



EUROPEAN CENTRAL BANK  
EUROSYSTEM

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# Update on economic and monetary developments

## Summary

While the recovery in global demand and the sizeable fiscal stimulus are supporting global and euro area activity, the near-term economic outlook remains clouded by uncertainty about the resurgence of the pandemic and the roll-out of vaccination campaigns. Persistently high rates of coronavirus (COVID-19) infection and the associated extension and tightening of containment measures continue to constrain economic activity in the short term. Looking ahead, progress with vaccination campaigns and the envisaged gradual relaxation of containment measures reinforce the expectation of a firm rebound in economic activity in the course of 2021. Inflation has picked up over recent months on account of some idiosyncratic and temporary factors and an increase in energy price inflation. At the same time, underlying price pressures remain subdued in the context of significant economic slack and still weak demand.

Preserving favourable financing conditions over the pandemic period remains essential to reduce uncertainty and bolster confidence, thereby underpinning economic activity and safeguarding medium-term price stability. Euro area financing conditions have remained broadly stable recently after the increase in market interest rates earlier in the year, but risks to wider financing conditions remain. Against this background, the Governing Council decided to reconfirm its very accommodative monetary policy stance.

Global economic activity remained on a solid recovery path at the turn of 2020-21, despite the re-intensification of the pandemic. Supplier delivery times have lengthened on the back of strong global demand. The recovery in trade also continued, with merchandise trade remaining the main driving factor, and services trade showing signs of improvement. Global financial conditions continued to be highly accommodative, with equity markets underpinned by optimism about global growth prospects and continued monetary policy support.

Over the review period (11 March to 21 April 2021) the forward curve of the euro overnight index average (EONIA) was broadly unchanged, suggesting no market expectations of an imminent policy rate change in either direction. Long-term sovereign bond yields in the euro area increased somewhat, but have remained relatively stable overall since March. Non-financial corporations' equity prices increased on both sides of the Atlantic and reached new post-financial crisis highs. In foreign exchange markets, the nominal effective exchange rate of the euro appreciated slightly.

Euro area real GDP declined by 0.7% in the fourth quarter of 2020 to stand 4.9% below its pre-pandemic level one year earlier. Incoming economic data, surveys and high-frequency indicators suggest that economic activity may have contracted again in

the first quarter of this year, but point to a resumption of growth in the second quarter. Business surveys indicate that the manufacturing sector continues to recover, supported by solid global demand. At the same time, restrictions on mobility and social interaction still limit activity in the services sector, although there are signs of a bottoming-out. Fiscal policy measures continue to support households and firms, but consumers remain cautious in view of the pandemic and its impact on employment and earnings. Despite weaker corporate balance sheets and elevated uncertainty about the economic outlook, business investment has shown resilience. Looking ahead, the progress with vaccination campaigns, which should allow for a gradual relaxation of containment measures, should pave the way for a firm rebound in economic activity in the course of 2021. Over the medium term the recovery of the euro area economy is expected to be driven by a recovery in domestic and global demand, supported by favourable financing conditions and fiscal stimulus.

Euro area annual inflation increased to 1.3% in March 2021, from 0.9% in February, on account of a strong increase in energy price inflation that reflected both a sizeable upward base effect and a month-on-month increase. This increase more than offset decreases in food price inflation and in HICP inflation excluding energy and food. Headline inflation is likely to increase further in the coming months, but some volatility is expected throughout the year reflecting the changing dynamics of idiosyncratic and temporary factors. These factors can be expected to fade out of annual inflation rates early next year. Underlying price pressures are expected to increase somewhat this year, owing to short-term supply constraints and the recovery in domestic demand, although they remain subdued overall, in part reflecting low wage pressures, in the context of economic slack, and the appreciation of the euro exchange rate. Once the impact of the pandemic fades, the unwinding of the high level of slack, supported by accommodative fiscal and monetary policies, will contribute to a gradual increase in inflation over the medium term. Survey-based measures and market-based indicators of longer-term inflation expectations remain at subdued levels, although market-based indicators have continued their gradual increase.

In February 2021, money growth was robust, driven by domestic credit expansion, especially via Eurosystem asset purchases. While growth in lending to firms has been broadly unchanged since June 2020, loan flows point to a moderation in loan dynamics in recent months as demand for loans has abated, while some signs of a tightening in credit supply have also emerged. The euro area bank lending survey for the first quarter of 2021 reports a moderate tightening of credit standards for loans to firms, following more significant tightening in the previous two quarters. Bank lending rates have continued to hover close to their historical lows.

Against this background, the Governing Council decided to reconfirm its very accommodative monetary policy stance.

First, the Governing Council decided to keep the key ECB interest rates unchanged. They are expected to remain at their present or lower levels until the inflation outlook robustly converges to a level sufficiently close to, but below, 2% within the projection horizon, and such convergence has been consistently reflected in underlying inflation dynamics.

Second, the Governing Council will continue the purchases under the pandemic emergency purchase programme (PEPP) with a total envelope of €1,850 billion until at least the end of March 2022 and, in any case, until the Governing Council judges that the coronavirus crisis phase is over. Since the incoming information confirmed the joint assessment of financing conditions and the inflation outlook carried out at the March monetary policy meeting, the Governing Council expects purchases under the PEPP over the current quarter to continue to be conducted at a significantly higher pace than during the first months of the year.

The Governing Council will purchase flexibly according to market conditions and with a view to preventing a tightening of financing conditions that is inconsistent with countering the downward impact of the pandemic on the projected path of inflation. In addition, the flexibility of purchases over time, across asset classes and among jurisdictions will continue to support the smooth transmission of monetary policy. If favourable financing conditions can be maintained with asset purchase flows that do not exhaust the envelope over the net purchase horizon of the PEPP, the envelope need not be used in full. Equally, the envelope can be recalibrated if required to maintain favourable financing conditions to help counter the negative pandemic shock to the path of inflation.

The Governing Council will continue to reinvest the principal payments from maturing securities purchased under the PEPP until at least the end of 2023. In any case, the future roll-off of the PEPP portfolio will be managed to avoid interference with the appropriate monetary policy stance.

Third, net purchases under the asset purchase programme (APP) will continue at a monthly pace of €20 billion. The Governing Council continues to expect monthly net asset purchases under the APP to run for as long as necessary to reinforce the accommodative impact of its policy rates, and to end shortly before it starts raising the key ECB interest rates.

The Governing Council also intends to continue reinvesting, in full, the principal payments from maturing securities purchased under the APP for an extended period of time past the date when it starts raising the key ECB interest rates, and in any case for as long as necessary to maintain favourable liquidity conditions and an ample degree of monetary accommodation.

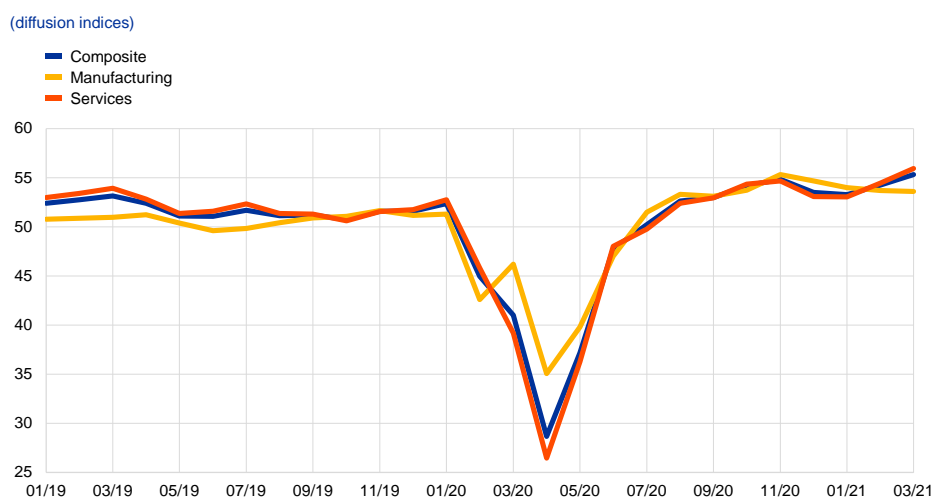
Finally, the Governing Council will continue to provide ample liquidity through its refinancing operations. In particular, the latest operation in the third series of targeted longer-term refinancing operations (TLTRO III) has registered a high take-up of funds. The funding obtained through TLTRO III plays a crucial role in supporting bank lending to firms and households.

The Governing Council stands ready to adjust all of its instruments, as appropriate, to ensure that inflation moves towards its aim in a sustained manner, in line with its commitment to symmetry.

**Global economic activity continued to expand at a solid pace at the start of 2021, after reaching pre-pandemic levels at the end of 2020.** National accounts data confirm a full recovery of global activity (excluding the euro area) in the last quarter of 2020 to its pre-pandemic levels, the resurgence of the pandemic intensity notwithstanding. Moreover, the global composite output Purchasing Managers' Index (PMI) – excluding the euro area – remained above its long-term average levels in the first quarter of 2021. The latest PMI figures also suggest a further broadening in the recovery of global activity as service sector growth momentum outpaced the solid expansion in manufacturing (Chart 1).

**Chart 1**

Global output PMI (excluding the euro area)



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

**Persistent supply bottlenecks represent short-term risks to global activity.** As the global economy recovers from the shock caused by the ongoing coronavirus (COVID-19) pandemic, supplier delivery times have lengthened and are now as high as during the peak of the pandemic last spring, particularly for advanced economies, although this time these signal also rising global demand. At the same time, the global PMI input price index has risen sharply, which mainly reflects the demand-driven surge in commodity prices in early 2021.

**Further improvements in the global growth outlook and continued policy support underpinned optimism in global financial markets, with financial conditions remaining highly accommodative.** Following the Governing Council meeting in mid-March 2021, global equity markets moderately increased, corporate spreads declined and the Cboe Volatility Index (VIX) continued to approach its pre-pandemic levels on the back of further improvements in the global growth outlook. Much of the optimism in global financial markets related to developments in the United States, where a recovery is expected on the basis of strong incoming data and plans for additional fiscal spending. At the same time, monetary policy remained very accommodative across advanced economies. As a result, global financial conditions

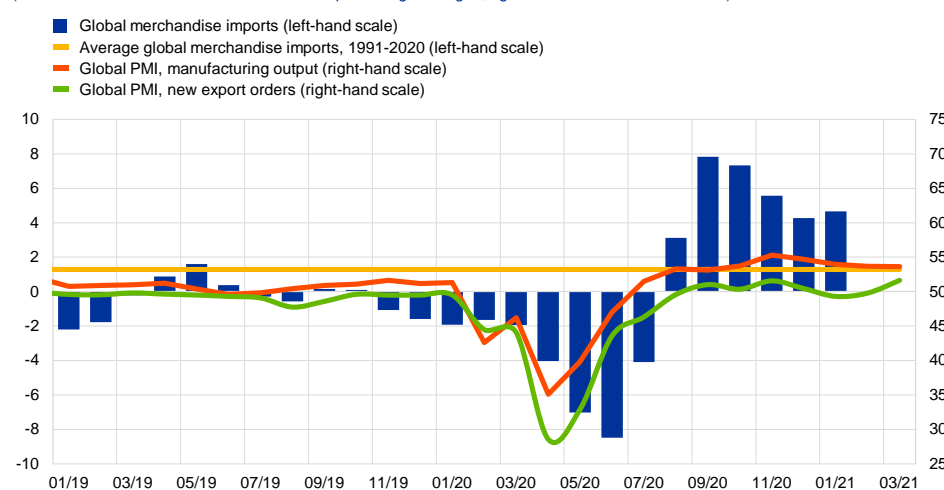
remained highly accommodative and even loosened slightly further in advanced economies on aggregate.

**Incoming data indicate a continued recovery in global trade.** Merchandise trade surprised on the upside in January and continued to drive the global trade recovery (Chart 2). Services trade showed signs of improvement but remained subdued at the end of 2020 owing to lockdowns and travel restrictions. The ECB internal trade tracker, based on weekly and monthly short-term trade indicators, points to a continued recovery of global trade in the first quarter of 2021.

## Chart 2

### Surveys and global trade in goods (excluding the euro area)

(left-hand scale: three-month-on-three-month percentage changes; right-hand scale: diffusion indices)



Sources: Markit, CPB Netherlands Bureau for Economic Policy Analysis and ECB calculations.

Note: The latest observations are for January 2021 for global merchandise imports and March 2021 for PMIs.

**Global inflation increased in January.** Annual consumer price inflation in the countries of the Organisation for Economic Co-operation and Development (OECD) increased to 1.5% in January, while inflation excluding energy and food rose to 1.7%. Transitory positive base effects are expected in the short term, owing to the initial reaction of prices to the pandemic shock in spring 2020, in particular global commodity prices. Looking ahead, global wage and price pressures are expected to remain relatively contained given that most economies still have ample spare capacity.

**Commodity prices have been largely stable since the Governing Council meeting in mid-March after sustained price increases in previous months.** With renewed lockdown measures in Europe weighing on short-term demand prospects and new coronavirus variants creating fresh uncertainties, oil prices and non-energy prices have remained broadly stable since mid-March. With demand prospects for 2021 remaining buoyant, however, pressure mounted on OPEC+ to adjust its production targets and to release more barrels onto the markets. The alliance reacted in early April by announcing supply increases for the coming months, including the phasing-out of the voluntary production cuts of 1 million barrels per day by Saudi Arabia.

**The recovery in the United States is accelerating amid the fast pace of vaccinations and large fiscal stimulus.**

A continued strong recovery is expected in the first quarter of 2021, following strong quarter-on-quarter annualised growth of 4.3% in the fourth quarter of 2020. The acceleration of vaccination efforts, fiscal and monetary policy support and a progressive reopening of the economy have all supported activity. The Federal Reserve Bank of New York Weekly Economic Index, which tracks GDP growth using high-frequency indicators, suggests that growth momentum has significantly accelerated since the beginning of March. In particular, disposable income and consumer spending increased substantially in January, boosted by the one-off government stimulus cheques dispensed through the December 2020 fiscal support package, before moderating in February. Additional stimulus cheques sent out since mid-March as part of the American Rescue Plan are expected to stimulate consumption further in the months ahead.

**In Japan, economic activity remains resilient amid rising supply constraints.**

Available high-frequency data signal that the second declaration of a state of emergency weighed on mobility and activity at the turn of the year, particularly in the services sector. After bottoming out in early 2021, economic activity appears to be gradually strengthening, benefiting also from a relatively resilient manufacturing sector. On the external side, the recovery in real exports of goods remained broadly stable at the start of the year, helped by resilient tech exports. Real imports of goods have risen at a fairly robust pace, likely reflecting a solid recovery in domestic demand.

**In the United Kingdom, the economy shows signs of a modest recovery despite hard lockdown measures.**

Monthly GDP increased in February, suggesting that households and businesses have been adapting better to COVID-19-related restrictions than in earlier lockdowns. Against the backdrop of rapid progress in vaccinations, which has allowed mobility restrictions to be gradually eased, business surveys, consumer confidence and mobility trackers have all improved, even before the reopening of non-essential retail stores and hospitality establishments on 12 April.

**In China, real GDP grew by 18.3% year on year in the first quarter of 2021.** The extraordinary rise in GDP in year-on-year terms is largely due to base effects but confirms the solid recovery of the economy in the aftermath of the COVID-19 pandemic. Applying a crude measure to filter out base effects results in an implied annualised growth rate of over 5% between the first quarter of 2019 and the first quarter of 2021, close to the pre-pandemic trend. At the industry level, the secondary sector outperformed the rest of the economy amid strong export demand, while retail sales figures for March, released together with GDP, point to a strengthening in the recovery of consumption.

## 2 Financial developments

**The EONIA and the new benchmark euro short-term rate (€STR) averaged -48 and -57 basis points respectively over the review period (11 March to 21 April 2021).**<sup>1</sup> Excess liquidity increased by approximately €339 billion to around €4,030 billion, mainly reflecting asset purchases under the pandemic emergency purchase programme (PEPP) and the asset purchase programme (APP), as well as the TLTRO III.7 operation take-up of €330.5 billion. The latter was partially offset by autonomous factors and expiring TLTRO II operations.

**The EONIA forward curve remained broadly unchanged over the review period.** The trough of the curve, which is 2 basis points below the current (21 April) EONIA level of -48 basis points, is reached in May 2022. The forward curve does not currently suggest market expectations of an imminent policy rate change in either direction, and EONIA forward rates remain below zero for horizons up to mid-2026. This reflects continued market expectations of a prolonged period of negative interest rates.<sup>2</sup>

**At the long end, sovereign bond yields in the euro area increased slightly, but remained at low levels overall (Chart 3).** The GDP-weighted euro area and the German ten-year sovereign bond yields increased by 9 and 7 basis points to 0.08% and -0.26% respectively, showing little reaction to the March meeting of the Governing Council or to adverse pandemic-related news such as resurgent COVID-19 case numbers, renewed lockdowns in many euro area countries and temporary setbacks in national vaccination campaigns. Ten-year sovereign bond yields in the United Kingdom remained unchanged at 0.74% while those in the United States increased only marginally, by 2 basis points to 1.56%, after having reached a value of 1.74% earlier in April.

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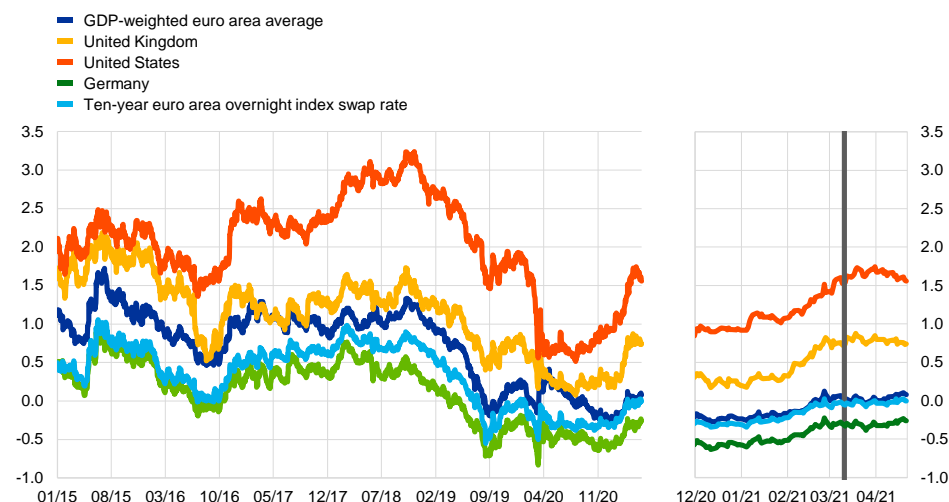
<sup>1</sup> The methodology for computing the EONIA changed on 2 October 2019; it is now calculated as the €STR plus a fixed spread of 8.5 basis points. See the box entitled “[Goodbye EONIA, welcome €STR!](#)”, *Economic Bulletin*, Issue 7, ECB, 2019.

<sup>2</sup> This assessment reflects information from the latest survey results and empirical estimates of “genuine” rate expectations, i.e. forward rates net of term premia.

### Chart 3

#### Ten-year sovereign bond yields

(percentages per annum)



Sources: Refinitiv and ECB calculations.

Notes: Daily data. The vertical grey line denotes the start of the review period on 11 March 2021. The zoom window shows developments in sovereign yields since 1 December 2020. The latest observations are for 21 April 2021.

**Euro area sovereign bond spreads relative to risk-free rates remained relatively stable.** Specifically, ten-year German, French and Spanish spreads moved by 1, 3 and 3 basis points respectively to reach -0.26, -0.01 and 0.40 percentage points, while the Italian spread increased by 9 basis points to stand at 0.76 percentage points. Consequently, the GDP-weighted euro area ten-year sovereign spread increased by 3 basis points to 0.08 percentage points, which is still below its pre-pandemic level of February 2020. In general, all euro area spreads experienced a slight decline in the weeks immediately after the March Governing Council meeting before increasing again towards the end of the review period.

**Equity prices of non-financial corporations reached new post-financial crisis highs on both sides of the Atlantic, while euro area bank equity prices saw prior gains reverse towards the end of the review period.** Despite adverse pandemic-related news coming from several euro area countries, euro area NFC stock market indices rose by 3.8% to now stand slightly above their pre-pandemic levels and at post-financial crisis highs. By contrast, euro area bank equity prices decreased by 1.5% after reaching new highs during the review period. US equities, which have repeatedly posted record highs since mid-2020, continued to rise, with NFC and bank equity prices increasing by 5.3% and 0.6% respectively.

**Euro area corporate bond spreads edged down further to pre-pandemic levels in all sectors.** Spreads on both investment-grade NFC bonds and financial sector bonds (relative to the risk-free rate) decreased by about 10 basis points to stand at 50 and 60 basis points.

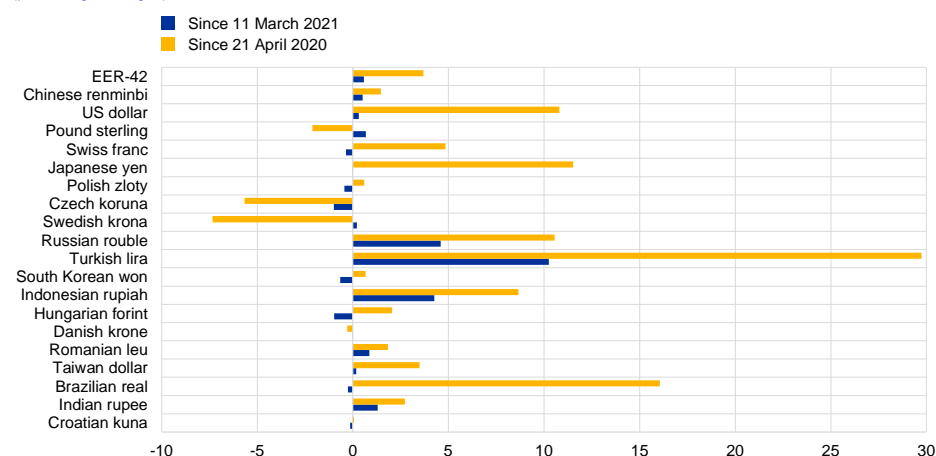
**In foreign exchange markets, the euro appreciated slightly in trade-weighted terms (see Chart 4).** Over the review period, the nominal effective exchange rate of the euro, as measured against the currencies of 42 of the euro area's most important

trading partners, appreciated by 0.6%. This development reflected a moderate appreciation against several major currencies, including the pound sterling (by 0.7%), the Chinese renminbi (by 0.5%) and the US dollar (by 0.3%). Over the review period, the euro first depreciated against the US dollar on the back of the broad-based strength of the dollar, but later recovered as the dollar declined alongside US Treasury yields. The euro appreciated strongly against the Turkish lira (by 10.3%) and the Russian rouble (by 4.6%) amid their recent broad-based volatility. The euro depreciated slightly against the Swiss franc (by 0.4%) and the currencies of several non-euro area EU Member States, including the Hungarian forint, the Czech koruna and the Polish zloty.

#### Chart 4

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

(percentage changes)



Source: ECB.

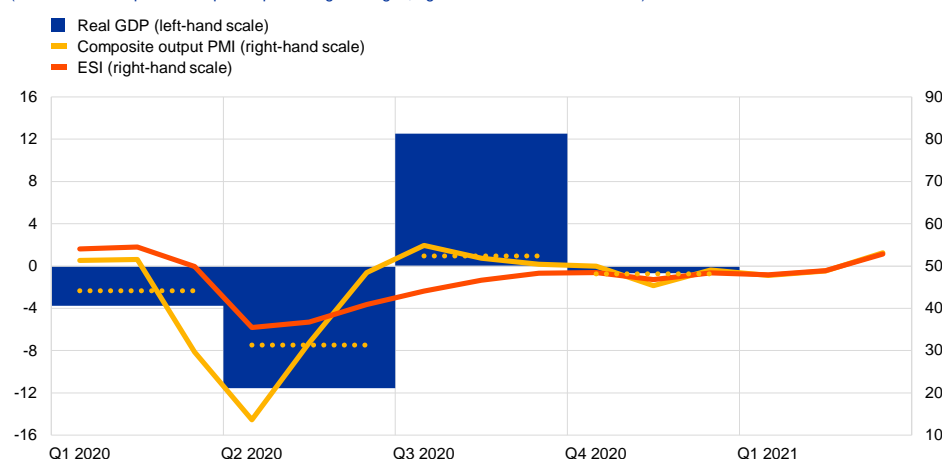
Notes: EER-42 is the nominal effective exchange rate of the euro against the currencies of 42 of the euro area's most important trading partners. A positive (negative) change corresponds to an appreciation (depreciation) of the euro. All changes have been calculated using the foreign exchange rates prevailing on 21 April 2021.

**Following the strong rebound in euro area output in the third quarter of 2020, economic growth turned negative again in the fourth quarter, with continued weak prospects for the first quarter of 2021.** Total economic activity contracted by 0.7%, quarter on quarter, in the final quarter of 2020, following the strong rebound of 12.5% in the third quarter (Chart 5). The expenditure breakdown shows that the decline in output was concentrated mainly in the domestic demand components, particularly consumption, with domestic demand (excluding inventories) subtracting 1.3 percentage points from quarterly GDP growth, while net trade made a neutral contribution. Changes to inventories made a positive contribution of 0.6 percentage points, largely reflecting a faster than expected recovery in demand for manufactured goods in the third quarter, leading to re-stocking in the fourth quarter. Hard data, survey results and high-frequency indicators point, on balance, to a possible renewed decline in GDP in the first quarter of this year, which would be broadly in line with expectations, reflecting the intensification of containment measures as a result of the renewed rise in infection rates.<sup>3</sup> The relative strength of output compared with the first wave of the pandemic probably reflects less stringent containment measures in combination with increased learning and adaptation by households and firms. Growth dynamics in the euro area are expected to remain uneven across sectors, with the services sector continuing to be more affected by the pandemic, in part as a result of its sensitivity to social distancing measures. The same is true across countries, with developments in output being dependent on infection rates and efforts to contain the pandemic as well as the sectoral composition of the respective economy.

**Chart 5**

Euro area real GDP, the composite output PMI and the ESI

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



Sources: Eurostat, European Commission, Markit and ECB calculations.

Notes: The two lines indicate monthly developments; the bars show quarterly data. The Economic Sentiment Indicator (ESI) has been standardised and rescaled so that it has the same mean and standard deviation as the Purchasing Managers' Index (PMI). Dotted lines show quarterly averages of monthly PMI observations. The latest observations relate to the fourth quarter of 2020 for real GDP and March 2021 for the ESI and the PMI.

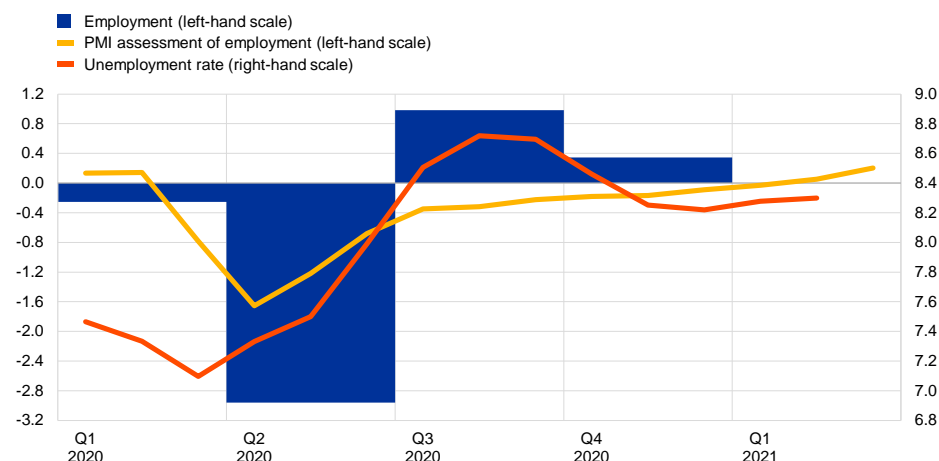
<sup>3</sup> Real GDP declined further by 0.6%, quarter on quarter, in the first quarter of 2021 according to Eurostat's preliminary flash estimate, which was released on 30 April 2021, i.e. after the cut-off date for data included in this issue of the Economic Bulletin.

**The unemployment rate in the euro area remained unchanged in February, as high numbers of workers covered by job retention schemes contributed to keeping unemployment contained.** The unemployment rate stood at 8.3% in February, unchanged from the previous month (Chart 6), and still around 1 percentage point higher than the rate seen in February 2020. Job retention schemes continued to cushion developments in the labour market, covering an estimated 5.6% of the labour force in February, up from around 5% in October in response to the latest lockdown measures.<sup>4</sup> Employment increased by 0.3% in the fourth quarter of 2020 following a decline of 1.0% in the third quarter. Despite that improvement, employment was still 1.9% lower than in the fourth quarter of 2019. Total hours worked declined again by 1.7% in the fourth quarter. This follows a rebound of 14.5% in the third quarter after having declined by 13.6% and 3.9% in the second and first quarter respectively. The large declines in total hours worked in the first half and the fourth quarter of 2020 reflect the impacts of lockdown measures in these periods. The level of total hours worked remained 6.5% below the level recorded in the fourth quarter of 2019.

**Chart 6**

**Euro area employment, the PMI employment indicator 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 two lines indicate monthly developments; the bars show quarterly data. The Purchasing Managers' Index (PMI) is expressed as a deviation from 50 divided by 10. The latest observations relate to the fourth quarter of 2020 for employment, March 2021 for the PMI and February 2021 for the unemployment rate.

**Short-term labour market indicators have continued to improve.** The monthly PMI employment indicator increased to 52.0 in March from 50.5 in February (Chart 6), remaining above the threshold level of 50 – indicating an expansion in employment – for two consecutive months. The last recording above this threshold dates to February 2020. The PMI for employment has recovered significantly since recording an all-time low in April 2020.

**After a weak start, consumer spending remained tepid at the end of the first quarter.** In February 2021 the volume of retail trade increased by 3%, month on month, while car registrations continued to decline by 1.1%, month on month,

<sup>4</sup> See the article entitled “[The impact of the COVID-19 pandemic on the euro area labour market](#)”, *Economic Bulletin*, Issue 8, ECB, 2020.

remaining at their lowest point since June 2020. Consumer confidence improved in March, to stand at -10.8 compared with -14.8 in February, largely on account of the forward-looking survey questions. For example, households' spending plans on major items increased in March but remained well below their pre-crisis level. The tightening of containment measures again around Easter foreshadows a renewed decline in consumer spending at the start of the second quarter, delaying the expected recovery. While labour income has been severely affected by the coronavirus crisis, fiscal transfers have absorbed most of the impact on euro area households' disposable income. The fall in consumption in the fourth quarter of 2020 was reflected in an increase in the household saving rate, which rose to 20% in that quarter, up from 17% in the third quarter. Looking ahead, the saving rate is likely to remain above its pre-pandemic level in the short term before gradually normalising thereafter, as is also suggested by households' subdued expectations for making major purchases in the next 12 months.

**Corporate investment is likely to have grown modestly in the first quarter of 2021, but elevated uncertainty and weakened balance sheets may weigh on investment decisions later this year.** Following a robust quarterly growth rate of 3.1% in the fourth quarter of 2020, mostly driven by intellectual property products, non-construction investment appears to have remained resilient in the first quarter of 2021. While industrial production of capital goods fell back in February, its average value in January and February was 2.0% higher than the level seen in the fourth quarter. Moreover, both the PMI and the European Commission's survey indicators for the capital goods sector tended to improve in the first quarter relative to the fourth quarter. Survey indicators by asset type suggest that investment in tangibles, such as machinery, equipment and transport, has recovered strongly following the sharp fall observed in the second quarter of 2020. However, the rebound remains incomplete when compared with pre-pandemic levels. Intangible investment fared comparably better during the crisis and reached in the fourth quarter of 2020 almost the same level as in the fourth quarter of 2019 (if one looks through the quarterly volatility related to the accounting of intellectual property activities of a few global firms, which particularly affects some countries such as Ireland and the Netherlands). This confirms evidence, from corporate contacts, of an ongoing digitalisation trend. Meanwhile, uncertainty is still high and corporate balance sheets remain strained, which could weigh on investment later this year. National accounts data for the fourth quarter of 2020 indicate that the euro area corporate gross operating surplus fell by 2.7% year on year and indebtedness increased.

**Housing investment is expected to remain resilient in the first quarter of 2021, amid significant uncertainty induced by renewed tightening of pandemic-related restrictions.** After a strong rebound in the third quarter of 2020, housing investment continued to increase in the fourth quarter, although its momentum slowed down markedly. Recent short-term indicators and survey results suggest a pattern of continued growth moderation for the first quarter of 2021. The index for construction production fell in February, with its average value in January and February standing 0.4% below the level seen in the fourth quarter of 2020. At the same time, the PMI for construction output, especially in the residential segment, improved in the first quarter of 2021, although remaining in contractionary territory.

The European Commission's construction confidence indicator also rose above its level in the previous quarter, standing well above its long-run average in the first quarter of the year. According to the European Commission's survey data on factors limiting production, supply-side factors, such as weather conditions and the availability of labour and materials, hindered construction activity at the start of the year. Demand-side constraints, however, were less relevant, which is also in line with the further improvement in firms' assessments of order book levels. Nevertheless, according to the Bank Lending Survey, demand for housing loans moderated in the first quarter of 2021, albeit with expectations of a further increase in the second quarter.

**The recovery in euro area trade has slowed, partly owing to Brexit.** Nominal trade in goods reflect a divergence of extra and intra-euro area goods trade at the beginning of 2021, as repercussions from the United Kingdom leaving the European Union negatively affected extra-euro area trade. Bilateral trade between the euro area and the United Kingdom contracted significantly in January reflecting a reversal of stockpiling in December and additional administrative burdens for exports and imports. Despite a partial rebound in trade with the United Kingdom extra-euro area exports remained weak in February. By contrast, intra-euro area exports expanded robustly in the first two months of 2021. The recovery towards pre-pandemic levels of trade with major export markets is continuing, while the rest of the world has remained a drag on overall exports. Euro area exports to China kept their strong momentum, mainly driven by car exports but also extending to other goods categories, while exports to the United States have returned to the pre-pandemic level on the back of car and consumer goods exports. The latest readings of leading indicators point to a resumption of the dynamics in goods trade while the recovery in services trade remains protracted. Tourism, which has been the sector in services trade most affected by the pandemic, shows early signs of recovery from lows reached at the end of 2020. While cross-border flights remained depressed in March, forward bookings and confidence in the accommodation sector have started to improve again.

**Mirroring the prevailing containment measures, economic indicators point to weak, possibly falling, output in the first quarter of 2021 followed by a resumption of growth in the second quarter.** Industrial production (excluding construction) fell by 1.0%, month on month, in February, although the average level of production in the first two months of the first quarter was still 1.0% above the average for the fourth quarter of 2020. More recent survey data show a gradual strengthening in economic activity across sectors in the period ahead. For instance, the composite output PMI rose to 49.9 in the first quarter of 2021, up from 48.1 in the fourth quarter of 2020. This improvement was explained by developments in both manufacturing and services. Economic indicators covering the first quarter point to continued weak growth – possibly negative – reflecting the intensification of containment measures in some countries towards the end of the quarter. High-frequency indicators also point, on balance, to continued weak, albeit slightly improving, growth going forward.

**Looking ahead, amid elevated uncertainty, the ongoing progress in vaccination campaigns should set the ground for a recovery in economic activity over the course of 2021, even if a full recovery remains some way off.** The implementation

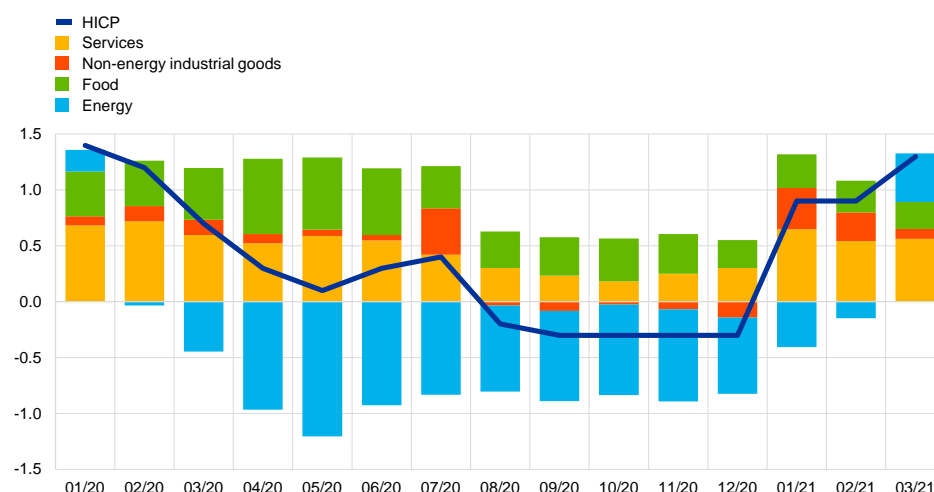
timeline for relaxing containment measures is not yet clear and further adverse developments relating to the pandemic cannot be ruled out. While this uncertainty surrounding COVID-19 is likely to dampen the recovery in the labour market and weigh on consumption and investment, the economic recovery in the euro area should be supported by favourable financing conditions, an expansionary fiscal stance and a recovery in domestic and global demand as containment measures are lifted and uncertainty recedes. The results of the latest round of the [Survey of Professional Forecasters](#) (which was conducted in early April) show that private sector GDP growth forecasts have been revised downwards for 2021 and upwards for 2022, relative to the previous round (which was conducted in early January). Forecasters foresee a 0.6% decline in GDP in the first quarter of 2021, followed by a rebound of 1.4% in the second quarter. This is broadly in line with the short-term outlook foreseen by the March 2021 ECB staff macroeconomic projections, which envisaged a 0.4% decline in the first quarter of 2021 followed by a 1.3% increase in the second quarter. This short-term growth profile is consistent with the current situation in terms of containment measures alongside improving momentum in ongoing vaccination campaigns. Over the medium term, the euro area recovery is expected to be driven by a recovery in global and domestic demand, supported by favourable financing conditions and fiscal stimulus.

**HICP inflation increased sharply at the start of 2021 compared with the end of last year (Chart 7).** After standing for four consecutive months at -0.3% towards the end of last year, HICP inflation increased at the beginning of this year to 1.3% in March, following rises of 0.9% in January and February. The increase in headline inflation in March reflected a further strong increase in energy inflation, which more than offset decreases in food inflation and HICP inflation excluding energy and food (HICPX). HICPX inflation fell to 0.9% in March from 1.1% in February and 1.4% in January but remained substantially higher than the figure of 0.2% recorded in the last four months of 2020 (Chart 9).

**Chart 7**

Headline inflation and components

(annual percentage changes and percentage point contributions)



Sources: Eurostat and ECB staff calculations.

Note: The latest observation is for March 2021.

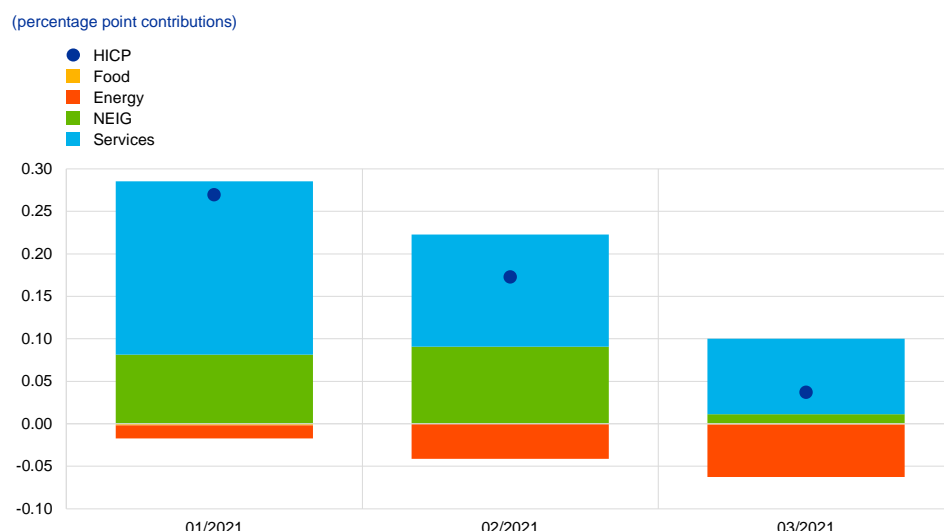
**The upswing in headline inflation in recent months reflected several factors which can be considered mostly temporary and are partly of a statistical nature.**

The strongest upward impact was associated with the successively less negative and then strongly positive energy inflation. This development reflected both a sizeable upward base effect and relatively large month-on-month increases in energy prices. If current futures prices hold, this upward impact can be expected to stay in the data for most of 2021 and then diminish early next year (Box 4). Another upward impact was associated with the reversal in January of the temporary VAT rate cut in Germany, which will continue to have an impact on inflation rates throughout 2021. Finally, there were two other factors that were particularly prominent in January, but which had receded by March. The first regards the changes in the timing and magnitude of seasonal sales in some euro area countries, which led to a substantial rise in non-energy industrial goods (NEIG) inflation. The second is the impact of stronger than usual changes in HICP weights for 2021 associated with changes in household consumption patterns during the pandemic. In particular, this led to increases in some

parts of services inflation in January and February, which then lessened substantially in March (Chart 8).

### Chart 8

#### Weight change impact decomposition



Sources: Eurostat and ECB staff calculations.

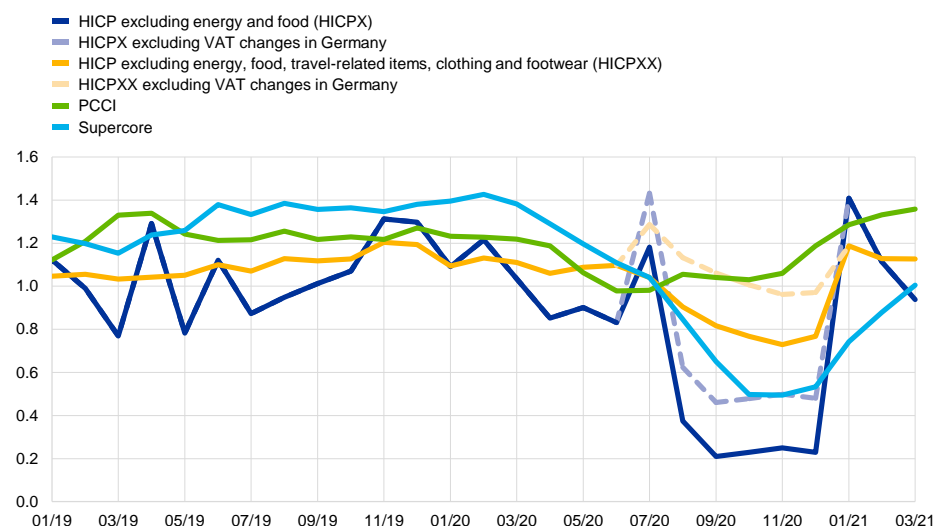
Notes: The impact of the changes in weights is based on ECB estimates. The latest observation is for March 2021.

**Uncertainty surrounding the signal for price pressures remained relatively elevated given that price imputations also continued to prevail in February and March.** The share of price imputations for HICP items decreased slightly in March to 10% for headline HICP and 15% for HICPX, with this decline mainly reflecting lower imputations for NEIG items, while imputations for services increased slightly. In particular, the share of imputations for non-energy industrial goods declined substantially (standing at just 4% in March compared with 15% in February), whereas that for services remained elevated (21% in March and 20% in February).

**Measures of underlying inflation increased in January before weakening somewhat in February and March (Chart 9).** Most measures were affected by the temporary factors discussed above and are therefore subject to some uncertainty in terms of signalling. In February and March the exclusion-based measures of inflation, HICPX and HICPXX (also excluding clothing and travel-related items), declined from the uptick observed in January, returning to the levels seen in spring 2020 before the impact of the VAT rate cut in Germany took effect. Other measures of underlying inflation have shown a more continuous pick-up since the end of 2020, but this started from relatively low levels and, overall, the available measures of underlying inflation do not provide a broad-based signal of a sustained rise in underlying inflationary pressures.

**Chart 9**  
Measures of underlying inflation

(annual percentage changes)



Sources: Eurostat and ECB calculations.  
Note: The latest observations are for March 2021.

**Price pressures remained stable at the later stages of the supply chain for non-energy industrial goods, despite a further build-up of global cost pressures.**

For non-food consumer goods, domestic producer price inflation was 0.6% in February, slightly down from January, but continuing to hover close to its long-term average. Import price inflation for non-food consumer goods remained at low levels in February and broadly unchanged from the previous two months. It is likely that this also reflects the stability of the nominal effective exchange rate. At the earlier input stages, both producer and import price inflation for intermediate goods continued to increase in February. It is likely that this reflected the sharp increase in the year-on-year growth rates of oil prices and industrial raw material prices and, to some extent, costs associated with frictions in supply chains. However, business expectations for selling prices in coming months do not point to a broad-based surge in prices across the supply and pricing chain going forward.

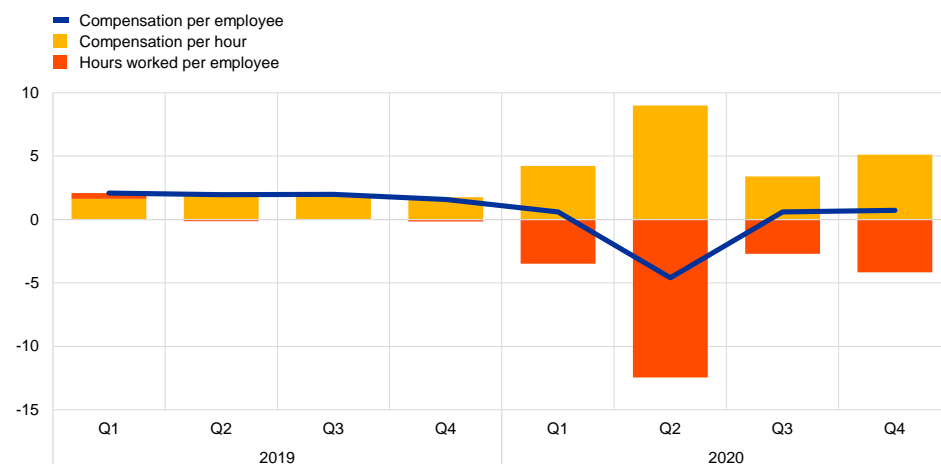
**Wage pressures appear to be weak and continue to be blurred by the impact of government support schemes.**

This is reflected, for instance, in the divergence between growth in compensation per employee and growth in compensation per hour. The gap between the two again widened in the fourth quarter of 2020, as the take-up of short-time work and temporary lay-off schemes increased owing to the renewed lockdown measures at the end of the year. On the one hand, annual growth in compensation per employee increased slightly to 0.7% in the fourth quarter, up from 0.6% in the third quarter, following a very negative rate of -4.5% in the second quarter. On the other hand, annual growth in compensation per hour rebounded to 5.1% in the fourth quarter, up from 3.4% in the third quarter of 2020 (Chart 10).

### Chart 10

#### Breakdown of compensation per employee by compensation per hour and hours worked

(annual percentage changes; percentage point contributions)



Sources: Eurostat and ECB calculations.

Note: The latest observations are for the fourth quarter of 2020.

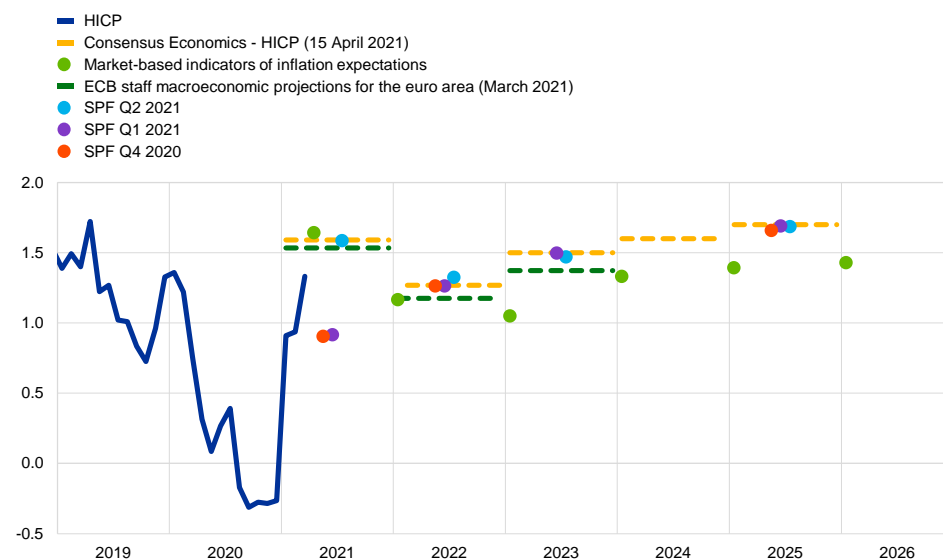
#### Survey-based indicators of long-term inflation expectations remained stable, while market-based indicators of inflation expectations continued to rise.

The increase in both shorter and longer-term euro area market-based indicators of inflation expectations that started in early 2021 continued following the March meeting of the Governing Council, despite the increase in COVID-19 cases in Europe and temporary setbacks in the vaccination process. The most prominent forward inflation-linked swap rate, the 5-year inflation linked forward swap in 5 years, currently stands at 1.53%, 8 basis points higher compared with the beginning of the review period. With regard to survey-based measures, according to the [ECB Survey of Professional Forecasters](#), average longer-term inflation expectations for 2025 remained unchanged in April at 1.7%. Longer-term expectations reported in the April 2021 forecast by Consensus Economics were also unchanged at 1.7% for 2025 (Chart 11).

## Chart 11

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

(annual percentage changes)



Sources: Eurostat, Thomson Reuters, Consensus Economics, ECB staff macroeconomic projections for the euro area (March 2021), ECB SPF and ECB calculations.

Notes: The SPF for the second quarter of 2021 was conducted between 31 March and 12 April 2021. The market-implied curve is 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 expectations are for 21 April 2021.

## 5 Money and credit

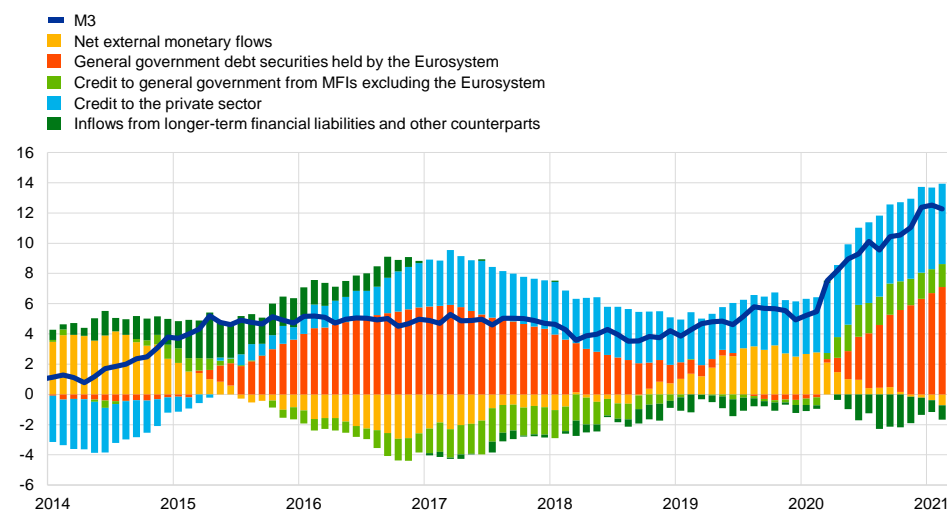
**Broad money growth remained stable in February 2021.** The annual growth rate of M3 decreased somewhat to 12.3% in February, after 12.5% in January (Chart 12), thus remaining elevated as it still incorporates the impact of the exceptional monetary expansion in the early phases of the coronavirus (COVID-19) pandemic. Shorter-run dynamics of broad money, such as monthly flows, have moderated, but still imply a robust pace of money creation on the back of the support provided by monetary, fiscal and prudential policies. The main driver of M3 growth was the narrow aggregate M1, which includes the most liquid components of M3. The annual growth rate of M1 remained broadly unchanged at 16.4% in February. This development was mainly attributable to firms and households, which increased deposits at a strong pace, similar to the second half of 2020. The contribution of other short-term deposits and marketable instruments to annual M3 growth was small, reflecting the low level of interest rates and the search-for-yield behaviour of investors.

**Money creation continued to be driven by domestic credit expansion, mainly via Eurosystem asset purchases.** In February 2021, the largest contribution to M3 growth again 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 12). Further support for M3 growth came from credit to the private sector (blue portion of the bars in Chart 12) and, to a lesser and declining extent, from credit to general government from banks (light green portion of the bars in Chart 12). Net external monetary flows continued to have a small impact on money creation (yellow portion of the bars in Chart 12). Longer-term financial liabilities and other counterparts continued to dampen broad money growth. This effect has diminished compared to the second half of 2020, as the net issuance of long-term bank bonds, which depresses M3 growth, was contained by banks' recourse to targeted longer-term refinancing operations (TLTROs) in view of their attractive conditions.

## Chart 12

### 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 monetary financial institution (MFI) loans to the private sector and MFI holdings of securities issued by the euro area private non-MFI sector. As such, it also covers the Eurosystem's purchases of non-MFI debt securities under the corporate sector purchase programme and the PEPP. The latest observations are for February 2021.

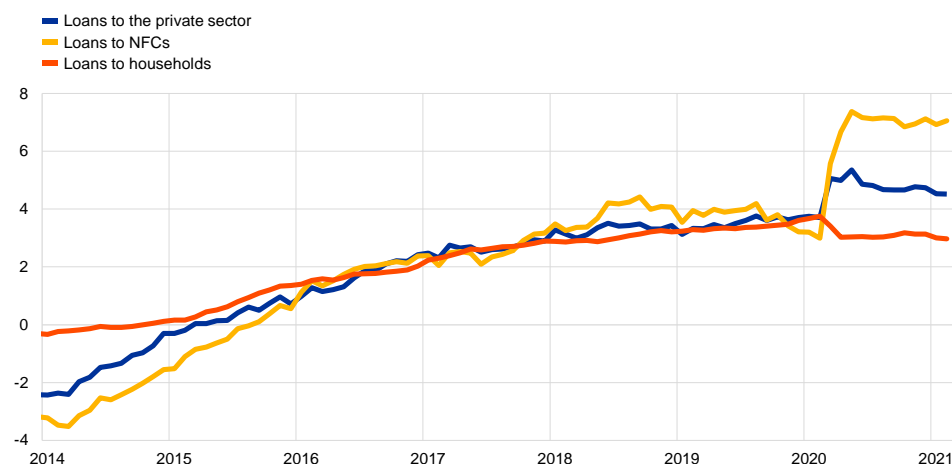
### Loan growth to the private sector remained broadly unchanged in February

**2021.** The annual growth rate of bank loans to the private sector stood at 4.5% in February, broadly unchanged since the summer and well above its pre-pandemic level (Chart 13). The annual growth rate of loans to firms stood at 7.1% in February, after 6.9% in January, while growth in loans to households was unchanged at 3.0%. While these growth rates have been broadly stable since June 2020, data on flows point to a moderation in loan dynamics as firms' demand for loans has abated, while some signs of a tightening in credit supply have also emerged. Firms' reliance on longer-term loans has continued to increase at the expense of shorter-term loans. At the same time, mortgage lending continued to drive household borrowing in February, while consumer credit growth remained weak, with tighter COVID-19-related restrictions limiting consumption opportunities.

### Chart 13

#### Loans to the private sector

(annual percentage changes)



Source: ECB.

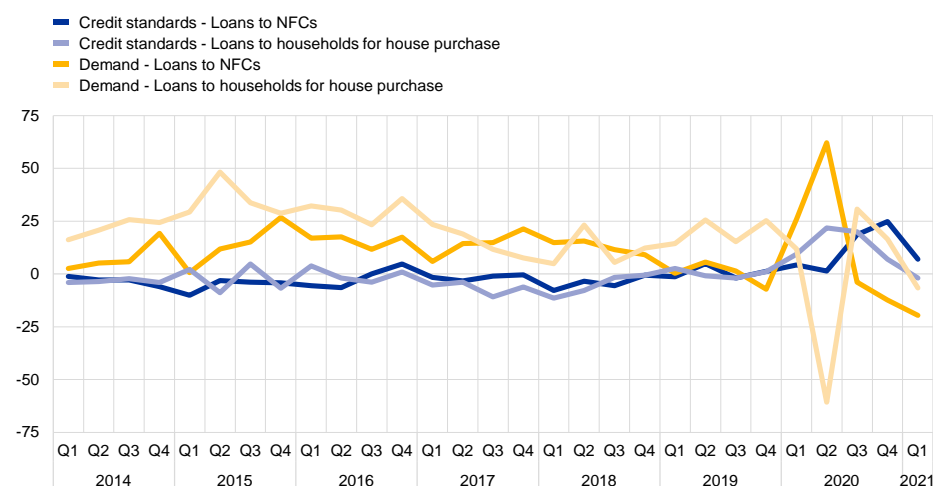
Notes: Loans are adjusted for loan sales, securitisation and notional cash pooling. The latest observations are for February 2021.

#### The April 2021 euro area bank lending survey showed a moderate net tightening of credit standards on loans to firms in the first quarter of 2021 (Chart 14).

This followed a significant tightening in the previous two quarters and was driven by higher risk perceptions and lower risk tolerance among banks, albeit less so than during the previous two quarters. The lower net tightening may be related to the prolongation of fiscal support measures, the continued support from monetary policy and supervisory measures, and the broader improvement in risk sentiment in the first quarter of 2021. Firms' demand for loans or drawing of credit lines declined again in the first quarter of 2021, mainly driven by a continued dampening impact of firms' demand for financing fixed investment, as firms, especially in sectors more affected by the pandemic, tended to postpone investment. For the second quarter of 2021, banks expect a rebound in loan demand from firms and a further modest tightening of credit standards for firms. Banks reported a very modest easing of credit standards for housing loans and a moderate tightening of credit standards for consumer credit in the first quarter of 2021. The net easing for housing loans was supported by competition from other lenders, while risk perceptions related to borrowers' creditworthiness and banks' risk tolerance continued to have a tightening impact on all lending to households. Net demand for housing loans declined in the first quarter. Weak consumer confidence and low spending on durables contributed negatively to net demand, while the low general level of interest rates and solid housing market prospects contributed positively. Banks expect a net tightening of credit standards and an increase in demand for loans to households in the second quarter of 2021. In addition, banks reported that the APP, the PEPP and the third series of TLTROs (TLTRO III) continued to have a positive impact on their liquidity position and market financing conditions. Together with the negative deposit facility rate (DFR), these measures had an easing impact on bank lending conditions and a positive impact on lending volumes. At the same time, banks suggested that the ECB's asset purchases and the negative DFR continued to have a negative impact on their net interest income, while the ECB's two-tier system for remunerating excess liquidity holdings supported bank profitability.

**Chart 14****Changes in credit standards and net demand for loans (or credit lines) to enterprises and households for house purchase**

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



Source: ECB (euro area bank lending survey).

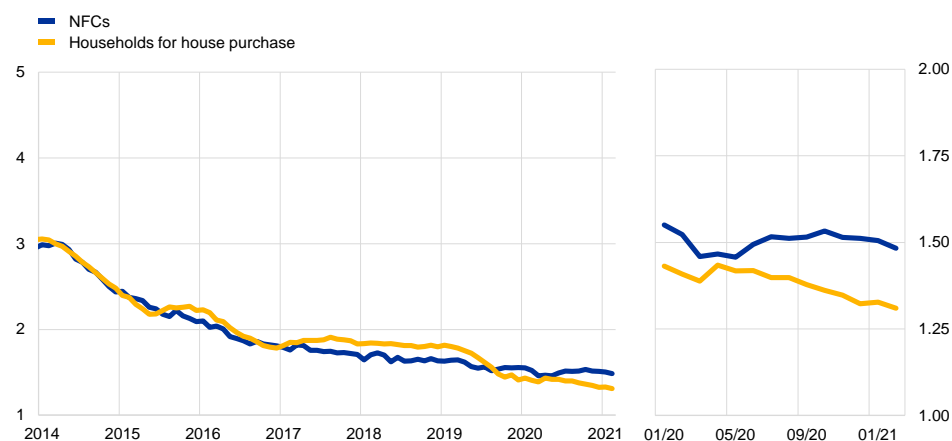
Notes: For the bank lending survey questions on credit standards, "net percentages" are defined as the difference between the sum of the percentages of banks responding "tightened considerably" or "tightened somewhat" and the sum of the percentages of banks responding "eased somewhat" or "eased considerably". For the survey questions on demand for loans, "net percentages" are defined as the difference between the sum of the percentages of banks responding "increased considerably" or "increased somewhat" and the sum of the percentages of banks responding "decreased somewhat" or "decreased considerably". The latest observations are for the first quarter of 2021.

**Bank lending rates continued to hover close to their historical lows.** In February 2021 the composite bank lending rate for loans to non-financial corporations (NFCs) remained broadly unchanged at 1.48%, and for loans to households it reached a new historical low of 1.31% (Chart 15). This development reflects the continued impact of the policy measures taken by the ECB, supervisors and national governments to support credit supply conditions and was widespread across euro area countries. Firms' real cost of bank financing converged back towards its early 2020 level, supported by the recent rebound in inflation expectations. Moreover, the spread between bank lending rates on very small loans and those on large loans stabilised at pre-pandemic levels. At the same time, uncertainty regarding the lasting impact of the pandemic on the economy, and thus also on borrowers' creditworthiness and bank balance sheets, remains high. In order to avoid this uncertainty precipitating a broad-based tightening of financing conditions, amplifying the economic impact of the pandemic, all current policy support measures remain essential.

**Chart 15**

**Composite bank lending rates for NFCs and households**

(percentages per annum)



Source: ECB.

Notes: Composite bank lending rates are calculated by aggregating short and long-term rates using a 24-month moving average of new business volumes. The latest observations are for February 2021.

# Boxes

## 1 What is driving the recent surge in shipping costs?

Prepared by Maria Grazia Attinasi, Alina Bobasu and Rinalds Gerinovics

**In the second half of 2020 global economic activity and trade staged a sharp rebound driven mainly by the manufacturing sector, while services sector activity was and has remained subdued.** In the third quarter of 2020 global economic activity recovered swiftly as a result of the easing of the pandemic and associated containment measures as well as the significant policy support deployed at the peak of the crisis. Despite a slowdown in the last quarter of the year, reflecting a worsening of the pandemic, the pace of the global economic recovery in the second half of 2020 was overall stronger than initially estimated (ECB 2021, IMF 2021).<sup>1</sup> It was driven to a significant extent by the manufacturing sector (Chart A, upper panel), as production activities restarted and the demand for goods recovered. At the same time the services sector, and especially the most contact-intensive activities, lagged behind owing to continued social distancing and some remaining limitations. These also hit the travel and tourism sectors particularly hard. Following the collapse in global trade in the first half of 2020 (ECB 2020), global merchandise imports recovered, and by November 2020 they had reached their pre-crisis level again.<sup>2</sup> However, the recovery has progressed at different speeds across countries, with China – the first country to bring the virus under control – already returning to its pre-crisis level in June 2020 (Chart A, lower panel). It was only towards the end of the year that the recovery in trade started to spread to other key global economies.

<sup>1</sup> See Box 2 in “ECB Macroeconomic Staff Projections for the Euro area”, March 2021, and “World Economic Outlook Update”, January 2021.

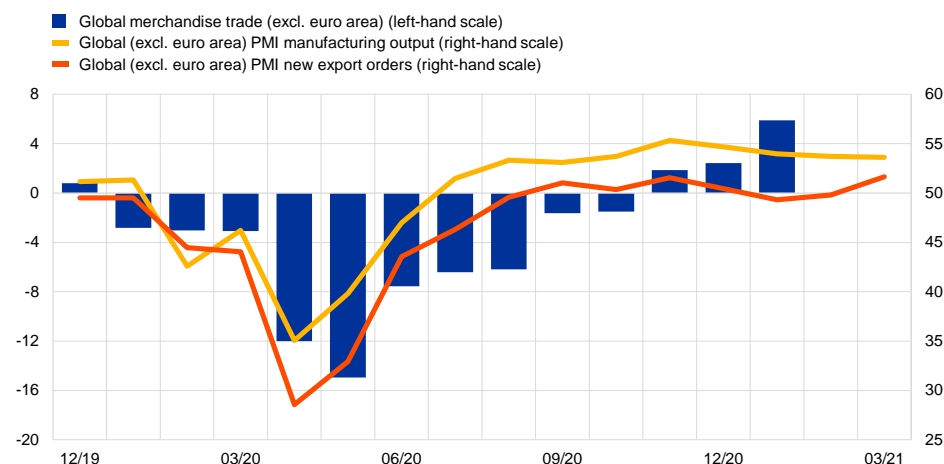
<sup>2</sup> See Box 2 “The great trade collapse of 2020 and the amplification role of global value chains”, *Economic Bulletin*, Issue 5, ECB, July 2020.

## Chart A

### Developments in global economic activity and trade

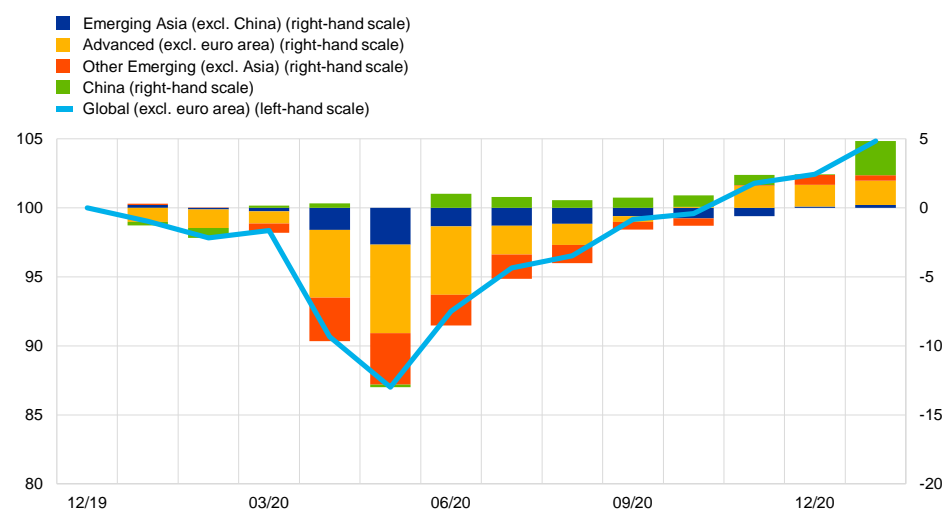
#### Global merchandise trade and PMI indices

(left-hand scale year-on-year, percentage changes; right-hand scale diffusion indices)



#### Global merchandise trade and country contributions

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



Sources: Markit, CPB and ECB calculations.

Notes: The global aggregate excludes the euro area. The latest observations are for March 2021 (PMI) and January 2021 (global merchandise trade).

**The sharp rebound in global manufacturing activity caused a strong rise in international orders and resulted in some supply bottlenecks.** Supply frictions are evidenced by rising supplier delivery times, which in turn are reflected in higher container shipping costs and, more generally, in higher input prices. In particular, the Global Purchasing Managers' Indices (PMIs) for different manufacturing sub-sectors show how the sharp rebound in new orders for inputs of production since the trough in the second quarter of 2020 has been accompanied by a strong rise in supplier delivery times and an increase in input price pressures (Chart B). The sectors experiencing stronger disruptions in supply chains are basic materials, machinery and equipment,

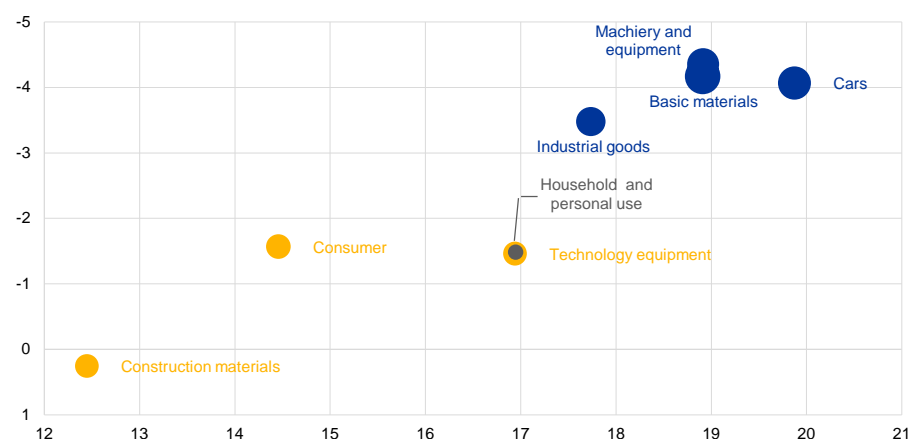
and cars. A particularly severe shortage in the supply of semiconductors is causing delays in car production globally.<sup>3</sup>

## Chart B

### Supplier delivery times and input prices

#### Global PMI Indices (diffusion indices)

(y-axis – PMI suppliers' delivery times (reversed); x-axis – PMI new export orders, change between February 2021 and Q2 2020)



Sources: IHS Markit, Haver analytics and ECB staff calculations.

Notes: The size of the bubbles is proportional to the change in the PMI index for input prices between February 2021 and Q2 2020. Grey dots reflect increases in the PMI index for input prices below 10, yellow dots reflect increases between 10 and 15 and blue dots reflect increases in the PMI index greater than 15.

### Rising ocean freight shipping costs are another sign of supply bottlenecks

(Chart C, upper panel). Since the second half of 2020, global freight shipping costs have been on a steady recovery path from the lows reached in the midst of the pandemic. In recent months, however, they have reached levels not seen since after the Great Financial Crisis, while growth rates have risen above those observed since 2015. At the same time, transport costs on shipping routes from Asia and China to Europe and the Mediterranean, as well as the United States, have experienced a particularly sharp rise since the second half of the year. They appear to have peaked recently (Chart C, lower panel). Two factors are associated with the increase in shipping costs. On the one hand, the strong rise in demand for intermediate inputs on the back of stronger manufacturing activity raised the demand for Chinese exports and the demand for container shipments. At the same time, shortages of containers at Asian ports have exacerbated supply bottlenecks and further increased shipping costs as companies in Asia are reported to be paying premium rates to get containers back.<sup>4</sup> Reportedly, ports in Europe and the United States are congested amid logistics disruptions related to the coronavirus (COVID-19) pandemic and idle containers remain in several ports on the back of the uneven recovery of trade. Notably, available data point to a decrease in container ship traffic from important Asian ports, with the Asia-EU trade lane having experienced the biggest decrease (as indicated by the

<sup>3</sup> Supply shortages in the semiconductor industry are also attributed to the fact that while car production collapsed in the second quarter of 2020, demand for semiconductors remained relatively buoyant as the pandemic also led to a surge in demand for electronic equipment (e.g. computers). As a result, once the recovery in car production materialised and with little slack left in the semiconductor industry, shortages in production of semiconductors have started to emerge.

<sup>4</sup> Bloomberg, "Freight-Cost Pain Intensifies as Pandemic Rocks Ocean Shipping", February 2021.

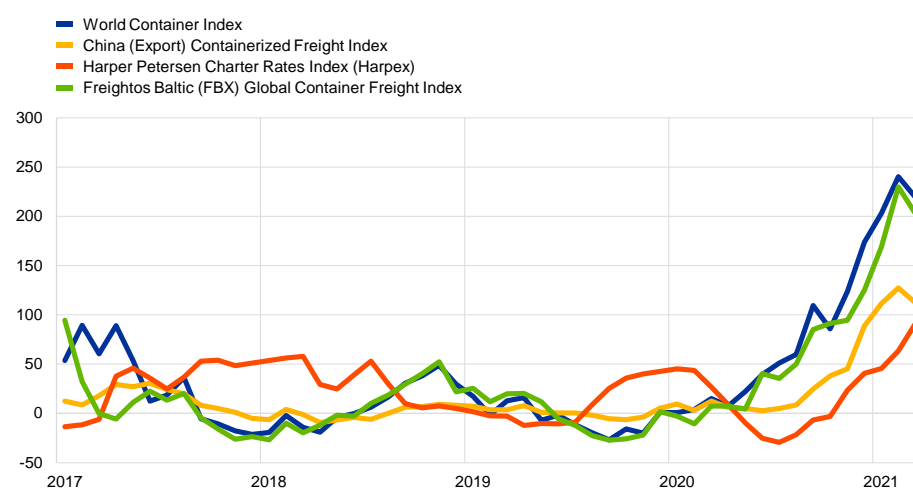
largest reduction in Chart D). In this context, the reliability of the schedules of global container services has declined to the lowest levels on record, according to new data from SeaIntelligence Consulting.<sup>5</sup> The rise in shipping costs has been further exacerbated by limited air freight capacity as international flight volumes have plunged due to travel restrictions and flight cancellations.

### Chart C

#### Global and regional shipping costs

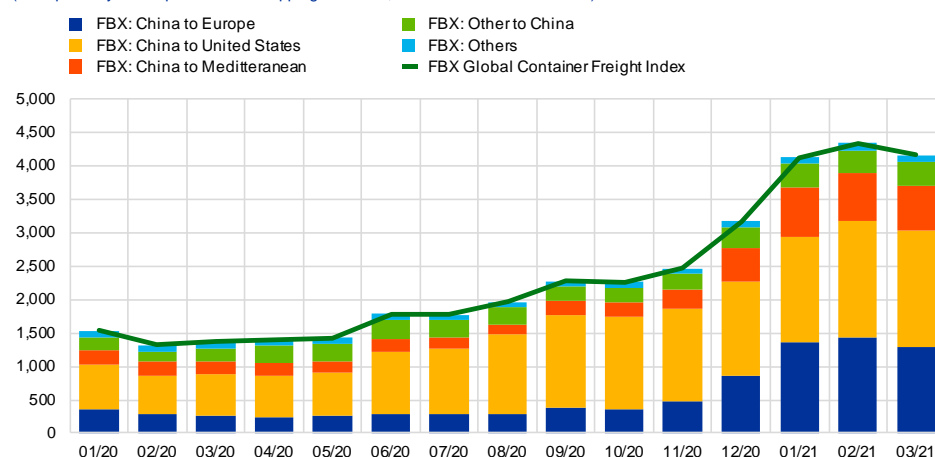
##### Global shipping costs

(year-on-year, percentage changes)



##### Freightos Baltic Index

(USD per forty-foot equivalent unit shipping container, contributions of sub-indices)



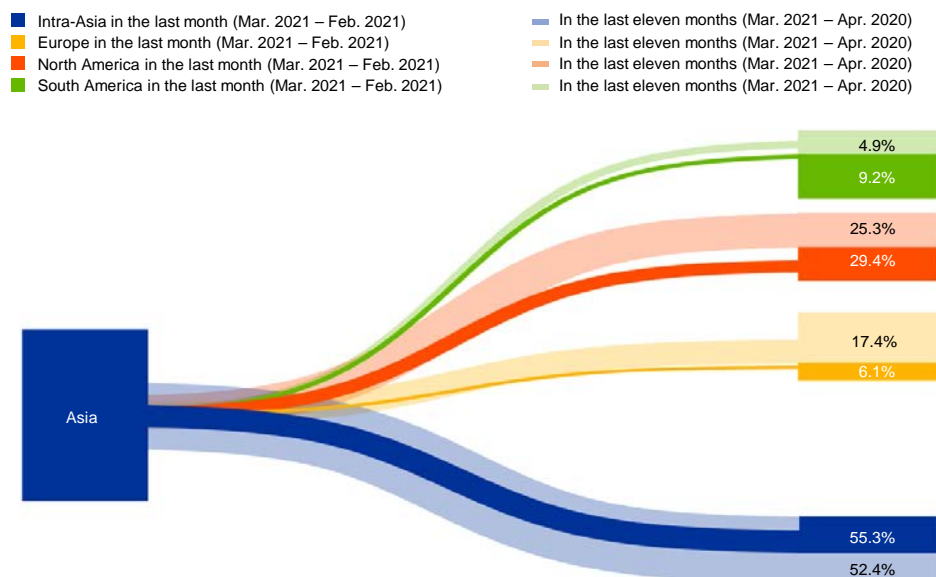
Sources: Bloomberg, Refinitiv, and ECB calculations.

Notes: The latest observations are for March 2021. The World Container Index (WCI) is a composite indicator of container freight rates for eight major trade lanes between Asia, Europe and North America. The China (Export) Containerized Freight Index (CCFI) is a composite indicator of container freight rates from all major ports in China. The Harpex is a composite indicator of weekly container shipping rate changes in the time charter market for eight different classes of container ships. The Freightos Baltic Global Container Freight Index (FBX) is a composite indicator of container freight spot rates across twelve major global trade lanes.

<sup>5</sup> The Sealntel schedule reliability report covers 34 different trades and more than 60 lines. It reports that for the last six months reliability has been at its lowest levels since the index was introduced in 2011.

**Chart D**  
**Shipping capacity**

(deadweight tons (DWT); 1 DWT=1,000 kilograms)



Sources: Bloomberg, IHS and ECB calculations.

Notes: Container ship vessels include container ro-ro cargo, container, deck cargo and general cargo vessels. Port of departure includes major Asian ports (Shanghai, Singapore, Shenzhen, Ningbo, Busan, Hong Kong and Klang). Port of destination, in addition to major Asian ports, includes major European ports (Rotterdam, Antwerp and Hamburg), major North American ports (Los Angeles, Long Beach and New York/New Jersey) and major South American ports (Santos, Colon and Cartagena). Shaded areas refer to the volume of traffic – when vessels are fully loaded – in April 2020, whereas the solid areas refer to the volume of traffic in February 2021. The thickness of edges is proportional to the aggregate deadweight tonnage (DWT) and percentages refer to the share of each destination out of total outbound DWT from Asia in April 2020 (shaded area) and February 2021 (solid areas) respectively.

**The rise in global container shipping costs at the end of 2020 largely reflected stronger demand (Chart E).** We use econometric analysis to disentangle the relative importance of the demand and supply forces.<sup>6</sup> The analysis suggests that at the start of 2020 supply constraints explained rising shipping costs, as containers were grounded as a consequence of the measures adopted to contain the spread of COVID-19. While such pressures persisted in the second quarter of the year, amid stringent containment measures globally, these were more than offset by the great trade collapse which led to a sharp decline in the Harpex. Shipping costs remained subdued in the third quarter as supply chain disruptions begun to subside, and global demand was on a path of gradual recovery and feeding only slowly into higher trade flows.<sup>7</sup> In the fourth quarter, however, the rise in shipping costs reflected above all the more vigorous recovery in global demand, and only to a smaller extent supply

<sup>6</sup> The decomposition is based on a structural vector autoregressive model estimated over the period January 2013 to January 2021 that employs total containers (measured in twenty-foot equivalent units (TEUs)), using the Harper Petersen Charter Rates Index (Harpex) of shipping costs and fuel prices. The model is identified using sign restrictions whereby a positive demand shock leads to an increase in both TEUs and the Harpex, while a positive supply shock leads to an increase in TEUs and a decline in the Harpex (neither has any contemporaneous impact on the oil price). An oil price shock leads to an increase in the oil prices and the Harpex, and a decline in TEUs.

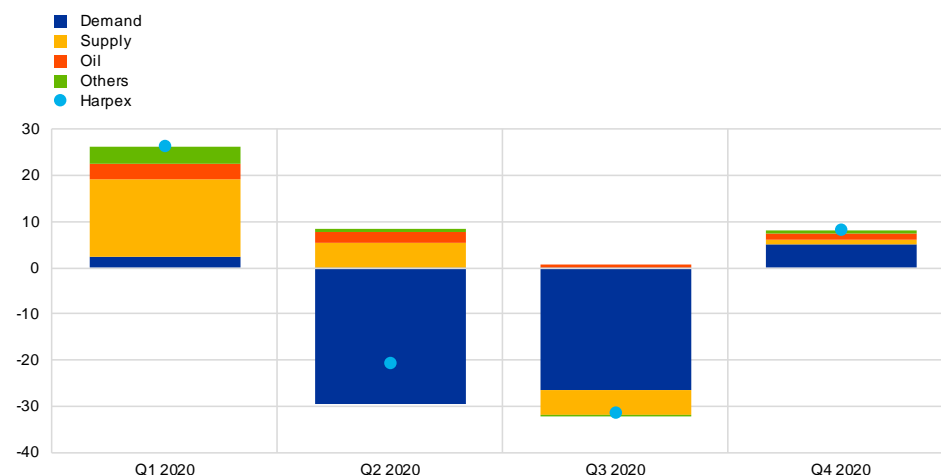
<sup>7</sup> The gradual recovery in demand is more visible in monthly data as it started picking up in September. However, on quarterly aggregates the contribution is still negative, albeit smaller than in the previous quarter. This also implies some delay in the response of global container shipping to reviving global demand.

constraints in the shipping industry.<sup>8</sup> The surge in global oil and fuel prices further contributed to the spike in shipping costs.

### Chart E

#### Historical decomposition of global shipping costs

(percentage point deviations from trend, contributions)



Sources: ECB staff calculations.

Notes: The decomposition is based on an SVAR model that employs: total shipping containers (measured in twenty-foot equivalent units (TEUs)), Harper Petersen Charter Rates Index (Harpex) of shipping costs and fuel prices. The model is identified using sign restrictions whereby a positive demand shock leads to an increase in both TEUs and the Harpex, while a positive supply shock leads to an increase in TEUs and a decline the Harpex (both have no contemporaneous impact on the oil price). An oil price shock leads to an increase in the oil prices and the Harpex, and a decline in TEUs. The model is estimated on monthly data (expressed in annual dynamics) from January 2013 to January 2021.

#### The surge in shipping costs raised the question to what extent these are passed on through the pricing chain.

Importers commonly pass on part of rising transportation costs to consumers through higher prices, which could give rise to inflationary pressures. In order to gauge the potential magnitude of this effect, a structural vector autoregressive (SVAR) model has been estimated for the US economy, following Herriford et al. (2016).<sup>9</sup> The analysis suggests that after one year, the pass-through of shipping prices into US Personal Consumption Expenditures (PCE) inflation is rather limited.<sup>10</sup> Even a 50% annual increase in the Harpex – similar to that experienced leading up to January 2021 – could raise annual PCE inflation by up to 0.25 percentage points one year later. The size of this effect is also explained by the fact that international shipping costs make up only a relatively small share of the final cost of manufacturing output.<sup>11</sup> Overall, given that supply challenges are largely

<sup>8</sup> The model results for January 2021, the latest available observations, also confirm that the sharp rise experienced at the start of the year in the Harpex is consistent with the findings of Chart E. Namely there was a positive contribution from surging demand, followed by supply constraints and fuel price dynamics.

<sup>9</sup> Herriford, T., Johnson, E., Sly, N. and Lee Smith, A., "How Does a Rise in International Shipping Costs Affect U.S. Inflation?," *Macro Bulletin*, Federal Reserve Bank of Kansas City, pages 1-3, December 2016.

<sup>10</sup> The model uses the West Texas Intermediate (WTI) spot price, the Bureau of Labor Statistics' (BLS) nonpetroleum import price index, the Harper Petersen Charter Rate Index (Harpex), and the core PCE price index. The model is estimated using monthly data from January 2001 to December 2020 and uses year-on-year growth rates and 12 lags for each variable. Shocks to the variables are identified using Choleski ordering. The BLS import price index omits shipping costs, which is consistent with import prices being ordered before shipping costs.

<sup>11</sup> According to the World Input-Output Tables, shipping costs make up less than 3% of the final cost of manufacturing output, implying that international shipping costs make up less than 1%.

driven by transportation rather than production constraints, the rise in transportation costs is expected to have only a modest impact on global economic activity.<sup>12</sup>

**As supply adjusts to higher demand freight costs might decline again.** Overall, higher shipping costs and longer delivery times have caused temporary frictions in supply chains. However, as supply adjusts to increased demand, these bottlenecks should delay but not derail the global recovery.<sup>13</sup> At the same time, as lockdowns are lifted and consumers rebalance their spending towards services, some easing of the current supply bottlenecks should be expected, with knock-on effects on shipping costs.

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<sup>12</sup> Goldman Sachs Report, “The Inflation Boost From Supply Chain Disruptions: Here Today, Gone in 2022”, March 2020.

<sup>13</sup> At the same time, the blockage of the Suez canal at the end of March will add to the short-term pressure on global shipping costs worldwide.

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

Prepared by Gwenaél Le Breton, Richard Morris and Moreno Roma

This box summarises the results of contacts between ECB staff and representatives of 66 leading non-financial companies operating in the euro area. The exchanges took place between 23 March and 1 April 2021.<sup>1</sup>

**Contacts reported increasing constraints and restrictions on their ability to respond to strong or growing actual or latent demand.** Stricter and more prolonged coronavirus (COVID-19) containment measures continued to severely restrict activity in services dependent on social contact. Moreover, many contacts in the manufacturing sector emphasised supply constraints. As a result, many firms' activity was stable or contracting despite strong growth in order books or indications of substantial latent demand. Overall, activity in the first quarter was seen to have contracted in most parts of the retail, consumer services and energy sectors, and was considered to be rather mixed in manufacturing, broadly stable in construction and mostly stable or growing in business services.

**In the manufacturing sector, supply was increasingly failing to keep up with demand owing to shortages of inputs, which may continue for some weeks or months.** The most acute shortage was of semiconductors. During the first wave of the pandemic, supply had been diverted to manufacturers of IT equipment, which then left shortages when demand from other industries recovered more quickly than expected. In recent weeks, shortages of semiconductors, as well as metals, chemicals, plastics and related components, had been exacerbated by various events, including the weather-induced power cuts in Texas. These problems were further compounded by the ongoing problems in transport logistics, especially shortages of shipping containers. This resulted in delivery times that were substantially longer than normal and crisis management of certain supply chain and production decisions. Contacts expected supply constraints to worsen in the second quarter of 2021 before gradually easing in the second half of the year.

**Activity in much of the services sector continued to be strongly influenced by the prevalence of lockdowns and travel restrictions.** Nearly all contacts whose businesses depended heavily on the physical presence or movement of customers reported activity that was either contracting or stable at very low levels. Within non-essential retail, developments were highly sensitive to the geographical and product focus and to the relative strength of the online offering. Consequently, retailers with businesses focused on the same or similar product lines painted starkly different pictures of business conditions. Besides lost sales, "stop-start" lockdowns added to costs in the hospitality sector. By contrast, food retailers and their suppliers continued to benefit from stronger-than-normal demand, although a lack of available drivers limited their ability to meet the increased demand for home deliveries.

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

**Contacts anticipated growth in the second quarter, but continuing lockdowns and the slow roll-out of vaccines pushed expectations of a more substantial rebound to later in the year.** Contacts in the travel industry reported negligible bookings so far for the summer. Several contacts in consumer-oriented services did, however, highlight signs that consumers were very eager to eat in restaurants, shop in physical stores and go on holiday as soon as regulations allowed. As and when those consumer services rebounded, some consumer spending was likely to be diverted away from consumer goods, which should help rebalance supply and demand in the manufacturing sector.

**Most contacts described a relatively stable employment outlook in terms of permanent headcount.** Firms continued to adjust to pandemic-induced fluctuations in activity by making use of the flexibility provided by government support schemes, interim staff and subcontracting. Therefore, permanent headcount tended to remain relatively stable. Permanent hiring primarily targeted highly specialised jobs, especially in IT. At the agency level, the recovery in recruitment was described as slowing overall, with new recruitment mostly related to e-commerce and logistics. For companies for which the pandemic had triggered a (greater) structural adjustment of the workforce, this adjustment had typically already been implemented in the rest of the world, but was progressing more gradually in the euro area.

**Contacts in the industrial sector mostly reported increasing selling prices, while price developments in the services sector were more subdued.** In much of the manufacturing sector selling prices were rising in response to higher input costs. Customers tended to focus more on securing supply than on negotiating prices, which facilitated pass-through to some extent. Many contacts thus anticipated some higher-than-usual consumer goods inflation this year. This was, however, expected to be transitory and could be mitigated by retailers pushing for stronger discounts than they had received last year. Meanwhile, selling prices across much of the services sector remained mostly stable, and in consumer-oriented services tended to be described as weak or still subject to downward pressure. There was considerable heterogeneity in the development of services prices and a highly uncertain outlook, as usual market dynamics were somewhat interrupted.

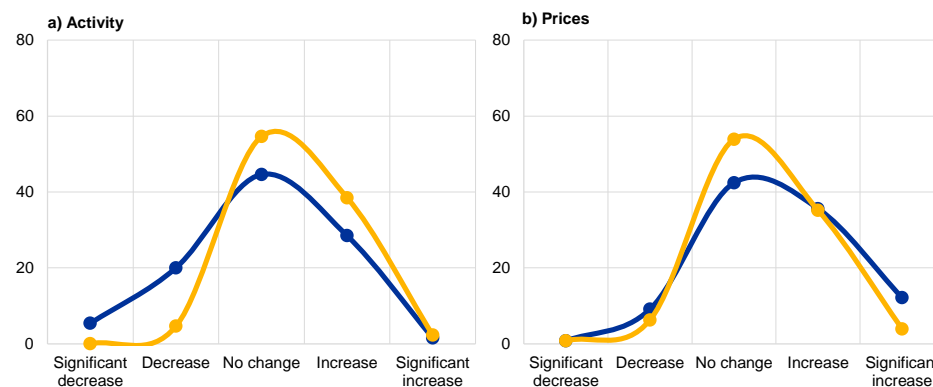
**Shortages of raw materials and bottlenecks in transport and logistics were driving input prices higher, but the wage outlook remained moderate.** The increase in the prices of many raw materials and related inputs had accelerated in recent months in view of global demand and supply imbalances. However, several contacts anticipated that commodity prices would peak in the coming months and could start moderating slightly later in the year. Transport costs (especially sea freight rates) remained high but seemed to have peaked. Most contacts described a normal or moderate outlook for wages. On balance, contacts expected wage agreements in 2021 to be broadly similar to those in 2020, with both years influenced by considerations surrounding the pandemic, depending on the precise timing of negotiations.

## Chart A

### Summary of views on developments in and the outlook for activity and prices

(percentage of respondents)

- Previous quarter
- Current quarter



Source: ECB.

Notes: The scores for the previous quarter reflect the ECB staff assessment of what contacts said about developments in activity (sales, production and orders) and prices in the first quarter of 2021. The scores for the current quarter reflect the assessment of what contacts said about the outlook for activity and prices in the second quarter of 2021.

### 3 Macroeconomic implications of heterogeneous long-term inflation expectations: illustrative simulations through the ECB-BASE

Prepared by Matthieu Darracq Pariès and Srećko Zimic<sup>1</sup>

**This box explores how heterogeneous expectations across agents can change the macroeconomic outcomes of an increase in long-term inflation expectations.**

Over the recent period, long-term inflation expectations of financial market participants, which can be measured either from financial market instruments like inflation-linked swaps (ILS) or from surveys of professional forecasters, have been rising. As shown in Chart A, between the fourth quarter of 2020 and the first quarter of 2021, inflation expectations increased only slightly according to the ECB Survey of Professional Forecasters (SPF), while this pattern was more pronounced for market-based measures.<sup>2</sup> In assessing the macroeconomic implications of a rise in long-term inflation expectations, a critical factor with regard to the propagation mechanism is whether other sectors of the economy (notably households and firms) share the same expectations as priced by financial markets. This issue is explored through the lens of the ECB-BASE<sup>3</sup> model, conducting illustrative simulations where the agents modelled have different perceptions of a shift in long-term inflation expectations.

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<sup>1</sup> The authors would like to thank Alice Carroy for her valuable research assistance and contribution to this box.

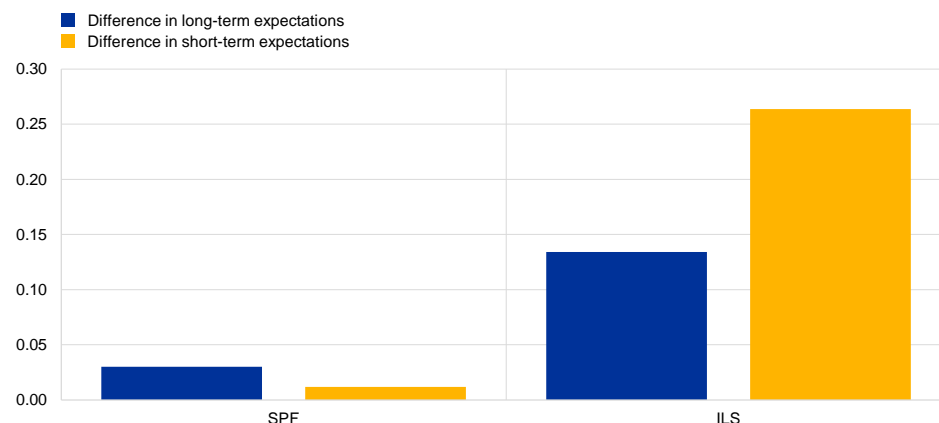
<sup>2</sup> Inflation expectations may also be measured through business and household surveys: on the latter, see the article entitled "[Making sense of consumers' inflation perceptions and expectations – the role of \(un\)certainty](#)", *Economic Bulletin*, Issue 2, ECB, 2021.

<sup>3</sup> See Angelini, E., Bokan, N., Christoffel, K., Ciccarelli, M. and Zimic, S., "[Introducing ECB-BASE: The blueprint of the new ECB semi-structural model for the euro area](#)", *Working Paper Series*, No 2315, ECB, September 2019.

## Chart A

### Changes in HICP expectations in the SPF and ILS rates

(changes between Q4 2020 and Q1 2021, year-on-year growth rates, percentage points)



Sources: Statistical Data Warehouse and Eurosystem staff calculations.

Notes: This chart shows the difference between Q4 2020 and Q1 2021 expected inflation. Two sources of expected inflation are compared. The first one is HICP inflation expectations from the ECB Survey of Professional Forecasters (SPF). It corresponds to the average of point forecasts given by the forecasters. The second is the inflation calculated from the euro area inflation-linked swap (ILS) rates. For each source of inflation, long-term and short-term expectations differences are shown. In the case of the SPF, the short term is the 2021 expected annual inflation and the long term is the five-year-ahead expected annual inflation. For ILS, the short term is calculated as the percentage deviation between the two-year-ahead swap rate and the one-year-ahead swap rate and the long term corresponds to the percentage difference between the ten-year-ahead swap rate and the five-year-ahead swap rate.

### The macroeconomic implications of alternative mechanisms of expectations formation, their heterogeneity across economic agents and the interplay with monetary policy remain an active field of theoretical and empirical research. A

significant part of the literature on structural macroeconomic models relies on the assumption of rational expectations and perfect common knowledge among economic agents. At the same time, data cannot explain exactly how expectations are formed and there is evidence suggesting departures from rational expectations, even if some convergence towards rational expectations over time cannot be excluded.

Accordingly, the literature has modified macroeconomic models to incorporate alternative mechanisms of expectations formation, such as learning (Slobodyan and Wouters<sup>4</sup>), hybrid expectations (Levine et al.<sup>5</sup>), rational inattention (Maćkowiak and Wiederholt<sup>6</sup>) and sticky information (Reis<sup>7</sup>).

### In the context of central bank macroeconomic models, the large semi-structural model ECB-BASE can be operated under various expectations settings and allows for some heterogeneous design across model agents. These features are

well suited to examining the transmission of changes in long-term inflation expectations. Heterogeneous perceptions across economic agents could indeed significantly affect the associated macro-financial implications. The key mechanisms at play operate through the perceived real rates across economic agents: to the extent

<sup>4</sup> Slobodyan, S. and Wouters, R., "Learning in an estimated medium-scale DSGE model", *Journal of Economic Dynamics and Control*, Vol. 36(1), 2012, pp. 26-46.

<sup>5</sup> Levine, P. et al., "Endogenous persistence in an estimated DSGE model under imperfect information", *The Economic Journal*, Vol. 122, No 565, 2012, pp. 1287-1312.

<sup>6</sup> Maćkowiak, B. and Wiederholt, M., "Business Cycle Dynamics under Rational Inattention", *The Review of Economic Studies*, Vol. 82, No 4, 2015, pp. 1502-1532.

<sup>7</sup> Reis, R., "Optimal Monetary Policy Rules in an Estimated Sticky-Information Model", *American Economic Journal: Macroeconomics*, Vol. 1, No 2, 2009, pp. 1-28.

that households and firms update their long-term inflation expectations, higher long-term nominal yields could still be consistent with lower real rates and thereby provide an expansionary effect on spending. On the other hand, where financial market participants increase their long-term inflation expectations by more than other economic agents and this is reflected in market prices, the subsequent rise in nominal financing costs translates into higher real rates for households and firms which may weigh on their spending decisions.

**The ECB-BASE can be used to perform a sensitivity analysis on the macroeconomic implications of an illustrative exogenous shift in long-term inflation expectations.** Assuming a 0.1 percentage point permanent increase in long-term inflation expectations, three simulation modalities are contrasted according to the perception of shock by i) all agents; ii) all agents (also including firms as in the first modality), but excluding the household sector; or iii) the financial sector only.<sup>8</sup> Chart B presents the simulation results for output, inflation, the term premium and the long-term interest rate. In all cases, financial markets are pricing the increase in inflation expectations and update their beliefs on the future course of the short-term interest rate. Consequently, long-term interest rates increase on impact by around 50 basis points in the three scenarios.<sup>9</sup> Beyond this first stage of transmission, the macroeconomic propagation crucially depends on expectations in the other sectors.

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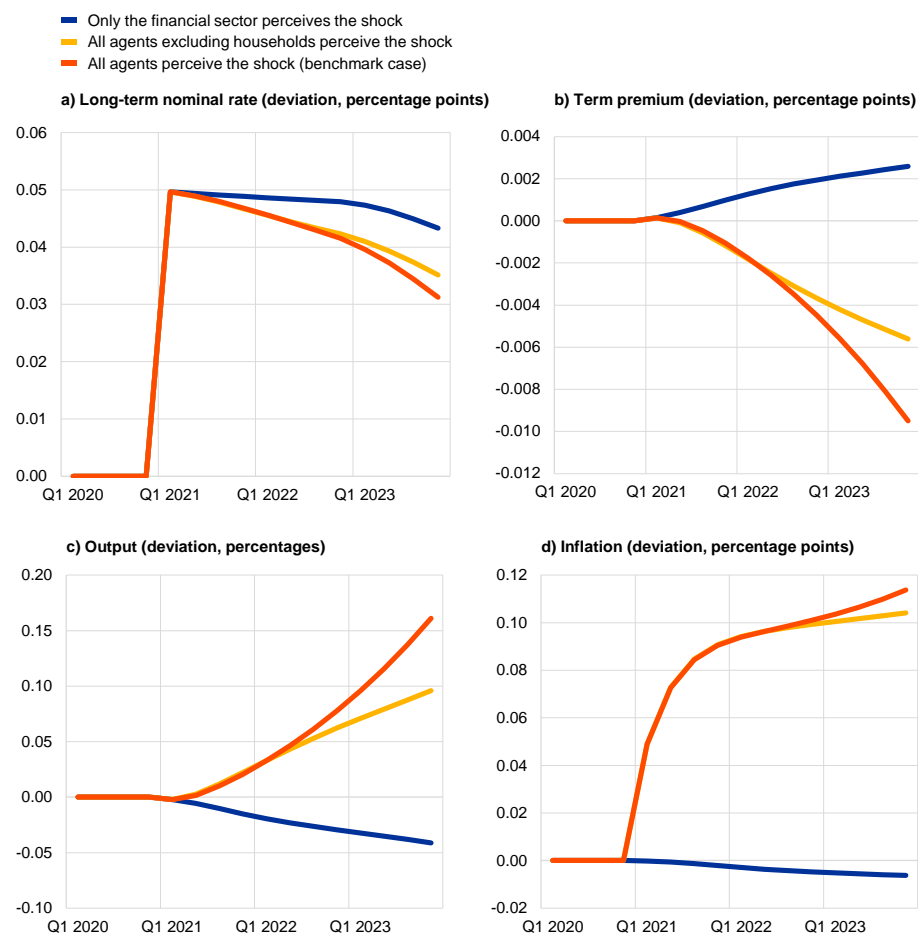
<sup>8</sup> In the model, the long-term inflation expectations play a role of perceived inflation target. The perceived inflation target, together with estimated dynamics, forms the basis for the inflation expectations of agents. The change in perceived inflation target therefore affects inflation expectations and, via the Phillips curve and other behaviour equations that depend on expectations, the macroeconomy at large.

<sup>9</sup> We assume an ex ante rational pricing kernel of the expected average short-term rate over the horizon. This implies that the expected average short-term rate is consistent with outcomes under a scenario where all agents adapt their expectations.

## Chart B

### Macro-financial implications of higher longer-term inflation expectations

(impact of a 0.1 percentage point increase in long-term inflation expectations, per annum)



Source: ECB calculations based on the ECB-BASE model.

Notes: In all simulations we assume a 0.1 percentage point increase in long-term inflation expectations. Monetary policy and the exchange rate are kept unchanged. The scenarios vary according to the perception of the shock across the various agents. In red: all agents perceive the shock (benchmark case). In yellow: all agents excluding the household sector perceive the shock. In blue: only the financial sector perceives the shock.

**A broad-based expectation of higher longer-term inflation can be expected to lift the short to medium-term inflation outlook and have an expansionary effect on economic activity.** If the shift in long-term inflation expectations is common knowledge among all sectors of the economy, price and wage-setters would factor in such perceptions when taking decisions, thereby leading to an increase in short-term inflation expectations and ultimately actual inflation. Indeed, although the long-term nominal rates increase (despite the short-term nominal interest rate remaining unchanged, as monetary policy is assumed not to react), the real rates drop owing to the increase in inflation expectations, thereby stimulating capital expenditures by firms. The easing of real financing conditions also reaches households, notably through higher house prices and wealth, and stimulates residential investment. Conversely, the real income channel works in the opposite direction for consumption as households perceive an erosion of their expected real income. On balance, the net effect is expansionary after a few quarters and overall output increases by 0.2% above the baseline after two years. The economic stimulus then validates the increase in

short-term inflation and contributes to the build-up of underlying inflation pressures: inflation reaches 0.1 percentage point above the baseline over the simulation horizon.

**If households do not perceive an increase in long-term inflation expectations, the positive impact on output and inflation is somewhat less pronounced.** In the second simulation, households do not change their inflation expectations when forming expectations about permanent incomes, wealth and real rates. Consequently, the tightening of nominal lending rates is also perceived in real terms, leading to a drop in house prices and wealth compared with the previous simulation. Lower wealth and expectations about permanent incomes drive consumption behaviour over the simulation horizon, leading to lower consumption and lower output than in the previous simulation.

**Assuming that the financial markets are the only segment of the economy repricing higher longer-term inflation expectations, the associated tightening of financing conditions would hamper the spending decisions of firms and households and prevent any price pressures from building up.** The increase in long-term inflation expectations leads to an increase in long-term rates. Inflation and wages do not increase, however, as price and wage-setters do not internalise increases in long-term inflation expectations. Real rates increase as households and firms do not perceive the shift in long-term inflation expectations, which leads to a drop in investment and lower wealth. Consumption drops owing to lower wealth and real incomes, and the worsening of expected economic conditions leads to an increase in the term premium and risk premia.

## Recent dynamics in energy inflation: the role of base effects and taxes

Prepared by Ieva Rubene and Gerrit Koester

**Energy price developments have caused a pronounced pick-up in euro area headline HICP inflation over recent months.** This box reviews the factors behind the 11-percentage point swing in energy inflation between December 2020 and March 2021 (which accounted for 1.1 percentage points of the corresponding swing in headline HICP inflation), with a particular focus on oil prices, base effects and the impact of indirect taxation, and discusses their implications for the outlook.

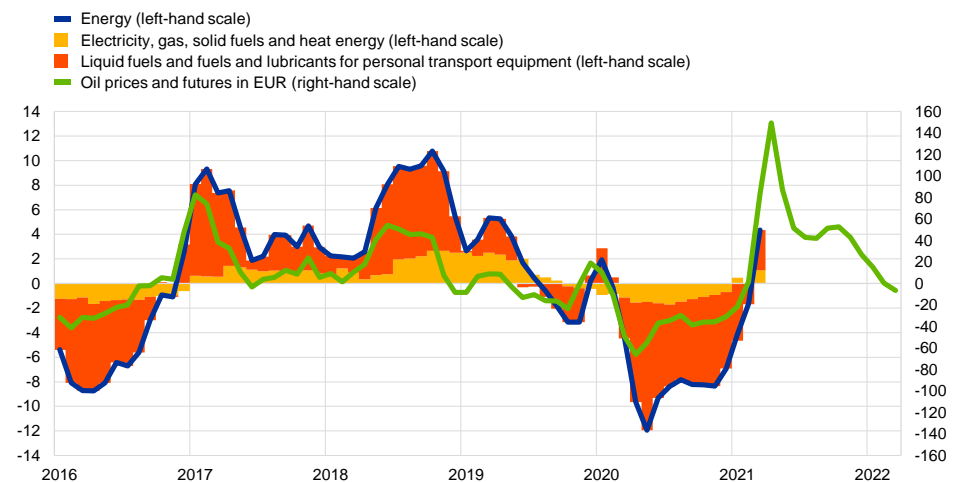
**The most prominent factor driving energy inflation is typically the price of oil.**

This reflects the strong and immediate pass-through of oil price changes to transport fuel prices (Chart A). The link with electricity, gas and other energy price components tends to be looser.<sup>1</sup>

### Chart A

#### Inflation developments for energy and oil prices

(left-hand scale: annual percentage changes; right-hand scale: annual percentage changes)



Sources: Eurostat, Bloomberg, ECB and ECB calculations.

Notes: The latest observation for the HICP inflation components is for March 2021; for oil prices and the USD/EUR exchange rate the latest observation is for 15 April 2021. Oil price inflation from 16 April 2021 is extended to March 2022 using oil prices futures and the USD/EUR exchange rate according to the methodology used for the technical assumptions for the Eurosystem/ECB staff macroeconomic projections.

**Energy inflation has been pushed up both by recent oil price increases and by base effects linked to the collapse in oil prices at the beginning of 2020.** As a result of the coronavirus (COVID-19)-related collapse in oil prices in spring 2020, prices for personal transportation fuels also fell sharply – leading to a drop in energy inflation as large as that recorded during the 2009 financial crisis. This massive

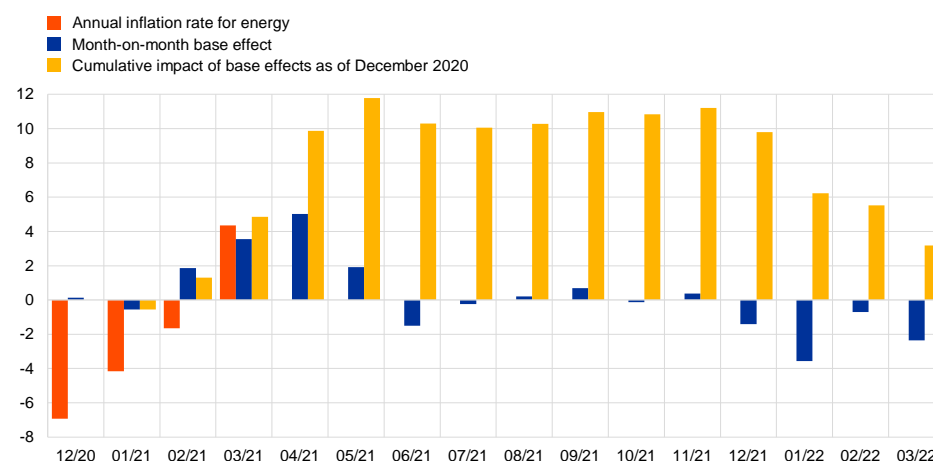
<sup>1</sup> See Task Force of the Monetary Policy Committee of the European System of Central Banks, “[Energy markets and the euro area macroeconomy](#)”, *Occasional Paper Series*, No 113, ECB, June 2010, in particular the section entitled “The impact of energy prices on inflation”, and also the box entitled “[The role of energy prices in recent inflation outcomes: a cross-country perspective](#)”, *Economic Bulletin*, Issue 7, ECB, 2018.

decline is having significant base effects on monthly year-on-year inflation rates for energy in spring 2021. A base effect is the effect on the year-on-year rate of inflation when an unusually large month-on-month change 12 months earlier drops out of the index.<sup>2</sup> As a result of this effect, even if oil and energy prices had remained at the low levels these reached after the onset of the pandemic, there would still have been an upward impact on annual rates of change in spring 2021. Around 60% of the total 6-percentage point increase in energy inflation between February and March 2021 (i.e. just below 4 percentage points) can be attributed to the upward base effect (Chart B). Cumulatively, base effects contributed around 5 percentage points to the increase in energy inflation between December 2020 and March 2021. This cumulative contribution since December can be expected to double in April to 10 percentage points (the contribution to headline inflation being around 1 percentage point). This impact will remain in the data for most of the year.

### Chart B

#### Impact of base effects on energy inflation

(percentage points)



Sources: Eurostat and ECB calculations.

Note: Month-on-month base effects show the contribution of the base effect to the change in the annual energy inflation rate from one month to the next. The cumulative impact of base effects is calculated by summing month-on-month base effects and is always shown relative to a specific reference month. For example, 10 percentage points of the increase in energy inflation in April 2021 compared with the inflation rate in December 2020 is due to base effects.

**The impact of the marked increase in oil prices since November 2020 has come on top of these base effects.** In particular the month-on-month increase in energy prices in January 2021 was stronger than usual and will thus give rise to a downward base effect on energy inflation, expected to be around 4 percentage points, in January 2022 (which would lead to a decline of around 0.4 percentage points in headline HICP inflation compared with December 2021). The outcome for energy inflation and the extent to which it conforms with the March 2021 ECB staff macroeconomic projections for the euro area will naturally depend on whether oil prices move in line with the path of oil futures prices assumed in these projections and many other factors that can have an impact on energy prices over time. However, the size of the base effects can

<sup>2</sup> See the box entitled “Base effects from the volatile components of the HICP and their impact on HICP inflation in 2014”, *Monthly Bulletin*, ECB, February 2014 and the box entitled “The role of energy base effects in short-term inflation developments”, *Economic Bulletin*, Issue 1, ECB, 2017.

be estimated for the period of 12 months after the latest available inflation outcome and provide some indication as to likely broad directional movements.

**The strengthening of energy inflation in early 2021 reflected not only oil price developments but also changes in taxes and other surcharges.** This relates most prominently to the reversal, in January, of the earlier VAT reduction in Germany, which also had a substantial effect on energy inflation in the euro area (Chart C).<sup>3</sup> In addition, government measures aiming to reduce CO2 emissions affected developments in euro area energy inflation at the beginning of 2021. These included the introduction of carbon emission certificates in the transport and heating sectors in Germany, which push up prices for refined petroleum products and gas, and a reduction in the surcharge to support the production of green electricity, with downward effects on electricity prices. Taken together these measures in Germany pushed up the annual rate of energy inflation in the euro area by around 0.8 percentage points from January 2021 onwards (Chart C). The upward impact of the VAT and environment-related government measures will stay in the energy inflation data for 2021 but then drop out of the annual rates of change and reinforce the downward impact of oil price-related base effects in early 2022. Compared with the impact of changes in oil prices, however, these changes in taxes and government measures have played only a very limited role in developments in HICP energy inflation in the euro area.<sup>4</sup>

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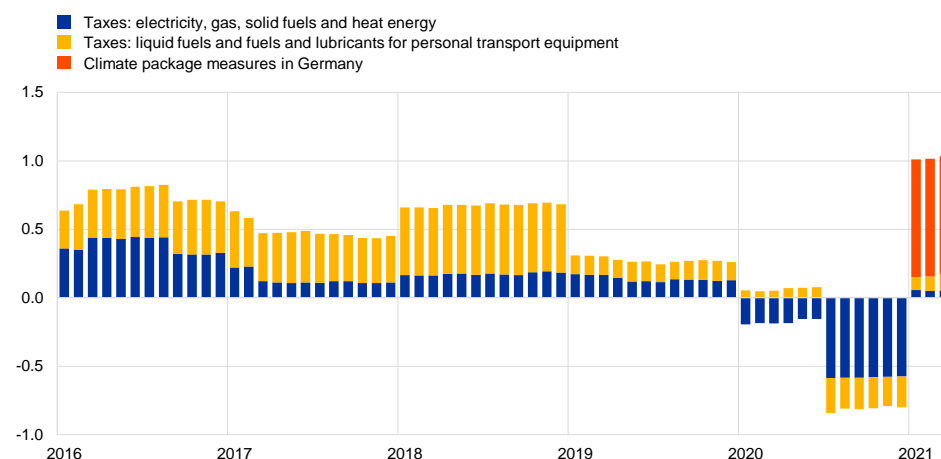
<sup>3</sup> See also the box entitled “[The role of indirect taxes in euro area inflation and its outlook](#)”, *Economic Bulletin*, Issue 6, ECB, 2020.

<sup>4</sup> Such changes in taxes, surcharges or other government measures, e.g. changes in the relative rates of taxation of various forms of energy towards favouring alternative energy consumption, may push up energy inflation in the euro area in the medium to longer term, especially if they become more common across euro area countries in order to achieve ambitious emission-cutting targets.

## Chart C

### Impact of indirect taxes and recent major climate-related measures on energy inflation in the euro area

(percentage point contributions)



Sources: Eurostat, ECB, Deutsche Bundesbank and ECB calculations.

Notes: The impact of changes in indirect taxes is calculated as the difference between HICP energy inflation and HICP energy inflation at constant tax rates, assuming full and immediate pass-through of indirect taxes. "Climate package measures in Germany" refers to the estimated effect, as given in "Outlook for the Germany economy 2021 to 2023", *Monthly Report*, Deutsche Bundesbank, December 2020, of the introduction of carbon emission certificates in the transport and heating sectors in Germany and the reduction of the surcharge to support the production of green electricity. The introduction of carbon emission certificates for transportation fuels and gas and the reduction in the surcharge to support the production of green energy are not classified as indirect tax measures in the HICP framework.

**In the March 2021 ECB staff projections energy inflation played a prominent role in the projected temporary rise in HICP inflation in 2021 and its reduction in early 2022.** Much of that role can already be gauged quantitatively when base effects, one-off tax impacts, climate package measures in Germany and current oil futures prices are considered.<sup>5</sup>

<sup>5</sup> The upward effects of the climate change measures in Germany will largely fall out of year-on-year energy inflation rates at the beginning of 2022. Prices for carbon emission certificates will be raised only moderately in 2022, with ongoing reductions in electricity prices dampening the impact on overall energy inflation in 2022. See for details "Outlook for the German economy 2021 to 2023", *Monthly Report*, Deutsche Bundesbank, December 2020.

# Articles

## 1 Understanding post-referendum weakness in UK import demand and UK balance of payments risks for the euro area

Prepared by Valerie Jarvis and Tobias Schuler<sup>1</sup>

### 1 Introduction

**The UK referendum on EU membership in 2016 has set the course for the most significant change to the relationship between the United Kingdom and its closest trading partners for decades.** The primary interest from the ECB's perspective is to understand the likely impact on trade of the departure of the United Kingdom from the European Union, as the United Kingdom has long been one of the euro area's major export markets.

**This article reviews the development of UK import demand and balance of payments since the referendum in order to assess the likely implications for euro area foreign demand.**<sup>2</sup> It focuses on early insights into factors which have affected UK imports in the period between the referendum and the start of the coronavirus (COVID-19) pandemic. The departure of the United Kingdom from the EU could potentially result in some disruption to euro area export growth in the coming years if, for instance, UK import demand is reduced or diverted as a consequence of Brexit.

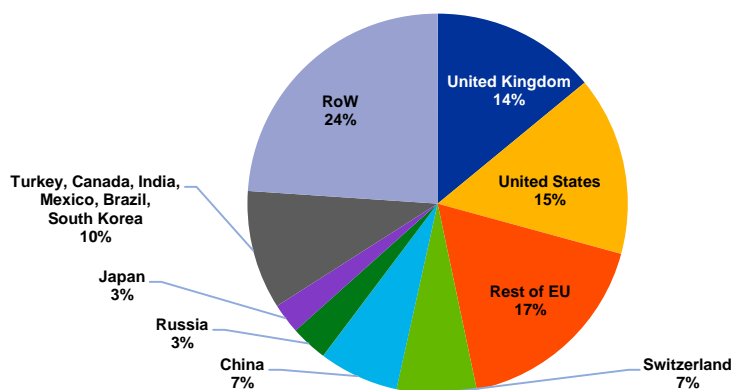
**The United Kingdom has long been a major trading partner for the euro area, accounting for around 14% of euro area foreign demand over the period 2016-18 (Chart 1).** Until the mid-2010s, when the 2015 general election paved the way for the referendum, the United Kingdom had been the euro area's largest single trading partner – even ahead of the United States. Developments in foreign demand are a major determinant of euro area GDP growth as non-euro area imports and exports of goods and services amount to around half of euro area GDP.

<sup>1</sup> We would like to thank Florian Forsthuber for data assistance and Andrejs Semjonovs (now Latvijas Banka) for earlier input.

<sup>2</sup> We focus on the impact on euro area foreign demand. For data availability reasons, where necessary we refer to EU figures.

**Chart 1****Euro area export destinations**

(share of exports of goods and services, 2016-18 average)

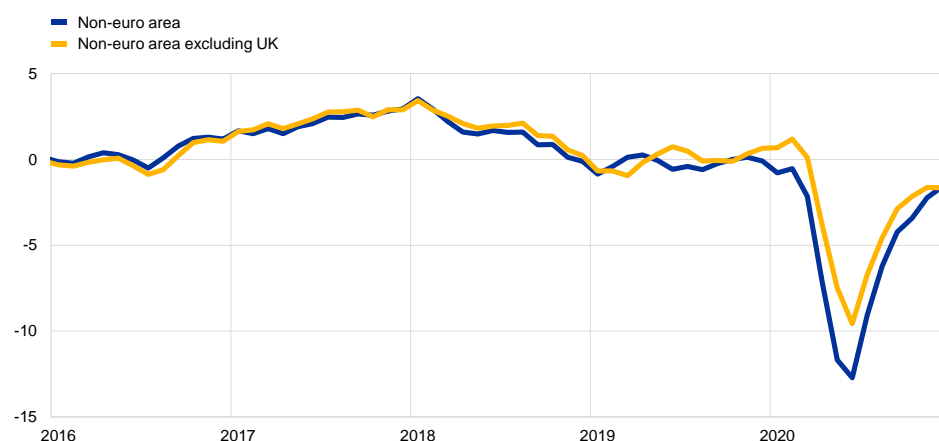


Source: ECB staff calculations.  
 Note: RoW stands for the rest of the world.

Since the 2016 referendum, the UK's share of euro area foreign demand has fallen somewhat, largely reflecting a notable slowdown in the growth of UK imports from the EU and, correspondingly, a sizeable drag on euro area exports (Chart 2). A marked deceleration in the growth of UK import demand since the end of 2017 has exacerbated a broader slowdown in the growth of non-euro area foreign demand, which has weighed on euro area export growth. In addition, uncertainties surrounding the various Brexit deadlines throughout much of 2019 and 2020 resulted in considerable quarterly volatility in the UK component of euro area foreign demand.

**Chart 2****Euro area exports to non-euro area countries**

(annual percentage changes of three-month moving averages, monthly data)



Sources: Eurostat and ECB staff calculations.  
 Notes: Exports of goods and services. The latest observation is for December 2020.

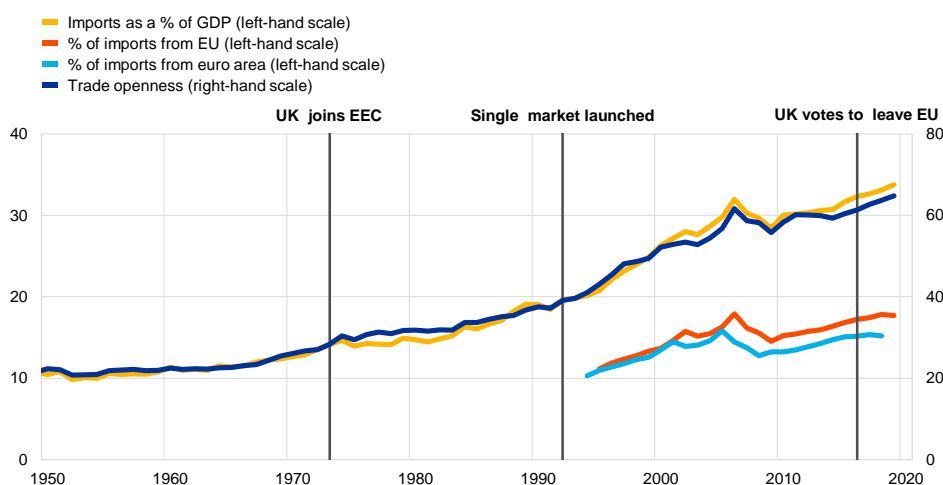
## 2 Key features of UK trade dynamics

**The UK's import propensity has almost trebled since the end of the Second World War, a trend that is particularly clear following the UK's accession to the European Economic Community (later the European Union) (Chart 3).** Notable increases in the UK import propensity are evident following the country's accession to the European Economic Community in the early 1970s and more especially following the creation of the single European market in the early 1990s. Over this period, UK imports rose from a share of just under 14% of GDP in the early 1970s to around 20% in 1991 (on the eve of the creation of the single market), with a further marked increase to just under 30% by 2007 – largely on account of strong growth in imports of EU goods. The increase over this period was also reflected in a tangible rise in UK exports, resulting in a higher degree of UK trade openness. The share of total foreign trade (exports and imports) in GDP went on to expand from around 20% to around 60% by the mid-2010s. From a euro area perspective, UK imports rose as a proportion of euro area foreign demand, from around 12% at the time of Economic and Monetary Union in 1999 to almost 16% – the largest single recipient – at its peak in 2006.

**Chart 3**

UK trade openness since 1950

(real exports and imports as a % of UK GDP)

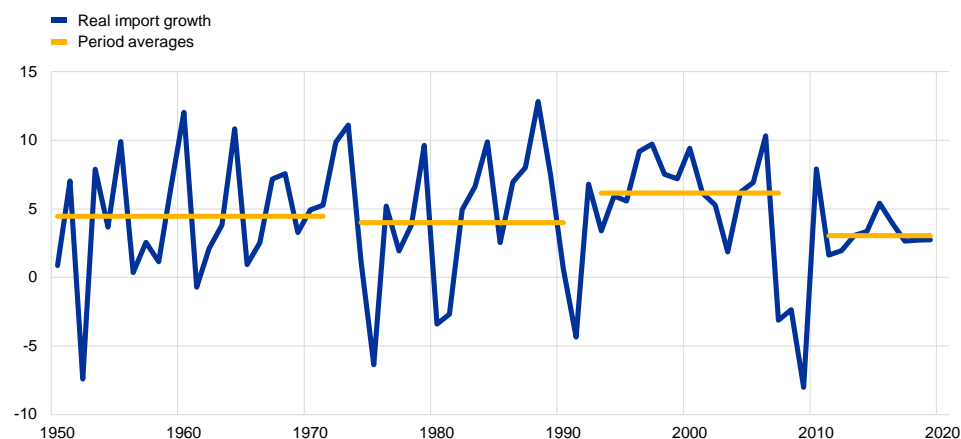


Sources: Bank of England (dataset "A millennium of macroeconomic data for the UK"), Eurostat and ECB staff calculations.  
Note: The latest observation is for 2019 (Bank of England data updated from 1995 from national accounts data).

**UK import growth slowed markedly following the worldwide disruption to international trade during the global financial crisis.** UK import growth has almost halved since the global financial crisis, with the annual rate averaging just over 3% over the period from 2011 to 2019 compared with just over 6% between 1992 and 2007 (Chart 4). As a result, by the end of 2019 the share of imports in UK GDP was almost unchanged from pre-crisis levels – albeit subject to considerable temporary volatility around episodes associated with Brexit-related deadlines in 2019 (Box 1). These aspects have demonstrably weighed on euro area export growth (Chart 2).

**Chart 4****Real UK import growth since 1950**

(annual percentage change)

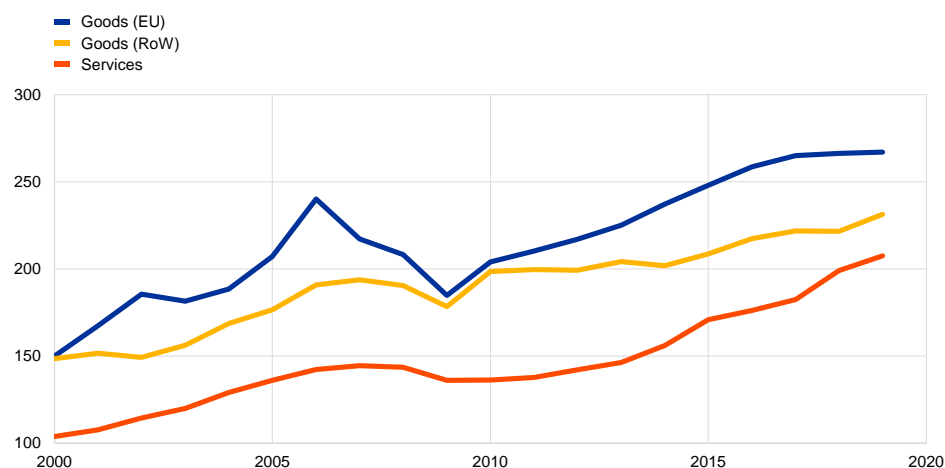


Sources: Bank of England (dataset "A millennium of macroeconomic data for the UK") and ECB staff calculations.  
 Note: The latest observation is for 2019 (Bank of England data updated from 1995 from national accounts data).

**Leaving aside the volatility of 2019-20, the marked slowdown in pre-pandemic UK import growth seen since the referendum was particularly strong for EU and euro area goods.** A breakdown of UK imports over the past two decades shows that the recent deceleration has largely concerned imports of goods from the EU (Chart 5).

**Chart 5****UK imports by source and category**

(GBP billions)



Sources: Eurostat, Office for National Statistics and ECB staff calculations.  
 Notes: RoW stands for the rest of the world. The latest observation is for 2019.

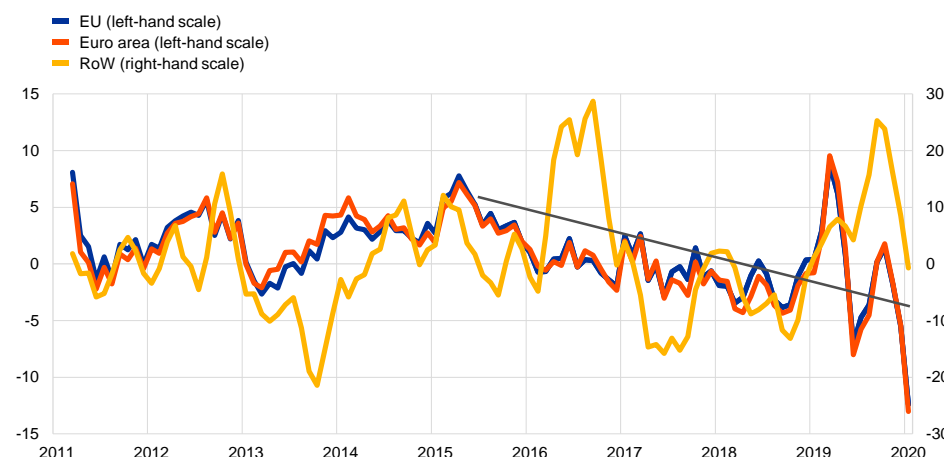
**Since mid-2015, the growth in UK imports of goods from the EU and the euro area has been on a consistently downward curve, in marked contrast to more volatile developments from the (non-EU) rest of the world (Chart 6).** While some of the difference can be traced to the high volatility associated with non-EU trading in non-monetary gold, the clear and almost monotonic decline in euro area/EU imports

over this period warrants a timely assessment of recent UK import developments and their likely drivers.

### Chart 6

#### UK imports and selected sub-groups

(volumes, annual percentage changes of three-month moving averages)



Sources: Eurostat, Haver Analytics and ECB staff calculations.

Notes: Annual percentage changes of three-month moving averages from monthly data. The latest observation is for January 2020.

### Box 1

#### The volatility of UK import growth since 2019 and the role of stockbuilding

Prepared by Florian Forsthuber and Valerie Jarvis

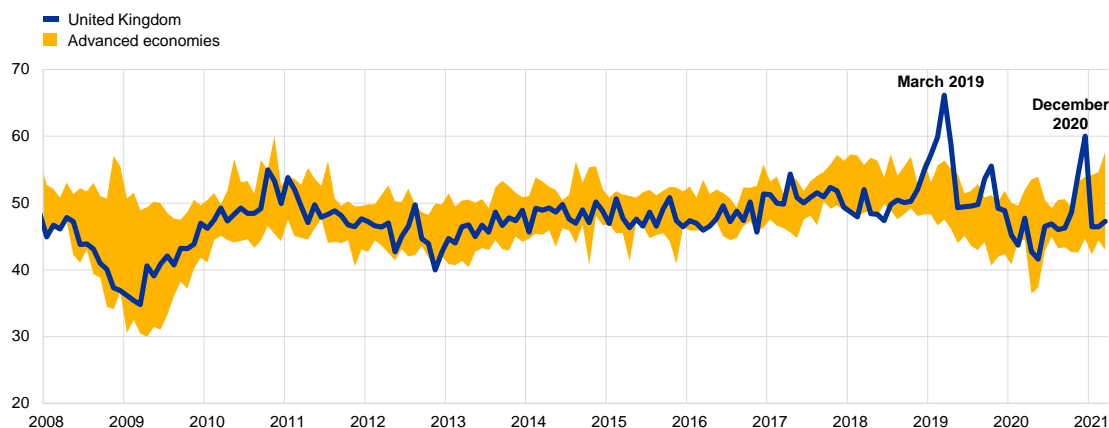
UK import growth was erratic in 2019 – driven in part by firms stockpiling in response to heightened fears of a no-deal Brexit in advance of various (missed) Brexit deadlines. This box explores the linkages between UK imports and Brexit-related stockpiling in the run-up to Brexit deadlines.

Survey indicators of UK inventory dynamics have consistently signalled Brexit-related stockpiling in 2019 and 2020. The PMI stockbuilding indicator<sup>3</sup> offers timely insights into Brexit-related stockpiling. At the most prominent point, fears of an imminent no-deal Brexit in the run-up to the original 29 March 2019 Brexit deadline led to a surge in UK inventories. As shown in Chart A, this caused the PMI stockbuilding indicator to surge to unprecedented levels, even from an international perspective. Similar developments also look to have been underway in the final quarter of 2020 in advance of the end of the transition period, although the picture is somewhat clouded by pandemic-related disruptions.

<sup>3</sup> PMI manufacturers' additions (or otherwise) to stocks for the purpose of selling on or using in production.

**Chart A**  
PMI stockbuilding indicator

(diffusion index)



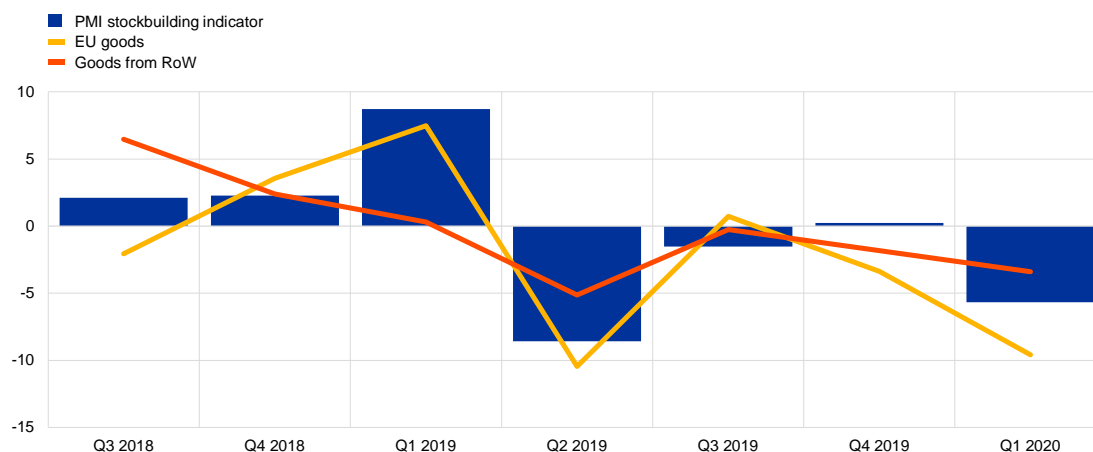
Sources: Haver Analytics and ECB staff calculations.

Notes: The shaded area refers to the range of monthly values recorded for 2008-18 in the United Kingdom and 2008-20 in France, Germany, Ireland, Italy, Japan, the Netherlands, South Korea, Spain, Switzerland and the United States. The latest observation is for March 2021.

UK imports rose markedly ahead of the original 29 March 2019 Brexit deadline, in line with the sharp increase in Brexit-related stockpiling of goods from the EU. In consequence, UK imports surged, increasing by almost 7% quarter on quarter – an almost 40-year high. This resulted in a record (nominal) trade deficit in the first quarter of 2019. Chart B shows that the volatility in UK imports over the course of 2019 was heavily concentrated in imports of goods from the EU, leading to an almost direct correspondence between the two series.

**Chart B**  
UK import growth and stockbuilding

(quarterly percentage change for import growth, quarterly percentage point changes in indicator)



Sources: Eurostat, Office for National Statistics and ECB staff calculations.

Notes: RoW stands for the rest of the world. The changes in the PMI stockbuilding indicator are given as the difference in the three-month averages of the indicator.

The marked increase in UK imports from the EU in the first quarter of 2019 was followed by an equally sharp decrease in the following quarter. This pattern was repeated to varying extents around the various Brexit deadlines (Chart C). With the end of the Brexit transition period approaching in the final months of 2020, survey data again showed a marked surge in inventory build-up for the final quarter

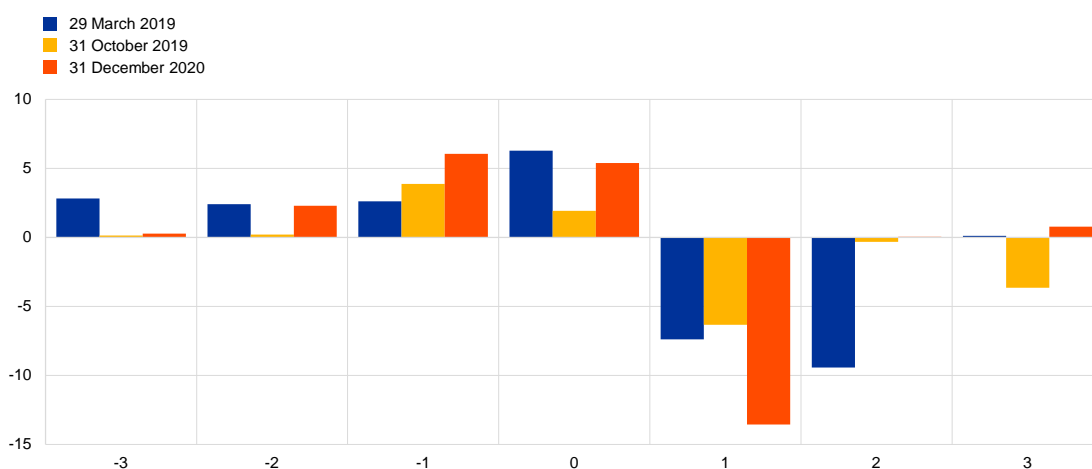
of the year. As Chart C demonstrates (on a month-on-month basis), the PMI stockbuilding indicator rose markedly in November 2020 – i.e. one month ahead of the end of the Brexit transition period and somewhat out of step with the typical stockpiling patterns seen in advance of other Brexit deadlines (where the bulk of stockbuilding had usually occurred only in the month preceding the deadline) – which the PMI compilers noted “was almost exclusively attributed to Brexit uncertainty and a subsequent build-up of critical inputs before the end of the transition period”<sup>4</sup> and not simply a reaction to pandemic-related disruptions earlier in the year.

Additional pandemic-related disruptions in the second half of December seem likely to have dampened final stockbuilding efforts at the end of 2020, while the January offset was particularly sharp, leading to a contraction in imports of goods from the euro area in that month, as seen around earlier Brexit deadlines. While the pandemic continued to cause disruption at this time, the initial data on euro area exports in the first quarter of 2021 suggest a clear disconnect in UK-euro area trading patterns at the start of the year. Exports of euro area goods to the United Kingdom fell by almost a third month on month in January, while imports more than halved. By contrast, intra-euro area goods exports grew strongly, most likely as a direct consequence of diverted trade flows, particularly to Ireland.

### Chart C

#### Evolution of the PMI stockbuilding indicator ahead of Brexit deadlines

(monthly percentage point change in diffusion index, t=0 at month of expected Brexit deadline)



Sources: Haver Analytics and ECB staff calculations.

Notes: Following the passing of the “Benn Act” in late September 2019, the 31 October 2019 Brexit deadline was subsequently postponed to 31 January 2020, immediately reducing the need for further stockpiling in October 2019. The latest observation is for March 2021.

## 3 Recent drivers of UK import demand

**As UK real GDP growth has slowed progressively since the referendum, imports have also declined, adversely impacting euro area foreign demand.** The United Kingdom fell from being one of the G7’s best performers in advance of the

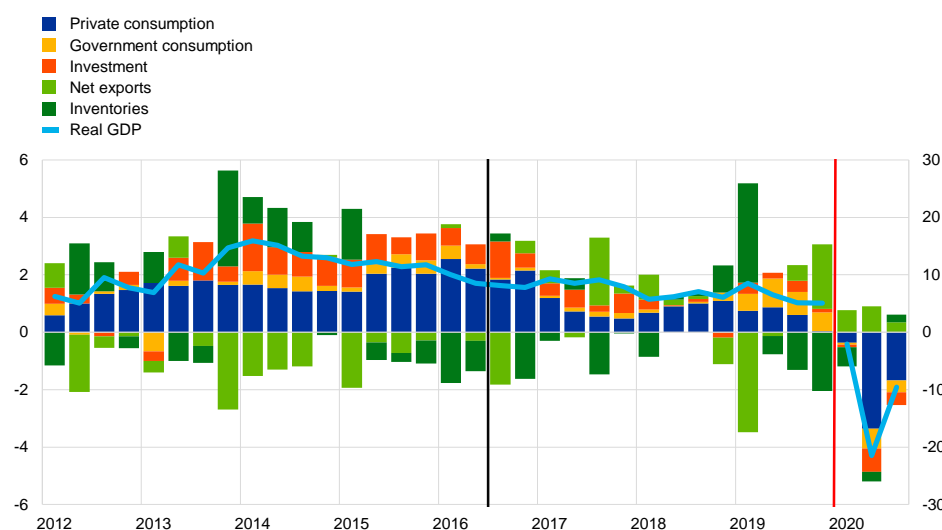
<sup>4</sup> See Markit, [News Release for Flash UK PMI](#) (16 December 2020). A survey by the Bank of England’s Agents suggests that stockpiling was planned only for the final months of the year ([Bank of England, Monetary Policy Report \(November 2020\)](#), pp. 38-42).

referendum to its worst performer by 2020.<sup>5</sup> The post-referendum decline in GDP growth is evident across most expenditure components (Chart 7), particularly private consumption and investment, while sterling's depreciation since the referendum has helped to bolster net exports.

### Chart 7

#### UK real GDP growth and contributions

(annual percentage changes and percentage point contributions)



Sources: Eurostat and ECB staff calculations.

Notes: Beyond the red line, the scale is on the right-hand axis; the black line indicates the Brexit referendum date. The latest observation is for the third quarter of 2020.

**The very swift and marked depreciation of sterling likely goes some of the way to explaining the marked slowdown in import growth.**<sup>6</sup> After several years well above its long-term average, sterling depreciated sharply – particularly against the euro – from mid-2015, as the prospect of a referendum on EU membership became a reality. A further, stronger depreciation followed the referendum result, with sterling weakening against all major currencies, and particularly the euro. This led to a rising import bill in terms of nominal imports as a share of GDP (Chart 8). While this measure has been co-moving with the nominal effective exchange rate (NEER-38) over the last 20 years, this is not the case for real imports as a share of GDP. A decline in the purchasing power of British consumers after mid-2015 has been a major transmission channel of pound sterling to the economy.

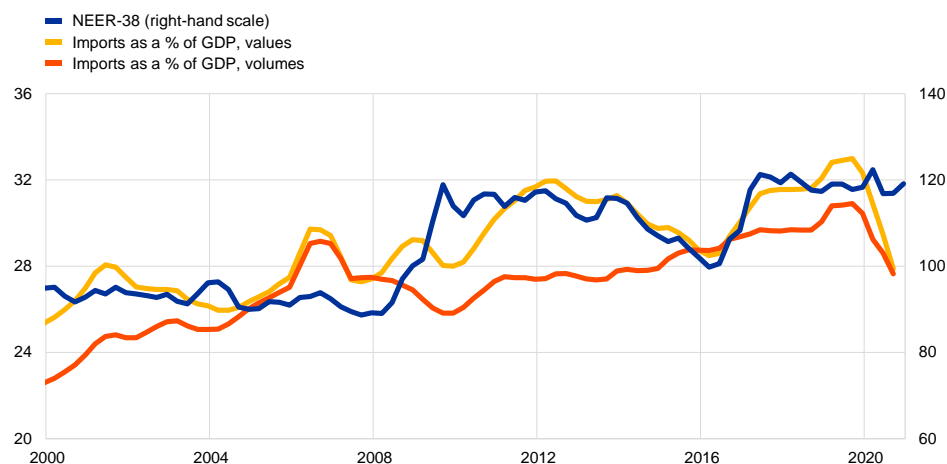
<sup>5</sup> See also Born, B.G., Müller, G.J., Schularick, M. and Sedláček, P., "The Costs of Economic Nationalism: Evidence from the Brexit Experiment", *The Economic Journal*, Vol. 129, Issue 623, October 2019, pp. 2722-44.

<sup>6</sup> The June 2016 referendum led to an immediate and pronounced depreciation of sterling against the currencies of the UK's main trading partners, but particularly against the euro. The financial markets first showed clear signs of concern about a possible Brexit vote in 2015, immediately after the Conservatives' general election victory. Having peaked at levels somewhat above its long-run (1999-2014) average early in 2015, sterling fell by around 10% by the eve of the referendum, before remaining around 15% below its 2015 peak in the four and a half years following the referendum. Considerable volatility emerged from the end of 2018 in response to growing fears of a disorderly no-deal outcome in advance of the various Brexit deadlines until agreement was finally reached just days before the end of the transition period.

## Chart 8

### UK imports and NEER-38

(left-hand scale: percentages of GDP, four quarter moving averages; right-hand scale: index: 1999-2014 average = 100)



Sources: Bank of England, Eurostat and ECB staff calculations.

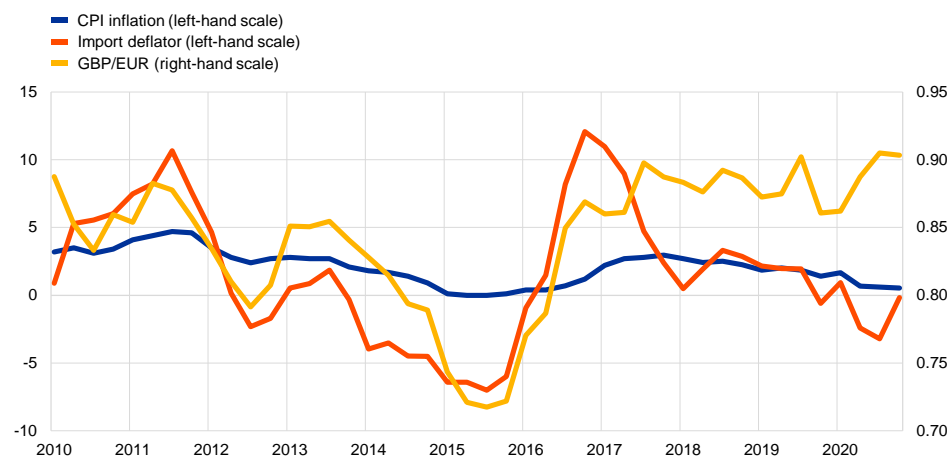
Notes: The nominal effective exchange rate (NEER-38) is a trade-weighted average of nominal bilateral rates between the pound and a basket of 38 foreign currencies. NEER indexed in relation to its 1999-2014 average, lagged two quarters. The latest observations are for the fourth quarter of 2020 for NEER-38 and the third quarter of 2020 for imports.

**UK consumption growth decelerated markedly as the strong depreciation of sterling quickly fed through to domestic inflation.** The import deflator has been strongly correlated with the exchange rate against the euro (Chart 9). In particular, the depreciation of sterling in 2016 led to immediate movements in the import deflator. It has also been the major driver of CPI inflation, with higher import prices accounting for around two-thirds of the annual increase in the Consumer Price Index (CPI).<sup>7</sup> The negative effects from terms of trade squeezed household incomes, resulting in both a reduction in import demand and a notable deceleration of consumption growth.

<sup>7</sup> See the Bank of England [Inflation Report \(November 2017\)](#), particularly the discussion around Charts 2.10 and 4.5-4.6.

**Chart 9****UK nominal exchange rate and inflation**

(left-hand scale: annual percentage changes, right-hand scale: exchange rate)



Sources: Bank of England, Eurostat and ECB staff calculations.  
 Note: The latest observation is for the fourth quarter of 2020.

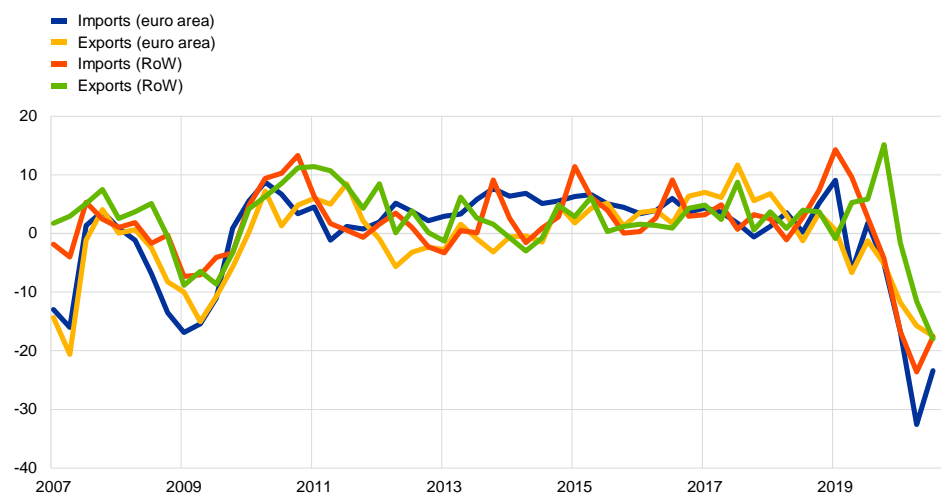
**A marked slowdown in UK investment may also be a factor behind the lower rate of UK import growth since the referendum.** Elevated uncertainty in the post-referendum period resulted in a marked slowdown in UK investment – particularly business investment – which fell from annual growth rates of 3.8% between 2011 and 2015 to an annual average of 1.7% over the period from 2017 to 2019. This exacerbated the deceleration in UK import growth, given the typically higher import intensity of investment compared to other expenditure components. From a euro area perspective, the slowdown evident in UK investment since the referendum is of particular concern. The typically high (40%) share of capital goods in total UK goods imports from the EU (and from the euro area in particular) had been a substantial source of export growth over previous decades.

**The post-referendum decline in UK import growth comes despite a considerable rise in UK export growth, particularly to the euro area (Chart 10), supported by a depreciating currency.** While value chain effects had led UK exports to drive imports in advance of the referendum, this effect appears to have been limited in the post-referendum period.<sup>8</sup>

<sup>8</sup> This episode differs markedly from sterling's depreciation seen over the course of the 2008-09 global financial crisis, when export and import dynamics were largely synchronised.

**Chart 10****UK import and export growth**

(annual percentage changes)



Source: National accounts.

Notes: RoW refers to rest of the world. Chain-linked volumes of goods and services, quarterly data. The latest observation is for the third quarter of 2020.

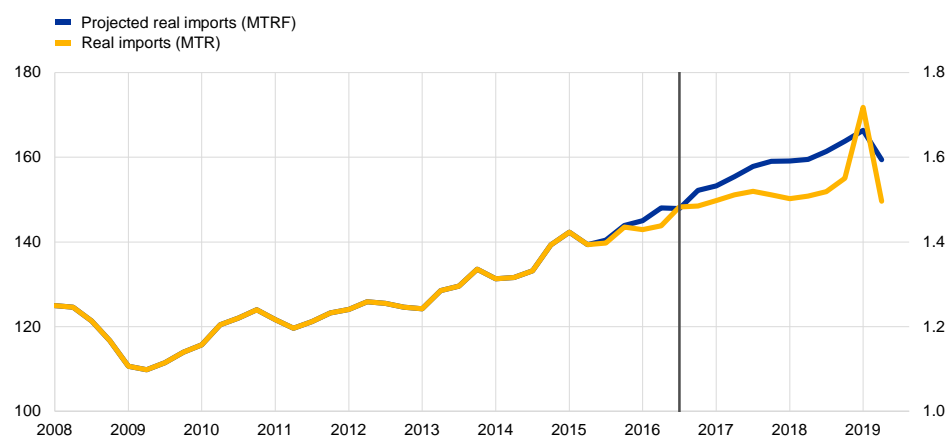
**Internal ECB estimates suggest initial signs of UK import propensity falling since the referendum.**

We use an error correction model (ECM) for UK import volumes to assess the significance of the notable reduction in real import volume growth. This entails regressing UK imports against the remaining total final expenditure (TFE<sup>9</sup>) components (weighted by their share in imports given input-output tables) and relative prices of imports versus domestic prices (see Box 2 for details). The estimation period encompasses a subsample covering the period from the second quarter of 1995 to the second quarter of 2015, when the general election in the United Kingdom paved the way for the referendum. Using the parameter estimates from this model to project imports based on the actual values of the remaining TFE components and relative prices results in a significant gap between predicted and actual UK import volumes in 2017 and 2018 on the basis of an in-sample forecast (Chart 11). The path of real imports is significantly lower than implied by the model specification – at least, before the gap closes as a result of the strong stockpiling seen in advance of the original 29 March 2019 Brexit deadline.

<sup>9</sup> Total final expenditure of private consumption, government consumption, investment expenditure and exports.

**Chart 11****UK real imports and model prediction based on weighted GDP components and relative prices**

(GBP billions in 2015 prices, quarterly)



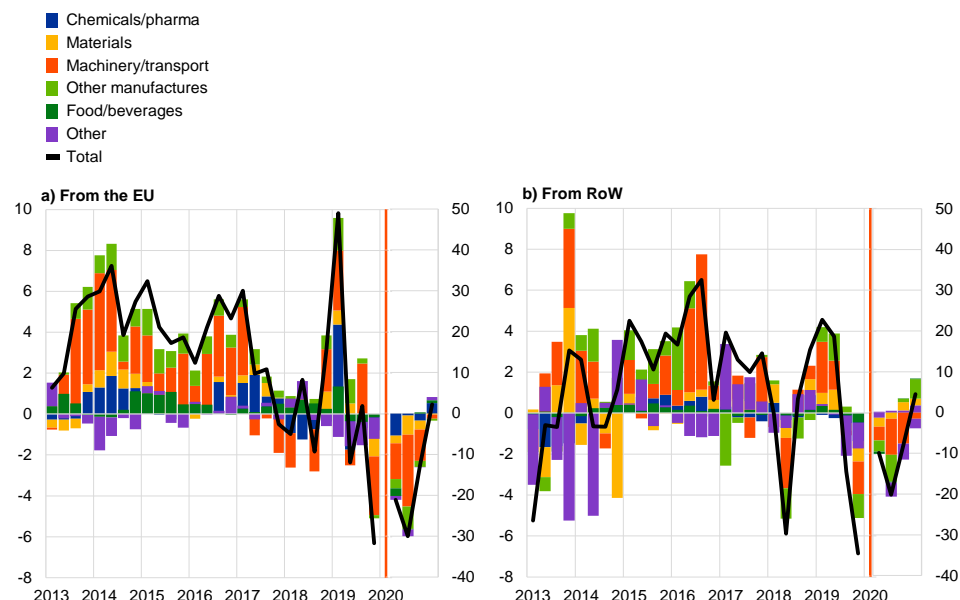
Source: ECB staff calculations.

Notes: MTR (total real imports) refers to real imports into the United Kingdom. MTRF (forecast total real imports) refers to an in-sample forecast based on an error correction model in which import volumes are regressed on the remaining components of total final expenditure, relative import versus domestic prices and an error correction term. The vertical black line indicates the Brexit referendum date. The latest observation is for the second quarter of 2019.

**From a sectoral perspective, vehicles and pharmaceutical products have largely driven the deceleration in UK import growth – particularly from its EU and euro area trading partners.** Machinery/transport and chemicals/pharma imports have dropped significantly in the post-referendum period (Chart 12). In particular, vehicles and pharmaceutical products, which had accounted for some 12% and 6% respectively of exports from the euro area to the United Kingdom on the eve of the referendum, have fallen from stable double-digit positive growth to double-digit negative growth. Both categories of goods together have an adverse impact of around 4 percentage points on UK import growth from peak (mid-2016) to trough (mid-2018). The marked deceleration in import growth driven by a substantial reversal of these two categories may account for the gap between demand-implied and realised real import growth and can be traced to Brexit-related drivers.

**Chart 12****UK goods imports by sector and source**

(volumes; annual percentage change of three-month moving averages and percentage point contributions)



Sources: Office for National Statistics and ECB staff calculations.

Notes: RoW stands for the rest of the world. Beyond the red line, the scale is on the right-hand axis. Goods imports excluding unspecified. "Machinery/transport" includes cars and vehicle components. "Food/beverages" includes live animals, tobacco, fats and vegetable oils. Quarterly data, seasonally adjusted. Disaggregated at classification of products by activity (CPA) 2-digit level. The latest observation is for the fourth quarter of 2020.

**Vehicles and chemicals have long been held to be particularly vulnerable to Brexit.** This is due to the potential impact of additional frictions in EU-UK trade and value chains following the end of the transition period.<sup>10</sup> EU countries with high sectoral shares of vehicles (most notably Germany, as well as the countries in central and eastern Europe linked to German value chains) and chemicals (including Ireland, Denmark and Slovenia) are likely to be disproportionately affected by Brexit disruptions in the short term. Further ahead, however, euro area foreign demand will hinge on the impact of the new trading regime on the UK's ability to substitute EU imports with domestic production and imports from the rest of the world together with the impact on UK purchasing power.

**Box 2****An error correction model for UK import demand**

Prepared by Florian Forsthuber and Tobias Schuler

This box describes an error correction model (ECM) for UK real imports. This involves regressing UK imports against the remaining final expenditure components over the subsample from the first quarter of 1995 to the second quarter of 2015.

<sup>10</sup> Bailey, D. and Rajic, I., "UK manufacturing welcomes the deal in as far as it goes", Commentary, UK in a Changing Europe, 29 December 2020.

### Estimation of long-run and dynamic relationships

We define the variable WER as the real expenditure components weighted by their average shares in real imports in input-output tables in 2013-14.

$$WER_t = 0.38 * PCR_t + 0.14 * GCR_t + 0.13 * ITR_t + 0.35 * XTR_t$$

The estimated equation suggests a long-term relationship of the form:

$$MTR_t = -5.546 + 1.442 * WER_t - 0.292 * (MTD_t/YED_t)$$

where WER refers to real weighted expenditure, MTR to real imports, PCR to real private consumption, GCR to real government consumption, ITR to real investment, XTR to real exports and MTD/YED to the ratio of the import deflator to the GDP deflator.

The error term from the long-run equation is employed as RESID\_MTR, yielding a dynamic relationship<sup>11</sup> as:

$$\Delta MTR_t = -0.322 * RESID\_MTR_{t-1} + 1.616 * \Delta WER_t$$

where RESID\_MTR refers to the residual of the long-run equation.<sup>12</sup>

### In-sample projection

The projection has been performed as an in-sample projection (Q3 2015-Q2 2019) with the respective realised values for the variables entering the dynamic equation for changes in MTR. This reflects the information from the demand components and the error correction term. The residual from the long-term equation is employed for the projection.

## 4 The impact of Brexit on the UK balance of payments

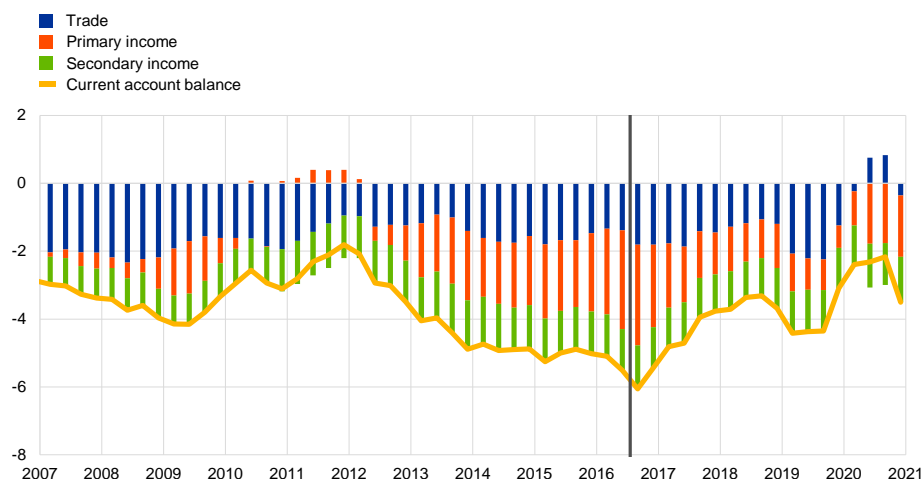
**Prior to the initial Brexit deadline of 29 March 2019, the UK current account had seen a persistent and widening deficit for more than a decade (Chart 13).** Over the same period, however, the UK's trade deficit had been broadly stable despite some recent volatility. The secondary income account had also displayed a constant deficit. By contrast, movements in the primary income deficit had emerged as the main driver in the current account.

<sup>11</sup> All parameter estimates are significant at the 99% level.

<sup>12</sup> R-squared = 0.62, DW = 2.01.

**Chart 13****Current account balance**

(percentage of GDP, cumulated over previous four quarters)



Sources: Haver Analytics, Office for National Statistics and ECB staff calculations.

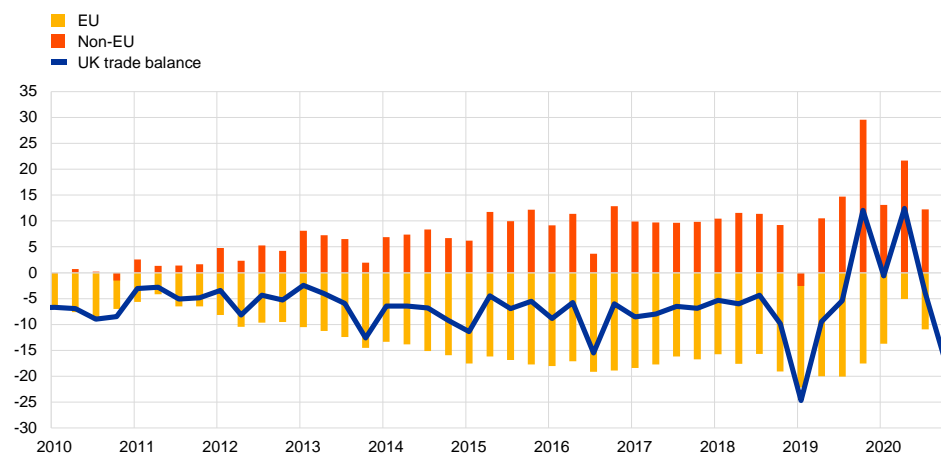
Notes: The latest observation is for the fourth quarter of 2020. The black line indicates the Brexit referendum date.

**The UK trade deficit had long been driven by net trade developments with the EU (Chart 14), with a similar pattern involving the euro area also evident.** At the same time, the UK trade balance with the rest of the world had been positive for a considerable period. Between 2012 and the Brexit referendum, the trade deficit with the EU widened. It narrowed again thereafter, before stockpiling ahead of various 2019 Brexit deadlines drove UK trade deficits with the EU and the euro area to record levels. While the deficit broadly stabilised at around 5% of GDP in the aftermath of the global financial crisis, Brexit-related (and more recently also pandemic-related) disruptions have resulted in greater volatility since the middle of the 2010s.<sup>13</sup>

<sup>13</sup> The movement in the trade balance ranges from a record deficit in the run-up to the original 29 March 2019 Brexit deadline to a surplus of around 15% in the second quarter of 2020, when a pandemic-related national lockdown and severe supply chain disruptions caused UK import volumes to contract sharply. The trade balance has also been significantly impacted since the start of the pandemic by the collapse in trade in travel services, a sector in which the United Kingdom has been the single most significant contributor to the euro area's net trade surplus; see the box entitled "Impact of the COVID-19 lockdown on trade in travel services", *Economic Bulletin*, Issue 4, ECB, 2020.

**Chart 14**  
Trade balance

(percentage of GDP, cumulated over previous four quarters)



Sources: Eurostat, Office for National Statistics and ECB staff calculations.

Note: The latest observations are for the second quarter of 2020 for the EU and non-EU breakdown and the third quarter of 2020 for the UK trade balance.

**Direct Brexit-related effects in the current account balance are likely to play an important role going forward, given that around half of the UK's deficit in its secondary balance is due to net contributions to EU institutions.** The secondary balance has been in deficit for a long time. The United Kingdom's departure from the EU means that it has ceased to contribute to the common EU budget, which can be expected to reduce the deficit in its secondary income account. For the euro area as a whole, this means a reduction of net flows into the secondary account.

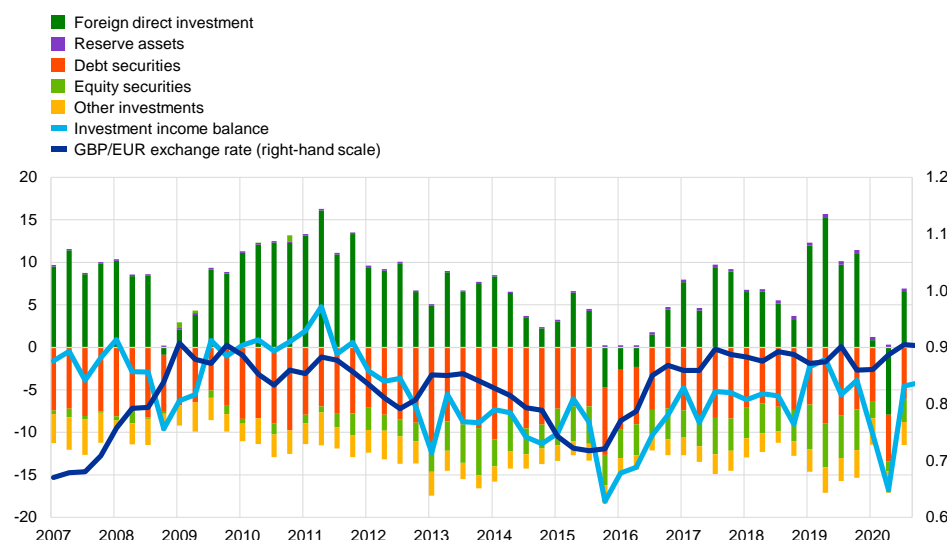
**In just over a decade, the UK's primary income account has moved from balance into a marked deficit (Chart 15) that even surpasses the trade deficit.**

While other earnings categories, such as net earnings on debt securities, have typically remained relatively stable, the sharp decline in net earnings on foreign direct investment (FDI) was a major factor behind the deterioration in the UK primary income balance measured between 2011 and 2015.<sup>14</sup>

<sup>14</sup> This development can be attributed to a reversal in the underlying net FDI position and a reduction in the income yield differential between FDI assets and FDI liabilities. See Lane, P.R., "A financial perspective on the UK current account deficit", *National Institute Economic Review*, Vol. 234, November 2015, F67-72.

**Chart 15****Breakdown of the primary income balance into net earnings by category**

(percentage of GDP, cumulated over previous four quarters)



Sources: Haver Analytics, Office for National Statistics and ECB staff calculations.  
 Note: The latest observation is for the third quarter of 2020.

**The depreciation in sterling following the referendum had a short-run positive effect on the UK's primary balance.** In 2016 the primary income balance showed some signs of improvement. The sharp depreciation in sterling which accompanied Brexit-related concerns around the time of the referendum, increased net FDI earnings, while payments on debt securities were hardly affected, resulting in a short-run positive effect on the balance of payments from 2016 to 2018. Movements in net FDI earnings were strongly correlated with the GBP/EUR exchange rate after 2009 – with a correlation coefficient of 97%. This stems from the fact that domestic currency depreciation boosts income from abroad due to compositional effects. Valuation gains have materialised in net foreign assets thanks to the depreciation of sterling.

**FDI net inflows into the financial account have fallen since the referendum.**<sup>15</sup>

FDI net inflows did not see an immediate negative reaction in 2016, as evidenced by a lag in the reversal of such flows. They eventually declined in the course of 2017 and 2018 on the back of increased uncertainty surrounding the UK's long-term economic prospects.

**In the longer run, the UK's capacity to continue running trade deficits with the EU and the euro area at current levels will depend on steady inflows into the financial account.** The new trading environment set by the EU-UK Trade and Cooperation Agreement could result in lower demand for the UK's financial assets – possibly due to its former EU partners turning towards financial centres in other EU member states. At the same time, the ability of the United Kingdom to fund its current account deficit at the levels seen over the past decade could be reduced. By contrast,

<sup>15</sup> As a counterpart to the current account deficit, the financial account is in surplus. The United Kingdom is a global financial centre that draws in foreign capital, and this access to external financing has helped it to finance its current account deficit. Portfolio investment and FDI inflows have been positive drivers of the UK financial account.

some argue that a weaker pound could attract global FDI investors in search of undervalued assets, potentially causing FDI inflows to increase in the longer run following the large depreciation of sterling. Such FDI inflows may precede export surges.<sup>16</sup> So far, no sustained increase in exports has been evident – although this could be due to the short period since the end of the Brexit transition arrangements together with pandemic-related distortions. However, it could be that this will not occur further out, given that Brexit might well lead to EU demand being redirected towards other EU countries. With potentially more limited options in terms of the financial account offsets to its current account deficits following Brexit, the United Kingdom would need to reduce its trade deficit through either higher exports to, or lower imports from, its main trading partners. This raises risks for EU and euro area foreign demand.

## 5 Concluding remarks

**Considerable uncertainty surrounds the longer-term consequences of Brexit for both UK trade and euro area foreign demand.** Large-scale distortions to UK trading patterns – from Brexit-related stockpiling and also pandemic-induced supply chain disruptions throughout 2020 – have made it hard to discern the initial signs of longer-term trends. Nevertheless, some indications of weakening demand for imported goods from EU sources have been evident since the referendum. This is probably in part a consequence of the sharp depreciation of sterling. Sectoral import data provide some evidence that Brexit is already having a strong impact in some areas, most notably the automotive and pharmaceutical industries. This is likely to have affected UK import demand from EU countries – even in advance of any material change in the trading environment up until the end of 2020. The sustainability of the trade deficit with the EU/euro area will also likely depend in part on steady positive net inflows into the UK's financial account. Ultimately the impact on euro area foreign demand and broader growth will depend on the extent to which the United Kingdom can move away from euro area suppliers over the longer term and the extent to which alternative (and perhaps internal) euro area networks can be established to provide those services mainly sourced from the United Kingdom in the past.

<sup>16</sup> See Lederman, D., "Large devaluations, foreign direct investment and exports: A speculative note", *Policy Research Working Papers*, World Bank Group, 2011.

## 2 The role of households in financing government debt in the euro area

Prepared by Jeanne Pavot and Vilém Valenta

### 1 Introduction

**The coronavirus (COVID-19) pandemic has reinvigorated interest in how governments finance their spending to an extent not seen since the global financial and euro area sovereign debt crises of 2008-12.** Economic crises of such depth require governments to take decisions on how far the crisis-related costs should be financed by spending cuts elsewhere in the budget, by revenue increases and/or by incurring additional debt. At the same time increases in government debt raise questions as to the optimal financing strategy in terms of instruments and maturities, but also the investor base.

**The composition of government debt has important financial and economic policy implications.** Recent literature has pointed to the fact that the structure of government debt by holder can give insights into issues such as the diversification of risks in government debt issuance. It is also relevant to the strength of the sovereign-bank nexus and overall financial stability, the probability and effectiveness of sovereign debt restructuring, income inequality and the size of fiscal multipliers (see Section 2).

**Against this background, the article first provides an overview of the evolution of the structure of public debt by holder in euro area countries since 1995.**

Literature on government debt composition has traditionally focused on distinguishing shares of domestic and foreign-held debt, with less emphasis on analysing a more detailed disaggregation by domestic holders. In this article we analyse more granular data on domestically held government debt to assess the role of non-bank actors in financial intermediation as well as the effects of the Eurosystem's purchases of government securities on the composition of government debt by institutional sector (Section 3).

**The article then explores in more detail the structure of domestically held government debt with a special focus on the household sector.** With increases in the level of government debt and in the share of domestically held debt, an analysis of the public debt composition in terms of institutional sector becomes increasingly relevant, including the role of households as savings providers. For an assessment to be meaningful, the size not only of direct holdings by households should be considered, but also the size of their indirect holdings through investment funds, insurance corporations and pension funds. The aim of the article is not to provide a full picture or normative assessment of the ultimate owners of government debt but rather a factual analysis of the size and evolution of households' holdings of government debt in the euro area, also in comparison with selected advanced economies (Section 4). For euro area countries this relies on the breakdown in the financial sector accounts –

known as the “who-to-whom” data – published by the ECB and euro area countries. Similar datasets are available also for other EU Member States and the other advanced economies.

## 2 Main implications of the structure of government debt holdings

**There is a large body of literature examining government debt composition by holder, but the analysis of holdings of households is more limited.** Several studies analyse the holdings of public debt in the euro area by the non-financial sector and by non-residents, but they do not include households or retail government debt programmes.<sup>1</sup> A greater number of studies, using both macro- and microdata, are available for the United States, especially with regard to municipal debt where households traditionally have a key role.<sup>2</sup>

**The composition of government debt holdings, including by households, is relevant to economic analysis in several areas covered in the literature.**

- **Public debt management.** Broadening the investor base across domestic investors (residents of the country whose government has issued the debt) and foreign investors as well as across interest-sensitive and insensitive investors is a key tool in diversifying the refinancing risk and reducing borrowing costs.
- **Financial stability.** Feedback loops originating from domestic holdings and potential cross-border spillovers from foreign government debt holdings are important parameters for financial stability. An increased funding diversification for governments, less dependent on domestic banks and with a larger share of bonds sold to other investors can reduce such risks.
- **Safe assets.** Higher risk in times of economic crisis increases the demand for safe assets. Government bonds represent the main source of high-quality assets in the euro area.<sup>3</sup> Households are risk-averse investors and hold relatively little government debt directly, but indirect holdings via pension and investment funds and insurance corporations are much more common. Bank deposits are the main safe asset for households. In turn, the safety of bank deposits is underpinned, apart from deposit insurance, by the ability of banks to pledge collateral in the form of government bonds to the central bank. Sovereign debt thus plays a vital role in giving households financial safety.

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<sup>1</sup> Among others Merler, S. and Pisani-Ferry, J., “Who’s Afraid of Sovereign Bonds”, Bruegel Policy Contribution, Issue 2012/2, 2012; Andritzky, J.R., “Government Bonds and their Investors: What Are the Facts and Do They Matter?”, *IMF Working Paper*, No 12/158, 2012; Afonso, A. and Silva, J., “Determinants of non-resident government debt ownership”, *Applied Economics Letters*, Taylor & Francis Journals, Vol. 24(2), 2017, pp. 107-112.

<sup>2</sup> See Hager, S.B., “Public Debt, Ownership and Power: The Political Economy of Distribution and Redistribution”, PhD diss., York University, Toronto, 2013.

<sup>3</sup> Grandia, R., Hänling, P., Lo Russo, M. and Åberg, P., “[Availability of high-quality liquid assets and monetary policy operations: an analysis for the euro area](#)”, *Occasional Paper Series*, No 218, ECB, 2019.

- **Sovereign debt sustainability.** On the one hand, domestic debt holdings represent a more stable investor base. They can also make sovereign default less likely because they increase the incentives for debt repayment as the cost of a potential non-repayment is borne by residents.<sup>4</sup> On the other hand, large domestic holdings of government debt can have a destabilising effect because they generate feedback loops between the public and private sectors during crises.<sup>5</sup>
- **Income inequality.** The impact of public debt on distributional aspects and wealth inequalities is explored in the literature. Although many papers analyse only the redistributive dimension across generations, some papers also cover within-cohort wealth redistribution originating from bond holdings, including government bonds.<sup>6</sup> As households' holdings of government debt are concentrated among the wealthiest households and government bonds normally offer higher yields than bank deposits, the government debt holding structure can lead to regressive distributional effects.
- **Fiscal multipliers.** Evidence suggests that a higher share of domestically held government debt may reduce the size of fiscal multipliers owing to stronger crowding-out of private investment.<sup>7</sup>

### 3 Structure of government debt holdings in the euro area

**Capturing long-term trends in the structure of government debt holdings in the euro area is not straightforward because of a lack of data.** While it is possible to build data on the level of the government debt over a very long period, reporting on government creditors has long been more fragmented and less reliable.<sup>8</sup> The global financial crisis (GFC) triggered many initiatives to cover the data gap and more granular data are now available allowing to better capture the structure of government debt holdings.<sup>9</sup> However, these data cover only a relatively short period of time. In annual government finance statistics, a breakdown of the holders of government debt has been available for most euro area countries since 1995.<sup>10</sup> The category of resident or domestic creditors refers to holders that are resident in the country whose

<sup>4</sup> Guembel, A. and Sussman, O., "Sovereign Debt without Default Penalties", *Review of Economic Studies*, Vol. 76, Issue 4, 2009, pp. 1297-1320; Gennaioli, N., Martín, A. and Rossi, S., "Sovereign Default, Domestic Banks, and Financial Institutions", *The Journal of Finance*, Vol. 69, Issue 2, 2014, pp. 819-866.

<sup>5</sup> See Acharya, V., Drechsler, I. and Schnabl, P., "A Pyrrhic Victory? Bank Bailouts and Sovereign Credit Risk", *The Journal of Finance*, Vol. 69, Issue 6, 2014, pp 2689-2739; Farhi, E. and Tirole, J., "Deadly Embrace: Sovereign and Financial Balance Sheets Doom Loops", *Review of Economic Studies*, Vol. 85(3), 2018, pp 1781-1823.

<sup>6</sup> Arbogast, T., "Who Are These Bond Vigilantes Anyway? The Political Economy of Sovereign Debt Ownership in the Eurozone", *MPiFG Discussion Paper*, 20/2, 2020.

<sup>7</sup> Broner, F., Clancy, D., Erce, A. and Martín, A., "Fiscal multipliers and foreign holdings of public debt", *Working Paper Series*, No 2255, ECB, 2019.

<sup>8</sup> See Reinhart, C.M. and Rogoff, K.S., "Growth in a time of Debt", *American Economic Review*, Vol. 100, Issue 2, 2010, pp. 573-78.

<sup>9</sup> See the [G20 Data Gaps initiative](#) recommendations to enhance economics and financial statistics. The [Securities Holdings Statistics](#) offer more breakdowns and a higher frequency than government finance statistics, but are available for a shorter period.

<sup>10</sup> More information on the dataset is available on the ECB's website in the Statistical Data Warehouse section on [Government Finance Statistics](#).

government has issued the debt. Non-residents includes both residents of other euro area countries and residents of countries outside the euro area.<sup>11</sup> The resident creditors include the financial sector and the non-financial sector (Table 1). The financial sector creditors are the central bank, other monetary financial institutions (other MFIs or banks), and the other financial corporations (OFCs). The latter mainly include investment funds (IFs) and insurance corporations and pension funds (ICPFs).<sup>12</sup> Lastly, the non-financial sector (resident creditors) aggregates non-financial corporations (NFCs) and households.<sup>13</sup> The composition of government debt is determined by a number of demand and supply factors, such as the liquidity conditions in the sovereign markets, the marketability of the debt instruments and the institutional framework for debt and inflation management. Table 1 shows significant heterogeneities across the euro area countries. This section focuses on the main drivers behind the shifts in the composition of government debt over 1995-2020.

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<sup>11</sup> The split of foreign holdings between rest of the euro area and the rest of the world outside the euro area is not available for data shown in Table 1 and Chart 1, which represents a data limitation. Such a distinction would be relevant considering the absence of currency risk for intra-euro area holdings. It would also allow to better assess the contribution of foreign holdings of government debt to financial integration in the Economic and Monetary Union (EMU).

<sup>12</sup> Other financial intermediaries, financial auxiliaries and captive financial institutions and money lenders are also included in the OFCs.

<sup>13</sup> The household sector includes non-profit institutions serving households (NPISH).

**Table 1**  
Holders of government debt

(percentage of total government debt; 2020)

	Resident creditors					Non-resident creditors
	Total Resident	Financial sector			Non-financial sector	
		Central bank	Other MFIs	OFCs	NFCs and households	
		(a)	(b)	(c)	(d)	
	(a)+(b)+(c)+(d)	(a)	(b)	(c)	(d)	(e)
<b>Euro area</b>	56.1	20.8	19.4	11.4	4.4	43.9
<b>Belgium</b>	44.1	16.0	12.4	12.3	3.3	55.9
<b>Germany</b>	54.6	22.5	21.9	7.9	2.3	45.4
<b>Estonia</b>	29.1	0.0	21.9	1.7	5.5	70.9
<b>Ireland</b>	49.0	-	-	-	-	51.0
<b>Greece</b>	14.4	6.4	6.1	0.2	1.7	85.6
<b>Spain</b>	56.1	23.3	22.4	10.3	0.2	43.9
<b>France</b>	51.2	17.8	15.1	15.2	3.0	48.8
<b>Italy</b>	70.2	21.6	25.4	14.1	9.0	29.8
<b>Cyprus</b>	19.1	0.6	15.4	2.5	0.6	80.9
<b>Latvia</b>	33.1	19.4	8.0	2.1	3.6	66.9
<b>Lithuania</b>	30.6	20.5	7.4	2.1	0.7	69.4
<b>Luxembourg</b>	51.7	18.6	25.2	5.2	2.7	48.3
<b>Malta</b>	82.2	17.4	35.4	9.7	19.6	17.8
<b>Netherlands</b>	62.2	-	15.5	20.2	2.4	37.8
<b>Austria</b>	35.9	21.4	11.6	2.6	0.4	64.1
<b>Portugal</b>	51.0	18.5	14.0	4.8	13.8	49.0
<b>Slovenia</b>	42.5	27.6	11.6	3.0	0.3	57.5
<b>Slovakia</b>	46.4	27.1	18.1	0.0	1.2	53.6
<b>Finland</b>	39.2	21.8	14.1	1.2	2.1	60.8

Sources: ESCB and ECB calculations.

Notes: Data refer to excessive deficit procedure (EDP) debt. Gross general government debt at nominal value and consolidated between sub-sectors of government. For Ireland domestic holdings are calculated as the total minus the non-resident holdings.

**The share of euro area government debt held by residents declined substantially before the GFC and increased again afterwards.** With the exception of a few countries in which the government debt-to-GDP ratio is very low in comparison with the euro area average (like Estonia, Lithuania, Luxembourg or Malta), there was an overall increase in the share of non-resident holdings before the GFC (Chart 1). There is evidence of growing financial integration within the euro area after the introduction of the euro.<sup>14</sup> The GFC had a major impact on cross-border portfolio investments, which was compounded by the euro area sovereign debt crisis in 2010-12. Global investors shifted their portfolio investment away from euro area countries that were perceived to be under stress.<sup>15</sup> In Spain and Italy, the share of government debt held by non-residents dropped between 2010 and 2015. Similar trends prevailed in Greece, Ireland and Portugal, and later in Cyprus, after excluding the loans granted by non-resident creditors under the EU/IMF financial assistance

<sup>14</sup> See, for instance, Lane, P., "The real effects of European Monetary Union", *Journal of Economic Perspectives*, Vol. 20:4, 2006, pp. 47-66.

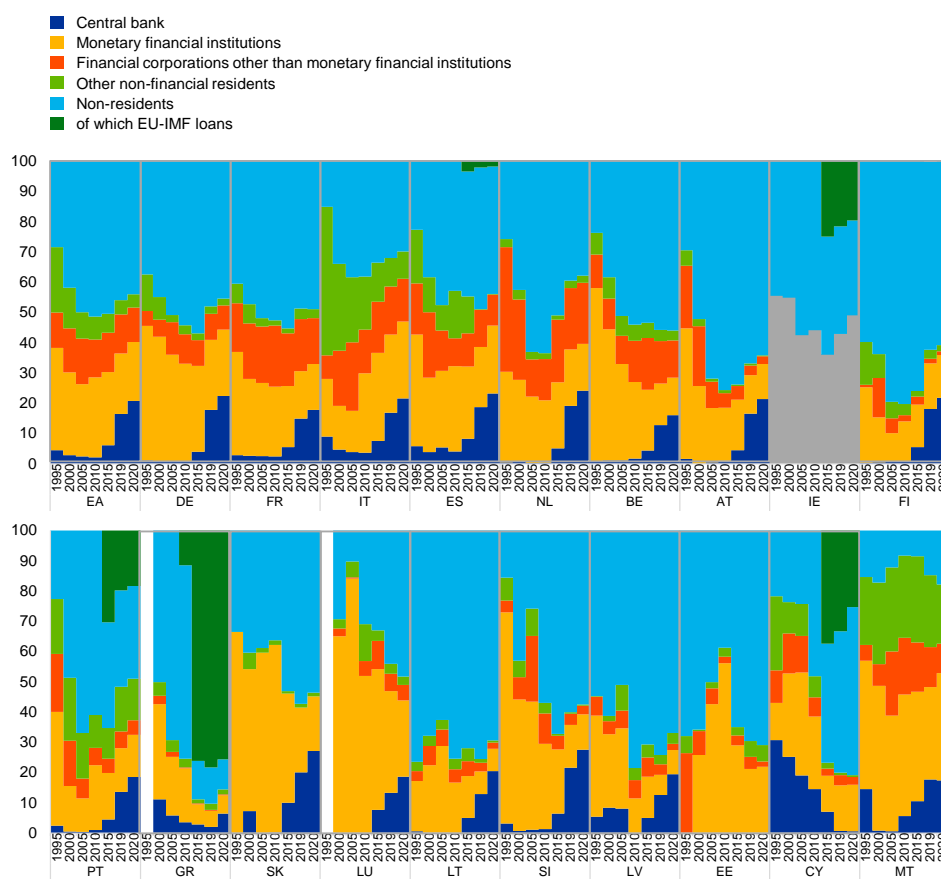
<sup>15</sup> See, for example, Merler, S. and Pisani-Ferry, J., op. cit.

programmes. In other countries, like Germany and France, the share of non-resident holdings stabilised. It stood at around 50% in 2015 at euro area level. The overall reduction in the share of non-resident holdings of government debt has mostly been driven by the Eurosystem's sovereign bond purchases under the public sector purchase programme (PSPP) since 2015 and under the pandemic emergency purchase programme (PEPP) since 2020.<sup>16</sup> By reducing yields on securities, these programmes also prompted investors to shift their investments towards assets with higher expected returns. Foreign investors have rebalanced their portfolios towards more attractive investments.<sup>17</sup>

### Chart 1

#### Euro area government debt structure by debt holder

(percentage of total government debt; 1995-2020)



Sources: ESCB and ECB calculations.

Notes: The latest observations are for 2020. For Ireland the breakdown of the domestic holdings is not available, therefore only the total domestic holdings are shown in grey and is calculated as the total minus the non-resident holdings. For the Netherlands the central bank holding is calculated as the residual part (i.e. the total minus the other sub-components). Countries are ranked according to their GDP since its size is likely to influence the structure of the debt. The Eurosystem holdings do not only consist of national central banks' holdings of domestic bonds. First, the ECB also holds securities issued by government: for each euro area country – the ECB holding is classified as a non-resident holding. Second, for monetary policy purposes, national central banks purchase cross-border EMU bonds. Nevertheless, the national central banks' holdings of domestic bonds constitute the bulk of the Eurosystem holdings.

<sup>16</sup> See also Hammermann, F., Leonard, K., Nardelli, S. and von Landesberger, J., "Taking stock of the Eurosystem's asset purchase programme after the end of net asset purchases", *Economic Bulletin*, Issue 2, ECB, 2019.

<sup>17</sup> See Kojen, R.S.J., Koulischer, F., Nguyen, B. and Yogo, M., "Euro-Area Quantitative Easing and Portfolio Rebalancing", *American Economic Review*, Vol. 107, No 5, 2017, pp. 621-627.

**The increase in domestic holdings of government debt was mainly driven by non-monetary financial institutions until the euro area sovereign debt crisis and thereafter by monetary financial institutions including central banks.** Chart 1 shows the available breakdown of domestic holders. Before the GFC, resident banks and other financial corporations hold the most government debt. Central banks and the other domestic holders are less significant creditors, except for in Ireland, Spain, Italy, Malta and Portugal where households and NFCs' holdings are more prominent, although their weight is declining. The chart shows that before the GFC, the relative share in government debt of OFCs grew in most countries while the banks' share declined. Structural factors, including population ageing and institutional factors such as pension reforms encouraging private retirement saving schemes contributed to the increased holdings by OFCs, in particular by ICPFs.<sup>18</sup> During the euro area sovereign debt crisis, the share of government debt held by banks increased in countries that were subject to financial market pressure thus reinforcing the sovereign-bank nexus. Since then, larger capital buffers have strengthened the euro area banks by raising their loss-absorption capacity, and a revised regulatory framework has reduced risks from the sovereign-bank nexus.<sup>19</sup> Finally, the share of government debt held by central banks has increased since 2015 as a result of the Eurosystem purchases under the PSPP and the PEPP to stand at 20.8% at the euro area level at the end of 2020. At the country level, the data show only the holdings of the national central banks, but the total Eurosystem holdings of domestic government debt cannot be identified from the data because the ECB is classified as a non-resident creditor. Besides, the other euro area central banks also have cross-border holdings of sovereign bonds. Although declining, the share of government bonds held by private, price-sensitive investors, also called “free float”, remains substantial in the euro area.

## Box 1

### The structure of government debt in terms of instruments

Prepared by Henri Maurer

#### Government debt valuation and composition

The government debt or “Maastricht debt” is the total consolidated gross debt at face value in the following categories of government liabilities (as defined in the European System of Accounts<sup>20</sup> (ESA)): currency and deposits, debt securities and loans. The government debt as notified within the excessive deficit procedure (EDP) to Eurostat covers all general government levels: the central government and its federal state entities, local government and social security funds. It is gross debt in the sense that government financial assets are not subtracted from liabilities. It is consolidated by excluding the debt items of a government unit that are held by another government unit (for example, government deposits held with the Treasury).

<sup>18</sup> Voluntary schemes or pension systems' third pillar, see Rodríguez-Vives, M. and Kezber, L., [Social spending, a euro area cross-country comparison](#), *Economic Bulletin*, Issue 5, ECB, 2019.

<sup>19</sup> See Dell'Ariccia, G., Ferreira, C., Jenkinson, N., Laeven, L., Martin, A., Minoiu, C. and Popov, A., [“Managing the sovereign-bank nexus”](#), *Working Paper Series*, No 2177, ECB, 2018.

<sup>20</sup> See also [“European system of accounts – ESA 2010”](#), Eurostat, European Commission, 2013.

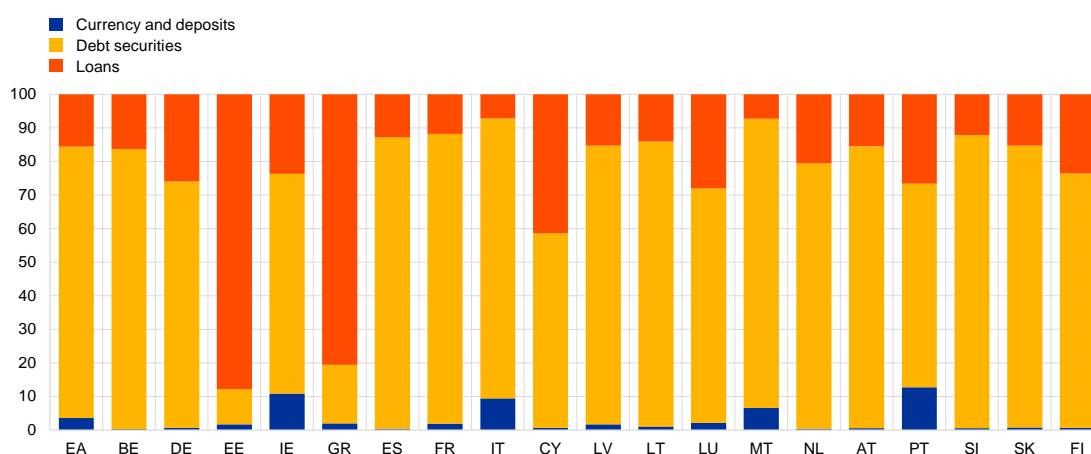
The composition of the Maastricht debt is very heterogeneous across the euro area countries. Chart A illustrates the structure in 2019.<sup>21</sup> Debt securities represent the major share within the euro area aggregate fluctuating between 70.5% and 80.3% in the period from 1995 to 2019.

The relative importance of loans in government debt has evolved over time notably owing to the change in the relative cost of bank loans compared with debt securities. It increased further, for example, in the wake of the euro area sovereign debt crisis with the loans granted under the EU/IMF financial assistance programmes, as illustrated by the case of Greece (where loans represent 80% of the debt in 2019) and to a lesser extent by Ireland, Cyprus and Portugal.

## Chart A

### Government debt structure by instrument

(percentage of total government debt; 2019)



Sources: ESCB and ECB calculations.

### The currency and deposits component of government debt

The currency and deposits component of the government debt amounted to €363 billion in 2019, i.e. 3.3% of the euro area government debt. It is mostly composed of savings products<sup>22</sup> issued by government and deposits placed by non-government units with the Treasury. The savings notes of central government directly held by households represented a share of 37% of the deposits component in 2019 and the deposits held by the resident (mainly public) financial or non-financial entities with central government a share of 54%. The remaining share of 9% consists of deposits from entities outside the euro area.

There is a high level of heterogeneity across euro area countries in terms of the use and the institutional arrangements for the currency and deposits component. In two countries, savings notes and deposits represented in 2019 more than 10% of the government debt. In Portugal (11.6%), this was mostly accounted for by the savings and Treasury certificates directly held by households, and in Ireland (10.5%) it is common for households to hold savings notes. In Italy, in addition to savings

<sup>21</sup> Complementary information can be found on the ECB's website in the Statistical Data Warehouse sections on [Government Finance Statistics](#) and [Debt securities issuance and service by EU governments](#).

<sup>22</sup> According to ESA only negotiable securities qualify as debt securities. Non-negotiable bonds, disregarding their labelling, are classified as deposits. A range of various savings products offered to personal savers such as savings bonds, savings books, savings certificates or deposit accounts are classified as deposits.

notes directly held by households, deposits also include funds raised by public banks with postal savings bonds. In Malta, the central government has been issuing fixed non-negotiable coupon rate bonds to Maltese citizens aged 62 years or above since 2017. These represented in 2019 approximately 5.1% of the Maltese government debt.

With a lower share of their respective government debt (between 1% and 2% in 2019), savings notes and deposits in Greece,<sup>23</sup> Lithuania, Latvia and France contribute to financing general government. In Lithuania, savings notes issued by the Treasury are mostly held by households. In Latvia, bailiffs or custodians in debt recovery proceedings must hold transferable deposits in Treasury accounts. In France, most deposits held with the government are from public entities (classified as non-government) or are deposits with the Treasury related to the issuance of external currencies pegged at a fixed rate against the euro. For the remaining euro area countries, the share of deposits in government debt is marginal.

Finally, currency has a small share in the liabilities of euro area government (0.3% of an amount close to €30 billion) corresponding to the euro coins in circulation (mainly held by households) when the governments are responsible for its issuance.<sup>24</sup>

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## 4 Holdings of government debt by households

**More granular data enable an assessment of the role of households in financing the government debt.** The annual government finance statistics used in the previous section do not permit such an analysis. The direct government debt holdings of households cannot be distinguished as households and non-financial corporations are grouped together. Nor is the indirect role of households in financing government debt easily observable, as this requires “looking through” financial intermediaries. The financial sector accounts, however, provide a comprehensive framework for the analysis of the role of households in financing government debt. The breakdown in these accounts – “who-to-whom” data – present the financial positions between sectors and therefore provide a more comprehensive view on how government is financed.<sup>25</sup> Figure 1 illustrates the network of euro area inter-sector claims in the form of deposits, debt securities, investment fund shares and insurance and pension products. It only includes instruments that are relevant for assessing households’ contribution to financing government debt. It does not fully depict how government debt is financed, however, as loans are not included. Moreover, not all financial assets of households are shown, as their holdings in shares and other equities are

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<sup>23</sup> In Greece, savings notes and deposits consist of time deposits held by households since an entity carrying out consignment deposit activities is reclassified in government.

<sup>24</sup> The government is responsible for coin issuance in all euro area countries, except for Slovakia and the three Baltic States where coins are a liability of the central bank.

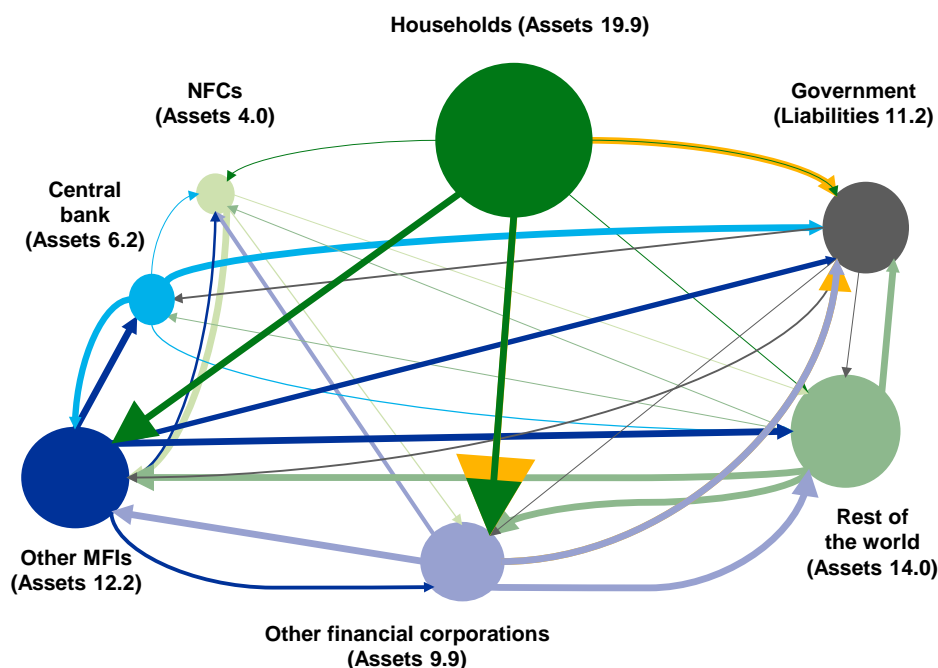
<sup>25</sup> For an overview of data availability, see [Guideline of the European Central Bank of 25 July 2013 on the statistical reporting requirements of the European Central Bank in the field of quarterly financial accounts \(ECB/2013/24\)](#) (OJ L 2, 7.1.2014, p. 34).

excluded.<sup>26</sup> Nevertheless, it provides an overview of the complexity of the financing relationships in the euro area.

**Figure 1**

Government funding by other sectors in the euro area using “who-to-whom” funding relationships (deposits, debt securities, investment fund shares and insurance and pension products)

(outstanding amount; Q3 2020; EUR trillions)



Sources: ECB and ECB calculations.

Notes: For all sectors but government, the size of the nodes is proportional to the combined assets of each sector in the form of deposits, debt securities, investment fund shares and insurance and pension products (excluding intra-sector claims). For government, the size of the node is proportional to its combined liabilities in the form of deposits and debt securities (excluding intra-sector claims). The outstanding amounts of these combined assets and liabilities are indicated in brackets. The width of the arrows linking two sectors indicates the total amount of funding from one sector to another sector when combining those instruments. For all sectors but government the sum of arrows going from the node correspond to the size of the node. For government, the sum of the arrows going to the node corresponds to the size of the node. Only combined funding relationships larger than €100 billion are plotted.

## Box 2

Assets of euro area insurance corporations, pension funds and investment funds in the form of euro area government debt securities

Prepared by Jürgen Herr

The liabilities of euro area insurance corporations, pension funds and, to a lesser extent, investment funds are tilted towards the household sector. Chart A shows that the main liabilities of euro area insurance corporations and pension funds are life insurance technical reserves (ITRs) and pension entitlements respectively. Life ITRs amounted to more than €6 trillion at the end of the third quarter of 2020 and represent approximately 70% of the insurance sector's total liabilities. Euro area pension funds reported pension entitlements of slightly more than €2.7 trillion at the end of the third quarter of 2020 which account for more than 90% of their total liabilities. More than 98% of these life ITRs and

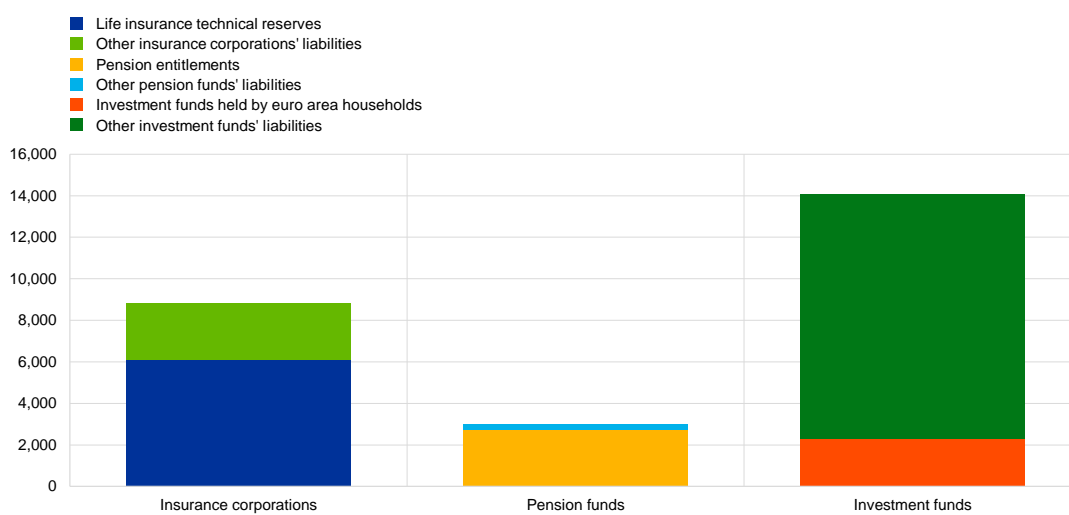
<sup>26</sup> See also Household sector report: 2020 Q3, “Quarterly report of financial and non-financial accounts for the household sector in the euro area”, ECB, 2021.

pension entitlements are vis-à-vis euro area residents.<sup>27</sup> The liabilities of euro area investment funds are more diversely distributed. On an estimated basis, only around 17% of the investment fund shares are held by euro area households amounting to approximately €2.3 trillion. Chart B shows the growing share of these products in financial assets held by euro area households over the last 13 years, increasing from 33% in 2008 to a share of 42% in 2020.

## Chart A

### Liabilities of euro area insurance corporations, pension funds and investment funds

(outstanding amount; Q3 2020; EUR billions)



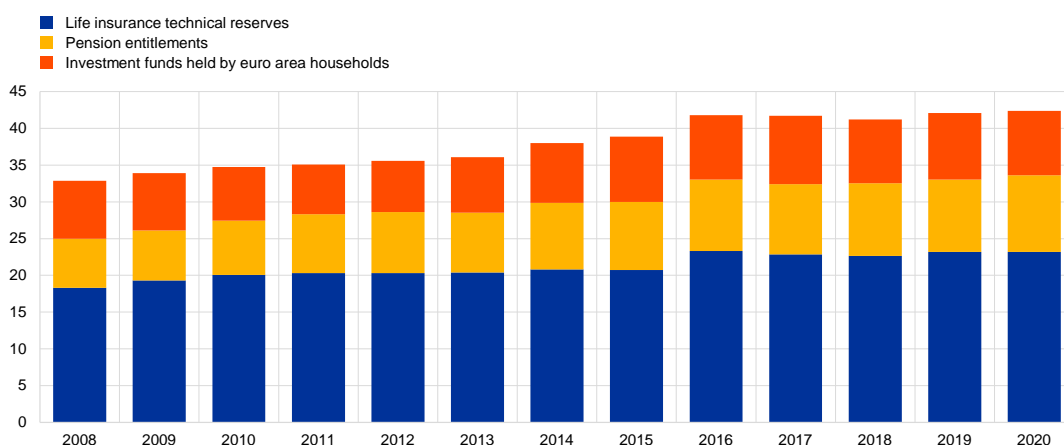
Sources: ECB and ECB calculations.

Note: Investment funds held by euro area households are reasonably close to investment fund shares issued by euro area investment funds and held by euro area households.

## Chart B

### Share of insurance, pension and investment fund products in total financial assets of euro area households

(percentage of total financial assets of euro area households)



Sources: ECB and ECB calculations.

Notes: Investment funds held by euro area households are reasonably close to investment fund shares issued by euro area investment funds and held by euro area households. Solvency II valuation of life insurance technical reserves as of 2016.

<sup>27</sup> For more details on pension fund statistics, see Gutiérrez Curos, J., Herr, J., Quevedo, R., Valadzija, M. and Yeh, M.-L., "New pension fund statistics", *Economic Bulletin*, Issue 7, ECB, 2020.

Significant holdings relate to debt securities issued by the euro area government sector. Chart C shows that holdings of debt securities represent the main asset item on the balance sheets of euro area insurance corporations and account for more than 40% of their total financial assets. Investments in euro area government bonds amounted to more than €1.7 trillion. Close to 65% of these holdings were domestic government debt securities at the end of the third quarter of 2020, exhibiting therefore a strong “home bias”.

Euro area pension funds hold more than €770 billion worth of debt securities which account for around 25% of their total assets. Approximately €230 billion worth of these debt instruments have been issued by non-euro area residents. Investments in euro area government bonds represented approximately half of these debt securities holdings, like for euro area insurance corporations, and amounted to more than €400 billion at the end of the third quarter of 2020.

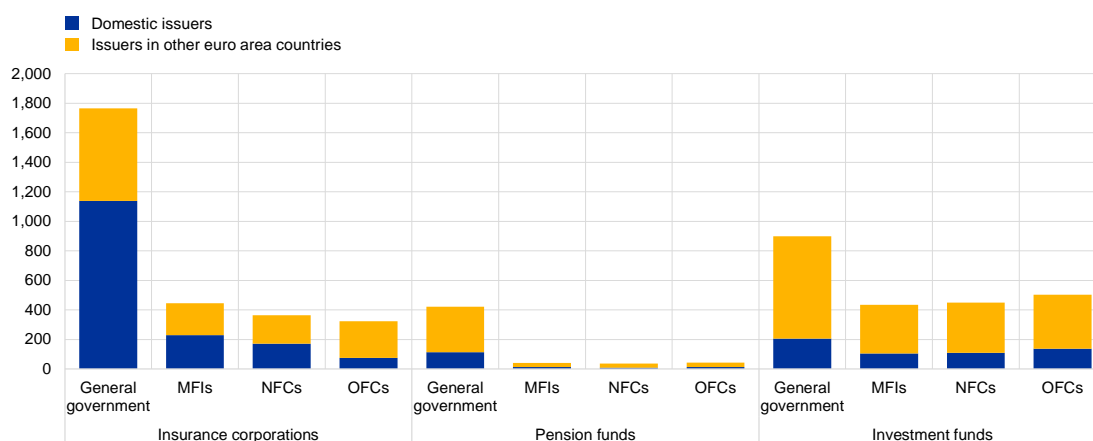
Euro area insurance corporations and pension funds hold also substantial amounts of government debt indirectly via investment fund shares. More than 95% of these holdings were issued by euro area entities and are well covered in the data of euro area investment funds.

Euro area investment funds also invest significantly in debt securities (accounting for around 37% of their total assets). In contrast to insurance corporations and pension funds, investments in debt markets are geographically more widely distributed with debt securities of non-euro area issuers accounting for more than 50% of their total debt securities holdings. Investments in euro area debt instruments were also mainly directed to the government sector and represent approximately €900 billion. However, only less than 25% of these holdings are with domestic government units at the end of the third quarter of 2020.

### Chart C

#### Holdings of euro area debt securities by issuing sector and geographical area

(outstanding amounts; Q3 2020; EUR billions)



Sources: ECB and ECB calculations

Notes: MFIs stands for monetary financial institutions; NFCs for non-financial corporations; OFCs for other financial corporations.

#### Households contribute both directly and indirectly to the financing of government debt.

The households' direct holdings of government debt correspond to their deposits vis-à-vis the government (see Box 1) plus their holdings of debt securities issued by government entities. Households do not provide loans to governments. However, there is no unique definition of an indirect holding. According to a narrow definition of indirect holding, only indirect holdings via IFs are considered,

as individuals select the IF based on the fund's characteristics and, in particular, the type of assets the fund invests in. In a very broad definition of indirect holding, all financial intermediaries can be considered. For the purposes of this article, we opt for an in-between scope of indirect holdings. ICPFs, as long-term investors, acquire long-term maturity assets, especially sovereign bonds, to match the maturity profile of their liabilities. Their assets can be considered to be held indirectly by households. Conversely, MFI investments in government debt are not considered to be indirect assets of households, as banks do not use the portfolio of assets as collateral to meet their obligations vis-à-vis depositors in fulfilling their transformation function. While households play a significant role in financing government debt through placing deposits in MFIs, which in turn invest in government bonds, this channel is distinguished from indirect holdings of households via resident IFs and ICPFs. This distinction is useful to assess the relative importance of the bank and non-bank financial intermediation.

**The indirect holdings still exclude several important channels through which households may contribute to financing government debt.** In Figure 1, the channels analysed are highlighted in yellow. Only the direct holdings of resident IFs and ICPFs are taken into account for households' indirect holdings. For example, there are sizeable financial interlinkages within the resident OFCs (e.g. ICPFs investing in investment funds, with the latter investing in debt securities), which are not considered here as indirect holdings.<sup>28</sup> Moreover, part of the funds invested by households in non-resident funds are re-invested in government debt but are not included here as households' indirect holdings.<sup>29</sup> To enrich the comparison exercise, other advanced economies – the United States, Canada and the United Kingdom – are included.<sup>30</sup> Quarterly data are available since 1951 (for the United States) and since 2013 (for the euro area countries) until the third quarter of 2020 for all countries. As the outstanding amounts are recorded at market value in financial accounts whereas government debt is reported at face value, the shares of direct and indirect holdings are computed using government debt at market value as a denominator.<sup>31</sup>

<sup>28</sup> A real “look-through” would require the method's reiteration and allow the full removal of intermediation.

<sup>29</sup> More granular data such as the [Securities Holdings Statistics](#) would enable some round-tripping to be identified.

<sup>30</sup> In the financial accounts of the United States, domestic hedge funds are also classified in the household sector, while in ESA they are classified as IFs. Moreover, the general government debt instruments are recorded at nominal value in the financial accounts balance sheets. For the United Kingdom, the IF balance sheet data are not available on a disaggregated basis. Therefore, indirect holdings are computed using only the direct holding of the ICPFs.

<sup>31</sup> For the non-EU countries, a public debt is computed using a definition close to European standards, both in terms of instruments and in terms of the government perimeter. The computed data are close to the ones published by the Bank for International Settlements (BIS) (see the section of the BIS website on [Credit to the non-financial sector](#)).

**Table 2****Households' direct and indirect holdings of government debt**

(percentage of total government debt; 1995-2020)

	Q4 1995	Q4 2000	Q4 2005	Q4 2010	Q4 2015	Q3 2020				
						Total (a)+(b)+(c)	Direct (a) + (b)			Indirect (c)
								Deposits (a)	Debt securities (b)	
Belgium					13.9	9.6	0.2	0.0	0.2	9.4
Germany					2.3	2.4	0.2	0.0	0.2	2.2
Estonia			0.1	0.1	0.1	1.1	0.1	0.0	0.0	1.0
Ireland		19.5	16.4	9.8	9.1	9.6	9.1	9.1	0.0	0.5
Greece					2.1	2.6	1.6	1.3	0.3	1.0
Spain		14.8	8.6	10.2	12.4	9.4	0.1	0.0	0.1	9.2
France	23.2	19.6	11.1	10.8	12.4	12.2	0.0	0.0	0.0	12.2
Italy		38.2	34.3	23.0	22.9	18.9	6.9	2.2	4.7	12.0
Cyprus					2.8	2.7	2.5	0.0	2.5	0.1
Latvia			3.5	2.4	6.8	2.8	1.2	1.1	0.1	1.7
Lithuania		2.4	12.0	8.4	6.6	2.7	1.3	0.3	1.0	1.4
Luxembourg		8.4	5.3	7.3	1.0	0.5	0.3	0.0	0.3	0.1
Malta					30.5	20.3	19.4	4.8	14.6	0.9
Netherlands				10.1	15.8	16.1	0.2	0.0	0.2	15.9
Austria		6.2	2.5	2.1	2.2	1.7	0.2	0.0	0.2	1.5
Portugal		19.0	13.6	9.4	12.3	15.3	11.9	10.1	1.8	3.4
Slovenia			15.9	8.0	2.9	2.1	0.2	0.0	0.1	1.9
Slovakia					4.7	3.2	0.1	0.0	0.1	3.1
Finland					0.9	0.3	0.0	0.0	0.0	0.2
Euro area					15.8	15.8	2.2	1.2	1.0	13.7
United States	50.3	45.1	45.0	39.5	34.4	31.5	14.5	0.6	13.9	17.0
Canada	36.8	44.6	39.9	36.8	34.7	28.6	2.9	0.6	2.3	25.7
United Kingdom	47.2	53.9	46.8	26.6	23.9	26.6	7.8	7.7	0.1	18.8

Sources: ESCB, Federal Reserve System, Statistics Canada, Office for National Statistics and ECB calculations.

Notes: For Ireland and Portugal, households' direct holdings only include deposits before Q4 2013 and Q1 2013 respectively. For the United States, the deposits correspond to the Savings Securities (mainly Savings bonds: Series EE, Series HH, Series I), and for Canada they correspond to the Canada Savings Bonds (CSBs). The euro area aggregate does not correspond to the weighted average of the Member States as not only the households' direct and indirect holdings of domestic government debt is considered but also the direct and indirect government debt holdings of other EMU Member States. The indirect holding is derived by multiplying the ICPF and IF direct holdings of domestic sovereign bonds by the share of the claims vis-à-vis the resident households in their total liabilities.

**Households' direct holdings of government debt are relatively low in most euro area countries and have been declining since the introduction of the euro.** Table 2 shows for all countries the share of households' direct holdings of government debt in the form of deposits and debt securities. As highlighted in Box 1, direct holdings in the form of deposits are very specific to several countries in the euro area (mainly Ireland, Italy, Malta and Portugal), but have also been sizeable in the United States, Canada and the United Kingdom. Chart 2 shows an overall declining trend in these forms of savings instruments.<sup>32</sup> This decline might have resulted from the choice of

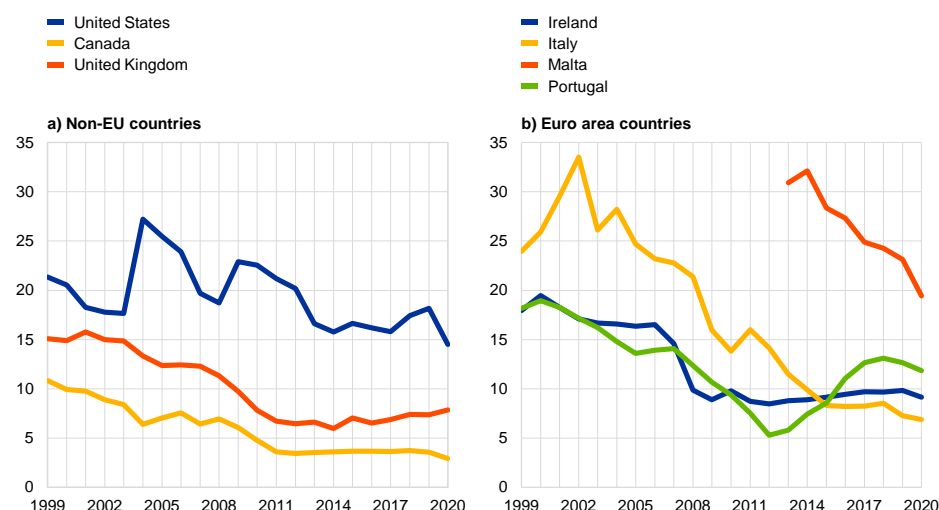
<sup>32</sup> In Portugal, the issuance of new savings certificates (Treasury Certificates Savings Plus) in 2013 has contributed to the rebound of households' deposit holdings vis-à-vis the government.

governments to reduce the scope of relatively costly retail debt programmes. These programmes sometimes offer tax exemptions or interest premia, which makes them more costly compared with market funding. The decline can also originate from a reduction in demand in an environment of low interest rates or a shift to private pension systems. Competition from close substitutes issued by banks might also have contributed to the decline. The direct holdings in the form of securities issued by government also show a strong heterogeneity across countries, being very high in Malta and in the United States and relatively high in Italy. As in the case of deposits, the issuance of special retail bonds contributes to higher direct holdings of households in the form of securities.<sup>33</sup> In total, households held directly around 2% of government debt in the euro area in the third quarter of 2020, but this figure was close to 20% in Malta, close to 10% in Ireland and Portugal, and around 7% in Italy. The share of government debt held directly by households was close to 15% in the United States and close to 8% in the United Kingdom.

## Chart 2

### Households' direct holdings of government debt

(percentage of total government debt; 1999-2020)



Sources: ESCB, Federal Reserve System, Statistics Canada, Office for National Statistics and ECB calculations.

Notes: For Ireland and Portugal, the households' direct holdings only include deposits before 2013 and 2013 respectively. Only countries where the direct holding is or has been close to 10% or above are included. The large increase in 2004 in the United States corresponds to a break in the Municipal Bonds data, not to actual transactions. The latest observations are for Q3 2020.

**Households' indirect holdings are lower where banks have a larger share in financial intermediation and higher where financial interlinkages between the other financial corporations are less prevalent.** Households held indirectly around 14% of government debt in the euro area in the third quarter of 2020, mirroring the large government securities holdings of IFs and ICPFs (Box 2). The level of indirect holdings depends on the relative importance of IF shares and ICPF products in the households' total financial assets. In this regard, the relative share of the bank

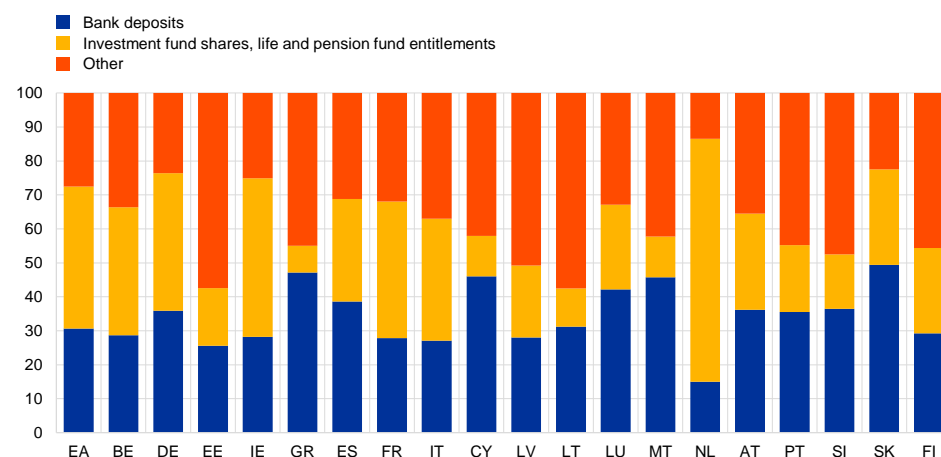
<sup>33</sup> In the United States, without being strictly reserved to retail investors, the associated tax exemptions for local government bonds (Municipal Bonds) make them more attractive to households. In Malta, investors can invest in Malta Government Stocks (MGS) through competitive auctions and non-competitive retail applications. In Italy, the government issued for the first time in 2012 BTPs Italia, which are inflation-indexed bonds specially designed for retail investors. In June 2020 the government also issued a new retail series of GDP-linked bonds.

deposits is larger and partly contributes to lower indirect holdings in the euro area than in economies like the United States where the OFCs play a greater role in managing households' savings. Within the euro area countries, this factor explains lower indirect holdings in Germany, Spain, Cyprus, Malta, Austria, Portugal and Slovakia and the higher level of indirect holdings in the Netherlands where pension funds are particularly developed (Chart 3). The level of indirect holdings is also influenced by the investment strategy of IFs and ICPFs, namely the extent to which they invest directly in assets issued by the non-financial sector to cover their financing needs (such as governments or non-financial corporations), or the extent to which they invest in IFs which ultimately invest in claims issued by the non-financial sector. Chart 4 shows that in the euro area, the intensity of financial interlinkages between OFCs varies across countries and contributes to lower indirect holdings in Germany, the Netherlands, Austria and in Finland as only the direct government debt holdings of IFs and ICPFs is considered.

### Chart 3

#### Composition of households' financial assets by instrument in euro area countries

(percentage of total financial assets; Q3 2020)

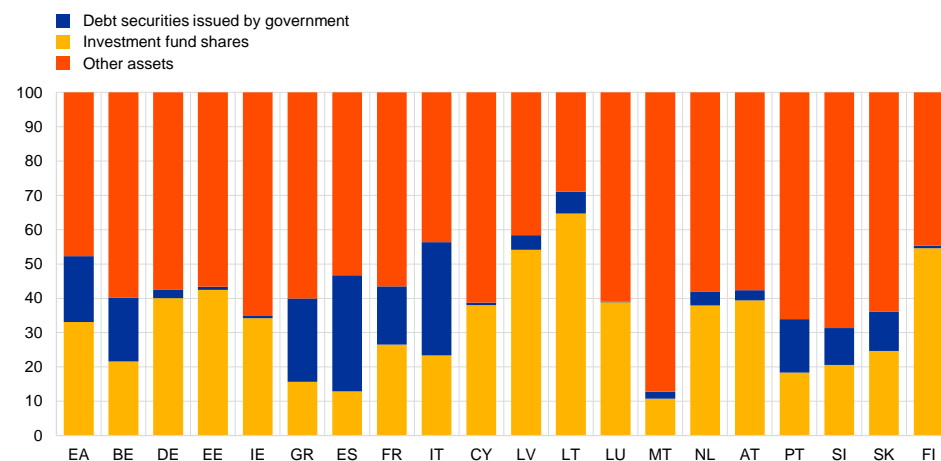


Sources: ECB, Eurostat and ECB calculations.

Note: "Other" includes banknotes, debt securities, shares and other equities, loans granted by households to all institutional sectors and other accounts receivable.

**Chart 4****Composition of ICPFs' financial assets by instrument in euro area countries**

(percentage of total financial assets; Q3 2020)



Sources: ECB, Eurostat and ECB calculations.

Note: "Other" includes banknotes, debt securities issued by sectors other than government, shares and other equities, loans granted by ICPFs to all institutional sectors and other accounts receivable.

**The total holdings by households of government debt are sizeable and concentrated among the wealthiest households.**

Households held both directly and indirectly around 16% of government debt in the euro area in the third quarter of 2020, but the level was close to 20% in Malta and Italy, close to 15% in Portugal, and 12% in France (Table 2). In the United States households hold around one-third of the government debt, and in Canada and the United Kingdom the share is close to one quarter. For euro area countries, the [Household Finance and Consumption Survey](#)<sup>34</sup> (HFCS) shows that within each country holdings of government debt instruments are tilted towards the top of the income distribution<sup>35</sup> (see Chart 5).<sup>36</sup> The households from among the top 20% of income have a higher propensity to own bonds issued by government. The overall propensity to hold this kind of asset is very low in most of the euro area countries, but there is cross-country heterogeneity as the propensity to hold bonds issued by government is relatively high in Ireland, Italy and Malta. Moreover, households from among the top 20% of income have a higher propensity to have at least one pension plan or life insurance policy. This indicates that such indirect holdings are also biased towards the wealthiest households. The financial literacy, financial sophistication, and the use of professional financial advice play an important role

<sup>34</sup> The HFCS collects information on the assets, liabilities, income and consumption of households. See Household Finance and Consumption Network, "[The Household Finance and Consumption Survey: results from the 2017 wave](#)", *Statistics Paper Series*, No 36, ECB, 2020.

<sup>35</sup> Given the unequal distribution of household wealth and the fact that certain financial instruments are almost exclusively held (and in large quantities) by the wealthiest households, most countries apply some type of oversampling of wealthy households in their survey. Nevertheless, the top tail of the wealth distribution might still be underrepresented in surveys. See Chakraborty, R., Kavonius, I., Pérez-Duarte, S. and Vermeulen, P., "[Is the top tail of the wealth distribution the missing link between the Household Finance and Consumption Survey and national accounts?](#)", *Working Paper Series*, No 2187, ECB, 2018.

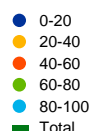
<sup>36</sup> The HFCS does not contribute to explaining the cross-country differences within the euro area. Given the breakdowns available in the HFCS, only the propensity to hold the relevant instruments can be assessed but the corresponding amounts held are not available. It is therefore impossible to compute direct and indirect holdings based on the survey data.

in both the composition of households' wealth and return on households' investments and are likely to be an important driver of this bias.<sup>37</sup>

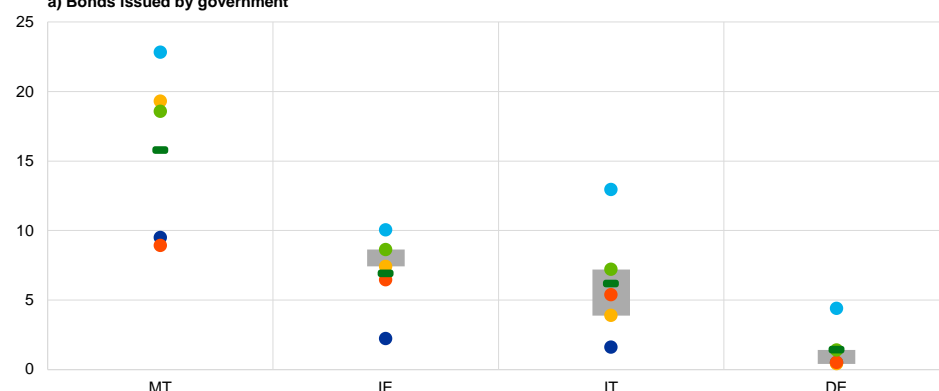
## Chart 5

### Households' propensity to hold financial assets by income quintile

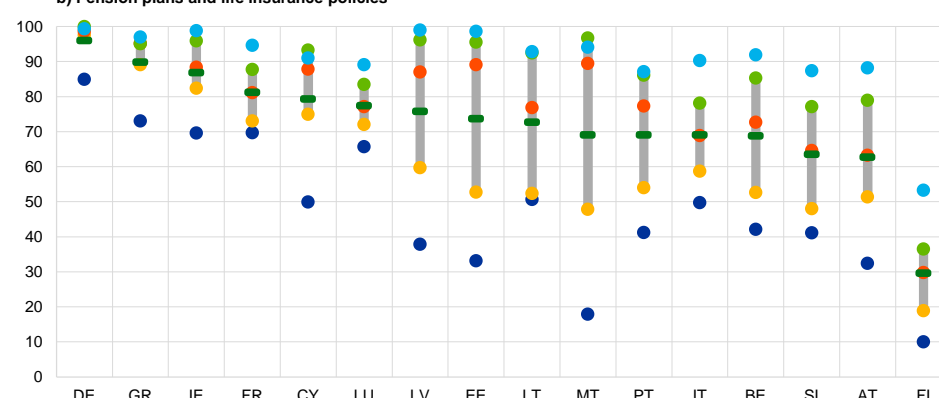
(propensity to hold in percentages by income quintile)



#### a) Bonds issued by government



#### b) Pension plans and life insurance policies



Source: The Household Finance and Consumption Survey: results from the 2017 wave.

Notes: Panel a) shows the proportion of households holdings bonds issued by central or other government across five income quintiles. Only countries for which the total holdings are above 1% are shown. Panel b) shows the proportion of households holding at least one pension plan or one life insurance policy. Spanish data are not yet available. For the Netherlands and Slovakia, the propensity to hold at least one pension plan or one life insurance policy is virtually 100% for all income quintiles. The vertical grey bars show a range of propensity to hold of middle-income households between the 20th and 80th income quintiles. Countries are ranked according to their total propensity to hold the specific financial assets.

## 5 Conclusion

**Over the last two decades, the structure of government debt by holder has evolved, driven by financial integration, economic crises and policy responses.**

In the early stages of EMU, growing financial integration led to an increase in cross-border holdings of government debt. The GFC and the euro area sovereign debt

<sup>37</sup> See Stolper, O.A. and Walter, A., "Financial literacy, financial advice, and financial behavior", *Journal of Business Economics*, Vol. 87, No 5, 2017, pp 581-643.

crisis led to a sharp reduction of portfolio investment away from euro area countries that were perceived to be under stress, amplifying the feedback loops between sovereigns and banks, as the financial health of banks and sovereigns is intertwined. The importance of OFCs in financing government debt has also grown over time as structural and institutional changes (e.g. population ageing and the establishment of funded pension pillars) have contributed to the increase of investment in pension and life insurance products. Finally, the Eurosystem's purchases of government securities have contributed to the reduction in the share of non-resident and bank holdings of government debt, which started in 2015.

**The share of households' direct and indirect holdings of government debt is significant and has also evolved.** The share of government debt held directly by households is relatively low in the euro area as a whole (2% in the third quarter of 2020), but it is higher in several euro area countries and in other advanced economies, reflecting notably institutional differences and supply policies (e.g. the issuance of specific retail bonds or savings notes). However, the role of households in financing government debt goes beyond direct holdings. Considering indirect holdings through IFs and through ICPFs, the role of households in financing the government debt is more significant in most euro area countries (almost 16% in the third quarter of 2020).

### 3 Liquidity usage in TARGET2

Prepared by Ioana Duca-Radu and Sara Testi<sup>1</sup>

#### 1 Introduction

**Real-time gross settlement (RTGS) systems typically require large amounts of liquidity to support the settlement of payments on a gross basis.**<sup>2</sup> At the same time, settling on a gross basis<sup>3</sup> benefits the payment system by reducing credit risk<sup>4</sup> and, more generally, systemic risk. For these reasons, TARGET2<sup>5</sup>, the Eurosystem's RTGS system that processes euro-denominated payments in central bank money, also settles payments on a gross basis. To enable participants to optimise the use of liquidity and reduce their liquidity needs, TARGET2 offers a number of features, called liquidity-saving mechanisms.<sup>6</sup> In addition, when liquidity on their accounts is not sufficient, TARGET2 participants can make use of the intraday credit line (ICL) facility, which is offered by the Eurosystem against eligible collateral and is interest free.

**TARGET2 participants can also help to optimise their liquidity usage by actively managing their intraday liquidity.** By coordinating their incoming and outgoing payments, TARGET2 participants can limit their liquidity needs and make more efficient use of their liquidity resources. There are three sources of liquidity that payment system participants can tap in order to fund their payments: (i) incoming payments, i.e. flows received from other participants; (ii) positive balances available on their accounts – called “central bank reserves”; and (iii) the additional liquidity that can be accessed via the ICL facility.

**The use of the various liquidity sources differs across participants and can also vary depending on exogenous factors, such as monetary policy decisions.** The interest rates set by the central bank can have an impact on the cost of the liquidity sources, and in particular of the central bank reserves, as holding the liquidity in the account may carry the opportunity cost of not placing it on the interbank market. At the same time, intraday credit, or any collateralisation with the Eurosystem, bears the

<sup>1</sup> The authors of this article are members of one of the user groups with access to TARGET2 data in accordance with Article 1(2) of Decision ECB/2010/9 of the European Central Bank of 29 July 2010 on access to and use of certain TARGET2 data. The ECB, the Market Infrastructure Board and the Market Infrastructure and Payments Committee have checked this article against the rules for guaranteeing the confidentiality of transaction-level data established by the Market Infrastructure Board pursuant to Article 1(4) of the above-mentioned Decision.

<sup>2</sup> An additional characteristic of RTGS systems is that payments are settled on a continuous basis, i.e. in real time. As soon as a payment is settled, it becomes final and irrevocable, hence liquidity can immediately be reused by the recipient.

<sup>3</sup> For a payment to be settled on a gross basis, i.e. one by one, sufficient liquidity needs to be on the debited account, i.e. the account of the sender of the payment.

<sup>4</sup> Credit risk is the risk that a counterparty, whether a participant or other entity, will be unable to fully meet its financial obligations when they fall due or at any time in the future.

<sup>5</sup> For more details about TARGET2, how it works and its relevance for credit institutions in the euro area, see the article entitled “Liquidity distribution and settlement in TARGET2”, *Economic Bulletin*, Issue 5, ECB, 2020.

<sup>6</sup> For example, a well-known liquidity-saving mechanism is the multilateral offsetting algorithm that matches and offsets payments between multiple participants, thus reducing their liquidity needs.

opportunity cost of having eligible collateral encumbered for this purpose. Using incoming payments is the cheapest source of liquidity, as it carries no cost. Measures taken by the central bank that have an impact on the level of central bank reserves are also an important factor. When central bank reserves<sup>7</sup> increase significantly, there is a lower need for participants to synchronise their payments. This is currently the case for euro area banks due to the various monetary policy instruments deployed by the Eurosystem<sup>8</sup> to maintain price stability in an environment of protracted weakness in inflation.

**This article examines how liquidity has been used in TARGET2 since June 2008.**

Liquidity usage – for the purpose of this article – is a broad term used for all aspects that could reflect the efficiency in the use of the participants' liquidity sources. Analysing such aspects can help in understanding the implications of the high levels of central bank reserves in TARGET2 for the smooth settlement of payments and how this type of regime has changed the behaviour of banks in settling payments in TARGET2.

**The remainder of the article is structured as follows.** Section 2 provides some general considerations about liquidity usage over time. Section 3 focuses on the particularities of banks in managing their intraday liquidity, as well as on the impact of monetary policy decisions on intraday liquidity management. Section 4 concludes.

## 2 Liquidity velocity in TARGET2

**A good indication of overall liquidity usage in a payment system is given by its liquidity velocity.** Liquidity velocity in a payment system is the value of payments made for each unit of liquidity that is used for settling payments,<sup>9</sup> and it basically shows how many times one unit of liquidity, in this case one euro, changes ownership on average in a day. Liquidity used encapsulates the central bank reserves available on the TARGET2 accounts that are actively utilised to settle payments as well as the liquidity drawn from the ICL facility, i.e. overdrafts.<sup>10</sup> There are various components that affect liquidity velocity: (i) the liquidity-saving mechanisms available in the payment system, typically a constant factor through time; (ii) the way the payment system participants manage their liquidity to meet their payment obligations; and (iii) the amount of central bank reserves available for participants to settle payments. In practice, liquidity velocity in TARGET2 is measured as the ratio of the total value of

<sup>7</sup> In TARGET2, the central bank reserves available on the participants' accounts in TARGET2 can be fully utilised for settling payments, i.e. there is no distinction between the use of minimum and excess reserves. Minimum reserve requirements need to be met over the maintenance period.

<sup>8</sup> For example, the asset purchase programme (APP), the three series of targeted longer-term refinancing operations (TLTROs), and more recently the launch of the pandemic emergency purchase programme (PEPP) to counter the downward impact of the pandemic on the projected path of inflation.

<sup>9</sup> In this article, we apply the methodology used by Benos, E., Garratt, R. and Zimmerman, P., "Bank behaviour and risks in CHAPS following the collapse of Lehman Brothers", *Working Paper Series*, No 451, Bank of England, 2012. Other alternatives exist in the literature, in which, for instance, liquidity velocity is computed relative to the liquidity available, see also Garratt, R., Antoine, M. and McAndrews, J., "Turnover in Fedwire Funds Has Dropped Considerably since the Crisis, but it's Okay", Technical Report, *Liberty Street Economics*, Federal Reserve Bank of New York, August 2014.

<sup>10</sup> In practice, this is measured as the sum of the maximum positive net debit positions (outgoing payments minus incoming payments) on the TARGET2 accounts. In this article, we measure the net debit positions every minute. This is, nevertheless, a proxy and there are alternative ways of measuring it.

payments settled to the liquidity used to settle them. The amount of liquidity used depends on each participant's intraday management of liquidity, i.e. the extent to which the participant synchronises incoming with outgoing payments. However, depending on the level of central bank reserves, there is either less or more of a need for a participant to manage its liquidity in the most efficient way, i.e. to synchronise incoming with outgoing payments. Thus, liquidity used fluctuates in line with the liquidity available in the system. The liquidity available on the participants' TARGET2 accounts is approximately equal to the overall central bank reserves available in the banking system.<sup>11</sup>

**Liquidity velocity in TARGET2 fell amid the upsurge in central bank reserves resulting from the Eurosystem's asset purchase programme (APP) and, more recently, the pandemic emergency purchase programme (PEPP), as well as the third series of targeted longer-term refinancing operations (TLTRO-III).** The liquidity velocity indicator in TARGET2 decreased from 5.1 in March 2015 to 3.0 in November 2020, most of the decrease taking place between March and September 2015 (Chart 1). Similar developments took place during and following the sovereign debt crisis as well. Liquidity velocity decreased between 2011 and 2012 in the context of rising levels of central bank reserves resulting from the significant uptake in the two three-year very long-term refinancing operations (VLTROs) conducted by the Eurosystem. In early 2013, liquidity velocity started to increase again as a consequence of the early repayments of the VLTROs, which led to a decrease in central bank reserves. The visible decline between March and August 2020 was driven by the additional stimulus provided by the Eurosystem in the context of the coronavirus (COVID-19) pandemic, in particular the PEPP and TLTRO-III. Overall, there is a declining trend of liquidity velocity in TARGET2, which may have also been reinforced by the introduction of the fixed-rate full allotment approach in October 2008 to guarantee an elastic supply of liquidity. These developments show that liquidity velocity in TARGET2 correlates strongly and negatively<sup>12</sup> with the central bank reserves available, which in turn are positively correlated with the liquidity used.

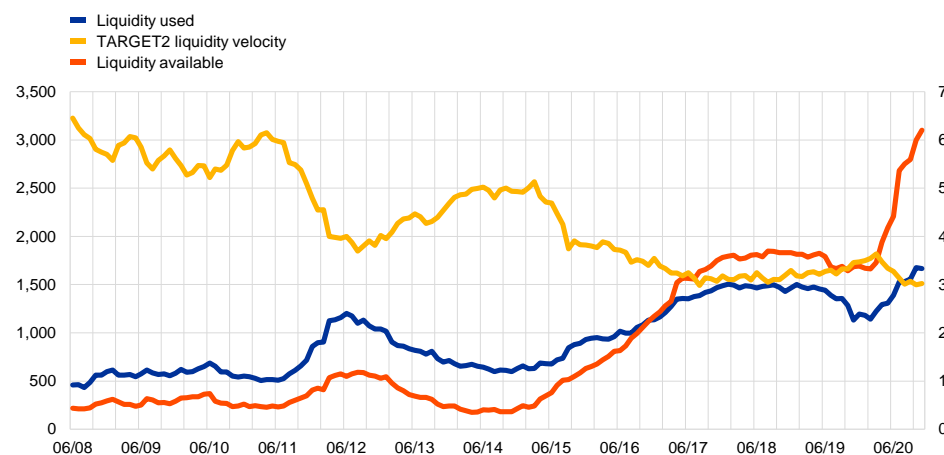
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<sup>11</sup> In several publications, liquidity available also includes the ICL available to the participant. In this article, the two concepts are considered separately.

<sup>12</sup> Correlation coefficient stands at -0.82.

**Chart 1****Liquidity used and available versus TARGET2 liquidity velocity**

(y-axis: liquidity used and liquidity available, EUR billions (left-hand scale); liquidity velocity (right-hand scale); x-axis: months)



Sources: TARGET2, ECB calculations.

Note: The chart covers the period from June 2008 to November 2020 at a monthly frequency.

**Since December 2016, the liquidity used for payments in TARGET2 has stood below the liquidity available in TARGET2.** The gap between the liquidity used and the liquidity available has since steadily increased, with it surging over the course of 2020 due to the additional stimulus programmes – in particular the PEPP and TLTRO-III – implemented by the Eurosystem to address the impact of the COVID-19 crisis (Chart 1). More precisely, as of November 2020, the gap stood at €1,435.2 billion. Compared with March 2015, the liquidity used in 2020 increased by 2.6 times, while the liquidity available increased by 12.8 times. Interestingly, before November 2016, the liquidity used was even higher than the central bank reserves on TARGET2 accounts on the back of the use of intraday credit. During that period, the overall size of the ICL was higher than it currently is, and overdrafts were used much more to settle payments.<sup>13</sup>

**All of these observations indicate that, currently, TARGET2 participants would also be able to settle payments in TARGET2 with lower account balances.** In fact, by comparison, in 2020 the value of payments settled was, on average,<sup>14</sup> only 5.4% above the value settled in 2012, while the liquidity available was 304.0% higher and the liquidity used 29.7% higher. This clearly suggests that, currently, there are more central bank reserves than that needed by banks to settle their payment obligations.<sup>15</sup> At the same time, liquidity velocity also stood at its lowest historical value at the end of 2020. Thus, historical evidence shows that going forward banks could settle their payments with a lower level of central bank reserves. In the following section, we explain in greater depth how banks participating in TARGET2 use the liquidity sources available to them.

<sup>13</sup> See Duca-Radu, I. and Polo Friz, L., “Liquidity distribution and settlement in TARGET2”, *Economic Bulletin*, Issue 5, ECB, 2020.

<sup>14</sup> Note that for the sake of comparison, data available from January through to November only were taken into account, as data for December 2020 were not yet available.

<sup>15</sup> Note that central bank reserves are, on aggregate, determined by monetary policy actions and their level depends on central bank decisions.

### 3 Payment funding sources

#### Overview of use of funding sources

**To fund their payments, TARGET2 participants can rely on three sources of funding: (i) incoming payments; (ii) the account balance, i.e. central bank reserves available on their TARGET2 account; and (iii) intraday credit.**<sup>16</sup>

Incoming payments are considered to fund outgoing payments when the latter are settled within the same minute as the reception of the incoming flows. This is a concept also known as “liquidity recycling” in the payments literature. Whenever outgoing payments are in excess of the incoming payments received within the same minute, they are considered to be funded using the account balance, provided that sufficient liquidity is available on the account. Whenever incoming payments and the account balance are not sufficient to settle the outgoing payments, the remaining outgoing payments are funded using the ICL. The ensemble of payment funding sources is also known as “payment capacity”. As discussed in the introduction, banks typically need to actively manage their liquidity sources during the day to ensure that they have sufficient capacity to settle payments and economise on liquidity costs.

**In TARGET2, the main source of funding payments is the account balance.**<sup>17</sup> In the period under analysis, participants funded, on average, 73.0% of their payments using the liquidity available on their account balance, whereas incoming payments constituted the second source of funding, covering, on average, 18.8% of the payment outflows (Chart 2). Intraday credit was used to provide liquidity for 8.1% of outgoing transactions. The fact that TARGET2 participants rely on intraday credit only to a very limited extent indicates that the intraday liquidity risk for TARGET2 participants is low.

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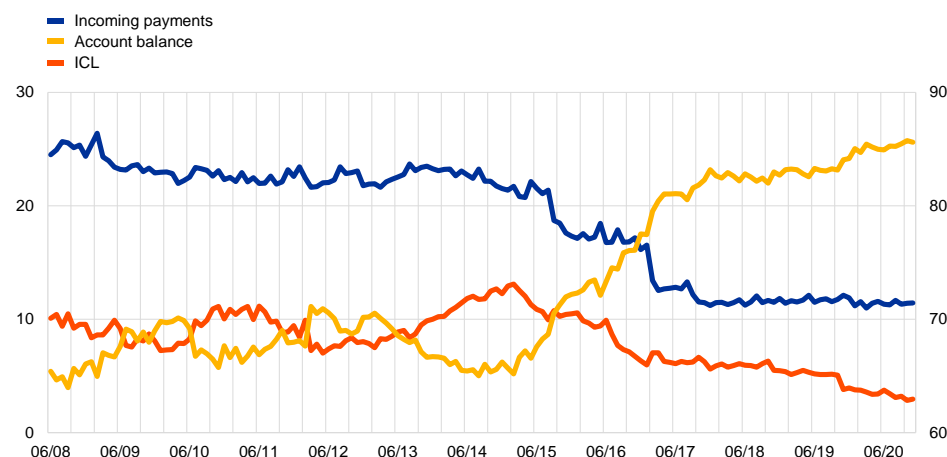
<sup>16</sup> To quantitatively determine the size of the funding sources, we apply the methodology of McAndrews, J. and Rajan, S., “The timing and funding of Fedwire Funds transfers”, *Economic Policy Review*, Federal Reserve Bank of New York, July 2000. Unlike the methodology in that paper, we use time intervals of one minute to increase the precision of the calculations.

<sup>17</sup> Note that the results provided in this section and the article henceforth are based on a sub-sample of TARGET2 participants, i.e. those TARGET2 participants that are technically provided with intraday credit in TARGET2 via the ICL, as the methodology employed allows the three payment funding sources to be distinguished in this way only.

## Chart 2

### Funding sources of payments in TARGET2

(y-axis: incoming payments and ICL, percentages (left-hand scale); account balance, percentages (right-hand scale))



Sources: TARGET2, ECB calculations.

Note: The chart covers the period from June 2008 to November 2020 at monthly frequency.

**The use of the account balance increased over time, whereas the use of incoming payments and intraday credit decreased.** These developments coincided, in particular, with the upsurge in aggregate liquidity levels in TARGET2 resulting from the Eurosystem's monetary policy measures. After the public sector purchase programme (PSPP) was introduced in March 2015, the usage of intraday balances grew, on average, from 67.6% to 79.4%, whereas the use of incoming payments fell, on average, from 23.0% to 13.0%. At the same time, recourse to intraday credit declined, from 9.4%, on average, in the period before the introduction of the PSPP to 6.6% in the following period, and it stood below 4.0% in the last year under review. With central bank reserves becoming abundant and lower money market activity, these developments are rather natural. First, they indicate a lesser need for TARGET2 participants to focus on intraday liquidity management practices – a behaviour that is nevertheless expected to be reversed once returning to lower levels of central bank reserves. Second, they show that there is also less of a need for banks to resort to the ICL facility, which brings about a further reduction in the intraday liquidity risk for TARGET2 participants.

**Comparable developments in payment funding were also observed in other RTGS systems worldwide owing to higher levels of central bank reserves.** In Fedwire, the RTGS system operated by the Federal Reserve, following the upsurge in reserves that began in 2009, the funding of payments with own account balances almost tripled, while the proportion of payments funded by overdrafts fell significantly.<sup>18</sup> In the Clearing House Automated Payments System (CHAPS), the RTGS system operated by the Bank of England, the use of own funds – defined as reserve balances and the ICL – to make payments only increased to a limited extent

<sup>18</sup> See Garratt, R., Antoine, M. and McAndrews, J., "Turnover in Fedwire Funds Has Dropped Considerably since the Crisis, but it's Okay", Technical Report, *Liberty Street Economics*, Federal Reserve Bank of New York, August 2014.

following the start of its quantitative easing programme in March 2009.<sup>19</sup> UK participants are reported to predominantly recycle liquidity to fund their payments. While it should be acknowledged that the methodology used for the CHAPS analysis is not the same as that of this article, these differences may also be attributable to the UK system being highly tiered<sup>20</sup>, as well as to throughput guidelines that oblige banks to settle a part of their daily payments value within fixed time slots.

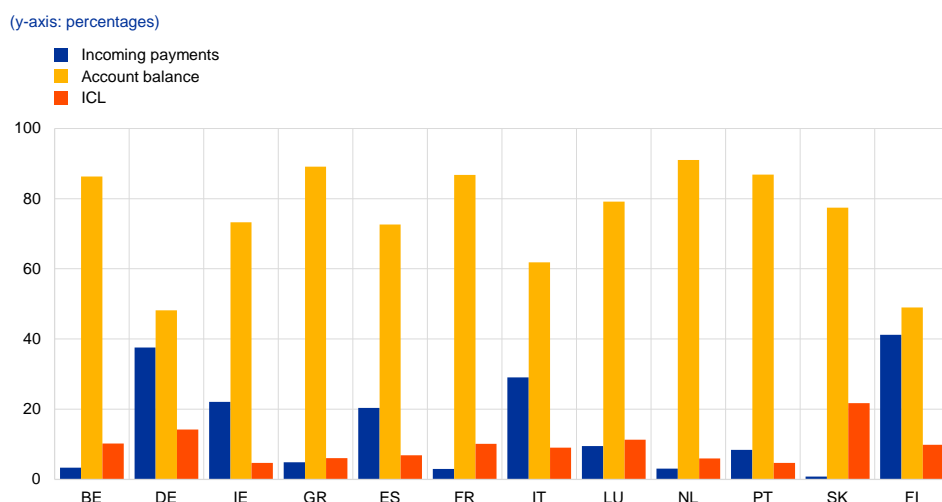
**The funding behaviour of payment obligations varies considerably across different communities of TARGET2 participants.** Reliance on incoming payments is high in Finland, Germany and Italy, covering roughly one-third or more of their outgoing traffic, on average. On the other hand, liquidity recycling is very low in Belgium, the Netherlands, France and Slovakia, where this source of payment funding is used for less than 3.4% of outgoing payments. Intraday credit appears to be used to a greater extent in Slovakia, which makes the highest use of the ICL with 21.5%, as well as Germany, Luxembourg and Belgium, while it is of rather limited use in Portugal and Ireland. At the same time, all countries make predominant use of the account balance, with Germany and Finland being the two countries to make more even use of the account balance and incoming payments, i.e. within an 11-percentage point difference between the two. These developments suggest that there are heterogeneous intraday liquidity management practices across national banking communities in the euro area. Such differences could be attributable to the unique structure of each country's banking sector and the way that this is reflected in their participation in TARGET2.<sup>21</sup> The next part of this section provides a further analysis of the drivers behind this heterogenous use of funding sources.

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<sup>19</sup> See Benos, E. and Harper, G., "Recycling is good for the liquidity environment: Why ending QE shouldn't stop banks from being able to make CHAPS payments", Bank Underground, May 2016.

<sup>20</sup> Tiered participation in a payment system is when a direct participant of that system provides services allowing other participants to access the system indirectly. The indirectly connected participants thus benefit from the clearing and settlement facility services offered through the direct participants.

<sup>21</sup> In Germany, for example, many of the small savings banks are not connected to TARGET2.

**Chart 3****Average usage of sources of payment funding across national banking communities**

Sources: TARGET2, ECB calculations.

Notes: The chart shows average daily figures over the period from June 2008 to November 2020. Only those euro area countries for which data are sufficiently representative are included in the chart.

**The relative usage of the sources of payment funding differs across specific bank characteristics.**

Smaller banks, i.e. banks in the first quartile of the sample ordered by total assets, appear, on average, to rely more on their account balances to settle outgoing payments than larger banks (Table 1). This can be explained by the fact that smaller banks typically conduct less activity in TARGET2 and therefore encounter greater difficulties in recycling liquidity. Incoming payments are mainly used as a source of funding by mid-size banks, i.e. banks in the second and third quartile by total assets, with an average of 23.2%.<sup>22</sup> Larger banks, i.e. banks in the fourth quartile by total assets, appear instead to rely more than the others on overdrafts, with an average of 9.1%. This finding is in line with the results by bank business model, with investment and corporate banks as well as global systemically important banks (G-SIBs) and universal banks also having wider recourse to overdrafts. Larger-size and corporate banks benefit from larger collateral pools to cover intraday liquidity needs, thus having more flexibility to use this particular payment funding source. These participants, due to the nature of their business, are also more likely to settle transactions of higher values, making it more likely for them to use the ICL to cover specific payment obligations. In addition, larger banks may offer correspondent banking services<sup>23</sup> which can generate payment flows that are difficult to predict. Diversified and retail lenders are able to match their incoming payments with their outgoing ones to a large extent, i.e. 22.8% and 24.5% respectively, hence reducing the opportunity cost of funding their traffic in TARGET2. These banks typically benefit from a more foreseeable payment schedule, allowing them to coordinate a higher share of transactions. Compared with other participants, they also concentrate their payments in a shorter time frame and tend to settle their payments earlier in the day.

<sup>22</sup> Before the start of the PSPP in March 2015, the use of incoming payments by this group of banks was even higher, standing at 28.7%.

<sup>23</sup> A correspondent bank is a bank that provides settlement services on behalf of another bank.

**Table 1****Average usage of payment sources by bank characteristics**

(percentages)

	TOTAL ASSETS				BUSINESS MODEL			
	Quartile 1	Quartile 2	Quartile 3	Quartile 4	G-SIBs/Univ.	Invest./Corp.	Diversified lender	Retail lender
Incoming payments	18.5	23.1	23.3	18.6	15.0	14.6	22.8	24.5
Account balance	75.9	70.1	68.7	72.3	77.1	75.8	70.4	69.6
Intraday credit	5.5	6.8	7.9	9.0	7.9	9.6	6.8	5.8

Sources: TARGET2, Orbis, ECB, ECB calculations.

Notes: Due to data availability, the results reported are calculated based on a sub-sample reduced to approximately one-third of the TARGET2 participants included in this analysis. While the overall behaviour of the sub-sample is in line with that at system level, levels of individual indicators may be different.

**Liquidity recycling is more intense at the beginning of the business day and once more before the end-of-day.** In the first two hours of the business day, when

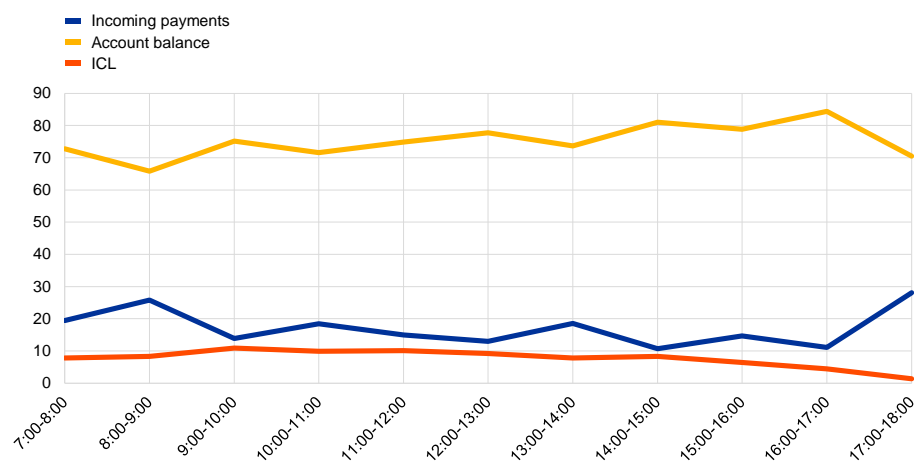
activity is very high,<sup>24</sup> TARGET2 participants fund 19% to 26% of their payments using incoming liquidity (Chart 4). During the day, the use of incoming payments is lower, only to increase once more in the last hour of business, when mainly interbank traffic and liquidity management transactions, which can be more easily coordinated, are settled. The use of account balances perfectly mirrors the incoming payments and reaches its maximum at 17:00 CET, standing at 84.4%. The usage of intraday credit decreases steadily from 13:00 CET onwards and reaches a very low level towards the end of the business day, i.e. 1.4% between 17:00 CET and 18:00 CET. This is an important point, as it indicates a low risk of banks not being able to repay their negative positions towards the end-of-day. If banks were to be unable to repay their negative positions, they would need either to: (i) have recourse to the marginal lending facility for which an interest rate is charged – in the case of eligible counterparties for Eurosystem monetary policy operations with access to the marginal lending facility; or (ii) to incur penalty interest – in the case of TARGET2 participants who do not have access to the marginal lending facility.<sup>25</sup>

<sup>24</sup> Around 20% of the total payments value in TARGET2 is settled within the first two hours of the business day.

<sup>25</sup> See Annex III, Provision of intraday credit, to Guideline ECB/2012/27 of the European Central Bank of 5 December 2012 on a Trans-European Automated Real-time Gross settlement Express Transfer system (TARGET2) (OJ, L 30, 30.1.2013, p. 1).

**Chart 4****Intraday pattern of funding sources in TARGET2**

(percentages)



Sources: TARGET2, ECB calculations.

Notes: The chart shows average daily figures over the period from June 2008 to November 2020.

**Bank-level analysis of the factors that influence the use of the different payment funding sources**

**To understand what influences the heterogeneous use of payment funding sources, a bank-level panel analysis using data at daily frequency was performed (Table 2).**

The sources of payment funding show the share of outgoing payments settled via a specific source, i.e. incoming payments, the account balance or intraday credit, and they are expressed in percentages. The panel approach allows several individual bank features to be taken into account at once, such as: (i) the value settled; (ii) the start-of-day balance; (iii) the ICL size; and (iv) the size of the bank's network;<sup>26</sup> as well as other more general factors: (v) the overnight interest rate, which provides the cost of liquidity; and (vi) a dummy to control for the start of the APP,<sup>27</sup> which equates to a change of regime in terms of Eurosystem central bank reserve levels.

**The availability of central bank reserves on the TARGET2 account weighs negatively on the use of incoming payments and intraday credit as funding sources, but positively on the use of the account balance.**

More precisely, an increase of €1 billion in the start-of-day balance on a TARGET2 account decreases the share of payments settled by a participant via incoming payments by approximately 0.2 percentage point (Table 2, "Start-of-day balance", (1) and (2)) and via intraday credit by approximately 0.6 to 0.7 percentage point (Table 2, "Start-of-day balance", (4) to (6)). At the same time, an increase of €1 billion in the start-of-day balance increases the use of the account balance by approximately 0.7 to 0.9 percentage point

<sup>26</sup> The size of a bank's network is measured as the average number of counterparties with which each bank interacts on a daily basis in TARGET2.

<sup>27</sup> The start of the APP is approximated with the start of the PSPP in March 2015, given that the PSPP had the largest impact on the levels of central bank reserves among the programmes implemented under the APP.

(Table 2, “Start-of-day balance”, (7) to (9)). These results confirm the findings at aggregate level that were mentioned in the previous section. The start-of-day balance available on banks’ accounts has increased significantly since the introduction of the APP in 2015, and, according to the bank-level panel analysis, this has led to a decrease of 5.8 percentage points, on average, in the use of incoming payments as a source of payment funding, a decrease of 2.2 percentage points in the use of intraday credit and an increase of 8.0 percentage points in the use of the account balance (Table 2, “APP”, (3), (6) and (9)). These results are not only statistically significant, but they also demonstrate the sizeable impact of the APP on the use of different payment funding sources by TARGET2 participants.

**Table 2**

Factors affecting different uses of payment funding sources – bank-level panel analysis

	Incoming payments			Intraday credit			Account balance		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<b>Value settled</b>	0.150* (0.062)	0.136* (0.080)	0.100 (0.175)	0.083 (0.347)	0.075 (0.387)	0.064 (0.464)	-0.233* (0.060)	-0.212* (0.077)	-0.163 (0.159)
<b>Start-of-day balance</b>	-0.238*** (0.004)	-0.185** (0.014)	-0.095 (0.134)	-0.680*** (0.000)	-0.652*** (0.000)	-0.625*** (0.000)	0.917*** (0.000)	0.837*** (0.000)	0.720*** (0.001)
<b>Network size</b>	0.044** (0.010)	0.044*** (0.009)	0.023 (0.155)	0.032*** (0.007)	0.032*** (0.005)	0.024*** (0.033)	-0.076*** (0.000)	-0.076*** (0.000)	-0.048*** (0.011)
<b>ICL size</b>	0.067*** (0.001)	0.065*** (0.001)	0.042** (0.020)	0.138*** (0.002)	0.137*** (0.002)	0.129*** (0.002)	-0.205*** (0.000)	-0.202*** (0.000)	-0.171*** (0.000)
<b>Overnight rate</b>		1.838*** (0.000)			0.964*** (0.000)			-2.801*** (0.000)	
<b>APP</b>			-5.821*** (0.000)			-2.199*** (0.000)			8.020*** (0.000)
<b>Constant</b>	15.520*** (0.000)	15.340*** (0.000)	19.656*** (0.000)	6.594*** (0.000)	6.498*** (0.000)	8.156*** (0.000)	77.886*** (0.000)	78.167*** (0.000)	72.188*** (0.000)
<b>R<sup>2</sup></b>	0.007	0.014	0.032	0.026	0.027	0.029	0.032	0.039	0.054
<b>Number of observations</b>	1,632,570	1,632,570	1,632,570	1,632,570	1,632,570	1,632,570	1,632,570	1,632,570	1,632,570

Sources: ECB, TARGET2 and ECB calculations.

Notes: Data cover the period from June 2008 to November 2020. The overnight unsecured rate is measured as the EONIA until 1 October 2019 and the €STR from then onwards. The reported results are based on fixed-effect regressions. The numbering (1) to (9) denotes the specifications employed for each of the regressions. Each specification uses a different set of regressors which are clearly marked by the presence of a coefficient. Robust standard errors are reported in parentheses. \*\*\* p<0.01; \*\* p<0.05; \* p<0.1.

**The size of the network of a bank has a positive effect on its ability to synchronise incoming with outgoing payments.** The effect is statistically significant and relatively large: extending a bank’s network by 70 counterparties – equivalent to a one standard deviation of the number of counterparties across participants averaged through time – results in an approximately 2.8 percentage point increase in the use of incoming payments as a funding source (Table 2, “Network size”, (1) and (2)). At the same time, it seems to drive downwards the use of the account balance (Table 2, “Network size”, (7) to (9)), the effect being even stronger – but of opposite sign – than that on the use of incoming payments. Having more counterparties creates more occasions for synchronising payments. Similarly, settling more payments has a positive impact on the use of incoming payments as a funding source – the larger volume of business facilitates obtaining liquidity that can be reused

to fund outgoing obligations – while it has the opposite effect on the use of the account balance (Table 2 “Value settled”, (1) to (3) and (7) to (9)).

**A larger ICL size is associated with lower funding of payments through the account balance and a higher use of incoming payments and intraday credit.**

When operating with limited liquidity on the account balance, banks can increase their payment capacity by either synchronising their outgoing payments with their incomings, or by increasing the size of their ICL. The size of the credit line, which is interest free, depends on the amount of collateral posted with the Eurosystem. Participants set the ICL at the beginning of the day and can flexibly modify it throughout the day. The size of the ICL does not necessarily indicate a need to increase the payment capacity: larger banks typically have large holdings of collateral parked in the Eurosystem collateral pool when not being used otherwise. As the ICL can fluctuate during the day, the daily ICL size available to each participant is approximated in the panel analysis by the maximum value reached over the course of the day. Since intraday modifications are not captured, it could be argued that the variable is exogenous to intraday liquidity management. The figures in Table 2 show that a larger ICL size is associated with a higher use of intraday credit and incoming payments. This indicates either that the size of the ICL is modified to increase the payment capacity or that, when available, the ICL is used more often. Also, the results confirm that when in need, participants invest more in synchronising their payments (Table 2, “ICL size”, (1) to (6)).

**An increase in the overnight interest rate translates into an increase in the use of incoming payments and of intraday credit and a decrease in the use of the account balance.**

When the central bank absorbs reserves and their cost increases, there is traditionally an incentive for banks to lend on the money market, thereby decreasing their individual account balance holdings in favour of profitable lending opportunities. This leaves them with less central bank reserves on their TARGET2 accounts, thus making them more likely to use alternative sources to settle their outgoing payments. Likewise, in the case of borrowing banks, an increased cost of central bank reserves provides an incentive to use payment funding sources other than their account balances. The use of incoming payments as a funding source bears no cost, while for intraday credit, even though it is interest free, there is a cost associated with the fact that collateral is encumbered for this purpose. This, in turn, creates an incentive for banks to actively manage their central bank reserves. According to the bank-level panel analysis, an increase of 1 percentage point in the overnight rate is associated with an increase of 1.8 percentage points in the use of incoming payments or 1.0 percentage point in the use of the ICL (Table 2, “Overnight rate”, (2) and (5)). On the contrary, the use of central bank reserves decreases with an increase in the overnight rate, suggesting that when the cost of central bank reserves is high, banks prefer to create additional payment capacity by better synchronising their payments or using the ICL, as they are both cheaper than borrowing funds on the money market.

## 4 Conclusions

**Liquidity usage in TARGET2 has changed considerably since 2008, primarily as a result of the level of central bank reserves available in the system.** The velocity at which liquidity circulates in TARGET2 has fallen over the course of time, particularly when the level of central bank reserves increased during the sovereign debt crisis and subsequently once the APP was introduced, as well as more recently with the additional stimulus provided in the context of the COVID-19 pandemic. Clearly, liquidity velocity fluctuates with the amount of central bank reserves available in the system, because, in the presence of higher levels of central bank reserves, banks tend to use more liquidity to settle payments, albeit a similar volume of payments could be settled even if lower levels of central bank reserves were available. This could be made possible, for instance, if banks were to synchronise their incoming with outgoing payments more efficiently or were to use the intraday credit line (ICL) to a greater extent. Nonetheless, the liquidity used to make payments has increased at a slower pace than the liquidity available, resulting in a significant amount of central bank reserves on TARGET2 accounts that is currently not being actively used to settle payments.

**While most payments in TARGET2 are funded using the liquidity available on the account balance, the interplay between different funding sources varies across time, countries and bank characteristics.** On average, throughout the period of analysis, TARGET2 participants funded 73.0% of their payments using the liquidity available on their account balance, 18.8% using incoming payments, and 8.1% using intraday credit. With central bank reserves becoming abundant, a higher proportion of outgoing payments were settled using the account balance, which further supports the previous argumentation behind the decrease in liquidity velocity in TARGET2. The usage of liquidity differs not only with the level of central bank reserves available, but also across bank characteristics. Smaller banks have greater difficulties in coordinating incoming and outgoing payments, which can be a consequence of lower activity in TARGET2 and fewer connections. At the same time, larger-size banks, such as G-SIBs and corporate banks, make wider use of the intraday credit line, as they benefit from a larger collateral pool. Furthermore, intraday liquidity management practices differ significantly across national banking communities in the euro area.

**A bank-level panel analysis provides a quantification of the impact of both monetary policy decisions and participant features on liquidity usage in TARGET2.** The availability of higher levels of central bank reserves leads to a lower recycling of incoming liquidity and a higher use of the account balance. The panel analysis shows that since 2015 the recycling of incoming payments fell, on average, by 5.8 percentage points, while the use of the account balance for payment settlement increased, on average, by 8.0 percentage points. Also, the use of intraday credit decreased by 2.2 percentage points. A lower recourse to intraday credit in TARGET2 is generally seen to reduce liquidity risk for the participants and to decrease the likelihood of the marginal lending facility being used at the end-of-day, the latter implying a cost for the participants. A tightening in the monetary policy rates, on the other hand, is associated with an increased recycling of payments and reduced

reliance on the account balance. More specifically, an increased cost of central bank reserves incentivises banks to manage their intraday liquidity more actively by using payment funding sources other than their account balance. At participant level, what makes a difference in the ability to synchronise payments better is the size of their network or the amount of payments that they settle – both of which providing more opportunities to recycle liquidity.

**To conclude, with the increase in central bank reserves, the efficiency of liquidity usage in TARGET2 has slowed down, as banks have fewer incentives to actively manage their intraday liquidity.** This is natural, as the need for banks to synchronise payments or use intraday credit has decreased in the presence of higher account balances and low opportunity costs as well as reduced opportunities of using them differently. However, historical evidence shows that, when there were lower levels of central bank reserves, participants were able to make more efficient use of their liquidity. It is therefore likely that, in the event of a reduction in central bank reserves, participants will be able to shift back towards a more active intraday liquidity management, thus contributing to the continuation of a smooth settlement of payments in TARGET2.

# Statistics

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## Further information

ECB statistics can be accessed from the Statistical Data Warehouse (SDW):	<a href="http://sdw.ecb.europa.eu/">http://sdw.ecb.europa.eu/</a>
Data from the statistics section of the Economic Bulletin are available from the SDW:	<a href="http://sdw.ecb.europa.eu/reports.do?node=1000004813">http://sdw.ecb.europa.eu/reports.do?node=1000004813</a>
A comprehensive Statistics Bulletin can be found in the SDW:	<a href="http://sdw.ecb.europa.eu/reports.do?node=1000004045">http://sdw.ecb.europa.eu/reports.do?node=1000004045</a>
Methodological definitions can be found in the General Notes to the Statistics Bulletin:	<a href="http://sdw.ecb.europa.eu/reports.do?node=10000023">http://sdw.ecb.europa.eu/reports.do?node=10000023</a>
Details on calculations can be found in the Technical Notes to the Statistics Bulletin:	<a href="http://sdw.ecb.europa.eu/reports.do?node=10000022">http://sdw.ecb.europa.eu/reports.do?node=10000022</a>
Explanations of terms and abbreviations can be found in the ECB's statistics glossary:	<a href="http://www.ecb.europa.eu/home/glossary/html/glossa.en.html">http://www.ecb.europa.eu/home/glossary/html/glossa.en.html</a>

## 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 <sup>1)</sup> (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 <sup>2)</sup> (HICP)
	1	2	3	4	5	6	Total	excluding food and energy	9	10	11	12	13
2018	3.6	3.0	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	2.2	1.4	0.3	6.0	1.3	2.1	2.2	1.8	1.8	0.5	2.9	1.2
2020	-3.3	-3.3	-9.9	-4.8	2.3	-6.6	1.4	1.8	1.2	0.9	0.0	2.5	0.3
2020 Q1	-3.2	-1.3	-2.8	-0.6	-9.7	-3.8	2.1	2.2	2.1	0.2	0.5	5.0	1.1
Q2	-6.6	-9.0	-19.5	-8.3	11.6	-11.6	0.9	1.6	0.4	0.2	0.1	2.7	0.2
Q3	7.8	7.5	16.9	5.3	3.0	12.5	1.3	1.7	1.2	0.2	0.2	2.3	0.0
Q4	2.1	1.1	1.3	2.8	2.6	-0.7	1.2	1.6	1.2	0.2	-0.8	0.1	-0.3
2020 Oct.	-	-	-	-	-	-	1.2	1.6	1.2	0.7	-0.4	0.5	-0.3
Nov.	-	-	-	-	-	-	1.2	1.6	1.2	0.3	-0.9	-0.5	-0.3
Dec.	-	-	-	-	-	-	1.2	1.6	1.4	0.6	-1.2	0.2	-0.3
2021 Jan.	-	-	-	-	-	-	1.5	1.7	1.4	0.7	-0.6	-0.3	0.9
Feb.	-	-	-	-	-	-	1.7	1.6	1.7	0.4	-0.4	.	0.9
Mar.	-	-	-	-	-	-	.	.	2.6	.	.	.	1.3

Sources: Eurostat (col. 6, 13); BIS (col. 9, 10, 11, 12); OECD (col. 1, 2, 3, 4, 5, 7, 8).

1) Quarterly data seasonally adjusted; annual data unadjusted.

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

## 1.2 Main trading partners, Purchasing Managers' Index and world trade

	Purchasing Managers' Surveys (diffusion indices; s.a.)									Merchandise imports <sup>1)</sup>		
	Composite Purchasing Managers' Index						Global Purchasing Managers' Index <sup>2)</sup>			Global	Advanced economies	Emerging market economies
	Global <sup>2)</sup>	United States	United Kingdom	Japan	China	Memo item: euro area	Manufacturing	Services	New export orders			
	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	4.6	3.2	6.0
2019	51.7	52.5	50.2	50.5	51.8	51.3	50.3	52.2	48.8	-0.4	-0.3	-0.6
2020	47.5	48.8	46.5	42.4	51.4	44.0	48.5	46.3	45.3	-4.6	-4.7	-4.5
2020 Q2	37.9	37.3	30.5	31.5	52.6	31.3	40.6	36.9	35.0	-8.5	-8.5	-8.4
Q3	51.9	53.1	57.5	45.6	54.7	52.4	52.6	51.7	49.0	7.8	8.8	6.8
Q4	54.2	56.8	50.5	48.2	56.3	48.1	54.6	54.0	50.8	4.3	4.8	3.7
2021 Q1	54.3	59.3	.	48.4	52.3	49.9	53.8	54.5	50.2	.	.	.
2020 Oct.	54.2	56.3	52.1	48.0	55.7	50.0	53.7	54.3	50.4	7.3	8.1	6.5
Nov.	54.8	58.6	49.0	48.1	57.5	45.3	55.3	54.7	51.6	5.6	6.6	4.4
Dec.	53.5	55.3	50.5	48.5	55.8	49.1	54.7	53.1	50.4	4.3	4.8	3.7
2021 Jan.	53.3	58.7	41.2	47.1	52.2	47.8	54.0	53.0	49.3	4.7	4.4	4.9
Feb.	54.2	59.5	49.6	48.2	51.7	48.8	53.7	54.4	49.8	.	.	.
Mar.	55.3	59.7	.	49.9	53.1	53.2	53.6	55.9	51.6	.	.	.

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 <sup>1)</sup>						United States	Japan
	Euro short-term rate (€STR) <sup>2)</sup>	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
2020 Sep.	-0.55	-0.47	-0.52	-0.49	-0.46	-0.41	0.24	-0.09
Oct.	-0.55	-0.47	-0.54	-0.51	-0.49	-0.47	0.22	-0.10
Nov.	-0.56	-0.47	-0.54	-0.52	-0.51	-0.48	0.22	-0.10
Dec.	-0.56	-0.47	-0.56	-0.54	-0.52	-0.50	0.23	-0.10
2021 Jan.	-0.56	-0.48	-0.56	-0.55	-0.53	-0.50	0.22	-0.08
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

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 <sup>1), 2)</sup>					Euro area <sup>1), 2)</sup>	United States	United Kingdom	Euro area <sup>1), 2)</sup>			
	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
2020 Sep.	-0.62	-0.64	-0.69	-0.71	-0.50	0.15	0.56	0.20	-0.69	-0.78	-0.58	-0.04
Oct.	-0.71	-0.75	-0.80	-0.81	-0.60	0.15	0.75	0.27	-0.81	-0.88	-0.68	-0.17
Nov.	-0.72	-0.72	-0.75	-0.75	-0.55	0.17	0.73	0.32	-0.75	-0.81	-0.62	-0.13
Dec.	-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 Jan.	-0.62	-0.70	-0.75	-0.74	-0.51	0.19	0.99	0.46	-0.78	-0.82	-0.58	-0.04
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

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										Standard & Poor's 500	Nikkei 225
	Broad index	50	Basic materials	Consumer services	Consumer goods	Oil and gas	Financials	Industrials	Technology	Utilities	Telecoms	Health care		
	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
2020 Sep.	359.2	3,260.7	800.6	215.7	162.0	75.4	119.0	638.1	669.1	347.2	245.9	822.8	3,365.5	23,306.9
Oct.	355.1	3,180.4	784.7	220.4	162.0	69.8	112.9	641.0	660.8	350.5	240.0	809.1	3,418.7	23,451.4
Nov.	377.7	3,391.8	824.1	238.4	167.0	80.5	130.3	692.7	653.1	364.4	249.2	820.1	3,549.0	25,384.9
Dec.	394.0	3,530.9	852.2	249.1	170.2	88.6	140.6	718.0	697.6	373.2	252.2	814.8	3,695.3	26,773.0
2021 Jan.	403.1	3,592.2	877.5	251.5	170.7	91.6	140.8	734.6	743.4	391.6	254.3	835.5	3,793.7	28,189.1
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

Source: Refinitiv.

## 2 Financial developments

### 2.4 MFI interest rates on loans to and deposits from households (new business) <sup>1), 2)</sup>

(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					
	Over-night	Redeem-able at notice of up to 3 months	With an agreed maturity of:				By initial period of rate fixation		APRC <sup>3)</sup>		By initial period of rate fixation				APRC <sup>3)</sup>	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 Mar.	0.02	0.36	0.31	0.64	5.60	16.19	5.47	5.45	5.88	2.06	1.39	1.54	1.35	1.35	1.65	1.39
Apr.	0.02	0.36	0.23	0.73	5.38	16.06	3.60	5.50	5.54	1.99	1.30	1.54	1.35	1.43	1.67	1.43
May	0.02	0.36	0.24	0.70	5.26	16.06	4.12	5.30	5.64	1.83	1.47	1.58	1.40	1.41	1.70	1.42
June	0.02	0.35	0.23	0.71	5.28	16.02	4.41	5.14	5.57	1.87	1.44	1.64	1.38	1.39	1.68	1.42
July	0.02	0.35	0.22	0.74	5.16	15.92	4.73	5.27	5.70	2.00	1.43	1.59	1.34	1.38	1.67	1.40
Aug.	0.02	0.35	0.19	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	1.50	1.29	1.35	1.60	1.33
Feb. <sup>(p)</sup>	0.01	0.35	0.23	0.66	5.02	15.74	5.10	5.24	5.81	1.97	1.30	1.49	1.27	1.33	1.59	1.31

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) <sup>1), 2)</sup>

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

	Deposits			Revolving loans and overdrafts	Other loans by size and initial period of rate fixation									Composite cost-of- borrowing indicator
	Over- night	With an agreed maturity of:			up to EUR 0.25 million			over EUR 0.25 and up to 1 million			over EUR 1 million			
		Up to 2 years	Over 2 years		Floating rate and up to 3 months	Over 3 months and up to 1 year	Over 1 year	Floating rate and up to 3 months	Over 3 months and up to 1 year	Over 1 year	Floating rate and up to 3 months	Over 3 months and up to 1 year	Over 1 year	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2020 Mar.	0.00	-0.08	0.25	1.98	1.90	2.18	1.97	1.57	1.51	1.47	1.14	1.10	1.18	1.46
Apr.	0.00	-0.06	0.31	1.97	2.00	1.16	1.70	1.61	0.92	1.48	1.22	1.12	1.26	1.47
May	0.00	-0.10	0.39	1.89	1.87	1.21	1.62	1.54	0.86	1.56	1.23	1.07	1.31	1.46
June	0.00	-0.12	0.32	1.94	1.89	1.50	1.79	1.55	1.13	1.50	1.23	1.17	1.42	1.49
July	0.00	-0.18	0.27	1.86	1.98	1.86	1.87	1.60	1.31	1.51	1.24	1.17	1.38	1.52
Aug.	0.00	-0.20	0.39	1.83	1.88	1.90	1.94	1.57	1.40	1.49	1.29	1.31	1.20	1.51
Sep.	0.00	-0.20	0.26	1.88	1.95	2.11	1.94	1.55	1.43	1.49	1.22	1.32	1.31	1.52
Oct.	0.00	-0.21	0.26	1.82	1.95	2.21	1.96	1.56	1.46	1.50	1.22	1.42	1.40	1.53
Nov.	-0.01	-0.20	0.42	1.83	2.00	2.01	1.98	1.58	1.41	1.47	1.22	1.29	1.30	1.51
Dec.	-0.01	-0.18	0.25	1.83	2.04	1.94	1.94	1.62	1.43	1.44	1.34	1.23	1.27	1.51
2021 Jan.	-0.01	-0.14	0.39	1.83	2.16	2.00	1.92	1.62	1.44	1.41	1.17	1.18	1.29	1.51
Feb. <sup>(p)</sup>	-0.01	-0.21	0.26	1.84	1.99	2.01	1.95	1.59	1.45	1.43	1.15	1.22	1.23	1.48

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 <sup>1)</sup>						
	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	1,527	454	144	.	97	714	118	457	180	70	.	45	114	49
2020 Sep.	1,691	511	165	.	113	754	146	474	203	63	.	43	126	40
Oct.	1,662	504	161	.	114	742	141	416	202	46	.	36	93	40
Nov.	1,630	493	158	.	116	731	132	418	217	40	.	37	83	41
Dec.	1,527	454	144	.	97	714	118	347	176	60	.	30	51	31
2021 Jan.	1,582	495	139	.	99	718	131	478	232	45	.	37	121	43
Feb.	1,540	474	141	.	102	702	121	354	149	42	.	32	103	27
Long-term														
2018	15,745	3,687	3,162	.	1,247	7,022	627	228	64	68	.	15	75	6
2019	16,312	3,817	3,398	.	1,321	7,151	626	247	69	74	.	20	78	7
2020	17,243	3,892	3,172	.	1,450	8,004	725	295	68	71	.	27	114	16
2020 Sep.	17,286	3,946	3,179	.	1,461	8,006	694	315	65	80	.	27	124	19
Oct.	17,287	3,937	3,203	.	1,456	7,978	713	275	47	78	.	27	91	32
Nov.	17,267	3,915	3,187	.	1,456	7,987	722	219	42	63	.	18	79	17
Dec.	17,243	3,892	3,172	.	1,450	8,004	725	204	40	104	.	17	36	7
2021 Jan.	17,360	3,897	3,177	.	1,459	8,091	736	318	90	55	.	21	133	19
Feb.	17,537	3,906	3,207	.	1,465	8,208	751	305	56	67	.	18	144	19

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
Outstanding amount											
2018	16,959.8	4,189.8	3,332.2	.	1,318.5	7,445.8	673.5	7,024.3	465.0	1,099.2	5,460.1
2019	17,594.9	4,366.8	3,578.5	.	1,405.9	7,557.2	686.5	8,587.9	538.4	1,410.6	6,638.9
2020	18,770.3	4,346.3	3,315.7	.	1,546.6	8,718.5	843.1	8,448.2	469.3	1,341.0	6,638.0
2020 Sep.	18,976.9	4,457.9	3,344.5	.	1,574.0	8,760.5	839.9	7,537.2	364.9	1,127.7	6,044.6
Oct.	18,948.7	4,440.3	3,364.1	.	1,570.0	8,720.1	854.1	7,230.8	348.2	1,100.2	5,782.4
Nov.	18,897.2	4,408.0	3,344.4	.	1,572.7	8,717.8	854.2	8,232.3	448.2	1,313.7	6,470.4
Dec.	18,770.3	4,346.3	3,315.7	.	1,546.6	8,718.5	843.1	8,448.2	469.3	1,341.0	6,638.0
2021 Jan.	18,941.4	4,392.2	3,315.4	.	1,558.0	8,809.1	866.7	8,331.3	446.6	1,316.9	6,567.8
Feb.	19,077.0	4,380.4	3,347.5	.	1,566.9	8,910.0	872.1	8,652.2	520.6	1,405.6	6,726.0
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	7.4	1.2	2.7	.	12.3	10.9	24.3	1.3	0.0	3.1	1.1
2020 Sep.	7.9	2.7	4.3	.	11.7	10.6	21.2	0.6	-0.1	0.5	0.7
Oct.	8.2	2.5	4.5	.	12.0	11.0	24.2	1.0	0.1	2.2	0.8
Nov.	7.5	1.7	2.6	.	11.7	10.7	24.4	1.2	0.0	2.2	1.1
Dec.	7.4	1.2	2.7	.	12.3	10.9	24.3	1.3	0.0	3.1	1.1
2021 Jan.	7.4	0.3	2.8	.	11.6	11.3	25.4	1.5	0.0	4.5	1.0
Feb.	7.6	-0.3	3.5	.	10.8	11.8	25.1	1.7	0.0	4.7	1.2

Source: ECB.

## 2 Financial developments

### 2.8 Effective exchange rates <sup>1)</sup>

(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	100.0	95.7	94.0	90.5	80.7	95.8	117.3	95.1
2019	98.2	93.3	92.9	88.7	79.0	93.1	115.5	92.4
2020	99.7	93.7	94.1	89.1	78.5	93.9	119.4	94.0
2020 Q2	98.8	93.1	93.2	88.5	81.7	94.0	118.1	93.3
Q3	101.2	94.9	95.3	90.0	78.7	94.4	121.7	95.6
Q4	101.3	94.9	95.3	90.1	75.6	94.0	122.3	95.7
2021 Q1	100.9	94.9	95.3	.	.	.	121.7	95.5
2020 Oct.	101.4	94.9	95.4	-	-	-	122.4	95.8
Nov.	100.7	94.4	94.7	-	-	-	121.6	95.2
Dec.	101.9	95.4	95.9	-	-	-	123.0	96.1
2021 Jan.	101.4	95.6	95.8	-	-	-	122.4	96.2
Feb.	100.8	94.8	95.1	-	-	-	121.5	95.3
Mar.	100.4	94.4	94.9	-	-	-	121.3	95.0
<i>Percentage change versus previous month</i>								
2021 Mar.	-0.3	-0.4	-0.2	-	-	-	-0.2	-0.4
<i>Percentage change versus previous year</i>								
2021 Mar.	1.5	1.4	1.6	-	-	-	2.9	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 Q2	7.808	7.578	27.058	7.458	351.582	118.410	4.503	0.887	4.8378	10.651	1.061	1.101
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
2020 Oct.	7.923	7.575	27.213	7.442	362.529	123.889	4.541	0.907	4.8747	10.397	1.074	1.178
Nov.	7.815	7.562	26.466	7.446	359.842	123.610	4.495	0.896	4.8704	10.231	1.079	1.184
Dec.	7.960	7.542	26.311	7.441	359.016	126.278	4.479	0.906	4.8703	10.174	1.081	1.217
2021 Jan.	7.873	7.565	26.141	7.439	359.194	126.308	4.533	0.893	4.8732	10.095	1.079	1.217
Feb.	7.814	7.573	25.876	7.437	358.151	127.493	4.497	0.873	4.8750	10.089	1.086	1.210
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
<i>Percentage change versus previous month</i>												
2021 Mar.	-0.9	0.1	1.2	0.0	2.1	1.5	2.3	-1.6	0.3	0.8	1.9	-1.6
<i>Percentage change versus previous year</i>												
2021 Mar.	-0.3	0.1	-1.5	-0.5	5.8	8.8	3.6	-4.0	1.2	-6.5	4.5	7.6

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 <sup>1)</sup>			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 Q1	27,543.9	27,617.6	-73.7	11,321.4	9,344.7	8,906.1	11,168.3	-98.6	6,548.6	7,104.6	866.3	15,535.9
Q2	28,197.7	28,206.3	-8.5	11,372.0	9,477.9	9,860.0	11,935.5	-71.0	6,131.8	6,792.9	905.0	15,289.1
Q3	28,109.8	28,049.0	60.8	11,175.1	9,326.8	9,998.3	12,030.1	-97.0	6,123.9	6,692.1	909.6	15,127.9
Q4	28,403.2	28,312.0	91.1	11,065.0	9,292.4	10,685.8	12,286.4	-86.2	5,858.8	6,733.2	879.8	14,846.5
Outstanding amounts as a percentage of GDP												
2020 Q4	250.8	250.0	0.8	97.7	82.1	94.4	108.5	-0.8	51.7	59.5	7.8	131.1
Transactions												
2020 Q1	576.4	573.2	3.2	-60.5	-66.3	-133.8	51.5	11.1	755.1	588.1	4.6	-
Q2	140.1	113.0	27.1	68.9	178.3	380.5	200.4	40.8	-353.3	-265.7	3.2	-
Q3	182.1	83.1	98.9	23.8	-0.7	96.2	74.7	-31.8	90.5	9.1	3.4	-
Q4	-7.2	-129.9	122.7	-119.2	3.8	342.5	-259.6	-19.2	-213.4	125.9	2.1	-
2020 Sep.	-31.3	-78.6	47.3	-45.7	-15.0	22.1	12.2	-7.8	-2.5	-75.7	2.6	-
Oct.	91.3	39.5	51.8	-7.1	-65.4	74.8	-11.3	2.4	18.2	116.1	2.9	-
Nov.	131.6	133.6	-2.0	6.9	122.0	100.7	-97.0	8.9	17.7	108.5	-2.6	-
Dec.	-230.1	-302.9	72.9	-119.0	-52.8	167.0	-151.3	-30.5	-249.3	-98.8	1.7	-
2021 Jan.	304.2	292.3	11.9	51.1	37.5	107.1	76.9	5.5	141.5	177.9	-0.9	-
Feb.	126.9	83.7	43.1	17.8	6.3	92.7	0.6	5.4	12.6	76.8	-1.6	-
12-month cumulated transactions												
2021 Feb.	731.5	401.8	329.7	-15.8	168.1	803.7	-21.5	-2.9	-63.1	255.2	9.7	-
12-month cumulated transactions as a percentage of GDP												
2021 Feb.	6.5	3.5	2.9	-0.1	1.5	7.1	-0.2	0.0	-0.6	2.3	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 <sup>1)</sup>		
	Total	Total	Private consumption	Government consumption	Gross fixed capital formation			Changes in inventories <sup>2)</sup>	Total	Exports <sup>1)</sup>	Imports <sup>1)</sup>	
					Total construction	Total machinery	Intellectual property products					
	1	2	3	4	5	6	7	8	9	10	11	12
Current prices (EUR billions)												
2018	11,588.2	11,120.2	6,222.7	2,369.1	2,431.4	1,178.2	746.0	500.7	97.0	468.0	5,575.9	5,107.9
2019	11,937.3	11,489.6	6,376.3	2,454.4	2,622.8	1,258.0	771.1	586.9	36.1	447.7	5,758.9	5,311.2
2020	11,322.8	10,872.1	5,896.8	2,555.2	2,437.3	1,208.5	679.0	542.7	-17.2	450.7	5,157.7	4,707.0
2020 Q1	2,912.7	2,819.7	1,538.1	627.9	645.9	310.2	174.8	159.1	7.8	93.0	1,388.8	1,295.7
Q2	2,599.3	2,519.4	1,343.9	630.2	541.6	273.0	142.1	124.7	3.8	79.9	1,108.1	1,028.2
Q3	2,899.8	2,763.2	1,529.6	646.1	616.2	309.7	179.0	125.6	-28.7	136.6	1,297.1	1,160.5
Q4	2,900.0	2,761.7	1,483.2	651.5	628.2	312.9	180.7	132.8	-1.2	138.3	1,357.4	1,219.1
as a percentage of GDP												
2020	100.0	96.0	52.1	22.6	21.5	10.7	6.0	4.8	-0.2	4.0	-	-
Chain-linked volumes (prices for the previous year)												
quarter-on-quarter percentage changes												
2020 Q1	-3.8	-3.4	-4.4	-0.2	-5.9	-2.7	-9.5	-7.5	-	-	-3.8	-2.9
Q2	-11.6	-11.1	-12.6	-2.2	-16.1	-12.3	-18.9	-20.7	-	-	-18.7	-18.1
Q3	12.5	10.3	14.2	4.7	13.8	13.7	25.8	0.6	-	-	16.7	11.8
Q4	-0.7	-0.7	-3.3	0.3	1.9	0.7	1.2	6.1	-	-	4.0	4.5
annual percentage changes												
2018	1.9	1.9	1.5	1.2	3.2	3.8	3.7	1.2	-	-	3.6	3.7
2019	1.3	1.9	1.3	1.8	5.7	3.4	2.2	16.4	-	-	2.5	3.9
2020	-6.6	-6.3	-8.0	1.2	-8.2	-5.5	-12.8	-8.2	-	-	-9.3	-9.0
2020 Q1	-3.3	-1.7	-3.9	1.2	0.8	-2.7	-10.2	26.9	-	-	-3.1	0.3
Q2	-14.6	-14.0	-16.1	-1.3	-20.8	-14.4	-27.3	-25.4	-	-	-21.4	-20.5
Q3	-4.1	-4.0	-4.5	2.5	-4.6	-3.5	-8.5	-1.7	-	-	-8.9	-9.1
Q4	-4.9	-5.8	-7.7	2.5	-8.4	-2.3	-6.6	-21.8	-	-	-5.1	-7.1
contributions to quarter-on-quarter percentage changes in GDP; percentage points												
2020 Q1	-3.8	-3.2	-2.4	0.0	-1.3	-0.3	-0.6	-0.4	0.5	-0.5	-	-
Q2	-11.6	-10.7	-6.7	-0.5	-3.6	-1.3	-1.1	-1.1	0.0	-0.8	-	-
Q3	12.5	10.1	7.5	1.1	2.9	1.4	1.4	0.0	-1.4	2.5	-	-
Q4	-0.7	-0.6	-1.8	0.1	0.4	0.1	0.1	0.3	0.6	0.0	-	-
contributions to annual percentage changes in GDP; percentage points												
2018	1.9	1.8	0.8	0.2	0.6	0.4	0.2	0.0	0.1	0.1	-	-
2019	1.3	1.8	0.7	0.4	1.2	0.4	0.1	0.7	-0.5	-0.5	-	-
2020	-6.6	-6.1	-4.2	0.3	-1.8	-0.6	-0.8	-0.4	-0.3	-0.5	-	-
2020 Q1	-3.3	-1.6	-2.1	0.3	0.2	-0.3	-0.7	1.1	0.0	-1.7	-	-
Q2	-14.6	-13.6	-8.6	-0.3	-4.7	-1.5	-1.8	-1.4	0.0	-1.1	-	-
Q3	-4.1	-3.8	-2.4	0.5	-1.0	-0.4	-0.5	-0.1	-1.0	-0.3	-	-
Q4	-4.9	-5.6	-4.1	0.5	-1.9	-0.2	-0.4	-1.2	-0.1	0.7	-	-

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	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
Current prices (EUR billions)												
2018	10,384.2	174.6	2,052.2	528.1	1,964.0	500.5	476.9	1,167.2	1,207.0	1,957.5	356.2	1,204.0
2019	10,695.4	178.8	2,064.2	570.0	2,027.9	530.7	481.5	1,204.8	1,252.7	2,020.0	364.9	1,241.9
2020	10,187.6	176.9	1,931.3	559.0	1,778.7	535.9	473.1	1,216.2	1,157.2	2,045.8	313.3	1,135.2
2020 Q1	2,620.5	44.5	498.6	141.3	478.9	133.1	121.4	302.0	306.1	508.2	86.3	292.2
Q2	2,341.0	45.0	427.4	125.6	379.5	127.6	115.5	296.2	262.1	492.8	69.4	258.3
Q3	2,607.0	43.9	493.4	144.5	469.3	137.1	118.2	306.5	292.2	520.1	81.9	292.8
Q4	2,604.8	43.7	512.5	146.9	449.6	136.5	117.6	307.0	297.1	519.5	74.4	295.2
as a percentage of value added												
2020	100.0	1.7	19.0	5.5	17.5	5.3	4.6	11.9	11.4	20.1	3.1	-
Chain-linked volumes (prices for the previous year)												
quarter-on-quarter percentage changes												
2020 Q1	-3.4	-2.1	-3.8	-3.5	-6.3	-1.3	-1.0	-1.1	-3.4	-2.1	-6.9	-6.8
Q2	-11.8	0.2	-15.0	-12.3	-21.3	-4.3	-2.2	-2.4	-15.1	-6.3	-23.8	-9.5
Q3	12.3	0.5	16.0	14.4	23.4	7.3	2.9	3.0	11.8	9.0	22.6	14.5
Q4	-0.7	0.4	3.1	0.7	-4.4	-0.7	-0.4	-0.4	1.0	-1.0	-12.1	-0.2
annual percentage changes												
2018	1.9	-0.2	1.6	2.4	1.8	6.4	0.9	1.3	3.7	1.0	0.9	1.6
2019	1.3	1.0	-0.9	3.0	2.0	4.7	1.3	1.5	1.7	1.0	1.3	1.6
2020	-6.5	-0.9	-7.6	-5.7	-13.2	0.3	-1.1	-0.8	-8.9	-2.4	-17.9	-7.1
2020 Q1	-2.9	-1.5	-4.9	-3.1	-5.9	2.0	-0.5	0.3	-2.8	-1.3	-6.5	-6.2
Q2	-14.6	-1.1	-18.9	-14.9	-25.9	-4.6	-3.1	-2.5	-17.7	-7.8	-29.0	-15.2
Q3	-4.2	-0.5	-5.8	-3.2	-8.9	2.2	-0.5	0.0	-8.2	0.4	-12.8	-3.5
Q4	-5.0	-0.9	-2.3	-2.6	-13.0	0.7	-0.7	-1.0	-7.4	-1.1	-23.5	-3.6
contributions to quarter-on-quarter percentage changes in value added; percentage points												
2020 Q1	-3.4	0.0	-0.7	-0.2	-1.2	-0.1	0.0	-0.1	-0.4	-0.4	-0.2	-
Q2	-11.8	0.0	-2.9	-0.7	-3.9	-0.2	-0.1	-0.3	-1.8	-1.2	-0.8	-
Q3	12.3	0.0	2.9	0.8	3.8	0.4	0.1	0.4	1.3	1.8	0.6	-
Q4	-0.7	0.0	0.6	0.0	-0.8	0.0	0.0	0.0	0.1	-0.2	-0.4	-
contributions to annual percentage changes in value added; percentage points												
2018	1.9	0.0	0.3	0.1	0.3	0.3	0.0	0.1	0.4	0.2	0.0	-
2019	1.3	0.0	-0.2	0.2	0.4	0.2	0.1	0.2	0.2	0.2	0.0	-
2020	-6.5	0.0	-1.5	-0.3	-2.5	0.0	-0.1	-0.1	-1.0	-0.4	-0.6	-
2020 Q1	-2.9	0.0	-1.0	-0.2	-1.1	0.1	0.0	0.0	-0.3	-0.3	-0.2	-
Q2	-14.6	0.0	-3.7	-0.8	-4.9	-0.2	-0.1	-0.3	-2.1	-1.5	-1.0	-
Q3	-4.2	0.0	-1.1	-0.2	-1.7	0.1	0.0	0.0	-1.0	0.1	-0.4	-
Q4	-5.0	0.0	-0.4	-0.1	-2.5	0.0	0.0	-0.1	-0.9	-0.2	-0.8	-

Sources: Eurostat and ECB calculations.

## 3 Economic activity

### 3.3 Employment <sup>1)</sup>

(quarterly data seasonally adjusted; annual data unadjusted)

	Total	By employment status		By economic activity									
		Employ- ees	Self- employed	Agricul- ture, forestry and fishing	Manufac- turing, energy and utilities	Con- struc- tion	Trade, transport, accom- modation and food services	Informa- tion and communica- tion	Finance and insur- ance	Real estate	Professional, business and support services	Public adminis- tration, edu- cation, health and social work	Arts, entertainment and other services
	1	2	3	4	5	6	7	8	9	10	11	12	13
Persons employed													
as a percentage of total persons employed													
2018	100.0	85.8	14.2	3.1	14.6	6.0	25.0	2.9	2.4	1.0	14.0	24.2	6.8
2019	100.0	86.0	14.0	3.0	14.5	6.0	25.0	2.9	2.4	1.0	14.0	24.3	6.7
2020	100.0	86.1	13.9	3.0	14.5	6.2	24.5	3.0	2.4	1.0	13.9	24.9	6.6
annual percentage changes													
2018	1.6	1.8	0.1	-0.4	1.5	2.7	1.5	3.9	-1.1	2.0	2.8	1.3	0.1
2019	1.2	1.4	0.0	-2.0	0.8	2.0	1.3	3.6	-0.4	1.5	1.3	1.5	0.6
2020	-1.6	-1.6	-2.0	-3.2	-1.9	0.4	-3.6	1.4	-0.7	-0.3	-2.4	0.7	-3.4
2020 Q1	0.4	0.7	-1.3	-3.4	-0.4	1.2	0.3	2.6	-0.3	-0.3	0.6	1.2	-0.3
Q2	-2.9	-3.0	-2.6	-3.9	-2.2	-0.9	-5.7	0.8	-1.1	-1.6	-4.6	0.2	-5.9
Q3	-2.1	-2.0	-2.3	-3.1	-2.7	0.8	-4.2	0.9	-0.9	0.1	-3.5	0.6	-3.7
Q4	-1.9	-1.9	-1.9	-2.4	-2.4	0.5	-4.7	1.2	-0.6	0.7	-2.3	0.8	-3.7
Hours worked													
as a percentage of total hours worked													
2018	100.0	81.1	18.9	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	13.9	21.8	6.1
2020	100.0	81.9	18.1	4.3	14.9	6.9	24.2	3.3	2.5	1.1	13.9	23.2	5.7
annual percentage changes													
2018	1.7	2.1	0.0	0.1	1.4	3.3	1.5	4.1	-0.9	2.7	3.2	1.4	0.5
2019	0.9	1.2	-0.4	-2.6	0.2	1.8	0.9	3.7	-0.2	1.4	1.1	1.3	0.4
2020	-7.7	-7.0	-10.6	-3.5	-7.5	-6.0	-13.6	-1.7	-3.2	-6.6	-7.7	-2.0	-13.3
2020 Q1	-3.9	-3.1	-7.2	-3.8	-4.5	-4.2	-5.7	0.9	-2.8	-4.4	-2.8	-1.7	-7.7
Q2	-16.8	-15.6	-22.2	-6.8	-16.2	-17.7	-27.1	-5.7	-6.6	-16.9	-16.9	-6.3	-27.9
Q3	-4.9	-4.7	-5.7	-2.0	-5.8	-1.0	-9.1	-2.0	-2.6	-3.3	-6.6	-0.2	-6.3
Q4	-6.4	-6.0	-8.4	-2.4	-5.6	-2.8	-13.6	-0.9	-2.2	-3.0	-5.7	-0.8	-12.1
Hours worked per person employed													
annual percentage changes													
2018	0.1	0.3	-0.1	0.6	-0.1	0.6	-0.1	0.2	0.2	0.7	0.4	0.1	0.3
2019	-0.3	-0.2	-0.4	-0.6	-0.6	-0.2	-0.4	0.1	0.2	-0.1	-0.2	-0.2	-0.1
2020	-6.2	-5.5	-8.8	-0.3	-5.7	-6.4	-10.4	-3.0	-2.5	-6.4	-5.4	-2.7	-10.2
2020 Q1	-4.3	-3.8	-6.0	-0.5	-4.2	-5.2	-6.0	-1.6	-2.6	-4.1	-3.4	-2.9	-7.4
Q2	-14.3	-13.0	-20.1	-2.9	-14.4	-16.9	-22.7	-6.5	-5.5	-15.6	-13.0	-6.5	-23.4
Q3	-2.8	-2.7	-3.4	1.2	-3.2	-1.8	-5.1	-2.9	-1.7	-3.4	-3.2	-0.8	-2.7
Q4	-4.6	-4.2	-6.7	0.0	-3.3	-3.3	-9.3	-2.0	-1.6	-3.7	-3.5	-1.6	-8.8

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 <sup>1)</sup>											Job vacancy rate <sup>3)</sup>
			Total		Long-term unemploy- ment, % of labour force <sup>2)</sup>	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			80.9		19.1		51.5		48.5		
2018	162.443	3.7	13.204	8.1	3.8	10.814	7.3	2.390	16.8	6.805	7.8	6.400	8.5	2.1
2019	163.198	3.5	12.215	7.5	3.3	9.984	6.7	2.231	15.6	6.266	7.2	5.949	7.9	2.3
2020	161.377	3.5	12.593	7.8	3.0	10.185	6.9	2.408	17.4	6.487	7.5	6.106	8.1	1.8
2020 Q1	162.759	3.4	12.000	7.4	3.0	9.730	6.6	2.270	15.7	6.131	7.0	5.869	7.8	1.9
Q2	159.216	3.6	12.056	7.6	2.5	9.744	6.7	2.312	17.3	6.313	7.4	5.743	7.8	1.6
Q3	161.621	3.6	13.412	8.3	3.1	10.785	7.3	2.627	18.8	6.827	7.9	6.586	8.7	1.7
Q4	161.911	3.5	12.903	8.0	3.2	10.482	7.1	2.422	17.6	6.676	7.7	6.228	8.3	1.9
2020 Sep.	-	-	14.251	8.7	-	11.698	7.8	2.553	18.1	7.167	8.2	7.084	9.3	-
Oct.	-	-	13.841	8.5	-	11.405	7.6	2.435	17.5	6.975	8.0	6.865	9.0	-
Nov.	-	-	13.471	8.3	-	11.083	7.4	2.388	17.3	6.811	7.8	6.660	8.8	-
Dec.	-	-	13.411	8.2	-	11.030	7.4	2.381	17.4	6.796	7.8	6.615	8.7	-
2021 Jan.	-	-	13.523	8.3	-	11.120	7.4	2.403	17.4	6.882	7.9	6.641	8.7	-
Feb.	-	-	13.571	8.3	-	11.177	7.5	2.394	17.3	6.903	7.9	6.668	8.8	-

Sources: Eurostat and ECB calculations.

1) Where annual and quarterly Labour Force Survey data have not yet been published, annual and quarterly data are derived as simple averages of the monthly data. 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 Q1 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 production	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							
	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	1.0	0.6	1.2	1.5	-1.4	1.7	2.8	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	0.9	3.7	0.8	1.8
2020	-8.7	-9.2	-7.4	-13.4	-4.8	-5.4	-5.6	-10.7	-1.0	3.6	-2.5	-14.4	-25.0
2020 Q2	-20.2	-21.2	-19.4	-28.1	-13.3	-10.5	-15.3	-26.7	-6.5	2.9	-10.7	-29.1	-50.8
Q3	-6.9	-7.3	-5.7	-12.0	-2.2	-4.4	-2.1	-7.6	2.4	2.5	3.3	-4.9	-6.9
Q4	-1.6	-1.7	1.5	-3.4	-2.9	-1.7	-0.8	-1.7	1.3	4.4	1.0	-13.8	-9.2
2021 Q1	.	.	.	.	.	.	.	.	.	.	.	.	3.4
2020 Oct.	-3.7	-4.3	-1.0	-8.3	-2.2	0.5	-1.9	-2.7	4.5	5.0	5.7	-9.0	-4.8
Nov.	-0.7	-0.4	1.5	-0.2	-2.7	-4.6	-0.5	-1.6	-1.6	2.4	-2.2	-18.2	-14.9
Dec.	-0.1	-0.2	4.5	-1.4	-3.9	-1.0	-0.2	-0.7	1.2	5.5	-0.1	-14.5	-8.0
2021 Jan.	0.1	-0.1	1.5	1.4	-3.7	0.6	-2.6	-2.0	-5.2	5.9	-11.3	-16.9	-18.8
Feb.	-1.6	-1.8	-0.1	-2.2	-3.7	-1.5	-5.8	1.9	-2.9	1.9	-5.5	-13.0	-20.8
Mar.	.	.	.	.	.	.	.	.	.	.	.	.	88.2
month-on-month percentage changes (s.a.)													
2020 Oct.	2.5	2.4	2.1	3.2	0.4	2.4	0.0	2.6	1.6	2.1	1.6	-3.7	3.0
Nov.	2.2	2.9	1.8	7.8	-1.3	-3.6	2.4	0.8	-5.3	-2.1	-7.1	-10.5	-7.2
Dec.	-0.1	-0.2	1.3	-1.0	-0.7	1.7	-1.4	0.2	2.0	2.0	1.4	4.1	10.4
2021 Jan.	0.8	0.7	0.0	1.2	0.1	0.3	0.8	1.8	-5.2	1.0	-9.9	-0.9	-22.5
Feb.	-1.0	-1.0	-0.7	-1.9	0.2	-1.2	-2.1	2.0	3.0	-1.1	6.8	3.7	-1.1
Mar.	.	.	.	.	.	.	.	.	.	.	.	.	0.2

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 confid- ence indicator	Service industries		Purchasing Managers' Index (PMI) for manu- facturing	Manu- facturing output	Business activity for services	Composite output
		Industrial confidence indicator	Capacity utilisation (%)				Services confidence indicator	Capacity utilisation (%)				
	1	2	3	4	5	6	7	8	9	10	11	12
1999-15	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	103.6	-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 Q2	72.0	-27.3	70.2	-18.5	-14.5	-26.4	-39.2	85.6	40.1	34.2	30.3	31.3
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	85.6	54.6	56.7	45.0	48.1
2021 Q1	95.3	-2.4	.	-13.7	-6.0	-16.6	-14.7	.	58.4	58.5	46.9	49.9
2020 Oct.	92.5	-9.3	76.3	-15.5	-8.0	-6.9	-12.0	86.2	54.8	58.4	46.9	50.0
Nov.	89.3	-10.2	-	-17.6	-9.0	-12.7	-17.0	-	53.8	55.3	41.7	45.3
Dec.	92.4	-6.8	-	-13.8	-8.0	-13.2	-17.1	-	55.2	56.3	46.4	49.1
2021 Jan.	91.5	-6.1	77.5	-15.5	-7.7	-18.5	-17.7	85.1	54.8	54.6	45.4	47.8
Feb.	93.4	-3.2	-	-14.8	-7.5	-19.1	-17.0	-	57.9	57.6	45.7	48.8
Mar.	100.9	2.0	-	-10.8	-2.7	-12.2	-9.3	-	62.5	63.3	49.6	53.2

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 <sup>2)</sup>	Housing wealth	Profit share <sup>3)</sup>	Saving ratio (net)	Debt ratio <sup>4)</sup>	Financial investment	Non-financial investment (gross)	Financing
	Percentage of gross disposable income (adjusted) <sup>1)</sup>		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
2017	12.3	93.7	1.6	2.3	5.4	4.3	4.2	35.0	7.0	77.0	4.1	9.4	2.6
2018	12.5	93.3	1.8	2.0	6.0	2.6	4.7	35.4	5.8	77.5	2.1	7.1	1.6
2019	12.9	93.8	1.8	2.6	4.8	5.7	3.8	34.5	5.7	77.3	2.4	3.3	1.9
2020 Q1	13.8	93.7	0.4	2.6	-1.6	3.1	4.5	33.6	4.7	78.4	2.4	0.2	2.1
Q2	16.6	95.0	-3.2	3.3	-15.3	4.2	4.5	31.2	4.1	82.9	2.6	-27.4	1.8
Q3	17.8	95.7	1.2	3.5	-3.4	3.8	4.6	30.7	3.5	83.3	3.0	-13.6	2.0
Q4	19.6	96.3	0.7	4.0	0.2	5.4	5.1	30.4	3.3	84.2	3.5	-12.9	2.1

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 <sup>1)</sup>	
	Total			Goods		Services		Primary income		Secondary income		Credit	Debit
	Credit	Debit	Balance	Credit	Debit	Credit	Debit	Credit	Debit	Credit	Debit		
	1	2	3	4	5	6	7	8	9	10	11	12	13
2020 Q1	1,063.5	1,009.7	53.7	586.5	497.1	241.7	251.5	205.4	194.0	30.0	67.1	12.2	11.0
Q2	870.4	841.4	29.0	466.0	412.2	192.5	182.6	185.2	176.5	26.6	70.1	11.2	15.8
Q3	952.1	884.3	67.8	548.2	455.6	192.5	186.4	182.9	179.7	28.5	62.6	11.5	10.4
Q4	1,013.7	922.8	90.9	581.8	478.7	220.1	194.6	182.8	171.8	29.1	77.6	23.5	24.4
2020 Sep.	326.6	297.3	29.2	187.5	154.9	68.2	62.8	61.4	58.3	9.5	21.3	3.6	3.9
Oct.	334.0	306.0	28.1	191.1	156.5	73.2	65.6	59.9	60.5	9.8	23.4	4.4	5.1
Nov.	339.1	313.7	25.4	194.8	162.1	73.3	64.7	61.1	57.2	9.8	29.7	4.3	6.0
Dec.	340.6	303.2	37.4	195.9	160.1	73.5	64.4	61.7	54.1	9.5	24.6	14.8	13.3
2021 Jan.	345.1	310.4	34.7	196.9	159.0	77.9	65.5	60.6	61.5	9.7	24.4	3.4	3.4
Feb.	345.1	319.2	25.9	199.2	166.7	78.0	66.6	57.8	60.0	10.1	25.9	3.9	3.4
12-month cumulated transactions													
2021 Feb.	3,854.9	3,596.2	258.7	2,174.9	1,825.0	834.2	775.8	732.2	714.7	113.6	280.7	58.0	61.8
12-month cumulated transactions as a percentage of GDP													
2021 Feb.	34.1	31.8	2.3	19.2	16.1	7.4	6.9	6.5	6.3	1.0	2.5	0.5	0.5

1) The capital account is not seasonally adjusted.

### 3.9 Euro area external trade in goods <sup>1)</sup>, values and volumes by product group <sup>2)</sup>

(seasonally adjusted, unless otherwise indicated)

	Total (n.s.a.)		Exports (f.o.b.)					Imports (c.i.f.)					
	Exports	Imports	Total			Memo item:	Total				Memo items:		
			Intermediate goods	Capital goods	Consumption goods	Manu- facturing	Intermediate goods	Capital goods	Consumption goods	Manu- facturing	Oil		
	1	2	3	4	5	6	7	8	9	10	11	12	13
Values (EUR billions; annual percentage changes for columns 1 and 2)													
2020 Q1	-1.6	-4.2	578.1	274.6	116.0	176.7	482.1	507.4	282.6	82.9	134.6	371.5	56.1
Q2	-23.6	-21.7	447.7	217.9	87.6	133.0	369.3	422.5	220.3	77.4	119.1	319.6	26.1
Q3	-8.7	-11.5	531.4	248.2	108.4	164.7	447.7	469.1	243.1	84.3	133.9	359.1	34.2
Q4	-2.9	-5.9	566.6	264.3	113.8	177.7	477.7	489.9	259.7	85.8	134.7	377.5	35.3
2020 Sep.	-3.4	-6.8	182.4	85.7	37.4	55.8	154.5	159.6	83.1	28.2	45.7	122.3	11.0
Oct.	-9.0	-11.7	185.9	85.9	37.7	58.9	157.2	160.6	85.3	27.2	44.8	122.2	11.0
Nov.	-1.1	-4.1	189.2	88.9	37.2	59.8	160.2	164.9	87.0	29.4	45.5	127.7	11.2
Dec.	2.5	-1.2	191.4	89.5	38.9	59.0	160.2	164.4	87.4	29.2	44.4	127.6	13.0
2021 Jan.	-8.9	-14.2	190.9	91.8	37.4	57.7	155.5	162.2	88.2	29.0	41.7	118.7	13.7
Feb.	-5.4	-2.7	186.1	.	.	.	156.6	167.7	.	.	.	124.6	.
Volume indices (2000 = 100; annual percentage changes for columns 1 and 2)													
2020 Q1	-4.1	-4.8	103.7	106.5	100.4	102.9	102.6	104.0	103.4	100.4	109.2	105.2	98.1
Q2	-23.6	-16.4	81.7	86.5	76.1	78.9	79.1	92.2	90.1	94.6	97.1	91.1	81.8
Q3	-7.2	-6.9	98.5	100.0	95.4	99.2	97.8	101.7	97.1	105.5	110.5	104.0	80.9
Q4	-1.5	-1.1	104.0	105.5	99.2	106.1	103.4	104.9	101.8	106.7	110.7	108.6	84.5
2020 Aug.	-10.8	-9.6	98.0	99.5	95.0	98.2	96.9	100.6	95.7	103.9	110.2	103.8	81.1
Sep.	-1.1	-0.9	101.9	104.5	98.7	101.2	101.9	104.4	100.0	107.6	113.3	106.9	81.8
Oct.	-7.6	-6.8	103.0	103.1	99.6	106.3	102.8	104.4	101.6	103.4	110.9	106.3	83.6
Nov.	0.2	0.7	104.4	107.1	97.1	107.0	104.1	106.1	103.0	108.9	112.1	110.3	83.6
Dec.	3.8	3.5	104.7	106.2	101.0	105.2	103.2	104.4	100.9	107.7	109.1	109.2	86.4
2021 Jan.	-8.0	-11.0	103.1	106.6	97.8	102.0	99.4	101.3	98.9	106.3	102.8	101.3	83.3

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 <sup>1)</sup>

(annual percentage changes, unless otherwise indicated)

	Total					Total (s.a.; percentage change vis-à-vis previous period) <sup>2)</sup>						Administered prices	
	Index: 2015 = 100	Total	Goods	Services	Total	Processed food	Unprocessed food	Non-energy industrial goods	Energy (n.s.a.)	Services			
		Total excluding food and energy									Total HICP excluding administered prices	Administered prices	
	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 Q2	105.5	0.2	0.9	-0.6	1.2	-0.4	0.8	3.5	-0.1	-7.9	0.3	0.2	0.5
Q3	105.1	0.0	0.6	-0.7	0.7	0.0	-0.2	-1.9	0.4	0.9	-0.1	-0.1	0.4
Q4	105.0	-0.3	0.2	-0.9	0.5	0.0	0.1	0.5	-0.7	0.5	0.3	-0.4	0.5
2021 Q1	105.8	1.1	1.2	0.8	1.3	1.3	0.5	-0.4	1.3	6.5	0.6	1.0	1.4
2020 Oct.	105.2	-0.3	0.2	-0.8	0.4	0.1	0.1	0.4	0.0	0.4	0.1	-0.4	0.6
Nov.	104.8	-0.3	0.2	-1.0	0.6	0.1	0.1	0.7	-0.1	-0.1	0.2	-0.4	0.5
Dec.	105.2	-0.3	0.2	-1.0	0.7	0.1	0.0	-1.6	-0.1	1.6	0.2	-0.4	0.5
2021 Jan.	105.3	0.9	1.4	0.5	1.4	1.1	0.4	0.2	2.0	3.8	0.3	0.8	1.3
Feb.	105.5	0.9	1.1	0.7	1.2	0.0	0.2	0.3	-0.6	0.9	0.1	0.8	1.5
Mar.	106.5	1.3	0.9	1.3	1.3	0.1	0.0	0.0	-0.6	2.6	0.1	1.3	1.4
	Goods						Services						
	Food (including alcoholic beverages and tobacco)			Industrial goods			Housing		Transport	Communi-cation	Recreation and personal care	Miscel-laneous	
	Total	Processed food	Unpro-cessed 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 Q2	3.4	2.3	6.7	-2.7	0.2	-10.3	1.4	1.3	1.1	0.1	1.2	1.5	
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	
2020 Oct.	2.0	1.3	4.3	-2.3	-0.1	-8.2	1.2	1.2	-0.9	-1.8	0.4	1.2	
Nov.	1.9	1.2	4.2	-2.5	-0.3	-8.3	1.2	1.2	-0.6	-1.3	0.5	1.3	
Dec.	1.3	1.1	2.1	-2.3	-0.5	-6.9	1.2	1.2	-0.3	-1.4	0.7	1.3	
2021 Jan.	1.5	1.3	2.0	-0.1	1.5	-4.2	1.2	1.1	1.0	-0.3	1.8	1.5	
Feb.	1.3	1.3	1.5	0.3	1.0	-1.7	1.3	1.2	0.8	-0.3	1.2	1.5	
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	

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>).

## 4 Prices and costs

### 4.2 Industry, construction and property prices

(annual percentage changes, unless otherwise indicated)

	Industrial producer prices excluding construction <sup>1)</sup>										Con- struction <sup>2)</sup>	Residential property prices <sup>3)</sup>	Experimental indicator of commercial property prices <sup>3)</sup>
	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	5.2	2.6
2020 Q1	103.7	-1.7	0.0	0.4	-1.4	1.1	2.3	3.3	0.6	-7.4	1.5	5.0	3.8
Q2	100.2	-4.5	-3.0	-0.5	-2.7	1.0	1.1	1.5	0.6	-15.5	0.8	5.0	5.1
Q3	101.4	-2.7	-2.0	-0.3	-1.8	0.8	0.5	0.3	0.6	-9.3	0.8	5.1	1.6
Q4	102.6	-1.7	-1.7	0.0	-0.6	0.8	0.0	-0.5	0.7	-6.7	1.6	5.8	-0.1
2020 Sep.	101.7	-2.3	-2.2	-0.3	-1.6	0.8	0.4	0.1	0.6	-8.3	-	-	-
Oct.	102.1	-2.0	-1.9	-0.2	-1.3	0.8	0.3	0.0	0.7	-7.7	-	-	-
Nov.	102.4	-2.0	-1.7	0.0	-0.6	0.8	0.1	-0.4	0.7	-7.6	-	-	-
Dec.	103.3	-1.1	-1.3	0.1	-0.1	0.8	-0.3	-1.0	0.6	-4.8	-	-	-
2021 Jan.	105.1	0.4	-0.6	0.7	1.0	0.8	-0.4	-1.0	0.7	-0.6	-	-	-
Feb.	105.6	1.5	0.9	1.2	2.4	0.9	-0.2	-0.9	0.6	2.3	-	-	-

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](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 <sup>1)</sup>	Imports <sup>1)</sup>		Import-weighted <sup>2)</sup>			Use-weighted <sup>2)</sup>		
			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	103.4	1.4	1.7	1.5	1.7	1.9	1.5	2.2	60.4	-0.9	-6.4	4.3	-0.6	-6.2	5.7
2019	105.2	1.7	1.4	1.1	1.8	2.1	0.7	0.1	57.2	2.0	4.4	-0.1	3.0	8.3	-2.3
2020	106.8	1.5	1.1	0.5	2.8	1.2	-1.3	-2.6	37.0	1.5	3.4	-0.3	-0.9	-0.2	-1.8
2020 Q2	107.3	2.3	1.3	0.7	4.7	1.2	-2.0	-4.4	28.5	-2.4	3.9	-8.1	-4.4	0.0	-9.2
Q3	106.4	0.9	0.6	0.1	2.1	0.7	-1.8	-2.8	36.5	1.9	1.5	2.4	-0.7	-2.2	1.0
Q4	107.2	1.2	1.0	0.0	2.1	1.5	-1.4	-2.2	37.4	4.1	0.1	7.9	-0.5	-6.0	6.2
2021 Q1	-	-	-	-	-	-	-	-	50.4	18.3	9.2	27.3	14.1	5.2	24.6
2020 Oct.	-	-	-	-	-	-	-	-	34.4	2.5	2.1	2.9	-0.4	-1.9	1.4
Nov.	-	-	-	-	-	-	-	-	36.5	3.3	-0.1	6.6	-2.1	-7.9	5.0
Dec.	-	-	-	-	-	-	-	-	41.0	6.3	-1.5	14.0	1.0	-8.0	12.0
2021 Jan.	-	-	-	-	-	-	-	-	44.8	10.5	3.7	17.0	5.8	-1.9	14.8
Feb.	-	-	-	-	-	-	-	-	51.2	16.8	8.0	25.5	12.7	4.1	22.9
Mar.	-	-	-	-	-	-	-	-	54.8	28.4	16.4	40.4	24.4	14.0	36.9

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

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

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

## 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 Q2	-6.9	-3.6	-7.4	-11.6	11.0	44.2	48.1	46.1	43.3
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
2020 Oct.	0.5	3.2	-2.1	-7.0	9.2	52.9	53.1	50.5	48.7
Nov.	0.2	1.4	-4.0	-8.2	6.9	55.9	51.5	51.6	47.7
Dec.	4.1	3.3	-2.0	-8.3	4.7	61.4	53.1	52.6	48.4
2021 Jan.	4.8	2.8	-3.1	-6.0	5.3	68.3	53.2	52.2	47.3
Feb.	9.8	3.9	-3.2	-5.6	7.2	73.9	53.2	56.5	48.1
Mar.	17.6	8.2	0.9	0.1	11.8	79.7	55.6	60.9	50.5

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 <sup>1)</sup>
			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	2.6	2.1	2.0
2019	106.7	2.4	2.6	1.8	2.3	2.7	2.2
2020	110.1	3.1	3.7	1.4	2.8	3.8	1.8
2020 Q1	103.3	3.8	3.9	3.3	3.3	4.8	2.0
Q2	115.5	4.1	4.9	1.2	4.0	4.1	1.7
Q3	104.9	1.5	2.2	-0.3	1.3	2.2	1.7
Q4	116.6	3.1	3.5	1.6	2.6	4.1	2.0

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](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	1.0	1.8	2.2	1.8	-0.1	0.3	4.4	1.9	2.4	2.4
2019	105.3	1.9	-1.1	3.3	1.0	1.4	0.7	0.5	2.5	1.0	2.6	1.9
2020	110.2	4.6	-1.8	3.3	4.5	6.2	1.4	0.4	0.5	6.6	5.7	15.6
2020 Q1	109.0	4.4	-0.9	4.2	2.5	5.2	2.5	-0.1	1.7	4.9	5.1	6.6
Q2	114.0	8.6	-3.3	11.4	7.5	12.1	3.5	1.7	-4.6	9.5	10.5	22.1
Q3	108.5	2.8	-1.7	1.4	5.2	3.6	-1.1	-0.7	2.1	6.2	2.8	11.5
Q4	110.0	3.9	-1.0	-0.9	4.3	6.0	1.6	0.7	2.9	6.6	5.3	25.3
Compensation per employee												
2018	105.3	2.2	1.2	1.9	1.9	2.1	2.3	2.4	3.7	2.8	2.1	3.2
2019	107.3	1.9	1.8	1.6	2.0	2.1	1.8	2.2	2.5	1.4	2.1	2.6
2020	106.6	-0.6	0.5	-2.6	-1.8	-4.4	0.3	-0.1	0.0	-0.6	2.6	-1.8
2020 Q1	107.2	0.5	1.0	-0.5	-1.9	-1.3	2.0	-0.3	2.3	1.3	2.4	0.0
Q2	102.2	-4.5	-0.4	-7.7	-7.7	-11.9	-2.1	-0.3	-5.5	-5.6	1.7	-7.8
Q3	108.4	0.6	0.9	-1.8	1.0	-1.4	0.2	-0.2	2.0	1.0	2.6	1.0
Q4	108.7	0.7	0.5	-0.8	1.1	-3.2	1.1	0.6	1.1	1.0	3.4	-0.5
Labour productivity per person employed												
2018	101.8	0.3	0.2	0.2	-0.3	0.3	2.4	2.1	-0.7	0.9	-0.3	0.8
2019	101.9	0.1	3.0	-1.7	1.0	0.7	1.0	1.7	0.0	0.3	-0.5	0.8
2020	96.8	-5.0	2.3	-5.8	-6.0	-10.0	-1.0	-0.4	-0.5	-6.7	-3.0	-15.0
2020 Q1	98.4	-3.7	1.9	-4.5	-4.2	-6.2	-0.5	-0.2	0.6	-3.4	-2.5	-6.2
Q2	89.6	-12.1	3.0	-17.1	-14.2	-21.4	-5.4	-2.0	-0.9	-13.8	-7.9	-24.5
Q3	99.9	-2.1	2.7	-3.2	-3.9	-4.9	1.3	0.4	-0.1	-4.9	-0.2	-9.5
Q4	98.8	-3.0	1.4	0.1	-3.1	-8.7	-0.5	-0.1	-1.7	-5.3	-1.8	-20.6
Compensation per hour worked												
2018	105.0	1.9	0.8	2.0	0.9	1.9	2.0	2.3	2.8	2.1	2.0	2.7
2019	107.2	2.2	2.0	2.1	2.2	2.3	1.7	1.8	2.8	1.6	2.3	2.9
2020	112.8	5.2	2.5	2.9	3.9	6.1	3.0	2.0	5.2	4.6	4.9	7.2
2020 Q1	110.8	4.5	3.9	3.5	3.4	4.0	3.3	1.9	5.7	4.4	5.1	7.2
Q2	117.3	9.8	4.0	7.0	8.8	12.6	4.0	4.7	6.4	7.1	7.7	14.7
Q3	111.2	3.4	0.8	1.2	2.3	4.3	3.2	1.1	4.8	4.4	3.0	3.2
Q4	113.4	5.1	2.0	2.4	3.6	6.5	2.6	2.0	5.6	4.3	4.8	6.4
Hourly labour productivity												
2018	102.0	0.2	-0.4	0.3	-0.9	0.3	2.2	1.9	-1.4	0.5	-0.4	0.4
2019	102.4	0.4	3.7	-1.1	1.2	1.0	0.9	1.5	0.1	0.6	-0.3	0.9
2020	103.6	1.2	2.6	-0.1	0.4	0.4	2.0	2.2	6.3	-1.3	-0.4	-5.3
2020 Q1	102.7	0.6	2.4	-0.4	1.1	-0.2	1.1	2.4	4.9	0.0	0.3	1.3
Q2	105.1	2.7	6.1	-3.2	3.4	1.7	1.1	3.7	17.4	-1.0	-1.5	-1.5
Q3	103.3	0.8	1.5	0.0	-2.2	0.3	4.3	2.1	3.4	-1.7	0.6	-6.9
Q4	104.3	1.6	1.5	3.5	0.2	0.6	1.5	1.6	2.1	-1.8	-0.3	-13.0

Sources: Eurostat and ECB calculations.

## 5 Money and credit

### 5.1 Monetary aggregates <sup>1)</sup>

(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	8,898.0	10,257.2	1,039.9	2,447.2	3,487.1	13,744.3	100.6	646.9	33.3	780.9	14,525.2
2020 Q1	1,265.3	8,079.2	9,344.5	1,075.1	2,368.6	3,443.7	12,788.2	109.9	536.1	48.1	694.1	13,482.3
Q2	1,302.8	8,425.2	9,728.0	1,075.3	2,400.8	3,476.1	13,204.1	95.2	579.7	20.1	695.1	13,899.2
Q3	1,330.5	8,617.0	9,947.6	1,076.9	2,423.3	3,500.3	13,447.8	100.3	610.3	7.1	717.7	14,165.5
Q4	1,359.2	8,898.0	10,257.2	1,039.9	2,447.2	3,487.1	13,744.3	100.6	646.9	33.3	780.9	14,525.2
2020 Sep.	1,330.5	8,617.0	9,947.6	1,076.9	2,423.3	3,500.3	13,447.8	100.3	610.3	7.1	717.7	14,165.5
Oct.	1,338.1	8,683.6	10,021.7	1,060.5	2,431.8	3,492.3	13,514.0	96.3	611.4	18.4	726.2	14,240.2
Nov.	1,351.2	8,781.7	10,132.9	1,029.5	2,446.3	3,475.8	13,608.7	101.2	611.9	19.7	732.8	14,341.5
Dec.	1,359.2	8,898.0	10,257.2	1,039.9	2,447.2	3,487.1	13,744.3	100.6	646.9	33.3	780.9	14,525.2
2021 Jan.	1,380.4	8,995.8	10,376.2	1,003.7	2,456.8	3,460.5	13,836.7	111.5	629.6	29.6	770.7	14,607.4
Feb. <sup>(p)</sup>	1,390.3	9,066.9	10,457.2	985.5	2,472.2	3,457.7	13,914.9	108.8	608.7	35.2	752.7	14,667.6
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	1.7	664.9	4.1	-2.1	-56.6	-54.7	610.3
2020	137.7	1,255.4	1,393.1	-27.2	85.6	58.4	1,451.5	19.2	123.9	13.9	157.0	1,608.5
2020 Q1	43.8	347.7	391.5	0.0	6.1	6.1	397.6	30.9	9.2	26.8	66.8	464.4
Q2	37.5	343.0	380.5	2.1	32.6	34.8	415.3	-14.1	43.7	-28.8	0.8	416.0
Q3	27.7	269.0	296.8	5.6	22.9	28.5	325.3	5.9	29.9	-11.7	24.2	349.4
Q4	28.7	295.7	324.3	-35.0	24.0	-11.0	313.3	-3.5	41.2	27.6	65.3	378.6
2020 Sep.	8.9	84.4	93.3	28.0	8.7	36.7	129.9	8.3	19.1	-3.9	23.4	153.4
Oct.	7.6	65.4	73.0	-17.8	8.5	-9.3	63.7	-4.0	1.1	11.7	8.8	72.5
Nov.	13.1	108.3	121.3	-29.3	14.5	-14.7	106.6	0.8	0.5	1.8	3.1	109.8
Dec.	8.0	121.9	130.0	12.1	1.0	13.1	143.0	-0.3	39.6	14.1	53.3	196.3
2021 Jan.	21.2	94.8	116.0	-37.2	11.3	-25.8	90.2	10.6	-17.3	-3.4	-10.0	80.1
Feb. <sup>(p)</sup>	9.9	70.5	80.4	-18.4	15.4	-3.0	77.4	-2.9	-20.9	6.2	-17.6	59.8
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	75.1	25.0	12.4
2020 Q1	7.1	11.0	10.4	-3.8	1.8	0.0	7.4	47.4	2.2	52.0	9.7	7.5
Q2	9.7	13.2	12.7	-3.3	2.6	0.7	9.3	28.2	11.0	-45.8	9.4	9.3
Q3	10.5	14.4	13.8	-2.1	3.0	1.4	10.3	36.7	12.6	-66.7	12.7	10.4
Q4	11.3	16.3	15.6	-2.5	3.6	1.7	11.7	24.2	23.5	75.1	25.0	12.4
2020 Sep.	10.5	14.4	13.8	-2.1	3.0	1.4	10.3	36.7	12.6	-66.7	12.7	10.4
Oct.	10.7	14.3	13.8	-2.7	3.2	1.4	10.3	23.4	15.2	-25.8	14.4	10.5
Nov.	11.1	15.1	14.5	-4.4	3.8	1.2	10.8	31.9	14.7	-15.7	15.5	11.0
Dec.	11.3	16.3	15.6	-2.5	3.6	1.7	11.7	24.2	23.5	75.1	25.0	12.4
2021 Jan.	12.2	17.1	16.5	-5.4	4.0	1.1	12.2	40.3	16.2	4.8	18.5	12.5
Feb. <sup>(p)</sup>	12.3	17.0	16.4	-7.0	4.6	1.0	12.2	24.6	11.7	34.3	14.2	12.3

Source: ECB.

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

## 5 Money and credit

### 5.2 Deposits in M3 <sup>1)</sup>

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

	Non-financial corporations <sup>2)</sup>					Households <sup>3)</sup>					Financial corporations other than MFIs and ICPFs <sup>2)</sup>	Insurance corporations and pension funds	Other general government <sup>4)</sup>
	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	2,334.2	1,901.4	277.3	147.9	7.6	6,645.3	4,035.6	517.8	2,090.6	1.3	996.0	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	2,985.0	2,528.4	310.3	143.1	3.3	7,647.5	4,954.6	437.5	2,254.6	0.8	1,106.8	237.8	508.7
2020 Q1	2,610.9	2,191.4	264.0	147.9	7.6	7,173.7	4,535.9	472.2	2,165.0	0.6	1,151.4	224.3	472.6
Q2	2,869.9	2,396.8	318.7	148.3	6.2	7,349.4	4,683.7	462.8	2,202.0	0.9	1,084.7	226.5	466.0
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	2,985.0	2,528.4	310.3	143.1	3.3	7,647.5	4,954.6	437.5	2,254.6	0.8	1,106.8	237.8	508.7
2020 Sep.	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
Oct.	2,968.9	2,488.2	328.5	147.0	5.1	7,534.8	4,856.9	443.3	2,233.5	1.1	1,052.2	236.9	479.5
Nov.	2,966.9	2,502.2	312.7	146.4	5.5	7,595.0	4,903.6	441.0	2,249.2	1.1	1,074.6	238.9	483.5
Dec.	2,985.0	2,528.4	310.3	143.1	3.3	7,647.5	4,954.6	437.5	2,254.6	0.8	1,106.8	237.8	508.7
2021 Jan.	3,008.3	2,556.9	302.4	142.2	6.9	7,707.4	5,009.5	430.7	2,266.3	0.8	1,114.8	229.7	507.6
Feb. <sup>(p)</sup>	3,027.9	2,585.5	293.3	143.2	5.9	7,760.8	5,051.6	426.6	2,281.7	1.0	1,119.8	227.0	497.9
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	394.6	360.2	-26.2	61.0	-0.5	26.9	11.0	29.7
2020	513.7	467.7	55.8	-6.9	-3.0	611.5	561.1	-53.8	104.3	-0.1	144.6	22.1	41.0
2020 Q1	126.0	120.8	6.4	-2.2	1.0	131.3	138.1	-20.6	14.0	-0.2	116.1	6.8	4.5
Q2	261.2	206.7	55.4	0.4	-1.3	177.6	149.0	-9.1	37.4	0.3	-71.4	2.7	-6.5
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	31.8	51.6	-12.6	-3.7	-3.5	158.3	139.2	-8.5	27.9	-0.2	53.9	-2.1	39.2
2020 Sep.	20.0	18.5	-1.0	0.0	2.5	51.0	46.4	-4.5	9.1	-0.1	50.0	6.6	1.8
Oct.	9.1	6.8	4.0	0.1	-1.8	43.6	40.1	-3.2	6.6	0.1	-7.0	-3.5	9.8
Nov.	1.3	16.4	-15.1	-0.5	0.5	61.2	47.4	-2.1	15.8	0.1	25.5	2.2	4.2
Dec.	21.4	28.4	-1.5	-3.3	-2.2	53.5	51.6	-3.2	5.4	-0.3	35.4	-0.8	25.2
2021 Jan.	22.8	27.2	-7.1	-1.0	3.6	60.5	54.1	-7.0	13.4	0.1	5.7	-8.4	-1.1
Feb. <sup>(p)</sup>	19.3	28.4	-9.1	1.0	-1.0	53.2	41.9	-4.2	15.4	0.2	4.5	-2.7	-9.7
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	10.2	8.8
2020 Q1	9.7	12.1	-2.2	-1.0	24.5	6.1	9.8	-8.5	2.4	-56.9	16.9	5.7	2.7
Q2	19.2	20.7	21.1	-1.8	-13.8	7.4	11.3	-9.4	3.6	-48.0	5.0	3.7	0.6
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	10.2	8.8
2020 Sep.	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
Oct.	20.5	21.6	26.9	-3.0	-28.5	7.9	11.9	-11.4	4.4	-34.0	7.4	7.0	2.7
Nov.	20.3	21.5	24.6	-3.1	2.4	8.3	12.2	-11.1	4.9	-32.9	11.0	6.7	3.2
Dec.	20.7	22.6	21.6	-4.6	-46.9	8.7	12.8	-10.9	4.9	-6.5	14.5	10.2	8.8
2021 Jan.	21.8	24.0	19.0	-5.3	71.9	9.2	13.3	-11.4	5.3	-6.3	15.6	5.4	8.3
Feb. <sup>(p)</sup>	21.2	23.7	16.0	-4.4	14.4	9.5	13.4	-11.4	5.9	15.4	14.6	5.0	4.8

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 <sup>1)</sup>

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

	Credit to general government			Credit to other euro area residents								
	Total	Loans	Debt securities	Total	Loans					Debt securities	Equity and non-money market fund investment fund shares	
					Total	To non-financial corporations <sup>3)</sup>	To households <sup>4)</sup>	To financial corporations other than MFIs and ICPFs <sup>3)</sup>	To insurance corporations and pension funds			
												Adjusted loans <sup>2)</sup>
	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	4,405.0	5,741.9	849.8	126.4	1,519.9	773.6
2019	4,660.7	986.8	3,662.2	13,865.4	11,452.3	11,839.5	4,475.7	5,931.1	893.5	152.0	1,562.5	850.6
2020	5,925.0	996.1	4,916.9	14,341.1	11,927.1	12,300.8	4,723.5	6,119.9	916.1	167.7	1,548.8	865.2
2020 Q1	4,794.6	1,007.2	3,775.6	14,055.9	11,692.0	12,067.7	4,605.0	5,965.4	960.7	160.9	1,564.9	799.0
Q2	5,279.2	1,005.9	4,261.6	14,244.9	11,781.7	12,163.6	4,718.4	5,995.4	912.6	155.2	1,646.7	816.6
Q3	5,737.1	1,003.0	4,722.3	14,200.5	11,868.4	12,226.5	4,731.8	6,066.1	912.6	157.9	1,517.9	814.2
Q4	5,925.0	996.1	4,916.9	14,341.1	11,927.1	12,300.8	4,723.5	6,119.9	916.1	167.7	1,548.8	865.2
2020 Sep.	5,737.1	1,003.0	4,722.3	14,200.5	11,868.4	12,226.5	4,731.8	6,066.1	912.6	157.9	1,517.9	814.2
Oct.	5,803.5	1,003.7	4,788.0	14,232.9	11,900.3	12,260.0	4,738.4	6,092.6	910.3	158.9	1,528.8	803.9
Nov.	5,850.1	1,006.4	4,831.6	14,288.5	11,926.8	12,285.8	4,735.9	6,106.6	927.5	156.7	1,541.0	820.7
Dec.	5,925.0	996.1	4,916.9	14,341.1	11,927.1	12,300.8	4,723.5	6,119.9	916.1	167.7	1,548.8	865.2
2021 Jan.	5,948.7	988.1	4,959.1	14,355.3	11,944.7	12,309.5	4,720.4	6,135.5	940.2	148.6	1,547.5	863.0
Feb. <sup>(p)</sup>	5,986.9	993.6	4,991.7	14,392.5	11,971.2	12,334.7	4,729.8	6,153.2	941.7	146.5	1,549.9	871.3
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	425.4	115.6	200.4	41.2	21.1	30.5	43.4
2020	1,046.4	13.3	1,033.0	737.2	540.0	560.8	288.8	209.1	26.2	15.8	169.6	27.7
2020 Q1	145.4	19.8	125.7	242.5	253.4	249.2	135.7	40.5	68.4	8.8	20.2	-31.1
Q2	465.6	-1.9	467.4	185.1	97.6	104.8	120.7	35.8	-53.3	-5.6	76.3	11.2
Q3	258.8	-2.8	261.6	154.4	105.1	86.8	29.0	72.1	1.1	2.9	44.3	5.0
Q4	176.6	-1.9	178.3	155.2	83.9	120.0	3.5	60.7	10.0	9.7	28.8	42.5
2020 Sep.	96.1	2.3	93.8	30.4	25.8	21.4	-11.7	29.9	6.0	1.6	5.3	-0.8
Oct.	54.9	1.0	53.8	36.8	32.4	37.1	7.7	26.7	-2.6	0.7	11.8	-7.5
Nov.	42.8	2.9	39.6	47.4	34.6	40.2	2.1	15.1	19.6	-2.1	6.7	6.1
Dec.	78.9	-5.8	84.9	71.0	16.8	42.7	-6.2	18.9	-6.9	11.0	10.3	43.9
2021 Jan.	33.1	-8.3	51.8	16.4	18.4	11.0	-2.2	16.3	23.5	-19.2	-0.7	-1.3
Feb. <sup>(p)</sup>	63.2	5.8	57.3	36.1	28.5	28.7	10.7	19.1	0.8	-2.1	1.6	6.0
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	22.2	1.3	27.8	5.4	4.7	4.7	6.5	3.5	2.9	10.4	11.4	3.3
2020 Q1	1.6	0.4	2.0	4.3	4.8	5.1	5.0	3.3	11.3	20.7	3.0	-0.6
Q2	13.5	0.4	17.2	4.8	4.7	4.9	6.5	3.2	3.9	17.1	7.2	0.7
Q3	18.9	0.0	24.1	4.9	4.7	4.7	6.5	3.5	2.7	8.2	9.2	0.1
Q4	22.2	1.3	27.8	5.4	4.7	4.7	6.5	3.5	2.9	10.4	11.4	3.3
2020 Sep.	18.9	0.0	24.1	4.9	4.7	4.7	6.5	3.5	2.7	8.2	9.2	0.1
Oct.	20.3	0.0	25.9	4.9	4.7	4.7	6.3	3.6	1.7	14.0	10.4	-1.3
Nov.	21.2	0.4	27.0	5.0	4.8	4.8	6.3	3.6	4.3	7.3	10.3	-1.3
Dec.	22.2	1.3	27.8	5.4	4.7	4.7	6.5	3.5	2.9	10.4	11.4	3.3
2021 Jan.	22.9	-0.1	29.4	5.1	4.4	4.5	6.2	3.3	3.7	-2.6	11.9	3.0
Feb. <sup>(p)</sup>	23.9	0.5	30.5	5.1	4.4	4.5	6.3	3.2	3.6	-2.5	10.7	3.8

Source: ECB.

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

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

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

4) Including non-profit institutions serving households.

## 5 Money and credit

### 5.4 MFI loans to euro area non-financial corporations and households <sup>1)</sup>

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

	Non-financial corporations <sup>2)</sup>					Households <sup>3)</sup>				
	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 <sup>4)</sup>					Adjusted loans <sup>4)</sup>				
	1	2	3	4	5	6	7	8	9	10
Outstanding amounts										
2018	4,405.0	4,489.1	991.4	844.2	2,569.4	5,741.9	6,024.9	682.6	4,356.4	702.9
2019	4,475.7	4,577.8	967.4	878.0	2,630.3	5,931.1	6,224.0	720.1	4,524.6	686.4
2020	4,723.5	4,841.3	898.8	1,012.2	2,812.5	6,119.9	6,389.8	700.2	4,725.1	694.6
2020 Q1	4,605.0	4,706.2	1,003.2	917.4	2,684.5	5,965.4	6,254.1	714.9	4,565.8	684.7
Q2	4,718.4	4,829.8	957.8	993.4	2,767.2	5,995.4	6,276.5	701.0	4,603.8	690.6
Q3	4,731.8	4,845.5	930.0	1,014.7	2,787.1	6,066.1	6,334.1	702.4	4,667.6	696.1
Q4	4,723.5	4,841.3	898.8	1,012.2	2,812.5	6,119.9	6,389.8	700.2	4,725.1	694.6
2020 Sep.	4,731.8	4,845.5	930.0	1,014.7	2,787.1	6,066.1	6,334.1	702.4	4,667.6	696.1
Oct.	4,738.4	4,845.5	916.4	1,011.3	2,810.7	6,092.6	6,359.5	704.4	4,690.3	697.9
Nov.	4,735.9	4,842.3	911.8	1,004.9	2,819.3	6,106.6	6,376.2	701.7	4,708.6	696.4
Dec.	4,723.5	4,841.3	898.8	1,012.2	2,812.5	6,119.9	6,389.8	700.2	4,725.1	694.6
2021 Jan.	4,720.4	4,836.3	888.4	1,006.1	2,826.0	6,135.5	6,402.4	696.7	4,745.3	693.5
Feb. <sup>(p)</sup>	4,729.8	4,846.9	893.1	1,002.1	2,834.6	6,153.2	6,420.9	698.1	4,761.3	693.8
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	143.9	-13.2	43.6	85.3	200.4	217.2	40.9	168.6	-9.2
2020	288.8	325.2	-54.0	139.1	203.7	209.1	194.7	-11.9	210.7	10.3
2020 Q1	135.7	137.9	33.2	44.0	58.5	40.5	38.3	-3.7	45.0	-0.8
Q2	120.7	131.0	-39.1	80.4	79.4	35.8	29.1	-12.2	39.2	8.8
Q3	29.0	33.9	-22.5	15.9	35.6	72.1	59.7	5.8	65.1	1.3
Q4	3.5	22.4	-25.5	-1.2	30.2	60.7	67.6	-1.8	61.4	1.1
2020 Sep.	-11.7	-5.4	-12.9	0.8	0.4	29.9	22.1	-0.5	30.1	0.2
Oct.	7.7	2.2	-13.2	-2.9	23.8	26.7	26.4	2.3	22.7	1.7
Nov.	2.1	7.3	-2.7	-5.2	10.0	15.1	17.7	-3.7	19.3	-0.6
Dec.	-6.2	12.9	-9.6	6.9	-3.5	18.9	23.6	-0.4	19.4	-0.1
2021 Jan.	-2.2	-3.1	-10.4	-6.0	14.2	16.3	13.7	-2.7	20.2	-1.2
Feb. <sup>(p)</sup>	10.7	12.9	5.4	-3.6	8.9	19.1	20.3	2.0	16.2	0.9
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	-1.7	4.7	1.5
2020 Q1	5.0	5.6	2.9	9.1	4.4	3.3	3.4	3.8	4.0	-1.2
Q2	6.5	7.2	-1.2	16.1	6.2	3.2	3.1	0.3	4.1	0.4
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	-1.7	4.7	1.5
2020 Sep.	6.5	7.1	-3.9	17.3	6.9	3.5	3.1	-0.1	4.5	1.0
Oct.	6.3	6.9	-5.2	16.3	7.2	3.6	3.2	-0.1	4.6	1.5
Nov.	6.3	6.9	-4.6	15.1	7.4	3.6	3.1	-1.1	4.7	1.3
Dec.	6.5	7.1	-5.6	15.9	7.8	3.5	3.1	-1.7	4.7	1.5
2021 Jan.	6.2	6.9	-6.0	14.9	7.7	3.3	3.0	-2.6	4.5	1.3
Feb. <sup>(p)</sup>	6.3	7.1	-4.7	13.9	7.8	3.2	3.0	-2.8	4.5	1.3

Source: ECB.

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

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

3) Including non-profit institutions serving households.

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

## 5 Money and credit

### 5.5 Counterparts to M3 other than credit to euro area residents <sup>1)</sup>

(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 <sup>2)</sup>	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 counterparties <sup>3)</sup>	Reverse repos to central counterparties <sup>3)</sup>
	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	2,906.2	1,455.7	452.3	178.9	187.2
2020	749.0	6,965.7	1,915.5	42.1	1,994.9	3,013.3	1,449.5	524.4	130.1	139.2
2020 Q1	409.5	7,036.5	1,937.1	47.2	2,119.9	2,932.3	1,562.5	515.4	183.7	196.5
Q2	673.3	7,042.9	1,934.5	44.1	2,080.4	2,983.8	1,562.5	528.7	159.2	174.3
Q3	806.2	7,039.7	1,934.3	43.0	2,059.7	3,002.7	1,574.2	499.6	139.9	147.3
Q4	749.0	6,965.7	1,915.5	42.1	1,994.9	3,013.3	1,449.5	524.4	130.1	139.2
2020 Sep.	806.2	7,039.7	1,934.3	43.0	2,059.7	3,002.7	1,574.2	499.6	139.9	147.3
Oct.	864.3	7,038.0	1,933.5	42.7	2,036.5	3,025.3	1,578.9	527.3	148.7	154.3
Nov.	753.6	6,973.2	1,938.1	42.4	2,012.4	2,980.3	1,469.4	460.4	148.2	147.1
Dec.	749.0	6,965.7	1,915.5	42.1	1,994.9	3,013.3	1,449.5	524.4	130.1	139.2
2021 Jan.	678.5	6,925.3	1,911.6	42.0	1,970.4	3,001.2	1,473.9	433.2	147.4	146.7
Feb. <sup>(p)</sup>	684.9	6,878.6	1,905.2	41.5	1,971.7	2,960.2	1,448.2	403.5	145.4	145.7
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	107.8	-5.2	-3.3	27.3	89.0	309.4	19.4	-2.7	-2.5
2020	321.6	-34.3	-15.8	-8.0	-99.3	88.8	-28.6	140.8	-48.8	-48.0
2020 Q1	45.6	-45.4	-6.8	-2.9	-47.5	11.8	67.6	9.0	4.7	9.3
Q2	264.0	-0.3	-0.7	-3.1	-13.9	17.5	-28.9	58.0	-24.5	-22.2
Q3	69.2	10.8	-3.2	-1.1	6.1	9.0	27.4	-11.2	-19.3	-27.1
Q4	-57.1	0.6	-5.1	-0.9	-44.0	50.6	-94.6	84.9	-9.8	-8.1
2020 Sep.	-13.5	10.9	-6.0	-0.1	19.6	-2.6	23.0	1.3	-30.5	-30.3
Oct.	58.2	-11.7	0.1	-0.3	-24.3	12.9	1.6	25.8	8.8	7.1
Nov.	-110.7	-0.8	13.4	-0.2	-13.8	-0.2	-55.0	-36.9	-0.5	-7.3
Dec.	-4.7	13.1	-18.6	-0.4	-5.9	38.0	-41.2	96.1	-18.1	-7.9
2021 Jan.	-70.6	-38.1	-5.4	-0.1	-30.6	-2.0	22.2	-100.2	17.3	7.5
Feb. <sup>(p)</sup>	6.4	3.2	-6.5	-0.5	-1.9	12.1	10.4	-40.3	-2.0	-1.0
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 Q1	11.7	0.3	-0.1	-11.1	-2.6	2.9	-	-	-0.3	0.6
Q2	81.0	-0.4	-1.3	-19.6	-3.3	2.6	-	-	-10.5	-8.8
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
2020 Sep.	91.8	-0.4	-0.6	-19.4	-3.1	2.1	-	-	-24.1	-25.6
Oct.	108.5	-0.5	-0.7	-17.5	-3.6	2.2	-	-	-32.8	-34.6
Nov.	85.3	-0.7	-0.1	-17.1	-4.3	1.8	-	-	-30.0	-34.6
Dec.	88.5	-0.5	-0.8	-15.9	-4.6	3.0	-	-	-27.3	-25.7
2021 Jan.	65.0	-0.9	-1.0	-14.0	-6.1	3.0	-	-	-13.9	-19.5
Feb. <sup>(p)</sup>	52.7	-0.9	-1.0	-13.9	-6.0	3.1	-	-	-18.3	-23.8

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
2016	-1.5	-1.7	0.0	0.2	0.1	0.6
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
2019 Q4	-0.6	.	.	.	.	1.0
2020 Q1	-1.1	.	.	.	.	0.5
Q2	-3.8	.	.	.	.	-2.2
Q3	-5.0	.	.	.	.	-3.4

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

### 6.2 Revenue and expenditure

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

	Revenue						Expenditure						
	Total	Current revenue				Capital revenue	Total	Current expenditure					Capital expenditure
		Direct taxes	Indirect taxes	Net social contributions				Compensation of employees	Intermediate consumption	Interest	Social benefits		
	1	2	3	4	5	6	7	8	9	10	11	12	13
2016	46.3	45.8	12.6	13.0	15.3	0.5	47.7	44.2	10.0	5.4	2.1	22.7	3.6
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	46.0	12.9	13.1	15.1	0.5	47.1	43.3	9.9	5.3	1.6	22.5	3.8
2019 Q4	46.4	46.0	12.9	13.1	15.1	0.5	47.0	43.3	9.9	5.3	1.6	22.5	3.8
2020 Q1	46.5	46.1	13.0	13.0	15.1	0.5	47.7	43.8	10.0	5.4	1.6	22.8	3.8
Q2	46.8	46.3	13.0	12.9	15.4	0.5	50.5	46.6	10.4	5.7	1.6	24.1	4.0
Q3	46.8	46.3	13.0	12.9	15.5	0.5	51.8	47.7	10.6	5.8	1.6	24.8	4.2

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

### 6.3 Government debt-to-GDP ratio

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

	Total	Financial instrument			Holder			Original maturity		Residual maturity			Currency	
		Currency and deposits	Loans	Debt securities	Resident creditors	Non-resident creditors	MFIs	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
2016	90.1	3.3	15.7	71.0	47.5	30.8	42.6	9.4	80.7	17.9	29.9	42.3	87.9	2.2
2017	87.7	3.2	14.6	70.0	48.2	32.1	39.5	8.6	79.0	16.5	29.0	42.3	85.8	1.9
2018	85.8	3.1	13.8	68.8	48.0	32.4	37.8	8.1	77.7	16.1	28.4	41.3	84.2	1.6
2019	84.0	3.0	13.1	67.9	45.4	30.6	38.6	7.7	76.3	15.7	27.9	40.4	82.6	1.4
2019 Q4	84.0	3.0	13.1	67.9	.	.	.	.	.	.	.	.	.	.
2020 Q1	86.2	3.1	13.4	69.8	.	.	.	.	.	.	.	.	.	.
Q2	95.0	3.2	14.3	77.5	.	.	.	.	.	.	.	.	.	.
Q3	97.3	3.2	14.1	80.1	.	.	.	.	.	.	.	.	.	.

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

## 6 Fiscal developments

### 6.4 Annual change in the government debt-to-GDP ratio and underlying factors <sup>1)</sup>

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

	Change in debt-to-GDP ratio <sup>2)</sup>	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
2016	-0.8	-0.6	0.2	0.3	0.3	-0.1	0.0	0.1	0.0	-0.1	-0.4	1.6
2017	-2.4	-1.0	-0.1	0.4	0.5	0.0	-0.2	0.1	-0.1	-0.4	-1.3	0.9
2018	-1.9	-1.4	0.4	0.5	0.4	-0.1	0.0	0.2	0.0	-0.1	-1.0	0.8
2019	-1.7	-1.0	0.1	0.3	0.0	0.0	0.1	0.2	-0.2	0.0	-0.9	0.9
2019 Q4	-1.7	-1.0	0.1	0.3	0.0	0.0	0.1	0.2	-0.2	0.0	-0.9	0.9
2020 Q1	-0.1	-0.5	0.4	0.7	0.5	0.0	0.0	0.1	-0.2	0.0	0.0	1.8
Q2	8.9	2.2	3.4	3.0	2.8	0.2	-0.1	0.2	-0.3	0.6	3.3	7.4
Q3	11.5	3.4	3.2	3.3	2.9	0.3	-0.1	0.2	-0.3	0.2	4.9	8.5

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 <sup>1)</sup>

(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 <sup>2)</sup>					Average residual maturity in years <sup>3)</sup>	Average nominal yields <sup>4)</sup>						
	Total	Principal		Interest			Outstanding amounts					Transactions	
		Maturities of up to 3 months	Maturities of up to 3 months	Total	Floating rate		Zero coupon	Fixed rate	Issuance	Redemption			
											Maturities of up to 1 year		
	1	2	3	4	5	6	7	8	9	10	11	12	13
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	13.7	4.2	1.4	0.3	7.6	1.9	1.1	-0.2	2.2	2.3	0.0	0.8
2019 Q4	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 Q1	12.9	11.5	4.3	1.4	0.4	7.5	2.1	1.2	-0.2	2.4	2.0	0.1	1.0
Q2	15.4	14.0	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
2020 Oct.	15.7	14.3	4.2	1.4	0.3	7.6	1.9	1.1	-0.2	2.2	2.2	0.0	0.8
Nov.	15.4	14.0	3.9	1.4	0.3	7.7	1.9	1.1	-0.2	2.2	2.1	0.0	0.8
Dec.	15.0	13.7	4.2	1.4	0.3	7.6	1.9	1.1	-0.2	2.2	2.3	0.0	0.8
2021 Jan.	15.3	14.0	5.0	1.4	0.3	7.7	1.8	1.1	-0.2	2.2	2.3	0.0	0.7
Feb.	15.4	14.0	5.2	1.4	0.4	7.8	1.8	1.1	-0.2	2.2	2.3	0.0	0.6
Mar.	15.6	14.2	5.4	1.4	0.4	7.8	1.8	1.1	-0.2	2.1	2.3	0.0	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 (+)										
2016	-2.4	1.2	-0.4	-0.7	0.5	-4.3	-3.6	-2.4	0.3	
2017	-0.7	1.4	-0.7	-0.3	0.7	-3.0	-3.0	-2.4	1.9	
2018	-0.8	1.8	-0.5	0.1	1.0	-2.5	-2.3	-2.2	-3.5	
2019	-1.9	1.5	0.1	0.5	1.5	-2.9	-3.0	-1.6	1.5	
2019 Q4	-1.9	1.5	0.1	0.5	1.5	-2.9	-3.0	-1.6	1.5	
2020 Q1	-2.6	1.1	-0.9	0.1	1.1	-3.4	-3.7	-2.3	2.1	
Q2	-6.0	-1.4	-2.9	-1.9	-1.8	-6.9	-5.9	-4.8	-2.2	
Q3	-7.0	-2.9	-3.5	-3.6	-4.6	-8.1	-6.1	-6.7	-4.4	
Government debt										
2016	105.0	69.3	9.9	74.1	180.8	99.2	98.0	134.8	103.1	
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	98.1	134.4	99.2	
2019	98.1	59.6	8.4	57.4	180.5	95.5	98.1	134.7	94.0	
2019 Q4	98.1	59.6	8.4	57.4	180.5	95.5	98.1	134.7	94.0	
2020 Q1	103.4	61.0	8.9	58.9	180.7	99.0	101.3	137.6	96.2	
Q2	114.1	67.4	18.5	62.7	191.4	110.2	114.0	149.3	113.3	
Q3	113.2	70.0	18.5	62.0	199.9	114.1	116.5	154.2	119.5	
	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Austria	Portugal	Slovenia	Slovakia	Finland
	10	11	12	13	14	15	16	17	18	19
Government deficit (-)/surplus (+)										
2016	0.2	0.2	1.9	0.9	0.0	-1.5	-1.9	-1.9	-2.6	-1.7
2017	-0.8	0.5	1.3	3.2	1.3	-0.8	-3.0	-0.1	-0.9	-0.7
2018	-0.8	0.6	3.1	2.0	1.4	0.2	-0.3	0.7	-1.0	-0.9
2019	-0.6	0.3	2.4	0.5	1.7	0.7	0.1	0.5	-1.4	-1.0
2019 Q4	-0.6	0.3	2.4	0.5	1.7	0.7	0.1	0.5	-1.4	-1.0
2020 Q1	-0.7	-0.2	1.3	-1.5	1.5	0.4	-0.1	-0.8	-1.9	-1.2
Q2	-1.8	-2.4	-2.2	-5.1	-1.6	-3.4	-1.9	-4.8	-3.5	-3.3
Q3	-3.4	-4.3	-3.6	-8.0	-3.1	-5.5	-4.0	-5.4	-4.7	-4.5
Government debt										
2016	40.4	39.7	20.1	54.5	61.9	82.8	131.5	78.5	52.4	63.2
2017	39.0	39.1	22.3	48.8	56.9	78.5	126.1	74.1	51.7	61.3
2018	37.1	33.7	21.0	45.2	52.4	74.0	121.5	70.3	49.9	59.6
2019	36.9	35.9	22.0	42.6	48.7	70.5	117.2	65.6	48.5	59.3
2019 Q4	36.9	35.9	22.0	42.4	48.7	70.5	117.2	65.6	48.5	59.3
2020 Q1	37.1	33.0	22.2	43.9	49.5	73.1	119.5	69.0	49.7	64.3
Q2	42.9	41.4	23.9	51.0	55.2	82.5	126.0	78.3	60.3	68.6
Q3	44.6	45.9	26.1	53.7	55.2	79.1	130.8	78.5	60.8	66.9

Source: Eurostat.

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