours are usually laid off first. This implies that the dynamics of average hours worked also have an important cyclical component on top of the declining long-run trend.

[20] During recessions, workers may be offered fewer hours than they would wish to work, as reflected by an increase in involuntary part-time work. Further details are provided in Section 3.

[21] The results in Table 1 do not necessarily provide a causal relation on the drivers of average hours worked. Instead, they provide a characterisation of the long-run association between average hours worked, part-time employment and the business cycle in the euro area.

Table 1

Quantifying the relation between average hours worked and part-time employment

(dependent variable: year-on-year growth rate of average hours worked, percentages)

	(1)	(2)	(3)	(4)	(5)
PT	-0.277**	-0.169***	-0.140**	-0.121**	-0.121**
Recession x PT					-0.445**
U rate			-0.067**	-0.070**	-0.105***
Recessions x U rate					0.341***
Recessions					-0.627***
Country FE				✓	✓
Observations	88	1,724	1,724	1,724	1,724

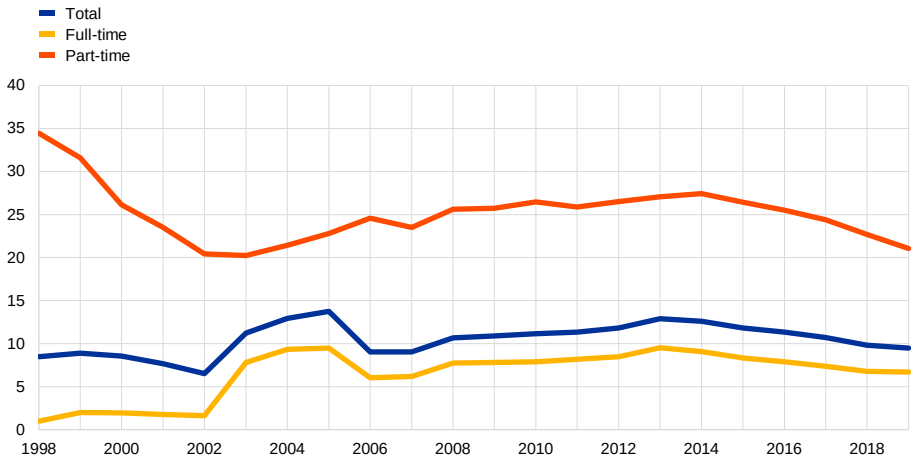
Sources: Eurostat, EU Labour Force Survey and ECB staff calculations.
Notes: ** and *** refer to statistical significance at 5 and 1 percent, respectively. Each regression model estimates the relationship between the year-on-year growth rate of average hours worked and the year-on-year percentage point differences in the share of part-time employment (PT), defined as the ratio between part-time employment and total employment. Model (1) estimates this relationship using time series data for the euro area as a whole, while (2) estimates the same relation using panel data for the 19 euro area countries. Model (3) accounts for the state of the business cycle by augmenting the regression in (2) with each country's unemployment rate. Model (4) introduces additional country fixed effects. Finally, model (5) includes a dummy for the euro area recessions as communicated by the CEPR business cycle dating committee and allows for asymmetric effects of part-time employment and the unemployment rate to the growth rate of average hours worked during expansions and recessions. The panel data regressions in models (2) to (5) are weighted by the employment share of each country. The sample period is from the first quarter of 1995 to the fourth quarter of 2019.

The documented decline in hours worked per worker depends on both demand and supply factors. Most people working part-time do so voluntarily, as they choose to work fewer hours than full-time workers. However, a not insignificant share of part-time workers report doing so because they could not find a full-time job, suggesting demand as a factor determining the numbers of hours worked. The European Union Labour Force Survey (EU-LFS) asks all workers whether they would like to work more hours. In the total sample, about 10% of workers report that they would like to work more hours than they currently do (Chart 7). Among part-time workers, more than one in five would like to work more hours than they usually do.

Chart 7

Share of workers who would like to work more hours

(percentages)



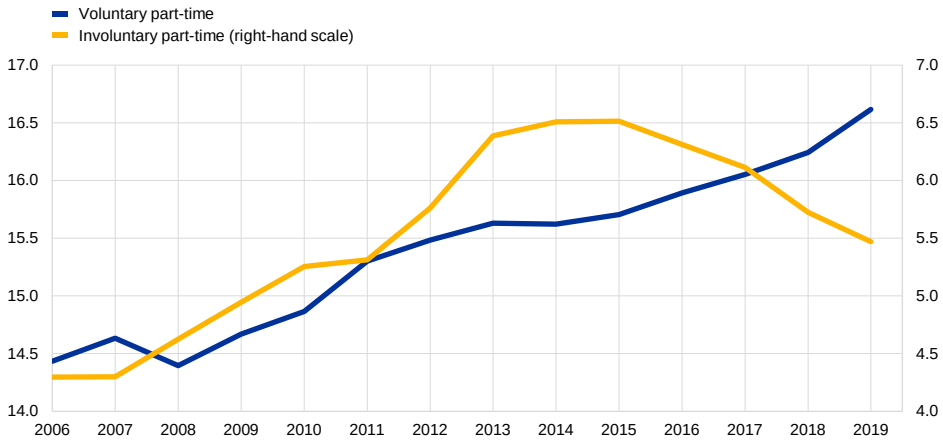
Source: Authors' calculations based on Eurostat data.

Part-time employment features a cyclical component related to "involuntary" part-time employment, which played as a buffer in the adjustment of the labour market during crisis periods. Chart 8 shows the evolution of part-time employment in the euro area between 2006 and 2019, focusing on disentangling the trend increase in "voluntary" part-time employment from the more cyclical "involuntary" part-time employment. "Voluntary" part-time employment reflects increases in the aggregate labour supply stemming from increasing flexibility in the labour market, which allows workers to work if they wish to and to work fewer hours than a full-time job. By contrast, "involuntary" part-time employment comprises all workers who work part-time because they could not find a full-time job. In this way, involuntary part-time captures fluctuations in labour demand, in workers' bargaining power and in the matching efficiency of the euro area labour market. This all means that involuntary part-time employment is considerably more cyclical than voluntary part-time employment. Voluntary part-time employment has been trending upwards over time, without many major cyclical fluctuations. At the same time, involuntary part-time employment in the euro area increased during the global financial crisis and the sovereign debt crisis periods, before falling slowly during the economic expansion that ensued following a stabilisation during the first years of the recovery.[22] The share of involuntary part-time work can also be linked to labour underutilisation beyond that captured by the unemployment rate, with this factor instead being observed in a decline in average hours worked.

Chart 8

Part-time employment: voluntary vs involuntary

(percentage of the number of persons employed)



Sources: Eurostat and ECB staff calculations.
Note: The latest observation is for 2019.

The differences in hours worked per worker across demographic groups are largest for women. To analyse differences across individuals, hours per week usually worked are regressed on five age groups, three education groups, gender, occupation, economic activity sector, country and year. The regression analysis is carried out for the period 1998-2019 using the EU-LFS microdata for workers aged

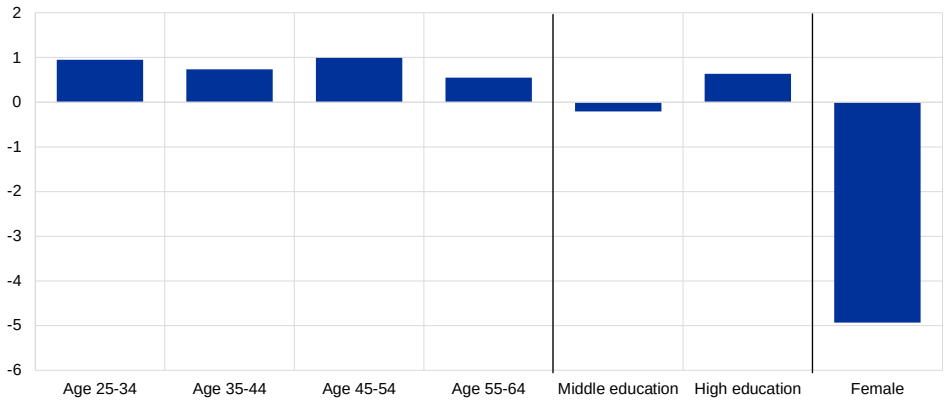
[22] For an earlier assessment of the decline in underemployed part-time workers during the latest economic expansion, see "Recent developments in part-time employment", *Economic Bulletin*, Issue 2, ECB, 2018.

20-65 reporting between ten and 60 hours usually worked per week; the agriculture sector and armed forces are excluded. Chart 9 displays the estimation results for individual characteristics and shows that the more marked differences in weekly hours worked occur for gender, with usual hours worked per week being about five hours less for women than for men. This result is partly explained by the larger share of women working part-time. All age groups work higher hours on average than the 20-24 age group. Among prime-age workers, the 35-44 age group reports slightly lower hours, which may be related to childcare activities. Across education groups, workers with high levels of education tend to work more hours than workers with middle and low levels. These are average results for 1998-2019, and the patterns are relatively stable over this period for gender but differ both for age and education. The age group 20-24 had a larger decline in hours worked than any other age group; and workers with a high level of education had a lower decline in hours worked than workers with low and middle levels of education.

Chart 9

Differences in weekly hours worked by demographic group

(weekly hours in differences from the base category: age 20-24 for age groups, low education for education levels; and male for gender)



Source: Authors' calculations based on Eurostat data.
Notes: Results based on a regression framework with usual hours worked per week as dependent variable and age, education, gender, occupation, sector, country and year as explanatory variables. Estimates statistically significant at 1% level.

The incidence of part-time work varies across demographic groups and activity sectors, and these differences may offer insights on the future evolution of hours worked per worker. Female and older workers have been two important forces driving the increase in the labour force participation in the euro area. It is expected that these two groups will continue to increase their share in the labour market, in view of the large heterogeneity in their labour force participation rates across the euro area countries and the ageing of the population. These developments are likely to continue to contribute to lower hours worked per worker

as these workers are more likely to work part-time. [23] In addition, the incidence of part-time is very different across economic activity sectors. For example, accommodation, human health and social activities, and education are three sectors with an incidence of part-time work above average, which also gained employment shares since the Global Financial Crisis. An increase in employment in sectors with higher shares of part-time work may lead to lower average hours worked per worker in the future. The skill level is another factor explaining the incidence of part-time work. Part-time work increased across all education groups, with faster increases for low and middle-skilled workers than for high-skilled workers, from about 16% in 2000 to 24% in 2020. In the same period, part-time employment among high-skilled workers increased from 13% to 18%. The increasing employment share of high-skilled workers may moderate the downward pressure in hours worked per worker.

Self-employment is another important factor driving the decline in average hours worked in the euro area. Self-employment contributes to the decline in average hours worked directly – with the average self-employed worker decreasing their hours worked by more than the average employee – and indirectly via composition effects in the economy.[24] The direct effects can be assessed by looking at the relative decline in average hours worked across the two groups of workers. While employees reduced their average hours worked by 5.2% between 1995 and 2019, the average self-employed worker reduced their hours by 7% over the same period (Chart 10, left panel). The indirect contribution of self-employment to the decline in average hours worked stems from composition effects, as self-employed workers worked longer hours on average than the average employee (Chart 10, middle panel) and their share in total employment decreased (Chart 10, right panel).

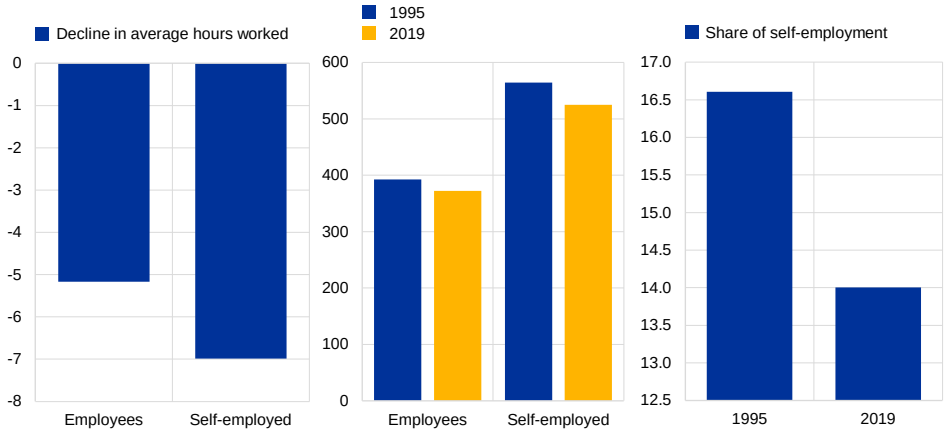
[23] Both young and older workers work on average less hours than prime age workers. In the period of analysis, composition effects arising from change in the age structure of the workforce have had a very small impact on the decline in average hours worked due to offsetting effects. The increasing share of older workers have been counter-balanced by a declining share in younger workers, which is the group that has higher incidence of part-time and work fewer hours. Instead, hours worked per worker declined across all age groups. For the younger cohorts, the main reason for a higher incidence of part-time work is that the "person is undergoing school, education or training". While age composition effects have not played an important role until now, it is expected that in the future ageing will play a downward pressure in average hours worked.

[24] Self-employment accounts for about 25-35% of the decline in hours worked in the euro area, depending on whether the national accounts or the EU-LFS are used. The share of women in self-employment increased from 28% in 2000 to 33% in 2019, as the number of self-employed women increased by 30.5% in this period. While self-employed with employees declined by 17% for men and stabilised for women, own-account self-employment increased by 15% for men and 46% for women. Own-account self-employed people work significantly fewer hours (40.1 hours a week in 2019) than self-employed people with employees (48.8 hours a week in 2019).

Chart 10

Employment share and average self-employed hours worked

(left panel: percentages, middle panel: quarterly hours worked; right panel: percentages)



Source: Authors' calculations based on Eurostat data.
Notes: The left panel shows the percentage decline in average hours worked by employees and self-employed workers between 1995 and 2019; the middle panel considers the average hours worked by employees and self-employed workers in 1995 and 2019; and the right panel depicts the employment share of self-employment in the euro area in 1995 and 2019.

Box 1

Implications of the declining trend in hours worked per worker for potential output

Prepared by Katalin Bodnár and Julien Le Roux

This box examines how changes in trend hours worked per worker have affected euro area potential output growth. Total labour input is defined in terms of total trend hours worked and can be further decomposed into different components such as the size of the working age population, the trend labour force participation rate, the trend unemployment rate (NAIRU) and trend hours worked per worker.

The labour contribution to potential output in the euro area is decreasing over time. According to estimates from the European Commission, labour contribution was around 0.4-0.5 percentage points before the global financial crisis and slowed down to 0.1pp by 2019. This reflects that the growth rate of the working age population has slowed down, while trend hours worked per worker has provided a negative contribution. This has been partially offset by a positive contribution of the rising trend labour force participation rate and the declining NAIRU.

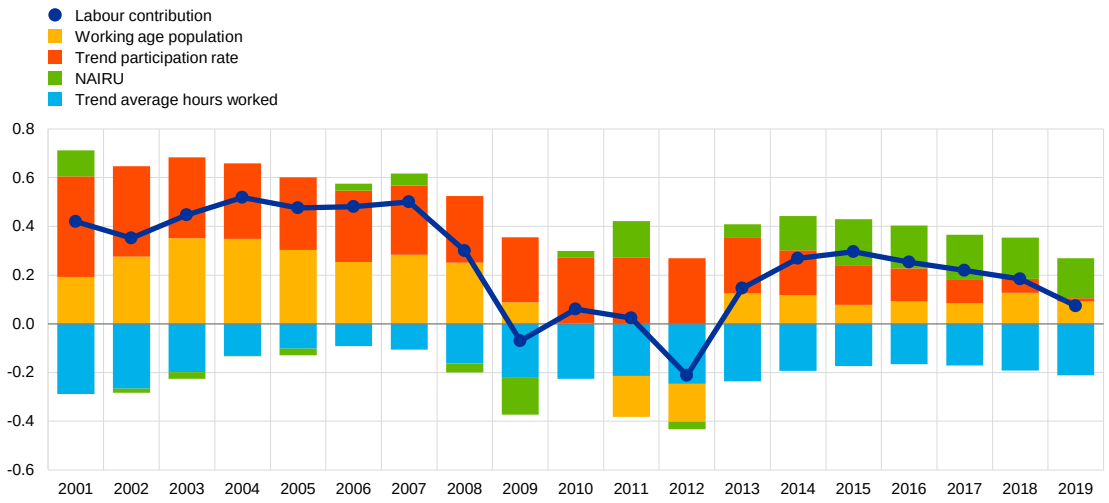
The growth in trend average hours worked has been negative over recent years, averaging -0.3% per year between 2001 and 2019. The decline in trend average hours worked led to an estimated contribution of less than -0.2 percentage points to the annual growth rate of potential output (Chart A). Put in perspective, this is a relatively small and somewhat constant contribution to the annual growth rate of potential output which, according to the European Commission, increased by an average of around 1.8% between 2001 and 2008 and around 0.6% between 2009 and 2012, before improving to around 1% thereafter.[25] However, it is not negligible as a driver of the labour input contribution to potential output growth.

[25] See the article entitled "Potential output in the post-crisis period", *Economic Bulletin*, Issue 7, ECB, 2018.

Chart A

Labour contribution to potential output growth and its components in the euro area

(percentage point contributions)



Source: European Commission.

The declining trend in average hours worked has been accompanied by an increase in the trend labour force participation rate. This is not merely a co-movement, but the two indicators are related. The rise in the trend labour force participation rate is instead driven by a higher labour market involvement of women and older people. The increase in the trend labour force participation rate has offset the negative contribution from trend hours worked per worker, albeit with differences over time.[26] Developments in trend hours worked per worker and labour force participation also relate to the slowing growth of the working age population. The ageing of the euro area population results in an increasing share of pensioners and worsening of the old-age dependency ratio. This has incentivised governments to introduce pension reforms that have been the main driver of the rise in the labour force participation rate[27] and also contributed to the decline in trend hours worked per worker.

Furthermore, the trend decline in hours worked per worker can also influence total factor productivity, in a relation that is not necessarily linear. Lower hours worked may lead to higher productivity, because employee fatigue, which was found to decrease marginal productivity, appears less.[28] But employing a worker implies some fixed costs, for example in terms of training and providing office equipment. Such fixed costs are relatively higher for those whose working hours are lower, resulting in a lower measured productivity. However, these effects are difficult to estimate as characteristics of industries, firms, jobs and individuals may also play an influential role in the evolution of both productivity and hours worked.

26 From 2001 to 2013, the negative contribution to potential growth of trend hours worked per worker represents almost 68% of the positive contribution of the trend labour force. This ratio rises to 180% over the period 2014-19 as the increase in trend labour force participation slows down while that of hours worked per worker continues to decrease at a similar rate to that observed previously.

27 See the article entitled "Drivers of rising labour force participation – the role of pension reforms", *Economic Bulletin*, Issue 5, ECB, 2020.

28 See, for example, Collewet, M. and Sauermann, J., "Working hours and productivity", *Labour Economics*, Vol. 47, August 2017, pp. 96-106

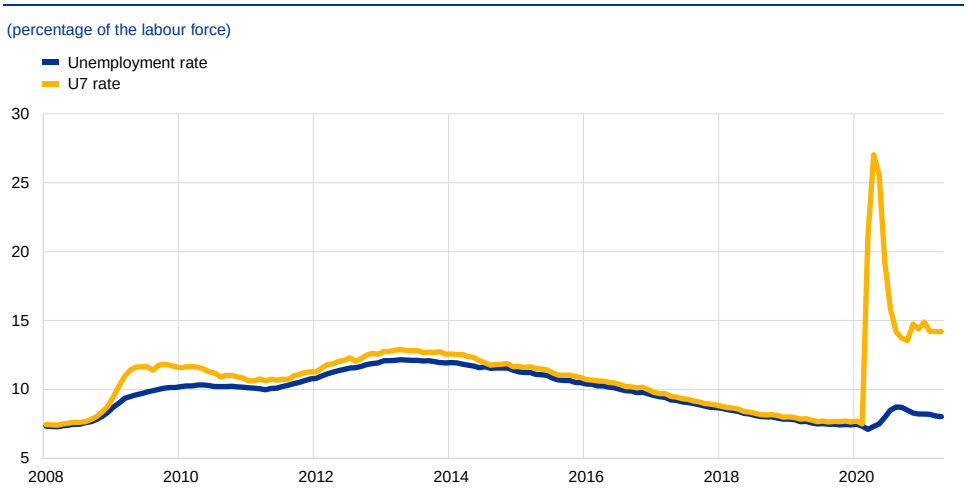
The impact of the COVID-19 shock on trend hours worked per worker is still uncertain. During the pandemic, the adjustments on the labour market occurred mainly through the intensive margin, which has taken a particularly heavy toll. In that context, disentangling trends in hours worked per worker and cycles may be challenging.[29] Furthermore, the future path of trend hours worked per worker will also crucially depend on how the crisis affects the trend participation rate of women and older people in the labour force, and how teleworking impacts trend hours worked per worker.

3 Hours worked during the COVID-19 pandemic

The adjustment of the labour market during the COVID-19 pandemic featured only limited changes in the standard unemployment rate. Measures to contain the spread of the coronavirus severely limited activity in some sectors. This situation would normally lead to a sharp increase in unemployment. However, policy support in the form of job retention schemes helped to protect employment and facilitated labour market adjustment via average hours worked (Chart 11). This led the standard measure of the unemployment rate to be mostly unaffected during the pandemic. However, a broader measure of labour underutilisation, the "U7" rate, can account for both people unemployed and workers in job retention schemes. The U7 rate thus better capture the strong response of the labour market to the sharp contraction in economic activity during the pandemic (Chart 12).[30]

Chart 11

Unemployment rate and U7 rate



Sources: Authors' estimates based on data from Eurostat, Institute for Employment Research, ifo Institute, French Ministry of Labour, Employment and Economic Inclusion, Italian National Institute for Social Security and Spanish of Inclusion, Social Security and Migration.
Notes: The U7 rate is defined as the unemployment rate augmented by the workers in job retention schemes as percentage of the labour force. Workers in job retention schemes are considered employed during the period analysed and thus part of the labour force.

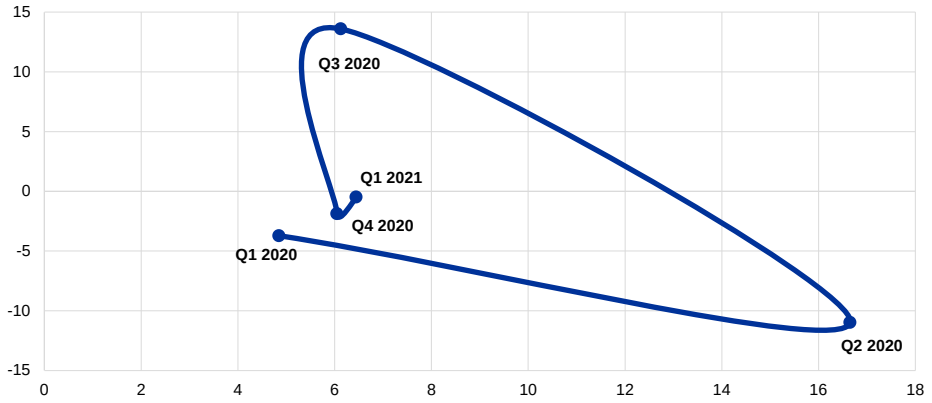
29 See the article entitled "The impact of COVID-19 on potential output in the euro area", *Economic Bulletin*, Issue 7, ECB, 2020.

30 The U7 rate is the sum of the unemployed and workers in job retention schemes, divided by the labour force. For an application of this metric see for example "A preliminary assessment of the impact of the COVID-19 pandemic on the euro area labour market", ECB Economic Bulletin, Issue 5/2020.

Chart 12

Average hours worked and job retention schemes

(y-axis: percentage variation in hours worked per person; x-axis: workers in job retention schemes as a share of total employment)



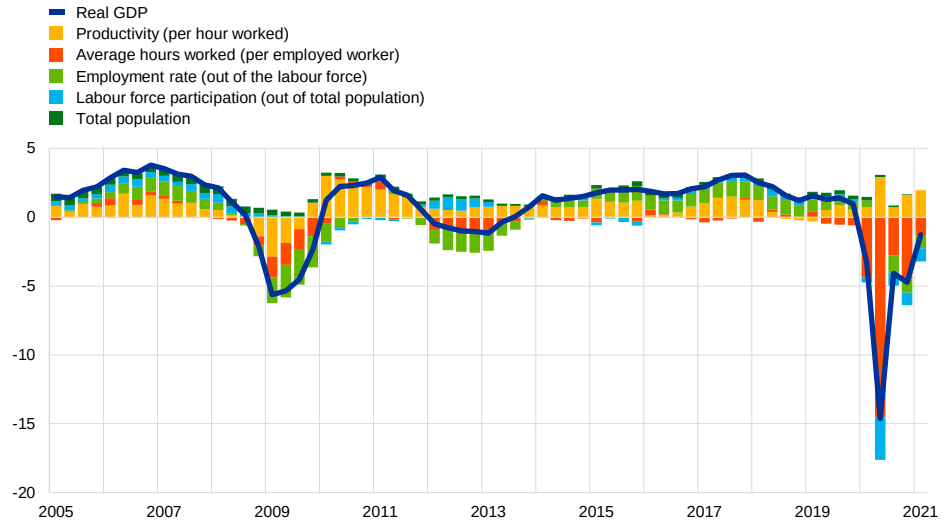
Sources: Authors' estimates based on data from Eurostat, Institute for Employment, ifo Institute, French Ministry of Labour, Employment and Economic Inclusion, Italian National Institute for Social Security and Spanish of Inclusion, Social Security and Migration.

Hours worked per worker played an important role in the adjustment of the labour market during the COVID-19 pandemic. The year-on-year growth rate of real GDP can be decomposed into developments in total hours worked and in labour productivity per hour worked. The developments in total hours worked are further decomposed in Chart 13 to account for the different margins of adjustment in the labour market, such as changes in average hours worked, the unemployment rate, labour force participation and population growth. These different margins can have either a persistent or a cyclical impact on the growth rate of total hours worked. Of these factors, changes in hours worked per worker represent on average a persistent drag on the growth rate of real GDP over time, which is stronger during recessions and milder during expansions. The importance of hours worked per worker increased considerably during the COVID-19 pandemic, boosted by the strong policy support in the form of job retention schemes.

Chart 13

Labour market decomposition of real GDP growth

(year-on-year growth, percentages)



Sources: Eurostat and ECB staff calculations.
Notes: Real GDP is decomposed into labour productivity (real GDP/total hours worked), average hours worked per employed worker, employment rate (total employment/labour force), labour force participation rate and total population. The labour force is defined as the sum of employed and unemployed workers. The contribution of total hours worked to the growth rate of real GDP can be obtained by adding together the contributions of average hours worked, employment rate, labour force participation and total population. The latest observation is for the first quarter of 2021.

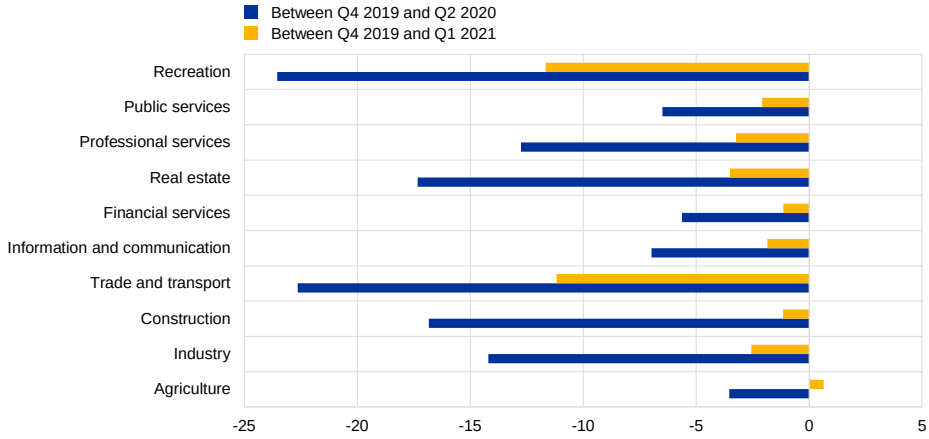
The adjustment in average hours worked varied greatly across sectors, reflecting the nature of the pandemic and subsequent containment measures. In the first half of 2020, average hours worked declined by 14.3%. The decline was much stronger in contact-intensive sectors such as trade and transport and recreation – which also saw their activity substantially curtailed due to social distancing measures – than for sectors such as ICT or financial services, which are less contact-intensive and have a higher proportion of potentially teleworkable jobs (Chart 14).[31] Average hours worked recovered substantially from the lows recoded in the second quarter of 2020. That said, average hours worked were still 5% lower in the first quarter of 2021 than in the last quarter of 2019. The trade and transport and recreation sectors remain the worst affected by the pandemic, with average hours worked in the first quarter of 2021 standing at 11% below the levels seen in the fourth quarter of 2019.

[31] The trade and transport sector includes the wholesale and retail trade, accommodation and food services, and transport sectors, while the recreation sector comprises recreational activities and personal services. Relatedly, see "The impact of the COVID-19 crisis on the euro area labour market for men and women" for an earlier take on the sectoral impact of the pandemic on employment and average hours worked, and "The impact of the COVID-19 pandemic on the euro area labour market", *Economic Bulletin*, Issue 8, ECB, 2020 for a sectoral analysis of potentially teleworkable jobs in the euro area.

Chart 14

Variation in hours worked per worker by sector

(percentages)



Source: Authors' calculations based on Eurostat data.

Job retention schemes facilitated the preservation of employment in these sectors.[32] A great advantage of these schemes is that they help activity to resume swiftly as soon as containment measures are lifted. However, they need to be flexible enough to be adjusted quickly as soon as activity recovers so as to allow labour reallocation across firms.

4 Concluding remarks

The analysis of hours worked per worker play an important role in explaining both the long-term trends and the cyclical fluctuations of the euro area labour market. A secular downward trend in hours worked per worker is mainly related to technological progress, sectoral shifts towards the services sector, changes in labour and tax regulations, increases in labour force participation and the increased preference for part-time jobs. At the same time, cyclical changes in hours worked per worker have provided an important margin of labour market flexibility to withstand adverse shocks to firms' profitability during the global financial crisis, the euro area sovereign debt crisis and the COVID-19 pandemic.

Various factors help to explain the decline in hours worked per worker over the last 25 years, while the future path after the pandemic is uncertain. The increase in the participation rate of women and the related increase in part-time employment, and self-employment explain some of the decline in hours worked per worker over the last 25 years. While hours worked per worker played a prominent

[32] Sectoral data on the number of workers in job retention schemes for Germany, France, and Spain show that job retention schemes have had a widespread usage in the trade and transport sector. In May 2021, around 2.8 million workers in job retention schemes were working in the trade and transport sector, representing 54% of all workers in job retention schemes in these three countries. By country, the number of workers in job retention schemes in these sectors was about 1 million in Germany (43% of all workers in job retention schemes in the country), 1.5 million workers in France (63%) and 300,000 in Spain (66%).

role as a margin of adjustment during the COVID-19 pandemic, it remains unclear whether hours worked will recover to pre-pandemic levels.

The cyclical adjustment of hours worked per worker is a distinct feature of the euro area, making it important for assessing the labour market. The use of part-time contracts and, more recently. The widespread use of job retention schemes means that the standard measure of unemployment is not fully capable of capturing labour underutilisation in the euro area. Consequently, any analysis of the labour market needs to include the intensive margin. Hours worked and the share of (involuntary) part-time employment are thus important metrics to complement standard labour market indicators. Moreover, hours worked per worker in the euro area tend to decline faster during cyclical downturns and then not fully recover during the upturn. The real-time analysis has become more difficult and uncertain as different permanent and cyclical factors are at play in the dynamics of hours worked per worker, which can blur potential scarring effects from recessions.

Labour market heterogeneity measured in terms of full-time and part-time workers is an important factor affecting the Phillips curve. When looking at the wage-unemployment relationship in the euro area, Eser et al. (2020)[33] conclude that the sensitivity of wages to the output gap can be lower to the extent that there are many people underemployed or inactive. Thus, assessing the intensive margin and considering differences across job types may provide a better signal of the strength of the labour market as well as the implications for wages and inflation. In addition, labour market heterogeneity is relevant for income inequality. This is especially the case when either average hours worked or part-time workers are more persistently affected following an economic recession. Hysteresis effects on hours worked can further contribute to a higher income dispersion across workers, as also suggested by Heathcote et al. (2020)[34] for the United States.

The future path in hours worked per worker is difficult to predict, while the balance of factors seems to point to the continuation of the downward trend. The expected increase in labour market participation of female and older workers is likely to exert downward pressure in hours worked per worker. A higher employment share in service sector with higher rates of part-time employment may also lead to lower average hours worked. By contrast, the ongoing upskilling of the labour force may moderate the decline in hours worked per worker as individuals with high education tend to work more hours on average. Preferences regarding the allocation of time will continue to play a key role on the evolution of hours worked.

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33 See Eser, F., Karadi, P., Lane, P.R., Moretti, L. and Osbat, C., "The Phillips Curve at the ECB", The Manchester School, 2020.

34 See Heathcote, J., Perri, F. and Violante, G.L., "The rise of US earnings inequality: Does the cycle drive the trend?", *Review of Economic Dynamics*, Vol. 37/1, 2020.

2 TLTRO III and bank lending conditions

Prepared by Francesca Barbiero, Miguel Boucinha and Lorenzo Burlon

1 Introduction

Targeted longer-term refinancing operations (TLTROs) play a key role in preserving favourable bank financing conditions for households and firms, thereby contributing to inflation reaching the ECB's target of 2% in the medium term. The operations are part of a broad set of complementary policy instruments, which include asset purchases, negative interest rates and forward guidance.[1] Since their inception in 2014, TLTROs have supported the transmission of monetary policy by incentivising lending through their targeting feature and by providing a reduction in bank funding cost, which has been instrumental in avoiding a deterioration in lending conditions that would have otherwise occurred. The third series of the TLTROs (TLTRO III) was introduced in early 2019. The initial announcement of TLTRO III in March 2019 reassured markets about the extension of the pre-existing TLTRO II. The operations were intended to stave off "congestion effects" in bank funding markets that would have otherwise materialised because of the need to replace expiring TLTRO II funds. The operations were recalibrated in September 2019 to preserve favourable bank lending conditions, ensure the smooth functioning of the monetary policy transmission mechanism and therefore further support the accommodative stance of monetary policy. From the start of the coronavirus (COVID-19) crisis, the recalibration of this tool was, thanks to its design and the role of the euro area banking system in the monetary policy transmission mechanism, an integral part of the ECB's policy response to ensure favourable borrowing conditions for firms and households during the pandemic.

TLTRO III provided ample liquidity at attractive rates to address the emergency liquidity needs of households and firms induced by the pandemic. The ECB's monetary policy response to the COVID-19 crisis involved two main tools. First, asset purchases supported favourable financing conditions for the real economy in times of heightened uncertainty, both through an additional envelope under the regular asset purchase programme (APP) and via the launch of the pandemic emergency purchase programme (PEPP). Second, the recalibration of the existing TLTRO III operations helped banks secure funding at favourable terms to support access to credit for firms and households.[2] The Governing Council's decisions of

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1 See Rostagno, M., Altavilla, C., Carboni, G., Lemke, W., Motto, R., Saint Guilhem, A., Yiangou, J., *Monetary Policy in Times of Crisis: A Tale of Two Decades of the European Central Bank*, Oxford University Press, 2021 and the article entitled "The transmission of the ECB's recent non-standard monetary policy measures", *Economic Bulletin*, Issue 7, ECB, 2015.

2 The recalibration of TLTRO III was critically supported by temporary adjustments to the ECB collateral framework. Moreover, it was complemented by the introduction of pandemic emergency long-term refinancing operations (PELTROs), the temporary availability of longer-term refinancing operations with maturity coincident with the earliest available TLTRO III operation after the recalibrations of March and April 2020 (referred to as bridge LTROs), and central bank swap and repo lines across the globe that provided euro and foreign currencies.

12 March[3] and 30 April[4] 2020 have secured the transmission of monetary policy via banks at times of elevated uncertainty and high liquidity needs by expanding banks' borrowing allowance under TLTRO III from 30% to 50% of the eligible loan book (providing an additional leeway of approximately €1.2 trillion) and reducing the interest rate applied on these operations to a rate as low as -1% until June 2021 for banks fulfilling the lending requirements. These decisions also enlarged the set of assets eligible to collateralise the borrowing under TLTRO III and enhanced banks' flexibility of repayment options and participation modalities across operations. The Governing Council's decisions of 10 December 2020[5] further widened the borrowing allowance to 55% and prolonged the period in which banks could secure a rate as low as -1% to June 2022, subject to additional lending requirements until the end of 2021. This served to shelter borrowing conditions from the ripple effects of the pandemic.

The magnitude of the pandemic shock, the broad-based policy response and the attractive design of TLTROs (after the various recalibrations) resulted in one of the largest liquidity injections by the ECB directly into the euro area banking sector, bringing the total uptake to €2.2 trillion as of June 2021, thereby providing substantial support to the euro area throughout the entire pandemic period. The monetary policy response to buffer the impact of the pandemic on borrowing was complemented by policy support from other policy domains, ranging from microprudential and macroprudential policy via capital relief measures, to fiscal policy via extensive use of government guarantees and moratoria. The favourability of TLTRO conditions, together with the broadened eligibility of assets that could be pledged as collateral (see Box 1), the capital space and loan demand reinforced by other policies, enabled euro area banks to participate widely in the TLTRO III programme, leading to the largest participation in Eurosystem refinancing operations so far. The overall take-up exceeded €1.5 trillion after the June 2020 operation and subsequent operations brought it up to €2.2 trillion as of June 2021 (Chart 1). This article studies how, and by how much, this targeted longer-term central bank funding has affected bank lending conditions.

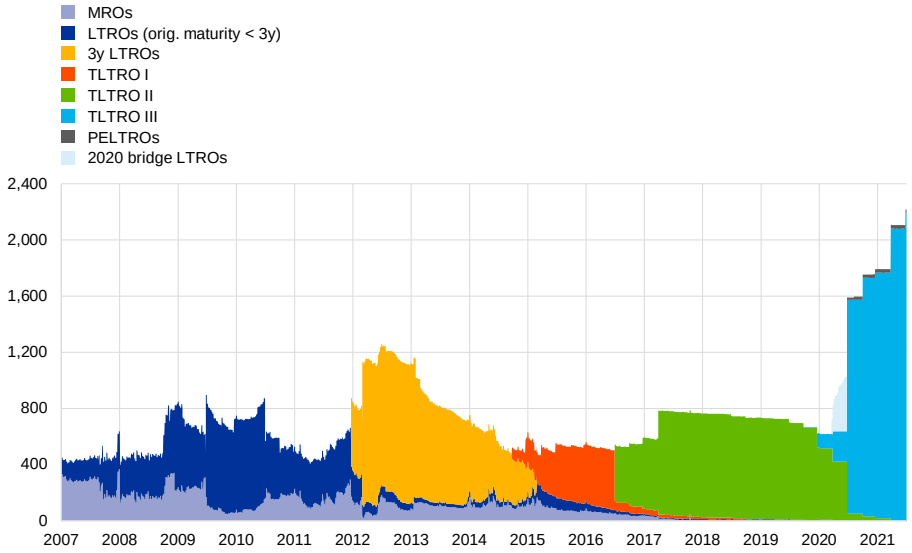
3 For more details, see ECB press release of 12 March 2020.

4 For more details, see ECB press release of 30 April 2020.

5 For more details, see ECB press release of 10 December 2020.

Chart 1
Borrowing from the Eurosystem

(EUR billions)



Sources: ECB and ECB calculations.
Notes: The chart shows developments in borrowing from the Eurosystem broken down into the different lending facilities. "MROs" are main refinancing operations. "LTROs (orig. maturity < 3y)" are longer-term refinancing operations with original maturity below three years. "3y LTROs" are longer-term refinancing operations with a three-year original maturity. "TLTRO I", "TLTRO II" and "TLTRO III" refer to the three programmes of targeted longer-term refinancing operations. "PELTROs" are pandemic emergency longer-term refinancing operations. "2020 bridge LTROs" are longer-term refinancing operations introduced to bridge liquidity needs between the announcement of the TLTRO recalibration in March 2020 and the first subsequent operation in June 2020.

This article is organised as follows. Box 1 sheds light on the role of the collateral easing measures. Section 2 explains how the stimulus from TLTRO III is transmitted via banks to the final borrowers. Box 2 focuses on the programme's impact on money market rates. Section 3 documents the extent to which TLTRO III has eased bank lending conditions, considering its efficiency vis-à-vis other policy measures and the scope for potential side effects. Box 3 discusses the impact of TLTRO III on excess liquidity. Section 4 provides this article's overall conclusions.

Box 1
TLTRO III and collateral easing measures

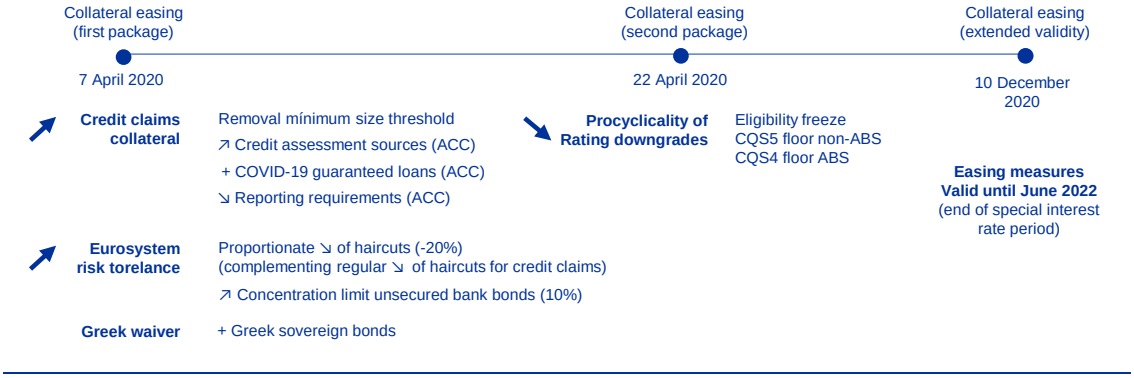
Prepared by Adina-Elena Fudulache and Arturo Diez-Caballero

Collateral easing measures constitute a core element of the ECB's monetary policy response to the coronavirus (COVID-19) pandemic. Since the provision of Eurosystem liquidity is based on eligible collateral, the TLTRO III recalibrations were also accompanied by a comprehensive set of temporary measures aimed at preserving collateral availability by easing certain collateral standards (Figure A).[6] This box assesses the extent to which collateral easing measures have contributed to the large participation in TLTRO III operations. It also examines how these have further created a supportive environment for banks to lend to the real economy. The analysis covers the period between 5 March 2020 and 24 June 2021 (also referred to as the *analysed period*).

[6] See ECB press release of 7 April 2020 and ECB press release of 22 April 2020.

Figure A

Collateral easing measures in response to the coronavirus pandemic



Notes: "ACC" refers to additional credit claims, "ABS" refers to asset backed securities and "CQS" refers to credit quality step as defined in the Eurosystem Credit Assessment Framework.

The large recourse to TLTRO III was supported by a sizeable expansion of mobilised Eurosystem collateral. In anticipation of an increase in their TLTRO III borrowing capacity as of June 2020, and following the implementation of the collateral easing measures, the total collateral value after haircuts pledged by participating banks has significantly increased. This increase, owing to additional collateral mobilisation as well as the reduction in valuation haircuts, is notably observed in (additional) credit claims, covered bonds, and government bonds. At the end of the analysed period, the value of mobilised collateral by participating banks amounted to €2.6 trillion and was €1.3 trillion higher than pre-pandemic levels (+92%). This increase mirrors the parallel TLTRO net take-up of €1.6 trillion (see panel (a) of Chart A).

Collateral easing measures have contributed around 20% to participating banks' increase in collateral positions. ECB estimates indicate that the total value of participating banks' collateral attributable to the temporary easing measures amounts to €240 billion.[7] The largest part of this stemmed from the credit claims collateral category (€180 billion), which was mainly achieved by expanding additional credit claim (ACC) frameworks[8], notably accepting loans covered by public guarantee schemes issued in response to the COVID-19 pandemic.

The expanded possibility of securing TLTRO III funding with collateral that does not qualify as high-quality liquid assets (HQLA) allowed banks to avoid a procyclical retention of liquidity in the face of the generalised liquidity shock that the economy was facing. Participating banks had the means to source market funding using HQLA as collateral and to improve, or at least preserve, their liquidity coverage ratio (LCR) by choosing to collateralise the TLTRO borrowing with non-HQLA. ECB estimates suggest that, at the end of the analysed period, encumbered non-HQLA collateral stood at €1.6 trillion or 74% of participating banks' total central bank funding (panel (b) of Chart A). This translates to an overall increase in the encumbrance of non-HQLA collateral of €1.1 trillion over the analysed period. The encumbrance of large amounts of non-HQLA was facilitated by the pandemic-related eligibility expansion of (additional) credit claims and more incentivised use of non-HQLA through haircut easing.

7 Collateral easing is measured as the difference between the actual value of collateral mobilised and the estimated amount of collateral mobilised, valued at non-pandemic (regular) conditions. Collateral easing measures comprise only the temporary measures taken in response to the coronavirus pandemic, valid until June 2022. The estimates exclude the impact of the softening of certain operational requirements such as the reporting frequency of pools of ACCs.

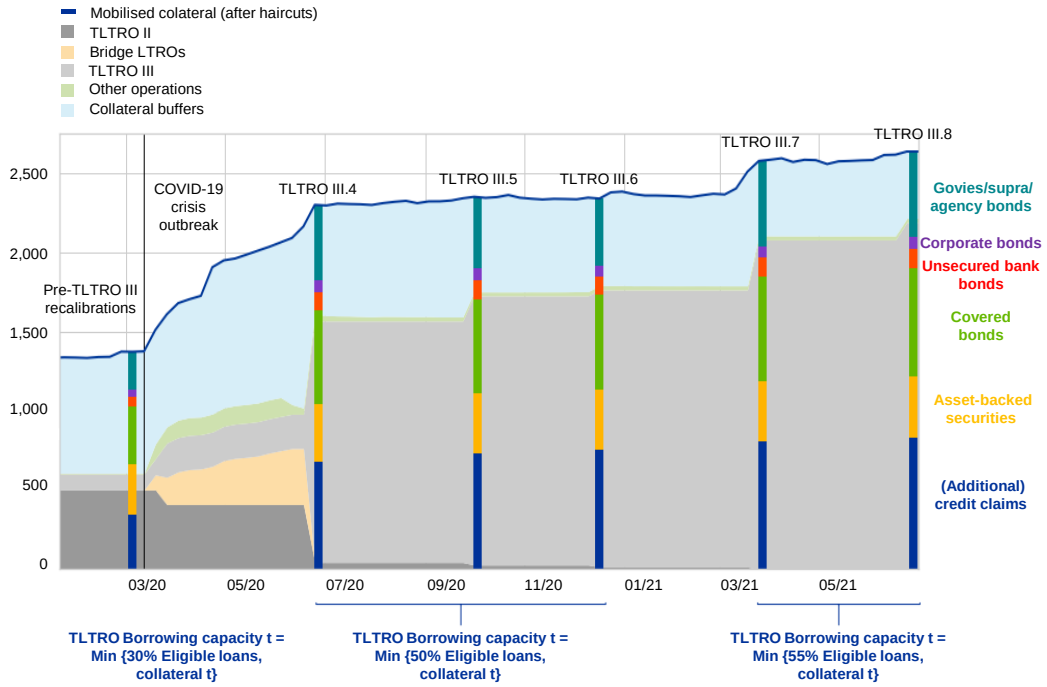
8 For more details on the scope, eligibility criteria and pandemic-related expansions of additional credit claims see the ECB explainer "What are additional credit claim (ACC) frameworks?"

Chart A

Mobilisation of Eurosystem collateral and recourse to Eurosystem credit operations by TLTRO III participants since the pandemic outbreak

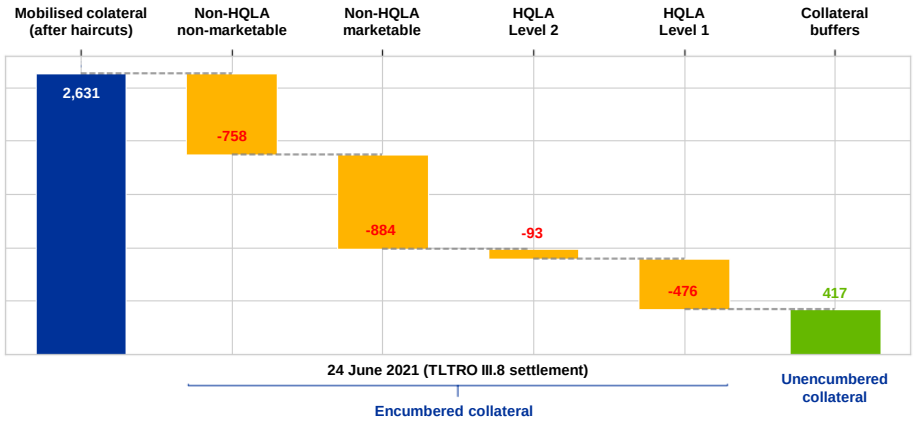
a) Recourse to credit operations and collateral mobilisation

(EUR billions)



b) Collateral encumbrance

(EUR billions)



Source: ECB calculations.
Notes: The bar chart in panel (a) shows the mobilisation of Eurosystem collateral by asset category. The first observation of the bar chart (pre-pandemic outbreak collateral composition) refers to 5 March 2020. The area chart in panel (a) shows mobilisation of collateral by Eurosystem credit operations and collateral buffers (over-collateralisation). Data relate to TLTRO III participating banks up to the June 2021 TLTRO. For panel (b), collateral encumbrance is based on Article 7(2)(a) of Commission Delegated Regulation (EU) 2015/61 of 10 October 2014 to supplement Regulation (EU) No 575/2013 of the European Parliament and the Council with regard to liquidity coverage requirement for Credit Institutions Text with EEA relevance (OJ L 11, 17.1.2015, p. 1), i.e. it assumes that mobilised assets are encumbered in order of increasing liquidity, starting with non-HQLA. The ECB methodology for classifying assets mobilised with the Eurosystem into the relevant LCR liquidity categories (Level 1, Level 2A, Level 2B, non-HQLA) is mainly based on information contained in the ECB's eligible assets database and is similar to the one described in Grandia, R., Hänling, P., Lo Russo, M. and Åberg, P. (eds.), "Availability of high-quality liquid assets and monetary policy operations: an analysis for the euro area", *Occasional Paper Series*, No 218, ECB, Frankfurt am Main, February 2019. Encumbrance is calculated at bank level and aggregated up for all TLTRO III participants. Level 2A and Level 2B collateral are displayed aggregated (HQLA Level 2) and non-HQLA category is further broken down by non-HQLA non-marketable and non-HQLA marketable, with the additional assumption that non-HQLA non-marketable are encumbered first.

2 The transmission of TLTRO III to borrowers via banks

The transmission of TLTRO III to bank lending conditions operates through a variety of channels. TLTROs target bank lending to non-financial corporations and to households for purposes other than housing. The operations also provide a reduction in the funding cost of euro area banks, which activates a bank lending channel that can lead to lower lending rates and higher lending volumes. Moreover, as detailed below, additional channels complement the transmission of TLTROs, stimulating lending and supporting a decrease in borrowing costs for firms and households.

The incentive scheme embedded in the TLTROs stimulates bank lending to specific sectors, leading to increased competition in lending markets. In contrast with standard non-targeted operations, TLTRO III offers more advantageous pricing on borrowed funds; this pricing is conditional on participants achieving lending targets. This increases participants' propensity to lend, especially in situations where uncertainty leads to a risk of tightening in access to funding for banks, which would normally induce them to tighten credit standards. As participants aim to lend more, competitive pressures in lending markets increase, which also induces non-participants to ease lending criteria to protect their market share.[9] The increase in competition is also one of the reasons why lending targets are carefully calibrated based on lending volume projections. Too high a bar to clear in order to achieve favourable TLTRO pricing could induce disproportionally competitive behaviour and potentially encourage excessive risk-taking. At the same time, setting a lending target that is too demanding could discourage some banks from participating and consequently reduce the effectiveness of the programme. At the same time, an insufficiently ambitious lending benchmark would compromise the effectiveness of the targeting feature of the operations.

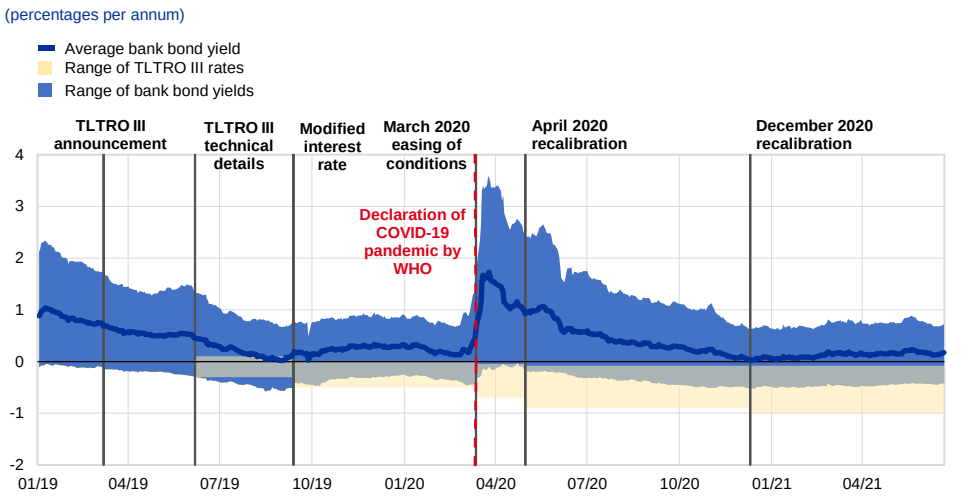
TLTROs provide both direct and indirect reductions in the cost of funding of euro area banks. Bank funding costs have moderated following TLTRO announcements (see Chart 2). TLTROs compress banks' funding costs by offering long-term borrowing from the central bank at attractive rates. This can be used to replace more expensive sources of market funding. The resulting compression in the cost of funding of banks has a direct and an indirect component. For each participating bank, the direct cost reduction stems from the substitution of more expensive funds. For banks not directly participating in the programme, the reduction in the cost of funding is indirect and originates from a positive externality: since banks participating in TLTROs are likely to cancel or postpone their bond issuance, the resulting decrease in bond supply generates a reduction in the external funding cost even for those banks that do not directly borrow under the operations. Since banks operate in a competitive market, this leads to lower lending rates and

9 See 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 & Finance*, Vol. 122, No 105992, Elsevier, January 2021, and Benetton, M. and Fantino D., "Targeted monetary policy and bank lending behavior", Journal of Financial Economics, forthcoming.

increased credit volumes, as borne out by experience of previous TLTROs.[10] For this indirect channel to become active, participation in the programme at the aggregate level must be large, suggesting there is scope for important non-linearities to come into play, especially after the large take-up in the June 2020 operation. In this regard, the collateral policy of the Eurosystem and the decision to increase the borrowing allowance are key to enabling a large and broad-based participation, as discussed in Box 1.

Chart 2

Bank bond yields since 2019



Sources: ECB, iBoxx, Centralised Securities Database (CSDB) and ECB calculations.
Notes: The chart displays the weighted average (dark blue line) and the p10-p90 range of euro area bank bond yields (shaded blue area). The TLTRO III range reflects the changes in the pricing introduced by each subsequent recalibration. The maximum TLTRO III rate reflects the highest possible rate achievable by keeping the funds until maturity. The minimum TLTRO III rate after the March 2020 and April 2020 recalibrations is the lowest possible rate achievable by repaying the funds at the earliest possible date, while after December 2020 it is the lowest possible rate achievable by repaying the funds at the end of the extended period of temporary rate reduction in June 2022.

TLTROs ultimately support borrowing conditions faced by households and firms by mitigating potential increases in lending rates and by providing a substantial compression in the cost of bank funding. TLTROs are normally transmitted to interest rates via their aggregate effects on the loan market. This is due to aggregate loan supply expanding enough to exert downward pressure on lending rates, which eventually decrease if loan demand is not strong enough. The recent experience with TLTROs after March 2020, when the demand for loans registered unprecedented levels, indicates the heightened relevance of at least two additional mechanisms of propagation are specific to the pandemic. First, the availability of TLTRO funds contributed to mitigating a potential increase in lending rates due to the surge in credit risk in the context of the economic disruptions brought forth by the pandemic. Second, the sharp and large increase in uncertainty about the macroeconomic outlook induced strong precautionary behaviour on the part of firms and households, which contributed to a large increase in deposit volumes. Given the relative difficulty in imposing negative rates on retail deposits,

[10] The indirect reduction in bank funding cost therefore also supports lending for banks not directly participating in the programme. Moreover, while the targeting feature stimulates lending to the eligible sector, these more favourable funding costs can stimulate lending more broadly, also to the non-eligible sector.

the reduction in bank funding cost provided by TLTROs contributes to preserving the smooth transmission of monetary policy by enabling banks to lower lending rates while preserving lending margins and avoiding excessive credit risk-taking.

By reducing liquidity constraints, TLTROs mitigate procyclicality that is driven by medium-term to long-term financing conditions. Since TLTROs have a longer maturity than standard refinancing operations, they contribute to easing regulatory constraints related to liquidity requirements, especially when the operations are initially implemented and their residual maturity is considerable. This allows banks to structure their liquidity composition in a less procyclical manner, issuing longer-term bonds when they are not overly expensive due to the transitory financial distress brought forth by the crisis to which the TLTROs are a response.

In addition, TLTROs inject central bank liquidity into the financial system, putting downward pressure on money market rates. TLTROs stimulate demand for central bank funding and effectively increase the quantity of excess liquidity in the system. The more attractive the TLTRO terms, the more broad-based the participation and resulting distribution of excess liquidity in the system. This reduces reliance on interbank markets for short-term liquidity needs, and thus compresses short-term rates, as shown in Box 2.

TLTROs also offer a backstop against escalating funding stress because banks can increase their recourse to TLTROs if faced with adverse scenarios. Like standard Eurosystem refinancing operations, TLTROs are demand-driven and allow potential participants to use the facility when access to market-based funding sources becomes challenging. Hence, the current price constellation for bank funding conditions is likely to reflect the effect of this option, including with regard to future refinancing conditions for banks, compressing the risk premia on bond yields and contributing to preserving favourable financing conditions.

Finally, TLTROs operate as a powerful credit easing measure in conjunction with the other active monetary policy instruments. The negative interest rate policy reinforces the incentive for loan origination by lowering the returns on risk-free assets, and at the same time maintaining the availability of TLTRO funding at very low rates, while the two-tier system for excess reserve remuneration mitigates potential frictions associated with the downward rigidity of retail deposit rates. Forward guidance keeps the intermediate segments of the risk-free curve, used by banks to price loans, at low levels. This stimulates credit demand and is complemented by the long term of TLTRO funds which helps compress the term premium of bank funding. Purchases of government bonds lower the returns on alternative uses of TLTRO funds, which helps to convey TLTRO liquidity towards the targeted sector. Purchases of corporate bonds narrow corporate bond spreads, thereby providing a direct channel of transmission from monetary policy to the real economy and creating space on banks' balance sheets for extending more loans to

firms not directly exposed to the asset purchases, such as small and medium-sized enterprises, via the use of TLTRO funds.[11]

Box 2
TLTRO III and money market rates

Prepared by Maria Encio

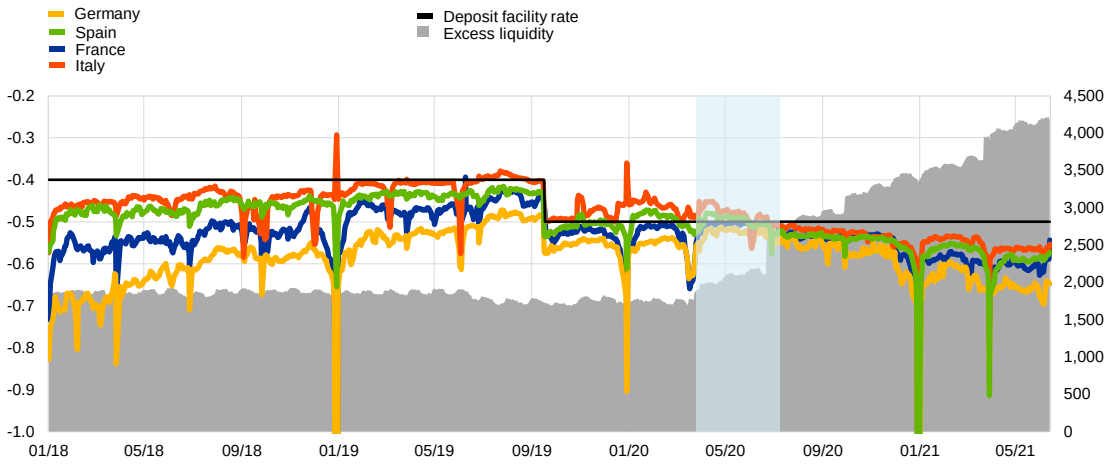
Money markets are the starting point of the monetary policy transmission mechanism that passes interest rates on to other financial market segments, which affects financing conditions in the broader economy. While a significant amount of unsecured transactions shifted to the secured segment in recent years, unsecured rates still play a crucial role as benchmark rates. For example, three-month and six-month unsecured EURIBOR rates serve as references for interest rate swap markets and interest rate futures markets, and for banks' lending rates to businesses and households. This implies that movements in these unsecured rates are transmitted widely and swiftly to other economic agents.

While the secured segment confirmed its resilience during the coronavirus (COVID-19) pandemic, the FX swap and unsecured term segments, including short-term securities issuance, were adversely affected. Interest rates and trading volumes of secured transactions remained broadly stable despite the increased risk aversion throughout spring 2020. In contrast, there was a sharp rise in unsecured term interest rates by more than 20 basis points, e.g. with regard to EURIBOR as well as rates for commercial papers. Furthermore, the cost of borrowing US dollars against the euro spiked in the FX swap market (see Chart A, where the blue area highlights the peak period of the COVID-19 crisis).

Chart A
Overview of rates in the euro money markets

a) Secured rates

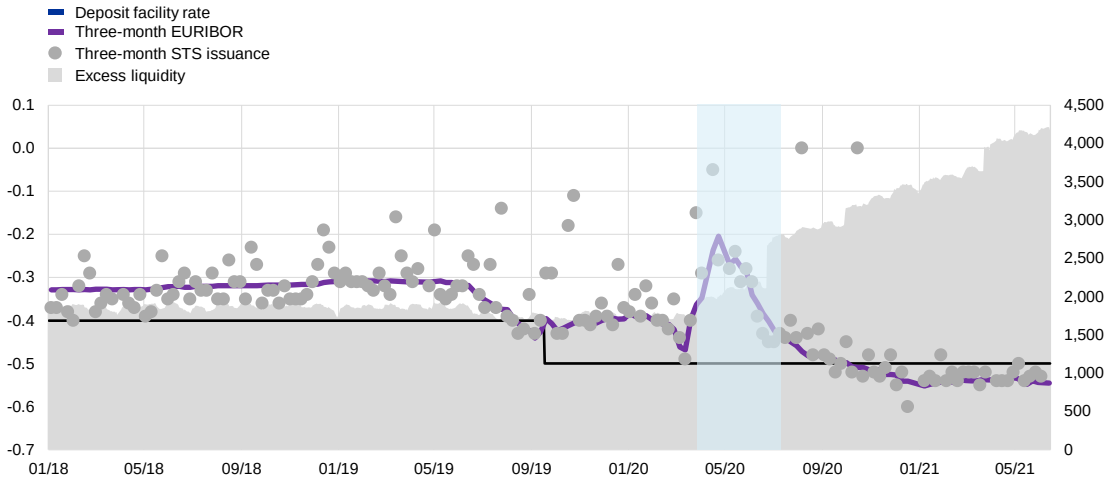
(left-hand scale: percentages; right-hand scale: EUR billions)



[11] See Arce, O., Gimeno, R. and Mayordomo, S., "Making Room for the Needy: The Credit-Reallocation Effects of the ECB's Corporate QE", *Review of Finance*, Vol. 25, Issue 1, Oxford University Press, Oxford, 2020, pp. 43–84.

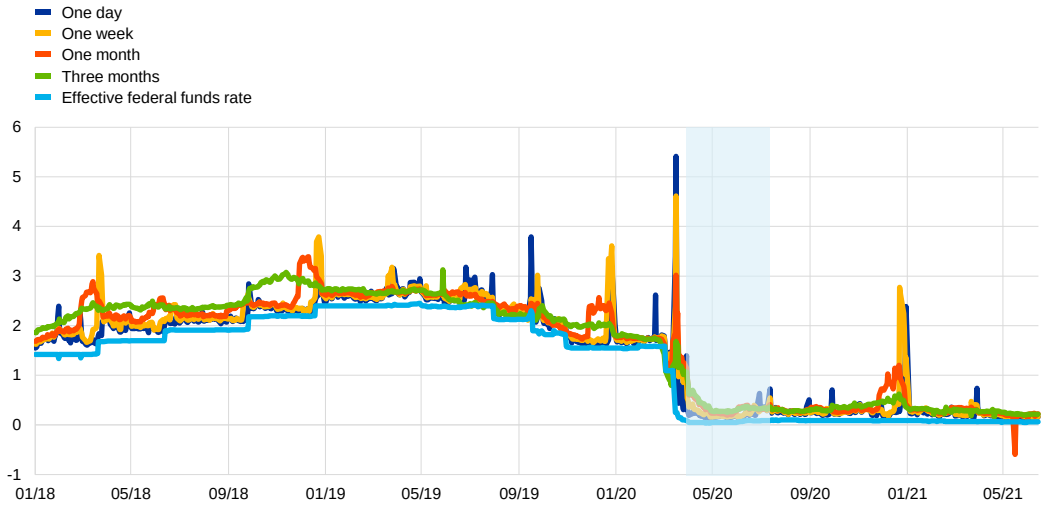
b) Unsecured rates (STS, EURIBOR)

(left-hand scale: percentages; right-hand scale: EUR billions)



c) Foreign exchange rates EUR/USD (swap basis spread in percentage points)

(percentage points)



Sources: Panel (a) – ECB Money Market Statistical Reporting (MMSR); panel (b) – ECB MMSR, Bloomberg and ECB calculations; panel (c) – STS (Banque de France).
Notes: Panel (a) shows volume-weighted average rate per settlement date per collateral jurisdiction and only includes government collateral. The scale is limited to 1% for readability. Cut-off points: year-end 2019 for Germany (2.74%) and for France (2.13%); year-end 2020 for Germany (2.09%) and for France (1.57%) and for Spain (1.59%). Only trades with O/N, S/N and T/N maturities. The rate includes both borrowing and lending transactions. In panel (b) "STS" stands for short-term debt issuance based on NEU CP data. The blue area highlights the COVID-19 crisis period. In panel (c) the FX swap basis spread is calculated as the USD implied rate minus the USD OIS rate for the selected maturity. The axis is cut off at 300 basis points in the interests of readability. One-day trades combine the O/N, S/N and T/N for a selected settlement day.

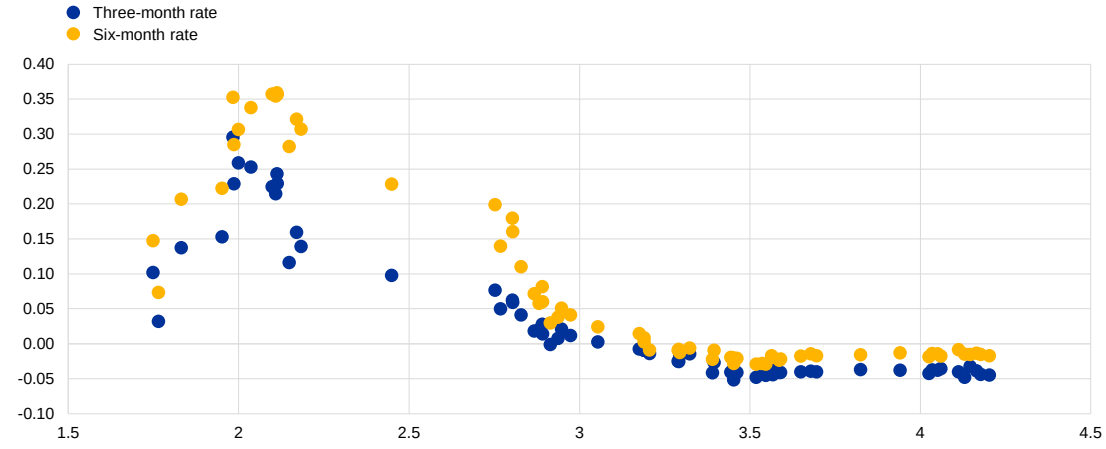
To stabilise the stressed money market rates and ease funding conditions, the Eurosystem introduced several measures. The new and recalibrated lending operations for banks put significant downward pressure on unsecured term rates, driven by large excess liquidity and reduced need for banks to issue commercial paper. The inclusion of commercial papers issued by non-financial corporations in the purchases under the PEPP, the larger securities lending facilities offered by national central banks, and the broadening of collateral eligibility all supported the continuation of trades with corporate commercial paper and the supply of collateral to the market for repo transactions. Finally, the provision of US dollar liquidity at backstop prices via the swap line network of major central banks swiftly addressed distortions in the FX swap segment. The re-establishment of normal functioning of all money market segments over the second half of 2020 was evident in the normalisation in unsecured market rates.

The recalibration of TLTRO III terms on two specific parameters was instrumental in achieving the desired easing effect on funding. Offering conditional funding below the deposit facility rate during two special lending periods, when the pandemic effects were most pronounced, provided a highly effective incentive that promoted high participation. Furthermore, the increase of the borrowing allowance permitted banks to increase their take-up from €0.3 trillion in March 2020 to €2.2 trillion in June 2021. This large injection of liquidity contributed to a decrease in the money market reference rates, such as three-month and six-month EURIBOR rates, which eased funding conditions for the broader economy via the money market channel (see Chart B).

Chart B

Relation between excess liquidity and unsecured term rates

(x-axis: excess liquidity in EUR trillions; y-axis: weekly average of EURIBOR spread to deposit facility rate in percentage points)



Sources: Bloomberg and ECB calculations.
Notes: Data cover the period from 12 March 2020 to 11 June 2021. R-squared for three-month rates: 77% and R-squared for six-month rates: 75%.

3 Impact on bank lending conditions

Evidence from bank balance sheet data

TLTRO III allowed banks to accommodate the large-scale increase in credit demand triggered by the pandemic. The growth in bank credit to the private sector has been substantial among TLTRO III participants since the start of the pandemic in the 13 months covered by the lending performance benchmark introduced in March 2020 (see panel (a) of Chart 3).[12] Loan growth has continued for participants in TLTRO III since the start of the additional lending performance evaluation period in October 2020[13], especially if compared with the figure for non-participants over the same period (see panel (b) of Chart 3). Together with an increase in the maturity of

[12] In order to attain the minimum interest rate on TLTRO III operations, participating banks need to meet a threshold above their lending benchmark over a certain evaluation period. In March 2020 a new evaluation period for banks' lending performance was introduced, which was modified in April 2020 to include the 13-month period from March 2020, in order to provide further incentives for banks to maintain the level of credit support that they have provided since the start of the pandemic.

[13] The recalibration of 10 December 2020 prolonged the -1% interest rate to June 2022, subject to an additional lending requirement based on the lending performance measured between October 2020 and December 2021.

loans, which was also favoured by the availability of public guarantee schemes, this suggests that the operations helped banks to meet the increased credit demand in a sustainable way, allowing for a rotation from the initial emergency credit demand towards lending for longer-term purposes, including investment.[14] At the same time, acquisitions of government securities increased initially, reflecting increased issuance and liquidity demand by governments in order to finance the public support measures. Following this initial period, the net flows into government securities since October 2020 were negative, which is consistent with banks favouring origination of loans to the private sector over potential acquisition of government securities and also reflects the large absorption of these securities by asset purchases.

The temporary build-up of liquidity by individual TLTRO borrowers may also point to the credit expansion that these lenders may provide in the future.
There has been a major increase in Eurosystem deposits since the start of the pandemic. This increase at the aggregate level is entirely mechanical, as the liquidity injected through the TLTROs (and the asset purchases that were conducted in parallel) circulates within the closed system of banks that have reserve accounts with the Eurosystem and is not reduced when banks expand credit to firms and households, which are not part of this closed system.[15] Moreover, the still sizeable build-up of liquidity deposited with the Eurosystem since the introduction of TLTRO III is the result of a range of factors, as discussed in Box 3.[16] At the bank level, it is important to note that euro area banks were actively engaged in meeting the urgent liquidity needs of the corporate and household sector. This supports the post-crisis recovery under challenging conditions in wholesale funding markets. At the onset of the crisis, banks responded to the emergency liquidity needs of firms by relying on their liquidity buffers. Considering the overall uncertainty and investor risk aversion, tapping markets to obtain the funds necessary to operate such a process could have generated strains in wholesale funding markets or outright rationing episodes. Individual banks have been accumulating on-balance sheet liquidity to be better able to buffer shocks as they have expanded lending. The reduction in money market rates observed after the June TLTRO III, and documented in Box 2, is a further signal that TLTRO funds are pivotal in applying the necessary downward pressure on the cost of the various funding options for banks. Currently, banks are still in the process of accompanying the exit from impairments in supply chains brought about by the pandemic shock, while also sheltering the corporate sectors from pockets of liquidity needs that isolated lockdowns might still entail as the vaccine roll-out normalises the functioning of the economy.

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14 See the box entitled "Public loan guarantees and bank lending in the COVID-19 period", *Economic Bulletin*, Issue 6, ECB, 2020 and M. Falagiarda and P. Köhler-Ulbrich "Bank Lending to Euro Area Firms – What Have Been the Main Drivers During the COVID-19 Pandemic?", *European Economy*, Issue 1, April 2021.

15 The accumulation of deposits with the Eurosystem is also visible among banks that did not participate in TLTRO III (see panel (a), Chart 3).

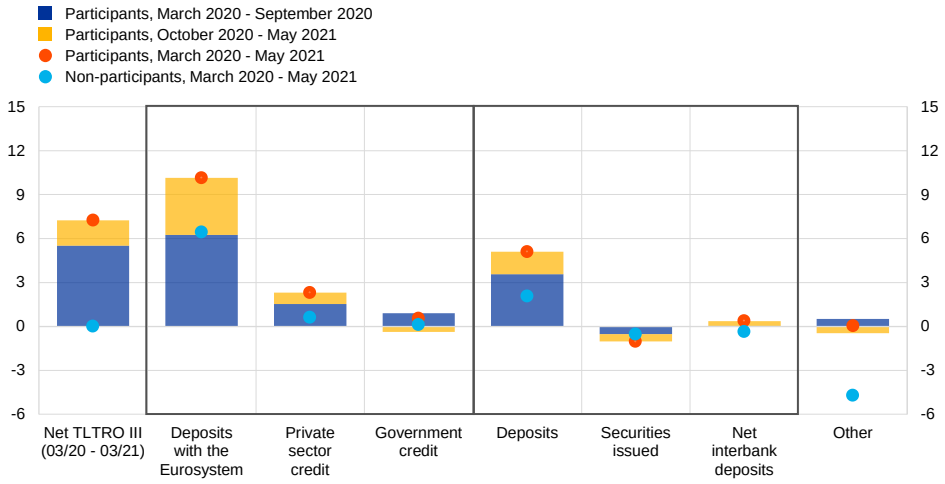
16 Individual banks can engineer a reduction in their own excess liquidity position by, for instance, employing it to grant a new loan. However, unless the borrower withdraws the full amount of the loan and keeps it in banknotes, the funds will find their way back to a deposit at the same or another bank, offsetting the initial decrease in excess liquidity. For more details see the ECB explainer "What is excess liquidity and why does it matter?"

Chart 3

Evolution of balance sheet items for TLTRO III participants and non-participants

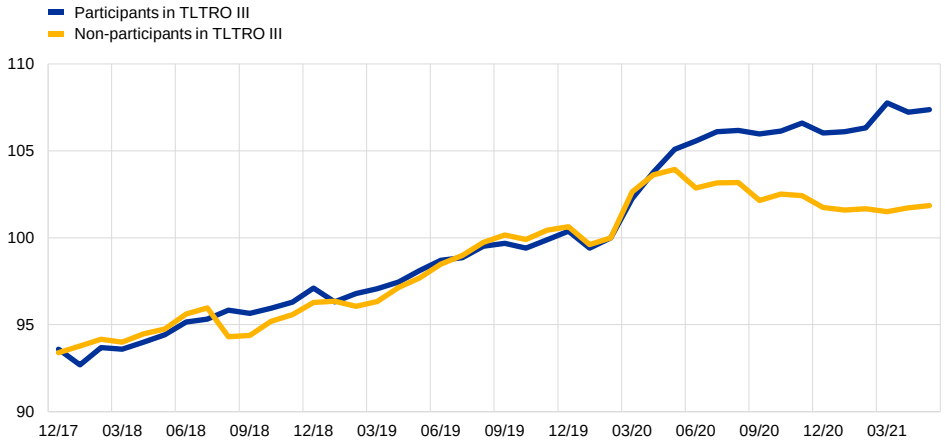
a) Developments in assets and liabilities

(percentage of main assets)



b) Volume of loans

(notional stock, February 2020 = 100)



Sources: ECB and ECB calculations.
Notes: Panel (a) shows the cumulated flows in the main assets and liabilities from March 2020 until September 2020 (blue bars) and from October 2020 until May 2021 (yellow bars) and from March 2020 until May 2021 (red dots) for participants in TLTRO III covered in the ECB's individual balance sheet items dataset; developments for non-participants between March 2020 and May 2021 are displayed as light blue dots; data are rescaled by the size of the two groups, participants and non-participants, as measured by main assets at the end of February 2020. TLTROs are net from other funding from the Eurosystem as of March 2021 for the iBSI sample of banks (excluding micro-data groups to avoid double-counting and collapsed at the TLTRO participant level). On the asset side, private sector credit includes loans to non-financial corporations and households as well as holdings of private sector securities; government credit includes holdings of sovereign securities and credit to the government. On the liability side, deposits are vis-à-vis non-monetary financial institutions; (net) interbank funding is deposits minus loans from other monetary financial institutions, excluding the Eurosystem. Panel (b) displays the evolution of eligible loans for banks participating (blue line) and banks not participating (yellow line) in TLTRO III until May 2021.

Evidence from survey data

Soft information coming from surveys confirms that most banks participated in TLTRO III operations with the intention of using the funds for lending purposes. Hard data on bank balance sheets available up to March 2021 suggests that TLTRO funds have underpinned the ability of the euro area banking system to answer the initial unprecedented demand for liquidity coming from the non-financial

private sector (NFPS) since the onset of the pandemic and to help with the rotation of firms' exposures from emergency liquidity to term loans. On the one hand, the operations supported euro area banks' ability and incentives to provide loans. On the other hand, developments in loan demand have played a crucial role. Soft information coming from surveys, such as the euro area bank lending survey, offers insight into the uses of these funds up to now and into the future. Comparing the responses over time also sheds some light on how the banking system reacted to the evolving features of TLTRO III.

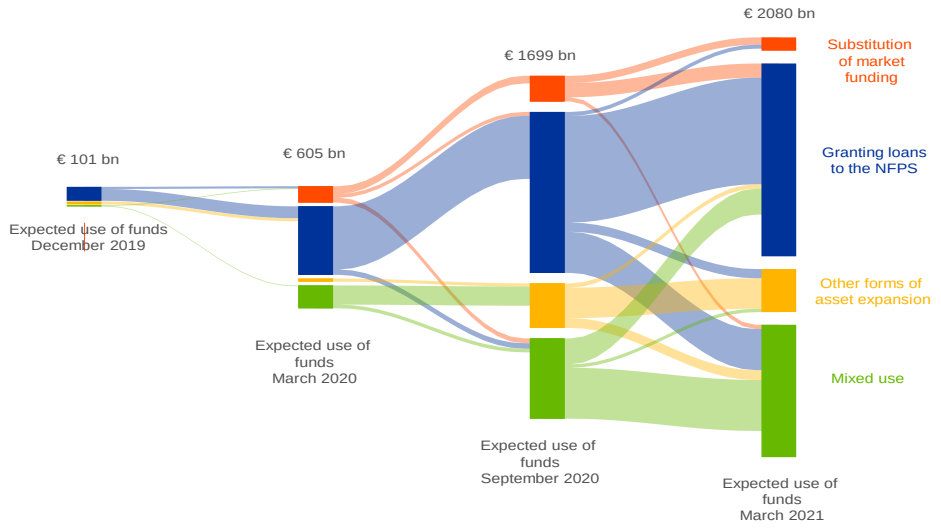
The evolution of banks' replies to the euro area bank lending survey illustrates how banks' intended uses of TLTRO funds adapted to the changing circumstances (Chart 4). Before the tensions associated with the COVID-19 pandemic, banks mainly expected to use TLTRO III funds either to grant loans to the NFPS or to roll over expiring funds from TLTRO II. As the pandemic crisis unfolded, some banks started to consider using TLTRO funds as a substitute for their market funding, although granting loans has remained the main expected destination of the additional liquidity. The TLTRO recalibration on 30 April 2020 has introduced stronger incentives to devote at least part of the funds to various forms of balance sheet expansion including, at least temporarily, holding deposits with the Eurosystem and purchasing government debt securities. At the same time, holding excess liquidity from TLTRO III participation was also motivated by banks' precautionary attitudes amid unprecedented levels of uncertainty.[17] As lending to the private sector materialised, remaining TLTRO funds featured an increased role of mixed uses. In any case, banks' expected uses of funds continue to suggest a high effectiveness of TLTROs in supporting lending conditions.

[17] This is in line with the individual responses of participants in the October 2020 euro area bank lending survey to questions related to the motivation to participate in future TLTROs.

Chart 4

Evolution of expected use of TLTRO III funds

(share of respondents weighted by TLTRO III amounts)



Sources: ECB, euro area bank lending survey, and ECB calculations.
Notes: The four bars on the fourth column to the right measure the outstanding TLTRO III amounts in March 2021 distributed by the responses to the April 2021 euro area bank lending survey. The red bar measures the take-up of banks that reported that they will use TLTRO funds to substitute market funding sources. The blue bar measures the same take-up by banks that intend to use the funds for granting loans. The yellow bar collects take-up by banks that intend to use the funds for purposes other than substituting market funding or granting loans (government securities, holding as cash, financing other financial entities, etc.). The green bar reports the take-up by banks that do not plan to allocate the funds to a single category. The bars in the first column measure the outstanding TLTRO III amounts in December 2019, distributed by the responses to the January 2020 euro area bank lending survey. The bars in the second column measure the outstanding TLTRO III amounts in March 2020 and the amount of bridge LTROs distributed by the responses to the April 2020 euro area bank lending survey. The bars in the third column measure the outstanding TLTRO III amounts in September 2020 distributed by the responses to the October 2020 euro area bank lending survey. Shaded areas report take-up of banks that change their expected use of funds between survey waves.

Estimated impacts of the TLTROs

TLTRO III provides substantial support to bank lending conditions (Chart 5). A large cross-section of studies encompassing a range of econometric methods, sample periods and jurisdictions, reveals a strong easing impact on bank lending conditions. These studies cover the wide spectrum of the transmission channels mentioned above. A holistic approach combining all these studies is therefore likely to average out biases introduced by the absence of specific channels within the same study. The results of each paper are classified in terms of their period of reference and the corresponding TLTRO uptake, rescaling the impacts to account for differences in data, samples and methodologies.[18] This allows for a recasting of the respective elasticities in terms of the percentage increase of loan volumes per annum and basis points of impact on lending rates for each unit of TLTRO take-up. This results in an impact on loan volumes of above 2 percentage points each year, and on lending rates of over 60 basis points after the last operation in December 2021, against a counterfactual of nil participation. Importantly, this can be considered a conservative assessment of the actual impact of the operations, in particular with

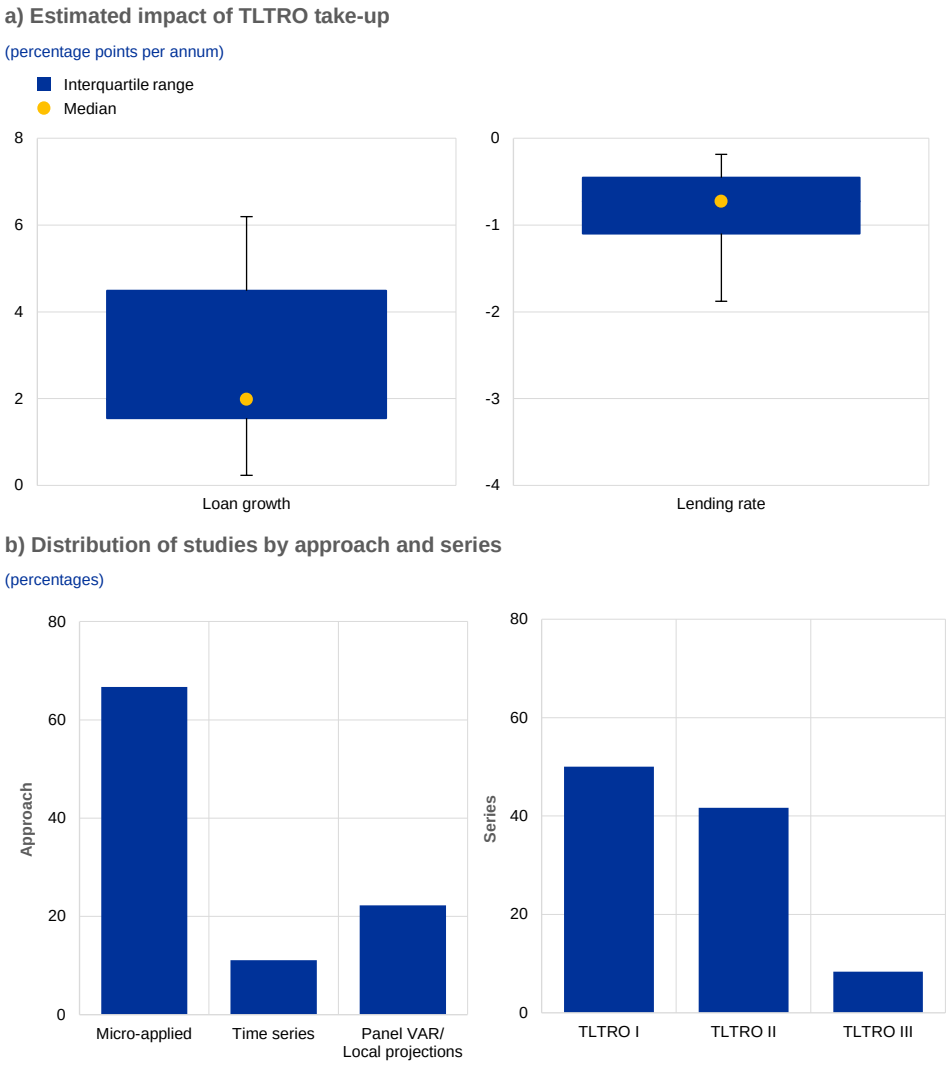
18 Moreover, the survey evidence discussed above suggests that the sheer magnitude of TLTRO III borrowing in the wake of the pandemic could lead to a more diversified use of funds. In a conservative approach, the exercise uses this information to rescale the estimates of studies conducted on pre-pandemic data. The estimates based on post-pandemic data are not affected.

regard to their role as a backstop against a sharp deterioration in borrowing costs. This reflects that the sample period of the bulk of the studies does not feature episodes of financial and real economic stress of the magnitude experienced since the start of the COVID-19 crisis. Moreover, the absence of the TLTRO programme could have triggered a sharp deterioration in banks' funding conditions, leading to a massive deleveraging episode. The effects of such a scenario are very difficult to quantify. Lastly, other pandemic response policies aimed at supporting bank lending, such as broadening collateral eligibility, capital relief measures and government guarantee schemes, are likely to have boosted the effectiveness of TLTROs even further.[19]

[19] See, for example, Altavilla, C., Barbiero, F., Boucinha, M. and Burlon, L., "The great lockdown: pandemic response policies and bank lending conditions", *Working Paper Series*, No 2465, ECB, Frankfurt am Main, September 2020.

Chart 5

Meta-analysis of estimated impacts of TLTROs



Sources: Afonso, A. and Sousa-Leite, J., "The transmission of unconventional monetary policy to bank credit supply: evidence from the TLTRO", *Working Papers*, No 201901, Banco de Portugal, Lisbon, 2019; Altavilla, C., Barbiero, F., Boucinha, M. and Burlon, L., op. cit.; 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, Issue C, Elsevier, 2020, pp. 81-98; Andreeva, D. C. and García-Posada, M., op. cit.; Arce, O., Gimeno, R. and Mayordomo, S., op. cit.; Balfoussia, H. and Gibson, H. D., "Financial conditions and economic activity: the potential impact of the targeted longer-term refinancing operations (TLTROs)", *Applied Economics Letters*, Vol. 23, No 6, Taylor & Francis, London, 2016, pp. 449-456; Barbiero, F., Burlon, L., Dimou, M., Toczynski, J., "Targeted monetary policy during the pandemic: Evidence from TLTRO III", forthcoming 2021; Bats, J. and Hudepohl, T., "Impact of targeted credit easing by the ECB: Bank-level evidence", *Working Papers*, No 631, De Nederlandsche Bank, Amsterdam, 2019; Benetton, M. and Fantino, D., "Targeted Monetary Policy and Bank Lending Behavior", *Journal of Financial Economics*, forthcoming 2021; Boeckx, J., de Sola Perea, M. and Peersman, G., "The transmission mechanism of credit support policies in the euro area" , *European Economic Review*, Vol. 124, Issue C, Elsevier, 2020; Cravo Ferreira, M., "What happens when the ECB opens the cash tap? An application to the Portuguese credit market", dissertation, Universidade Católica Portuguesa, 2019; Esposito, L., Fantino, D. and Sung, Y., "The impact of TLTRO2 on the Italian credit market: some econometric evidence", *Working Papers*, No 1264, Banca d'Italia, Rome, 2020; Flanagan, T., "Stealth Recapitalization and Bank Risk Taking: Evidence from TLTROs", available at SSRN No 3442284; Gibson, H. D., Hall, S. G., Petroulas, P., and Tavlas, G. S., "On the effects of the ECB's funding policies on bank lending", *Journal of International Money and Finance*, Vol. 102, Issue C, Elsevier, 2020, pp. 1021-12; Laine, O., "The Effect of Targeted Monetary Policy on Bank Lending", *Journal of Banking and Financial Economics*, forthcoming 2021; Offermans, C. J. and Blaes, B. A., "The Effects of Unconventional Monetary Policies on the Lending Activity of German Banks", mimeo, 2021; Rostagno, M., Altavilla, C., Carboni, G., Lemke, W., Motto, R., Saint Guilhem, A., Yiangou, J., *Monetary Policy in Times of Crisis: A Tale of Two Decades of the European Central Bank*, Oxford University Press, Oxford, 2021; van Dijk, M. and Dubovik, A., "Effects of Unconventional Monetary Policy on European Corporate Credit", *Discussion Papers*, No 372, CPB Netherlands Bureau for Economic Policy Analysis, 2018.
Notes: Panel (a) shows average annual impact of TLTROs on loan growth to non-financial corporations for €2.2 trillion take-up. Estimates of each study are rescaled to take into account differences in data, samples and methodologies. Yellow bars report the median impact across studies. Dark blue areas correspond to the interquartile range, whiskers represent the range between 10th and 90th percentiles. Panel (b) shows percentages of studies on TLTROs covered in the meta-analysis by approach and programme of reference. Studies covering more approaches or programmes are counted multiple times when warranted, and the percentages are computed relative to the overall count.

TLTROs have staved off a sizeable part of the uncertainty about bank funding conditions and continue to provide a backstop function, conditional on the availability of spare borrowing allowances. The presence of TLTROs alone ensures that banks have access to ample funding at attractive conditions without stigma from participation into the programme, thereby increasing investor confidence and reducing the likelihood of adverse shocks in bank bond markets. Considering the outstanding amount of bank bonds by yield to maturity suggests that, if sizeable shocks to banks' funding costs were nevertheless to materialise, this could prompt banks to replace a large fraction of their market funding with TLTROs. This highlights the importance of the TLTRO backstop function. Concretely, currently about 20% of banks' outstanding bank bonds are priced below the deposit facility rate and more than half these bonds carry yields below the entry rate of TLTRO III. Some banks can thus still find it convenient to resort to market-based financing, if only to maintain their market access and for regulatory compliance purposes. However, a sudden shock to the cost of bond financing could make market-based financing considerably more expensive than central bank funding. At that point, banks could gradually replace the stock of their maturing debt with TLTRO III borrowing to the maximum possible extent given regulatory constraints and the residual spare capacity in terms of borrowing allowance. The current programme therefore serves as a backstop in case of the materialisation of severe distress in banks' funding markets, but its effectiveness would in any case be constrained by the residual borrowing capacity of banks. Indeed, the availability of spare TLTRO borrowing capacity eases the decision for banks to venture into loan origination even in uncertain times by offering a comfortable level of liquidity and funding buffers to be accessed on demand. Simulations of a micro-structural model of the euro area banking system also show that the availability of attractive TLTROs helped to avoid adverse equilibria for banks' riskiness, contributing to preserving accommodative funding conditions, above and beyond the actual reduction in the funding cost associated with TLTRO take-up.[20]

Moreover, the pass-through of TLTROs to lending conditions is complemented by other policy measures. The TLTRO incentive scheme motivates the channelling of borrowed funds to eligible lending. Yet, once the lending benchmarks are achieved, banks are likely to base their investment choices on the relative risk-adjusted return of alternative investment options. If this return is higher for lending to the private sector than for alternative uses of TLTRO funds, then banks have incentives to devote the necessary risk-bearing capacity to loan origination. Conversely, if the risk-adjusted return on loans falls below that of other assets, or if banks face de-facto quantitative capital constraints, they may find it more profitable to divert at least part of the funds into acquiring sovereign bonds or risk-free arbitrage with the ECB's deposit facility. This has not been the case so far, partly because of complementary support from other policy areas. Asset purchase programmes have contained upward pressures on risk-free and sovereign yields, while microprudential and macroprudential actions have provided capital leeway for

[20] In particular, it is estimated that a 1 percentage point reduction in TLTRO rate reduces the median bank's default risk by around 50%, with increasing effectiveness for banks more exposed to fundamental risk. See Albertazzi, U., Burlon, L., Jankauskas, T, Pavanini, N., "The (unobservable) value of central bank's refinancing operations", *Working Paper Series*, No 2480, ECB, Frankfurt am Main, October 2020.

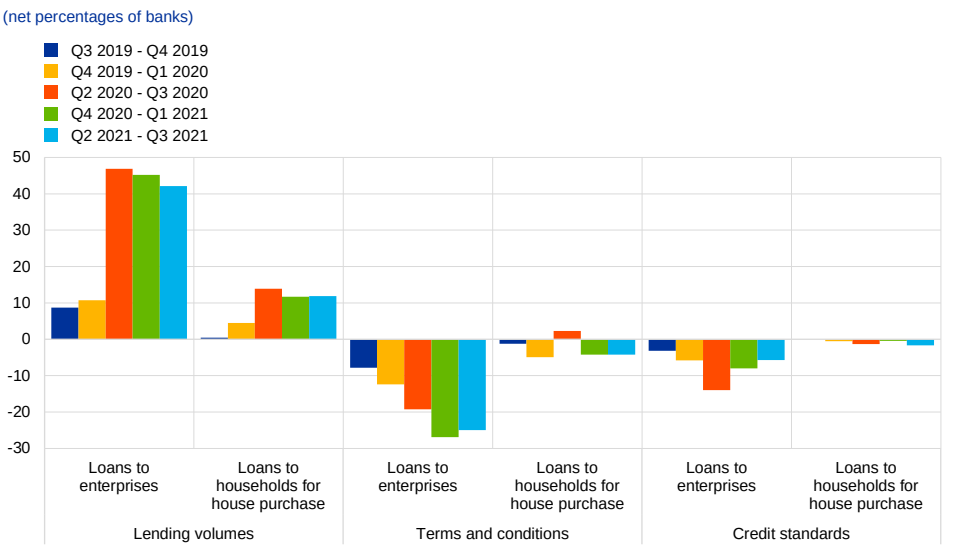
an expansion of credit to the private sector and government guarantees have substantially reduced banks' exposure to the associated credit risk. From a longer-term perspective, the common fiscal instrument of the Next Generation EU programme has supported market expectations around a scenario of substantial fiscal support over the coming years. However, this balance could change for certain segments of the euro area banking system if faced with changes in the constellation of policies in place, such as a premature tightening of regulatory, supervisory or macroprudential policies, or delays in the deployment of the common fiscal instrument.

Soft information and econometric analysis of the impact of TLTROs on lending volumes and terms and conditions confirm that, alongside the stimulus to loan creation, there is no substantial increase in risk-taking by banks benefiting from the programme (Chart 6). While indicating a predominant profitability motive for participation and a recurring intended future use of TLTRO funds for granting loans to the private sector, euro area banks have consistently reported that TLTROs spur an increase in their lending volumes and a decrease in their lending rates, especially for loans to firms. Yet, the impact on credit standards, though it points towards an overall easing of criteria, has been moderating over time and especially relative to the early stages of the pandemic, when TLTRO incentives operated in strong interaction with government guarantee schemes and collateral and capital relief measures. The results of the euro area bank lending survey illustrated in Chart 6 show a negligible contribution to the easing of lending standards. This suggests relatively prudent lending behaviour on the part of participants. The results of this survey also point to a continued tightening of margins on riskier loans since the start of the pandemic, in contrast with broadly stable margins on average loans. Moreover, econometric evidence based on the euro area-wide credit register confirms that banks' exposure to TLTROs was associated with an increase in lending concentrated towards ex ante safer borrowers, and that the registered increase was not associated with an increase in arrears ex post.[21]

[21] See Barbiero, F., Burlon, L., Dimou, M., Toczynski, J. "Targeted monetary policy during the pandemic: Evidence from TLTRO III", forthcoming 2021.

Chart 6

Reported impact of TLTRO III on bank lending conditions



Source: Euro area bank lending survey.
Notes: Net percentages are defined as the difference between the sum of the percentages for "contributed considerably to a tightening or increase" and "contributed somewhat to a tightening or increase" and the sum of the percentages for "contributed somewhat to an easing or decrease" and "contributed considerably to an easing or decrease". The last period denotes expectations indicated by banks in the latest available round (April 2021) of the euro area bank lending survey.

Together with the stimulus to real economic activity provided by the easing of financing conditions, the impact of TLTROs on employment is likely to have been sizeable. It is generally challenging to analyse the effects of TLTRO III on the real economy, especially at such an early stage after the actual participation in TLTRO III operations. However, previous experience with TLTRO programmes, in situations characterised by a less pivotal role of the operations for bank lending conditions, shows the potential for significant real economic effects of TLTRO III, especially in conjunction with other policy areas activated during the pandemic, such as government guarantees and capital relief measures. A study finds that firms more exposed to TLTROs and capital relief measures tend to increase their employment levels significantly. The impacts predicted for the current juncture based on historical regularities are economically meaningful. Considering the reduction in bank funding cost brought forth by the TLTROs and the capital relief observed over the period between March and April 2020, the overall impact of the policy measures implemented in response to the pandemic has the potential to forestall an employment decline in the corporate sector of more than one million workers over the period 2020-2022.[22]

[22] See, for example, Altavilla, C., Barbiero, F., Boucinha, M. and Burlon, L., "The great lockdown: pandemic response policies and bank lending conditions", *Working Paper Series*, No 2465, ECB, Frankfurt am Main, September 2020.

Box 3
The redistribution of central bank reserves borrowed under TLTRO III

Prepared by Sebastiaan Pool

Banks receive central bank reserves when they borrow from the Eurosystem through its refinancing operations, such as TLTRO III, or when they sell or intermediate the sale of securities to the Eurosystem in the context of asset purchase programmes (see Table A). Those central bank reserves can only be stored on banks' accounts with the Eurosystem. Accordingly, the aggregate volume of banks' central bank reserve holdings with the Eurosystem mechanically reflects the liquidity injected by refinancing operations and asset purchases.

Table A

Creation of central bank reserves

(EUR)

Eurosystem			
Refinancing operations	+10	**Central bank reserves**	+15
Government bonds	+5		
Bank A			
Central bank reserves	+10	**Refinancing operations**	+10
Bank B			
Government bonds	-5		
Central bank reserves	+5		

Source: ECB.
Note: The table shows the change in balance sheet items following a €10 refinancing operation from Bank A and a €5 outright asset purchase from Bank B.

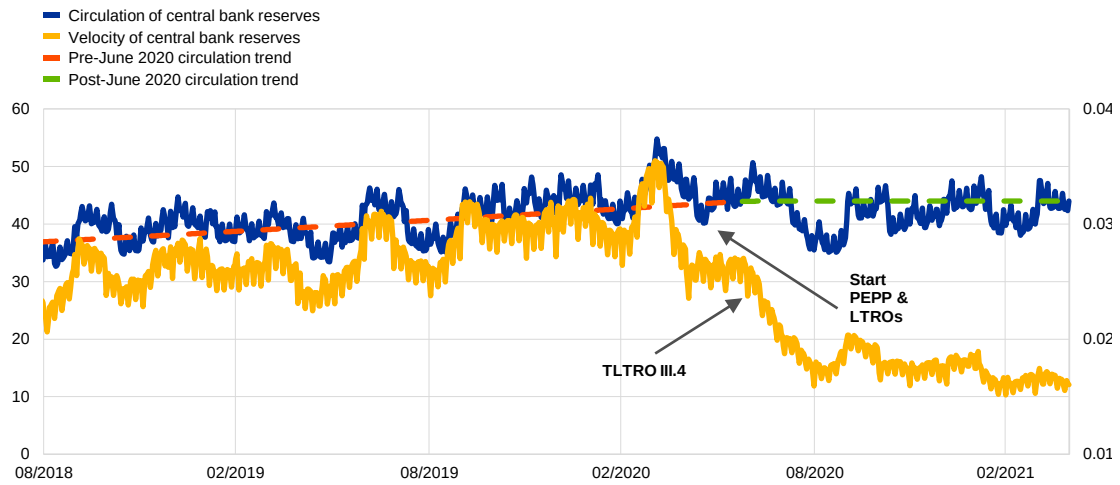
Notwithstanding these aggregate dynamics, central bank reserve holdings can circulate between banks when these holdings are used to settle interbank transactions. For instance, when a bank buys a security, e.g. a sovereign bond from another bank, it could pay the other bank by transferring some of its central bank reserves. Moreover, when households and firms make regular payment transactions, central bank reserves are transferred across banks. A bank that experiences an outflow of deposits could settle the transaction by transferring some of its central bank reserves to the bank that experiences an inflow. Finally, banks could issue or repay interbank loans and thereby redistribute central bank reserves.[23]

[23] Notably, banks cannot use central bank reserves directly for lending to households and firms because the latter do not have an account with the Eurosystem.

Chart A

The circulation and velocity of central bank reserves

(left-hand scale: EUR billions; right-hand scale: ratio)



Source: ECB.
Notes: The chart shows the circulation of central bank reserves which is computed as the 30-day moving average of the sum of all absolute daily changes in banks' excess liquidity holdings, corrected for changes that are caused by the settlement of refinancing operations and asset sales to the Eurosystem, divided by two. The velocity of central bank reserves is obtained by dividing the latter metric by banks' total holdings of excess liquidity (central bank reserves in excess of their minimum reserve requirements) to obtain the percentage of aggregate excess liquidity holdings used for daily interbank transactions. The latest observation is for 1 May 2021.

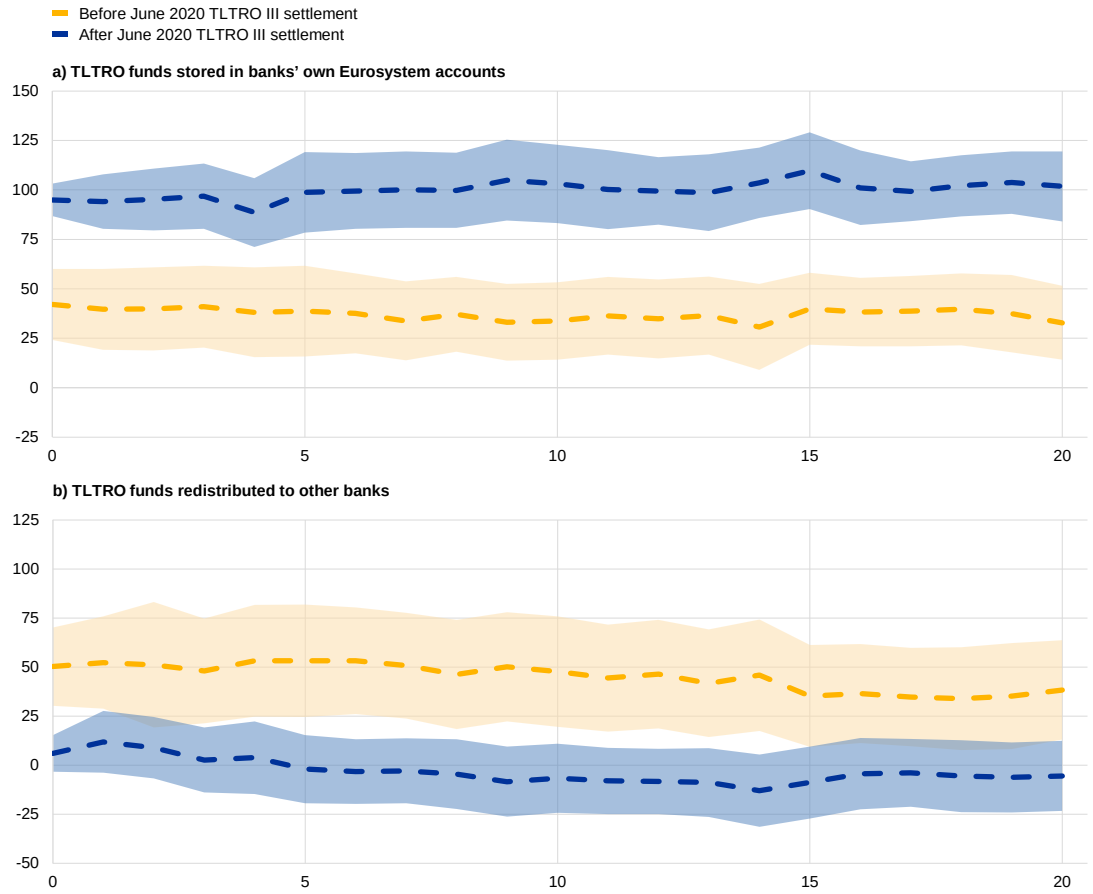
The redistribution of central bank reserves has declined substantially since the announcement of the additional longer-term refinancing operations (LTROs) and the pandemic emergency programme (PEPP) in March 2020. It decreased further after the settlement of the June 2020 TLTRO III. Before the pandemic, the total circulation of central bank reserves – measured by summing over all flows of central bank reserves between banks – increased steadily over time (blue line in Chart A). The circulation of central bank reserves was closely mirrored by the velocity of central bank reserves: the percentage of aggregate central bank reserve holdings in excess of banks' minimum reserve requirements used for daily interbank transactions (yellow line in Chart A). Following the start of the additional LTROs and the PEPP in March 2020 and more pronouncedly after the settlement of the June 2020 TLTRO III (the first operation after the April TLTRO III recalibration introduced more favourable terms), the circulation of central bank reserves stabilised, while the velocity of central bank reserves declined sharply.[24] A more formal statistical approach confirms that the redistribution of central bank reserves has declined. While historically only about half of the borrowed reserves were stored on banks' own accounts with the Eurosystem in the weeks following TLTRO settlement (yellow lines in Chart B), since the June 2020 TLTRO III banks appear to store close to all the borrowed reserves in their accounts with the Eurosystem (blue lines Chart B).

[24] The velocity of reserves observed depends on banks' holdings of central bank reserves at the end of the day. Therefore, it is possible to have a high intra-day and/or intra-bank velocity while the amount of reserves held by each bank at the end of the day remains relatively stable.

Chart B

Estimated percentage of TLTRO funds that banks stored and redistributed

(y-axis: percentages; x-axis: days after TLTRO settlement)



Source: ECB calculations.
Notes: The estimated coefficients in the chart are based on a panel data local projections model which relates daily changes in a bank's excess liquidity holdings to: its own TLTRO borrowing, panel (a); TLTRO borrowing by other banks in the Eurosystem, panel (b), controlling for other refinancing operations; the bank's own asset sales and asset sales by other banks to the Eurosystem; redemptions of assets bought by the Eurosystem; and autonomous factors at the euro area level. The first estimation period is August 2014 to 31 May 2020 for settlement before the June 2020 TLTRO, and 1 June 2020 to 1 May 2021 for settlement after the June 2020 TLTRO III. As the results are model-based and due to noise in the data and the inability to fully control for autonomous factors at the bank level (as such data are not available), the sum of funds stored in banks' own Eurosystem accounts and TLTRO funds redistributed to others do not exactly add up to 100% and are subject to uncertainty as reflected by the shaded areas denoting 90% confidence intervals.

Several factors could explain the decline in the redistribution of central bank reserves. First, the decline in economic activity and the increase in households' and firms' savings reduced payment flows and thereby reduced the need for banks to use central bank reserves to settle payment transactions. Second, the more favourable pricing of TLTRO III and the alleviation of regulatory rules over the pandemic emergency period allowed banks to build a precautionary liquidity buffer at little to no costs. This has likely increased TLTRO III participation while it has decreased the pecuniary incentive to redistribute the obtained central bank reserves. Finally, the increase in the number of banks participating in TLTRO III has potentially reduced the scope for redistributing central bank reserves to non-participating banks

4 Conclusions

TLTRO III has been effective in protecting bank-based transmission during the pandemic. Previous TLTROs already supported borrowing conditions for households and firms long before the COVID-19 pandemic hit the euro area. The recalibrations of TLTRO III in the first half of 2020 propelled the programme into a much wider role, as a central bulwark against the impairment of the bank-based transmission mechanism of monetary policy in a context of unprecedented financial stress for the euro area banking system. The largest liquidity injection in the history of the ECB, in June 2020, followed by robust participation in the subsequent operations, has provided central bank liquidity at attractive rates under the condition of complying with demanding and yet achievable lending targets for euro area banks. The stimulus coming from the enhanced operations was transmitted in various ways to lending conditions above and beyond the explicit lending criteria ingrained in the programme. This has helped to secure favourable financing conditions to households and firms throughout the pandemic. Since the stimulus to lending conditions via banks is generally transmitted with a lag, the overall impact of TLTROs has not yet fully materialised.

There is no evidence of substantial side effects or dilution of the stimulus coming from TLTROs so far, with the programme interacting positively with the broader policy package. By supporting lending margins, the programme granted banks enough leeway to extend credit to the private sector without necessarily scaling up the risk spectrum, especially against the background of the unprecedented demand for emergency liquidity needs expressed by corporates in the early stages of the pandemic. There is also evidence that the design of TLTROs ensured that the stimulus reached households and firms as intended, without being excessively diluted by unwarranted uses of funds such as lending to governments. The effectiveness of TLTROs in transmitting the accommodative conditions to the targeted sector was substantially supported by the contribution of other monetary policy instruments such as asset purchases, forward guidance and negative interest rate policy as well as collateral easing measures, which worked in unison with TLTROs, as well as contributions from other policy domains like microprudential and macroprudential policies or fiscal policy via, for example, the provision of government guarantees.

TLTROs offering conditional funding at rates below the deposit facility rate are an effective and flexible tool of monetary policy accommodation in the vicinity of the effective lower bound, especially in an environment characterised by a high level of uncertainty. The targeting element is a key feature of the operations, increasing banks' incentives for lending. The conditional pricing of TLTROs below the deposit facility rate has created additional room for easing funding conditions for banks in a negative interest rate environment and offers an effective backstop against strains in banks' access to market-based funding. Moreover, the close link with the deposit facility rate has allowed the negative interest rate policy to continue spurring loan origination, even as deposit rates fell further.

Statistics

Contents

Further information

ECB statistics can be accessed from the Statistical Data Warehouse (SDW):	http://sdw.ecb.europa.eu/
Data from the statistics section of the Economic Bulletin are available from the SDW:	http://sdw.ecb.europa.eu/reports.do?node=1000004813
A comprehensive Statistics Bulletin can be found in the SDW:	http://sdw.ecb.europa.eu/reports.do?node=1000004045
Methodological definitions can be found in the General Notes to the Statistics Bulletin:	http://sdw.ecb.europa.eu/reports.do?node=10000023
Details on calculations can be found in the Technical Notes to the Statistics Bulletin:	http://sdw.ecb.europa.eu/reports.do?node=10000022
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
2018	3.7	2.9	1.3	0.6	6.7	1.9	2.6	2.1	2.4	2.5	1.0	2.1	1.8
2019	2.8	2.3	1.4	0.0	6.0	1.5	2.0	2.2	1.8	1.8	0.5	2.9	1.2
2020	-3.3	-3.4	-9.8	-4.7	2.3	-6.3	1.3	1.7	1.2	0.9	0.0	2.5	0.3
2020 Q3	7.8	7.5	16.9	5.4	3.0	12.6	1.2	1.6	1.2	0.6	0.2	2.3	0.0
Q4	1.9	1.1	1.3	2.8	2.6	-0.4	1.2	1.5	1.2	0.5	-0.8	0.1	-0.3
2021 Q1	0.8	1.5	-1.6	-1.1	0.6	-0.3	1.9	1.7	1.9	0.6	-0.5	0.0	1.1
Q2	.	1.6	4.8	0.5	1.3	2.2	3.8	2.8	4.8	2.0	-0.8	1.1	1.8
2021 Mar.	-	-	-	-	-	-	2.4	1.8	2.6	0.7	-0.4	0.4	1.3
Apr.	-	-	-	-	-	-	3.4	2.4	4.2	1.5	-1.1	0.9	1.6
May	-	-	-	-	-	-	3.9	2.9	5.0	2.1	-0.8	1.3	2.0
June	-	-	-	-	-	-	4.1	3.2	5.4	2.5	-0.5	1.1	1.9
July	-	-	-	-	-	-	.	.	5.4	2.0	-0.3	1.0	2.2
Aug. [3]	-	-	-	-	-	-	.	.	.	.	.	.	3.0

Sources: Eurostat (col. 6, 13); BIS (col. 9, 10, 11, 12); OECD (col. 1, 2, 3, 4, 5, 7, 8).
1) Quarterly data seasonally adjusted; annual data unadjusted.
2) Data refer to the changing composition of the euro area.
3) The figure for the euro area is an estimate based on provisional national data, as well as on early information on energy prices.

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
2018	53.4	55.0	53.3	52.1	52.3	54.6	53.1	53.8	50.8	4.3	3.2	5.5
2019	51.7	52.5	50.2	50.5	51.8	51.3	50.3	52.2	48.8	-0.4	-0.3	-0.5
2020	47.5	48.8	46.5	42.4	51.4	44.0	48.5	46.3	45.3	-4.6	-4.5	-4.7
2020 Q3	51.9	53.1	57.5	45.6	54.7	52.4	52.6	51.7	49.0	8.4	8.7	8.1
Q4	54.2	56.8	50.5	48.2	56.3	48.1	54.6	54.0	50.8	4.6	4.9	4.2
2021 Q1	54.3	59.3	49.1	48.4	52.3	49.9	53.8	54.5	50.3	4.3	1.6	7.2
Q2	57.5	65.3	61.9	49.6	53.0	56.8	53.9	58.8	52.9	2.2	1.8	2.5
2021 Mar.	55.3	59.7	56.4	49.9	53.1	53.2	53.6	55.9	51.7	4.3	1.6	7.2
Apr.	57.5	63.5	60.7	51.0	54.7	53.8	54.4	58.5	53.3	4.3	1.7	7.2
May	59.0	68.7	62.9	48.8	53.8	57.1	54.4	60.5	53.6	4.4	2.7	6.1
June	56.1	63.7	62.2	48.9	50.6	59.5	52.9	57.2	51.7	2.2	1.8	2.5
July	54.9	59.9	59.2	48.8	53.1	60.2	53.2	55.5	51.4	.	.	.
Aug.	51.3	55.4	54.8	45.5	47.2	59.0	50.7	51.5	49.5	.	.	.

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 Financial developments

2.1 Money market interest rates

(percentages per annum; period averages)

	Euro area [1]						United States	Japan
	Euro short-term rate (€STR) [2]	Overnight deposits (EONIA)	1-month deposits (EURIBOR)	3-month deposits (EURIBOR)	6-month deposits (EURIBOR)	12-month deposits (EURIBOR)	3-month deposits (LIBOR)	3-month deposits (LIBOR)
	1	2	3	4	5	6	7	8
2018	-0.45	-0.36	-0.37	-0.32	-0.27	-0.17	2.31	-0.05
2019	-0.48	-0.39	-0.40	-0.36	-0.30	-0.22	2.33	-0.08
2020	-0.55	-0.46	-0.50	-0.43	-0.37	-0.31	0.64	-0.07
2021 Feb.	-0.56	-0.48	-0.55	-0.54	-0.52	-0.50	0.19	-0.09
Mar.	-0.56	-0.48	-0.55	-0.54	-0.52	-0.49	0.19	-0.08
Apr.	-0.57	-0.48	-0.56	-0.54	-0.52	-0.48	0.19	-0.07
May	-0.56	-0.48	-0.56	-0.54	-0.51	-0.48	0.15	-0.09
June	-0.56	-0.48	-0.55	-0.54	-0.51	-0.48	0.13	-0.09
July	-0.57	-0.48	-0.56	-0.54	-0.52	-0.49	0.13	-0.08
Aug.	-0.57	-0.48	-0.56	-0.55	-0.53	-0.50	0.12	-0.10

Source: Refinitiv and ECB calculations.

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

2) The ECB published the euro short-term rate (€STR) for the first time on 2 October 2019, reflecting trading activity on 1 October 2019. Data on previous periods refer to the pre-€STR, which was published for information purposes only and not intended for use as a benchmark or reference rate in any market transactions.

2.2 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
2018	-0.80	-0.75	-0.66	-0.26	0.32	1.07	0.08	0.51	-0.67	-0.45	0.44	1.17
2019	-0.68	-0.66	-0.62	-0.45	-0.14	0.52	0.34	0.24	-0.62	-0.52	-0.13	0.41
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 Feb.	-0.61	-0.65	-0.67	-0.55	-0.25	0.41	1.33	0.78	-0.69	-0.66	-0.26	0.32
Mar.	-0.64	-0.69	-0.72	-0.62	-0.28	0.41	1.68	0.82	-0.75	-0.73	-0.32	0.37
Apr.	-0.63	-0.68	-0.70	-0.57	-0.18	0.50	1.57	0.80	-0.73	-0.70	-0.21	0.53
May	-0.63	-0.68	-0.69	-0.54	-0.15	0.53	1.54	0.75	-0.72	-0.67	-0.16	0.57
June	-0.65	-0.69	-0.70	-0.56	-0.20	0.49	1.40	0.68	-0.72	-0.68	-0.22	0.45
July	-0.66	-0.75	-0.80	-0.75	-0.44	0.31	1.16	0.52	-0.83	-0.86	-0.50	0.16
Aug.	-0.68	-0.73	-0.77	-0.68	-0.39	0.34	1.24	0.56	-0.79	-0.79	-0.43	0.16

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.

2.3 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
2018	375.5	3,386.6	766.3	264.9	172.6	115.8	173.1	629.5	502.5	278.8	292.9	800.5	2,746.2	22,310.7
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 Feb.	410.0	3,667.1	873.5	258.5	168.5	90.7	146.1	751.4	785.6	372.8	253.9	851.8	3,883.4	29,458.8
Mar.	422.4	3,813.3	911.1	271.6	168.4	97.0	159.1	774.6	770.1	367.2	264.5	838.1	3,910.5	29,315.3
Apr.	440.1	3,987.3	952.7	286.0	177.2	93.2	161.5	807.2	835.4	387.5	267.3	874.0	4,141.2	29,426.8
May	443.8	4,003.6	959.5	290.0	183.0	94.8	167.8	808.7	811.7	384.1	278.3	870.2	4,169.6	28,517.1
June	455.3	4,105.8	958.5	305.3	188.6	97.4	168.5	831.8	850.4	375.9	287.2	883.4	4,238.5	28,943.2
July	453.8	4,062.6	979.0	300.5	190.2	91.2	162.2	835.4	875.2	372.0	290.2	896.1	4,363.7	28,118.8
Aug.	468.5	4,177.0	1,014.5	303.3	191.9	91.6	169.0	865.0	938.2	380.0	303.6	922.1	4,454.2	27,692.7

Source: Refinitiv.

2 Financial developments

2.4 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
2020 Aug.	0.02	0.35	0.18	0.71	5.20	15.88	5.33	5.35	5.88	1.91	1.42	1.61	1.31	1.40	1.67	1.40
Sep.	0.02	0.35	0.19	0.70	5.23	15.86	5.08	5.25	5.75	1.94	1.39	1.61	1.31	1.37	1.66	1.38
Oct.	0.02	0.35	0.20	0.69	5.18	15.82	5.14	5.26	5.80	2.03	1.37	1.56	1.27	1.36	1.64	1.36
Nov.	0.02	0.35	0.20	0.71	5.11	15.78	5.01	5.25	5.90	2.04	1.37	1.54	1.29	1.35	1.63	1.35
Dec.	0.01	0.35	0.17	0.72	4.99	15.78	4.93	5.08	5.71	1.93	1.35	1.52	1.27	1.33	1.62	1.32
2021 Jan.	0.01	0.35	0.22	0.68	5.00	15.81	4.84	5.32	5.87	1.91	1.35	1.49	1.29	1.35	1.60	1.33
Feb.	0.01	0.35	0.23	0.66	5.01	15.74	5.05	5.25	5.86	1.98	1.30	1.48	1.27	1.32	1.58	1.31
Mar.	0.01	0.35	0.20	0.61	4.98	15.77	4.88	5.12	5.72	1.94	1.32	1.43	1.24	1.32	1.58	1.31
Apr.	0.01	0.35	0.21	0.62	4.89	15.75	5.16	5.17	5.78	1.98	1.32	1.49	1.27	1.31	1.59	1.31
May	0.01	0.34	0.18	0.57	4.88	15.75	5.16	5.31	5.93	2.04	1.32	1.43	1.26	1.31	1.61	1.32
June	0.01	0.34	0.16	0.59	4.88	15.70	5.16	5.15	5.77	1.94	1.31	1.43	1.26	1.30	1.60	1.32
July [(p)]	0.01	0.34	0.19	0.59	4.78	15.57	5.29	5.24	5.85	1.98	1.35	1.45	1.27	1.30	1.61	1.32

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).

2.5 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
2020 Aug.	0.00	-0.20	0.39	1.83	1.84	1.90	1.94	1.56	1.39	1.49	1.29	1.31	1.20	1.51
Sep.	0.00	-0.20	0.26	1.88	1.91	2.10	1.94	1.54	1.43	1.49	1.22	1.31	1.31	1.51
Oct.	0.00	-0.21	0.26	1.82	1.91	2.20	1.96	1.55	1.46	1.50	1.22	1.42	1.40	1.53
Nov.	-0.01	-0.20	0.42	1.83	1.97	2.00	1.98	1.57	1.41	1.47	1.22	1.29	1.30	1.51
Dec.	-0.01	-0.18	0.25	1.83	2.01	1.94	1.94	1.61	1.42	1.44	1.34	1.23	1.27	1.51
2021 Jan.	-0.01	-0.14	0.39	1.84	2.14	2.00	1.92	1.61	1.44	1.41	1.17	1.18	1.29	1.50
Feb.	-0.01	-0.21	0.25	1.84	1.96	2.00	1.95	1.58	1.44	1.43	1.15	1.22	1.23	1.48
Mar.	-0.01	-0.11	0.22	1.82	1.91	1.97	2.02	1.56	1.45	1.40	1.09	0.71	1.23	1.39
Apr.	-0.01	-0.18	0.25	1.80	2.04	1.96	1.98	1.57	1.44	1.40	1.32	1.33	1.38	1.56
May	-0.01	-0.23	0.19	1.79	1.87	1.95	2.04	1.57	1.45	1.42	1.16	1.17	1.27	1.46
June	-0.02	-0.31	0.27	1.84	1.89	1.97	2.02	1.55	1.43	1.54	1.20	1.13	1.24	1.46
July [(p)]	-0.02	-0.31	0.14	1.72	1.82	2.14	2.00	1.59	1.44	1.37	1.26	1.32	1.16	1.47

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.

2 Financial developments

2.6 Debt securities issued by euro area residents, by sector of the issuer and initial maturity

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

	Outstanding amounts							Gross issues [1]						
	Total	MFIs (including Euro-system)	Non-MFI corporations			General government		Total	MFIs (including Euro-system)	Non-MFI corporations			General government	
			Financial corporations other than MFIs	FVCs	Non-financial corporations	Central govern-ment	Other general govern-ment			Financial corporations other than MFIs	FVCs	Non-financial corporations	Central govern-ment	Other general govern-ment
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Short-term														
2018	1,215	503	170	.	72	424	47	389	171	66	.	41	76	35
2019	1,283	550	181	.	85	406	61	415	177	80	.	47	73	38
2020	1,530	455	145	.	98	714	118	455	177	70	.	45	114	49
2021 Jan.	1,587	496	142	.	100	718	131	495	246	46	.	38	121	43
Feb.	1,547	477	145	.	103	702	121	372	165	45	.	32	103	27
Mar.	1,587	487	150	.	95	726	130	460	218	51	.	31	118	43
Apr.	1,560	475	145	.	98	706	136	413	180	40	.	39	107	47
May	1,532	463	147	.	100	692	130	409	187	47	.	37	105	33
June	1,538	482	147	.	90	694	126	449	216	55	.	34	105	39
Long-term														
2018	15,745	3,688	3,162	.	1,247	7,022	627	228	64	68	.	15	75	6
2019	16,313	3,817	3,398	.	1,321	7,151	626	247	69	74	.	20	78	7
2020	17,201	3,892	3,126	.	1,451	8,006	725	296	68	71	.	27	114	16
2021 Jan.	17,311	3,897	3,130	.	1,455	8,093	736	315	90	52	.	21	133	19
Feb.	17,505	3,905	3,187	.	1,453	8,209	751	324	57	84	.	18	144	19
Mar.	17,701	3,968	3,227	.	1,469	8,274	763	371	107	94	.	27	125	17
Apr.	17,704	3,954	3,217	.	1,465	8,308	760	316	64	77	.	17	146	12
May	17,844	3,945	3,250	.	1,488	8,393	768	271	46	69	.	22	121	12
June	18,010	3,968	3,288	.	1,504	8,472	779	330	74	77	.	28	135	15

Source: ECB.

1) For the purpose of comparison, annual data refer to the average monthly figure over the year.

2.7 Growth rates and outstanding amounts of debt securities and listed shares

(EUR billions; percentage changes)

	Debt securities							Listed shares			
	Total	MFIs (including Eurosystem)	Non-MFI corporations			General government		Total	MFIs	Financial corporations other than MFIs	Non-financial corporations
			Financial corporations other than MFIs	FVCs	Non-financial corporations	Central government	Other general government				
	1	2	3	4	5	6	7	8	9	10	11
Oustanding amount											
2018	16,960.6	4,190.4	3,332.3	.	1,318.6	7,445.8	673.5	7,024.3	465.0	1,099.2	5,460.1
2019	17,595.6	4,367.4	3,578.4	.	1,406.0	7,557.2	686.5	8,587.9	538.4	1,410.6	6,639.0
2020	18,730.5	4,347.3	3,270.9	.	1,548.7	8,720.3	843.3	8,448.7	469.3	1,321.5	6,658.0
2021 Jan.	18,898.3	4,393.8	3,271.7	.	1,555.0	8,810.9	866.8	8,331.8	446.6	1,317.4	6,567.8
Feb.	19,052.7	4,382.0	3,331.2	.	1,555.9	8,911.4	872.2	8,649.0	520.6	1,407.6	6,720.8
Mar.	19,287.7	4,455.4	3,376.5	.	1,564.2	8,999.1	892.5	9,237.8	542.9	1,467.6	7,227.3
Apr.	19,263.7	4,429.0	3,361.6	.	1,563.5	9,013.8	895.8	9,457.6	554.3	1,467.6	7,435.6
May	19,376.4	4,408.6	3,396.8	.	1,587.7	9,085.1	898.3	9,665.6	575.7	1,508.7	7,581.2
June	19,548.2	4,449.2	3,434.9	.	1,594.0	9,165.9	904.1	9,792.4	564.8	1,521.4	7,706.3
Growth rate											
2018	1.9	1.7	3.0	.	3.2	1.9	-4.3	0.7	0.3	2.4	0.4
2019	3.1	3.8	5.0	.	5.6	1.5	1.8	0.0	0.5	0.0	0.0
2020	7.2	1.2	1.4	.	12.4	10.9	24.3	1.1	0.0	3.1	0.8
2021 Jan.	7.2	0.4	1.5	.	11.7	11.3	25.5	1.3	-0.1	4.5	0.7
Feb.	7.5	-0.3	2.8	.	10.8	11.8	25.1	1.5	-0.1	4.7	0.9
Mar.	8.3	2.2	2.9	.	11.9	11.9	24.5	1.7	1.4	5.0	1.1
Apr.	6.8	0.9	3.4	.	8.2	10.2	19.5	2.0	1.4	5.3	1.5
May	5.3	0.1	3.8	.	5.5	8.1	12.2	2.3	1.4	6.1	1.6
June	4.3	-0.4	3.1	.	4.3	6.6	9.6	2.5	1.8	6.4	1.7

Source: ECB.

2 Financial developments

2.8 Effective exchange rates [1)]

(period averages; index: 1999 Q1=100)

	EER-19						EER-42	
	Nominal	Real CPI	Real PPI	Real GDP deflator	Real ULCM	Real ULCT	Nominal	Real CPI
	1	2	3	4	5	6	7	8
2018	99.9	95.5	94.1	90.6	80.9	89.2	117.3	94.9
2019	98.1	93.1	92.9	88.8	79.1	86.6	115.4	92.3
2020	99.6	93.4	94.1	89.2	78.9	87.5	119.4	93.8
2020 Q3	101.1	94.7	95.3	90.0	79.0	87.9	121.7	95.4
Q4	101.2	94.6	95.4	90.2	75.9	87.8	122.3	95.5
2021 Q1	100.7	94.6	95.2	89.8	75.1	87.5	121.7	95.3
Q2	100.5	94.1	95.0	.	.	.	121.9	94.9
2021 Mar.	100.3	94.1	94.7	-	-	-	121.2	94.8
Apr.	100.6	94.2	95.0	-	-	-	121.9	95.1
May	100.8	94.3	95.1	-	-	-	122.3	95.2
June	100.2	93.7	94.8	-	-	-	121.5	94.5
July	99.7	93.5	94.2	-	-	-	120.8	94.2
Aug.	99.3	93.2	93.9	-	-	-	120.4	93.9
Percentage change versus previous month								
2021 Aug.	-0.3	-0.3	-0.4	-	-	-	-0.4	-0.3
Percentage change versus previous year								
2021 Aug.	-2.1	-1.7	-1.9	-	-	-	-1.7	-2.0

Source: ECB.

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

2.9 Bilateral exchange rates

(period averages; units of national currency per euro)

	Chinese renminbi	Croatian kuna	Czech koruna	Danish krone	Hungarian forint	Japanese yen	Polish zloty	Pound sterling	Romanian leu	Swedish krona	Swiss franc	US Dollar
	1	2	3	4	5	6	7	8	9	10	11	12
2018	7.808	7.418	25.647	7.453	318.890	130.396	4.261	0.885	4.6540	10.258	1.155	1.181
2019	7.735	7.418	25.670	7.466	325.297	122.006	4.298	0.878	4.7453	10.589	1.112	1.119
2020	7.875	7.538	26.455	7.454	351.249	121.846	4.443	0.890	4.8383	10.485	1.071	1.142
2020 Q3	8.086	7.527	26.479	7.445	353.600	124.049	4.441	0.905	4.8454	10.364	1.075	1.169
Q4	7.901	7.559	26.667	7.443	360.472	124.607	4.505	0.903	4.8718	10.268	1.078	1.193
2021 Q1	7.808	7.572	26.070	7.437	361.206	127.806	4.546	0.874	4.8793	10.120	1.091	1.205
Q2	7.784	7.528	25.638	7.436	354.553	131.930	4.529	0.862	4.9240	10.141	1.098	1.206
2021 Mar.	7.747	7.578	26.178	7.436	365.612	129.380	4.599	0.859	4.8884	10.169	1.106	1.190
Apr.	7.805	7.568	25.924	7.437	360.583	130.489	4.561	0.865	4.9231	10.162	1.103	1.198
May	7.811	7.523	25.558	7.436	353.647	132.569	4.528	0.863	4.9250	10.147	1.097	1.215
June	7.739	7.498	25.454	7.436	349.937	132.631	4.501	0.859	4.9238	10.117	1.094	1.205
July	7.654	7.503	25.636	7.437	357.257	130.349	4.562	0.856	4.9255	10.198	1.086	1.182
Aug.	7.624	7.496	25.470	7.437	351.843	129.284	4.569	0.853	4.9232	10.216	1.076	1.177
Percentage change versus previous month												
2021 Aug.	-0.4	-0.1	-0.6	0.0	-1.5	-0.8	0.2	-0.4	0.0	0.2	-0.9	-0.4
Percentage change versus previous year												
2021 Aug.	-7.0	-0.2	-2.7	-0.1	0.8	3.1	3.8	-5.3	1.8	-0.9	-0.1	-0.5

Source: ECB.

2 Financial developments

2.10 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)												
2020 Q2	28,147.8	28,214.2	-66.5	11,309.8	9,464.6	9,868.7	11,969.9	-66.0	6,130.3	6,779.7	905.0	15,309.0
Q3	28,066.2	28,063.8	2.5	11,116.0	9,314.9	10,009.8	12,055.5	-91.9	6,122.8	6,693.4	909.6	15,148.3
Q4	28,335.8	28,453.7	-118.0	10,976.2	9,408.4	10,700.4	12,347.1	-75.2	5,854.6	6,698.3	879.8	14,809.7
2021 Q1	29,619.9	29,737.7	-117.8	11,320.4	9,605.4	11,436.4	13,070.4	-115.2	6,128.8	7,061.9	849.5	15,416.3
Outstanding amounts as a percentage of GDP												
2021 Q1	259.8	260.9	-1.0	99.3	84.3	100.3	114.7	-1.0	53.8	61.9	7.5	135.2
Transactions												
2020 Q3	184.7	86.7	98.0	24.7	-2.3	96.2	78.8	-31.8	92.3	10.3	3.4	-
Q4	31.2	-94.7	125.8	-97.9	13.5	355.0	-239.9	-19.6	-208.4	131.8	2.1	-
2021 Q1	513.5	428.7	84.8	70.6	7.7	259.7	165.4	7.2	179.1	255.5	-3.0	-
Q2	215.2	119.3	95.9	-1.4	38.0	241.7	49.6	12.5	-45.1	31.6	7.5	-
2021 Jan.	328.5	283.3	45.2	61.6	19.5	95.9	92.0	13.7	158.2	171.8	-0.9	-
Feb.	119.8	101.0	18.8	21.5	4.9	84.2	-2.7	-1.0	16.7	98.8	-1.6	-
Mar.	65.2	44.4	20.8	-12.5	-16.7	79.6	76.2	-5.6	4.2	-15.1	-0.5	-
Apr.	209.2	208.4	0.8	38.8	13.9	62.2	46.0	4.6	102.9	148.5	0.7	-
May	84.6	47.9	36.7	19.1	12.4	64.9	-6.8	-2.3	1.6	42.3	1.4	-
June	-78.7	-137.1	58.4	-59.2	11.7	114.7	10.4	10.2	-149.6	-159.2	5.3	-
12-month cumulated transactions												
2021 June	944.6	540.0	404.6	-4.0	56.9	952.6	53.8	-31.7	17.8	429.3	10.0	-
12-month cumulated transactions as a percentage of GDP												
2021 June	8.0	4.6	3.4	0.0	0.5	8.1	0.5	-0.3	0.2	3.6	0.1	-

Source: ECB.

1) Net financial derivatives are included in total assets.

3 Economic activity

3.1 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)											
2018	11,601.3	11,130.8	6,221.6	2,369.0	2,431.1	1,176.6	747.5	500.5	109.1	470.5	5,581.2	5,110.7
2019	11,976.8	11,568.0	6,375.6	2,456.4	2,647.2	1,247.0	772.3	621.2	88.8	408.8	5,764.1	5,355.4
2020	11,391.2	10,966.2	5,902.0	2,573.4	2,484.6	1,206.4	684.6	586.5	6.1	425.1	5,179.6	4,754.5
2020 Q3	2,915.4	2,775.1	1,529.3	649.2	619.3	309.1	180.2	128.1	-22.6	140.3	1,302.8	1,162.5
Q4	2,924.1	2,784.5	1,485.8	660.6	639.3	316.0	184.0	137.5	-1.2	139.5	1,365.6	1,226.0
2021 Q1	2,936.6	2,804.3	1,473.2	662.3	642.7	322.1	186.0	132.9	26.1	132.3	1,396.0	1,263.7
Q2	3,006.7	2,883.3	1,535.3	669.4	656.1	332.3	188.2	133.7	22.5	123.4	1,452.1	1,328.7
	as a percentage of GDP											
2020	100.0	96.3	51.8	22.6	21.8	10.6	6.0	5.1	0.1	3.7	-	-
	Chain-linked volumes (prices for the previous year)											
	quarter-on-quarter percentage changes											
2020 Q3	12.6	10.5	14.4	5.6	13.9	14.7	25.1	0.0	-	-	16.6	11.8
Q4	-0.4	-0.3	-3.1	0.7	2.8	1.8	1.9	6.4	-	-	4.1	4.8
2021 Q1	-0.3	-0.4	-2.1	-0.5	-0.2	0.5	1.1	-3.7	-	-	0.7	0.4
Q2	2.2	2.3	3.7	1.2	1.1	1.3	0.7	1.3	-	-	2.2	2.3
	annual percentage changes											
2018	1.9	1.8	1.5	1.1	3.0	3.8	3.8	0.4	-	-	3.6	3.7
2019	1.5	2.4	1.3	1.8	6.5	2.8	2.0	22.0	-	-	2.4	4.5
2020	-6.3	-6.2	-7.9	1.4	-7.2	-5.0	-12.2	-5.9	-	-	-9.0	-9.0
2020 Q3	-4.0	-4.2	-4.5	2.9	-4.2	-3.1	-8.1	-1.3	-	-	-8.6	-9.4
Q4	-4.4	-6.5	-7.5	3.3	-10.2	-0.6	-4.9	-30.7	-	-	-4.8	-9.2
2021 Q1	-1.2	-3.9	-5.4	2.9	-6.2	2.7	6.1	-31.5	-	-	-0.5	-6.1
Q2	14.3	12.2	12.6	7.1	18.2	18.9	29.8	3.7	-	-	24.8	20.4
	contributions to quarter-on-quarter percentage changes in GDP; percentage points											
2020 Q3	12.6	10.2	7.5	1.3	2.9	1.5	1.4	0.0	-1.6	2.4	-	-
Q4	-0.4	-0.3	-1.6	0.2	0.6	0.2	0.1	0.3	0.6	-0.1	-	-
2021 Q1	-0.3	-0.4	-1.1	-0.1	0.0	0.1	0.1	-0.2	0.8	0.1	-	-
Q2	2.2	2.2	1.9	0.3	0.2	0.1	0.0	0.1	-0.2	0.1	-	-
	contributions to annual percentage changes in GDP; percentage points											
2018	1.9	1.7	0.8	0.2	0.6	0.4	0.2	0.0	0.1	0.1	-	-
2019	1.5	2.3	0.7	0.4	1.3	0.3	0.1	0.9	-0.1	-0.8	-	-
2020	-6.3	-6.0	-4.2	0.3	-1.6	-0.5	-0.8	-0.3	-0.5	-0.4	-	-
2020 Q3	-4.0	-4.0	-2.4	0.6	-0.9	-0.3	-0.5	-0.1	-1.3	0.0	-	-
Q4	-4.4	-6.3	-4.0	0.7	-2.4	-0.1	-0.3	-2.0	-0.6	1.9	-	-
2021 Q1	-1.2	-3.7	-2.8	0.6	-1.4	0.3	0.4	-2.1	-0.1	2.5	-	-
Q2	14.3	11.8	6.5	1.7	3.8	2.0	1.7	0.2	-0.2	2.5	-	-

Sources: Eurostat and ECB calculations.

1) Exports and imports cover goods and services and include cross-border intra-euro area trade.

2) Including acquisitions less disposals of valuables.

3 Economic activity

3.2 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)											
2018	10,396.3	175.5	2,056.7	528.0	1,961.2	502.3	477.5	1,169.0	1,210.5	1,958.6	357.2	1,204.9
2019	10,735.3	179.2	2,096.6	563.3	2,036.9	531.8	480.4	1,204.7	1,250.3	2,023.9	368.2	1,241.5
2020	10,259.1	177.2	1,963.8	553.2	1,797.6	544.9	468.5	1,213.2	1,166.2	2,053.5	321.2	1,132.1
2020 Q3	2,624.8	44.3	504.0	142.6	473.3	140.0	116.8	305.9	294.4	519.7	83.8	290.7
Q4	2,631.9	44.0	519.9	146.8	458.5	139.6	116.7	306.3	301.0	521.7	77.4	292.1
2021 Q1	2,646.6	44.3	531.9	146.2	453.2	141.8	118.8	307.1	303.5	522.8	77.0	290.1
Q2	2,699.1	45.5	535.0	149.8	477.9	145.4	117.3	309.7	307.5	529.6	81.3	307.7
	as a percentage of value added											
2020	100.0	1.7	19.1	5.4	17.5	5.3	4.6	11.8	11.4	20.0	3.1	-
	Chain-linked volumes (prices for the previous year)											
	quarter-on-quarter percentage changes											
2020 Q3	12.5	0.9	16.3	15.1	23.3	7.7	2.7	3.0	11.8	9.4	23.8	13.3
Q4	-0.4	0.4	3.4	2.1	-3.7	-0.7	-0.4	-0.4	1.7	-1.3	-11.5	-0.5
2021 Q1	0.1	-2.1	1.0	-1.0	-1.2	2.1	1.2	-0.3	0.6	0.0	-0.6	-3.4
Q2	1.9	1.1	0.5	1.1	4.8	2.4	0.3	1.0	1.5	1.7	6.6	4.8
	annual percentage changes											
2018	1.9	-0.8	1.9	2.4	1.4	6.8	0.1	1.4	4.1	0.7	1.1	1.7
2019	1.5	1.9	0.3	2.0	2.3	5.2	0.6	1.6	1.5	1.0	1.7	1.5
2020	-6.3	-0.2	-6.9	-5.7	-13.3	1.1	-1.6	-1.0	-8.0	-2.6	-17.0	-6.8
2020 Q3	-4.0	0.5	-5.1	-3.7	-9.2	3.0	-1.0	-0.3	-7.3	0.4	-11.5	-3.6
Q4	-4.4	-0.4	-1.3	-1.1	-12.4	1.3	-1.3	-1.1	-5.7	-1.2	-21.8	-4.1
2021 Q1	-1.3	0.1	3.3	0.7	-8.1	3.9	1.1	-0.2	-2.6	0.9	-16.5	-0.7
Q2	14.3	0.4	22.0	17.7	22.9	11.8	3.9	3.4	16.1	9.9	16.1	14.1
	contributions to quarter-on-quarter percentage changes in value added; percentage points											
2020 Q3	12.5	0.0	3.1	0.8	3.8	0.4	0.1	0.4	1.3	1.9	0.7	-
Q4	-0.4	0.0	0.7	0.1	-0.7	0.0	0.0	0.0	0.2	-0.3	-0.4	-
2021 Q1	0.1	0.0	0.2	-0.1	-0.2	0.1	0.1	0.0	0.1	0.0	0.0	-
Q2	1.9	0.0	0.1	0.1	0.8	0.1	0.0	0.1	0.2	0.3	0.2	-
	contributions to annual percentage changes in value added; percentage points											
2018	1.9	0.0	0.4	0.1	0.3	0.3	0.0	0.2	0.5	0.1	0.0	-
2019	1.5	0.0	0.1	0.1	0.4	0.3	0.0	0.2	0.2	0.2	0.1	-
2020	-6.3	0.0	-1.3	-0.3	-2.5	0.1	-0.1	-0.1	-0.9	-0.5	-0.6	-
2020 Q3	-4.0	0.0	-1.0	-0.2	-1.8	0.2	0.0	0.0	-0.9	0.1	-0.4	-
Q4	-4.4	0.0	-0.2	-0.1	-2.3	0.1	-0.1	-0.1	-0.7	-0.2	-0.7	-
2021 Q1	-1.3	0.0	0.6	0.0	-1.5	0.2	0.0	0.0	-0.3	0.2	-0.6	-
Q2	14.3	0.0	4.1	0.9	3.7	0.7	0.2	0.4	1.8	2.0	0.5	-

Sources: Eurostat and ECB calculations.

3 Economic activity

3.3 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													
2018	100.0	85.8	14.2	3.1	14.6	6.0	24.9	2.9	2.4	1.0	14.0	24.3	6.8
2019	100.0	86.0	14.0	3.0	14.6	6.0	25.0	2.9	2.4	1.0	14.0	24.3	6.7
2020	100.0	86.0	14.0	3.0	14.5	6.2	24.4	3.0	2.4	1.0	13.9	24.9	6.6
annual percentage changes													
2018	1.5	1.8	0.1	-0.5	1.4	2.7	1.5	3.8	-1.0	2.0	2.8	1.3	0.2
2019	1.2	1.4	0.1	-1.8	1.1	2.1	1.2	3.3	-0.4	1.5	1.2	1.5	0.5
2020	-1.5	-1.5	-1.7	-3.1	-1.9	0.7	-3.6	1.4	-0.7	-0.1	-2.3	0.8	-3.3
2020 Q3	-2.0	-2.0	-1.9	-2.9	-2.7	1.0	-4.2	1.0	-0.8	0.5	-3.3	0.7	-3.5
Q4	-1.8	-1.8	-1.4	-2.2	-2.4	0.8	-4.6	1.5	-0.6	1.0	-2.1	1.0	-3.7
2021 Q1	-1.8	-1.9	-1.3	-0.4	-2.2	1.5	-5.6	2.3	-0.7	0.9	-1.6	1.3	-4.9
Q2	1.9	2.2	0.0	3.1	-0.4	4.8	0.3	4.5	0.5	1.6	4.4	2.4	1.5
Hours worked													
as a percentage of total hours worked													
2018	100.0	81.0	19.0	4.3	15.0	6.8	25.8	3.0	2.5	1.0	13.8	21.7	6.1
2019	100.0	81.3	18.7	4.1	14.9	6.8	25.8	3.1	2.4	1.0	13.8	21.8	6.1
2020	100.0	82.0	18.0	4.3	15.0	6.9	24.2	3.3	2.6	1.1	13.8	23.2	5.7
annual percentage changes													
2018	1.7	2.0	0.0	0.0	1.3	3.4	1.4	3.9	-0.9	2.6	3.2	1.3	0.4
2019	1.0	1.3	-0.3	-2.7	0.6	1.9	1.0	3.5	-0.2	1.8	1.0	1.6	0.5
2020	-7.7	-6.9	-11.0	-3.7	-7.4	-6.3	-13.6	-1.8	-2.9	-6.5	-7.8	-2.0	-13.1
2020 Q3	-4.6	-4.5	-5.4	-2.1	-5.6	-0.8	-8.8	-2.0	-1.9	-2.9	-6.5	0.0	-5.7
Q4	-6.2	-5.6	-8.6	-2.4	-5.4	-2.8	-13.1	-0.5	-1.6	-2.9	-5.4	-0.7	-11.9
2021 Q1	-2.9	-3.1	-2.0	1.8	-1.3	5.0	-11.4	2.0	0.6	2.4	-1.8	2.0	-8.6
Q2	16.1	14.9	21.6	6.9	15.0	24.9	23.2	11.6	5.6	18.0	18.1	8.3	24.3
Hours worked per person employed													
annual percentage changes													
2018	0.1	0.2	-0.1	0.5	-0.1	0.7	-0.1	0.1	0.1	0.6	0.4	-0.1	0.2
2019	-0.2	-0.1	-0.4	-0.9	-0.5	-0.1	-0.3	0.2	0.1	0.3	-0.2	0.0	0.0
2020	-6.3	-5.5	-9.4	-0.6	-5.7	-6.9	-10.4	-3.1	-2.2	-6.4	-5.6	-2.8	-10.1
2020 Q3	-2.7	-2.5	-3.5	0.9	-3.0	-1.8	-4.8	-3.0	-1.1	-3.3	-3.3	-0.7	-2.2
Q4	-4.5	-3.9	-7.2	-0.1	-3.1	-3.6	-8.9	-2.0	-1.1	-3.9	-3.4	-1.7	-8.5
2021 Q1	-1.1	-1.2	-0.7	2.1	0.9	3.4	-6.1	-0.2	1.2	1.5	-0.1	0.7	-3.9
Q2	13.9	12.4	21.7	3.7	15.4	19.2	22.8	6.8	5.1	16.1	13.2	5.7	22.5

Sources: Eurostat and ECB calculations.

1) Data for employment are based on the ESA 2010.

3 Economic activity

3.4 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			80.6		19.4		51.4		48.6		
2018	163.438	3.9	13.380	8.2	3.8	10.913	7.3	2.467	17.2	6.879	7.9	6.501	8.6	2.1
2019	164.209	3.6	12.406	7.6	3.3	10.102	6.7	2.304	16.0	6.352	7.2	6.054	7.9	2.2
2020	162.523	3.6	12.743	7.8	3.0	10.266	6.9	2.477	17.7	6.553	7.6	6.189	8.2	1.7
2020 Q3	163.000	3.7	13.832	8.5	3.1	11.127	7.5	2.706	19.2	7.096	8.2	6.737	8.9	1.7
Q4	163.169	3.6	13.144	8.1	3.2	10.665	7.1	2.479	17.9	6.756	7.8	6.388	8.4	1.9
2021 Q1	162.171	3.7	13.643	8.4	3.2	10.985	7.4	2.658	18.7	6.932	8.0	6.711	8.9	2.1
Q2	.	.	13.043	8.0	.	10.471	7.0	2.572	17.9	6.577	7.5	6.467	8.5	2.1
2021 Feb.	-	-	13.161	8.1	-	10.596	7.2	2.566	18.5	6.772	7.8	6.390	8.5	-
Mar.	-	-	13.070	8.1	-	10.480	7.1	2.589	18.4	6.610	7.6	6.460	8.6	-
Apr.	-	-	13.321	8.2	-	10.652	7.2	2.669	18.7	6.715	7.7	6.605	8.7	-
May	-	-	13.124	8.0	-	10.557	7.1	2.567	17.9	6.639	7.6	6.485	8.5	-
June	-	-	12.684	7.8	-	10.205	6.8	2.479	17.2	6.375	7.3	6.309	8.3	-
July	-	-	12.334	7.6	-	9.995	6.7	2.339	16.5	6.152	7.1	6.182	8.1	-

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).

3.5 Short-term business statistics

	Industrial production						Con-struction produc-tion	ECB indicator on industrial new orders	Retail sales				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	100.0	40.4	52.5	7.1	100.0
annual percentage changes													
2018	0.8	1.1	0.6	1.2	1.5	-1.4	1.7	2.7	1.6	1.4	2.0	0.7	0.9
2019	-1.3	-1.3	-2.4	-1.8	1.4	-2.1	2.1	-4.3	2.4	1.0	3.7	0.8	1.8
2020	-8.6	-9.0	-7.4	-13.2	-4.7	-5.2	-5.8	-10.7	-0.9	3.6	-2.4	-14.4	-25.0
2020 Q3	-6.8	-7.2	-5.6	-11.8	-2.1	-4.1	-2.3	-7.7	2.5	2.5	3.7	-4.9	-6.9
Q4	-1.5	-1.6	1.5	-3.3	-2.6	-1.8	-1.1	-1.7	1.5	4.5	1.3	-13.8	-9.2
2021 Q1	3.5	3.6	4.9	5.1	0.4	0.6	3.0	6.8	2.4	2.6	3.2	-5.2	3.4
Q2	22.1	23.8	25.3	29.0	16.5	7.6	16.5	45.6	11.7	1.9	18.5	29.4	53.8
2021 Feb.	-1.8	-2.0	-0.7	-2.7	-2.7	-2.2	-5.2	1.3	-1.3	2.6	-3.2	-11.9	-20.8
Mar.	12.0	12.8	13.9	17.3	6.5	4.0	20.0	23.5	13.8	-0.4	28.0	18.6	88.2
Apr.	39.7	42.9	38.6	64.6	26.2	13.7	45.6	68.9	23.6	3.8	42.8	62.1	262.5
May	20.6	22.4	23.9	27.4	14.5	6.2	12.2	47.6	8.6	0.2	14.0	28.3	49.5
June	9.7	10.5	15.7	6.3	10.4	2.9	2.8	26.8	5.4	1.9	7.1	11.6	5.4
July	.	.	.	.	.	.	.	28.0	3.1	1.1	4.8	0.6	.
month-on-month percentage changes (s.a.)													
2021 Feb.	-1.2	-1.1	-0.9	-2.5	0.5	-1.6	-1.8	1.4	4.3	-0.6	8.9	4.7	-1.1
Mar.	0.6	0.7	0.9	-0.4	2.7	1.6	4.0	3.3	4.1	2.0	6.2	-0.8	0.2
Apr.	0.7	0.6	0.8	0.9	2.1	2.0	-0.2	3.1	-3.8	-1.6	-6.0	-1.0	-0.4
May	-1.1	-0.8	-0.1	-2.5	-1.7	-2.5	-0.4	-1.4	4.1	-0.6	8.2	8.1	1.7
June	-0.3	-0.4	0.1	-1.5	1.2	-0.6	-1.7	3.6	1.8	-1.2	3.4	2.7	-0.6
July	.	.	.	.	.	.	.	3.8	-2.3	-0.7	-3.5	-1.6	.

Sources: Eurostat, ECB calculations, ECB experimental statistics (col. 8) and European Automobile Manufacturers Association (col. 13).

3 Economic activity

3.6 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
1999-15	99.3	-5.2	80.6	-11.6	-15.4	-8.6	7.3	-	51.2	52.5	53.0	52.8
2018	111.8	6.7	83.7	-4.8	7.2	1.3	15.2	90.4	54.9	54.7	54.5	54.6
2019	103.7	-5.2	82.0	-6.9	6.7	-0.5	10.8	90.5	47.4	47.8	52.7	51.3
2020	88.2	-14.4	74.0	-14.3	-7.4	-12.9	-16.5	86.3	48.6	48.0	42.5	44.0
2020 Q3	88.5	-13.6	74.2	-14.4	-10.6	-11.3	-18.0	85.9	52.4	56.0	51.1	52.4
Q4	91.4	-8.8	76.9	-15.6	-8.3	-10.9	-15.4	85.7	54.6	56.7	45.0	48.1
2021 Q1	95.3	-2.4	80.0	-13.7	-5.9	-16.6	-14.8	85.8	58.4	58.5	46.9	49.9
Q2	114.3	11.7	82.7	-5.5	4.4	0.7	10.5	87.2	63.1	62.7	54.7	56.8
2021 Mar.	100.9	2.1	-	-10.8	-2.3	-12.2	-9.6	-	62.5	63.3	49.6	53.2
Apr.	110.5	10.9	82.5	-8.1	3.0	-3.0	2.2	86.5	62.9	63.2	50.5	53.8
May	114.5	11.5	-	-5.1	4.9	0.5	11.3	-	63.1	62.2	55.2	57.1
June	117.9	12.8	-	-3.3	5.2	4.7	17.9	-	63.4	62.6	58.3	59.5
July	119.0	14.5	82.9	-4.4	4.0	4.4	18.9	88.0	62.8	61.1	59.8	60.2
Aug.	117.5	13.7	-	-5.3	5.5	4.6	16.8	-	61.4	59.0	59.0	59.0

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

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

	Households							Non-financial corporations					
	Saving ratio (gross)	Debt ratio	Real gross disposable income	Financial investment	Non-financial investment (gross)	Net worth [2]	Housing wealth	Profit share [3]	Saving ratio (net)	Debt ratio [4]	Financial investment	Non-financial investment (gross)	Financing
	Percentage of gross disposable income (adjusted) [1]		Annual percentage changes					Percentage of net value added		Percentage of GDP	Annual percentage changes		
	1	2	3	4	5	6	7	8	9	10	11	12	13
2018	12.5	93.4	1.8	2.1	6.1	2.7	4.7	35.6	5.8	76.9	2.0	7.1	1.5
2019	13.0	93.7	1.9	2.6	5.1	6.1	3.8	35.4	5.9	76.3	2.1	6.2	1.8
2020	19.6	96.2	-0.2	4.1	-4.9	5.0	4.7	31.1	4.1	83.9	3.2	-14.2	2.0
2020 Q2	17.1	94.9	-3.3	3.3	-15.1	4.1	4.3	32.1	4.8	81.9	2.2	-27.5	1.7
Q3	18.2	95.6	1.0	3.7	-3.3	3.6	4.2	31.6	4.3	82.8	2.7	-14.8	1.9
Q4	19.8	96.2	0.6	4.2	0.4	5.1	4.7	31.1	4.1	83.7	3.2	-20.6	2.0
2021 Q1	20.8	96.4	0.2	4.9	6.8	7.5	4.6	32.0	4.8	84.7	3.9	-11.2	2.2

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 share uses net entrepreneurial income, which is broadly equivalent to current profits in business accounting.
4) Defined as consolidated loans and debt securities liabilities.

3 Economic activity

3.8 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
2020 Q3	953.0	884.9	68.0	548.3	455.8	194.0	187.0	181.8	179.1	28.9	63.0	11.5	10.4
Q4	1,011.9	924.6	87.4	581.3	479.0	220.1	193.4	181.1	173.7	29.5	78.5	23.6	24.5
2021 Q1	1,051.4	948.8	102.5	603.7	497.3	224.1	201.9	193.8	174.4	29.8	75.2	15.2	11.7
Q2	1,048.3	990.0	58.3	615.1	544.4	224.6	197.9	178.9	177.1	29.7	70.6	16.4	11.5
2021 Jan.	353.8	307.5	46.3	200.8	157.7	75.5	65.9	67.8	58.8	9.7	25.1	4.2	3.6
Feb.	351.1	316.8	34.4	200.9	164.1	74.5	66.9	65.7	58.9	10.1	26.9	3.7	3.7
Mar.	346.4	324.6	21.8	202.0	175.5	74.2	69.1	60.3	56.7	10.0	23.2	7.3	4.4
Apr.	349.5	327.0	22.5	204.6	179.2	75.1	66.0	59.1	58.3	10.8	23.5	4.6	3.5
May	349.1	335.2	13.9	206.2	182.8	74.1	67.7	59.6	61.2	9.2	23.5	5.2	3.0
June	349.7	327.8	21.8	204.2	182.5	75.4	64.2	60.2	57.5	9.8	23.6	6.6	4.9
12-month cumulated transactions													
2021 June	4,064.6	3,748.4	316.2	2,348.4	1,976.5	862.7	780.1	735.6	704.3	117.9	287.4	66.6	58.1
12-month cumulated transactions as a percentage of GDP													
2021 June	34.5	31.8	2.7	19.9	16.8	7.3	6.6	6.2	6.0	1.0	2.4	0.6	0.5

1) The capital account is not seasonally adjusted.

3.9 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)													
2020 Q3	-8.7	-11.4	531.7	248.4	108.3	165.4	448.3	469.3	242.7	84.8	133.9	359.9	34.2
Q4	-2.8	-5.9	568.3	265.4	114.1	178.1	478.3	492.5	261.7	86.7	135.0	379.3	35.3
2021 Q1	0.7	0.4	582.1	280.2	114.9	174.5	470.9	512.8	284.6	91.0	129.9	372.2	46.1
Q2	34.3	33.4	594.8	.	.	.	486.6	555.3	.	.	.	396.4	.
2021 Jan.	-8.9	-14.1	191.7	92.4	37.5	57.7	155.6	163.7	89.7	29.2	41.8	119.1	14.0
Feb.	-2.3	-2.8	192.6	92.3	39.1	57.3	161.5	169.2	93.4	30.0	42.8	126.3	15.6
Mar.	12.6	19.5	197.8	95.5	38.3	59.5	153.8	179.9	101.5	31.9	45.3	126.7	16.5
Apr.	46.7	37.8	197.9	94.9	39.5	60.2	164.5	184.6	105.8	30.5	45.8	133.0	16.9
May	35.0	34.8	199.2	97.1	38.9	58.9	162.8	185.4	107.0	30.6	44.6	133.3	17.9
June	23.7	28.1	197.7	.	.	.	159.3	185.3	.	.	.	130.1	.
Volume indices (2000 = 100; annual percentage changes for columns 1 and 2)													
2020 Q3	-7.1	-6.9	98.5	100.1	95.5	99.7	97.9	101.8	97.1	106.1	110.4	104.3	81.2
Q4	-1.5	-1.0	104.3	105.9	99.6	106.4	103.4	105.5	102.6	107.6	110.9	109.1	84.7
2021 Q1	0.8	0.3	104.5	108.3	100.7	101.7	100.4	104.9	103.3	112.0	105.5	105.2	83.8
Q2	.	.	.	.	.	.	.	.	.	.	.	.	.
2020 Dec.	3.8	3.5	104.9	106.8	101.4	105.3	103.2	104.9	101.8	108.9	109.5	109.9	86.7
2021 Jan.	-7.9	-10.8	103.6	107.3	98.6	102.0	99.5	102.3	100.6	107.1	103.1	101.7	85.0
Feb.	-1.9	-3.3	104.1	107.4	103.4	100.4	103.7	103.8	101.5	111.1	104.2	107.0	85.1
Mar.	11.5	15.7	105.7	110.2	100.0	102.6	97.9	108.5	107.7	117.8	109.3	106.8	81.5
Apr.	41.6	25.0	104.4	107.2	103.4	103.2	103.6	109.8	110.3	112.2	109.3	110.6	83.2
May	29.4	20.5	104.7	108.9	100.8	101.5	102.2	109.6	110.1	112.7	107.1	111.0	86.3

Sources: ECB and Eurostat.

1) Differences between ECB's b.o.p. goods (Table 3.8) and Eurostat's trade in goods (Table 3.9) are mainly due to different definitions.

2) Product groups as classified in the Broad Economic Categories.

4 Prices and costs

4.1 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
2018	103.6	1.8	1.0	2.0	1.5	-	-	-	-	-	-	1.7	2.1
2019	104.8	1.2	1.0	1.0	1.5	-	-	-	-	-	-	1.1	1.9
2020	105.1	0.3	0.7	-0.4	1.0	-	-	-	-	-	-	0.2	0.6
2020 Q3	105.1	0.0	0.6	-0.7	0.7	-0.1	-0.2	-2.0	0.2	0.9	-0.1	-0.1	0.4
Q4	105.0	-0.3	0.2	-0.9	0.5	0.0	0.1	0.7	-0.8	0.5	0.3	-0.4	0.5
2021 Q1	105.8	1.1	1.2	0.8	1.3	1.4	0.6	-0.3	1.6	6.5	0.6	1.0	1.4
Q2	107.4	1.8	0.9	2.5	0.9	0.5	0.4	1.5	-0.2	3.7	0.2	1.8	2.4
2021 Mar.	106.5	1.3	0.9	1.3	1.3	0.2	0.0	0.2	-0.3	2.6	0.1	1.3	1.4
Apr.	107.1	1.6	0.7	2.1	0.9	0.2	0.2	1.4	0.0	0.7	0.0	1.5	2.2
May	107.4	2.0	1.0	2.6	1.1	0.1	0.1	-0.1	0.1	0.8	0.1	1.9	2.4
June	107.7	1.9	0.9	2.8	0.7	0.2	0.2	-0.3	0.2	1.3	0.1	1.8	2.5
July	107.6	2.2	0.7	3.3	0.9	0.6	0.3	0.3	1.2	2.0	0.1	2.0	3.5
Aug. [3)]	108.0	3.0	1.6	.	1.1	0.3	0.3	0.8	0.1	1.0	0.2	.	.

	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
2018	2.2	2.1	2.3	1.9	0.3	6.4	1.2	1.2	1.5	-0.1	2.0	1.4
2019	1.8	1.9	1.4	0.5	0.3	1.1	1.4	1.3	2.0	-0.7	1.7	1.5
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
2020 Q3	1.8	1.5	2.8	-2.0	0.4	-8.1	1.3	1.2	-0.4	-0.7	0.6	1.4
Q4	1.7	1.2	3.5	-2.4	-0.3	-7.8	1.2	1.2	-0.6	-1.5	0.6	1.3
2021 Q1	1.3	1.2	1.7	0.5	0.9	-0.6	1.3	1.2	1.1	-0.4	1.4	1.5
Q2	0.6	0.8	-0.2	3.6	0.8	12.0	1.4	1.3	0.8	-0.1	0.5	1.6
2021 Mar.	1.1	1.0	1.6	1.4	0.3	4.3	1.3	1.2	1.5	-0.7	1.3	1.4
Apr.	0.6	0.9	-0.3	3.0	0.4	10.4	1.4	1.3	0.5	0.1	0.6	1.4
May	0.5	0.7	0.0	3.8	0.7	13.1	1.4	1.3	1.2	-0.1	0.8	1.6
June	0.5	0.8	-0.3	4.1	1.2	12.6	1.4	1.3	0.7	-0.1	0.1	1.7
July	1.6	1.5	1.9	4.3	0.7	14.3	1.3	1.1	1.7	0.7	0.3	1.7
Aug. [3)]	2.0	1.7	2.9	.	2.7	15.4	.	.	.	.	.	.

Sources: Eurostat and ECB calculations.

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

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

3) Flash estimate.

4 Prices and costs

4.2 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	16.5	5.9	27.9			
2018	104.1	3.3	2.4	1.5	2.7	1.0	0.4	0.1	0.6	8.4	2.5	4.9	4.1
2019	104.7	0.6	0.6	0.8	0.1	1.5	1.0	1.1	0.9	-0.1	2.0	4.2	4.5
2020	102.0	-2.6	-1.7	-0.1	-1.6	0.9	1.0	1.1	0.6	-9.7	1.2	5.4	1.7
2020 Q3	101.4	-2.7	-2.0	-0.3	-1.8	0.8	0.5	0.3	0.6	-9.3	0.9	5.3	1.1
Q4	102.6	-1.7	-1.7	0.0	-0.6	0.8	0.0	-0.5	0.7	-6.7	1.6	6.0	-0.9
2021 Q1	105.9	2.1	1.3	1.4	2.7	1.0	0.0	-0.7	0.7	3.8	2.8	6.3	.
Q2	109.3	9.2	6.8	4.7	9.0	1.7	1.8	1.8	1.2	23.7	.	.	.
2021 Feb.	105.6	1.5	1.0	1.2	2.5	1.0	-0.2	-0.9	0.6	2.3	-	-	-
Mar.	106.9	4.4	3.5	2.4	4.5	1.2	0.5	-0.1	0.9	10.3	-	-	-
Apr.	107.9	7.6	5.8	3.6	7.0	1.4	1.0	0.8	1.1	20.6	-	-	-
May	109.3	9.6	7.2	4.9	9.3	1.8	2.0	2.0	1.3	25.1	-	-	-
June	110.8	10.2	7.4	5.6	10.7	2.0	2.4	2.6	1.4	25.5	-	-	-
July	113.4	12.1	8.3	6.7	12.6	2.5	2.6	2.7	1.9	28.9	-	-	-

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

1) Domestic sales only.

2) Input prices for residential buildings.

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

4.3 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
2018	103.6	1.5	1.9	1.5	1.9	2.0	1.5	2.2	60.4	-0.9	-6.3	4.3	-0.6	-6.2	5.7
2019	105.3	1.7	1.5	1.1	1.9	2.3	0.8	0.3	57.2	2.0	4.4	-0.1	3.0	8.3	-2.3
2020	107.0	1.6	1.1	0.5	3.4	1.2	-1.3	-2.6	37.0	1.5	3.4	-0.3	-0.9	-0.1	-1.8
2020 Q3	106.6	1.0	0.7	0.1	2.1	1.0	-1.9	-2.8	36.5	1.9	1.5	2.4	-0.7	-2.2	1.0
Q4	107.3	1.2	0.8	0.0	2.6	0.5	-1.4	-2.5	37.4	4.1	0.1	7.9	-0.5	-6.1	6.2
2021 Q1	108.1	1.6	1.6	1.1	2.2	1.1	0.9	0.8	50.4	18.3	9.1	27.3	14.0	5.1	24.6
Q2	108.3	0.6	1.6	1.5	-1.5	2.2	4.2	7.0	57.0	38.2	20.1	56.4	35.6	20.1	54.4
2021 Mar.	-	-	-	-	-	-	-	-	54.8	28.3	16.2	40.4	24.4	13.9	36.9
Apr.	-	-	-	-	-	-	-	-	54.1	35.4	17.5	54.0	33.8	19.4	51.4
May	-	-	-	-	-	-	-	-	56.0	41.0	20.5	61.9	37.2	19.1	59.5
June	-	-	-	-	-	-	-	-	60.7	38.2	22.2	53.4	35.9	21.9	52.1
July	-	-	-	-	-	-	-	-	62.9	36.9	26.8	46.0	36.1	27.4	45.5
Aug.	-	-	-	-	-	-	-	-	59.5	30.3	29.8	30.7	31.9	31.9	31.8

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.

4 Prices and costs

4.4 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	5.6	-	-4.5	32.3	56.7	56.3	-	49.7
2018	11.5	7.5	9.6	12.6	20.6	65.4	57.9	56.1	52.7
2019	4.2	7.3	9.1	7.5	18.2	48.8	57.1	50.4	52.4
2020	-1.3	1.6	-0.8	-5.8	10.9	49.0	52.1	48.7	47.2
2020 Q3	-1.7	0.9	-0.6	-7.8	12.4	49.4	52.9	49.3	47.7
Q4	1.6	2.6	-2.7	-7.8	7.0	56.7	52.6	51.6	48.3
2021 Q1	10.7	5.0	-1.8	-3.8	8.1	74.0	54.0	56.5	48.6
Q2	30.0	18.2	8.5	15.7	20.4	85.9	60.1	68.2	53.1
2021 Mar.	17.5	8.2	1.0	0.3	11.8	79.7	55.6	60.9	50.5
Apr.	24.2	14.1	5.2	8.4	17.2	82.2	57.6	64.3	50.9
May	29.9	17.5	9.4	16.7	19.2	87.1	59.6	69.1	52.6
June	36.0	23.1	10.9	21.9	24.7	88.5	63.2	71.1	55.6
July	35.5	26.1	12.2	25.7	31.2	89.2	63.1	71.9	55.4
Aug.	37.3	27.4	11.7	27.5	34.4	87.0	63.3	68.6	54.7

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

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

	Total (index: 2016 = 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 2018	100.0	100.0	75.3	24.7	69.0	31.0	
2018	104.3	2.4	2.3	2.7	2.5	2.1	2.0
2019	106.8	2.4	2.6	1.9	2.3	2.7	2.2
2020	110.1	3.1	3.6	1.4	2.8	3.7	1.8
2020 Q3	105.1	1.7	2.2	0.0	1.5	2.2	1.7
Q4	116.4	2.8	3.4	0.7	2.3	4.0	1.9
2021 Q1	104.7	1.6	2.2	-0.9	1.3	1.9	1.4
Q2	.	.	.	.	.	.	1.7

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

4 Prices and costs

4.6 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						
2018	103.4	1.9	1.3	1.4	2.3	2.3	-0.1	1.1	3.9	1.4	2.7	2.1
2019	105.3	1.8	-0.9	2.2	1.7	0.7	0.9	0.8	2.0	2.5	2.8	1.6
2020	109.9	4.4	-2.3	2.9	5.0	6.0	0.6	0.5	1.6	5.7	6.0	13.5
2020 Q3	108.3	2.7	-2.4	1.0	6.4	4.0	-1.7	-0.3	3.6	5.2	2.8	9.9
Q4	109.7	3.6	-1.4	-1.2	3.4	4.9	1.6	1.5	4.3	5.1	5.8	22.2
2021 Q1	110.0	1.3	1.7	-3.2	4.8	1.2	0.2	1.5	4.3	2.8	2.5	15.2
Q2	109.3	-3.8	5.6	-10.6	-0.8	-6.8	0.1	-1.0	8.7	-2.1	-4.0	-2.6
						Compensation per employee						
2018	105.3	2.2	1.0	2.0	2.1	2.2	2.8	2.3	3.3	2.7	2.0	3.0
2019	107.5	2.1	2.8	1.4	1.7	1.8	2.8	1.7	2.1	2.8	2.2	2.8
2020	106.7	-0.7	0.6	-2.4	-1.6	-4.7	0.3	-0.4	0.7	-0.5	2.5	-2.6
2020 Q3	108.6	0.6	1.0	-1.5	1.4	-1.5	0.2	-0.5	2.8	0.9	2.4	0.9
Q4	109.1	0.9	0.5	-0.1	1.5	-3.6	1.3	0.8	2.2	1.2	3.5	-0.8
2021 Q1	109.2	1.9	2.2	2.2	3.9	-1.5	1.8	3.3	3.2	1.8	2.1	1.2
Q2	110.2	8.0	2.7	9.5	11.3	14.2	7.1	2.4	10.6	8.9	3.0	11.4
						Labour productivity per person employed						
2018	101.8	0.3	-0.3	0.5	-0.2	-0.1	2.9	1.2	-0.6	1.2	-0.7	0.9
2019	102.1	0.3	3.8	-0.8	0.0	1.1	1.8	0.9	0.1	0.3	-0.6	1.1
2020	97.1	-4.9	3.0	-5.1	-6.3	-10.1	-0.3	-0.9	-0.9	-5.8	-3.4	-14.2
2020 Q3	100.2	-2.0	3.4	-2.4	-4.6	-5.3	2.0	-0.2	-0.7	-4.1	-0.4	-8.2
Q4	99.4	-2.7	1.9	1.1	-1.9	-8.1	-0.2	-0.7	-2.1	-3.7	-2.2	-18.8
2021 Q1	99.3	0.6	0.5	5.6	-0.8	-2.7	1.6	1.8	-1.1	-1.0	-0.4	-12.2
Q2	100.8	12.2	-2.7	22.5	12.2	22.5	7.0	3.4	1.7	11.2	7.2	14.4
						Compensation per hour worked						
2018	105.0	2.0	0.7	2.0	1.0	1.9	2.6	2.3	2.5	2.0	2.1	2.6
2019	107.3	2.2	3.3	1.9	1.8	1.9	2.5	1.4	2.0	2.9	2.2	3.0
2020	112.8	5.1	2.8	3.1	4.1	5.7	2.8	1.2	5.8	4.6	4.8	6.5
2020 Q3	111.1	3.2	0.9	1.5	2.5	3.6	3.0	0.1	5.7	4.2	2.8	3.2
Q4	113.4	5.0	2.1	2.8	3.5	5.5	2.4	1.4	6.1	4.1	4.9	6.5
2021 Q1	114.2	3.1	0.9	1.0	0.3	5.5	2.2	2.1	3.6	2.3	1.6	4.4
Q2	113.0	-3.9	-1.9	-4.3	-5.6	-5.8	0.9	-1.8	0.4	-2.4	-1.8	-5.5
						Hourly labour productivity						
2018	102.0	0.2	-0.8	0.6	-0.9	0.0	2.8	1.1	-1.2	0.9	-0.6	0.7
2019	102.5	0.5	4.7	-0.3	0.1	1.3	1.6	0.8	-0.2	0.4	-0.6	1.2
2020	104.0	1.5	3.6	0.6	0.7	0.4	2.9	1.3	5.8	-0.2	-0.6	-4.5
2020 Q3	103.4	0.7	2.6	0.6	-2.9	-0.5	5.2	0.9	2.7	-0.8	0.4	-6.1
Q4	104.7	1.9	2.0	4.4	1.8	0.8	1.8	0.3	1.9	-0.3	-0.5	-11.3
2021 Q1	104.9	1.7	-1.6	4.6	-4.1	3.7	1.8	0.5	-2.6	-0.8	-1.1	-8.6
Q2	104.4	-1.5	-6.1	6.1	-5.8	-0.3	0.2	-1.6	-12.4	-1.7	1.5	-6.6

Sources: Eurostat and ECB calculations.

5 Money and credit

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												
2018	1,164.2	7,114.7	8,278.9	1,128.3	2,298.9	3,427.2	11,706.1	74.4	521.8	82.0	678.2	12,384.3
2019	1,221.5	7,726.9	8,948.4	1,073.1	2,362.4	3,435.5	12,383.9	78.7	529.1	19.4	627.1	13,011.0
2020	1,359.2	8,898.4	10,257.6	1,039.9	2,447.3	3,487.2	13,744.9	100.6	647.0	28.4	776.0	14,520.9
2020 Q3	1,330.6	8,617.0	9,947.6	1,076.9	2,423.3	3,500.3	13,447.9	100.3	610.3	2.0	712.7	14,160.5
Q4	1,359.2	8,898.4	10,257.6	1,039.9	2,447.3	3,487.2	13,744.9	100.6	647.0	28.4	776.0	14,520.9
2021 Q1	1,391.8	9,146.4	10,538.2	985.5	2,483.7	3,469.2	14,007.4	109.6	612.4	12.6	734.6	14,742.0
Q2	1,419.5	9,360.7	10,780.3	932.4	2,489.8	3,422.2	14,202.5	112.0	610.8	22.1	744.8	14,947.3
2021 Feb.	1,390.5	9,068.1	10,458.7	984.3	2,472.4	3,456.7	13,915.3	108.8	608.8	30.8	748.4	14,663.7
Mar.	1,391.8	9,146.4	10,538.2	985.5	2,483.7	3,469.2	14,007.4	109.6	612.4	12.6	734.6	14,742.0
Apr.	1,402.4	9,182.3	10,584.7	965.6	2,486.4	3,451.9	14,036.7	109.3	608.7	20.3	738.3	14,774.9
May	1,411.7	9,241.0	10,652.6	964.3	2,486.3	3,450.5	14,103.2	107.2	609.7	28.4	745.4	14,848.5
June	1,419.5	9,360.7	10,780.3	932.4	2,489.8	3,422.2	14,202.5	112.0	610.8	22.1	744.8	14,947.3
July [p)]	1,426.9	9,416.1	10,842.9	935.2	2,487.3	3,422.5	14,265.4	116.8	612.3	29.2	758.3	15,023.7
Transactions												
2018	50.6	468.0	518.6	-73.2	44.8	-28.5	490.1	-0.9	12.6	-0.9	10.8	500.9
2019	57.3	605.8	663.2	-59.7	61.5	1.8	664.9	4.1	-2.1	-56.6	-54.6	610.3
2020	137.6	1,255.9	1,393.5	-27.2	85.7	58.5	1,452.0	19.2	124.0	8.8	152.0	1,604.0
2020 Q3	27.7	269.0	296.8	5.6	22.9	28.5	325.3	5.9	29.9	-12.2	23.6	348.9
Q4	28.6	296.1	324.7	-35.0	24.0	-10.9	313.8	-3.5	41.3	27.6	65.4	379.2
2021 Q1	32.6	235.5	268.1	-58.0	37.9	-20.1	247.9	8.0	-34.6	-14.2	-40.8	207.1
Q2	27.7	218.7	246.5	-52.0	6.2	-45.8	200.6	2.8	-1.0	9.4	11.2	211.8
2021 Feb.	10.2	72.2	82.4	-19.8	15.5	-4.3	78.1	-2.7	-21.2	6.0	-17.9	60.2
Mar.	1.2	69.3	70.6	-1.3	11.1	9.8	80.4	0.3	3.6	-17.5	-13.7	66.7
Apr.	10.6	45.1	55.7	-17.5	2.8	-14.7	41.0	0.4	-3.7	7.7	4.4	45.4
May	9.3	60.9	70.2	-0.6	-0.1	-0.8	69.4	-1.9	1.6	8.5	8.3	77.7
June	7.8	112.7	120.5	-33.8	3.6	-30.3	90.3	4.3	1.1	-6.9	-1.5	88.7
July [p)]	7.3	54.5	61.8	3.1	-2.5	0.5	62.4	4.8	1.5	7.2	13.5	75.8
Growth rates												
2018	4.5	7.0	6.7	-6.1	2.0	-0.8	4.4	-1.3	2.5	-1.6	1.6	4.2
2019	4.9	8.5	8.0	-5.3	2.7	0.1	5.7	5.4	-0.4	-71.4	-8.0	4.9
2020	11.3	16.3	15.6	-2.5	3.6	1.7	11.7	24.2	23.5	5.4	24.2	12.3
2020 Q3	10.5	14.4	13.8	-2.1	3.0	1.4	10.3	36.7	12.6	-93.3	11.9	10.4
Q4	11.3	16.3	15.6	-2.5	3.6	1.7	11.7	24.2	23.5	5.4	24.2	12.3
2021 Q1	10.0	14.2	13.7	-8.0	5.0	0.9	10.2	-3.6	14.9	-78.8	6.3	10.0
Q2	9.0	12.2	11.8	-13.0	3.8	-1.4	8.3	13.5	6.1	18.6	8.6	8.3
2021 Feb.	12.4	17.1	16.4	-7.2	4.6	1.0	12.2	24.6	11.7	-16.7	13.5	12.2
Mar.	10.0	14.2	13.7	-8.0	5.0	0.9	10.2	-3.6	14.9	-78.8	6.3	10.0
Apr.	9.8	12.8	12.4	-9.2	4.6	0.3	9.1	13.6	11.7	-49.3	10.1	9.2
May	9.1	12.0	11.6	-11.5	4.1	-0.8	8.3	8.9	10.1	1.5	11.0	8.5
June	9.0	12.2	11.8	-13.0	3.8	-1.4	8.3	13.5	6.1	18.6	8.6	8.3
July [p)]	8.9	11.3	11.0	-13.5	3.4	-1.8	7.6	5.1	3.9	219.6	7.7	7.6

Source: ECB.

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

5 Money and credit

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													
2018	2,334.0	1,901.2	277.3	147.9	7.6	6,645.3	4,035.6	517.8	2,090.6	1.3	996.1	204.8	436.2
2019	2,482.3	2,068.7	256.9	150.2	6.5	7,041.2	4,397.1	492.3	2,151.0	0.8	1,032.6	217.1	468.0
2020	2,985.2	2,528.6	310.3	143.1	3.3	7,647.6	4,954.6	437.5	2,254.7	0.8	1,106.7	237.9	508.9
2020 Q3	2,958.3	2,481.3	323.3	146.9	6.9	7,491.0	4,816.7	446.5	2,226.9	1.0	1,058.2	240.4	469.6
Q4	2,985.2	2,528.6	310.3	143.1	3.3	7,647.6	4,954.6	437.5	2,254.7	0.8	1,106.7	237.9	508.9
2021 Q1	3,071.4	2,618.4	301.3	143.8	7.8	7,825.3	5,109.5	422.2	2,292.9	0.8	1,127.1	209.4	492.0
Q2	3,105.4	2,667.0	290.0	139.7	8.7	7,908.0	5,199.4	407.5	2,300.4	0.7	1,171.3	219.3	490.9
2021 Feb.	3,028.1	2,587.0	292.3	143.2	5.7	7,761.3	5,052.0	426.5	2,281.8	1.0	1,119.9	226.9	497.4
Mar.	3,071.4	2,618.4	301.3	143.8	7.8	7,825.3	5,109.5	422.2	2,292.9	0.8	1,127.1	209.4	492.0
Apr.	3,051.4	2,606.1	294.9	143.0	7.4	7,844.1	5,129.7	417.5	2,295.9	0.9	1,128.7	225.5	493.8
May	3,059.6	2,615.9	295.2	141.7	6.8	7,874.6	5,165.7	411.6	2,296.5	0.8	1,144.4	229.4	490.7
June	3,105.4	2,667.0	290.0	139.7	8.7	7,908.0	5,199.4	407.5	2,300.4	0.7	1,171.3	219.3	490.9
July [p]	3,109.6	2,681.4	284.7	135.8	7.7	7,939.1	5,234.2	399.0	2,305.1	0.8	1,183.2	232.1	491.4
Transactions													
2018	94.6	106.8	-9.7	-1.0	-1.4	326.6	325.4	-45.0	45.6	0.5	1.7	-3.6	19.2
2019	149.6	167.1	-18.9	1.7	-0.4	394.5	360.2	-26.2	61.0	-0.5	26.9	11.0	29.7
2020	513.9	468.0	55.8	-6.9	-3.0	611.6	561.1	-53.8	104.4	-0.1	144.6	22.3	41.1
2020 Q3	94.7	88.6	6.5	-1.3	0.9	144.3	134.8	-15.6	25.0	0.1	46.1	14.6	3.9
Q4	32.1	51.8	-12.5	-3.7	-3.5	158.4	139.2	-8.5	27.9	-0.2	53.9	-1.9	39.2
2021 Q1	81.1	85.1	-9.0	0.7	4.4	176.3	152.6	-16.0	39.7	0.0	11.8	-29.1	-16.8
Q2	36.3	50.5	-11.1	-4.0	0.9	83.5	90.5	-14.5	7.6	-0.1	46.8	10.1	-1.0
2021 Feb.	20.1	29.6	-9.5	1.0	-1.0	53.6	42.7	-4.7	15.4	0.2	4.8	-2.6	-10.6
Mar.	39.0	28.2	8.2	0.6	2.1	62.5	56.4	-4.7	11.0	-0.2	1.3	-17.9	-5.5
Apr.	-15.4	-8.7	-5.7	-0.7	-0.3	20.3	21.3	-4.3	3.1	0.1	7.4	16.5	2.0
May	9.4	10.8	0.7	-1.4	-0.6	30.9	36.3	-5.9	0.6	-0.2	17.2	4.0	-3.2
June	42.4	48.5	-6.1	-1.8	1.8	32.3	32.8	-4.4	3.9	0.0	22.3	-10.4	0.2
July [p]	11.8	18.8	-5.2	-0.7	-1.0	22.8	29.8	-8.6	1.5	0.1	12.0	12.7	0.5
Growth rates													
2018	4.2	5.9	-3.4	-0.7	-16.2	5.2	8.8	-8.0	2.2	66.7	0.2	-1.7	4.6
2019	6.4	8.8	-6.8	1.2	-6.8	5.9	8.9	-5.1	2.9	-36.8	2.7	5.3	6.8
2020	20.7	22.6	21.6	-4.6	-46.9	8.7	12.8	-10.9	4.9	-6.5	14.5	10.3	8.8
2020 Q3	21.1	22.4	24.9	-3.3	23.4	7.7	11.7	-11.3	4.2	-0.2	8.2	9.9	0.9
Q4	20.7	22.6	21.6	-4.6	-46.9	8.7	12.8	-10.9	4.9	-6.5	14.5	10.3	8.8
2021 Q1	18.0	19.8	15.2	-2.7	9.4	9.2	12.7	-10.4	6.0	39.5	4.1	-6.2	4.2
Q2	8.5	11.5	-8.3	-5.7	47.9	7.7	11.0	-11.8	4.6	-20.0	15.5	-2.8	5.4
2021 Feb.	21.2	23.8	15.7	-4.4	9.1	9.5	13.4	-11.4	5.9	15.4	14.6	5.0	4.6
Mar.	18.0	19.8	15.2	-2.7	9.4	9.2	12.7	-10.4	6.0	39.5	4.1	-6.2	4.2
Apr.	12.8	14.8	4.7	-2.7	26.2	8.3	11.6	-10.4	5.4	4.0	8.8	-0.5	6.0
May	8.9	11.6	-5.8	-3.9	47.4	7.9	11.3	-11.3	4.9	-13.7	11.5	-0.7	6.5
June	8.5	11.5	-8.3	-5.7	47.9	7.7	11.0	-11.8	4.6	-20.0	15.5	-2.8	5.4
July [p]	6.9	10.4	-14.1	-5.5	47.0	7.3	10.6	-12.6	4.2	-28.6	15.0	-3.9	3.6

Source: ECB.

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

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

3) Including non-profit institutions serving households.

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

5 Money and credit

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		To non-financial corporations [3)]	To households [4)]	To financial corporations other than MFIs and ICPFs [3)]	To insurance corporations and pension funds		
	Total	Loans	Debt securities	Total		Adjusted loans [2)]						
	1	2	3	4	5	6	7	8	9	10	11	12
Outstanding amounts												
2018	4,684.1	1,008.4	3,664.3	13,416.5	11,123.0	11,483.4	4,404.9	5,741.9	849.8	126.4	1,519.9	773.6
2019	4,660.7	986.8	3,662.2	13,865.5	11,452.4	11,839.6	4,475.8	5,931.1	893.5	152.0	1,562.5	850.6
2020	5,925.4	996.1	4,917.3	14,343.2	11,927.3	12,301.1	4,723.6	6,119.9	916.1	167.7	1,549.9	866.0
2020 Q3	5,737.2	1,003.1	4,722.3	14,200.5	11,868.4	12,226.5	4,731.8	6,066.0	912.6	157.9	1,517.9	814.2
Q4	5,925.4	996.1	4,917.3	14,343.2	11,927.3	12,301.1	4,723.6	6,119.9	916.1	167.7	1,549.9	866.0
2021 Q1	6,092.3	993.9	5,096.8	14,461.3	12,059.3	12,419.4	4,782.8	6,173.4	947.9	155.2	1,521.2	880.8
Q2	6,185.9	1,005.9	5,178.4	14,485.0	12,072.5	12,436.1	4,745.0	6,240.2	937.6	149.7	1,523.6	888.9
2021 Feb.	5,986.6	993.7	4,991.3	14,394.1	11,973.3	12,337.0	4,731.6	6,153.5	941.7	146.5	1,549.4	871.4
Mar.	6,092.3	993.9	5,096.8	14,461.3	12,059.3	12,419.4	4,782.8	6,173.4	947.9	155.2	1,521.2	880.8
Apr.	6,098.7	1,002.7	5,093.7	14,417.2	12,037.9	12,393.8	4,751.4	6,191.4	944.6	150.4	1,505.5	873.8
May	6,133.9	1,004.4	5,127.7	14,455.7	12,064.9	12,415.6	4,745.8	6,213.8	948.2	157.1	1,505.0	885.8
June	6,185.9	1,005.9	5,178.4	14,485.0	12,072.5	12,436.1	4,745.0	6,240.2	937.6	149.7	1,523.6	888.9
July [p)]	6,290.1	1,009.9	5,278.5	14,530.3	12,113.3	12,472.6	4,743.9	6,275.5	945.7	148.0	1,526.7	890.4
Transactions												
2018	91.5	-28.2	119.7	375.0	307.5	382.6	124.1	166.1	-0.3	17.7	88.5	-21.1
2019	-87.2	-23.3	-64.3	452.1	378.3	424.9	115.6	200.4	41.2	21.1	30.5	43.4
2020	1,050.4	13.3	1,037.0	735.1	539.6	560.6	288.8	209.2	25.8	15.8	167.2	28.3
2020 Q3	262.5	-2.8	265.2	150.8	105.1	86.8	29.0	72.1	1.1	2.9	40.7	5.0
Q4	177.0	-1.9	178.7	156.7	83.6	119.9	3.5	60.8	9.6	9.7	30.0	43.1
2021 Q1	162.2	-1.7	174.4	144.4	132.5	114.8	59.5	56.6	28.9	-12.6	3.7	8.2
Q2	109.8	11.9	97.2	46.5	37.9	37.9	-26.2	78.8	-9.2	-5.5	2.5	6.0
2021 Feb.	60.9	5.1	55.8	36.7	31.3	31.3	9.9	18.9	4.6	-2.0	0.2	5.2
Mar.	67.1	0.6	66.5	91.8	83.0	75.3	49.4	20.6	4.5	8.6	4.5	4.3
Apr.	25.3	8.5	16.1	-20.6	-0.7	-8.8	-22.8	27.6	-0.8	-4.7	-12.6	-7.3
May	37.6	1.8	35.7	40.6	30.7	23.0	-3.9	23.1	4.7	6.7	-0.4	10.4
June	47.0	1.6	45.5	26.4	7.9	23.7	0.5	28.1	-13.2	-7.4	15.5	3.0
July [p)]	77.9	4.0	74.0	44.2	42.1	46.0	10.7	23.8	9.3	-1.7	3.9	-1.7
Growth rates												
2018	2.0	-2.7	3.4	2.9	2.8	3.4	2.9	3.0	0.0	16.3	6.1	-2.6
2019	-1.9	-2.3	-1.8	3.4	3.4	3.7	2.6	3.5	4.8	16.1	2.0	5.5
2020	22.3	1.3	27.9	5.3	4.7	4.7	6.5	3.5	2.9	10.4	11.2	3.4
2020 Q3	19.0	0.1	24.2	4.9	4.7	4.7	6.5	3.5	2.7	8.2	9.0	0.1
Q4	22.3	1.3	27.9	5.3	4.7	4.7	6.5	3.5	2.9	10.4	11.2	3.4
2021 Q1	21.9	-0.8	28.1	4.6	3.6	3.5	4.6	3.8	-1.4	-3.5	10.0	8.4
Q2	13.1	0.6	16.2	3.6	3.1	3.0	1.4	4.5	3.3	-3.5	5.1	7.6
2021 Feb.	24.0	0.5	30.6	5.0	4.4	4.5	6.4	3.3	3.6	-2.5	10.4	3.8
Mar.	21.9	-0.8	28.1	4.6	3.6	3.5	4.6	3.8	-1.4	-3.5	10.0	8.4
Apr.	18.0	-0.5	22.9	4.0	3.3	3.2	2.6	4.3	0.8	-3.5	6.5	9.0
May	15.4	-0.2	19.4	3.5	2.8	2.7	1.5	4.3	0.6	1.8	5.1	9.6
June	13.1	0.6	16.2	3.6	3.1	3.0	1.4	4.5	3.3	-3.5	5.1	7.6
July [p)]	12.4	1.1	15.1	3.4	3.0	3.0	1.2	4.5	4.3	-5.0	4.5	7.1

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 Money and credit

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										
2018	4,404.9	4,489.0	991.4	844.2	2,569.4	5,741.9	6,024.9	682.6	4,356.4	702.9
2019	4,475.8	4,577.9	967.4	878.0	2,630.4	5,931.1	6,224.0	720.1	4,524.6	686.4
2020	4,723.6	4,841.3	898.9	1,012.0	2,812.6	6,119.9	6,390.1	700.2	4,725.1	694.6
2020 Q3	4,731.8	4,845.5	930.0	1,014.7	2,787.2	6,066.0	6,334.0	702.4	4,667.6	696.0
Q4	4,723.6	4,841.3	898.9	1,012.0	2,812.6	6,119.9	6,390.1	700.2	4,725.1	694.6
2021 Q1	4,782.8	4,900.8	895.4	1,017.5	2,869.9	6,173.4	6,435.8	695.4	4,785.0	693.1
Q2	4,745.0	4,865.3	831.7	972.1	2,941.1	6,240.2	6,496.9	693.5	4,851.1	695.6
2021 Feb.	4,731.6	4,848.4	892.5	1,005.0	2,834.1	6,153.5	6,421.5	698.5	4,761.7	693.3
Mar.	4,782.8	4,900.8	895.4	1,017.5	2,869.9	6,173.4	6,435.8	695.4	4,785.0	693.1
Apr.	4,751.4	4,870.4	870.6	996.2	2,884.7	6,191.4	6,451.6	690.6	4,809.0	691.8
May	4,745.8	4,859.5	871.1	972.9	2,901.8	6,213.8	6,472.1	691.7	4,830.0	692.0
June	4,745.0	4,865.3	831.7	972.1	2,941.1	6,240.2	6,496.9	693.5	4,851.1	695.6
July [p)]	4,743.9	4,857.3	828.3	966.5	2,949.2	6,275.5	6,533.2	696.0	4,875.0	704.6
Transactions										
2018	124.1	176.3	18.0	32.8	73.3	166.1	188.4	41.2	134.2	-9.3
2019	115.6	143.3	-13.2	43.6	85.3	200.4	217.2	41.0	168.6	-9.2
2020	288.8	325.1	-54.0	138.8	203.9	209.2	195.1	-11.8	210.8	10.2
2020 Q3	29.0	33.9	-22.5	15.9	35.6	72.1	59.7	5.8	65.0	1.3
Q4	3.5	22.3	-25.5	-1.5	30.4	60.8	68.0	-1.7	61.6	1.0
2021 Q1	59.5	59.4	-3.6	5.8	57.4	56.6	51.0	-3.1	60.4	-0.7
Q2	-26.2	-26.8	-59.9	-42.3	76.0	78.8	72.7	3.1	72.9	2.8
2021 Feb.	9.9	12.0	2.1	-0.6	8.3	18.9	19.9	1.7	16.7	0.4
Mar.	49.4	50.4	2.2	12.3	34.9	20.6	16.7	-2.7	23.2	0.1
Apr.	-22.8	-25.8	-21.4	-19.4	18.0	27.6	25.5	-0.7	28.1	0.1
May	-3.9	-11.6	1.1	-22.8	17.7	23.1	21.3	1.4	21.1	0.6
June	0.5	10.6	-39.6	-0.2	40.2	28.1	25.8	2.3	23.7	2.1
July [p)]	10.7	8.2	-2.4	-4.0	17.2	23.8	28.6	1.4	23.3	-0.8
Growth rates										
2018	2.9	4.1	1.8	4.0	2.9	3.0	3.2	6.3	3.2	-1.3
2019	2.6	3.2	-1.3	5.2	3.3	3.5	3.6	6.0	3.9	-1.3
2020	6.5	7.1	-5.6	15.9	7.8	3.5	3.1	-1.6	4.7	1.5
2020 Q3	6.5	7.1	-3.9	17.3	6.9	3.5	3.1	-0.1	4.5	1.0
Q4	6.5	7.1	-5.6	15.9	7.8	3.5	3.1	-1.6	4.7	1.5
2021 Q1	4.6	5.3	-9.1	11.0	7.6	3.8	3.3	-1.6	5.0	1.5
Q2	1.4	1.8	-11.8	-2.2	7.3	4.5	4.0	0.6	5.7	0.6
2021 Feb.	6.4	7.0	-4.8	14.2	7.8	3.3	3.0	-2.8	4.5	1.2
Mar.	4.6	5.3	-9.1	11.0	7.6	3.8	3.3	-1.6	5.0	1.5
Apr.	2.6	3.2	-9.9	3.6	6.8	4.3	3.8	0.4	5.4	1.3
May	1.5	1.9	-7.7	-2.6	6.2	4.3	3.9	0.7	5.4	0.7
June	1.4	1.8	-11.8	-2.2	7.3	4.5	4.0	0.6	5.7	0.6
July [p)]	1.2	1.7	-11.4	-3.3	7.1	4.5	4.2	0.2	5.7	0.4

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 Money and credit

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										
2018	389.2	6,817.4	1,940.0	56.1	2,099.7	2,721.6	1,030.0	460.2	187.0	194.9
2019	364.2	7,058.9	1,946.1	50.1	2,156.5	2,906.1	1,455.5	452.3	178.9	187.2
2020	748.8	6,967.2	1,916.7	42.1	1,994.9	3,013.6	1,428.9	539.5	130.1	139.2
2020 Q3	806.2	7,039.6	1,934.3	43.0	2,059.7	3,002.6	1,569.1	499.5	139.9	147.3
Q4	748.8	6,967.2	1,916.7	42.1	1,994.9	3,013.6	1,428.9	539.5	130.1	139.2
2021 Q1	699.4	6,892.4	1,897.4	41.2	1,984.7	2,969.1	1,392.7	387.4	127.3	130.3
Q2	657.0	6,847.8	1,868.6	40.4	1,953.6	2,985.3	1,448.8	332.4	123.7	134.5
2021 Feb.	684.7	6,880.0	1,905.2	41.4	1,971.9	2,961.5	1,431.8	416.0	145.4	145.7
Mar.	699.4	6,892.4	1,897.4	41.2	1,984.7	2,969.1	1,392.7	387.4	127.3	130.3
Apr.	726.3	6,839.2	1,869.7	41.2	1,968.1	2,960.1	1,444.4	380.1	132.8	131.3
May	690.4	6,835.3	1,868.2	40.8	1,944.2	2,982.1	1,467.6	317.1	133.4	130.8
June	657.0	6,847.8	1,868.6	40.4	1,953.6	2,985.3	1,448.8	332.4	123.7	134.5
July [p)]	683.2	6,893.5	1,860.3	39.4	1,966.8	3,027.0	1,483.4	296.6	133.4	133.2
Transactions										
2018	45.5	51.0	-37.8	-4.9	16.1	77.6	88.4	42.6	16.2	23.6
2019	-24.3	107.7	-5.3	-3.3	27.3	89.0	309.4	19.4	-2.7	-2.5
2020	321.6	-32.8	-14.6	-8.0	-99.3	89.2	-49.3	156.6	-48.8	-48.0
2020 Q3	69.2	10.8	-3.2	-1.1	6.0	9.0	26.9	-11.2	-19.3	-27.1
Q4	-57.2	2.1	-4.0	-0.9	-43.9	50.9	-110.3	100.8	-9.8	-8.1
2021 Q1	-49.4	-31.9	-22.7	-0.9	-33.5	25.2	2.8	-183.6	-2.8	-8.8
Q2	-42.5	-19.9	-22.1	-0.7	-26.1	29.1	37.3	-44.1	-3.7	4.2
2021 Feb.	5.9	4.2	-7.3	-0.5	-1.8	13.7	-2.9	-24.4	-2.0	-1.0
Mar.	14.8	2.2	-9.7	-0.3	-1.1	13.2	-33.7	-41.4	-18.1	-15.4
Apr.	26.9	-18.0	-20.0	0.0	-3.2	5.3	49.7	-0.1	5.5	0.9
May	-36.0	-27.4	-1.0	-0.3	-20.5	-5.6	-5.6	-58.3	0.6	-0.5
June	-33.4	25.5	-1.2	-0.4	-2.4	29.4	-6.8	14.3	-9.7	3.7
July [p)]	26.2	-2.3	-8.0	-1.0	14.6	-8.0	12.0	-34.5	9.7	-1.3
Growth rates										
2018	13.0	0.8	-1.9	-8.0	0.8	2.9	-	-	8.1	7.7
2019	-6.3	1.6	-0.3	-5.9	1.3	3.2	-	-	-1.5	-1.5
2020	88.5	-0.5	-0.8	-15.9	-4.6	3.0	-	-	-27.3	-25.7
2020 Q3	91.8	-0.4	-0.6	-19.4	-3.1	2.1	-	-	-24.1	-25.6
Q4	88.5	-0.5	-0.8	-15.9	-4.6	3.0	-	-	-27.3	-25.7
2021 Q1	56.5	-0.3	-1.6	-12.7	-4.1	3.5	-	-	-30.7	-33.7
Q2	-10.6	-0.6	-2.7	-8.2	-4.8	3.9	-	-	-22.3	-22.9
2021 Feb.	52.7	-0.9	-1.0	-13.9	-6.0	3.1	-	-	-18.3	-23.8
Mar.	56.5	-0.3	-1.6	-12.7	-4.1	3.5	-	-	-30.7	-33.7
Apr.	27.8	-0.3	-2.4	-10.8	-4.2	4.0	-	-	-29.2	-35.4
May	5.3	-0.9	-2.7	-9.6	-4.9	3.1	-	-	-32.1	-38.1
June	-10.6	-0.6	-2.7	-8.2	-4.8	3.9	-	-	-22.3	-22.9
July [p)]	-9.6	-0.6	-3.0	-9.4	-3.9	3.6	-	-	-17.9	-23.5

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
2017	-0.9	-1.4	0.1	0.2	0.1	1.0
2018	-0.5	-1.0	0.1	0.2	0.3	1.4
2019	-0.6	-1.0	0.1	0.0	0.2	1.0
2020	-7.2	-6.0	-0.3	-0.1	-0.9	-5.7
2020 Q2	-4.0	.	.	.	.	-2.4
Q3	-5.3	.	.	.	.	-3.8
Q4	-7.3	.	.	.	.	-5.8
2021 Q1	-8.4	.	.	.	.	-6.9

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

6.2 Revenue and expenditure

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

	Revenue						Expenditure						
	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
2017	46.2	45.8	12.8	13.0	15.2	0.4	47.2	43.3	9.9	5.3	1.9	22.4	3.8
2018	46.5	46.0	13.0	13.0	15.2	0.5	46.9	43.2	9.9	5.3	1.8	22.3	3.7
2019	46.4	45.9	12.9	13.1	15.0	0.5	47.0	43.3	9.9	5.3	1.6	22.5	3.8
2020	46.8	46.4	13.0	12.8	15.7	0.5	54.1	49.5	10.7	5.9	1.5	25.7	4.6
2020 Q2	46.7	46.2	13.1	12.9	15.4	0.5	50.6	46.6	10.4	5.7	1.6	24.2	4.0
Q3	46.7	46.2	13.0	12.9	15.5	0.5	52.0	47.8	10.5	5.8	1.6	24.9	4.2
Q4	46.7	46.3	13.0	12.8	15.6	0.5	54.0	49.4	10.7	6.0	1.5	25.6	4.6
2021 Q1	46.7	46.2	13.0	12.7	15.7	0.5	55.1	50.4	10.8	6.1	1.5	25.9	4.7

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
2017	87.7	3.2	14.6	70.0	48.2	32.1	39.5	8.6	79.1	16.5	29.0	42.3	85.8	1.9
2018	85.7	3.1	13.8	68.8	48.0	32.4	37.8	8.1	77.7	16.0	28.4	41.3	84.2	1.5
2019	83.9	3.0	13.1	67.8	45.4	30.6	38.5	7.7	76.3	15.7	27.8	40.4	82.5	1.4
2020	98.0	3.2	14.3	80.5	54.9	39.4	43.1	11.6	86.4	19.7	31.7	46.6	95.9	2.1
2020 Q2	94.8	3.1	14.3	77.4	.	.	.	.	.	.	.	.	.	.
Q3	97.1	3.2	14.0	79.9	.	.	.	.	.	.	.	.	.	.
Q4	97.8	3.2	14.3	80.3	.	.	.	.	.	.	.	.	.	.
2021 Q1	100.5	3.2	14.3	83.0	.	.	.	.	.	.	.	.	.	.

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
2017	-2.4	-1.0	-0.1	0.4	0.5	0.0	-0.2	0.1	-0.1	-0.4	-1.3	1.0
2018	-2.0	-1.4	0.4	0.5	0.4	-0.1	0.0	0.2	0.1	-0.1	-1.0	0.8
2019	-1.8	-1.0	0.1	0.3	0.0	0.0	0.0	0.2	-0.2	0.0	-0.9	0.9
2020	14.1	5.7	2.3	2.4	2.0	0.4	-0.1	0.1	0.0	-0.1	6.1	9.5
2020 Q2	8.8	2.4	3.1	3.0	2.8	0.2	-0.1	0.2	-0.2	0.4	3.2	7.3
Q3	11.4	3.8	2.9	3.2	2.9	0.3	-0.1	0.1	-0.3	0.0	4.7	8.5
Q4	13.9	5.8	2.2	2.4	2.0	0.4	-0.1	0.1	0.0	-0.2	5.9	9.5
2021 Q1	14.4	6.9	1.9	2.1	1.6	0.5	-0.1	0.1	-0.1	-0.1	5.7	10.4

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	Maturities of up to 1 year	Issuance	Redemption
	1	2	3	4	5	6	7	8	9	10	11	12	13
2018	12.6	11.1	3.7	1.5	0.4	7.3	2.3	1.1	-0.1	2.7	2.5	0.4	0.9
2019	12.2	10.8	3.6	1.4	0.4	7.5	2.2	1.3	-0.1	2.5	2.1	0.3	1.1
2020	15.0	13.6	4.2	1.4	0.3	7.6	1.9	1.1	-0.2	2.2	2.3	0.0	0.8
2020 Q2	15.3	13.9	5.0	1.4	0.4	7.5	2.0	1.1	-0.2	2.3	2.0	0.1	0.9
Q3	15.9	14.5	4.7	1.4	0.3	7.5	1.9	1.1	-0.2	2.3	2.2	0.1	0.8
Q4	15.0	13.6	4.2	1.4	0.3	7.6	1.9	1.1	-0.2	2.2	2.3	0.0	0.8
2021 Q1	15.7	14.3	5.5	1.4	0.4	7.8	1.8	1.1	-0.2	2.1	2.1	0.0	0.5
2021 Feb.	15.4	13.9	5.2	1.4	0.4	7.8	1.8	1.1	-0.2	2.2	2.3	0.0	0.6
Mar.	15.7	14.3	5.5	1.4	0.4	7.8	1.8	1.1	-0.2	2.1	2.1	0.0	0.5
Apr.	15.8	14.4	5.1	1.4	0.4	7.9	1.7	1.0	-0.3	2.1	2.1	-0.1	0.6
May	15.7	14.3	4.8	1.4	0.3	7.9	1.7	0.5	-0.3	2.1	2.1	-0.1	0.6
June	15.6	14.2	5.2	1.4	0.3	7.9	1.7	0.5	-0.3	2.0	2.1	-0.1	0.5
July	15.3	14.0	5.2	1.3	0.3	7.9	1.6	0.5	-0.3	2.0	2.0	-0.1	0.5

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	Italy	Cyprus
	1	2	3	4	5	6	7	8	9
	Government deficit (-)/surplus (+)								
2017	-0.7	1.4	-0.7	-0.3	0.6	-3.0	-3.0	-2.4	1.9
2018	-0.8	1.8	-0.6	0.1	0.9	-2.5	-2.3	-2.2	-3.5
2019	-1.9	1.5	0.1	0.5	1.1	-2.9	-3.1	-1.6	1.5
2020	-9.4	-4.2	-4.9	-5.0	-9.7	-11.0	-9.2	-9.5	-5.7
2020 Q2	-6.1	-1.4	-3.1	-2.0	-2.7	-6.9	-6.7	-5.4	-2.4
Q3	-7.3	-2.9	-3.6	-3.4	-5.7	-8.2	-7.3	-7.4	-4.3
Q4	-9.4	-4.5	-4.9	-5.0	-9.7	-11.0	-9.2	-9.5	-5.7
2021 Q1	-9.3	-6.1	-4.7	-5.8	-12.3	-11.5	-10.3	-10.1	-7.6
	Government debt								
2017	102.0	65.1	9.1	67.0	179.2	98.6	98.3	134.1	93.5
2018	99.8	61.8	8.2	63.0	186.2	97.4	98.0	134.4	99.2
2019	98.1	59.7	8.4	57.4	180.5	95.5	97.6	134.6	94.0
2020	114.1	69.8	18.2	59.5	205.6	120.0	115.7	155.8	118.2
2020 Q2	114.0	67.3	18.5	62.1	191.3	110.2	113.1	149.4	113.2
Q3	113.1	70.0	18.5	61.2	199.8	114.0	115.6	154.4	119.5
Q4	114.1	69.7	18.2	58.4	205.6	119.9	115.1	155.8	119.1
2021 Q1	118.6	71.1	18.5	60.5	209.3	125.2	118.0	160.0	125.7

	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Austria	Portugal	Slovenia	Slovakia	Finland
	10	11	12	13	14	15	16	17	18	19
	Government deficit (-)/surplus (+)									
2017	-0.8	0.5	1.3	3.2	1.3	-0.8	-3.0	-0.1	-1.0	-0.7
2018	-0.8	0.6	3.0	1.9	1.4	0.2	-0.3	0.7	-1.0	-0.9
2019	-0.6	0.5	2.4	0.4	1.8	0.6	0.1	0.4	-1.3	-0.9
2020	-4.5	-7.4	-4.1	-10.1	-4.3	-8.9	-5.7	-8.4	-6.2	-5.4
2020 Q2	-1.6	-2.4	-2.2	-5.3	-1.3	-2.8	-1.9	-4.7	-3.4	-3.0
Q3	-3.4	-4.1	-2.9	-7.3	-2.5	-4.7	-4.2	-5.8	-4.5	-4.0
Q4	-4.5	-7.4	-4.1	-10.2	-4.2	-8.8	-5.7	-8.4	-6.1	-5.4
2021 Q1	-6.3	-7.3	-3.0	-10.6	-5.8	-10.9	-6.8	-8.8	-6.8	-6.0
	Government debt									
2017	39.0	39.1	22.3	48.5	56.9	78.5	126.1	74.1	51.5	61.2
2018	37.1	33.7	21.0	44.8	52.4	74.0	121.5	70.3	49.6	59.7
2019	37.0	35.9	22.0	42.0	48.7	70.5	116.8	65.6	48.2	59.5
2020	43.5	47.3	24.9	54.3	54.5	83.9	133.6	80.8	60.6	69.2
2020 Q2	43.0	41.3	23.9	50.1	55.0	82.2	125.7	78.2	59.9	68.9
Q3	44.7	45.9	26.0	52.8	55.1	78.6	130.5	78.4	60.2	67.2
Q4	43.5	47.1	24.8	54.8	54.3	83.5	133.6	80.8	60.3	69.5
2021 Q1	45.7	45.6	28.1	59.0	54.9	87.4	137.2	86.0	60.3	70.3

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