



EUROPEAN CENTRAL BANK

EUROSYSTEM

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# Update on economic, financial and monetary developments

## Summary

The euro area economy is continuing to recover and the labour market is improving further, helped by ample policy support. But growth is likely to remain subdued in the first quarter of 2022, as the current pandemic wave is still weighing on economic activity. Shortages of materials, equipment and labour continue to hold back output in some industries. High energy costs are hurting incomes of euro area households and earnings of firms and are likely to dampen spending. However, the economy is affected less and less by each wave of the pandemic and the factors restraining production and consumption should gradually ease, allowing the economy to pick up again strongly in the course of the year.

Inflation has risen sharply in recent months and further surprised to the upside in January. This is primarily being driven by higher energy costs that are pushing up prices of goods and services across many sectors, as well as by higher food prices. Inflation is likely to remain elevated for longer than previously expected, but to decline in the course of this year.

The Governing Council therefore confirmed the decisions taken at its monetary policy meeting last December. Accordingly, the Governing Council will continue reducing the pace of its asset purchases step by step over the coming quarters, and will end net purchases under the pandemic emergency purchase programme (PEPP) at the end of March. In view of the current uncertainty, the Governing Council needs more than ever to maintain flexibility and optionality in the conduct of monetary policy. The Governing Council stands ready to adjust all of its instruments, as appropriate, to ensure that inflation stabilises at the ECB's 2% target over the medium term.

## Economic activity

Global economic activity remained resilient in the fourth quarter of last year. Survey data point to robust economic growth towards the end of 2021, although growth in trade continued to be subdued. Supply chain bottlenecks showed tentative signs of easing. However, the emergence of the Omicron variant of the coronavirus (COVID-19) and the potential for pandemic-related employee absences could result in further supply chain disruptions and pose risks to global economic activity in the near term. Global inflation continued to rise, reflecting higher energy prices and a broadening of price pressures across sectors. Global inflationary pressures are expected to ease over the course of 2022, as it is anticipated that energy prices will moderate.

Euro area economic growth weakened to 0.3%, quarter on quarter, in the final quarter of last year. Nevertheless, output reached its pre-pandemic level at the end of 2021. Economic activity and demand will likely remain muted in the early part of this year for several reasons. First, pandemic containment measures are affecting consumer services, especially in the travel, tourism, hospitality and entertainment sectors. Although infection rates are still very high, the impact of the pandemic on economic life is now proving less damaging. Second, high energy costs are reducing the purchasing power of households and the earnings of businesses, which constrains consumption and investment. And, third, shortages of equipment, materials and labour in some sectors continue to hamper the production of manufactured goods, delay construction and hold back the recovery in parts of the services sector. There are signs that these bottlenecks may be starting to ease, but they will still persist for some time.

Looking beyond the near term, growth should rebound strongly in the euro area over the course of 2022, driven by robust domestic demand. As the labour market is improving further, with more people having jobs and fewer in job retention schemes, households should enjoy higher income and spend more. The global recovery and the ongoing fiscal and monetary policy support also contribute to this positive outlook. Targeted and productivity-enhancing fiscal measures and structural reforms, attuned to the conditions in different euro area countries, remain key to complement monetary policy effectively.

## Inflation

Inflation in the euro area increased to 5.1% in January 2022, from 5.0% in December 2021. It is likely to remain high in the near term. Energy prices continue to be the main reason for the elevated rate of inflation. Their direct impact accounted for over half of headline inflation in January and energy costs are also pushing up prices of goods and services across many sectors. Food prices have also increased, owing to seasonal factors, elevated transportation costs and the higher cost of fertilisers. In addition, price rises have become more widespread, with the prices of a large number of goods and services having increased markedly. Most measures of underlying inflation have risen over recent months, although the role of temporary pandemic factors means that the persistence of these increases remains uncertain. Market-based indicators suggest a moderation in energy price dynamics in the course of 2022 and price pressures stemming from global supply bottlenecks should also subside.

Labour market conditions are improving further, although wage growth remains muted overall. Over time, the return of the economy to full capacity should support faster growth in wages. Market-based measures of longer-term inflation expectations have remained broadly stable at rates just below 2% since the Governing Council's previous monetary policy meeting in December. The latest survey-based measures stand at around 2%. These factors will also contribute further to underlying inflation and will help headline inflation to settle durably at the ECB's 2% target.

## Risk assessment

The Governing Council continues to see the risks to the euro area economic outlook as broadly balanced over the medium term. The economy could perform more strongly than expected if households become more confident and save less than expected. By contrast, although uncertainties related to the pandemic have abated somewhat, geopolitical tensions have increased. Furthermore, persistently high costs of energy could exert a stronger than expected drag on consumption and investment. The pace at which supply bottlenecks are resolved is a further risk to the outlook for growth and inflation. Compared with the Governing Council's expectations in December, risks to the inflation outlook are tilted to the upside, particularly in the near term. If price pressures feed through into higher than anticipated wage rises or the economy returns more quickly to full capacity, inflation could turn out to be higher.

## Financial and monetary conditions

Market interest rates have increased since the December 2021 Governing Council meeting. However, bank funding costs have so far remained contained. Bank lending rates for firms and households continue to stand at historically low levels and financing conditions for the economy remain favourable. Lending to firms has picked up across all maturities. Robust demand for mortgages is sustaining lending to households. Banks are now as profitable as they were before the pandemic and their balance sheets remain solid.

According to the latest euro area bank lending survey, loan demand by firms increased strongly in the last quarter of 2021. This was driven by both higher working capital needs – stemming from supply bottlenecks – and increased financing of longer-term investment. In addition, banks continue to hold an overall benign view of credit risks, mainly because of their positive assessment of the economic outlook.

## Monetary policy decisions

Against this background, at its monetary policy meeting in February, the Governing Council therefore confirmed the decisions taken at its previous meeting last December.

In the first quarter of 2022 the Governing Council is conducting net asset purchases under the PEPP at a lower pace than in the previous quarter. It will discontinue net asset purchases under the PEPP at the end of March 2022.

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

The pandemic has shown that, under stressed conditions, flexibility in the design and conduct of asset purchases has helped to counter the impaired transmission of monetary policy and made the Governing Council's efforts to achieve its goal more effective. Within the Governing Council's mandate, under stressed conditions, flexibility will remain an element of monetary policy whenever threats to monetary policy transmission jeopardise the attainment of price stability. In particular, in the event of renewed market fragmentation related to the pandemic, PEPP reinvestments can be adjusted flexibly across time, asset classes and jurisdictions at any time. This could include purchasing bonds issued by the Hellenic Republic over and above rollovers of redemptions in order to avoid an interruption of purchases in that jurisdiction, which could impair the transmission of monetary policy to the Greek economy while it is still recovering from the fallout from the pandemic. Net purchases under the PEPP could also be resumed, if necessary, to counter negative shocks related to the pandemic.

In line with the step-by-step reduction in asset purchases decided on in December 2021 and to ensure that the monetary policy stance remains consistent with inflation stabilising at the Governing Council's target over the medium term, monthly net purchases under the asset purchase programme (APP) will amount to €40 billion in the second quarter of 2022 and €30 billion in the third quarter. From October onwards, the Governing Council will maintain net asset purchases under the APP at a monthly pace of €20 billion for as long as necessary to reinforce the accommodative impact of its policy rates. The Governing Council expects net purchases 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.

The Governing Council will continue to monitor bank funding conditions and ensure that the maturing of operations under the third series of targeted longer-term refinancing operations (TLTRO III) does not hamper the smooth transmission of its monetary policy. The Governing Council will also regularly assess how targeted lending operations are contributing to its monetary policy stance. As announced, it expects the special conditions applicable under TLTRO III to end in June this year. The Governing Council will also assess the appropriate calibration of its two-tier system for reserve remuneration so that the negative interest rate policy does not limit banks' intermediation capacity in an environment of ample excess liquidity.

The Governing Council also confirmed its other measures to support the ECB's price stability mandate, namely the level of the key ECB interest rates and the forward guidance on the future path of policy rates. This is crucial for maintaining the appropriate degree of accommodation to stabilise inflation at the ECB's 2% inflation target over the medium term.

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

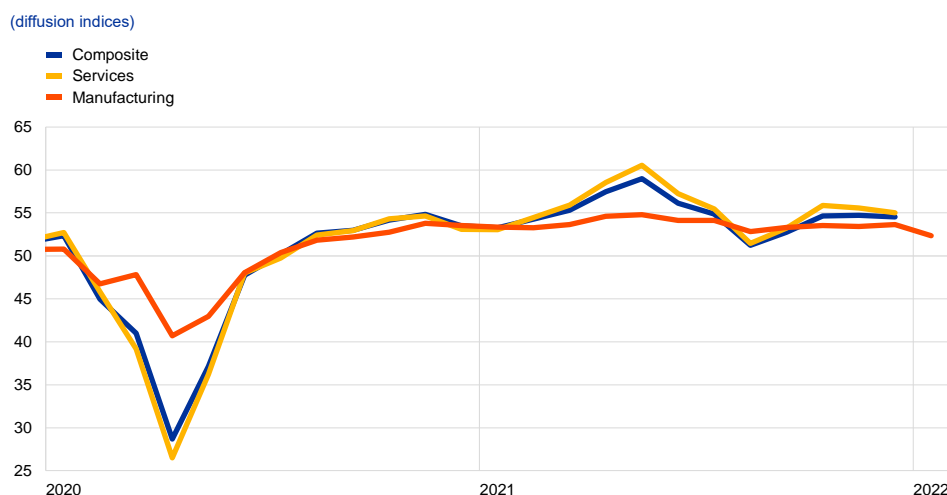
## External environment

*Global economic activity remained resilient in the fourth quarter of last year. Survey data point to robust economic growth towards the end of 2021, although growth in trade continued to be subdued. Supply chain bottlenecks showed tentative signs of easing. However, the emergence of the Omicron variant and potential pandemic-related staff absences pose risks to further supply chain disruptions and global economic activity in the near term. Global inflation continued to rise, reflecting higher energy prices and a broadening of price pressures across sectors. Global inflationary pressures are expected to ease over the course of 2022, as it is anticipated that energy prices will moderate.*

**Global economic growth remained robust in the fourth quarter of 2021.** The global composite output Purchasing Managers' Index (PMI) – excluding the euro area – remained stable and above its long-term average in the fourth quarter of 2021, reflecting steady demand (Chart 1). Nevertheless, the outbreak of the Omicron variant and its higher transmissibility began to weigh in December on the service sector in key economies, including the United Kingdom. With coronavirus (COVID-19) containment measures becoming significantly more stringent across many countries around the turn of the year, a temporary slowdown in economic activity is expected for the first quarter of 2022, as already signalled by a weakening in the manufacturing PMI for January.

**Chart 1**

Global output PMI (excluding the euro area)



Sources: Markit and ECB staff calculations.

Note: The latest observations are for December 2021 (composite and services indices) and January 2022 for the manufacturing index.

### **Global supply bottlenecks show tentative signs of easing amid increased uncertainty due to pandemic developments.**

Global supplier delivery times improved in November and December. At the same time, some of the improvements reversed in January, and supplier delivery times remain near the extreme values observed during the global lockdown in the second quarter of 2020. Shipping costs along certain major trade routes are falling, and global car production recovered somewhat in the fourth quarter of 2021. Nevertheless, the onset of the highly



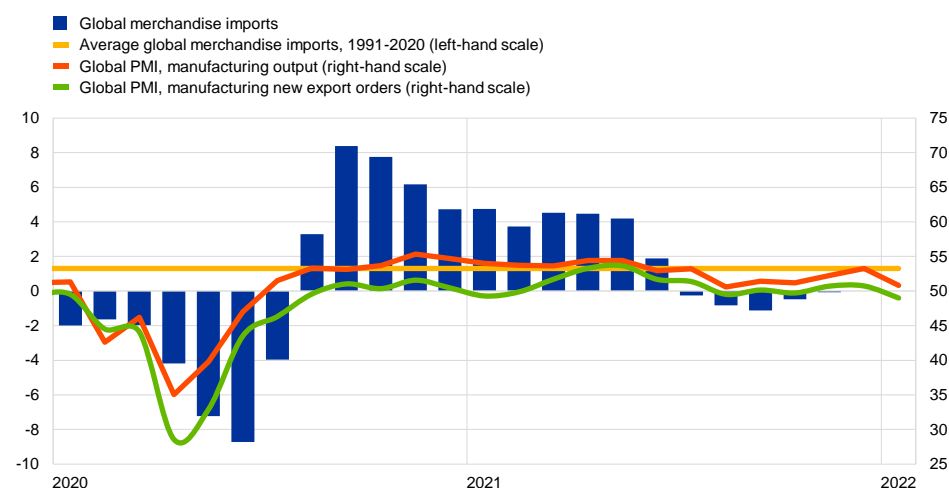
infectious Omicron variant, and the related prospect of coronavirus-related staff absentee rates amid already tight labour conditions, implies a risk that supply constraints could re-intensify in the near term.

**World trade growth remains subdued.** While month-on-month growth in global (excluding the euro area) merchandise import volumes increased in November, the growth momentum in global trade remains weak. Meanwhile, the global PMI for manufacturing new export orders (excluding the euro area) again fell into contractionary territory in January 2022, pointing to subdued growth in global trade at the beginning of 2022 (Chart 2).

## 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 November 2021 for global merchandise imports and January 2022 for the PMIs.

**Global price pressures remained elevated in November.** Annual consumer price inflation in the member countries of the Organisation for Economic Co-operation and Development (OECD) increased to 5.8% in November. While energy price inflation reached the highest level observed over the past four decades, inflation excluding energy and food also rose to 3.8% in November, up from 3.2% in the previous month. Looking ahead global inflationary pressures are expected to ease in the course of the year, as it is anticipated that energy prices will moderate from current high levels.

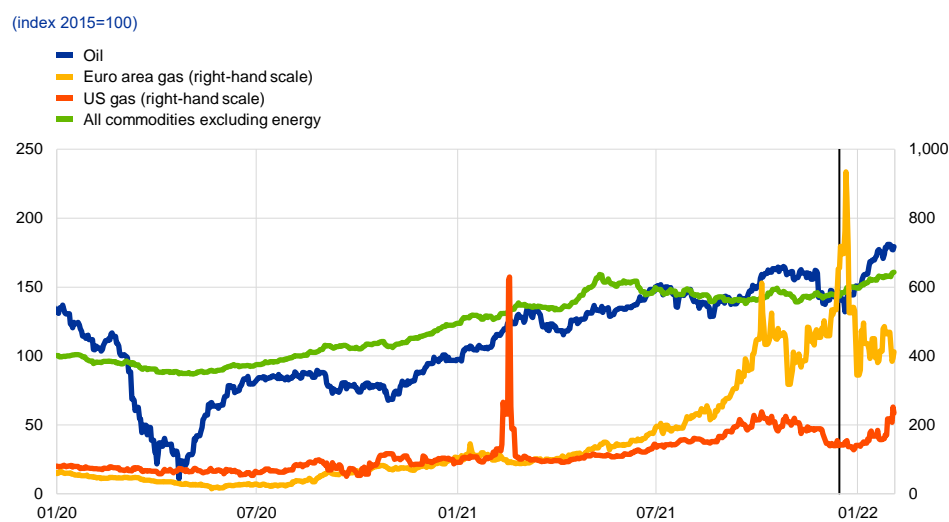
**Oil prices increased amid demand and supply factors.** Oil prices have rebounded by 28% since the Governing Council meeting in December, as oil markets appear to reflect the prevailing optimism that the Omicron variant will not impact global oil demand as much as previously feared. On the supply side, OPEC+ failed to meet production targets in December and, according to the U.S. Energy Information Administration,<sup>1</sup> is unlikely to reach the 2022 target given the difficulties encountered by some countries in bringing back idled capacity. Non-energy commodity prices have also increased since the Governing Council meeting in

<sup>1</sup> See "Short-term Energy Outlook", U.S. Energy Administration, 8 February 2022.



December owing to rises in both metal prices (+13%) and food prices (+6%) (Chart 3).

**Chart 3**  
Commodity price developments



Sources: Bloomberg, HWWI and ECB calculations.

Notes: Euro area gas refers to the Dutch TTF gas price, while US gas refers to the Henry Hub Natural Gas spot price. The grey vertical line marks the date of the Governing Council meeting in December 2021. The latest observation is for 3 February 2022.

**Economic activity in the United States remained resilient, with increased near-term risks to the outlook from an intensification of the pandemic.** Annualised GDP growth increased to 6.9% in the fourth quarter of 2021, driven in part by a strong rise in inventories, and private consumption accelerated to above pre-pandemic growth rates. The increase in consumption was primarily driven by services. At the same time, the emergence of the Omicron variant is expected to weigh on services, although the impact is expected to be largely confined to the first quarter of 2022. Meanwhile, the labour market remains tight amid labour supply shortages. Labour market tightness has translated into intensifying wage pressures. Annual headline consumer price inflation rose to 7.0% in December, its fastest pace since 1982. Energy prices remain an important driver, while persisting supply bottlenecks continue to contribute to higher prices. In response to the tight labour market and high inflation, the Federal Reserve signalled a tighter stance at its December meeting. The pace of tapering of monthly asset purchases accelerated as of January 2022, and interest rates are expected to rise over the course of the year. With regard to fiscal policy, the Build Back Better Act suffered a setback. The bill has been stalled in the Senate since November, and the fiscal impulse to growth is expected to fade much faster than previously anticipated.

**In Japan, the economic recovery resumed in the final quarter of 2021.** After the contraction observed in the summer of last year, economic activity remained steady in the fourth quarter, supported primarily by pent-up demand. Manufacturing rebounded significantly towards the end of 2021, in part reflecting increased production in the auto sector. While the recovery is expected to continue into the first quarter of 2022, the onset of Omicron has added headwinds to growth. The December PMI levels eased slightly for both manufacturing and services, perhaps

signalling some moderation in the recovery amid lingering supply pressures and concerns regarding the spread of the new variant.

**In the United Kingdom, economic activity recovered but is expected to remain subdued in the fourth quarter.** Real activity surpassed its pre-pandemic level for the first time in November, supported by increasing momentum across all industry sectors. Manufacturing and construction recovered as raw materials became easier to obtain and supply chain disruptions started to ease. With December output expected to show another setback related to the Omicron variant, the pace of recovery in the fourth quarter is likely to remain weak. Meanwhile, inflation increased further in December. Annual consumer price inflation rose to 5.4% in December, from 5.1% in November. Inflation excluding food and energy also increased to 4.2% in December, from 4.0% in the previous month. Inflationary pressures have broadened to most industries and are expected to remain sustained in the coming months. The Bank of England increased its policy rate from 0.1% to 0.25% at its Monetary Policy Committee meeting in December, taking into consideration the growing tightness in the labour market and signs of greater persistence of domestic price pressures.

**In China, the growth momentum remains fragile.** In the fourth quarter of last year, China's GDP growth increased to 1.6% quarter on quarter, which brings annual growth for 2021 to 8.1%. However, monthly indicators point to a slowdown in economic activity. Retail sales remained subdued towards the end of last year, underscoring the difficulty of consumption returning to pre-pandemic levels amidst China's strict COVID-19 containment strategy. The turmoil in China's residential property industry continued at the end of 2021, with residential real estate sales growth remaining negative in December and house prices weakening further. The emergence of the Omicron variant is posing risks to growth in the near term. Should an intensification of the pandemic lead to rising infection rates, China's zero-COVID strategy may imply significantly stricter containment measures, which would weigh further on economic activity.

## 2 Financial developments

*Since the December 2021 Governing Council meeting, global financial markets have primarily reflected stronger expectations of global monetary policy tightening. As a result, the euro short-term rate (€STR) forward curve has steepened further, bringing the expected date of a first rate increase forward to August 2022 and indicating that markets also expect a faster pace of rate normalisation after the lift-off. Likewise, longer-term nominal risk-free rates – and with them sovereign bond yields – rose throughout the review period. Equity prices for non-financial corporations decreased on balance, while there was little change in corporate bond spreads. At the beginning of the review period, stock prices were supported by waning concerns about the economic consequences of the Omicron variant of the coronavirus (COVID-19). However, sustained pressure from higher discount rates and, in particular, increasing concerns about the emerging geopolitical risks led to pronounced declines in equity prices towards the end of the review period. The euro depreciated in trade-weighted terms.*

**The benchmark €STR averaged -58 basis points over the review period.** Excess liquidity increased by approximately €143 billion to €4,520 billion, mainly reflecting an increase of around €87 billion<sup>2</sup> in the securities held for monetary purposes under the pandemic emergency purchase programme and the asset purchase programme, as well as the €51.97 billion take-up of the tenth operation under the third series of targeted longer-term refinancing operations (TLTRO III) on 22 December 2021. This growth in excess liquidity was curtailed substantially by early repayments amounting to €60.21 billion worth of funds borrowed under previous TLTRO III operations.

**The €STR forward curve has shifted up markedly compared with just before the December Governing Council meeting, suggesting a significant repricing of rate hike expectations by market participants.**<sup>3</sup> The €STR overnight index swap (OIS) forward curve has moved up noticeably since the December Governing Council meeting, reflecting waning concerns about the economic impact of the Omicron variant and market participants increasingly pricing in a global tightening of monetary policy, particularly in the United States. Overall, the market-implied rate lift-off date – defined as the time when the €STR forward curve surpasses the current level of the €STR plus 10 basis points – has been brought forward to the third quarter of 2022 as opposed to the end of 2022 as was being priced in at the time of the December Governing Council meeting.

**Long-term sovereign bond yields edged up, broadly mirroring the development of nominal risk-free rates (Chart 4).** During the period under review, the average GDP-weighted euro area and German ten-year sovereign bond yields increased by 41 basis points and 38 basis points, up to 0.49% and 0.04% respectively. Over the same period, ten-year US government bond yields went up by

<sup>2</sup> From the week ending 17 December 2021 to the week ending 4 February 2022.

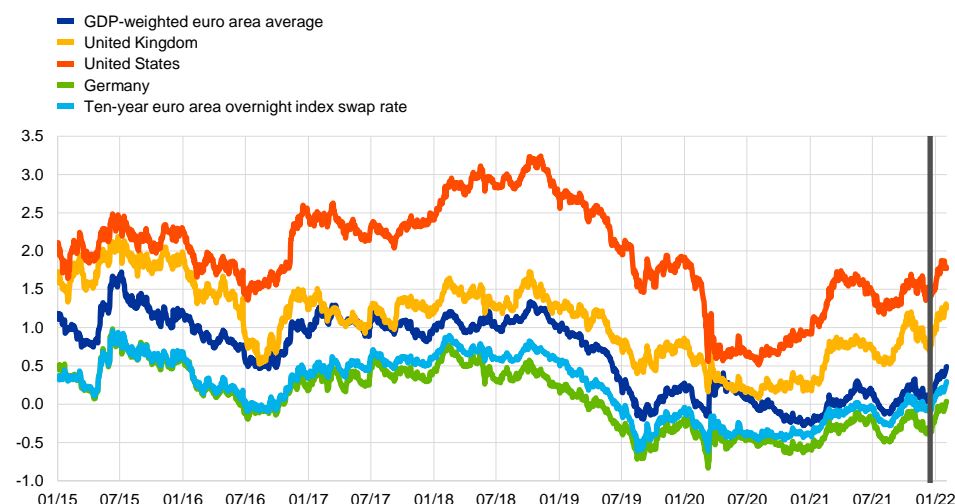
<sup>3</sup> From now on, the €STR overnight index swap (OIS) forward curve will be reported instead of the EONIA OIS forward curve. This is because the EONIA was discontinued on 3 January 2022 as it no longer complied with benchmark rate regulations. The two OIS forward curves were mechanically linked as, from 2 October 2019, the EONIA was computed 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.

35 basis points to 1.77%, while ten-year UK government bond yields rose by 50 basis points to 1.26%.

#### Chart 4

##### Ten-year sovereign bond yields

(percentages per annum)



Sources: Refinitiv and ECB calculations.

Notes: The vertical grey line denotes the start of the review period on 16 December 2021. The latest observations are for 2 February 2022.

**Long-term euro area sovereign bond spreads relative to OIS rates remained broadly unchanged.** The German ten-year sovereign bond spread remained almost unchanged, standing at -0.26% at the end of the review period. Ten-year sovereign bond spreads in France and Spain also moved within a very narrow range, widening by 7 basis points and 3 basis points to 0.16% and 0.5% respectively, and the Italian sovereign bond spread edged up by 7 basis points. Overall, changes in the average sovereign bond spreads relative to risk-free rates were limited, as also reflected in the aggregate ten-year euro area GDP-weighted sovereign bond spread, which widened by only 4 basis points to 0.20%. This overall limited movement may reflect some improvement in risk sentiment amid waning concerns about the Omicron variant.

**After temporarily increasing, equity prices of non-financial corporations declined on balance over the review period, likely reflecting pressure from the increase in discount rates and rising geopolitical risks.** At the beginning of the review period, stock prices were supported by waning concerns about the economic consequences of the Omicron variant, as lower equity risk premia offset the drag from higher discount rates on the back of global monetary policy tightening expectations. However, towards the end of the review period they declined markedly, owing to sustained pressure from higher discount rates and, in particular, increasing concerns about geopolitical risks in the context of the Ukraine crisis. Against this backdrop, equity prices of euro area and US non-financial corporations fell by 1.8% and 3% respectively. In the United States bank equity prices decreased by 2.2%, while in the euro area they rose by 11.8%. This likely reflects changes in the slope of

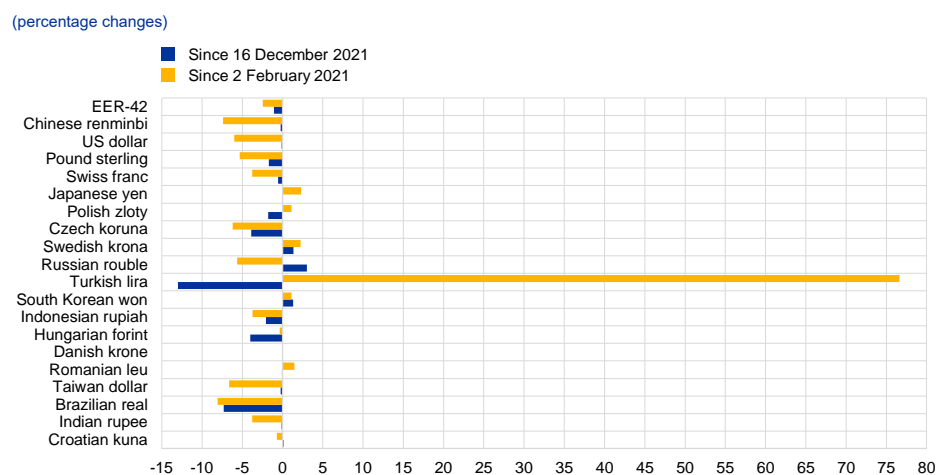
the yield curve on both sides of the Atlantic, which flattened in the United States and steepened in the euro area.

**Both financial and non-financial corporate bond spreads remained broadly unchanged over the review period.** Spreads on investment-grade non-financial corporate bonds fell by 2 basis points, reaching 44 basis points. Spreads on financial corporate bonds also moved within a very narrow range, rising by 2 basis points to 57 basis points. Although corporate bond spreads could have been affected by rate increases, they appear to have remained resilient, reflecting positive credit fundamentals and the ECB's ongoing purchases.

**In foreign exchange markets, the euro continued to depreciate in trade-weighted terms (Chart 5), reflecting a broad-based weakening against several major currencies.** Over the review period, the nominal effective exchange rate of the euro, as measured against the currencies of 42 of the euro area's most important trading partners, weakened by 1.1%. In terms of major currencies, the euro weakened only very mildly against the US dollar (by 0.1%) and the Chinese renminbi (by 0.2%), while it depreciated somewhat more strongly against the pound sterling (by 1.7%) and the Swiss franc (by 0.6%). At the same time, the euro depreciated substantially against the currencies of some large emerging economies, notably the Brazilian real (by 7.3%) and the Turkish lira (by 13.0%), as they recovered some of their previous losses, as well as against the currencies of most non-euro area EU Member States.

**Chart 5**

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



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 2 February 2022.

### 3 Economic activity

*Following two quarters of strong expansion, euro area real GDP growth slowed in the final quarter of 2021, nonetheless reaching its pre-pandemic level by the end of the year. Economic activity and demand will likely remain muted in the early part of 2022 for several reasons. First, containment measures are affecting consumer services, notably the most contact-intensive. That said, although infection rates are still very high, the impact of the pandemic on economic life is now proving less damaging. Second, high energy costs are reducing the purchasing power of households and the earnings of businesses, which constrains consumption and investment. And third, shortages of equipment, materials and labour in some sectors continue to hamper the production of manufactured goods, delay construction and hold back the recovery in parts of the services sector. There are signs that these bottlenecks may be starting to ease, but these will still persist for some time.*

*Looking beyond the near term, growth should rebound strongly over the course of 2022, driven by robust domestic demand. As the labour market is improving further, with more people having jobs and fewer remaining in job retention schemes, households should enjoy higher income and spend more freely. The global recovery and the ongoing fiscal and monetary policy support also contribute to this positive outlook. Targeted, productivity-enhancing fiscal measures and structural reforms, attuned to the conditions in different euro area countries, remain key to complement the ECB's monetary policy effectively.*

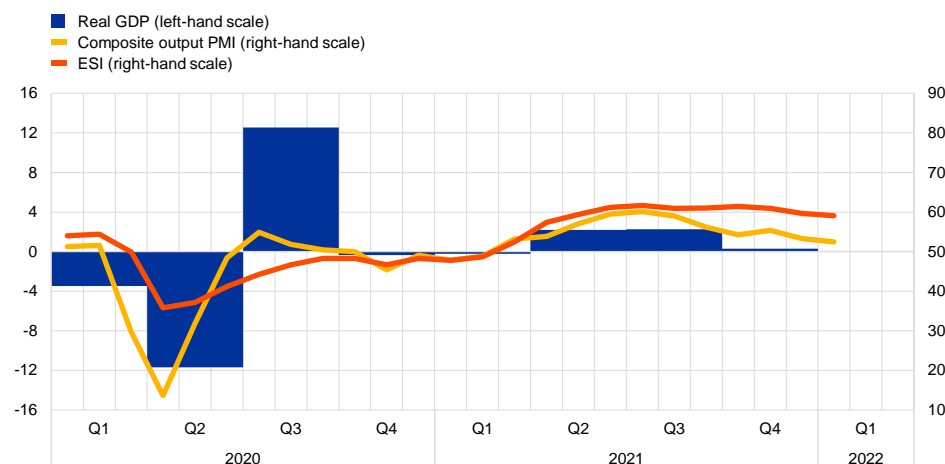
*The risks to the economic outlook continue to be seen as broadly balanced over the medium term. The economy could perform more strongly than expected if households become more confident and save less than expected. By contrast, although uncertainties related to the pandemic have abated somewhat, geopolitical tensions have increased. Furthermore, persistently high energy costs could exert a stronger than expected drag on consumption and investment. The pace at which supply bottlenecks are resolved is a further risk to the outlook for growth.*

**Following two quarters of strong expansion, euro area real GDP growth slowed in the final quarter of 2021.** Economic activity increased by 0.3% in the fourth quarter of last year, representing a clear slowdown compared with the two previous quarters (Chart 6). With the latest increase in output, GDP currently stands on a par with its pre-pandemic level from the fourth quarter of 2019. Moreover, the carry-over effect to growth in 2022 amounts to 1.9%.<sup>4</sup> No breakdown of growth is as yet available, but short-term indicators and released country data suggest that domestic demand provided a positive contribution to growth, while net trade provided a broadly neutral contribution. As a whole, GDP is currently estimated to have risen by 5.2% in 2021, following the fall of 6.4% in 2020.

<sup>4</sup> This implies that GDP would grow by 1.9% in 2022 if all quarterly growth rates this year were to have been zero (which is equivalent to the assumption that the quarterly levels of GDP remain unchanged at the same level as in the fourth quarter of 2021).

**Chart 6****Euro area real GDP, composite output PMI and ESI**

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



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

Notes: The two lines indicate monthly developments; the bars show quarterly data. The European Commission's Economic Sentiment Indicator (ESI) has been standardised and rescaled to have the same mean and standard deviation as the Purchasing Managers' Index (PMI). The latest observations are for the fourth quarter of 2021 for real GDP and January 2022 for the PMI and the ESI.

**Economic indicators point to GDP enjoying continued albeit slow growth in the first quarter of this year, before gaining momentum again.** The deceleration in activity in the fourth quarter of last year and expectations of continued muted growth in the first quarter are in line with the new restrictions implemented on the back of the fast spread of the Omicron variant of the coronavirus. While this has had the largest impact on the services sector, activity in manufacturing and construction continues to be affected by shortages of equipment, materials and labour. In addition, high energy costs are having an adverse effect on households' purchasing power and are exerting additional headwinds for private consumption and economic activity.<sup>5</sup> Companies operating in the non-financial sector broadly confirm this overall narrative about the short-term outlook, while remaining positive on the future evolution of demand ([Box 6](#)).

Turning to the most recent monthly data, industrial production rose by 2.3% month on month in November. However, the average level over October and November is still 1.3% below the average level for the third quarter. The more timely composite output Purchasing Managers' Index (PMI) declined from 58.4 in the third quarter of 2021 to 54.3 in the fourth quarter and 52.4 in January. This downward movement reflects developments in both manufacturing and services. Manufacturing supply bottlenecks, as captured by the PMI suppliers' delivery times, continued to increase, albeit at the slowest pace since January of last year. At the same time, the index for manufacturing stocks of purchases declined in January from its record high in the previous month, while the index for stocks of finished goods fell slightly. The European Commission's Economic Sentiment Indicator (ESI) also declined in January compared with its average in the fourth quarter. This easing was broad-

<sup>5</sup> [Box 4](#) reviews the role of natural gas in the euro area energy mix and provides an assessment of the impact of gas price increases on activity.



based across both countries and components, with the largest decline recorded for services.

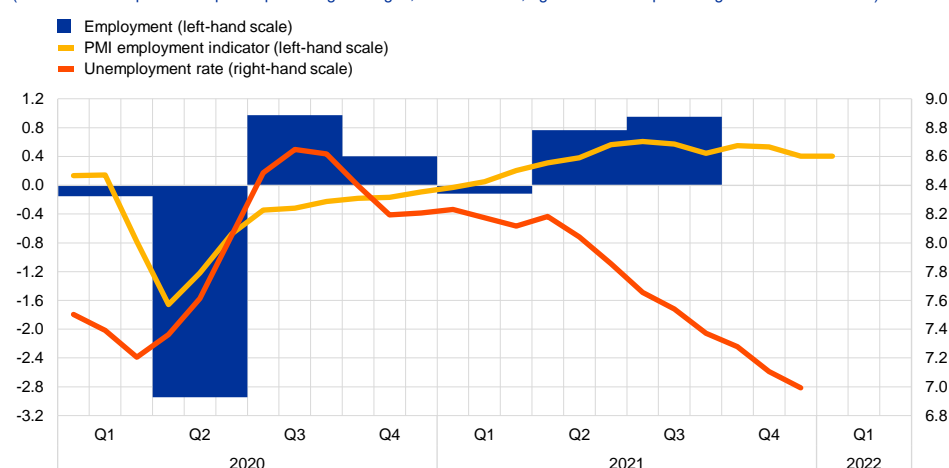
### **The unemployment rate in the euro area fell in December, amid continued support from job retention schemes.**

The unemployment rate stood at 7.0% in December 2021, 0.1 percentage points lower than in November (Chart 7) and around 0.4 percentage points lower than before the pandemic in February 2020. The renewed containment measures introduced since November 2021 led to an increase in take-up of job retention schemes to around 1.6% of the labour force in December compared with 1.4% in November. According to the latest employment data, employment and hours worked increased by 1% and 2.2% respectively in the third quarter of 2021. However, total hours worked in the third quarter of 2021 remained 1.9% below the level recorded in the fourth quarter of 2019.

### **Chart 7**

#### **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, IHS Markit and ECB calculations.

Notes: The two lines indicate monthly developments; the bars show quarterly data. The PMI is expressed as a deviation from 50 divided by 10. The latest observations are for the third quarter of 2021 for employment, January 2022 for the PMI and December 2021 for the unemployment rate.

**Short-term labour market indicators have continued to improve.** The monthly composite PMI employment indicator, encompassing industry and services, equalled the December level of 54.0 in January (flash release), thus remaining above the threshold level of 50 that indicates an expansion in employment. The PMI employment index has recovered significantly since its all-time low in April 2020 and stood in expansionary territory in January 2022 for the twelfth month in a row.

### **Household consumption, and especially spending on travel and hospitality services, has weakened amid the spread of the Omicron variant.**

After increasing by 4.3% in the third quarter of 2021, private consumption likely stagnated heading to the end of the year. The volume of retail sales in October and November increased by an average of 1.0% compared with the third quarter. This suggests ongoing growth in the consumption of goods towards the end of the year, despite a small decline in new car registrations in the fourth quarter (0.7% down on the third quarter). However, resilient spending on consumer goods may not be a reliable

signal for overall consumer demand, as consumer confidence fell between September and January, while the new wave of the pandemic and related restrictions are weighing on contact-intensive services in particular. While confidence in the retail sector improved in January following a drop in December, it continued to decline in the services sector for a second consecutive month at the start of 2022. Looking ahead, demand in the services sector is projected to remain weak, particularly in contact-intensive consumer services, such as accommodation, catering and travel. In January 2022 the European Commission's consumer survey indicated that households expected their financial situation to deteriorate further. All in all, the ongoing pandemic-related uncertainty is likely to continue weighing on the consumption of contact-intensive services over the winter months.

**Corporate investment is likely to have grown modestly in the fourth quarter, despite headwinds from supply-side disruptions.** In the capital goods sector, production in October and November combined rose by 0.2% over the third quarter, and the output PMI points to an expansion in activity in the fourth quarter. Confidence weakened compared with the third quarter, however, suggesting that the supply of capital goods continues to suffer from bottlenecks. The production of transport equipment remains particularly affected by shortages of semiconductors and congestion in supply chains. As a result, capacity utilisation has fallen, stocks of nearly finished goods have risen and supplier delivery times have continued to lengthen in the sector, albeit to a decreasing extent. Production of other equipment has remained more robust, with capacity utilisation high and stock-building of finished goods contained. On balance, available indicators suggest that business investment grew modestly in the fourth quarter. Looking forward, business investment growth is expected to pick up further, with the European Commission survey for the capital goods sector pointing to both confidence and export order books at record highs in January. Meanwhile, the limitations on production arising from shortages of capital and labour in the sector increased further in January compared with the Commission survey from October. While investment in the near term may suffer from protracted bottlenecks, benign demand and financing conditions should be supportive.

**Housing investment rebounded in the fourth quarter, supported by strong demand but also hampered by supply bottlenecks.** Following a decline in euro area housing investment in the third quarter of 2021, several short-term indicators point to a rebound in the fourth quarter. Building construction output in October and November stood 1.2% on average above its level in the third quarter. In the fourth quarter, the PMI for residential construction output advanced further into expansionary territory, while the European Commission's construction survey reported recent trends in activity well above their long-term averages. According to survey data on limits to production, the recovery in the construction sector appears to be driven by demand tailwinds, despite persistent supply headwinds stemming especially from shortages of materials and labour. Looking ahead, the uncertain evolution of the balance between supply and demand, together with the rapid spread of the Omicron variant, makes for a high degree of uncertainty around the outlook for housing investment in the first quarter of 2022. On the one hand, shortages of materials and labour, coupled with other limitations caused by the Omicron-driven

surge in COVID-19 infections, increased in January, suggesting tighter constraints on construction output. On the other hand, a large stock of accumulated savings and dynamic house prices could further sustain demand, as shown by households' intentions to purchase and renovate houses, which stood well above their pre-pandemic levels in the first quarter of 2022.

**Exports of goods experienced a mild rebound at the turn of the year, while the recovery in exports of services was held back by the spread of the Omicron variant.** After a significant contraction in the third quarter of 2021, volumes of extra-euro area goods exports expanded in October, by 1.2% month on month, and deflated nominal exports suggest a further monthly increase in November. The expansion was particularly pronounced in the machinery and equipment sector and the chemicals industry, possibly reflecting a mild alleviation of supply bottlenecks. As the snarl-ups are not expected to ease significantly in the near term and forward-looking indicators deliver no signs of improvement, it seems likely that the increase in export volumes will only be temporary. At the same time, euro area import volumes rose by 1.6% month on month in October, with particularly strong nominal increases evident in both October and November. On the services side, after having gradually strengthened on the back of a temporary rebound in travel activity, indicators for exports show signs of weakening at the end of the year as the new wave of the pandemic hit exports of high-contact and travel services.

**Although economic activity is likely to remain muted in the early part of this year, growth should rebound strongly over the course of 2022.** As the labour market improves further, with more people having jobs and fewer remaining in job retention schemes, households should enjoy higher income and spend more freely. The global recovery and the ongoing fiscal and monetary policy support also contribute to this positive outlook. Targeted and productivity-enhancing fiscal measures and structural reforms, attuned to the conditions in different euro area countries, remain key to complement the ECB's monetary policy effectively. Looking at more medium-term developments, [Box 2](#) investigates potential long-term effects that current supply shortages could have on potential output growth in the euro area. Meanwhile, [Box 3](#) shows that changes in the productivity distribution of firms over time have played a key role in explaining productivity developments in the euro area. The results of the latest round of the [Survey of Professional Forecasters](#) (conducted in early January) show that GDP growth forecasts have been revised downwards for 2022 and upwards for 2023 since the previous round, conducted in early October 2021.

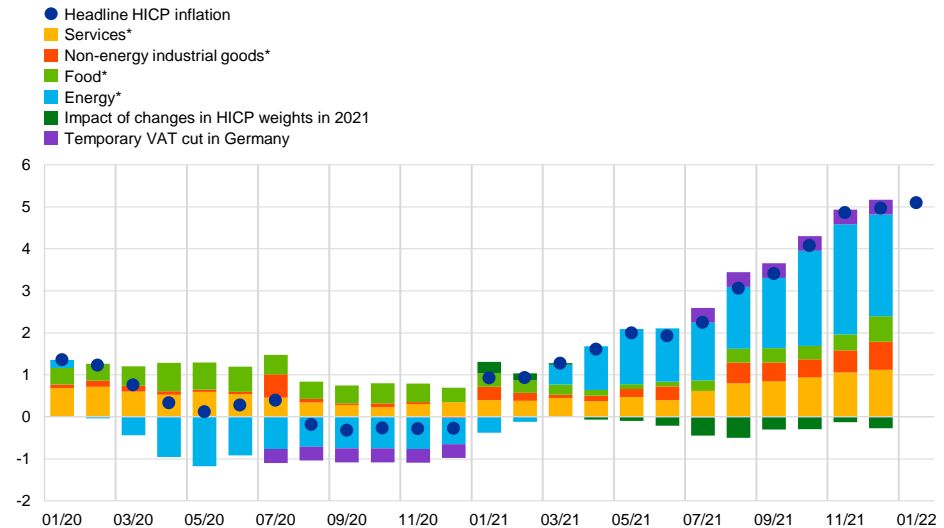
*Inflation increased to 5.1% in January, from 5.0% in December 2021. It is likely to remain high in the near term. Energy prices continue to be the main reason for the elevated rate of inflation. Their direct impact accounted for over half of headline inflation in January and energy costs are also pushing up prices across many sectors. Food prices have also increased, owing to seasonal factors, elevated transportation costs and the higher price of fertilisers. In addition, price rises have become more widespread, with the prices of a large number of goods and services having increased markedly. Most measures of underlying inflation have risen over recent months, although the role of temporary pandemic factors means that the persistence of these increases remains uncertain. Market-based indicators suggest a moderation in energy price dynamics in the course of 2022 and price pressures stemming from global supply bottlenecks should also subside. Market-based measures of longer-term inflation expectations have remained broadly stable at rates just below 2% since the Governing Council's last monetary policy meeting in December. The latest survey-based measures stand at around 2%.*

**HICP inflation increased further to 5.1% in January 2022 (Chart 8).** According to Eurostat's flash estimate, euro area HICP inflation increased to 5.1% in January 2022, from 5.0% and 4.9% in December and November 2021 respectively. The latest outcomes surprised to the upside. Both the further increase and the magnitude of headline inflation in January were largely due to developments in energy prices – accounting for over half of headline inflation. Although the January figure reflected a downward impact due to the base effect of the German VAT rate cut in 2020 dropping out of the inflation rate, this was more than offset by the continued upward pressures. HICP inflation excluding food and energy (HICPX) decreased to 2.3% in January, from 2.6% in December. This reflected a decline in the annual rate of change in non-energy industrial goods prices (to 2.3% in January from 2.9% in December), whereas that for services prices was unchanged at 2.4%.

## Chart 8

### Headline inflation and its components

(annual percentage changes; percentage point contributions)



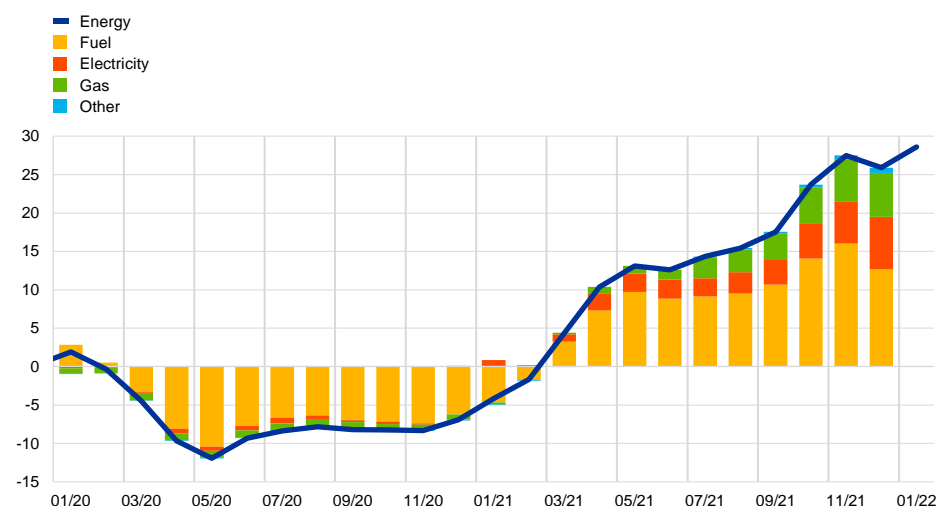
Sources: Eurostat, ECB staff calculations and the Narrow Inflation Projection Exercise.

Notes: Components highlighted with \* exclude both the impact of the changes in HICP weights in 2021 and the temporary reduction in VAT in Germany in 2020. The impact of the changes in HICP weights is estimated by the ECB. The latest observations are for December 2021. For headline HICP inflation the January 2022 flash estimate is shown.

**The most volatile components, energy and food, dominated the HICP inflation dynamics.** Energy inflation increased in January, following the moderation in December, and reached a new historical high of 28.6%. Components of energy price inflation are available until December, and suggest that gas and electricity prices increasingly explain the overall energy inflation dynamics (Chart 9). The greater contribution from the gas component was driven by the rise in global and European wholesale gas prices (Chart 3 in Section 1). This, in turn, pushed up EU wholesale electricity prices, as electricity prices are based on the short-run marginal costs of power plants. Gas and electricity prices are also likely to have accounted for a large part of the January energy price dynamics, partly because of a surge in the prices of regulated energy products in one of the larger euro area economies. Food inflation rose further to 3.6% in January, from 3.2% in December 2021, reflecting an increase in the rate of change in the prices of both unprocessed and processed food. These dynamics may in part reflect a rise in input and production costs related to the energy price surge, but may also be linked to unfavourable weather conditions and earlier increases in EU internal market prices for food commodities.

**Chart 9**  
Energy inflation decomposition

(annual percentage changes; percentage point contributions)



Sources: Eurostat and ECB calculations.

Notes: "Fuel" refers to the HICP component "liquid fuels and fuels and lubricants for personal transport equipment". "Other" includes the items "solid fuels" and "heat energy" at the COICOP 5-digit level of aggregation. COICOP stands for classification of individual consumption according to purpose. The latest observation for overall energy is for January 2022, whereas for the contribution it is for December 2021.

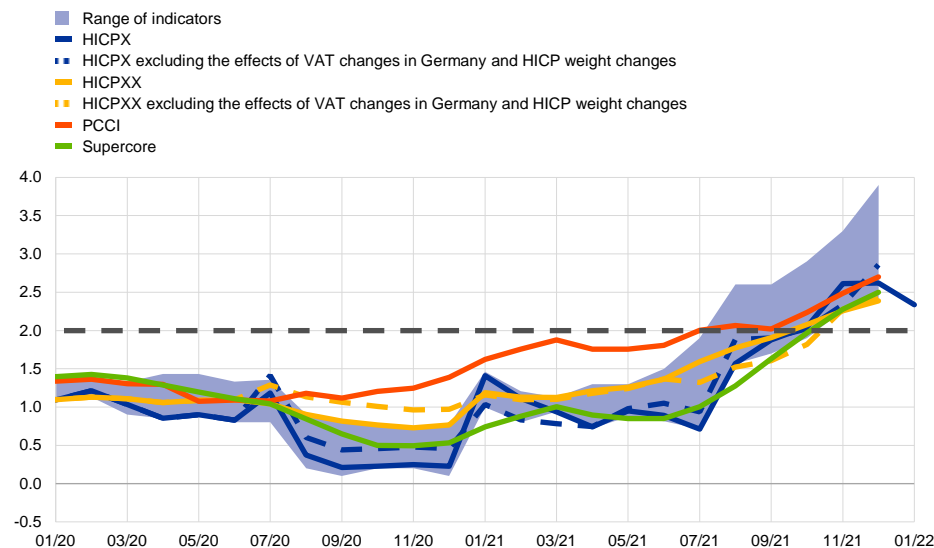
**Indicators of underlying inflation remained at high levels, but this partly reflects indirect effects of energy prices and temporary pandemic-related factors (Chart 10).** The HICPX decreased in January to 2.3%, from 2.6% in December.

The range of measures of underlying inflation moved upwards until December – the latest available data. HICP inflation excluding energy, food, travel-related items, clothing and footwear (HICPXX) rose from 2.1% in October to 2.4% in December, while the model-based Persistent and Common Component of Inflation (PCCI) went up from 2.2% to 2.7% over the same period. The Supercore indicator, which comprises cyclically sensitive items, increased for the sixth consecutive month and rose considerably, to 2.5% in December from 2.0% in October. While the whole range of indicators of underlying inflation moved above 2%, this also reflects the indirect effects of the surge in energy prices, and the impacts associated with reopening and supply bottlenecks.<sup>6</sup> The persistence of these increases remains uncertain, as it is unclear when the temporary pandemic factors will fade away.

<sup>6</sup> Trimmed means (which remove around 5% or 15% from each tail of the distribution of annual price changes) stand well above the target of 2% because they include some energy items with currently very high inflation rates. For further information on these and other measures of underlying inflation, see Boxes 2 and 3 in the article entitled "Measures of underlying inflation for the euro area", *Economic Bulletin*, Issue 4, ECB, 2018.

**Chart 10****Indicators of underlying inflation**

(annual percentage changes)



Sources: Eurostat and ECB calculations.

Notes: The range of indicators of underlying inflation includes the HICP excluding energy, HICP excluding energy and unprocessed food, HICPX (HICP excluding energy and food), HICPXX (HICP excluding energy, food, travel-related items, clothing and footwear), the 10% and 30% trimmed means and the weighted median. The latest observation is December 2021 for all the indicators except the HICPX, which has been obtained from the January 2022 flash estimate.

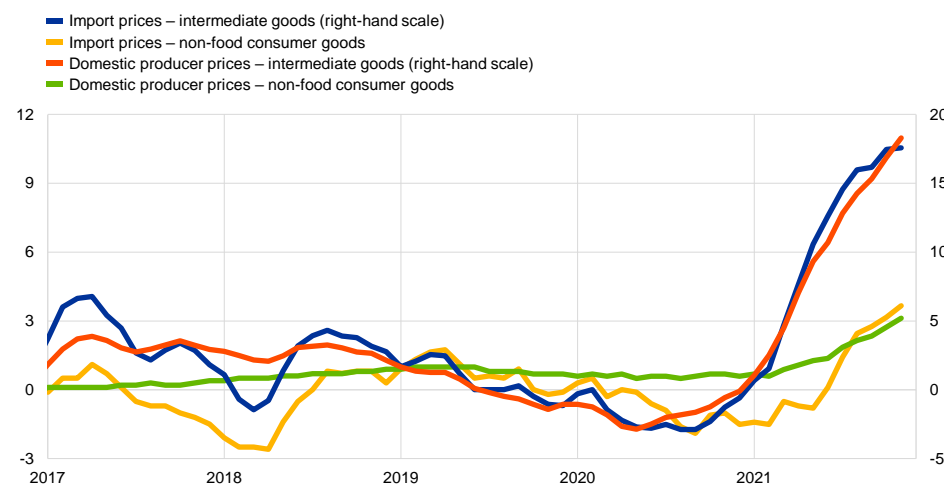
**Pipeline pressures on prices for non-energy industrial goods continued to build up in November (Chart 11).** Supply bottlenecks together with surges in global commodity prices – reinforced by the depreciation in the euro – are affecting firms' production costs. At the earlier stages of the production and pricing chain, the annual rate of change in producer prices for domestic sales of intermediate goods rose sharply once again. It was up from 16.9% in October to 18.3% in November, while the annual rate of change in import prices for intermediate goods edged up from 17.5% in October to 17.6% in November. Pipeline pressures have spread to the later stages of the pricing chain: producer price inflation for domestic sales of non-food consumer goods again reached a new historical high, having risen from 2.7% in October to 3.1% in November. Meanwhile import price inflation for non-food consumer goods rose further from 3.2% in October to 3.7% in November, likely attributable in part to exchange rate depreciation of the euro over the past year. Recent information from the ECB's Corporate Telephone Survey suggests that prices have been adjusted more frequently than in the past to avoid margins being squeezed and that prices will continue rising through much of 2022.<sup>7</sup> However, under the current pandemic circumstances, there remains considerable uncertainty about the degree of pass-through of pipeline pressures to consumer goods prices.

<sup>7</sup> See the box entitled "Main findings from the ECB's recent contacts with non-financial companies", *Economic Bulletin*, Issue 1, ECB, 2022.



**Chart 11****Indicators of pipeline pressures**

(annual percentage changes)



Sources: Eurostat and ECB calculations.

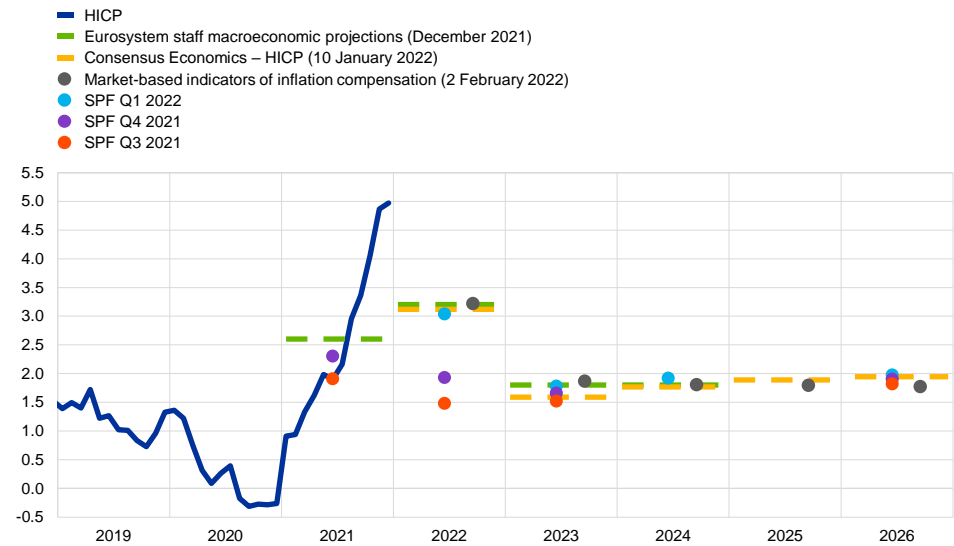
Note: The latest observations are for November 2021.

**Market-based indicators of euro area inflation expectations remained broadly unchanged over medium to longer-term horizons, whereas survey-based measures of longer-term inflation expectations edged up at the beginning of 2022.** Longer-term market-based indicators of inflation compensation mostly moved sideways over the review period. Amid muted year-end trading activity, the five-year forward inflation-linked swap (ILS) rate five years ahead increased slightly, to around 2% at the beginning of January, before receding again to 1.84% at the end of the review period. This notwithstanding, markets revised up the pricing of euro area year-on-year inflation rates for the coming months. The fact that euro area HICP inflation came in above expectations for the sixth straight month in December 2021 may have further induced market participants to demand somewhat higher inflation compensation over the coming months. According to the ECB Survey of Professional Forecasters for the first quarter of 2022, which was conducted in the first week of January, longer-term inflation expectations increased further to 2.0% from 1.9% and 1.8% in the previous two survey rounds. At the same time the January Consensus Economics forecasts remained at 1.9% (Chart 12), unchanged from October 2021.

## Chart 12

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

(annual percentage changes)



Sources: Eurostat, Refinitiv, Consensus Economics, ECB Survey of Professional Forecasters (SPF), Eurosystem staff macroeconomic projections for the euro area, December 2021 and ECB calculations.

Notes: The market-based indicators of the inflation compensation series are based on the one-year spot inflation rate and the one-year forward rate one year ahead, the one-year forward rate two years ahead, the one-year forward rate three years ahead and the one-year forward rate four years ahead. The latest observations for market-based indicators of inflation compensation are for 2 February 2022. The ECB Survey of Professional Forecasters for the first quarter of 2022 was conducted between 7 and 13 January 2022. The Consensus Economics cut-off date is 10 January 2022. The cut-off date for data included in the projections was 1 December 2021.

## 5 Money and credit

*Money creation in the euro area was supported by policy measures and continued to normalise in December 2021, reflecting base effects. Eurosystem asset purchases remained the dominant source of money creation. Growth in loans to firms increased, benefiting from favourable financing conditions and the improved economic situation, although pandemic-related risks also increased. According to the latest euro area bank lending survey, in the fourth quarter of 2021 loan demand continued to rise, with credit standards tightening very slightly for loans to firms while remaining unchanged for housing loans.*

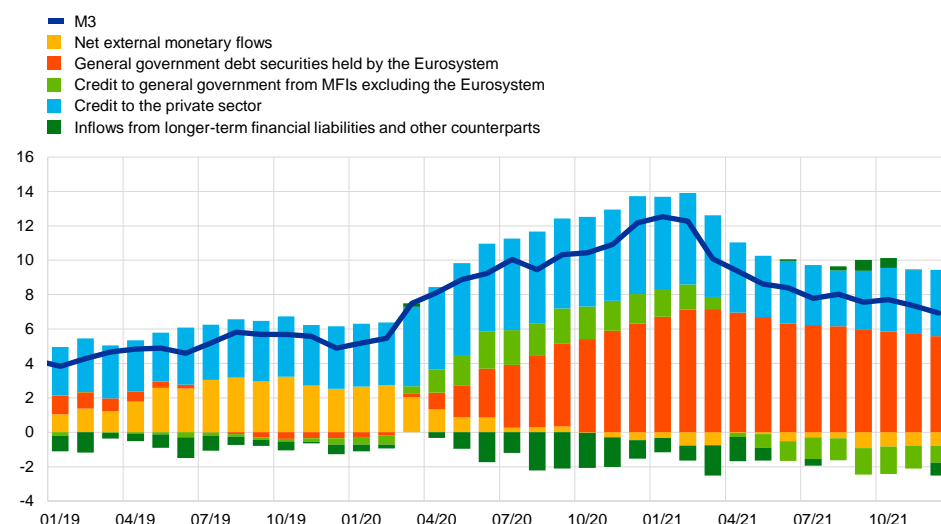
**In December 2021 broad money growth continued its moderating trend, which had started at the beginning of 2021.**

The annual growth rate of M3 declined to 6.9% in December, down from 7.4% in November (Chart 13), affected by a negative base effect linked to the exceptional increase in liquidity in December 2020. The quarterly pace of money growth moved closer to its longer-term average, with shorter-run dynamics of M3 continuing to benefit from the significant support provided by the pandemic-related policy responses. On the components side, the main driver of M3 growth was the narrow aggregate M1, which includes the most liquid components of M3. As growth rates continued to moderate from the high levels observed during 2020 – the first year of the coronavirus (COVID-19) pandemic – the annual growth rate of M1 decreased further to 9.8% in December, reflecting a normalisation in the growth of overnight deposits. Deposits of firms continued to grow solidly, while growth in household deposit flows remained below its pre-pandemic average for the third consecutive month. Other short-term deposits made a negative contribution to M3 growth, reflecting a decline in demand for time deposits, but marketable instruments provided further support owing to robust demand for money market funds.

**Money creation continued to be driven by Eurosystem asset purchases.** As in previous quarters, the largest contribution to M3 growth came from the Eurosystem's net purchases of government securities under the asset purchase programme (APP) and the pandemic emergency purchase programme (PEPP) (red portion of the bars in Chart 13). Support for M3 growth also came from a higher contribution of credit to the private sector (blue portion of the bars). However, three factors dampened money creation somewhat: first, bank credit to general government made a negative contribution owing to sales of government bonds (light green portion of the bars); second, net external monetary outflows continued, coinciding with a weakening of the effective exchange rate of the euro (yellow portion of the bars); third, outflows from other counterparts outweighed the inflows from longer-term liabilities (dark green portion of the bars), which benefited from favourable conditions for targeted longer-term refinancing operations (TLTROs).

**Chart 13****M3 and its counterparts**

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



Source: ECB.

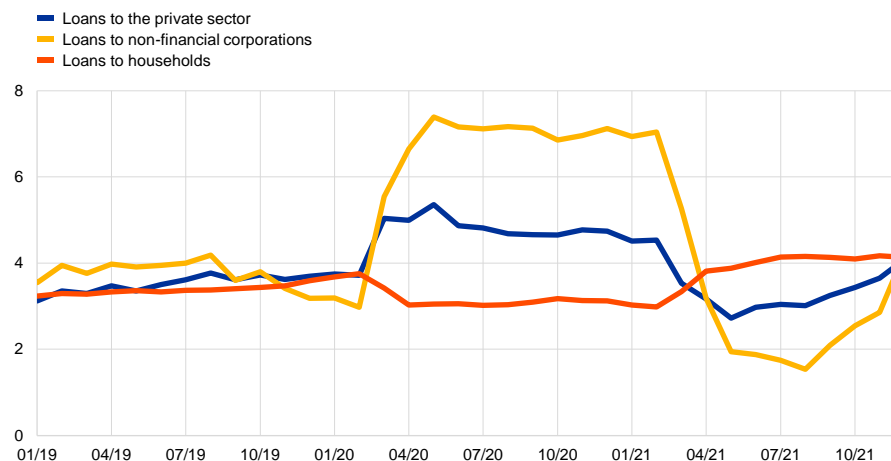
Notes: Credit to the private sector includes monetary financial institution (MFI) loans to the private sector and MFI holdings of debt securities issued by the euro area private non-MFI sector. As such, it also covers the Eurosystem's purchases of non-MFI debt securities under the corporate sector purchase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

**Growth in loans to the private sector increased in December 2021.** Lending to firms and households continued to benefit from favourable financing conditions and the ongoing economic recovery. Growth in loans to the private sector rose to 4.0% in December, up from 3.6% in November, driven by lending to firms and reflecting a positive base effect (Chart 14). The annual growth rate of loans to firms rose markedly to 4.2% in December, up from 2.9% in November, supported by an increase in loans in both the short and longer-term segments. The increase in shorter-term loans is explained by the persistence of supply bottlenecks, with increased working capital needs being reinforced by higher energy costs. Robust lending at maturities beyond the short term can instead be explained by rising demand for loans to finance fixed investment. At the same time, the growth rate of loans to households edged up only slightly to 4.2% in December (Chart 14). This was mainly the result of solid mortgage lending, as consumer credit growth remained weak. Overall, loan developments mask differences across euro area countries, which, among other things, reflect the uneven impact of the pandemic and the progress of the economic recovery across countries.<sup>8</sup>

<sup>8</sup> See the box entitled “[The heterogeneous economic impact of the pandemic across euro area countries](#)”, Economic Bulletin, Issue 5, ECB, 2021.

**Chart 14****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 December 2021.

**According to the January 2022 euro area bank lending survey, in the fourth quarter of 2021 credit standards for loans to firms tightened very slightly, while those for housing loans remained unchanged (Chart 15).** Given an overall

positive assessment of the economic outlook, banks continue to hold an overall benign view on firms' credit risks, despite higher pandemic-related risks, especially those related to supply bottlenecks. Banks reported that risk perceptions had a net easing impact on credit standards, while banks' risk tolerance had a slight tightening impact. For housing loans, banks' risk tolerance and their cost of funds had a slight tightening impact, whereas risk perceptions and competition had a broadly neutral impact. For the first quarter of 2022, euro area banks expect broadly unchanged credit standards for loans to firms and a further tightening of credit standards for loans to households for house purchase.

**Banks reported that loan demand rose considerably in the fourth quarter of 2021.** The increase in firms' demand for loans – the largest since the extraordinary rise in loan demand in the first half of 2020 – was driven by both greater working capital needs, stemming from the rebuilding of inventories resulting from supply bottlenecks, and the financing of longer-term investment. The further increase in demand for loans to households in the fourth quarter of 2021 was supported by improved consumer confidence and the historically low level of interest rates. For the first quarter of 2022, banks expect a further rise in demand for loans to firms and for loans to households for house purchase.

**The survey also suggests that, on balance, the ECB's unconventional monetary policy measures supported banks' credit intermediation activities.**

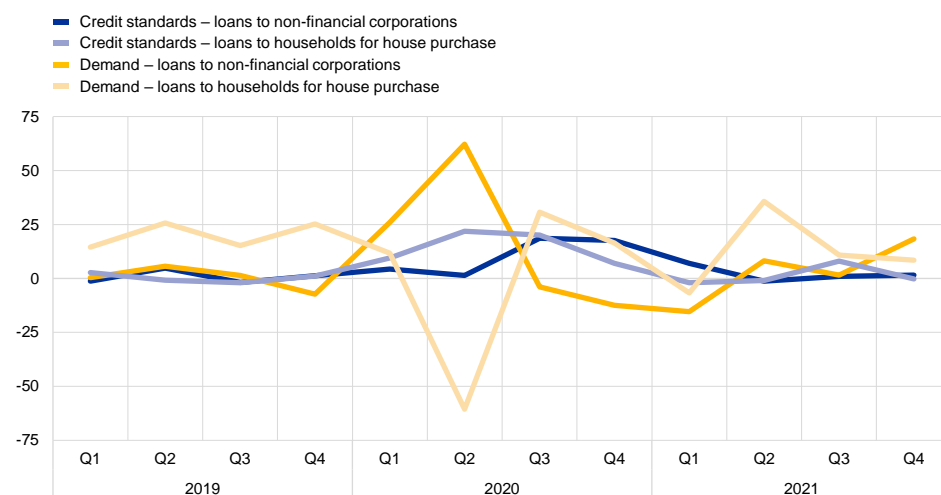
Euro area banks indicated that their access to retail and wholesale funding continued to improve in the fourth quarter of 2021, while their access to money markets, debt securities funding and securitisation was broadly unchanged. At the same time, they highlighted a continued strengthening of their capital position in 2021 against the backdrop of regulatory and supervisory actions, and a small net tightening of their

credit standards for loans to firms and for consumer credit on account of non-performing loan ratios. In addition, government guarantees related to the pandemic continued to support banks' credit standards for loans to firms in the second half of 2021.

### Chart 15

#### 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: [Euro area bank lending survey](#).

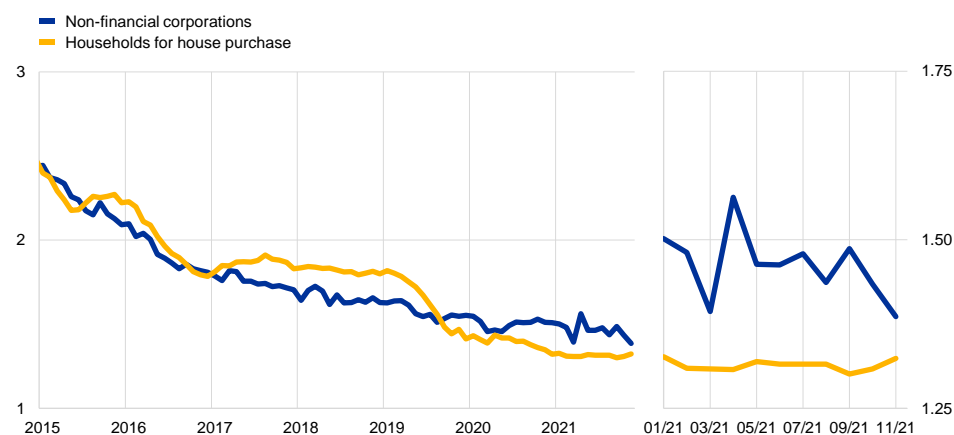
Notes: For the bank lending survey questions on credit standards, "net percentages" are defined as the difference between the sum of the percentages of banks responding "tightened considerably" or "tightened somewhat" and the sum of the percentages of banks responding "eased somewhat" or "eased considerably". 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 fourth quarter of 2021.

**Bank lending rates continue to stand at historically low levels.** In November 2021 the composite bank lending rate for loans to non-financial corporations fell back to its historical low of March 2021, when it stood at 1.39%, while the equivalent rate for loans to households for house purchase remained broadly unchanged at 1.32% (Chart 16). The decline in lending rates to firms was widespread across the largest euro area countries. Moreover, the spread between bank lending rates on very small loans and those on large loans increased again but remained below pre-pandemic levels, mainly reflecting declines in rates on large loans. The increase in bond yields is expected to be gradually transmitted to euro area yields, which would put upward pressure on domestic lending rates. The ECB's policy measures have so far prevented a broad-based tightening of financing conditions, which would have amplified the adverse impact of the new COVID-19 variants on the euro area economy.

## Chart 16

### Composite bank lending rates for non-financial corporations and households

(annual percentages)



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 November 2021.



# Boxes

## 1 Recent inflation developments in the United States and the euro area – an update

Prepared by **Sofía Cuquerella Ricarte, Ramon Gomez-Salvador and Gerrit Koester**

**After headline inflation had already reached very high levels in the United States in the first half of 2021, euro area inflation also recorded a very rapid increase in the second half of the year but remained much lower than in the United States.** Comparing inflation developments in both economic areas could help to separate idiosyncratic factors from those related to the cyclical position, taking into account the fact that the euro area is lagging the US cycle. By December 2021 inflation in the United States, as measured by the US consumer price index (CPI), had reached 7.0% (up by 5.6 percentage points since January 2021), compared with inflation in the euro area, as measured by the Harmonised Index of Consumer Prices (HICP), which stood at 5.0% (up by 4.1 percentage points since January 2021) – see Chart A.<sup>1</sup> Energy inflation made a 2.2 percentage point contribution to headline inflation in the United States and a 2.5 percentage point contribution in the euro area in December, thereby accounting for around half of headline inflation for the euro area and around one-third for the United States in that month.<sup>2</sup> In January 2022 headline inflation in the euro area – according to Eurostat’s flash release – increased slightly further to 5.1%

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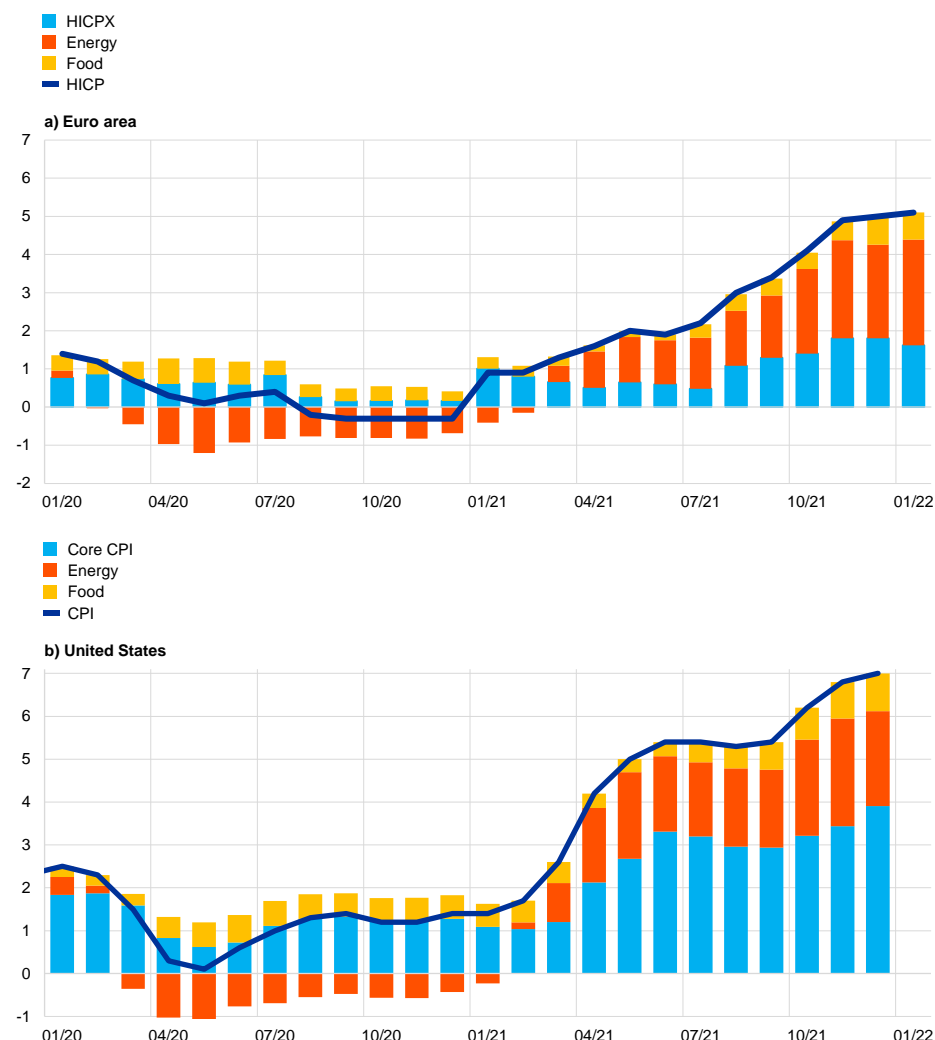
<sup>1</sup> To facilitate a comparison with the euro area, this box focuses on developments in CPI inflation in the United States, rather than developments in the US price index for total personal consumption expenditures (PCE). Although an indicator of HICP inflation is also available for the United States, the CPI is chosen as it allows for a greater level of detail for the analyses.

<sup>2</sup> For a discussion of developments up to August 2021, see the box entitled “[Comparing recent inflation developments in the United States and the euro area](#)”, *Economic Bulletin*, Issue 6, ECB, 2021.

## Chart A

### Headline inflation

(annual percentage changes, percentage point contributions)



Sources: US Bureau of Labor Statistics and ECB staff calculations.

Note: The latest observation is for December 2021 for the United States and January 2022 (flash release) for the euro area.

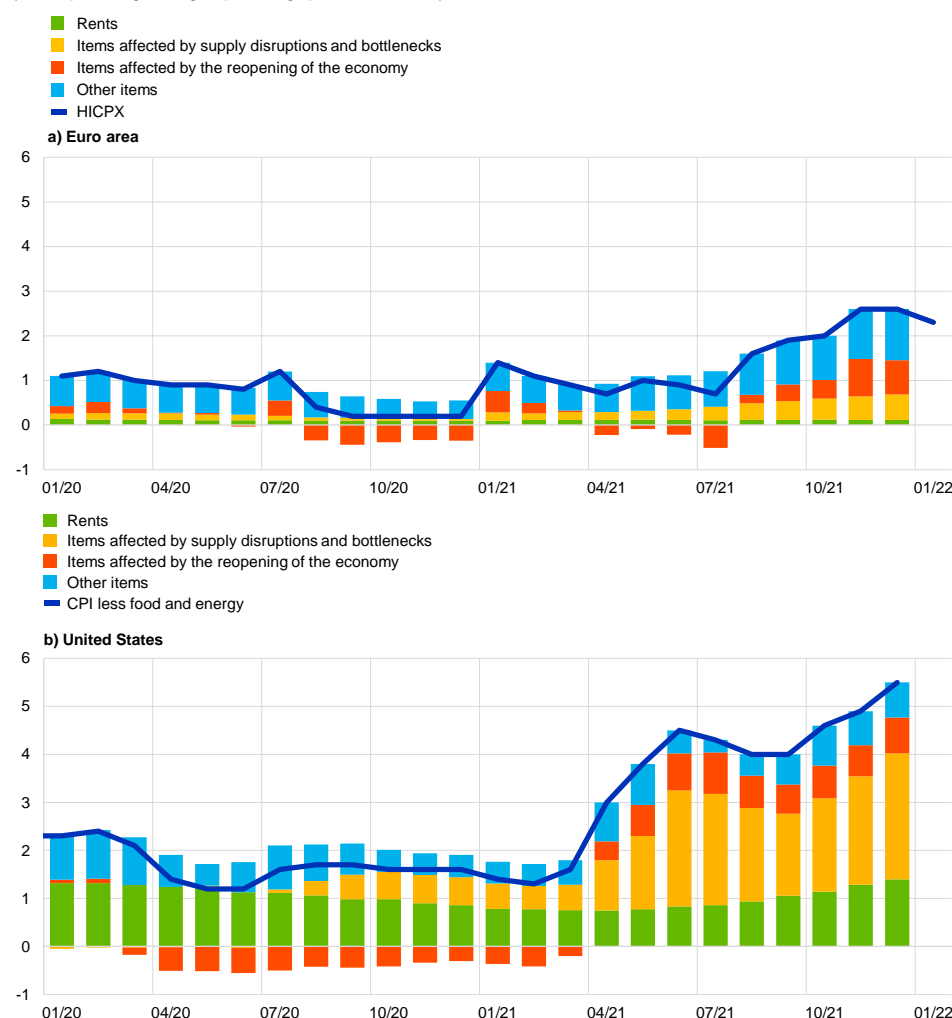
**Most of the difference in overall inflation developments was due to the far stronger increase in inflation excluding energy and food (and from a higher starting point) in the United States than in the euro area.** In the euro area, HICP inflation excluding energy and food (HICPX) started to increase in the second half of 2021 and stood at 2.6% in December – up 1.4 percentage points from the pre-crisis level of 1.2% recorded in February 2020. In the United States, by contrast, CPI inflation less food and energy, which had been substantially higher before the pandemic (standing at 2.4% in February 2020), began to soar from as early as April 2021 and increased substantially more (by 3.1 percentage points) to stand at 5.5% in December 2021 (Charts A and B). Part of the increase in HICPX inflation in the second half of 2021 in the euro area was due to base effects resulting from the temporary cut in value added tax in Germany in the second half of 2020. Without this temporary factor, HICPX inflation in the euro area would have been around 0.2 percentage points lower in each month of the second half of 2021 – leading to an

even more marked difference in inflation excluding energy and food between the euro area and the United States. In January 2022 HICP excluding energy and food – according to Eurostat’s flash release – decreased to 2.3%.

## Chart B

### Inflation excluding food and energy

(annual percentage changes, percentage point contributions)



Sources: ECB and ECB staff calculations.

Notes: Items affected by supply disruptions and bottlenecks comprise new motor cars, second-hand motor cars, spare parts and accessories for personal transport equipment, and household furnishings and equipment (including electronics). Items affected by the reopening of the economy comprise clothing and footwear; recreation and culture; recreation services; hotels/motels; and domestic and international flight prices. Rents comprise actual rents paid by tenants – and for the United States also imputed rents for owner-occupied housing. The latest observation is for December 2021 for the United States and January 2022 (flash release) for the euro area.

**Items affected by supply disruptions and bottlenecks and by the reopening of the economy play an important role as drivers of inflation excluding food and energy in the euro area and the United States.** As illustrated in Chart B, one important factor in the differences in inflation excluding food and energy between the United States and the euro area is rents, which contribute much more strongly to inflation in the United States. This is in part linked to the fact that rents have recorded substantially stronger growth in the United States, but it also reflects the larger share of rents in the US consumption basket, which includes not only actual

rents but also imputed rents for owner-occupied housing. While the impact of rents can help to explain differences in the level of inflation between the euro area and the United States, including before the pandemic, the high level of inflation excluding food and energy observed recently has been driven mainly by supply disruptions and bottlenecks and by effects related to the reopening of the economy. Supply chain bottlenecks have particularly affected prices for used and new cars, and car components, as well as household furnishings and equipment. In the United States, the prices for this group of items soared during the second quarter of 2021 and, after briefly easing, regained momentum in the last quarter of 2021. In particular, used car prices alone accounted for around 1.6 percentage points of CPI inflation less food and energy in December. Overall, items affected by supply disruptions and bottlenecks made a contribution of 2.6 percentage points to the annual growth rate of core CPI inflation in the United States in December (Chart D), whereas the average monthly contribution of this aggregate of items in 2015-19 had been marginally negative. In the euro area, the role of this aggregate has also increased – but its monthly contribution to HICPX inflation remained around 0.5 to 0.6 percentage points up to December 2021 and, thus, substantially smaller than in the United States (Chart B). Additionally, the prices of some goods and services have rebounded owing to the reopening of the economy, with their levels returning to or even exceeding pre-crisis levels. In the United States, this rebound is visible in prices for apparel and, among services, in prices for travel-related services and transportation, which have all risen strongly following the easing of containment measures. This contributed substantially to core CPI inflation in the second quarter of 2021 and remained significant in the last quarter, at around 0.7 to 0.8 percentage points in year-on-year terms (compared with a historical contribution of 0.04 percentage points). In the euro area, the contribution from such reopening effects only started to increase from late summer – in part linked to the later lifting of containment measures – but in recent months it has been similar in size to the contribution seen in the United States.

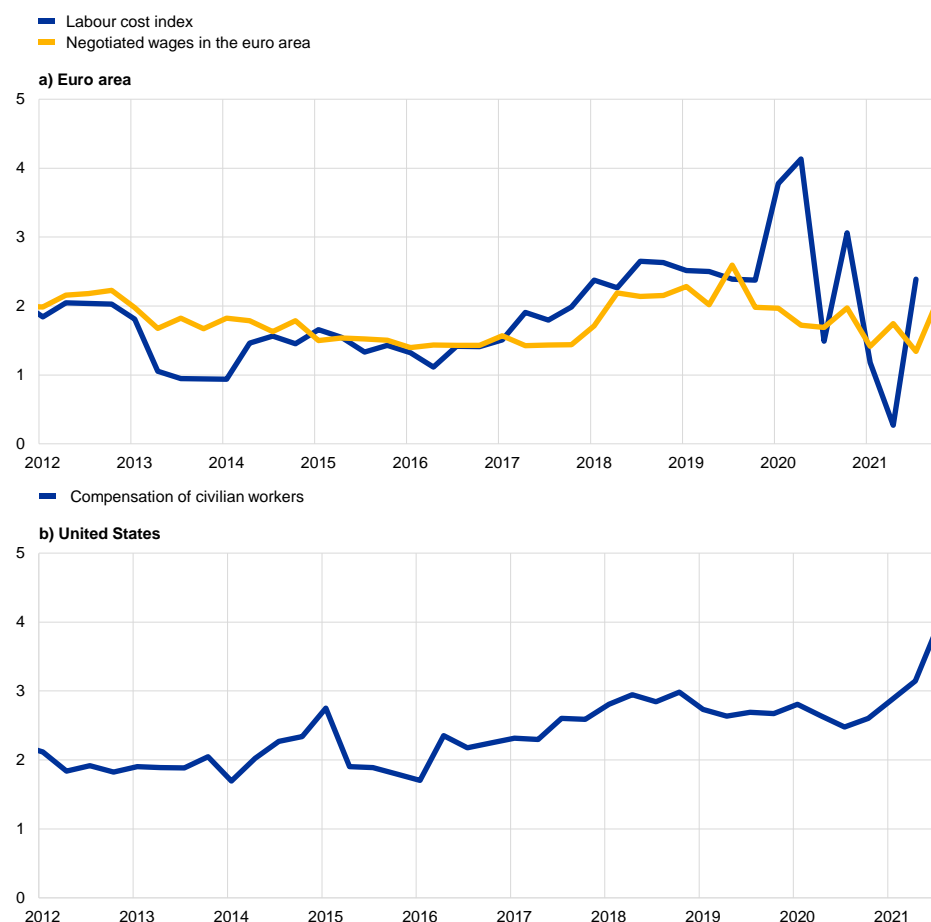
**Turning to the underlying drivers of inflation developments, the United States is more advanced in the business cycle than the euro area and the US labour market has tightened, which has started to be reflected in some upward pressure on wages.**

Real GDP had already surpassed its pre-crisis level in the United States in the second quarter of 2021 – while in the euro area GDP reached its pre-crisis level only in the fourth quarter of 2021. In the United States, labour market tightness has increased sharply over recent months and the employment cost index for civilian workers has shown a relatively large increase (Chart C). This stands in contrast to the euro area, where so far wage growth – as measured by negotiated wages or, for example, the labour cost index – has remained quite subdued. It should be kept in mind that wage indicators are being distorted by the effects of the crisis, including the important role of job retention schemes, especially in the euro area, which complicates their interpretation.

## Chart C

### Developments in wages and labour costs

(annual percentage changes, ratio, share of survey respondents)



Sources: US Bureau of Labor Statistics, NBER, ECB, European Commission and ECB staff calculations.

Notes: The latest observation is for October 2021. For the United States, civilian workers comprise workers in the private non-farm economy, except those employed in private households, and workers in the public sector, except the federal government. Wage indicators are being distorted by the effects of the crisis, which complicates their interpretation.

### Upside surprises in inflation data releases have continued to be larger for the United States than for the euro area over recent quarters. Consensus

Economics forecasts, produced at a monthly frequency (Chart D, panel a), show that in recent months inflation developments have been higher than forecast in the euro area and even more so in the United States. Looking ahead, the latest monthly Consensus Economics forecasts published in January 2022 see headline inflation remaining elevated over most of 2022 both in the United States and in the euro area. Overall, headline inflation in the United States – which had exceeded 2% before the start of the pandemic – is expected to remain above 2% much longer than in the euro area (Chart D, panels a and b).

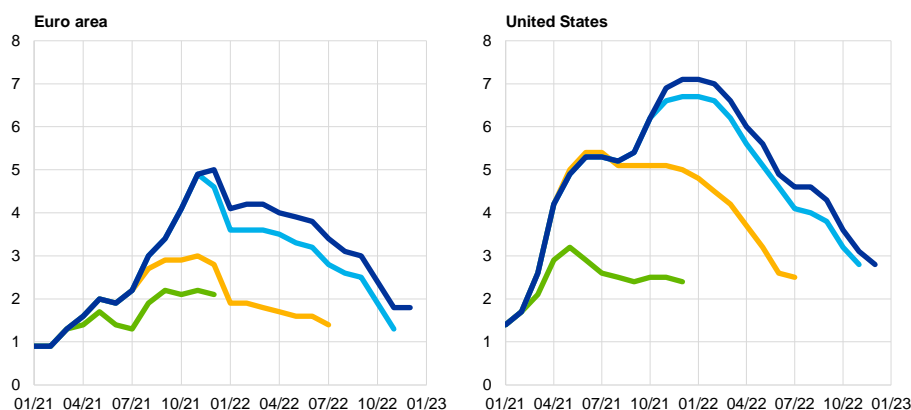
## Chart D

Inflation expectations based on Consensus Economics surveys for US headline CPI inflation and euro area headline HICP inflation

### a) Monthly inflation forecasts

(annual percentage changes)

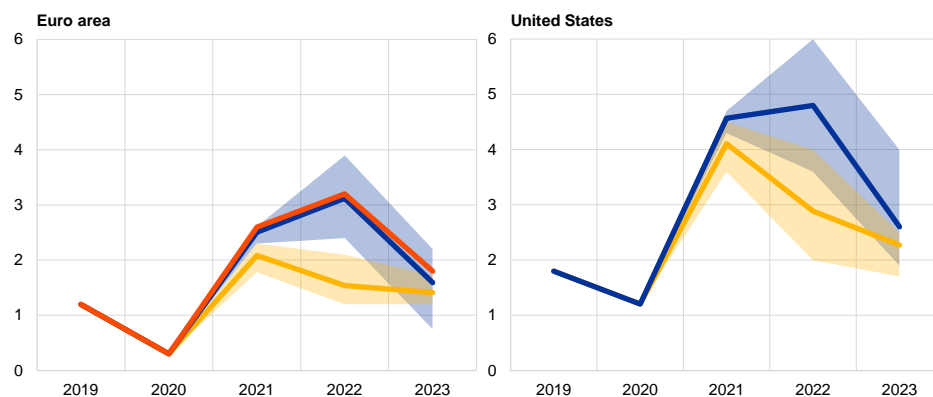
- March 2021
- August 2021
- December 2021
- January 2022



### b) Annual inflation forecasts

(annual percentage changes)

- August 2021 Consensus Economics mean forecast
- December 2021 Eurosystem staff macroeconomic projections
- January 2022 Consensus Economics mean forecast



Sources: Consensus Economics, Eurostat, Haver Analytics and ECB calculations.

Note: In panel b) the shaded blue and yellow areas denote the ranges of forecasts included in Consensus Economics surveys.

### Looking ahead, the degree of uncertainty around the outlook for inflation seems to be much larger for the United States than for the euro area.

The latest Consensus Economics forecasts published in January 2022 expect headline inflation in the euro area to be 3.1% in 2022 and 1.6% in 2023. This was broadly in line with the December 2021 Eurosystem staff macroeconomic projections, which foresaw euro area annual inflation at 3.2% in 2022 and 1.8% in 2023 and 2024. The range of annual forecasts included in Consensus Economics, which can be seen as a measure of uncertainty, is especially wide for 2022 and somewhat narrower for 2023. For 2023, all annual forecasts included in the January 2022 Consensus Economics survey round see inflation in the euro area at between 0.8% and 2.2%, while for the United States all forecasts are in a range between 1.9% and 4% and only one

forecaster sees inflation being below 2%. This higher level of inflation in the United States can be linked to differences in economic slack and labour market tightness compared with the euro area, leading to stronger wage pressures in the United States. At the same time, the pandemic is a unique situation with considerable differences compared with inflation developments in “normal” times, which require close monitoring and add to the uncertainty surrounding the inflation outlook in the United States as well as in the euro area.



## How persistent supply chain disruptions could affect euro area potential output

Prepared by Julien Le Roux

**This box investigates potential long-term effects that current supply shortages could have on euro area potential output growth.** Although initially assumed to be short-lived and confined to a few products (e.g. microprocessors) or countries (e.g. those that are manufacturing intensive), the supply shortages have been building up over time. Depending on the persistence of global value chain disruptions, firms might consider finding new suppliers, transport routes, locations of production and more broadly new supply chains. If this happens, sectors that have greatly benefited from international exposure and globalisation in terms of productivity growth might experience a decline in trend total factor productivity. All else being equal, this could lead to a trend decline in potential output growth for the most affected countries.

**Neither economic theory nor empirical evidence provide clear-cut conclusions on the long-term effects supply shortages may have on businesses restructuring their supply chain.** On the one hand, companies would only be prepared to bear the high cost of setting up new global supply chains if they were to consider supply shortages to be sufficiently long-lasting as to justify the expenditure. So far, when looking at survey data, business leaders have not anticipated much long-term change in their supply chains. However, recent developments in value chains may force them to reconsider their views on this.<sup>1</sup> On the other hand, a substantial change in the geography of supply chains may happen because persistent supply chain disruptions are inevitably very costly for firms. The challenges presented by this reorganisation process could be exacerbated if the pandemic encourages an increase in protectionism and de-globalisation. Reorganising company supply chains is ultimately a question of arbitrage between reshoring expenses and the cost of persistent supply disruptions – both of these can be very high and difficult for firms to anticipate.<sup>2</sup>

**As the euro area is tightly integrated into global value chains, current disruptions and possible supply reorganisations are highly important for euro area economies.** Euro area countries remain extensively involved in cross-border production chains and their participation in global value chains is relatively high compared with most other economies, including those of China and the United

<sup>1</sup> When asked about the persistence of supply-side constraints, almost 45% of non-financial companies expect a duration of supply bottlenecks of less than one year, while more than 30% of them anticipate shortages to persist beyond one year. The uncertainty is reflected by the 25% that did not respond. (See the box entitled “[Main findings from the ECB’s recent contacts with non-financial companies](#)”, *Economic Bulletin*, Issue 7, ECB, 2021.) For more on this topic, see “[Global Trade Report – Battling Out of Supply-Chain Disruptions](#)”, Allianz Research, Euler Hermes, 2021.

<sup>2</sup> For more on these two sides of the debate, see Antràs, P., “De-globalisation? Global Value Chains in the post-COVID-19 age” and Lund, S., “De-globalisation? The Recent Slowdown of Global Trade and Prospects for Future Rebalancing” in “[Central Banks in a Shifting World](#)”, Proceedings of the 2020 ECB Forum on Central Banking, ECB, November 2020, pp. 28-89.

States.<sup>3</sup> Different degrees of participation and positions in the value chain imply heterogeneous effects of the coronavirus (COVID-19) pandemic across euro area countries. Larger euro area economies tend to be more upstream in the global production chain than smaller euro area countries. In upstream economies, the impact of global value chains on total factor productivity and potential output depends on efficiency gains achieved by dividing tasks according to comparative advantage. Conversely, smaller euro area countries – notably some eastern European countries – are, for instance, generally more downstream and rely heavily on global value chains for technology adoption and total factor productivity growth. It is also worth noting that euro area global value chains are typically regional, which makes them somewhat less sensitive to extra-European shocks.<sup>4</sup>

**It is important to consider whether present shortages are likely to constitute a structural shift in global value chains.** Participation rose sharply in the early 2000s before falling temporarily in 2009. It then returned to its pre-crisis level the following year. In recent years, global value chain participation has flattened out (Chart A). Since the start of the coronavirus pandemic, there has been some evidence of firms reorganising themselves and their value chains but, so far, this remains mainly anecdotal and is not yet broad-based.<sup>5</sup> Notwithstanding this anecdotal evidence, the long-term effects of the pandemic on trade and value chains are still largely uncertain. It remains unclear whether or not the pandemic has ended the protracted period of stagnation in global value chain participation, leading to a further decline.<sup>6</sup>

<sup>3</sup> Global value chain participation is a commonly used indicator that measures the degree of value chain integration. The position of a country in value chains can be qualified as upstream (downstream) if the foreign content of the country's production is larger (lower) compared with the inputs supplied by this country to other economies. For further definitions, see ["The impact of global value chains on the euro area economy"](#), *Occasional Paper Series*, No 221, ECB, Frankfurt am Main, April 2019.

<sup>4</sup> See Cigna, S., Gunnella, V. and Quaglietti, L., ["Global value chains: measurement, trends and drivers"](#), *Occasional Paper Series*, No 289, ECB, Frankfurt am Main, January 2022.

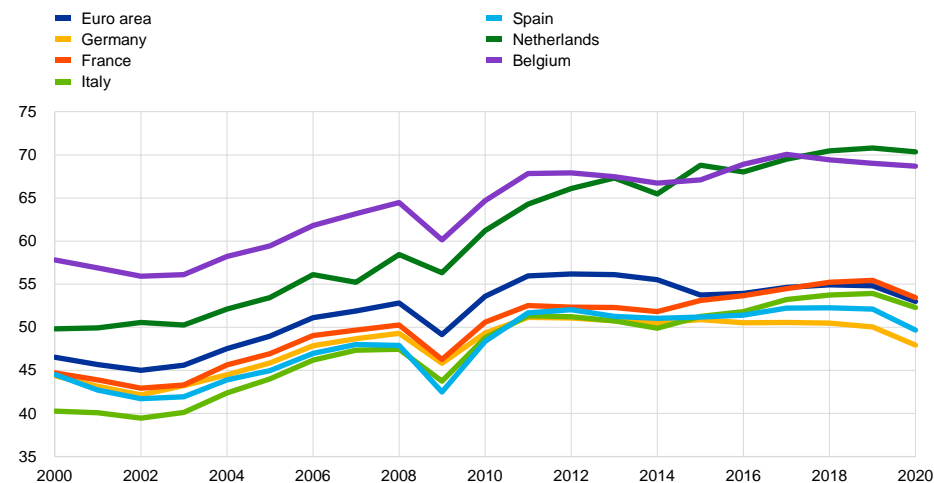
<sup>5</sup> For example, at the start of the pandemic, the scramble for personal protective equipment led to relocation of production to European countries, which was as sudden as it was short-lived. As another example, the firm IKEA® is considering moving part of its production devoted to its European market to Turkey. (See ["IKEA to shift more production to Turkey to shorten supply chain"](#), Reuters, October 2021.) The firms in the textile industry reportedly have similar intentions. (See ["Hugo Boss moves production closer to home to shorten supply chain"](#), Financial Times, December 2021.)

<sup>6</sup> Past events, although limited in number, can shed light on the present situation. For instance, the earthquake in Japan in 2011 did not lead to significant reshoring, nearshoring, or diversification. (See Freund, C., Mattoo, A., Mulabdic, A., Ruta, M., ["Natural Disasters and the Reshaping of Global Value Chains"](#), *Policy Research Working Papers*, No 9719, World Bank, Washington, DC, June 2021.) This is despite the fact that initially it may have been briefly thought that the earthquake would lead to such outcomes. (See ["Interconnected Economies: Benefiting from GVCs – Synthesis Report"](#), OECD Publishing, 2013.) However, it is worth noting that, in contrast with the situation today, global supply chain shocks have tended to be concentrated geographically and/or on a sectoral basis.

## Chart A

### Global value chain participation in the largest euro area countries

(percentage of gross exports)



Source: ECB staff calculations based on the World Input-Output Database (WIOD, see: [www.wiod.org](http://www.wiod.org)).

Note: Global value chain participation is measured as the share in gross exports of the sum of: (i) domestic value added in third country exports (forward global value chain participation); and (ii) the foreign value added in own exports (backward global value chain participation). The latest data from the WIOD is for 2014. From 2015 onwards, global value chain participation is estimated with a small panel regression of global value chain participation growth over trade openness (measured in volume by the sum of import and export as a share of gross domestic product). The estimation is carried out for the period 2000-2014 for the six largest euro area countries, including country fixed effects. The regression coefficients are statistically significant at the 1% level.

**The effect of supply chain disruptions on potential growth is likely to depend on the duration of these disruptions.** Theoretically, if supply chain disruptions are temporary these may not affect euro area potential growth. Temporary product or labour shortages lead to a decrease in firms' capacity utilisation, which will affect the cyclical component of total factor productivity.<sup>7</sup> The trend in total factor productivity is only affected if shortages lead to producers changing their supply chains, although there is still some debate on whether the overall economic effect would be negative or positive. Production onshoring and reduction in supply chain length is likely to reduce potential growth, as globalised production processes presumably reflect a more efficient allocation of resources that benefits from comparative advantages across countries. Long-lasting supply chain disruptions may also force companies to revise or postpone their investment plans and therefore alter the evolution of their stock of capital. On the other hand, global firms may reconfigure and optimise their global value chains. Greater resilience that comes with shorter supply chains and local access to strategic goods, spurred by digitalisation, the adoption of e-commerce, videoconferencing and robots, may revive trade flows, structurally change their composition (more towards services) and ultimately have a positive impact on trend total factor productivity.<sup>8</sup>

<sup>7</sup> For the link between total factor productivity and capacity utilisation, see, for instance, Planas, C., Roeger, W., Rossia, A., "The information content of capacity utilization for detrending total factor productivity", *Journal of Economic Dynamics and Control*, Volume 37, Issue 3, March 2013, pp. 577-590.

<sup>8</sup> See Baldwin, R., Freeman, R., "Risks and Global Supply Chains: What We Know and What We Need to Know", *Working Paper Series*, No 29444, National Bureau of Economic Research, Cambridge, MA, October 2021.

**A back-of-the-envelope calculation, using historical elasticities between global value chain participation and total factor productivity growth, suggests that the impact of current supply shortages on potential output would be limited.** If supply bottlenecks persist over time and are not temporary, as currently assumed in the December 2021 Broad Macroeconomic Projection Exercise (BMPE)<sup>9</sup>, euro area potential output could be adversely affected. The estimated effect of a possible reorganisation of global value chains on total factor productivity is based on a recent paper which highlighted the nexus between the development of global value chain participation and total factor productivity growth.<sup>10</sup> It is assumed that a reorganisation of global value chains would have a negative impact mainly via total factor productivity. To highlight the effects of possible reshoring, we propose two illustrative adverse scenarios.

**We analyse two scenarios based, on the one hand, on the expected decline in trade following the coronavirus crisis and, on the other hand, on the decline in trade observed during the great financial crisis.** In the first scenario, we estimate the impact of the coronavirus crisis on euro area trade using the trade openness ratio.<sup>11</sup> Although slightly different in concept, trade openness is an empirically valid and timely proxy for global value chain participation.<sup>12</sup> We depart from the assumed recovery of trade openness over the projection horizon (as assumed in the December 2021 BMPE) in this scenario and instead assume that global value chain participation is permanently affected in proportion with the decrease in the trade openness observed in 2021 and compared with the level that was anticipated in the December 2019 BMPE (Chart B). This represents a -0.6% deviation in euro area trade openness, with a large heterogeneity across countries (Chart B). The second scenario works directly with global value chain participation and assumes a permanent decline in participation equivalent to half of the shock observed during the great financial crisis. In this case, this represents a 1.8 percentage point decline in euro area global value chain participation. The disparity of shocks across countries is smaller in the second scenario than in the first. This stems from a more homogeneous decline in trade across euro area countries during the great financial crisis.

<sup>9</sup> See “[Eurosystem staff macroeconomic projections for the euro area, December 2021](#)”, ECB, Frankfurt am Main, 16 December 2021.

<sup>10</sup> See Chiacchio, F., Gradeva, K., Lopez-Garcia, P., “[The post-crisis TFP growth slowdown in CEE countries: exploring the role of Global Value Chains](#)”, *Working Paper Series*, No 2143, ECB, Frankfurt am Main, April 2018.

<sup>11</sup> We choose to base the size of the shock on trade openness rather than on global value chain participation because the latest values for global value chain participation end in 2014. However, the link between trade openness and global value chains is strong: we estimate, in a panel, an elasticity of 0.6 between trade openness and global value chain participation growth over the period 2000-2014. The estimation is carried out for the six largest euro area countries, with country fixed effects. The regression coefficients are statistically significant at the 1% level.

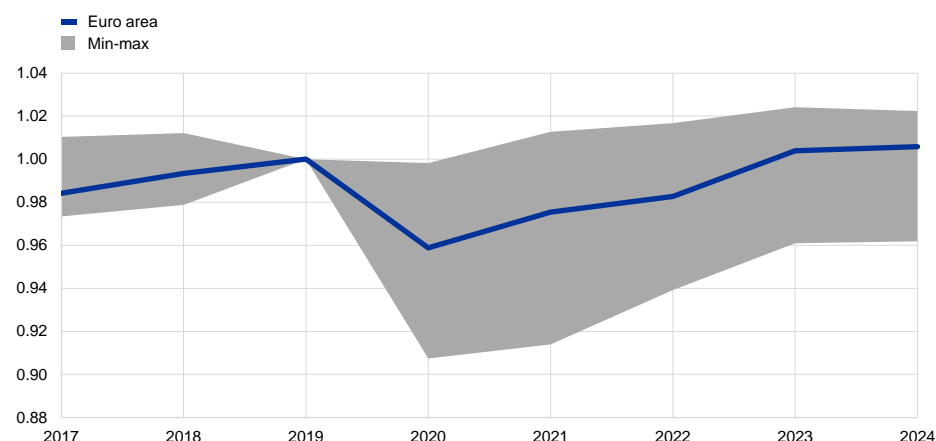
<sup>12</sup> Using the trade openness ratio as an indicator of global value chain participation enables us to have a counterfactual scenario, namely the Eurosystem's projection established in December 2019. However, it is possible that, owing to several factors (trade normalisation following the coronavirus shock, inventory rebuilding, etc.), in the current period this is a less accurate predictor of global value chains than it would be in normal times.

## Chart B

### Trade openness in the euro area and in the largest euro area countries

#### Ratio of the December 2021 projection over the December 2019 projection

(index)



Source: ECB staff calculations based on the December 2019 and 2021 BMPEs.

Note: The grey area denotes the min-max for the largest euro area countries (Belgium, Germany, Spain, France, Italy, Netherlands, Austria, Portugal and Finland) which are subject to less volatility in the revision of their annual national accounts than other countries. The December 2019 BMPE has been extended in 2023 and 2024, assuming the same growth rates for trade and GDP as those expected for 2022.

#### For both scenarios, the effect of declining global value chain participation on potential output would be of a limited magnitude.

In the two scenarios, elasticities, as calculated in an ECB Working Paper in 2018<sup>13</sup>, are applied to establish the effect on total factor productivity. The effect of the shocks is assumed to be one-half permanent and thus passes for half in the trend. As a result, trend total factor productivity would suffer a loss in the euro area ranging between -0.1 and -0.3 percentage points. Potential output would suffer a similar setback. This represents a limited impact in a context where trend total factor productivity of the euro area is expected to grow over the period 2021-2023, in cumulated terms, by 2.1% according to the European Commission's Autumn 2021 Economic Forecast. This estimate obscures some heterogeneity across countries (Table A). For some countries, a more negative impact on total factor productivity and on potential output may materialise if trade were to be lastingly affected by the pandemic.

## Table A

### Impact of a reversal of global value chain participation on the level of trend total factor productivity

(percentage points)

	Euro area	Germany	Spain	France	Italy	Netherlands
Scenario 1	-0.1	-0.2	-0.3	-0.7	-0.3	-0.2
Scenario 2	-0.3	-0.3	-0.4	-0.3	-0.3	-0.2

Source: ECB staff calculations.

Note: Overall, the orders of magnitude of the two scenarios are fairly similar in the different countries. However, in Scenario 1, France appears as an outlier. This is because of the persistent weakness of trade in France since the start of the coronavirus crisis, which is linked to its sectoral specialisations. (See Berthou, A. and Gaulier, G., "French exports in 2020: aerodependence", *Eco Notepad*, Banque de France, August 2021.)

<sup>13</sup> See Chiacchio, F., Gradeva, K., Lopez-Garcia, P., op. cit.

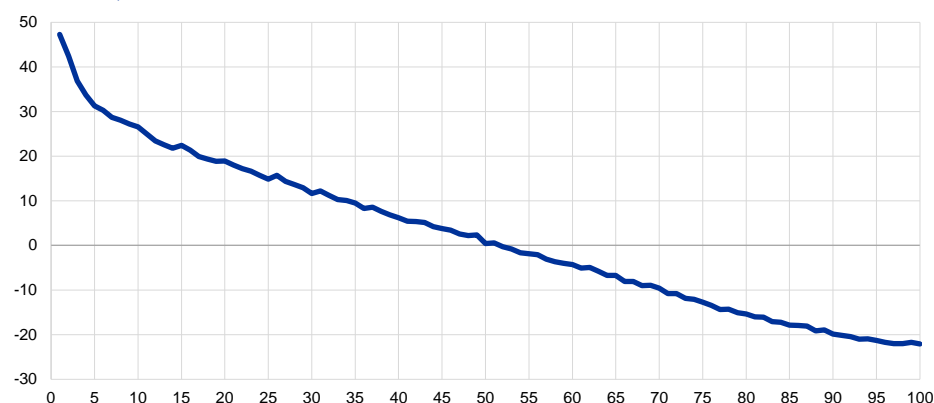
Prepared by Rodrigo Barrela, Vasco Botelho and Paloma Lopez-Garcia

**This box discusses how movements of firms along the productivity distribution over time affect aggregate productivity growth.**<sup>1</sup> The analysis is based on firm-level data for six euro area countries; the data have been treated to represent the set of non-financial corporations with employees. Firms move along the productivity distribution in accordance with their capacity to react to shocks and to structural factors that incentivise innovative investment. This applies both to low-productivity firms that are striving to survive in the market and high-productivity firms that are facing the risk of falling behind the times. Firm productivity is very dynamic across all countries, sectors and years: Chart A shows that firms fighting for survival at the bottom of the distribution (at the 5th percentile) were, on average, able to increase their productivity ranking by 30 percentiles over a 12-year period. At the same time, firms initially at the top of the distribution (at the 90th percentile) saw their productivity ranking decrease by 20 percentiles. This is significant as changes in firm productivity account, on average, for more than 60% of annual aggregate productivity growth.<sup>2</sup>

#### Chart A

Average change in firms' productivity ranking between 2006 and 2018

(x-axis: productivity ranking of a firm in 2006, in percentiles; y-axis: percentile change in the productivity ranking of a firm between 2006 and 2018)



Sources: Bureau van Dijk Orbis, the Bank for the Accounts of Companies Harmonized (BACH) database and ECB staff calculations.

Notes: Average change in incumbents' productivity ranking over a 12-year period, conditional on the firm's initial productivity ranking in 2006. Unweighted average across countries and sectors. The productivity ranking is constructed for each sector, country and year.

**Firm productivity is particularly dynamic among young firms.** The mean annual productivity growth of firms that have been active for fewer than six years is 8%,

<sup>1</sup> See also Work stream on productivity, innovation and technological progress, "Key factors behind productivity trends in EU countries", *Occasional Paper Series*, No 268, ECB, September 2021, and the article entitled "Key factors behind productivity trends in euro area countries", *Economic Bulletin*, Issue 7, ECB, 2021.

<sup>2</sup> There is some heterogeneity in the contribution of "within-firm" productivity growth across countries, sectors and time periods. To compute the contribution of within-firm productivity changes to annual aggregate productivity growth, see Melitz, M.J. and Polanec, S., "Dynamic Olley-Pakes productivity decomposition with entry and exit", *The RAND Journal of Economics*, Vol. 46, No 2, 2015, pp. 362-375.

compared with 2.5% for firms that have been active for more than 20 years (Chart B, panel a, yellow bar). The contribution of young firms to aggregate productivity growth is the result of selection and learning, as firms learn to adapt and implement new ideas while re-optimising their business models and processes. At the same time, the average productivity developments of young surviving firms are driven by a few young “superstar” firms, which are defined as the top 10% of firms in terms of productivity growth among all firms that have been active for fewer than six years.<sup>3</sup> While the median young firm (in terms of productivity growth) experiences annual average productivity increases of around 4% (Chart B, panel a, orange bar) over its first six years of activity, young superstar firms increase their productivity by around 100% per year, on average (Chart B, panel a, blue bar).<sup>4</sup>

**Young superstar firms stand out from the rest in several ways.** These firms invest more, on average, than their young competitors, particularly in intangible assets, while using fewer and more specialised workers (Chart B, panel b). They also pay higher wages and benefit from higher labour productivity. This, in turn, could reflect either these firms’ higher investment in human capital or a more capital-intensive production process hinging on a strong complementary relationship between labour and capital.<sup>5</sup>

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<sup>3</sup> The productivity growth distribution is skewed across all age groups, with superstar firms driving the productivity growth of surviving firms. This is considerably more pronounced for young firms, however. Superstar firms are generally defined as the top 10% of firms in terms of their productivity growth.

<sup>4</sup> For further evidence on the relevance of young superstar firms in driving average productivity growth of young surviving firms and on their contribution to the aggregate productivity growth of the euro area economy, see the article entitled “[Key factors behind productivity trends in euro area countries](#)”, *Economic Bulletin*, Issue 7, ECB, September 2021.

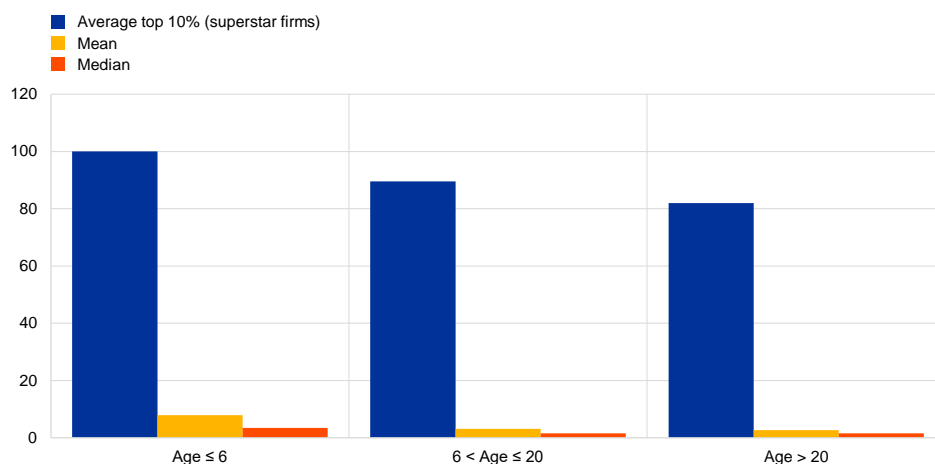
<sup>5</sup> An investment in human capital is an investment by the firm in the education and personal development of workers (e.g. tuition costs or training course fees) with the objective of these workers achieving higher productivity in the future. The results highlighted in the main text are consistent with recent evidence linking the rise in superstar firms to a decline in the level of the labour share. See Autor, D. et al., “The Fall of the Labor Share and the Rise of Superstar Firms”, *The Quarterly Journal of Economics*, Vol. 135, No 2, May 2020, pp. 645-709, and Kehrig, M. and Vincent, N., “The Micro-Level Anatomy of the Labor Share Decline”, *The Quarterly Journal of Economics*, Vol. 136, No 2, May 2021, pp. 1031-1087.

## Chart B

### Firm productivity dynamism by firm age and characteristics of young firms

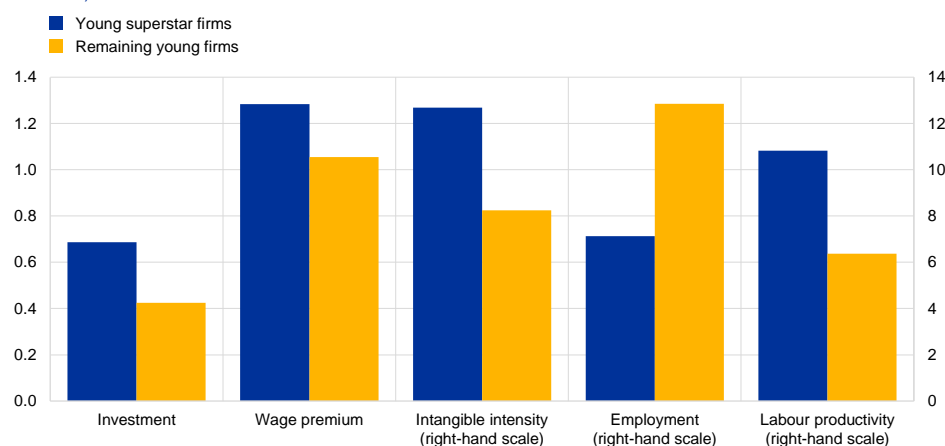
#### a) Annual labour productivity growth of surviving firms by age group in each sector

(percentages)



#### b) Average characteristics of young superstar firms and other young firms after controlling for country, sector and year

(left-hand scale: ratio; right-hand scale: number of employees, intangible intensity in EUR thousands, labour productivity in EUR ten-thousands)



Sources: Bureau van Dijk Orbis, the Bank for the Accounts of Companies Harmonized (BACH) database and ECB staff calculations. Notes: A young firm is defined as a firm that has been operating for up to six years. Young superstar firms are those in the top 10th percentile of the labour productivity growth distribution for each country, sector and year, and for at least two consecutive years. Panel a uses a weighted average across sectors, countries and years. In panel b each bar represents the coefficient from a regression of each variable listed in the x-axis on a dummy for the firm being a young superstar firm and a set of fixed effects controlling for the different countries, sectors and years. Productivity is computed as real value added per employee at the firm level. Intangible intensity is computed as the ratio of intangible capital to number of employees. Investment is computed as the change in real fixed tangible capital over the previous period's real fixed tangible capital. The period considered begins after the great financial crisis to avoid potential slumps.

**Firm productivity has become less dynamic over time.** This is the result of a loss of dynamism at both ends of the productivity distribution. First, there has been a significant decline in the share of low-productivity incumbents that register improvements in their productivity level over time (Chart C, panel a). Second, high-productivity firms were able to stay longer at the frontier in 2016 compared with 2006, although with some heterogeneity across countries (Chart C, panel b). The decline in firm dynamism alongside the productivity distribution is prevalent across



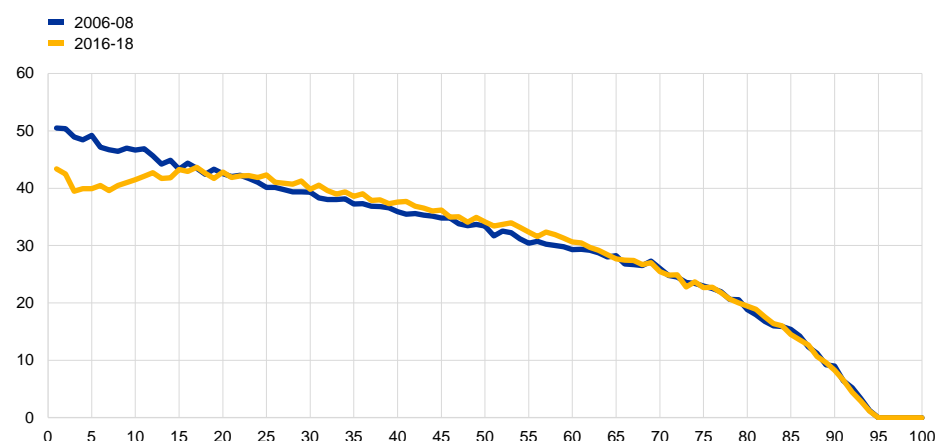
low and high-tech sectors. These findings are consistent with an increase in the average age of frontier firms and with declining entry rates.<sup>6</sup>

### Chart C

Decline in firm productivity dynamism at the bottom and top of the productivity distribution in six euro area countries

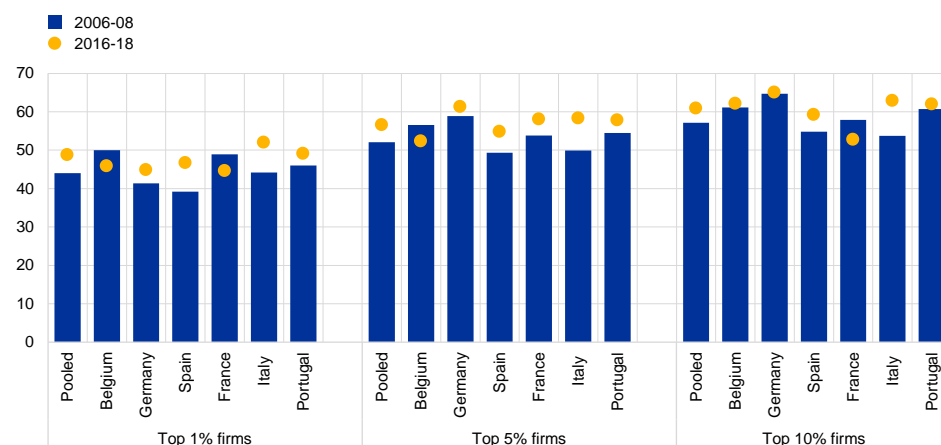
a) Share of firms that registered a productivity ranking improvement of at least five percentiles between 2006 and 2008 or 2016 and 2018

(percentages)



b) Share of firms that were at the productivity frontier for three consecutive years between 2006 and 2008 or 2016 and 2018

(percentage points)



Sources: Bureau van Dijk Orbis, the Bank for the Accounts of Companies Harmonized (BACH) database and ECB staff calculations.  
Notes: The productivity ranking is constructed for each sector, country and year. The productivity frontier is defined as the 1%, 5%, or 10% of firms with the highest productivity levels in their sector, country and year groups. The productivity frontier for the 2006-08 cohort tracks the performance of those firms that were leaders in 2006, and the productivity frontier for 2016-18 tracks the performance of the leaders in 2016. The pooled data represent an unweighted average of all firms in the six countries analysed.

**The causes of the slowdown in firm productivity dynamism deserve further research.** Lower dynamism could be linked to the winner-takes-all dynamics triggered by the particular characteristics of new technologies, such as network effects or high fixed costs. These dynamics could result in higher market concentration and lower entry activity, as some studies that are particularly focused

<sup>6</sup> Frontier firms in the euro area had an average of 20 years of activity in 2018, compared with around 14 years in 2006. This increase is shared across countries and could be related to the long-term decrease in firm entry, and thus to less competition from young disruptive firms.

on the United States have shown.<sup>7</sup> However, evidence for the euro area is not clear-cut and therefore deserves further research. As regards the lower firm dynamism in the euro area, recent evidence from the OECD suggests a link between the increases in market concentration, firm mark-ups and the incidence of mergers and acquisitions over the last decade.<sup>8</sup> The slowdown in firm dynamism implies lower productivity growth, and therefore low potential output growth and a lower natural rate of interest. This highlights the important role of structural policies aimed at increasing the durability and resilience of economic growth stemming from firms' investment in technological innovation, and of strengthening the market mechanism whereby highly productive firms thrive and less-productive firms shrink or exit the market entirely.

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<sup>7</sup> See Syverson, C., "Macroeconomics and Market Power: Context, Implications, and Open Questions", *Journal of Economic Perspectives*, Vol. 33, No 3, Summer 2019, pp. 23-43, and De Loecker, J., Eeckhout, J. and Unger, G., "The Rise of Market Power and the Macroeconomic Implications", *The Quarterly Journal of Economics*, Vol. 135, No 2, May 2020, pp. 561-644.

<sup>8</sup> See Criscuolo, C., "[Productivity and business dynamics through the lens of COVID-19: the shock, risks and opportunities](#)", ECB Forum on Central Banking 2021.

Prepared by Vanessa Gunnella, Valerie Jarvis, Richard Morris and Máté Tóth

**Natural gas is the second most important primary energy resource in the euro area, after petroleum-based products.** It is the most important source of energy in the manufacturing sector, and more than 90% of the gas consumed in the euro area is imported. The euro area is heavily dependent on imports of both petroleum-based energy products and natural gas, while renewable energy and nuclear energy are predominantly domestically produced (Chart A, panel a). From an economy-wide perspective, petroleum-based energy is the most consumed, reflecting mainly its use in the transport sector. Gas is, by contrast, the primary energy source most consumed in the industrial sector and by (non-transport) services and households (Chart A, panel b). Gas also acts as the key marginal energy resource in electricity generation, given the flexibility of gas-fired power plants and the overall gas infrastructure (e.g. network interconnections, storage capacity and liquified natural gas terminals) in responding to fluctuations in electricity demand. The transition towards renewables – where supply depends on variable weather patterns – has increased this reliance. This box examines the impact of gas price increases and a possible rationing shock on economic activity in the euro area.

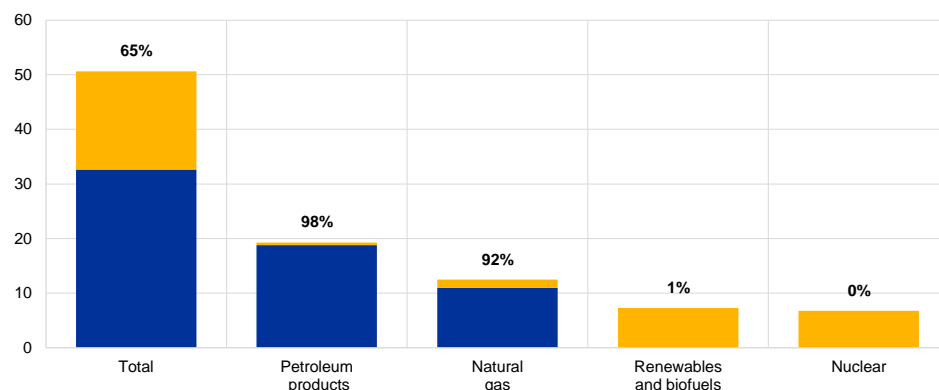
## Chart A

### Energy dependency and energy use by primary fuel type in the euro area

#### a) Euro area energy dependency

(millions of terajoules)

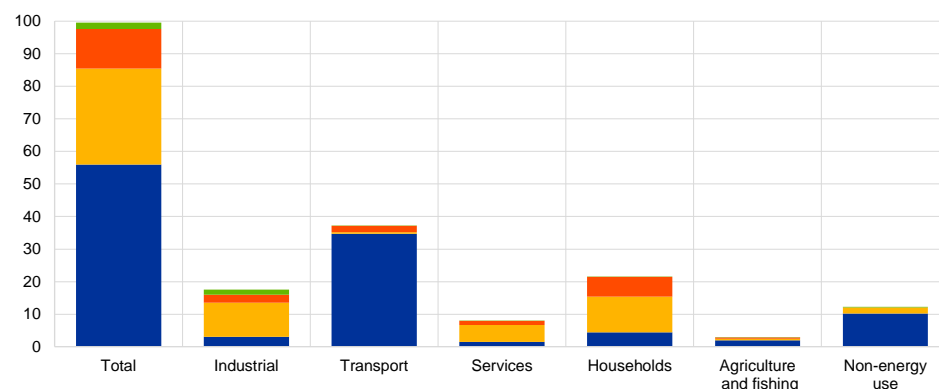
■ Net imports  
■ Domestic production  
% = dependency



#### b) Use by primary fuel type in 2019

(energy use as a percentage of total use)

■ Petroleum products  
■ Natural gas  
■ Renewables  
■ Other



Source: Eurostat (energy balances).

Notes: Dependency refers to the ratio of net imports to gross available energy. Intra-euro area trade is not included.

### Significant increases in natural gas prices can dampen economic activity through both the consumption channel and the intermediate goods channel. In

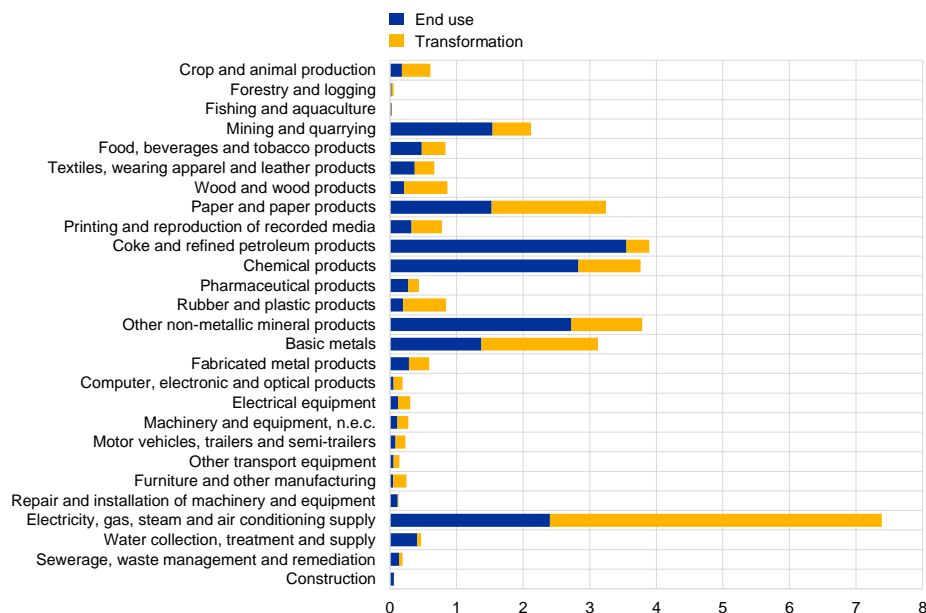
the case of the consumption channel, higher gas – and electricity – prices reduce households' real disposable income and purchasing power (as a result of the deterioration in terms of trade due to the increased cost of imported energy), and thus private consumption. As for the intermediate goods channel, gas is an input in the production processes of many firms. Chart B reports the use of natural gas by industrial sectors (relative to economy-wide output) classified according to the Statistical classification of economic activities in the European Community (NACE2), distinguishing between transformation use (when one form of energy is transformed into another) and end use (when energy is consumed). Besides the energy sector itself, which mostly transforms natural gas into other forms of energy, other large-

scale users of gas are producers of chemicals, basic metals, non-metallic minerals (glass, cement, ceramics, etc.) and food and beverages.

### Chart B

#### Gas use by industrial sector in 2019

(terajoules per unit of industry output)



Sources: Eurostat (energy supply and use tables) and ECB staff calculations. The sectors are classified according to the Statistical classification of economic activities in the European Community (NACE Rev. 2).

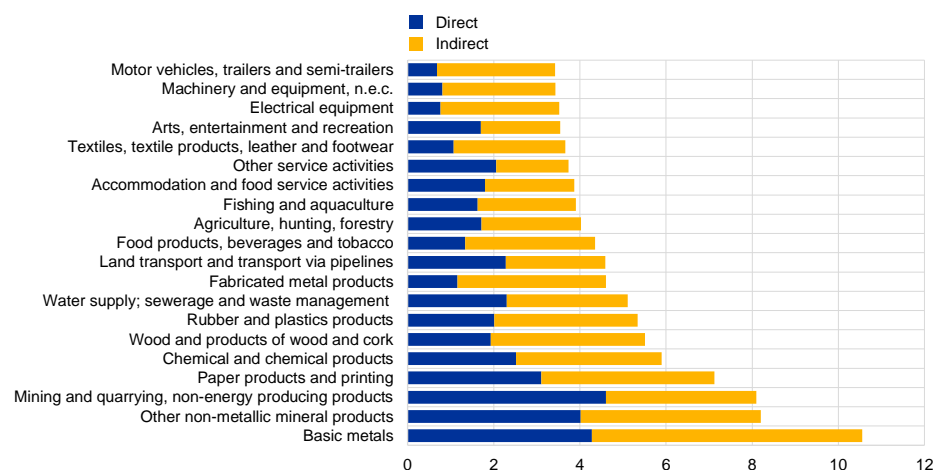
### Supply chain linkages amplify the reaction of goods producers and services providers to gas price increases.

Amplification occurs because more than two-thirds of energy consumption is attributable to indirect use embedded in the earlier stages of production. Chart C shows the 25 most energy-intensive sectors in the euro area measured by share of input from the electricity, gas, steam and air conditioning industries, after disentangling direct sourcing of input from indirect use via other sectors' inputs. Many industrial sectors have a sizeable direct use (especially mining and the metal and minerals sectors). Others mostly use electricity and gas indirectly, especially downstream industrial sectors such as those related to fabricated metals, food, textiles, electrical equipment, machinery and equipment, and motor vehicles) but also services sectors (transport-related, water supply, and accommodation and food). The overall input from the electricity, gas, steam and air conditioning supply industries is particularly relevant for the basic metals, mining and quarrying, paper and printing, and chemical sectors.

**Chart C**

**Direct and indirect gas and electricity use by sector**

(percentage of total output in 2018)



Sources: OECD Trade in Value Added (TIVA) database 2021 and ECB staff calculations.

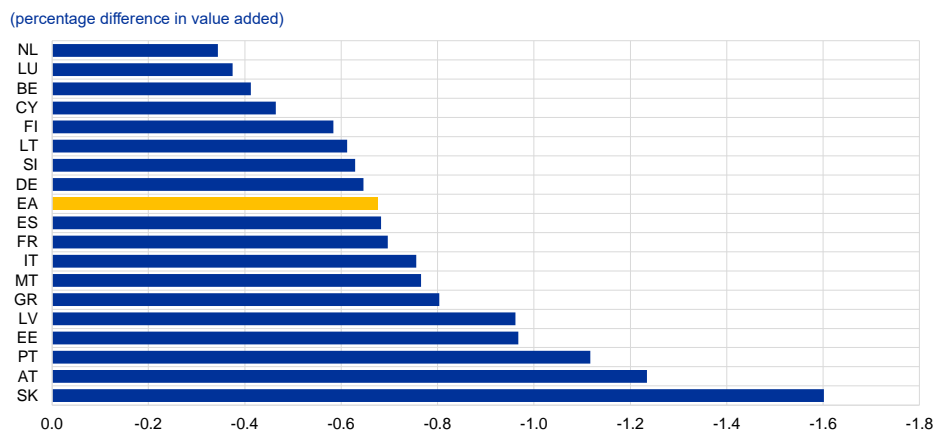
Note: The chart shows the 25 most energy-intensive sectors measured by the share of input from the electricity, gas, steam and air conditioning industries, classified according to the United Nations International Standard Industrial Classification for All Economic Activities (ISIC), Rev. 4.

**Regarding supply disruptions, the direct and indirect impact of a hypothetical 10% gas rationing shock on the corporate sector is estimated to reduce euro area gross value added by about 0.7%.**

To assess the effect of supply rationing, we assume, for illustrative purposes, a 10% fall in the output of the electricity, gas, steam and air conditioning supply sector for production processes in all other sectors. As shown in Chart B, this sector is by far the largest direct consumer of gas and its activity largely consists of distributing natural gas and transforming it into electricity. The effects are computed by comparing the value added derived from an input-output structure with full coefficients and the value added derived from an hypothetical input-output structure where the final and intermediate supply to the euro area of the electricity, gas, steam and air conditioning supply sector are rationed by 10%. It should be noted that the scope of this exercise is limited in that it does not consider the impact of price changes, complementarity, substitution or second-round and general equilibrium effects. Chart D reports the estimated losses for euro area countries. The accounting exercise suggests that gross value added in the euro area could be 0.7% lower in this rationing scenario, with losses being particularly significant for countries where production relies more heavily on gas and where the production of the electricity, gas, steam and air conditioning supply industry itself represents a considerable share of value added.

### Chart D

Impact of a 10% cut in the gas supply on gross value added according to input-output simulations



Sources: OECD Trade in Value Added (TIVA) database 2021, Eurostat and ECB staff computations.

Note: Impacts on countries are estimated by comparing the output derived from an input-output structure with full coefficients and the output derived from an input-output structure where the output of the electricity, gas, steam and air conditioning supply sector for production purposes in the euro area is 10% less.

### An alternative framework for assessing the macroeconomic impact of gas price increases is to use general equilibrium models with a rich energy representation.

The rich energy block of the National Institute Global Econometric Model (NIGEM) permits an illustrative assessment of the impact of the ongoing surge in gas (and oil) prices on euro area activity. NIGEM distinguishes between four types of energy: oil, gas, coal and renewables. While there is no mechanism for direct quantity rationing, simulated impacts for activity are possible by imposing shocks to global energy prices using current profiles from spot and futures prices. NIGEM-based estimates suggest that a permanent one standard deviation increase in natural gas prices from the first quarter of 2021 would result in a deviation in euro area GDP of around 0.2% from baseline levels over the standard three-year projection horizon (in the absence of policy and exchange rate effects).

### Illustrative counterfactual simulations based on the surge in oil and gas prices since the start of 2021 suggest a significant negative impact on euro area activity in 2022, peaking in the first quarter.

At the data cut-off date for the December 2021 Eurosystem staff projections, euro area oil and gas spot prices and futures suggested that euro area natural gas prices would likely peak in the first quarter of 2022 at almost 600% above their first quarter 2021 levels, before declining significantly thereafter.<sup>1</sup> Conditioning on these paths<sup>2</sup>, and under standard simulation assumptions excluding exchange rate and policy feedback, mechanical simulations using NIGEM suggest that the current surge in oil and gas prices could reduce euro

<sup>1</sup> While the increases in oil prices compared with their level in the first quarter of 2021 (which is broadly equivalent to the nominal averages seen over the course of 2017-19) are in line with historical patterns (as last seen in the run-up to and wake of the global financial crisis), the surge in recent gas prices is well outside earlier deviations. At the time of drafting, gas prices remained highly volatile, despite spot prices in January falling to around half of their December futures values.

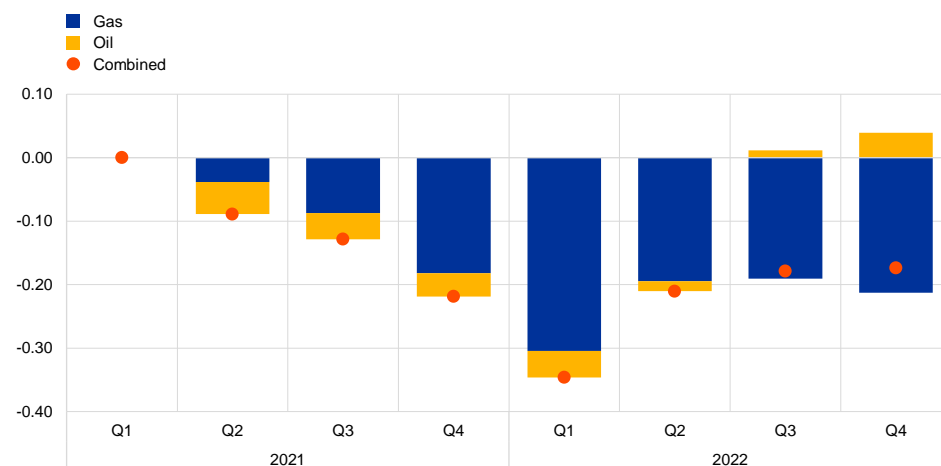
<sup>2</sup> The profiles used in these simulations reflect the quarterly averages of the profiles shown in Chart A of Box 3 entitled "Developments in energy commodity prices and their implications for HICP energy price projections" in the December 2021 Eurosystem staff macroeconomic projections for the euro area, published on the ECB's website on 16 December 2021.

area output by around 0.2%, compared with baseline levels of GDP (Chart E), by the end of 2022. While the proportional impact of increases in gas prices is typically substantially lower than the impact associated with rising oil prices, the extraordinary magnitude of the gas price increases seen in energy futures makes gas prices the main driver of the adverse impact on euro area GDP this time.

### Chart E

#### Simulated impacts of ongoing energy price developments on euro area GDP

(percentage deviation from baseline levels)



Sources: Bloomberg, National Institute Global Econometric Model (NIGEM) and ECB staff calculations.

Note: The chart shows the simulated impact of deviations in energy prices from first quarter 2021 levels on euro area GDP, net of exchange rate and policy effects.



## 5 The role of migration in weak labour force developments during the COVID-19 pandemic

Prepared by Katalin Bodnár and Derry O'Brien

**Weaker than expected developments in the labour force during the coronavirus (COVID-19) pandemic may partly reflect weak net immigration.** In the third quarter of 2021 the size of the euro area labour force recovered to around its pre-pandemic level in the fourth quarter of 2019.<sup>1</sup> However, it remains substantially below the level expected prior to the COVID-19 outbreak. This reflects the strong impact of the pandemic on the dynamics of both the working age population and the labour force participation rate (LFPR).<sup>2</sup> Subdued net immigration may have been a contributory factor, stemming from moderate migrant inflow and some foreign workers resettling in their home countries. Bringing together the available data on migration for euro area countries, this box examines the role of migration in weak labour force developments during the pandemic and the longer-term implications.

**Weak net immigration partly explains a flattening out of the working age population.** The working age population is usually considered to be independent of the business cycle<sup>3</sup> and is influenced by two factors: natural entry and exit from the population of residents aged 15-74 and net immigration of those aged 15-74. It was rising before the pandemic and was projected to continue increasing until 2024, albeit at a moderating rate.<sup>4</sup> This was predicated on a moderation or even a negative net flow in natural entry and exit from the population of residents aged 15-74. Net immigration flows were projected to contribute positively to the working age population, more than offsetting any declines in the number of working age residents. However, since the onset of the pandemic, net immigration flows have been much weaker than expected, resulting in a broadly flat profile for the working age population (Chart A).

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<sup>1</sup> According to EU Integrated European Social Statistics (IESS) data, the labour force was 0.2% smaller in the third quarter of 2021 than in the fourth quarter of 2019, as also indicated by data from the EU Labour Force Survey. The latter data source is used for the remainder of this box as it provides the necessary breakdown.

<sup>2</sup> With regard to the drivers of the recent changes in the labour force participation rate, see the box entitled "[Labour supply developments in the euro area during the COVID-19 pandemic](#)", *Economic Bulletin*, Issue 7, ECB, 2021.

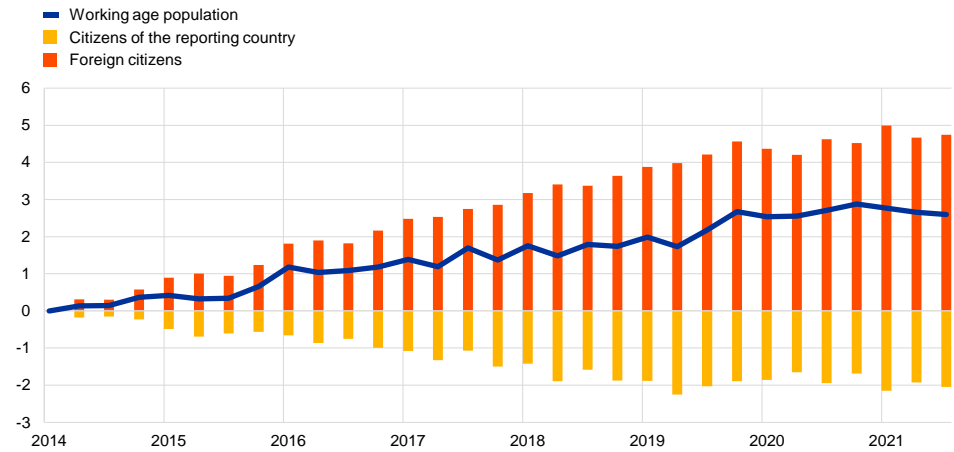
<sup>3</sup> See, for example, footnote 8 in Havik, K., Mc Morrow, K., Orlandi, F., Planas, C., Raciborski, R., Werner, R., Rossi, A., Thum-Thysen, A. and Vandermeulen, V., "[The Production Function Methodology for Calculating Potential Growth Rates & Output Gaps](#)", *Economic Papers*, No 535, November 2014.

<sup>4</sup> Eurostat baseline projections, which were prepared before the pandemic, foresaw a decline in the working age population from 2024.

## Chart A

### Working age population in the euro area

(millions; cumulative change since the first quarter of 2014)



Sources: Eurostat EU Labour Force Survey and ECB staff calculations.

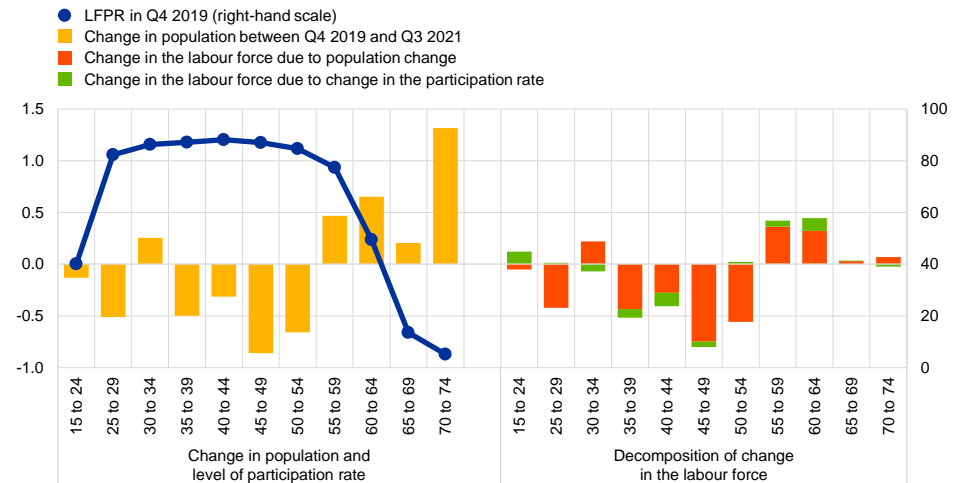
Notes: The breakdown is based on citizenship. "Foreign citizens" refers to all those who do not live in their own country of citizenship (i.e. citizens of a given euro area country who are living in another euro area country are considered foreign citizens).

**Declines in the prime-age labour force are primarily due to secular population ageing, but may also partly reflect subdued inward migration.** In general, since the outbreak of the pandemic, there have been strong declines in the population of prime-age cohorts (aged 25 to 54), which tends to have a relatively high LFPR, alongside increases in the population aged 55-64, which has a low LFPR (Chart B). Such developments within age cohorts are partially related to general demographic trends that reflect population ageing. In effect, the size of the cohorts leaving the prime-age group and entering the 55-64 age group is larger than the size of those entering the prime-age group. However, it is likely that these developments also reflect migration trends during the pandemic, as inward migrants to the euro area tend to be in the prime-age bracket.

## Chart B

Factors affecting labour force by age group and the decomposition of the change in the labour force between the fourth quarter of 2019 and the third quarter of 2021

(left-hand scale: millions; cumulative changes since the fourth quarter of 2019; right-hand scale: percentages of the population)



Sources: Eurostat Integrated European Social Statistics and ECB staff calculations.

Note: Series are seasonally adjusted.

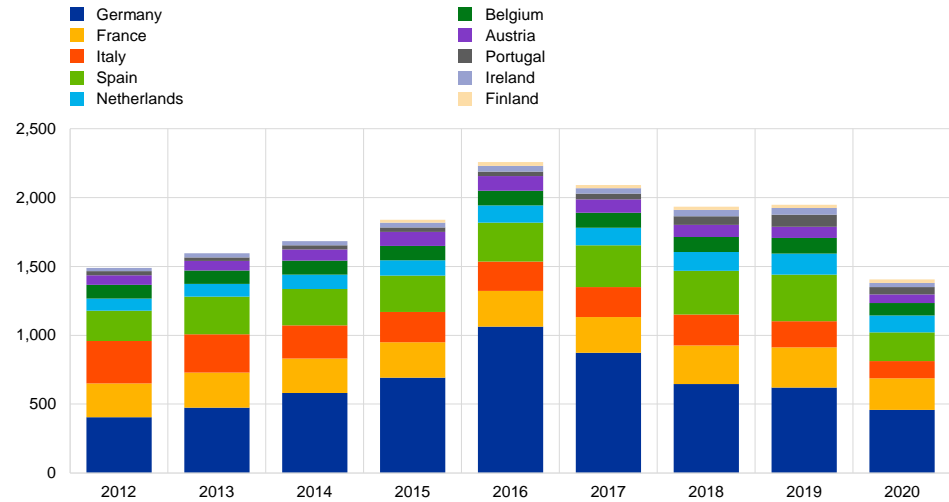
**Net immigration into the euro area fell short of the trend increase seen before the pandemic.** Given data limitations and the ongoing implementation of the Integrated European Social Statistics (IESS) Regulation,<sup>5</sup> it is only possible to draw tentative conclusions on how migration flows have evolved during the pandemic. EU Labour Force Survey (EU-LFS) data are used as the underlying data are available by citizenship. According to EU-LFS data, the number of foreign citizens of working age in the euro area has remained broadly unchanged since the start of the pandemic, in contrast to the rising trend observed in the preceding years. This slowdown was partly driven by a marked decline in the number of permanent migrants with foreign citizenship – mainly from non-euro area EU countries – into the euro area in 2020, a phenomenon that was common to many euro area countries (Chart C).

<sup>5</sup> Migrants may not be fully captured in official statistics, an issue that may have been exacerbated during the pandemic. The EU-LFS uses households as sampling units, but some migrants – especially seasonal workers – do not live in households in the destination country. Also, where migrants stay for a short time only, they may not be captured in the statistics (for example, some countries do not collect data on stays of 12 months or less). In some countries, the EU-LFS does not properly capture citizenship; however, these statistics are consistent with the labour force data generally used. Finally, official migration statistics tend to have a long release delay.

**Chart C**

Inflows of permanent migrants with foreign citizenship in some euro area countries

(thousands)



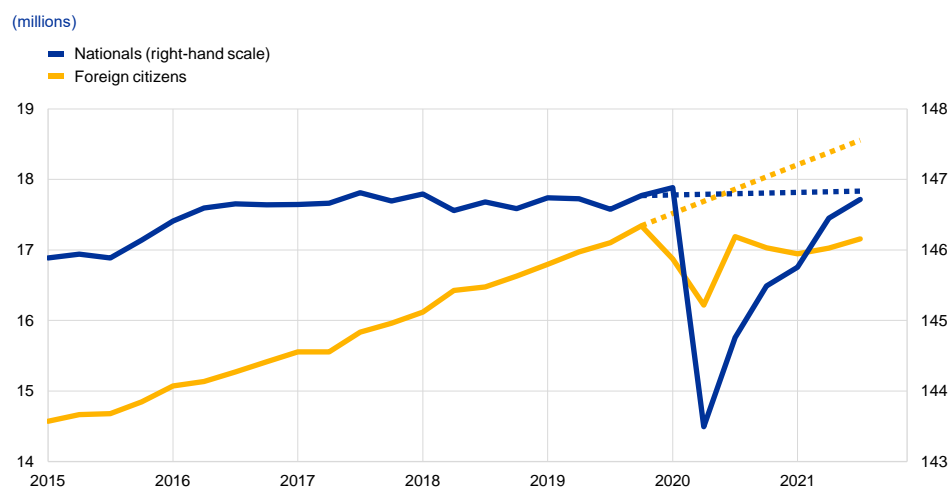
Source: OECD Migration Outlook 2021.

Notes: Includes foreign citizens only. The inflows include status changes, namely persons who entered the country on a temporary basis and subsequently obtained the right to stay on a longer-term basis.

**The labour force of foreign citizens in the euro area is about 0.2 million below the pre-pandemic level, but well below its pre-pandemic trend.** While the data are surrounded by some uncertainty, a drop in foreign citizens relative to the pre-pandemic period appears to account for more than 0.1 percentage points of the 0.2% decrease in the labour force (Chart D). This is mainly owing to a lower labour supply of prime-age and younger foreign workers. The unemployment rate among foreign citizens also increased substantially more than that of nationals (increasing by 3.1 percentage points and 0.9 percentage points between the fourth quarter of 2019 and the first quarter of 2021 respectively), reflecting the more cyclical nature of the unemployment rate of foreign citizens. It is likely that the higher unemployment rate for foreign citizens triggered greater outflows, while also dissuading potential migrants from relocating to the euro area.

**Chart D**

**Labour force by citizenship in the euro area**



Source: Eurostat EU Labour Force Survey.

Notes: Seasonally adjusted by ECB Staff. The dotted lines show an extrapolation of the pre-pandemic trend in labour force developments (from the first quarter of 2018 to the fourth quarter of 2019). The latest observation is for the third quarter of 2021.

**Migration flows during the pandemic were affected by several factors.** The weaker employment prospects and pervasive uncertainty induced by the pandemic may have dissuaded potential immigrants. Moreover, it is likely that travel restrictions hindered the inflow of migrants and may have also triggered some outflows (for example, migrants may have returned to their home country for fear of not being able to visit).<sup>6</sup> The share of foreign citizens is relatively high in sectors heavily affected by the lockdown measures, such as accommodation and food services (Chart E). Moreover, foreign citizens in general tend to work under less favourable conditions.<sup>7</sup> They are more often on temporary contracts, and thus have a higher probability of redundancy. In addition, they may be less likely to be covered by job retention schemes and other state support programmes. Some forces may have been at work that at least partially counterbalanced the previously mentioned ones. For example, the shares of foreign workers in some essential sectors (for example, the retail trade and health sectors) are relatively high, which would have supported their employment.<sup>8</sup>

<sup>6</sup> To counteract this, the international movement of seasonal workers was in some cases facilitated by bilateral agreements. See also “Essential but unprotected: highly mobile workers in the EU during the Covid-19 pandemic”, ETUI Policy Brief, No 9, 2020.

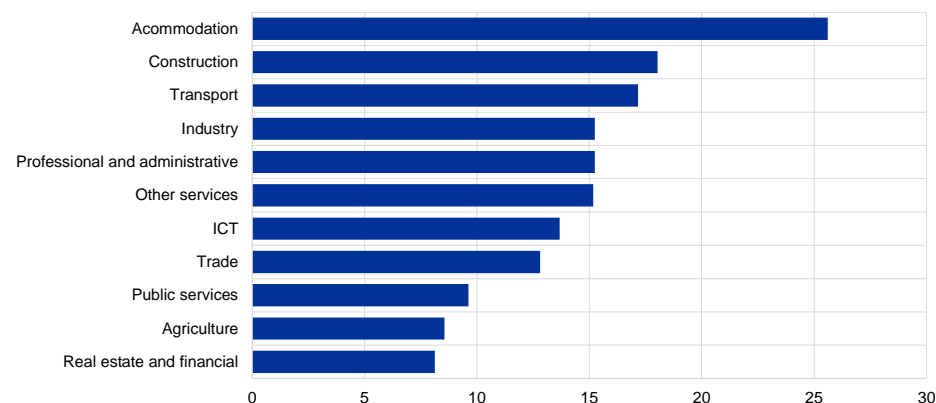
<sup>7</sup> See the article entitled “Labour supply and employment”, *Economic Bulletin*, Issue 1, ECB, 2018.

<sup>8</sup> See, for example, Bossavie, L., Garrote Sanchez, D., Makovec, M., Özden, Ç., “Immigration and natives’ exposure to COVID-related risks in the EU”, VoxEU Column, 1 September 2021.

### Chart E

#### Share of foreign citizens in employment by sector in 2019 before the pandemic

(percentages of total employment)



Sources: Eurostat EU Labour Force Survey and ECB staff calculations.

Notes: Based on aggregation of microdata for 11 euro area countries (Belgium, Germany, Ireland, Greece, Spain, France, Italy, the Netherlands, Austria, Portugal and Finland).

**The share of foreign citizens in euro area total employment may gradually converge towards the levels expected pre-pandemic, but risks are overall tilted to the downside.** Inward migration flows are likely to recover as the international channel for job vacancy search and matching gradually picks up. They could also be temporarily boosted as potential immigrants currently waiting for the risk of infection and the threat of further lockdown measures to recede decide to come to work in the euro area. However, it may also be the case that some migrants who returned to their home countries have resettled on a permanent basis. This could reflect a reassessment of work-life balance or improved employment opportunities in their respective home countries. It could also be supported by remote working arrangements offered by euro area employers. Overall, the outlook for migration flows over the projection horizon and beyond remains surrounded by a high degree of uncertainty.<sup>9</sup>

<sup>9</sup> Currently available projections of migration flows by Eurostat do not yet take into account the impact of the COVID-19 shock.

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

Prepared by Johannes Gareis, Richard Morris and Moreno Roma

This box summarises the results of contacts between ECB staff and representatives of 74 leading non-financial companies operating in the euro area. The exchanges mainly took place between 10 and 19 January 2022.<sup>1</sup>

**Contacts reported strong or growing demand across most sectors, but many said that supply constraints continued to limit their ability to meet that demand.** In this respect, little had changed in recent months. Manufacturers continued to describe healthy order books and long delivery times, but shortages of inputs made it difficult to meet orders. The acute shortage of semiconductors faced by the automotive industry (following the spread of the Delta variant of the coronavirus (COVID-19) through Asia during the summer) had eased somewhat in the fourth quarter of 2021. However, the industry-wide shortage of chips and related electronic components persisted. Furthermore, the sporadic shortages of other inputs caused by the congestion at container shipping ports and a lack of road haulage and warehousing capacity, which affected much of industry, had also not eased in recent months. The supply of manufactured goods thus struggled to keep pace with final consumer demand. Inventories of inputs and finished goods were consequently low, while stocks of semi-finished goods (and goods in transit) tended to be high. Contacts in the construction and real estate sector also reported strong demand, especially in the booming residential segment. Despite the spread of the Omicron variant since November, contacts in the services sector presented a relatively upbeat assessment of business conditions. In the case of travel and tourism, despite some interruption, the underlying trend was still one of recovering demand, aided inter alia by the reopening of travel to the United States in November. Retailers meanwhile observed that low footfall in shops was offset by a high ratio of sales to customers and by the continued strong growth of online activity. Contacts from a range of other services sectors also reported growing activity, which was particularly strong in digital-related sectors (IT, consulting) and employment services.

**Looking ahead, most contacts remained optimistic about the outlook for activity in 2022.** The spread of the Omicron variant would cause activity to moderate in the coming weeks, but the effect was expected to be relatively short-lived. Thereafter, strong order books would sustain activity in the manufacturing sector for several months, while the loosening of COVID-19 containment measures – once the latest wave of the pandemic passed – would give renewed impetus to the recovery of contact-dependent services. In this regard, contacts in the travel industry anticipated a relatively normal summer in 2022. The main risk to this benign outlook was the effect of higher and/or more persistent inflation (especially energy bills) eroding households' real disposable income and therefore dampening final

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<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.

consumer demand. The recent spread of the Omicron variant also pushed back expectations of when the ongoing supply chain disruptions would ease, which for most contacts was expected to be at least six months or even a year.

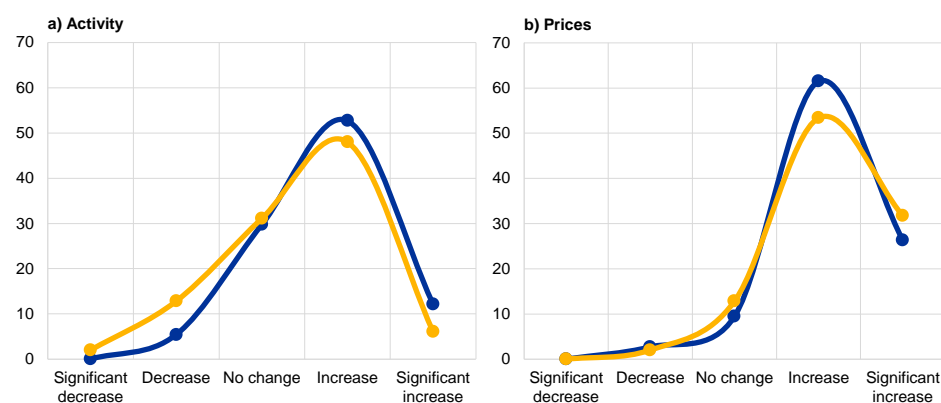
**Contacts continued to report tighter labour market conditions.** There was both strong demand for labour and some lack of supply, although the situation varied significantly across companies, sectors and geographical areas. While the pandemic played a role (obliging or encouraging people to move to jobs in other industries, to adjust their work-life balance or to return home in the case of migrant workers), there were also longer-standing shortages in some sectors and for certain profiles. The acceleration of the process of digitalisation and decarbonisation created widespread demand for specific skills, which education systems were so far not providing in sufficient quantity. Meanwhile, contacts indicated that people were becoming more reluctant to take up jobs that they considered unattractive (e.g. involving shift work, working outside or regular travel away from home). Almost all contacts observed an above-normal rate of attrition, possibly caused in part by the move to online recruiting (which speeded up the recruitment process) and the prevalence of home-working, which removed or reduced geographical constraints for some high-skilled positions.

## 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 fourth 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 first quarter of 2022.

### Most contacts reported increasing prices and a more dynamic pricing environment, especially in the industrial sector.

Most contacts in the manufacturing and construction sectors said that selling prices had risen in the last quarter of 2021, in some cases significantly, and would do so again in the first quarter of 2022. The effect of the surge in the prices of many raw materials and of logistics costs in 2021 was still feeding through the value chain, and the demand environment for passing these costs through to prices remained very favourable in most sectors. Energy prices had risen significantly in late 2021, which for many firms would now also push costs and prices up further in 2022. Many contacts said that



prices were being adjusted more frequently than in the past to avoid margins being squeezed and that prices would continue rising through much of 2022. Prices in many parts of the services sector were also rising and this applied not only to business-oriented sectors, such as transport and consulting, but also to some consumer-oriented services, such as telecoms. Contacts in or close to the retail sector continued to cite strong competition and the growth of online sales as limiting somewhat the pass-through of rising costs to final consumer prices, even if selling prices were expected to increase further in the coming months.

**Most contacts expected wage growth to pick up somewhat this year.** This reflected an element of catch-up following (near) wage freezes in many companies in 2020 or 2021 in response to the pandemic, the tight labour market conditions in some areas and the increase in the cost of living, especially owing to energy prices that were very visible in household bills. With regard to the latter, some contacts stressed the importance of wage agreements taking into account expected average inflation over time rather than monthly peaks driven by volatile energy prices. Typically, contacts said they expected average wage increases to move from around 2% in the recent past to 3% or possibly more this year. Significantly higher rates of wage inflation were described or anticipated in relation to those jobs for which it was a challenge to recruit and retain staff, for example in the fields of construction and road haulage and for IT experts and software engineers.

## Housing costs: survey-based perceptions and signals from price statistics

Prepared by David Wittekopf, Friderike Kuik, Omiros Kouvavas and Gerrit Koester

**A recurring theme in the “ECB Listens” event conducted in the context of the monetary policy strategy review was the affordability of housing and the case for including more adequately the related costs in the HICP.**<sup>1</sup> More than 80% of all respondents considered the increase in the cost of housing relevant for inflation measurement. This was addressed in the strategy review by suggesting the inclusion of owner-occupied housing (OOH) costs in inflation measurement on the basis of the net acquisition approach.<sup>2</sup>

**However, perceptions of housing costs can be analysed on the basis of different sources of data.** This box reviews perceptions of housing costs among tenants and homeowners based on survey microdata, compares them with developments in housing costs based on macro price statistics and illustrates conceptual differences between various measures that are important in the interpretation of the data.

**Consumer surveys are a prime source of perceptions of housing costs in euro area countries.** Panel a of Chart A shows the ratio of housing-related costs to disposable income based on European Union Statistics on Income and Living Conditions (EU-SILC) for 2019 (the latest year for which data are available)<sup>3</sup> and the ECB’s Consumer Expectations Survey (CES), for which more timely data are available (latest data: October 2021). The difference between the two surveys is partly related to definitions, a degree of measurement uncertainty and, more importantly, developments during the coronavirus (COVID-19) pandemic (which are not reflected in EU-SILC because of the date of the survey).

<sup>1</sup> See “[ECB Listens – Summary report of the ECB Listens Portal](#)”. The survey results were collected between 24 February 2020 and 31 October 2020.

<sup>2</sup> For more on the outcome of the strategy review and the related price index, see the article entitled “[Owner-occupied housing and inflation measurement](#)” in this issue of the Economic Bulletin.

<sup>3</sup> EU-SILC data for Italy refer to 2018, owing to non-availability of data for 2019.

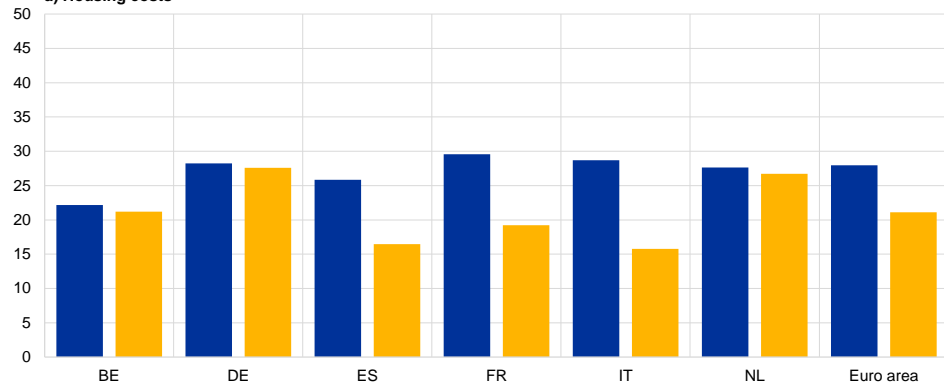
## Chart A

### Ratio of self-reported housing costs to income and share of households overburdened by housing costs in selected euro area countries

(percentage shares)

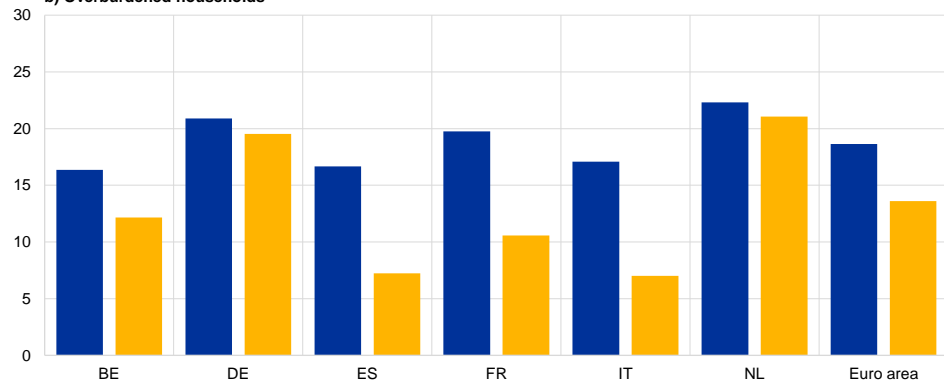
■ Housing costs as share of disposable income 2021 – CES  
■ Housing costs as share of disposable income 2019 – EU-SILC

#### a) Housing costs



■ Overburdened 2021 – CES  
■ Overburdened 2019 – EU-SILC

#### b) Overburdened households



Sources: Eurostat, ECB and ECB staff calculations.

Notes: Data from the CES refer to October 2021, while data from EU-SILC are based on the 2020 release. The EU-SILC and CES measures are based on the respective microdata. The overburdening measure is also based on the microdata and reflects the ratio of reported housing costs to household disposable income. The share of overburdened households is the percentage of households with housing costs exceeding 40% of disposable income.

**Both surveys indicate that housing costs are the largest item in household spending and that housing is indeed perceived by many households as challenging to afford.** According to EU-SILC data, housing costs in the euro area were, on average, 21% of disposable income in 2019, with considerable heterogeneity across countries. Among the largest euro area countries, the ratio of housing costs to disposable income was substantially above the euro area average in Germany and the Netherlands, but substantially below the average in Italy and Spain. Data from the CES for October 2021 point to a higher average ratio of housing costs to disposable income in the euro area (based on data for Germany, France, Italy, Spain, the Netherlands and Belgium) and less heterogeneity across large euro area countries.<sup>4</sup> Based on EU-SILC data for 2019, around 14% of

<sup>4</sup> As no overlapping data are available for EU-SILC and the CES, it is unclear to what extent the differences between EU-SILC data for 2019 and CES data for October 2021 reflect developments over time or differences between the surveys.

households in the euro area are overburdened by housing costs (i.e. their housing costs are in excess of 40% of their disposable income), again with considerable heterogeneity across large euro area countries. CES data for October 2021 show a higher share of overburdened households on average in the euro area (19%) and, again, less heterogeneity across large euro area countries.

**There are important conceptual differences between the types of housing costs included in perceptions and price statistics.** As explained in the article entitled “Owner-occupied housing and inflation measurement” in this issue of the Economic Bulletin, there are several ways in which the related price developments can be measured. Some approaches (e.g. net acquisition) rely directly on the cost of acquiring a dwelling, which is closely related to house prices. Other approaches (payments, user cost, rental equivalence) rely on the ongoing cost of using owner-occupied housing or its shadow price. In practice, the resulting measures diverge significantly. Owner-occupied housing price indices (OOHPs) follow the net acquisition approach. By contrast, total housing costs in EU-SILC follow a quasi-payment approach and include mortgage interest payments (for homeowners), rents (for tenants), and costs of utilities, insurance, services and charges, taxes, maintenance and repairs, but exclude acquisition costs (for homeowners). Table A divides housing costs into three categories (costs only affecting tenants, costs only affecting homeowners and costs affecting both). Housing costs for tenants included in EU-SILC can be matched relatively closely to those included in the HICP (Table A). For homeowners there is conceptually only a loose link to macro statistics as reflected in OOHPs. Most importantly, mortgage interest payments are included in the EU-SILC measure of OOH costs, but not in the OOHP, while other services related to the acquisition of dwellings, self-build dwellings and major renovations, and purchases of new dwellings are important categories in the OOHP (with a total weight of 77% in the index), but are not included in EU-SILC. Hence, the overlap between homeowner costs included in EU-SILC and the OOHP’s net acquisition approach is quite limited. This complicates any comparison and limits the usefulness of EU-SILC data for assessing homeowners’ housing costs.<sup>5</sup>

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<sup>5</sup> For more information on the different approaches, see the box entitled “International practices in the treatment of owner-occupied housing in consumer price indices” in the article entitled “[Owner-occupied housing and inflation measurement](#)” in this issue of the Economic Bulletin.

**Table A**

Housing cost for tenants and homeowners and their coverage in OOHPIs, HICP sub-aggregates and EU-SILC

Housing costs	Housing costs included in the HICP	Housing costs included in OOHPIs to be included in the HICP <sup>1)</sup>	Total housing costs included in EU-SILC
<b>Costs affecting tenants</b>			
Rents	HICP rents (7.47%)		Rental payments (tenants)
<b>Costs affecting tenants and owners</b>			
Maintenance costs	Maintenance and repairs (4.35%)	Major repairs and maintenance (19.89%)	Regular maintenance and repairs
Utilities	Energy (electricity and gas) (4.28%)		Cost of utilities (water, electricity, gas, heating)
Insurance	Insurance connected with the dwelling (0.32%)	Insurance connected with dwellings (2.64%)	Structural insurance
Refuse/sewage costs	Refuse collection and sewage (1.09%)		Services/charges (sewage removal, refuse removal, etc.)
Taxes			Taxes on dwellings
<b>Costs affecting owners</b>			
Mortgage payments			Mortgage interest payments (owners; net of tax relief, without deducting housing benefits)
Costs related to the acquisition of a dwelling		Other services related to the acquisition of dwellings (12.52%)	
House prices		Self-build dwellings and major renovations (43.40%) Purchases of new dwellings (19.39%)	

Source: Eurostat.

Notes: EU-SILC total housing costs are available as an aggregate only; no data or weights for individual components are available. For OOHPI and HICP sub-components, contributions to the total index (weights) are indicated in brackets.

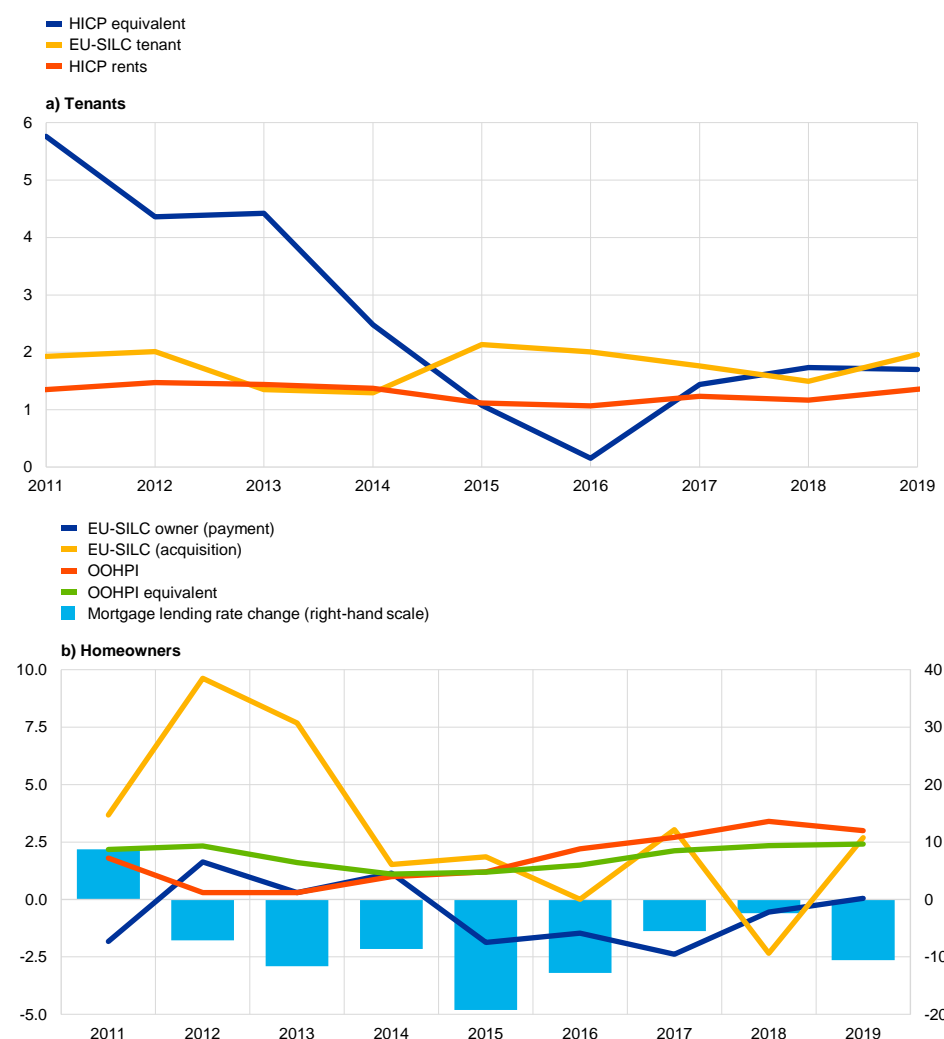
1) For a detailed explanation of the components of OOHPIs and what would be included in the HICP under the net acquisition approach, see the article entitled "Owner-occupied housing and inflation measurement" in this issue of the Economic Bulletin.

**Over the last decade, the growth rate of self-assessed housing costs of tenants in the euro area, based on EU-SILC data, has been similar to the growth rate for rents in the HICP.** According to EU-SILC, aggregate self-assessed housing costs grew at around 2% for most of the sample period (Chart B, panel a). Except for the last three years, these increases have been somewhat less strong than those of the matched components of HICP housing costs for tenants, while better mirroring the dynamics of HICP rents. This discrepancy may be due to EU-SILC participants being less aware of the costs of utilities, insurance, services and charges, taxes, maintenance and repairs than the cost of rents.

## Chart B

Growth in self-reported housing costs for tenants compared to selected components of the HICP, and for homeowners compared to selected components of the OOHPI and the mortgage lending rate

(annual percentage changes)



Sources: Eurostat and ECB staff calculations.

Notes: Euro area aggregates. For details of the series included, see Table A. We exploit a two-stage approach to obtain the growth rates of total housing costs by ownership, country and year. First, household-level information on total housing costs is aggregated using EU-SILC household weights at the country level. To get the growth rate for the euro area, we then weight each country-year specific growth rate by the size of the respective housing market (price-updated expenditure on owner-occupied housing). This implies that the derived growth rates for housing costs could also include the effects of, for example, an improvement in the average housing quality. The mortgage lending rate is "Cost of borrowing for households for house purchase – euro area, annualised agreed rate".

**Conversely, the pattern of home-ownership costs based on EU-SILC data has been diverging strongly from price developments reflected in the OOHPI.** While OOHPI inflation exhibited steady increases over time to levels clearly above 2% from 2015 to 2019, self-reported OOH costs based on EU-SILC have been much more volatile and have, on average, decreased or barely increased each year since 2016 (Chart B, panel b). One likely reason for the difference between the OOHPI and OOH costs based on EU-SILC is that the costs of other services related to the acquisition of dwellings, self-build dwellings and major renovations, and purchases of new dwellings, which account for most of the increase in the OOHPI from 2016 to

2019, are not included in the EU-SILC measure. Moreover, the mortgage interest rate is included in EU-SILC but not in the OOHPI. As mortgage lending rates have declined strongly since 2012, this can help to explain the decreases in the EU-SILC measure of OOH costs.

**Focusing only on households which recently bought a dwelling brings housing costs for homeowners in EU-SILC more in line with developments in the OOHPI.** For households buying property in recent years, mortgage lending rates have been low, while residential property prices, and hence often also the sizes of mortgages, have increased. These effects can be illustrated by deriving a measure that only reports EU-SILC-based OOH costs in the year that the house was purchased. In this measure, house price developments play a more important role in housing costs, which in turn would be a better approximation of OOHPIs, in which developments in real estate prices play an important role. In contrast to the broader measure of EU-SILC-based OOH costs, this narrower measure, albeit imperfect, seems to be more in line with the developments in the OOHPI (Chart B).

**One key advantage of EU-SILC survey data on housing cost perceptions is that developments can be analysed for different groups of tenants and homeowners.** The overall increase in housing costs for tenants in 2018 and 2019 was driven mainly by newer rental contracts (with the fastest growth in rents being for contracts with a tenure of less than two years), while rents for contracts more than ten years old fell on average over the same two years (Chart C, panel a). Looking at the ages of buyers, the properties bought by younger households were, on average, harder hit by the price increases. Panel b of Chart C shows the results for two age groups: 16-39 and 40 plus.<sup>6</sup> The difference in the growth rates across the two categories, which is similar to that for rents, has become significant since 2017, reflecting the more dynamic housing market faced by younger people.

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<sup>6</sup> The choice of only two age groups is to assure that there are enough observations in each bin, given the limited sample size. The sample follows the acquisition approximation described in the notes to Chart C, so only respondents who bought a house in the same year are included.

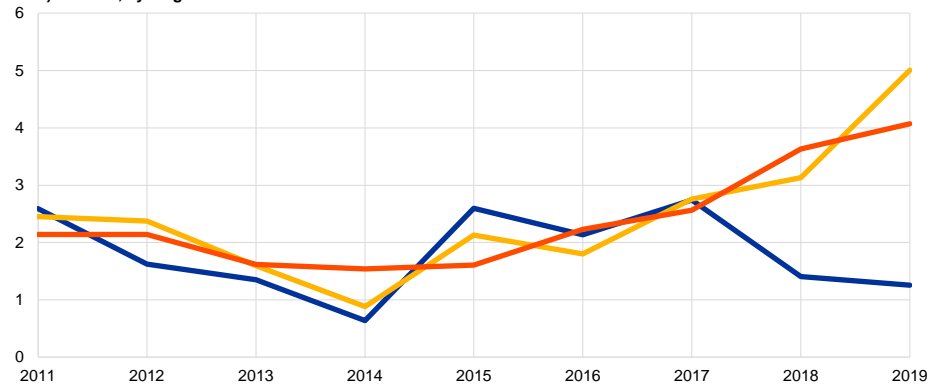
### Chart C

Growth in self-reported housing costs for tenants, by length of tenure, and for homeowners (acquisition approximation), by age

(annual percentage change)

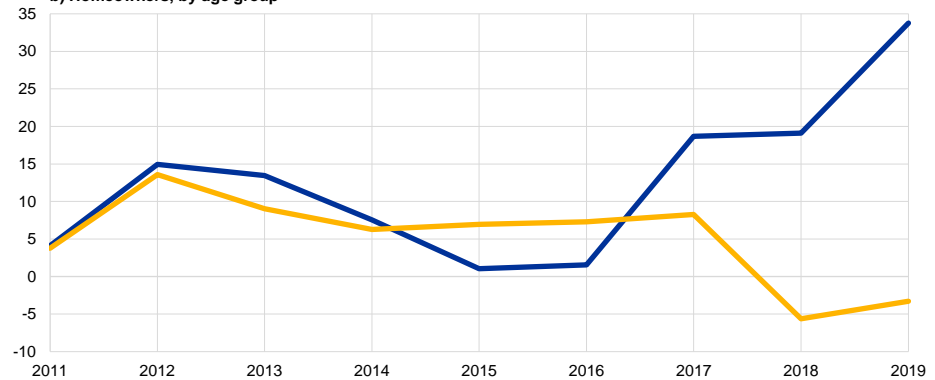
- Tenure more than 10 years
- Tenure 1-2 years
- Tenure 2-10 years

a) Tenants, by length of tenure



- Age 16-39
- Age 40 and older

b) Homeowners, by age group



Source: Eurostat and ECB staff calculations.

Notes: Both measures are based on the total housing costs reported. The growth rates are derived from EU-SILC microdata. To avoid measurement errors introduced by the possible divergence of reference periods, three-year rolling averages are used. In panel b, to approximate the acquisition cost, only homeowners who bought their dwelling in the year of reporting are included. Homeowners older than 70 are excluded.



Prepared by Cristina Checherita-Westphal

**If the response of wages – both private and public – and pensions to an increase in inflation leads to second-round effects, then this can make an inflationary shock more persistent.** Transmission is more likely where wage and pension indexation is automatic. It can, however, also play an important role in wage negotiations, especially in times of high inflation. The link through wages, particularly in the private sector, is likely to be more prominent and affect prices from both the demand and the production side; pensions are likely to impact demand through disposable income. On private wages, various recent ECB and Eurosystem analyses have concluded that the likelihood of wage-setting schemes triggering second-round effects based on inflation indexation is relatively limited in the euro area.<sup>1</sup> This holds in particular when inflation is driven by higher energy prices.

**This box provides an overview of indexation schemes of public wages and pensions across the euro area.** It is based on information provided through a questionnaire completed by the members of the Working Group on Public Finance (WGPF) as part of the December 2021 Eurosystem staff projections. The box also provides a brief discussion of public wage and pension developments for the euro area aggregate.

**Euro area public wage and pension expenditure accounts for significant budget resources, which have grown recently.** In 2020, the euro area public wage bill (compensation of employees, excluding employers' social contributions) is estimated to have amounted to around 7.8% of GDP, while public old age and survivors' pensions accounted for around 12.7%. Over the almost two decades running up to the coronavirus (COVID-19) crisis (2001-19), the average growth rates of public and private wages per employee, and of the average pension, were remarkably similar at the euro area aggregate level.<sup>2</sup> They stood at around 2.2-2.3%, that is, above the average HICP inflation rate of 1.7%. This masks differences across periods, with public wages growing faster than inflation (and private wages) before and during the great financial crisis and more slowly during the sovereign debt crisis (Chart A). Since 2015, average public wages and pensions have grown at rates well above contemporaneous or lagged HICP inflation at the euro area aggregate level, recovering after the subdued growth during the sovereign debt crisis.<sup>3</sup> In 2020, when the COVID-19 pandemic hit the euro area, wage trends were affected by one-off factors. The increase in public wages reflected bonuses in the health sector, amongst other things, while the decline in the growth of private wages

<sup>1</sup> See, for instance “[The prevalence of private sector wage indexation in the euro area and its potential role for the impact of inflation on wages](#)”, *Economic Bulletin*, Issue 7, ECB, 2021 and the [December 2021 Eurosystem staff macroeconomic projections](#).

<sup>2</sup> See the notes to Chart A for the computation of average public wages and pensions.

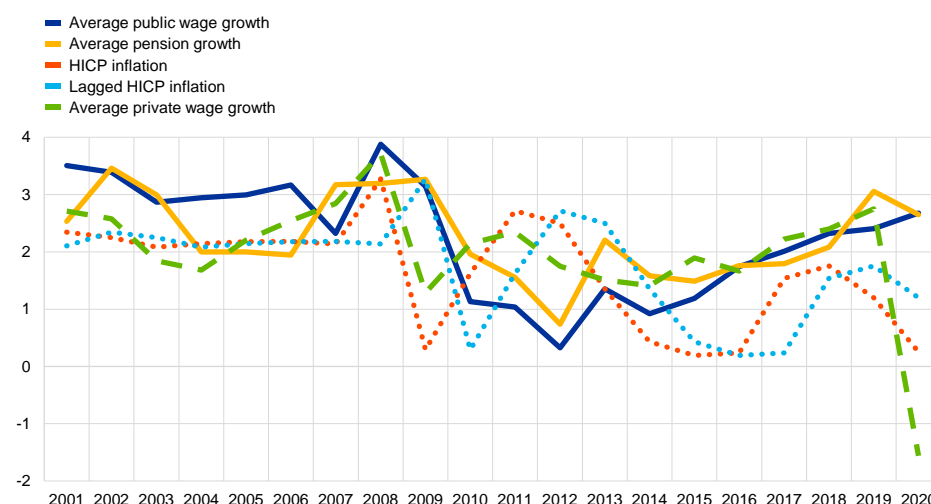
<sup>3</sup> In general, where public wages and pensions are indexed, this is done based on national price indices that can differ from the harmonised ones. The indices can also exclude selected components, most frequently health-related items such as tobacco. Energy is excluded from the price index used for public wage indexation (HICP) in Italy.

was related to the partial coverage by public funds under job retention schemes. Public pensions have followed lagged inflation more closely, especially after the sovereign debt crisis.

### Chart A

#### Average public wage and pension growth rate: euro area aggregate

(percentages per annum)



Source: ECB, December 2021 Eurosystem staff macroeconomic projections database and ECB calculations.

Notes: Data on average public wages are computed at the country level by dividing expenditure recorded under "Wages and salaries" in the Government Finance Statistics database (also referred to in this box as public wages or the public wage bill) by the number of government employees. Average pension refers to old age pensions and survivors' pensions and is computed as total expenditure divided by the number of pensions. The euro area aggregate is a GDP-weighted average of country-specific data. Average private wage denotes private wage per employee. For average pensions, consistent data for France is available from 2010, for Greece from 2014 and for Luxembourg from 2007; the euro area aggregate excludes these countries when data is not available. Growth rates are on an annual basis. Lagged inflation is annual end-of-period inflation lagged one year.

**Price indexation of public wages is relatively limited and applies to about one-fifth of the euro area public wage bill (Chart B).** Full and partial price indexation is reported in five countries, representing 19% of the euro area public wage bill in 2021. In two of these (Belgium and Luxembourg), public wages are fully automatically indexed to prices (with a backward-looking index, linked to the cost of living); Cyprus and Malta have a similar but more restricted indexation scheme categorised as partially automatic.<sup>4</sup> In Italy, expected inflation excluding energy is taken into account during negotiations for contract renewals: if inflation turns out to be higher than the increase in public wages over the three-year contract period, the difference is made up in the following three-year period. In most euro area countries, public wages are not automatically indexed to inflation, nor does inflation play a formal role in wage setting. However, inflation is or can be taken into account informally in public wage

<sup>4</sup> For instance, in Cyprus, public wages and pensions are adjusted in a backward-looking way with a payment equal to 50% of the increase in the cost of living index (COLA, which is the consumer price index, adjusted to exclude excise duties, in the previous year), provided there was positive growth in the second and third quarters of that year; this adjustment cannot be negative. In Malta, the government may decide to apply a public wage increase higher than the rise in the cost of living index, and part-time employees are entitled to partial adjustments.

negotiations.<sup>5</sup> Public wages are currently frozen in Greece and France (in the latter, until end-2022; the freeze does not apply to education, health and low wages).

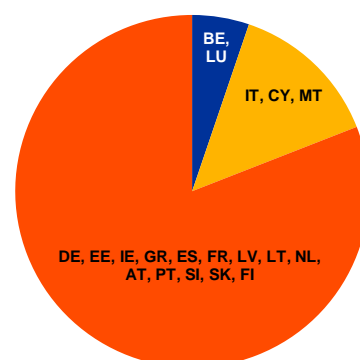
## Chart B

### Public wage indexation across euro area countries

#### a) Price indexation of public wages by country

(share in euro area 2021 public wage expenditure)

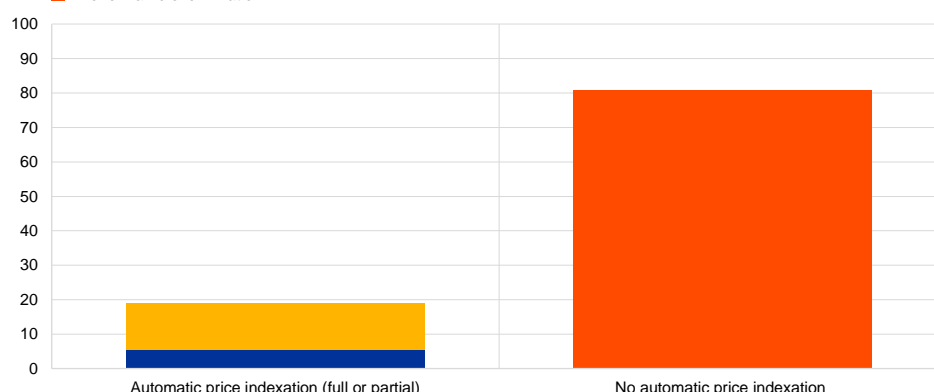
- Fully automatic price indexation
- Partially automatic price indexation
- No automatic indexation



#### b) Type of indexation reference

(percentage of 2021 euro area public wage expenditure)

- Backward-looking
- Forward-looking
- No formal role for inflation



Source: WGPf questionnaire, December 2021 Eurosystem staff macroeconomic projections and ECB calculations.

Notes: See description in the text for the various categories. In chart a), "Partially automatic price indexation" refers to restrictions on full indexation to prices, either in the amount (an adjustment lower than 100% of a given price index) or depending on other trigger variables and/or administrative decisions. In chart b), the left-hand bar includes Belgium, Luxembourg, Cyprus and Malta (blue) and Italy (yellow). The right-hand bar shows the percentage of euro area countries where inflation does not play a formal role in public wage setting, though inflation may be taken into account informally in wage negotiations.

**Euro area public pensions are indexed automatically – fully or partially – to prices and wages, mostly in a backward-looking way, in almost all countries (Chart C).** Four categories can be identified based on the questionnaire:

<sup>5</sup> In Slovenia, only a small portion of public wages (e.g. meal allowances, business trips, tenure allowances, etc.) are indexed to past inflation; the minimum wage is also adjusted (at least) in line with inflation. In Slovakia, about 12% of public employees are subject to a backward-looking automatic wage indexation system linked to economy-wide wages. In other countries, for example, inflation is used in a backward looking way as a reference in wage negotiations in Lithuania and Austria, and in a forward-looking way in Portugal.

**(i) Full price indexation of public pensions:** this applies in six countries (Belgium, Greece, Spain, Italy, Luxembourg<sup>6</sup> and Slovakia), representing 37% of euro area pension expenditure in 2021. In Spain, this is enshrined in a new law to be applied from 2022, following a regime of no automatic indexation in place since 2014. In Greece, a nominal freeze is currently in effect, with the automatic pension indexation formula to apply again from 2023.

**(ii) Partial automatic price indexation:** this applies in ten euro area countries, representing one-third of the euro area pension bill. Indexation is categorised as partial because some restrictions on full price index adjustment may apply and/or other variables, most importantly the growth rate of economy-wide or private wages, are automatically taken into account. In four members of this group (France, Cyprus, Austria and Portugal), full price indexation can be modified or restricted during the decision-making process.<sup>7</sup> In the remaining six countries (Estonia, Latvia, Lithuania, Malta, Slovenia and Finland), pensions are automatically indexed to prices and wages, mostly in a backward-looking way.<sup>8</sup>

**(iii) Indexation to economy-wide wages and the minimum wage:** this applies in Germany and the Netherlands respectively, which together represented about 30% of euro area pension expenditure in 2021.

**(iv) No automatic indexation system:** this applies only in Ireland, with public pensions increases decided as a rule in the annual budget law.

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<sup>6</sup> In Luxembourg, public pensions are also indexed every two years based on the developments in the real wages of the private sector.

<sup>7</sup> For instance, in France, indexation covers basic pensions, but supplementary pension revaluations depend on specific regimes (with no automaticity). In Estonia, France, Cyprus and Austria, government decisions may imply deviations from the indexation formula. In Portugal, pension indexation is determined by a backward-looking formula in which the main inflation benchmark is adjusted up or down depending on past real GDP growth; extraordinary increases have been granted by the government in recent years for the lowest pensions.

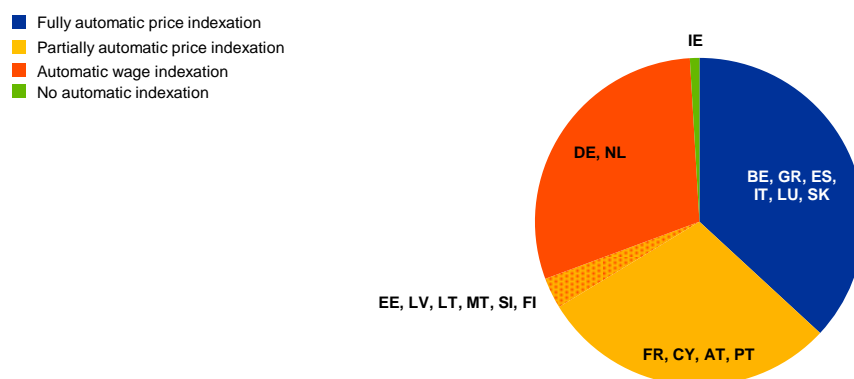
<sup>8</sup> Wages have a higher weighting in the index in all countries apart from Finland and (currently, but not in the future) in Malta.

## Chart C

### Public pension indexation across euro area countries

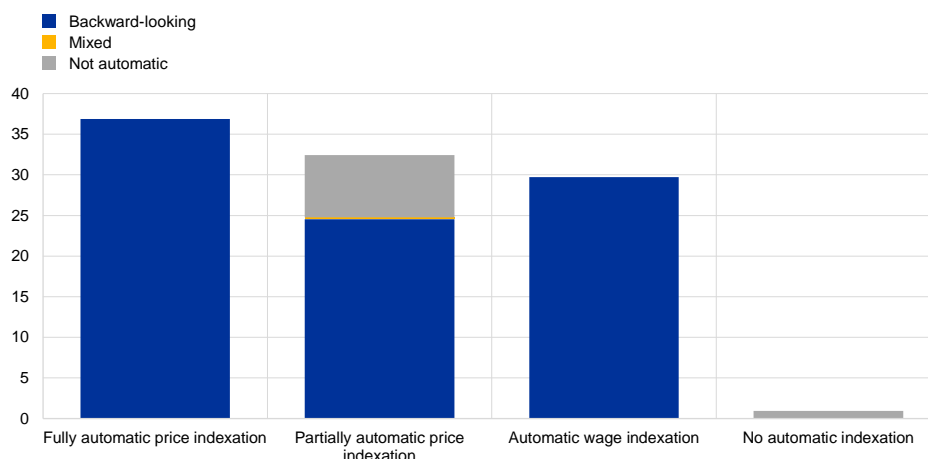
#### a) Indexation of public pensions by country

(share in 2021 euro area public pension expenditure)



#### b) Type of indexation reference

(percentage of 2021 euro area public pension expenditure)



Source: WGPf questionnaire, December 2021 Eurosystem staff macroeconomic projections and ECB calculations.

Notes: The four categories in the two charts are identical in terms of country coverage (see text for description). In b) the second bar includes France, where the majority of the pension bill represents basic pensions, which are automatically indexed to prices in a backward-looking way (included in the blue part of the bar); the rest is supplementary pensions, where the revaluation depends on specific regimes (no automaticity, the grey part of the bar). The small yellow part of the central bar represents pensions in Lithuania, which are adjusted with a mixed (forward and backward-looking) indicator.

### Looking ahead, in the December 2021 Eurosystem projections public wage and pension growth is not expected to lead to significant second-round effects.<sup>9</sup>

At the euro area aggregate level, wage growth in the public sector is projected to be consistently below that in the private sector, suggesting positive spillovers from the public to the private sector are unlikely. Reflecting the mostly backward-looking indexation schemes, the path of average pension growth follows one-year lagged HICP inflation closely, while remaining above it over the projection horizon. At the country level, due attention should be paid over the medium term also to the fiscal consequences of increases in public wages and pensions by balancing

<sup>9</sup> The December projection exercise covers the period 2021-24. Projections were finalised on 1 December 2021 based on the policy measures approved or likely to be approved at the time. Due to uncertainty with regard to its timing and implementation, the announced minimum wage increase in Germany was not included in the baseline projections. For more details, see the [December 2021 Eurosystem staff macroeconomic projections](#).

stabilisation and sustainability objectives, especially in countries with high debt and high ageing costs.

# Articles

## 1 Owner-occupied housing and inflation measurement

Prepared by Martin Eiglsperger, Rodolfo Arioli, Bernhard Goldhammer, Eduardo Gonçalves and Omiros Kouvavas

**In the context of monetary policy decision-making, consumer price indices (CPIs) are prominently used as measures of inflation.** The ECB's recently published monetary policy strategy review concluded that the Harmonised Index of Consumer Prices (HICP) remains the appropriate measure for assessing price stability in the euro area. However, it also acknowledged that the inclusion of costs related to owner-occupied housing (OOH) would better represent inflation relevant for households. This article elaborates on the treatment of OOH in CPIs in general, and in the HICP in particular, with a focus on the net acquisition approach recommended by the Governing Council. The article also presents the new analytical quarterly HICP combined with the owner-occupied housing price index (OOHPI) based on ECB calculations.<sup>1</sup>

### 1 Owner-occupied housing in the context of the HICP: concept, developments and housing market characteristics

#### Owner-occupied housing and the HICP

**The European Statistical System (ESS)<sup>2</sup> has been considering how to treat owner-occupied housing (OOH) since the early stages of the harmonisation of CPIs in the EU.** The ESS started harmonising CPIs in the EU in the 1990s.

However, so far, OOH has not been included in those harmonised indices. Owing to the very different treatment of OOH in the national CPIs of EU Member States, there was no agreement on a common approach to including OOH in the HICP. Moreover, residential property price indices based on actual purchases of houses and flats were rarely available.

**Since the establishment of the HICP in 1997, it has only covered a small part of owner-occupiers' housing costs.** The HICP includes OOH expenditures pertaining to material and services for minor repairs, insurance connected with the dwelling, electricity, gas and other fuels, water supply, waste water removal and waste collection. However, the most important part of household OOH costs – purchases of houses and flats and expenditures related to owning a dwelling or, alternatively, the

<sup>1</sup> For a more technical exposition, see Ganoulis, I. et al. "Owner-occupied housing and inflation measurement", *Statistical Paper Series*, ECB, forthcoming.

<sup>2</sup> The ESS comprises Eurostat and the statistical offices of EU Member States.

estimated cost of living in an owner-occupied dwelling – was not included in the HICP.

**In line with the HICP's conceptual foundation of covering transactions between households and other sectors of the economy, OOHPIs have been designed according to the net acquisition approach.** In the early 2000s, the ESS decided to quantify OOH-related costs according to the “net acquisition approach”. In the broadest sense, acquisitions of houses and flats by households encompass all purchases of residential dwellings. For the purpose of measuring OOH-related costs in a CPI like the HICP, however, buy-to-let purchases are disregarded. As the buyers do not intend to live in the property themselves, the housing is not “owner-occupied” and such purchases are investments rather than consumption.<sup>3</sup> Furthermore, the HICP concept of covering transactions between households and non-households, applied to OOH, disregards purchases of dwellings by households from other households.<sup>4</sup> Net acquisition is determined by deducting sales to sectors other than the household sector (outflows) from purchases from other sectors (inflows). Hence, sales of owner-occupied dwellings to parties outside the household sector have to be deducted from total purchases of owner-occupied dwellings by households.<sup>5</sup> The ESS also developed price indices for the additional components of OOHPIs, for self-built houses, for maintenance and major repair, and for expenditures related to the purchase (ownership transfer) and ownership of owner-occupied dwellings, such as home insurance. In 2013, Member States started to provide OOHPIs and their breakdowns based on a dedicated legal act – at first only internally within the ESS. Since then, further improvements have been implemented. In 2016, Eurostat began publishing a set of stand-alone OOHPIs, while euro area and EU totals of OOHPIs were published for the first time in October 2021.

## The importance of including owner-occupied housing in the HICP

**Including OOH-related costs in the HICP, as far as statistically possible, would improve the HICP as an indicator of inflation and increase its representativeness and cross-country comparability.** The public “ECB Listens” events conducted in the context of the ECB’s monetary policy strategy review demonstrated that European citizens consider changes in house prices to be an important element of overall inflation.<sup>6</sup> For an analysis of consumer perceptions of OOH-related costs, see the box entitled “[Housing costs: survey-based perceptions and signals from price statistics](#)” in this issue of the Economic Bulletin.

**High rates of home ownership motivate the inclusion of OOH-related costs in the HICP.** Chart 1 shows the percentage of owner-occupiers in total households in euro area countries. The share of owner-occupiers ranges from 50% to 90%, with

<sup>3</sup> Purchases of residential dwellings by households in order to let them to other households are intended to generate income. Such investments are outside the scope of consumption expenditure in the HICP.

<sup>4</sup> Even though these transactions may imply large re-distributional and inter-generational effects among households.

<sup>5</sup> In practice, however, such sales are rare.

<sup>6</sup> See the [ECB Listens Portal](#).

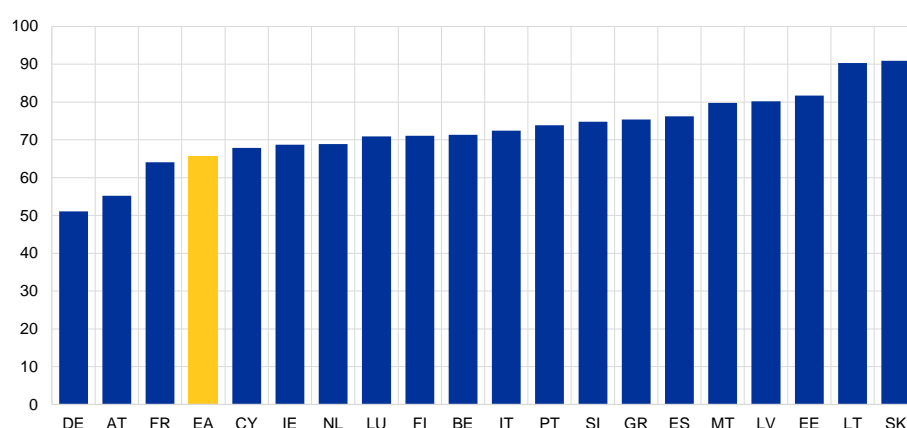


rates around or above 70% in 16 out of the 19 euro area countries. In view of the relatively high home ownership rates and the large differences across countries, the inclusion of OOH-related costs in the HICP will improve the representativeness of the inflation measure with respect to household expenditure within a country and will enhance cross-country comparability. The cross-country heterogeneity of OOH-related costs is reflected in the euro area price index through weighted averages, where expenditure weights may vary greatly across countries. However, when including OOH-related costs according to the net acquisition approach, it has to be borne in mind that the broadened representation of housing expenditure in the inflation index largely reflects net purchases of OOH by the household sector (the net increase in the stock of OOH), while costs related to ownership (the stock of OOH) are included in the form of maintenance, repair, insurance and other types of expenditure.

**Chart 1**

Home ownership rates in euro area countries, 2019

(percentages)



Source: Eurostat (EU Statistics on Income and Living Conditions, EU-SILC).

## 2 Approaches to owner-occupied housing in consumer price indices

**Generally, changes in consumer prices over time can be measured on the basis of acquisitions (expenditure), use (consumption or user costs) or payments.<sup>7</sup>** Acquisition-based price indices record actual transaction prices of products, including durable goods, when these are purchased.<sup>8</sup> By contrast, use approaches aim to quantify the cost of using durable products over the period of time that these are consumed. Finally, price indices constructed according to the payments approach represent changes over time in prices related to monetary outlays in all periods in which households actually pay for products acquired in

<sup>7</sup> See [Consumer Price Index Manual: Concepts and Methods](#), International Monetary Fund, 2020, pp. 3-4.

<sup>8</sup> In the HICP, prices for services like package holidays are taken into account at the point in time when the provision of the service may commence.

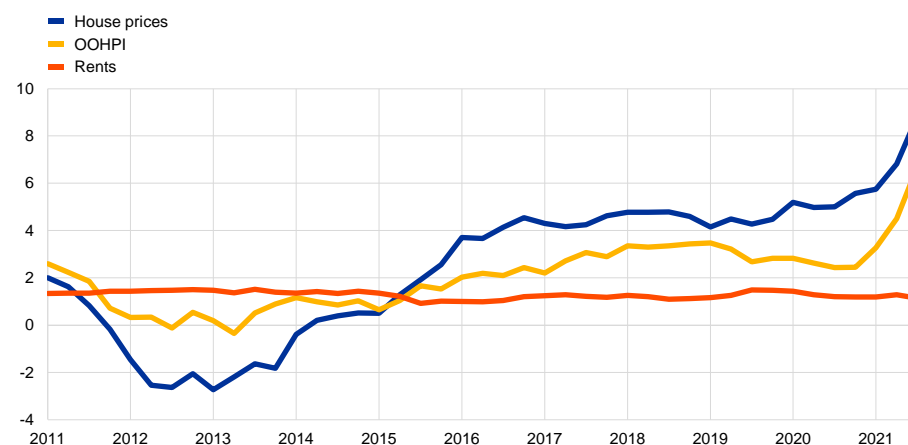
earlier periods. In CPI implementations worldwide, acquisition, use and payments approaches differ primarily in the area of OOH, where use approaches are implemented in the form of equivalent rents or user costs.

**Alternative approaches to including housing costs in inflation measurement focus on specific elements of housing market segments.** Chart 2 shows housing costs as measured by rents, house prices and OOHPIs. Rent price developments in the euro area demonstrate remarkably stable inflation rates, with an average of 1.6% over the longer-term (20 years)<sup>9</sup>, partly reflecting indexation to past inflation trends and stickiness of long-term rental contracts. By contrast, changes in house prices tend to be more closely linked to business cycles and sometimes also financial market dynamics, with considerable variation around their longer-term average of 3.3%<sup>10</sup>. OOHPIs can be seen as an intermediate measure that improves the capture of housing price dynamics and price changes in ownership-related expenditures. OOHPI annual growth rates are less volatile in the long term than changes in house prices. The approach chosen for including OOH-related costs in inflation measurement, whether it is based on imputing rents or on price developments of purchased houses (and flats), will thus have an impact on the resulting index. OOH price indices based on equivalent rents lead to a dampening of inflation cyclicalities, while including a house price-based OOH index implies adding a component with higher cyclicalities, at least during our observed sample (see Chart 2).<sup>11</sup>

**Chart 2**

Measures of housing costs: house prices, rents and the OOHPI in the euro area

(annual percentage changes)



Sources: Eurostat and ECB calculations.

<sup>9</sup> The long HICP time series for actual rentals for housing includes other actual rentals, e.g. rentals actually paid for secondary residences.

<sup>10</sup> According to the long time series of the ECB's residential property price index. Data for the fourth quarter of 2021 were not available at the time of publication of this article. The 20-year average includes an estimate for that quarter.

<sup>11</sup> It should be noted that housing cycles are connected more to financial cycles than to economic cycles, and to the extent these diverge from each other the degree of cyclicalities that eventually materialises in OOHPIs could vary. Nevertheless, in the current sample, the euro area OOHPI and house price index exhibit a high degree of co-cyclicalities.

**While the size of OOH weights is generally high when included in CPIs, it varies significantly across OOH inclusion methods.** However, the size of the OOH weight depends on whether OOH pricing refers to the stock of owner-occupied houses and flats, as in the rental equivalence and user cost approaches, or to purchases of dwellings from the non-household sector, i.e. the net inflow of OOH (“OOH new to the household sector”). Our estimates suggest that imputing rents for the stock of OOH would imply a weight of 12% for OOH in the euro area HICP, while the weight of OOH according to the net acquisition approach would be around 9%.

**The Governing Council has always been in favour of including OOH in the HICP, but under certain conditions.** A broad coverage of household expenditure in the headline inflation measure better represents the inflation rate that is relevant for households. However, the integration of price changes for OOH into the HICP requires OOHPIs to be brought into line with HICP standards. The Governing Council has argued that the full integration of OOH price changes into HICPs might adversely affect their reporting frequency and timeliness: OOH price indices are currently published once a quarter with a delay of around 100 days, whereas the full set of HICP data is published at monthly frequency with a delay of around two weeks.<sup>12</sup> Moreover, in principle, the HICP should capture changes in prices of consumer goods and services rather than changes in asset prices. However, an owner-occupied residential property is not only a consumption good, but also an asset that both serves as a store of wealth and provides a flow of consumable housing services. OOHPIs include such an asset component. Hence, the partial inclusion of asset price developments via OOHPIs in the HICP might be problematic.

**In the monetary policy strategy review, the Governing Council discussed the treatment of OOH-related costs under the rental equivalence approach and the net acquisition approach.**<sup>13</sup> The review focused on the statistical features of these OOH treatments in the HICP and their potential implications for monetary policy, including communication aspects. The user cost approach and the payments approach were not considered suitable, mainly owing to their inclusion of interest payments, which would establish a direct link to the ECB’s policy rates.

**The rental equivalence approach relies on the dual role households have with respect to OOH, as both consumers and producers of a flow of housing services.** Where households own the dwelling they live in, there is only a shadow price of the housing services (shelter) produced and consumed. The rental equivalence approach can be thought of as measuring the opportunity cost related to living in a dwelling rather than renting it out. In national accounts, OOH is usually

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<sup>12</sup> HICP flash estimates are published at the end of each reporting month, followed by a release with a full breakdown by consumption purpose and by product category around two weeks later.

<sup>13</sup> For details, see “[Inflation measurement and its assessment in the ECB’s monetary policy strategy review](#)”, *Occasional Paper Series*, No 265, ECB, September 2021.

quantified by imputing rents in order to measure the contribution it makes to gross domestic product (GDP).<sup>14</sup>

**The acquisition approach records the purchase of a dwelling in the same way as the purchase of a durable consumer good.** The acquisition approach accounts for OOH at the time of purchase rather than over the period of time that housing services are provided to owner-occupiers living in their own dwellings. The net acquisition approach thus treats OOH in the same way as any other durable consumption good (e.g. cars, furniture). OOHPIs cover purchases of dwellings bought for the first time by the household sector, which are primarily new dwellings bought from developers or self-built. Already existing houses and flats bought for owner-occupation from other institutional sectors, for example from the public sector, are also included, while sales of residential dwellings by households to non-households are deducted. Overall, since OOHPIs do not cover household-to-household sales of residential dwellings, OOHPIs tend to be less volatile than house price indices (see Chart 2). This is due to two reasons: (i) house price indices represent changes in the prices of all purchases of houses and flats by households, including secondary market transactions; and (ii) OOHPIs include other less volatile costs of OOH, such as insurance, major repairs and maintenance costs. Both the narrow coverage of dwelling purchases in OOHPIs and the impact of additional components should be highlighted, in particular with respect to different results compared to the familiar price dynamics of overall housing markets. Potential approaches aimed at mitigating the impact of asset price dynamics in OOHPIs would imply that the resulting modified indices may deviate even further from house price indices.

**Following the ECB's monetary policy strategy review, the Governing Council recommended the net acquisition approach for the inclusion of OOH-related costs in the HICP.** A more comprehensive inclusion of costs related to OOH in the HICP would better represent the inflation rate that is relevant for households. Although costs related to shelter account for a large part of household expenditure, the HICP currently only partially includes homeowners' OOH-related costs. The net acquisition approach, based on the transaction prices that households actually pay for the acquisition of homes, is the method preferred by the Governing Council for a broad inclusion of OOH-related costs. However, OOH price indices measured using the net acquisition approach currently include an element of investment, while it is the consumption component that is relevant for monetary policy. Hence, the compilation of OOHPIs needs to focus more on the consumption element rather than on asset prices. Improvements in the reporting frequency and timeliness of OOHPIs would also be desirable.

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<sup>14</sup> In national accounts, own-account production of housing services by owner-occupiers is recorded as production of households. This production, however, cannot be observed or recorded directly. Therefore, the production value of this service is quantified in the national accounts either by applying the rental equivalence approach or (in some cases, such as when rental markets are unrepresentative for OOH markets, e.g. when they are very thin) by using the sum of costs of households' own production of housing services.

## Box 1

### International practices in the treatment of owner-occupied housing in consumer price indices

Prepared by Bernhard Goldhammer

Internationally, there is considerable variation in the way OOH is treated in CPIs, including price indices used as price stability measures by central banks (Table A). In most of the cases presented in Table A, the “rental equivalence approach” is used when OOH is included. Australia and New Zealand apply the “net acquisition approach” in their quarterly CPIs. In the EU, acquisition-based OOHPIs are published as quarterly stand-alone indices. Canada, Iceland and Sweden (in its national CPI) quantify OOH on the basis of the “user cost approach”; the respective central banks also refer to these indices for their monetary policy. The user cost approach includes mortgage interest payments, depreciation and recurring costs. While capital gains/losses and opportunity costs are, in theory, elements of comprehensive user costs, appreciation and depreciation of housing assets over time are, in practice, not included in CPI implementations of the user cost approach. Opportunity costs with respect to alternative investments (e.g. in stocks) are either excluded (Canada, Sweden) or proxied. Finally, the payments approach covers mortgage interest payments, costs such as legal and real estate agency fees, and running costs. The payments approach is (or was) applied in two national CPIs (Ireland and, until 2019 for flats, Austria) and as an alternative stand-alone OOH measure in the United Kingdom.

**Table A**

Treatment of OOH in CPIs of selected countries

OOH approaches	Monetary policy purposes	Other purposes
<b>User cost of capital</b>	Canada, Iceland, Sweden (CPI with a fixed mortgage interest rate)	Canada, Iceland, Sweden
<b>Rental equivalence approach</b>	Japan, Norway, Switzerland, United States (Personal Consumption Expenditure Price Index)	Denmark, Germany, Cyprus, Japan, Netherlands, Norway, Switzerland, United Kingdom, United States (Personal Consumption Expenditure Price Index and CPI)
<b>Net acquisition approach</b>	Czech Republic, Australia*, New Zealand*	Euro area countries (HICP – separate OOH price indices), Czech Republic, Australia*, New Zealand*, Finland**
<b>Payments approach</b>		Ireland, Austria (for flats, until 2019)
<b>Not included</b>	Euro area, United Kingdom	Most national CPIs in EU Member States not mentioned above, Austria (as of 2020) and in CPIs of many other countries

Source: “Inflation measurement and its assessment in the ECB’s monetary policy strategy review”, op. cit., p. 49, updated with more recent information.

Notes: Where EU Member States are mentioned explicitly, the reference is to the national CPI and not to the HICP. \* CPIs provided at quarterly frequency.

\*\* Updated monthly with a proxy index.

Both Australia and New Zealand apply the net acquisition approach to OOH in a similar way: OOH price indices are primarily based on selling prices of newly built standardised houses, excluding the price of the land.<sup>15</sup> The rental equivalence approach is used in Japan and the United States (in both cases also for monetary policy purposes) and in the United Kingdom. Its implementation in the US CPI shows how demanding the calculations of rental equivalents can be when striving for advanced representativeness of OOH costs: owners’ equivalent rent (OER) in the United States is based on price information which differs from the data used for compiling the price index for actual rents.

<sup>15</sup> Eiglsperger, M. and Goldhammer, B., “Consumer price indices, owner-occupied housing and measures of underlying inflation in monetary policy of selected central banks”, paper prepared for the “Meeting of the Group of Experts on Consumer Price Indices”, 7-9 May 2018, Geneva, Switzerland, corrected version, August 2018, pp. 10 and 12.

“Economic rent”, which is used for the price index of actual rents, includes utilities provided by the landlord, while such utilities are excluded from the “pure rent” used for OER.<sup>16</sup> The overall weights, for actual and imputed rents, are derived from the US Consumer Expenditure Survey, which asks tenants to report the rent they actually pay and homeowners for a hypothetical rent they would charge a tenant.<sup>17</sup> The weights derived for each stratum of the residential housing stock take into account the number of tenants and homeowners in the respective area.<sup>18</sup> The US approach to OER suggests that a simple adjustment of the total weights of actual rents to cover actual and imputed rents may not lead to sufficiently representative results. The Personal Consumption Expenditures (PCE) price index (the main inflation measure used by the Federal Reserve System for monetary policy purposes) uses the same price data as the OER in the US CPI but gives far lower weight to imputed rents than the US CPI. This is due to differences in scope, as the PCE price index covers a larger amount of expenditure related to household consumption (including expenditure households do not pay for themselves, like state education) and different data sources for weights (the Consumer Expenditure Survey for the CPI and national accounts data for the PCE price index).<sup>19</sup>

In the United Kingdom, the Office for National Statistics (ONS) also includes imputed rents in the Consumer Prices Index including owner occupiers’ housing costs (CPIH). However, for monetary policy purposes, the Bank of England uses the CPI, which excludes OOH. The ONS publishes three alternative stand-alone OOH indices based on the rental equivalence, net acquisition and payments approaches.<sup>20</sup> A comparison of these three OOH indices reveals large divergences in price developments (Chart A). While the rental equivalence-based price index exhibits fairly stable growth over time, pronounced volatility can be seen in the price dynamics of the acquisition-based OOHPI, and especially in the price index using the payments approach.

<sup>16</sup> Ptacek, F., “Updating the rent sample for the CPI Housing Survey”, *Monthly Labor Review*, Bureau of Labor Statistics, August 2013, pp. 9-10.

<sup>17</sup> “How the CPI measures price change of Owners’ equivalent rent of primary residence (OER) and Rent of primary residence (Rent)”, *CPI Factsheets*, Bureau of Labor Statistics, April 2009, pp. 1-2.

<sup>18</sup> Ptacek, F., op. cit., pp. 10-11.

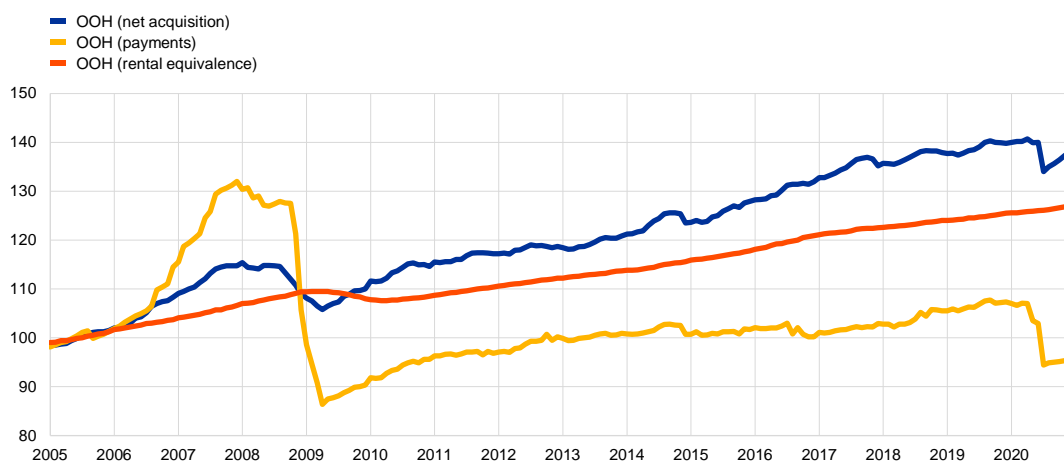
<sup>19</sup> Johnson, N., “A comparison of PCE and CPI: Methodological Differences in U.S. Inflation Calculation and their Implications”, Bureau of Labor Statistics, 2017.

<sup>20</sup> See, for example, “Measures of owner occupier’s housing costs, UK: January to March 2020”, Office for National Statistics, 2020. The release of 17 June 2020 indicates a release date of 16 June 2021 for the next release, but publication has been delayed. The next publication date is not yet known. Data up to December 2020 can be found in “Measures of owner occupiers’ housing costs”, Office for National Statistics, 2021.

## Chart A

### UK OOH price indices according to the net acquisition, payments and rental equivalence approaches

(index: January 2005 = 100)



Source: Office for National Statistics.

Canada and Sweden apply variants of the user cost approach in their CPIs. Both encompass depreciation and interest payments but exclude opportunity costs and capital gains. As including interest rates might imply the risk of a self-induced monetary policy, Statistics Sweden compiles a CPI which keeps interest rates fixed over time (CPIF) for Sveriges Riksbank. Canada's user cost approach estimates the actual profile of interest payments with respect to active mortgage contracts and the prices of houses and flats whose purchase has been financed by those contracts. This long-term perspective involves a representation of house price developments over a 25-year period.<sup>21</sup>

## 3 The ECB's new analytical quarterly index based on the net acquisition approach

### New analytical index combining HICPs and OOH price indices

**New analytical quarterly indices compiled by ECB staff combine HICPs and OOHPIs, for the euro area and euro area countries, on the basis of publicly available data.** The monetary policy strategy review laid down a roadmap for the integration of an OOHPI into the HICP.<sup>22</sup> The first step is to combine quarterly OOHPIs (which include an asset price component) with HICPs. ECB staff prepared analytical compilations for all euro area countries except Greece<sup>23</sup> and for the euro

<sup>21</sup> See Xu, A., Yélou, C. and Soumare, A., "New approach for estimating the mortgage interest cost index", *Prices Analytical Series*, Statistics Canada, November 2017.

<sup>22</sup> See "An overview of the ECB's monetary policy strategy", ECB, 2021.

<sup>23</sup> The OOHPI for Greece has not yet been provided by the Greek statistical office.

area as a whole. These analytical indices will be used primarily for internal purposes until experimental indices are published by the ESS (Eurostat and the statistical offices of the EU carry out their work independently of the ECB's internal deliberations). OOHPI expenditure weights, which need to be approximated in these new staff calculations, have been derived primarily from national accounts data.<sup>24</sup> Only published statistics have been used; detailed expenditure data (in EUR millions), broken down by OOHPI component, are not yet publicly available. Therefore, the calculations have to use some proxies, with “gross fixed capital formation”<sup>25</sup> for new residential dwellings being the main public data from which other expenditures have been deduced. HICPs combined with OOHPIs are compiled as quarterly chain-linked Laspeyres-type indices; weights are price-updated according to HICP methodology.<sup>26</sup>

**Over the last ten years, based on our preliminary staff calculations, the euro area HICP combined with the OOHPI has exhibited inflation rates that do not differ greatly from those of the HICP without OOH-related costs (Chart 3).** Since 2011, the difference between the euro area HICP with and without OOH has been limited, with the largest difference being 0.3 percentage points. Since headline inflation includes some very volatile items that might not provide information on the medium-term outlook, it is customary, for monetary policy purposes, to also look at exclusion measures that approximate underlying inflation, a prominent example being the HICP excluding food and energy (HICPX). Combining them with the OOHPI also affects the outcome of such exclusion measures for underlying inflation, partly because the relative weight of the OOHPI is higher in inflation rates that exclude certain expenditures. The difference in the inflation rate for the euro area HICPX, in particular in recent years, but also in the first half of 2012, has been more pronounced. The largest difference was around 0.4-0.6 percentage points in the second and third quarter of 2021 when HICP inflation (excluding OOH) was still influenced by coronavirus (COVID-19) pandemic-related factors. From 2012 to 2020, however, differences did not exceed 0.3 percentage points in absolute terms, including when the inclusion of OOHPI changes lowered the rates of change of the combined index. More generally, the properties of combined indices with respect to the business, housing market, construction and financial cycles need to be assessed more comprehensively as soon as longer time series with official OOHPI data become available.

<sup>24</sup> During the monetary policy strategy review, internal ECB calculations for combining HICPs and OOHPIs referred to proxy weights of OOHPIs on the basis of national accounts data for imputed rents. The results of these calculations are shown, for example, in [“Inflation measurement and its assessment in the ECB's monetary policy strategy review”](#), op. cit., pp. 48-65.

<sup>25</sup> These national accounts data represent expenditures for the purchase of new residential dwellings, excluding the cost of the land.

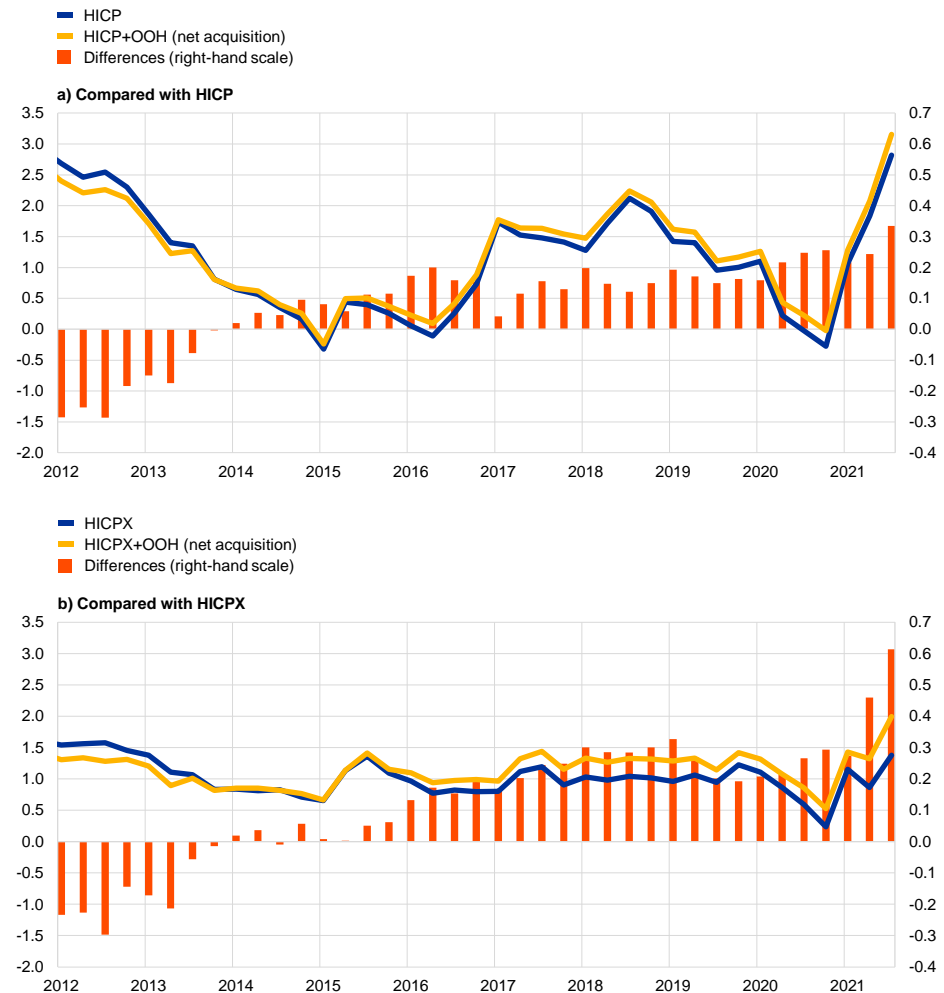
<sup>26</sup> For more details on HICP methodology, see [Harmonised Index of Consumer Prices \(HICP\) – Methodological Manual](#), Eurostat, November 2018.



### Chart 3

#### New combined analytical index including OOH according to the net acquisition approach: preliminary results from ECB staff calculations

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



Sources: Eurostat and ECB calculations.

### Comparison with the rental equivalence approach

**In the monetary policy strategy review, the net acquisition and rental equivalence approaches were compared on the basis of preliminary estimates by ECB staff.** ECB approximations of imputed rents for OOH were directly derived from the HICP price index for actual housing rentals. The respective weight attached to the imputed-rent OOH index in the combined HICP was derived from national accounts data on imputed rents included in household consumption statistics.

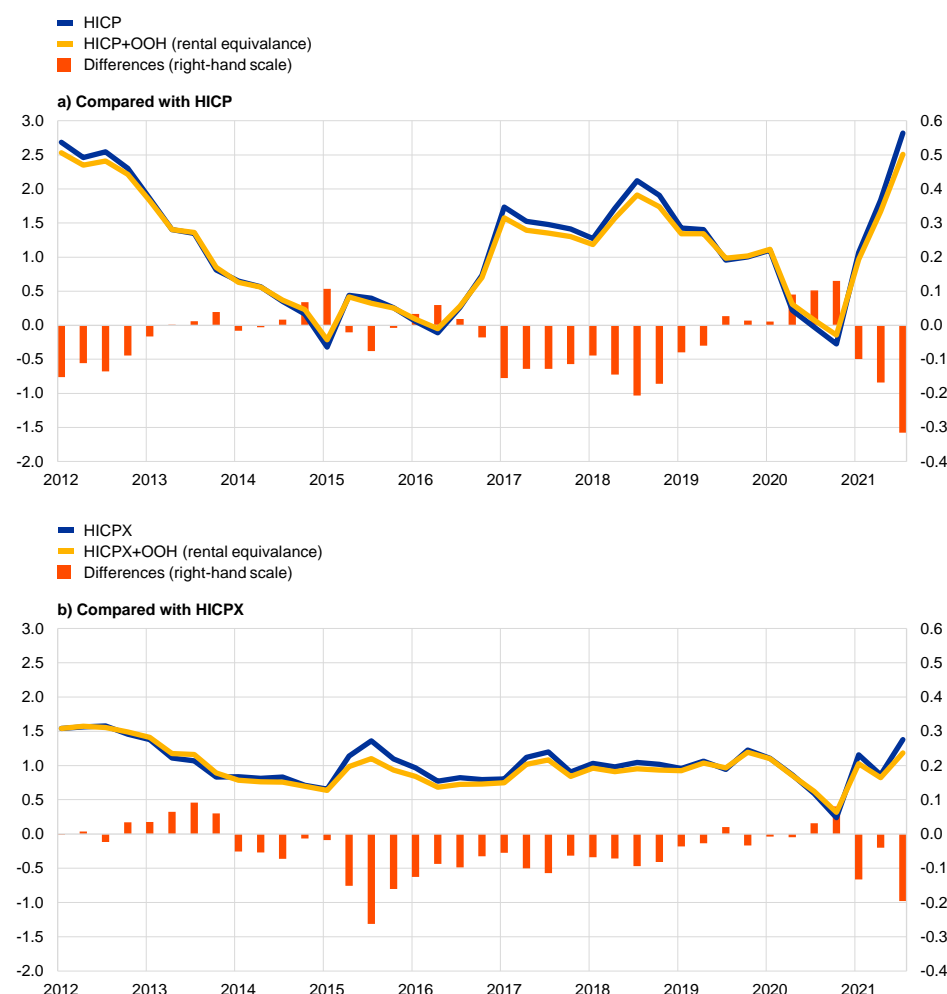
**When included in euro area headline inflation, the absolute impact of both the net acquisition approach and the rental equivalence approach is limited; however, the impacts are qualitatively different.** The combined index with net acquisition OOHPIs amplifies the cyclicalities, whereas the measure using the rental

equivalence indices dampens cyclical movements. Chart 4 shows that the impact on inflation of adding OOH in the form of imputed rents tends to be very small and is, unlike the net acquisition approach, mostly countercyclical. The results for the HICPX (panel b) are very similar to those for headline inflation (panel a), with the impact on the HICPX being slightly larger. The small size of these differences in inflation rates is mainly due to the low volatility of rent inflation (see Chart 2).

#### Chart 4

##### Index using the rental equivalence approach to OOH

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



Sources: Eurostat and ECB calculations.

**Based on preliminary ECB estimates using data since 2011, aggregate euro area acquisition-based weights have not been substantially more volatile than weights of imputed rents.** A possible concern in relation to the use of the net acquisition approach is that OOHPI weights could vary substantially over time, which could imply a potential upward bias in average inflation reflected in a combined index, related to the typical patterns of housing market cycles in combination with the

HICP requirement to update expenditure weights on an annual basis.<sup>27</sup> Chart 5, panel a, compares net acquisition weights based on ECB estimates (deduced from gross fixed capital formation in EUR billions and Eurostat's relative OOHPI sub-index weights) for the euro area and national accounts imputed rents in the form of price-updated relative expenditure shares.<sup>28</sup> For the years from 2011 to 2020, the variation coefficient of net acquisition weights was 0.044, compared to a coefficient of 0.025 for weights according to imputed rents; the minimum value of net-acquisition weights was 8.3% and the maximum 9.5%.<sup>29</sup> In individual countries, however, larger volatility over time in OOHPI weights is more likely to appear, in particular where construction cycles are pronounced. During the COVID-19 crisis, such sharp movements appeared in several countries (including France and Italy). While it is not yet known how national statistical offices would make net acquisition weights representative for the respective previous year – in line with OOHPI standards – ECB staff estimates shown in Chart 5, panel b, suggest that periods of significant changes over time in net acquisition weights may differ from periods in which shares of imputed rents change. Hence, when looking at the impact of combining the HICP with OOH costs quantified according to the net acquisition approach compared to the HICP to which imputed rents are added, differences in the compilation of the respective weights may also play a role.<sup>30</sup>

<sup>27</sup> See Whelan, K., “[How Should Housing Be Treated in the HICP? – In-Depth Analysis Requested by the ECON Committee](#)”, *Monetary Dialogue Papers*, European Parliament, November 2021, pp. 12-13. Since OOHPI weights are to be compiled according to the same concepts as HICP weights, OOHPI weights are intended to represent expenditure patterns of the previous year, with the main data taken from the year before that.

<sup>28</sup> Details of the compilation of these weights are presented in Ganoulis et al., op. cit.

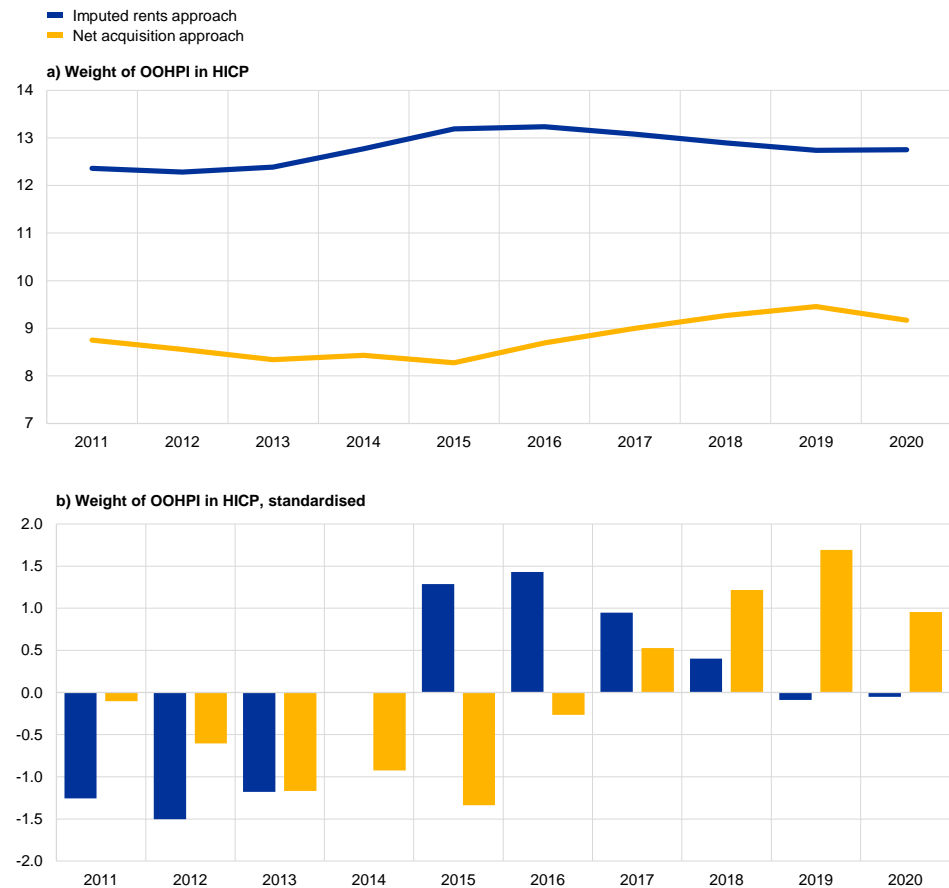
<sup>29</sup> Mean: 8.8%; standard deviation: 0.39 percentage points.

<sup>30</sup> During the monetary policy strategy review, however, ECB staff calculations for combining HICPs with OOHPIs on the one hand and with imputed rents on the other referred to the same proxy weights of OOH as an HICP component. These weights were derived from national accounts data for imputed rents. The results of these calculations are shown, for example, in “[Inflation measurement and its assessment in the ECB's monetary policy strategy review](#)”, op. cit., pp. 48-65. See also footnote 24.

## Chart 5

### Comparison of the OOHPI weight in the HICP according to the imputed rents and net acquisition approaches

(panel a: percentages; panel b: standardised units)



Sources: Eurostat and ECB calculations.

Note: Standardised deviations shown in panel b are deviations from the average, divided by the standard deviation, over the period from 2011 to 2020.

### Implications for cross-country variability and contributions of combining OOHPIs with HICPs

**Overall, according to the ECB's preliminary estimates, inflation dispersion across countries seems not to be significantly affected by the inclusion of OOHPIs.** Chart 6 shows minimum and maximum inflation across euro area countries for each quarter since 2012, both for HICPs and for the new indices that include OOHPIs. Differences between the ranges of the two measures seem to be very small, both for headline and for HICPX inflation. Chart 7 plots the standard deviations of inflation across countries for both the HICP and the HICPX. In line with Chart 6, the impact of the inclusion of OOH on overall inflation dispersion seems to be limited.

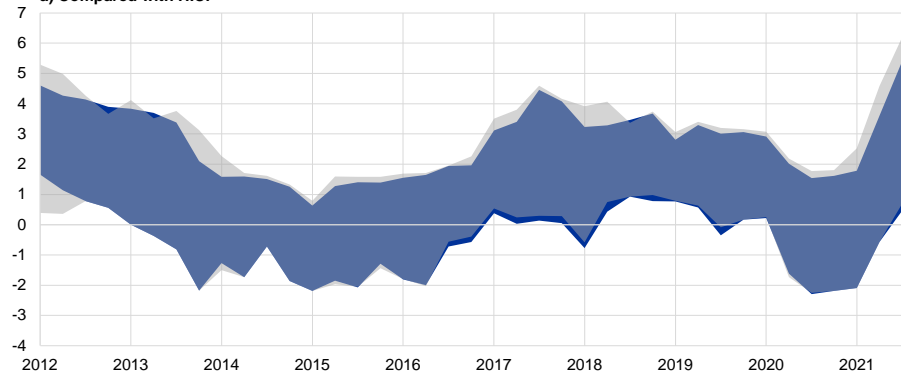
## Chart 6

### HICPs combined with OOHPIs in euro area countries – minimum-maximum range<sup>31</sup>

(annual percentage changes)

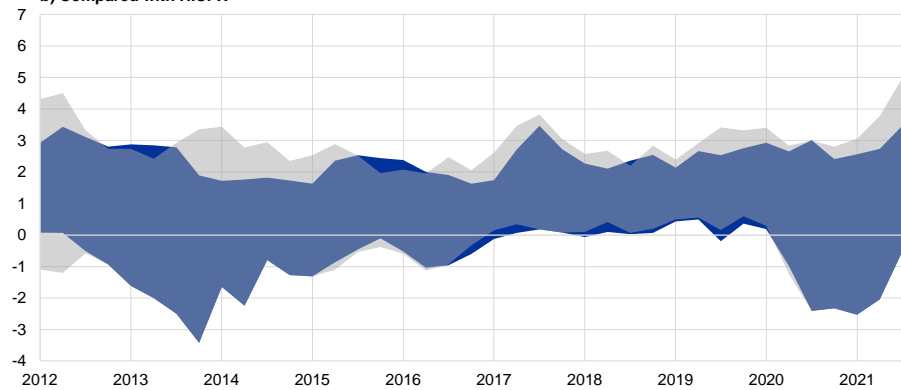
■ Range HICP  
■ Range HICP combined with OOH

#### a) Compared with HICP



■ Range HICPx  
■ Range HICPx combined with OOH

#### b) Compared with HICPx



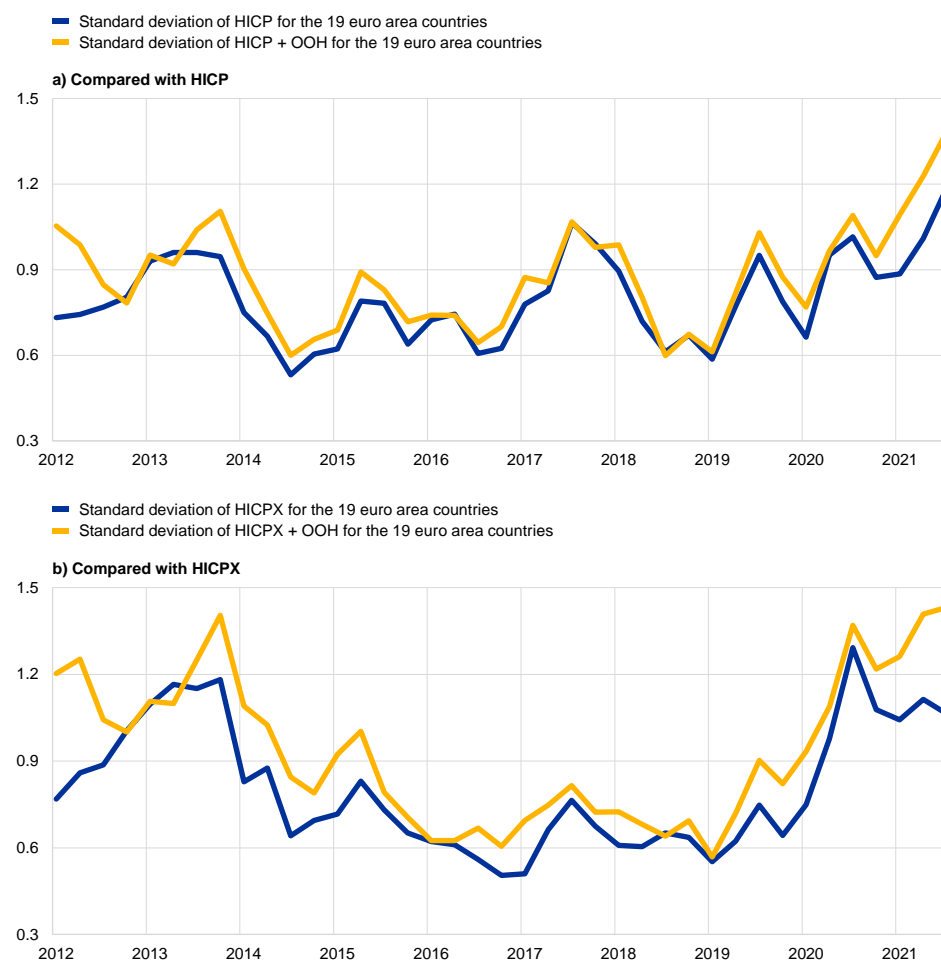
Sources: Eurostat and ECB calculations.

Note: Panels a and b show the range of HICP and HICPX inflation rates across euro area countries when OOH is added (grey) and when OOH is not added (dark blue). Where the ranges overlap, the shading is light blue.

<sup>31</sup> The OOHPI for Greece is not available. In the euro area HICP combined with the OOHPI, the HICP for Greece is included.

**Chart 7****HICPs combined with OOHPIs in euro area countries – standard deviation**

(percentage points)



Sources: Eurostat and ECB calculations.

**Owing to the potential for housing market cycles to have specific effects on overall HICP inflation when OOHPIs are added, such dynamics need to be identified, monitored and forecast.** Inflation analyses conducted at the ECB will be broadened and deepened in this respect. Currently available time series are often not long enough to allow an extended analysis of the cyclical properties of euro area countries' housing markets before 2011. However, some insights can be inferred from developments in the 2000s. According to internal ECB estimates, the rapid house price increases in several euro area countries leading up to the global financial crisis in 2008 would not have been very prominently reflected in euro area HICP inflation if OOH had been added because there were offsetting subdued movements in house prices in other euro area countries.

**In the period since 2012, the overall difference between euro area HICP inflation and changes in the HICP combined with the OOHPI was primarily driven by developments in a few countries.** Chart 8 shows the contributions of individual countries to the difference. In 2012 and 2013 the difference largely related to developments in Spain. Since then, the drivers of the difference in euro area

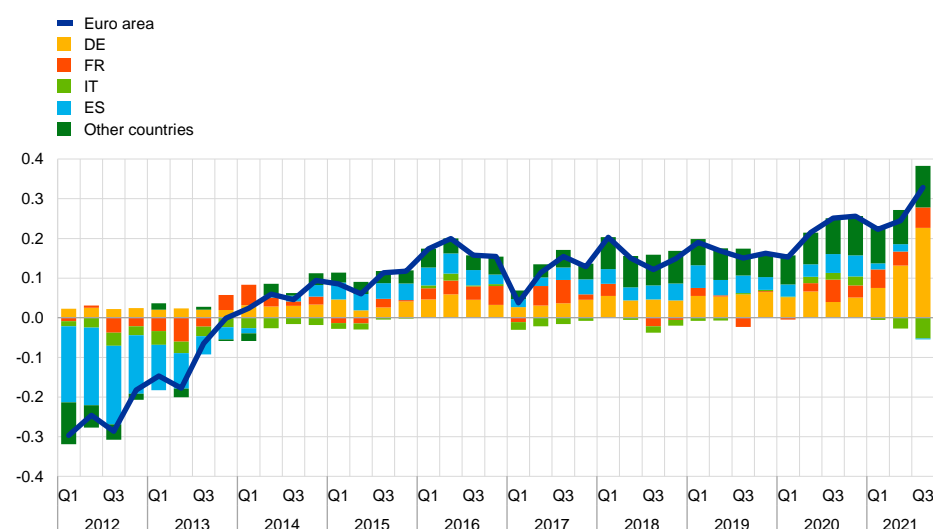
inflation when the OOHPI is added to the HICP have been more evenly spread across euro area countries. However, developments in the last few quarters are mostly explained by the sharp increase in Germany.

### Chart 8

Contributions to the difference between euro area HICP inflation and changes in the HICP combined with the OOHPI

#### Country contributions to euro area differences

(percentage points and percentage point contributions)



Sources: Eurostat and ECB calculations.

**OOHPI developments often relate to drivers of residential property prices that may vary from country to country.** Financing (i.e. mortgages) is an important driver of OOH transaction prices, playing a much larger role than it does for durable consumer goods like cars and furniture. The role of housing as an investment opportunity may also change over time depending on how risk-return profiles evolve across different asset classes. Supply-side restrictions, such as the limited availability of building land, are also a common driver of house price inflation and therefore OOHPIs. Medium to longer-term developments, such as demographic and socio-economic changes (e.g. number of persons in households and age structure), potentially have a more lasting impact on housing costs and thus also on OOHPIs.

## 4 Challenges ahead: towards OOHPI integration into the HICP

**The quarterly provision of OOHPIs by the ESS has been an important achievement on the way towards more comprehensive coverage of households' housing expenditure in HICPs for the euro area and euro area countries.** However, full integration of OOHPIs into HICPs requires monthly and timely reporting. Furthermore, in order to use a euro area HICP in which OOH is firmly integrated for monetary policy purposes, the issue that OOHPIs currently include an element of investment needs to be addressed. The ECB supports further

research projects on optimal measurement methods. These should be aimed at better isolating the consumption component from the investment component, with the former being the relevant component for monetary policy.

**In its monetary policy strategy review, the Governing Council outlined a roadmap for progress on OOHPIs.** With the ESS as the main actor, four milestones could be considered: (i) the provision of quarterly HICPs combined with OOHPIs as analytical ECB indices (presented in this article); (ii) the provision of an experimental index by the ESS, expected during 2023 – the ESS will decide about this independently of the ECB’s internal deliberations; (iii) the adaptation of the HICP legal framework in order to make quarterly HICPs combined with OOHPIs official statistics, expected not earlier than 2026; and (iv) the integration of OOH-related costs into the HICP, at a monthly frequency and in a timely manner, which could pave the way for moving to an HICP including OOH-related costs as the main index for monetary policy purposes.

**The ESS is working on advancing and adapting the OOHPI legal acts.** The forthcoming OOHPI Implementing Regulation, which will lay down revised and extended requirements for the compilation of quarterly OOHPIs by statistical offices in the EU, is expected to enter into force in the second half of 2022, to be applied by national statistical offices as of January 2024. In order to make OOHPIs combined with HICPs official statistics, however, the HICP Framework Regulation<sup>32</sup> needs to be amended. Depending on how the work of the ESS progresses, the process of updating this Regulation with respect to OOHPIs will take time.

**In the process of including OOHPIs in HICPs, the ECB will investigate in detail the properties of these indices.** The ECB will closely follow the statistical progress in compiling OOHPIs and combined indices, both in terms of methods and the adaptation of the legal framework underlying HICPs and OOHPIs. Statistical features of new OOHPI developments have to be assessed comprehensively, in particular with regard to their impact on the use of such indicators for the purposes of the ECB’s monetary policy.

**The features of OOHPIs also have to be analysed in terms of the statistical quality of the indices, in particular with respect to regular data revisions.** An important aspect is that, when they are released, OOHPI data only represent preliminary results. Unlike HICPs, OOHPIs are frequently revised as more data become available for the respective reference periods. Therefore, the use of OOHPIs has to address the greater statistical uncertainty surrounding OOHPI data for recent reporting periods.

**Follow-up work is being planned within the Eurosystem to forecast OOH price indices.** This is a challenging exercise given that the asset price component of OOHPIs (as opposed to the construction cost component) is not of the same type as for other cyclical indicators.

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<sup>32</sup> Regulation (EU) 2016/792 of the European Parliament and of the Council of 11 May 2016 on harmonised indices of consumer prices and the house price index, and repealing Council Regulation (EC) No 2494/95 (OJ L 135, 24.5.2016, p. 1).



**The feasibility of disentangling the consumption and investment components of OOHPIs rests on achieving a common interpretation and on designing a treatment that can be implemented in practice.**

As yet there is no unanimous agreement on what consumption and investment are in households' purchases of dwellings, which is a large component of OOHPIs, and this issue affects both price changes and weights. For the calculations in this article, "gross prices" and "net weights" have been used, as implemented in the ESS compilations of OOHPIs. Gross prices are actual transaction prices. Dwellings acquired by households for rental purposes (an investment) are disregarded in OOHPI prices and weights. Expenditures on land (a non-produced asset) are only excluded from net acquisition weights. The OOH price index for newly purchased dwellings, however, reflects changes in prices which include the price of land (the gross price), while the price index for self-built dwellings disregards land prices. Further refinements of what is included and excluded in weights and price indices would require a common understanding of what is considered consumption and what is considered investment, including in relation to the treatment of land.

**The compilation of monthly OOHPIs is statistically challenging.** Using transaction prices for new dwellings requires a sufficient amount of transactions to be recorded in each reporting period. On a monthly basis, however, the number of transactions may be low, in particular in small countries. In addition, reporting delays, which already adversely affect the quarterly reporting of housing transactions, are even more relevant when the recording is conducted on a monthly basis.

**Further research is required on the compilation of OOHPIs that are both monthly and timely.** It is very likely that both aspects require the application of methods that have not yet been established in HICPs. This calls for an innovative but careful approach in view of the potential implications for compilation practices and index uses.

**Long-term research projects conducted jointly with the ESS, the International Monetary Fund (IMF) and the Organisation for Economic Co-operation and Development (OECD) could shed more light on optimal measurement methods.** Research projects should be promoted, in particular with the aim of better isolating the asset component of net acquisition-based OOH price indices. Overall, the integration of OOHPIs into the HICP is a long-term project, with the ESS as the main actor. Given the challenges ahead, statistical activities will be supported by the Eurosystem where appropriate, in the form of regular user feedback.

**During the transition period the main reference index for monetary policy will remain the current HICP.** This transition period will last until the OOHPI has reached the standards of timeliness and quality necessary for full integration into the monthly HICP. In the meantime, recognising that the full inclusion of owner-occupied housing in the HICP is a multi-year project, the Governing Council will, for the purpose of its monetary policy assessments, include inflation measures that take into account initial estimates of the cost of owner-occupied housing in its wider set of supplementary inflation indicators.

Prepared by Maximilian Freier, Charlotte Grynberg, Marguerite O'Connell, Marta Rodríguez-Vives and Nico Zorell

## 1 Introduction

**Next Generation EU (NGEU) is a cornerstone of Europe's common policy response to the economic challenges raised by the coronavirus (COVID-19) pandemic.** The pandemic triggered a severe economic downturn in the EU and a re-intensification of cross-country divergences. In July 2020, the EU responded forcefully by announcing NGEU, an EU-wide investment and reform programme. In the short term, NGEU aims to support the recovery. In the medium term, it is designed to act as a catalyst for the modernisation of the EU economies, with positive effects on their growth, resilience and convergence. To achieve these objectives, NGEU offers financial support to the EU Member States conditional on the implementation of concrete investment and reform projects over the period 2021-26. If implemented effectively, NGEU should thus provide a significant boost to the capital stock and potential output of EU Member States.

**NGEU offers a unique chance to foster transformative momentum in the Member States on account of its funding volume, inbuilt cross-country solidarity and the fact that funding is linked to national policy performance.**

NGEU mobilises an unprecedented funding volume of up to €807 billion in current prices, the equivalent of 6% of 2020 EU GDP, of which €581 billion has been requested by EU Member States to date. Of the seven NGEU programmes, the Recovery and Resilience Facility (RRF) is by far the largest, accounting for 90% of the total envelope.<sup>1</sup> About half of the RRF funds are made available in the form of non-repayable grants to Member States; the other half is made available in the form of loans. Moreover, relatively more funding is made available for countries that have been hit hardest by the pandemic crisis, which also display lower GDP per capita and/or relatively higher debt-to-GDP levels. By designing NGEU with these features, Member States have demonstrated strong solidarity with each other. At the same time, RRF funding is made available to Member States conditional on the implementation of national recovery and resilience plans (RRPs), which set out concrete investments and reforms aligned with EU guidance.<sup>2</sup> Each RRP must be assessed by the European Commission and approved by the Council of the EU.

<sup>1</sup> The RRF consists of loans (up to €385.8 billion) and grants (€338.0 billion). The funds from the other six programmes are smaller: REACT-EU (€50.6 billion), Horizon Europe (€5.4 billion), InvestEU (€6.1 billion), Rural Development (€8.1 billion), Just Transition Fund (€10.9 billion) and RescEU (€2 billion).

<sup>2</sup> RRF funding is made available in two phases. In the approval phase, following the assessment of the RRP by the Commission and approval by the Council, pre-financing of up to 13% of the grants and loans approved for each respective Member State is disbursed. Further disbursements take place sequentially during the implementation phase, based on the satisfactory fulfilment of the milestones and targets agreed in the RRP, which are regularly monitored.

**NGEU could provide useful lessons for the economic governance framework and for a potential permanent fiscal capacity for the euro area in the future.**

NGEU is designed as a one-off measure. At the same time, the ECB has long supported a common macroeconomic stabilisation function to complete the economic and institutional architecture of Economic and Monetary Union (EMU). A fiscal capacity for the euro area should be designed in such a way as to complement a set of incentives for sound national fiscal and economic policies and, in particular, for reforms aimed at addressing national structural challenges and strengthening compliance with the EU's fiscal and macroeconomic surveillance framework.<sup>3,4</sup>

**This article provides an overview of NGEU from a euro area perspective, with a special focus on the national investment and reform plans.** By late 2021, the RRP of all euro area countries except for the Netherlands (which has not yet submitted an RRP) had been assessed by the Commission and approved by the Council and entered the implementation phase. All the RRP were subject to the same EU rules, operational guidance by the Commission and peer review in the EU fora, which facilitates a horizontal analysis. Against this backdrop, Section 2 reviews the fiscal aspects of the RRP, most notably the planned investments and their expected macroeconomic impact. Information missing from the RRP, for example on the time profiles of fiscal measures and their statistical classification, is complemented by Eurosystem and ECB staff assumptions, which are subject to some uncertainty. Section 3 assesses the structural reforms included in the RRP. Section 4 analyses the elements of the governance in place for the RRF that can sustain a successful implementation of NGEU. Section 5 concludes.

## 2 Plans for fiscal measures

**All euro area Member States intend to make full use of the available RRF grants, while only a few governments have requested loans so far.**<sup>5</sup> The grants total €262.1 billion for euro area Member States (Chart 1, panel a). RRF loans have been requested up to the ceiling of 6.8% of gross national income only by Greece and Italy. Slovenia, Portugal and Cyprus make so far some limited use of the loan funding available to them, bringing the overall amount of loans requested by euro area countries to €138.9 billion. While there are other euro area countries for which

<sup>3</sup> See the *Five Presidents' Report: Completing Europe's Economic and Monetary Union*, 2015 and Opinion of the ECB of 9 November 2018 on a proposal for a regulation on the establishment of a European Investment Stabilisation Function (CON/2018/51) (OJ C 444, 10.12.2018, p. 11).

<sup>4</sup> NGEU builds on previous attempts to establish policy instruments incentivising the implementation of necessary national structural reforms. Both the proposed budgetary instrument for convergence and competitiveness (BICC), which was designed to support structural reform implementation in euro area countries, and the proposed Reform Support Programme, aimed at providing financial and technical support to EU Member States implementing reforms, exploited the concept of rewarding policy actions reinforcing EU economic policy coordination, with the aim to support competitiveness and convergence. See the Proposal for a Regulation of the European Parliament and of the Council on a governance framework for the budgetary instrument for convergence and competitiveness for the euro area (COM(2019) 354 final); and the Proposal for a Regulation of the European Parliament and of the Council on the establishment of the Reform Support Programme (COM(2018) 391 final).

<sup>5</sup> While NGEU and the RRF are EU-wide programmes, 81% of the total RRF funds are allocated to the euro area countries.

RRF loans would be available at favourable conditions compared with market rates, these have opted not to use them for the time being.

**Almost two-thirds of RRF funding requested in the euro area is currently allocated to Italy and Spain.** The overall funding to be mobilised for euro area countries is currently expected to be €401 billion over 2021-26, equivalent to 3.5% of euro area 2020 GDP. Almost half of it (48%) is currently estimated to be absorbed by Italy (Chart 1, panel b). This amounts to €191.5 billion in grants and loans, or 11.6% of Italy's 2020 GDP. Spain will, in turn, absorb 17% of the requested RRF funding, which represents €69.5 billion in grants or 6.2% of its 2020 GDP. France and Germany will together receive another 16% of the RRF funding. Finally, around 19% will be directed to the smaller euro area countries: Greece being the major recipient of funds (8% in the form of grants and loans).

**NGEU allows the EU to issue a significant volume of debt at the European level.** The issuance of new NGEU debt is to take place between mid-2021 and 2026 and entails bond issuance of up to €150 billion per year to finance the non-repayable grants and the RRF loans.<sup>6,7</sup> This activity reinforces the role of the Commission in the capital markets as a major provider of safe assets denominated in euro.<sup>8</sup> NGEU provides new impetus for the EU to reform its system of own resources and introduce new own resources in the coming years, inter alia for the purpose of repayments.<sup>9</sup>

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<sup>6</sup> The European Commission became a novel actor in the bond markets during 2020 by raising €100 billion for financing the SURE programme (standing for Support to mitigate Unemployment Risks in an Emergency). After the approval of the Own Resources Decision, which establishes how the EU budget is financed, by all Member States on 31 May 2021, the Commission started borrowing to finance NGEU in June 2021. Another novelty is that 30% of the NGEU funding (€250 billion) will be issued in green bonds to be used exclusively for green and sustainable investments across the EU.

<sup>7</sup> The RRF grants will be recorded as EU debt, while the RRF loans will be accounted to the national debt of the recipient Member States.

<sup>8</sup> European Central Bank, "EU and ECB policy responses to the COVID-19 pandemic and the international role of the euro", *The international role of the euro*, June 2021.

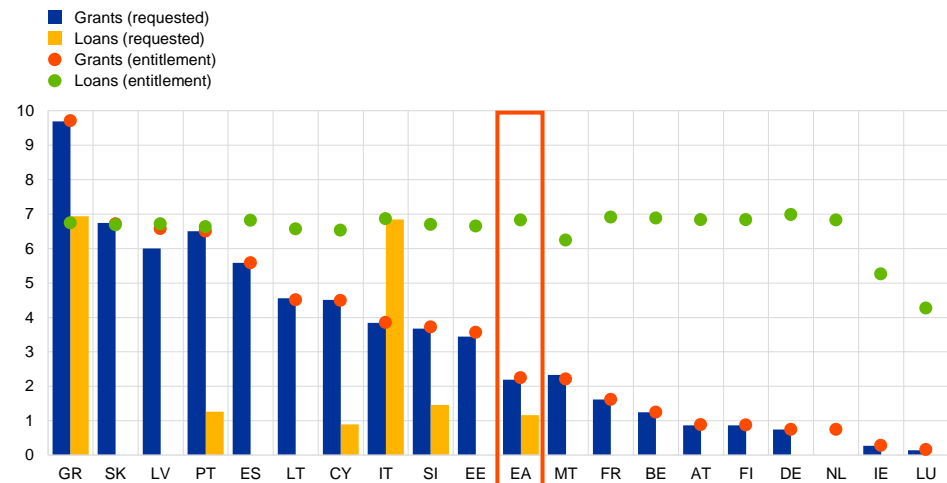
<sup>9</sup> European Council Conclusions of 17 to 21 July 2020.

**Chart 1**

**RRF funding sources in the euro area countries**

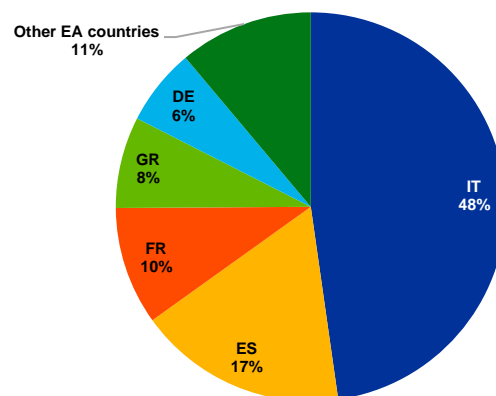
**a) RRF entitlements and funding requested in euro area countries**

(2021-26, percentage of 2020 GDP)



**b) Volume of RRF funding requested in euro area countries**

(2021-26, share of total take-up of grants and loans)



Sources: European Commission and ECB staff calculations.

Notes: Grant entitlements for countries are shown according to the European Commission data. Loan entitlements for countries are calculated as 6.8% of their 2019 gross national income (GNI). No information on RRF grants and loans is available for the Netherlands as this country still has to submit its RRP to the European Commission.

**The RRP include a growth-friendly composition of expenditures financed by the RRF in the euro area Member States.**

In line with the policy objectives of NGEU, almost 80% of RRP-related expenditures in the euro area is expected to be allocated to investment projects with relatively high fiscal multipliers compared with other expenditure components. Nearly 50% of expenditure is direct government investment and about 30% takes the form of support to private investment via capital transfers (grants to the private sector, public-private partnerships, etc.). As a result, the use of the RRF is expected to increase the share of public investment in euro area GDP during the period 2021-26 by about 2.5 percentage points (Chart 2, panels a and b). The remaining measures will mostly pertain to subsidies, social payments, and other current transfers to be implemented especially in the initial years of the plans. Overall, the RRP of euro area governments imply a stronger impact on

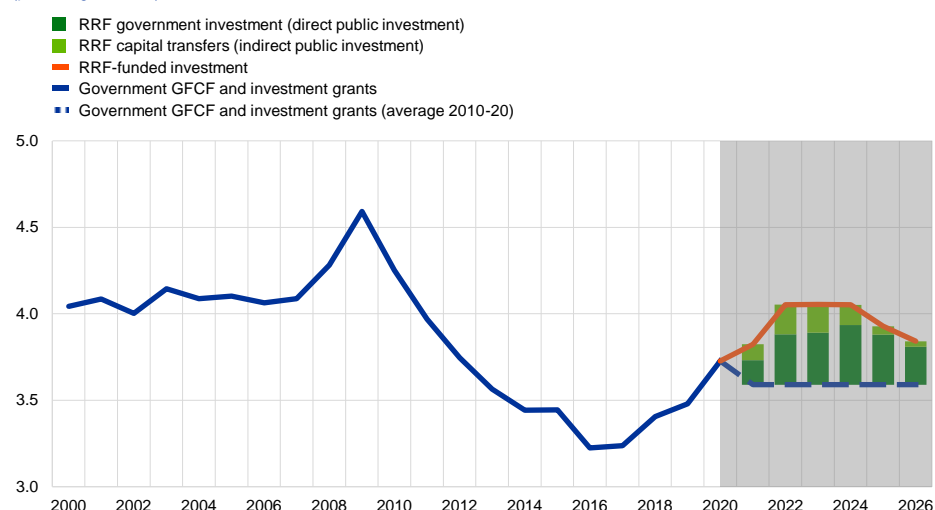
macroeconomic variables than would be the case if RRF funding had been earmarked for social spending or debt reduction.<sup>10</sup>

## Chart 2

### RRF-financed expenditure profile by statistical category

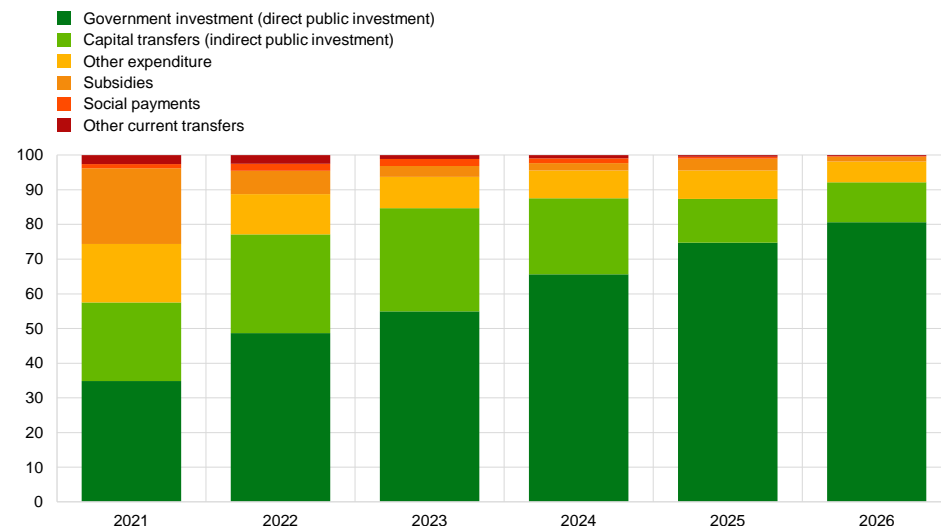
#### a) Public investment in the euro area

(percentage of GDP)



#### b) Expenditure profile of RRF funding requested in the euro area

(2021-26, percentage of total requested)



Sources: Eurosystem and ECB staff assumptions and calculations.

Notes: "RRF-funded investment" includes both (i) government investment (direct public investment, dark green bars) and (ii) capital transfers (indirect public investment, light green bars). GFCF stands for gross fixed capital formation in national accounts, i.e. investment. The public investment-to-GDP ratio (blue lines) includes government GFCF and investment grants. The information for the Netherlands is not included since its RRP has not been submitted to the European Commission yet. In the case of Greece, capital transfers include direct payments to the private sector to carry out new investment projects, which are statistically recorded as deficit-debt adjustment (DDA).

<sup>10</sup> Previous work by ECB staff shows the expected macroeconomic impact of several stylised scenarios, including the use of NGEU loans and grants for (i) productive public investment, (ii) unproductive government spending, and (iii) replacing or repaying existing sovereign debt; cf. Bańkowski, K., Ferdinandusse, M., Hauptmeier, S., Jacquinot, P. and Valenta, V., "The macroeconomic impact of the Next Generation EU instrument on the euro area", *Occasional Paper Series*, No 255, ECB, January 2021.

**The macroeconomic simulations by ECB staff point to a significant positive contribution of NGEU to the recovery in the euro area.** ECB staff macroeconomic models suggest that the additional spending from RRF funding will raise the level of euro area real GDP by around 0.5% in 2023 – an effect that will largely persist in the subsequent years (see Box 1). While the effects are expected to be stronger in the countries that particularly benefit from the programme, they will positively affect all countries also thanks to trade spillovers stemming from higher demand in the EU internal market. This is in line with other studies, which also emphasise the importance of spillover effects.<sup>11</sup> The cross-border nature of some investment projects (e.g. hydrogen and the 5G technology projects) would also contribute to strengthening the EU internal market.<sup>12</sup>

**The realised medium-term macroeconomic impact of NGEU may turn out to be higher than currently estimated on account of confidence effects and structural reforms.** First, the political agreement on NGEU – in tandem with supportive monetary policy measures – produced significant positive confidence effects in the euro area after the pandemic shock. This is reflected in the fall of sovereign spreads in the most vulnerable economies, reflecting the signal that in times of crisis the EU Member States stood together in solidarity.<sup>13</sup> Second, for the time being, ECB staff simulations, like those published by the Commission, do not take into account the positive impact of structural reforms, which may be very significant. RRF-funded investment is expected to be particularly productive where it is reinforced with appropriate structural reforms. Investments and other productive expenditure directly increase the capital stock, which may enhance total factor productivity and/or create employment, thereby increasing the level of potential output. The structural reforms embedded in the RRFs have the potential to reinforce the impact of the planned investments (see Section 3).

**Nonetheless, there are also several risks on the downside over the lifespan of the RRFs, which are difficult to quantify at this stage.** These include the possibility of lower absorption rates than expected and a reduction of non-RRF investment, with the funding re-allocated to less productive expenditure categories.<sup>14</sup> Hence, it is key to achieve the agreed milestones and targets in the implementation phase of the RRFs (see Section 4).

<sup>11</sup> See Pfeiffer, P., Varga, J. and in 't Veld, J., "Quantifying Spillovers of Next Generation EU Investment", *European Economy Discussion Papers*, No 144, European Commission, July 2021; and Bańkowski, K., Domingues, J., Dorrucchi, E., Freier, M., Jacquinet, P., Modery, W., Rodríguez-Vives, M., Valenta, V. and Zorell, N., "The economic impact of Next Generation EU: A euro area perspective", *Occasional Paper Series*, ECB, forthcoming.

<sup>12</sup> However, preliminary estimates suggest that only around 4% of the total funds assigned to euro area countries will be devoted to multi-country investment projects.

<sup>13</sup> The impact of the RRF funds in the government accounts reflects a redistribution element. Risk-sharing is deepened by means of a common fiscal capacity, as this time a percentage of the funds do not need to be repaid by the recipient country. The redistribution element (via the grant component) alleviates the public finance situation of the beneficiary Member State, i.e. it does not directly increase its deficit or the stock of debt. The pooling element is found in the deficit equation of the Member States (via the net contributions to the EU budget).

<sup>14</sup> Compared with previous EU programmes, however, the absorption capacity may have improved for some countries on account of the national governance reforms detailed in the RRFs (e.g. putting audit and project managers in place).

**If properly implemented, the RRFs may also contribute to reducing cross-country divergences that the pandemic crisis has further exacerbated in the euro area.** Over the medium run, NGEU funding may help to offset some of the fragmentation caused by the crisis. Chart 3, panel a, shows that the estimated NGEU-driven increase in the GDP level in 2026 is higher the lower the countries' GDP per capita in 2019. In this way, NGEU funding also loosens the budget constraint of vulnerable countries and helps forestall a potentially strong fiscal contraction, such as the one observed in some countries in the context of the global financial crisis.

**Over the longer run, NGEU may also mitigate some of the most entrenched structural divergences in the euro area economies.** For example, RRF funding may trigger a catching-up process for investment. RRF-funded public expenditure as a percentage of GDP is indeed particularly high in the countries with a relatively low net capital stock per capita (Chart 3, panel b). Furthermore, higher growth prospects and lower cost of financing may improve debt sustainability in the vulnerable countries.<sup>15</sup> This may also provide more fiscal space for national economic stabilisation in the future.

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<sup>15</sup> NGEU is also expected to improve debt sustainability in high-debt countries. This may materialise via four main channels: (i) confidence effects; (ii) solidarity effects owing to the fact that a significant share of NGEU resources consists of non-repayable grants that are relatively higher for high-debt countries; (iii) higher growth prospects; and (iv) the positive impact on potential output over the longer term.

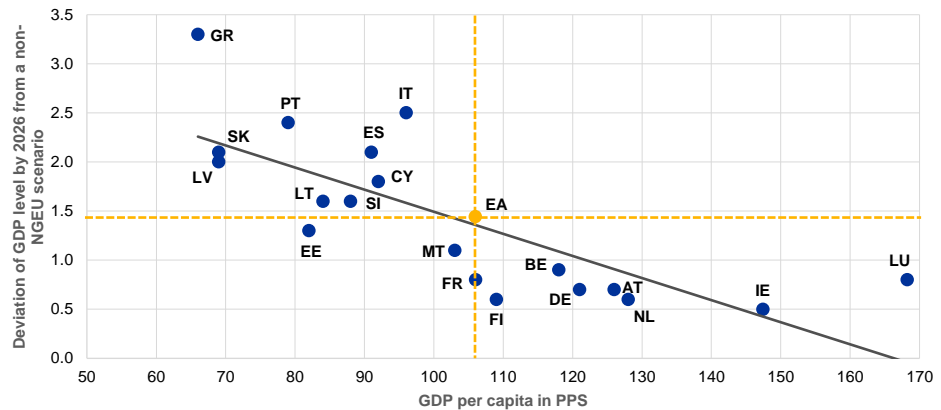


### Chart 3

#### NGEU's contribution to mitigating economic divergence

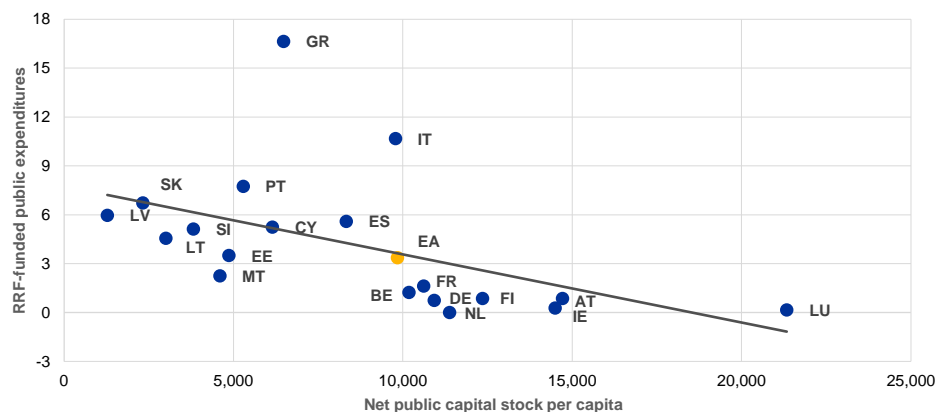
##### a) Estimated impact of NGEU on GDP level by 2026 and 2019 GDP per capita

(x-axis: EU27=100, 2019; y-axis: percentages)



##### b) Total RRF-funded public expenditure and per capita public capital stock

(x-axis: EUR, 2019; y-axis: percentage of 2019 GDP)



Sources: European Commission; Pfeiffer, P., Varga, J. and in 't Veld, J., "Quantifying Spillovers of Next Generation EU Investment", *European Economy Discussion Papers*, No 144, European Commission, July 2021; and ECB staff assumptions and calculations. Notes: Panel a): For IE and LU the gross national income (GNI) per capita in purchasing power standards (PPS) has been used. For the estimated growth owing to NGEU funds, Pfeiffer, P. et al. use the QUEST model assuming a linear disbursement over six years and no structural reforms. The scenario represented in the chart considers spillover effects and assumes high productivity. For further details on the estimated impact of NGEU on GDP, see Pfeiffer, P. et al. Panel b): Public expenditure is based on the total grants and loans requested by the euro area countries.

**Apart from its contribution to economic recovery and resilience, RRF funding is targeted to foster the green and digital transitions of the EU economies.** The [RRF Regulation](#)<sup>16</sup> requires Member States to allocate at least 37% of RRF-funded expenditure to the green transition, i.e. to measures in spheres such as sustainable mobility, energy efficiency, and clean energy and networks. At least 20% of total expenditure has, in turn, to be devoted to the digitalisation of the economy, especially the digitalisation of public services and the corporate sector, investment in human capital and investment in connectivity. All euro area RRFs fulfil these requirements, though with significant differences across countries.

<sup>16</sup> Regulation (EU) 2021/241 of the European Parliament and of the Council of 12 February 2021 establishing the Recovery and Resilience Facility (OJ L 57, 18.2.2021, p. 17).

## Box 1

### The macroeconomic impact of expenditure plans funded with NGEU

Prepared by Krzysztof Bańkowski, Maximilian Freier and Pascal Jacquinot

To assess the macroeconomic impact of Next Generation EU (NGEU), this box presents the model specifications, assumptions and results of two ECB staff models, namely a large-scale DSGE model (EAGLE) and a semi-structural model (ECB-MC).<sup>17</sup> Given high uncertainty surrounding the effects of NGEU, the two models are deployed with a view to cross-checking the results.

#### Model specifications and assumptions

The two models are well equipped with fiscal policy instruments/shocks and are therefore suitable for analysing policies such as the implementation of NGEU. At the same time, they have some distinctive properties. Most notably, the EAGLE model embeds detailed trade links, thereby emphasising spillover effects stemming from higher demand in the EU internal market, and public investment enhancing total factor productivity. Moreover, its forward-looking nature allows the deflationary pressures reflecting the future supply effects of NGEU investment to be identified. By contrast, the ECB-MC model applied here features backward-looking expectations where economic agents do not commensurately internalise the future outcomes of the programme. Instead, the strength of the model comes from its semi-structural nature and close links to the data.

Notwithstanding differences, the fiscal multipliers for government investment associated with the two models fall into the typical range (around unity) consistent with the relevant literature, which emphasises the relatively high potency of this fiscal instrument.<sup>18, 19</sup> Finally, estimates reported below do not reflect the impact of the structural reforms associated with NGEU or any confidence effect (reflected in the evolution of sovereign spreads).

The use of RRF funds is somewhat frontloaded over the RRF programme period (from mid-2021 until 2026) in terms of the euro area aggregate (Chart A). Close to 77% of grants and loans are estimated to finance additional fiscal measures in the euro area.<sup>20</sup> Taken in isolation, i.e. without the SURE programme (Support to mitigate Unemployment Risks in an Emergency) and the other components of NGEU, these measures add fiscal stimulus of 0.3% of GDP in 2021 and around 0.5% of GDP per year in 2022 and in 2023. The stimulus in the subsequent years is expected to wane gradually.

<sup>17</sup> DSGE stands for dynamic stochastic general equilibrium. For the models applied in the analysis, see Gomes, S., Jacquinot, P. and Pisani, M., "The EAGLE: A model for policy analysis of macroeconomic interdependence in the euro area", *Economic Modelling*, Vol. 29, Issue 5, 2012, pp. 1686-1714; and Angelini, E., Bokan, N., Christoffel, K., Ciccirelli, 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.

<sup>18</sup> For a review of typical values of fiscal multipliers, including those associated with government investment, see Coenen et al., "Effects of Fiscal Stimulus in Structural Models", *American Economic Journal: Macroeconomics*, Vol. 4(1), January 2012, pp. 22-68 (based on structural models operated by different policy institutions); and Gechert, S. and Rannenberg, A., "Which Fiscal Multipliers are Regime-dependent? A Meta-regression Analysis", *Journal of Economic Surveys*, Vol. 32, Issue 4, September 2018, pp. 1160-1182 (based on various studies including both structural and reduced-form models).

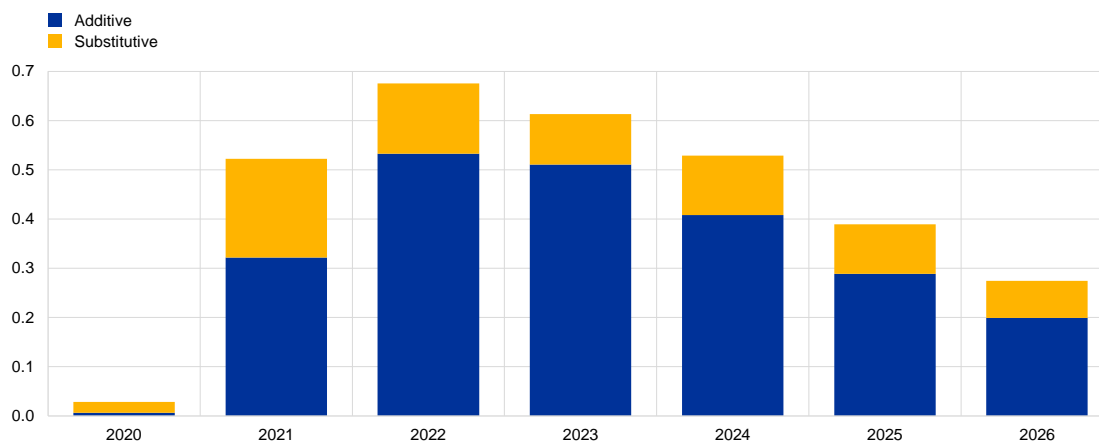
<sup>19</sup> The EAGLE (undiscounted) long-run government investment multiplier lies between 2.5 and 5 depending on the productivity of public capital (low or high respectively). For technical details, see Clancy, D., Jacquinot, P. and Lozej, M., "Government expenditure composition and fiscal policy spillovers in small open economies within a monetary union", *Journal of Macroeconomics*, Vol. 48, Issue C, 2016, pp. 305-26.

<sup>20</sup> The remaining 23% of grants and loans are "substitutive" in nature, i.e. they are used to finance fiscal measures that would have been taken even in the absence of NGEU and, as such, have no additional economic impulse. This is the case, however, for just a few countries.

## Chart A

### Amount of RRF funding used for additive vs. substitutive fiscal measures

(percentage of GDP)



Sources: Eurosystem and ECB staff assumptions.

## Model results

The analysis suggests that the boost to the level of euro area GDP from NGEU implementation, which reaches around 0.5% in 2022 and in 2023, persists largely in the subsequent years (Chart B). The effects are expected to be relatively more pronounced in countries that particularly benefit from the programme, but visible in all countries. At the same time, short-term effects on inflation are more model-dependent. Forward-looking models with fully rational agents like EAGLE tend to emphasise that rapid demand-driven inflation is quickly offset by disinflationary pressures on account of expected increases of productive capacity in the future. On the other hand, models with backward-looking expectations, like ECB-MC, tend to mostly reflect past and contemporaneous additional demand, which gradually pushes up prices. For this reason, the inflation results will depend on which forces will eventually prevail. However, the impact on euro area inflation is not expected to be significant over the medium run. The implementation of NGEU should lead to a minor reduction in the euro area government debt-to-GDP ratio measured by aggregating debt of single Member States, i.e. not accounting for EU common issuance. This largely reflects NGEU grants used to finance projects that would have been implemented even in the absence of NGEU, i.e. a substitutive element.

## Chart B

Simulation of the impact of RRF measures on the euro area GDP level (left panel), annual HICP inflation (middle panel), and government debt-to-GDP ratio (right panel)

(left panel: percentage deviation from the baseline; middle and right panels: percentage point deviation)



Source: ECB staff calculations.

Compared with previous analyses, the current results tend to paint a more moderate picture of the macroeconomic impact of NGEU.<sup>21</sup> This is because they are based on the investment and other expenditures actually included in the RRP of euro area governments, which effectively replace the assumptions that had to be made in past stylised scenarios.

## 3 Structural reform plans

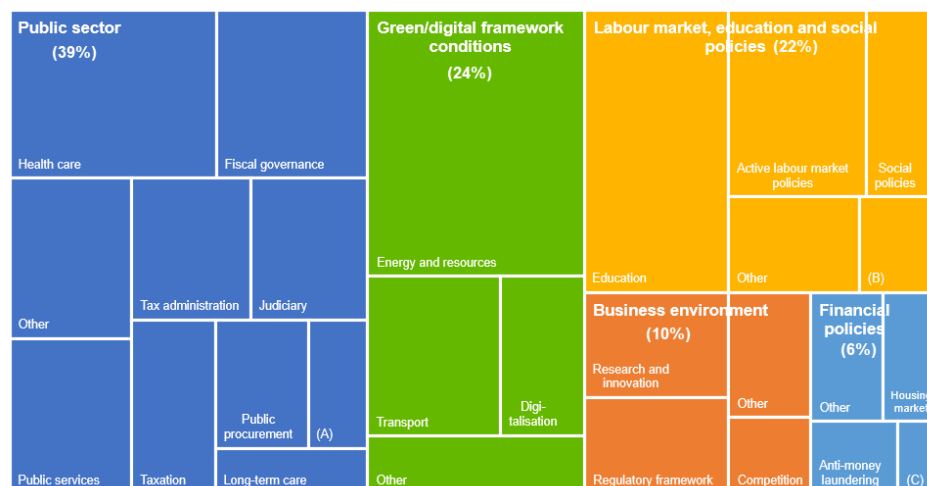
**The structural reforms in the RRP are strongly geared towards the public sector, framework conditions for the green and digital transitions, and “soft” labour market policies.** The RRP of euro area countries envisage more than 600 structural reforms. 39% of these reforms are related to the public sector (see Figure 1). This category includes, for instance, policy measures aimed at enhancing the functioning of the judiciary or the health care system. Green/digital framework conditions, such as eco-friendly revisions of building codes, account for 24% of the reforms. There are also synergies with other reform areas, most notably public sector reforms that also support the green and digital transitions, for example by promoting e-governance. 22% of all reforms are related to the labour market, education and social policies. Within this category, measures related to digital skills and active labour market policies are particularly frequent. Measures addressing the business environment and financial policies feature less prominently.

<sup>21</sup> The analysis conducted in the past concluded that NGEU funds, if used for productive public investment, could increase real output in the euro area by around 1.5% of GDP over the medium term, see Bańkowski, K., Ferdinandusse, M., Hauptmeier, S., Jacquinot, P. and Valenta, V., “[The macroeconomic impact of the Next Generation EU instrument on the euro area](#)”, *Occasional Paper Series*, No 255, ECB, January 2021.

**Figure 1**

**Breakdown of RRP reforms in euro area countries by policy area**

(percentage of total)



Source: ECB staff.

Notes: (A) Pensions; (B) Employment protection legislation, framework for labour contracts; (C) Insolvency frameworks. The classification is based on an ECB staff assessment. It has been applied at the level of individual milestones and targets.

**The reform mix embedded in the RRP reforms exploits synergies with the RRF-funded public investments and could thus increase NGEU's effectiveness in modernising the euro area economies.**

The reform mix is overall well suited to facilitate a swift and effective roll-out of RRP projects by removing administrative and regulatory bottlenecks. This is particularly important in view of the relatively weak track record of some countries in implementing reforms and absorbing EU structural funds effectively.<sup>22</sup> The reform plans also have the potential to reduce public sector inefficiencies on a broader basis and improve the framework conditions for private investments into green and digital projects, with positive effects on potential output over the medium term. The envisaged activation policies and skill-related initiatives, in turn, could facilitate post-pandemic labour market adjustments.

**A stronger focus in the RRP reforms on labour and product market institutions and the business environment could have increased NGEU's impact on potential output and resilience.** "Classical" reforms aimed at the liberalisation of labour and product markets or the broader business environment feature less prominently in the RRP reforms. Such reforms are important, since sound structural policies in these fields are widely considered to foster allocative efficiency, potential growth and economic resilience.<sup>23</sup> From a euro area perspective, sound economic structures and institutions also help to reduce the incidence and impact of asymmetric shocks and support the effectiveness of the ECB's monetary policy, thereby contributing to the smooth functioning of EMU.<sup>24</sup> Corresponding reform efforts would therefore need to

<sup>22</sup> See Darvas, Z., "Will European Union countries be able to absorb and spend well the bloc's recovery funding?", *Bruegel*, blog post, 24 September 2020.

<sup>23</sup> See Masuch, K., Anderton, R., Setzer, R. and Benalal, N. (editors), "Structural policies in the euro area", *Occasional Paper Series*, No 210, ECB, June 2018; and Sondermann, D., "Towards more resilient economies: the role of well-functioning economic structures", *Journal of Policy Modeling*, Vol. 40(1), 2018, pp. 97-117.

<sup>24</sup> See Masuch et al., *ibid.*

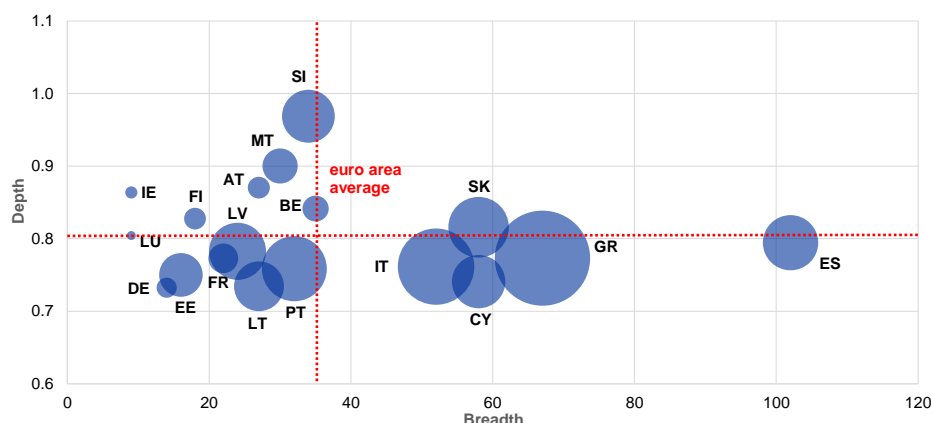
take place outside the RRP, most notably in the context of the European Semester – the EU's annual policy coordination cycle.

**Countries receiving larger RRF funds have committed to more structural reforms than their peers, which is conducive to economic convergence in the euro area.** The RRP of the euro area countries are relatively well aligned with the country-specific recommendations (CSRs) issued in the context of the European Semester, according to the Commission (see Chart 4). This is a requirement laid down in the RRF Regulation. At the same time, the number of reforms envisaged by the RRP is overall higher for countries that receive particularly large RRF funds relative to GDP.<sup>25</sup> Taken together, these stylised facts on the breadth and depth of reforms suggest that the plans of the main RRF-recipient countries are particularly ambitious. This is broadly in line with the RRF Regulation, which requires a balance between investment and reforms. The cross-country distribution of reforms is also conducive to economic convergence since the main recipients tend to underperform in comparison with their peers in terms of institutional quality and income per capita.

**Chart 4**

#### Depth and breadth of the RRP

(x-axis: number of reforms; y-axis: score, 0=no coverage, 1=full coverage; bubble size: RRF grants and loans, percentage of 2019 GDP)



Source: ECB staff calculations based on European Commission data.

Notes: The x-axis ("breadth") shows the number of reforms for each RRP, while the y-axis ("depth") reports the extent to which each RRP addresses the country-specific recommendations (CSRs) according to the European Commission's assessment. The latter indicator is calculated as an unweighted average score across individual CSRs elements. The bubble size captures the volume of RRF grants and loans requested by a country as a percentage of its 2019 GDP. The dotted lines refer to the unweighted euro area average.

#### The comprehensive reform plans triggered by the RRF stand in contrast to the weak reform momentum under the European Semester over the past decade.

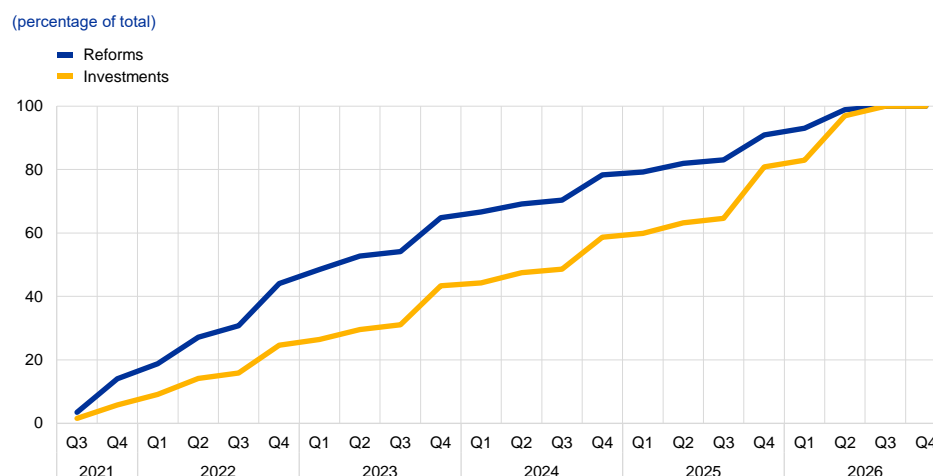
From a multiannual perspective, only 6% of the CSRs issued between 2011 and 2019 have been fully implemented under the European Semester, according to the European Commission. The RRF appears to have been more successful so far in aligning national policy plans with EU policy priorities, although implementation will

<sup>25</sup> This cross-country finding is robust to the use of alternative indicators, such as the number of reform-related milestones and targets, and confirmed by a qualitative, in-depth assessment of the RRP. Importantly, however, the relative position of individual countries may change depending on the metric used. Therefore, such indicators should not be used to construct a country ranking.

be key. Moreover, some reforms are not considered additive since they were already planned or implemented before the adoption of the RRFs.

**Despite the frontloading of reforms, adverse macroeconomic side effects in the short term are likely to be relatively small and outweighed by the RRF's positive fiscal impulse.** The RRFs envisage that the milestones and targets related to reforms will overall be implemented earlier than those for the investments (see Chart 5). This sequence is relevant from a macroeconomic perspective, since certain reforms can have adverse short-term effects on economic activity before their beneficial impact materialises over time.<sup>26</sup> However, based on the currently available information on the RRFs, it is difficult to find clear examples of reforms planned in the short term that could risk stifling the recovery. Most notably, only a few of the planned labour market reforms are related to changes in employment protection legislation, for which some studies have found significant short-term transition costs. The dynamic effects of the reforms related to the public sector and the digital and green transitions are more difficult to assess, given limited overlaps with the relevant literature. Even so, it seems plausible that households and firms should immediately benefit from policy actions that speed up administrative processes, reduce court congestion, ensure swifter payments in public procurement and enhance digital training.

**Chart 5**  
Cumulative path of RRF milestones and targets



Sources: European Commission and ECB staff calculations.

Notes: The chart shows the sum of milestones and targets. Milestones are qualitative achievements, such as the adoption of legislation, while targets are quantitative objectives.

## 4 Governance

**The RRF establishes a new governance framework with several innovative elements, which could be a decisive factor for the success of NGEU and provide lessons for the economic governance framework.** First, the RRF lays

<sup>26</sup> See International Monetary Fund, "Time for a supply-side boost? Macroeconomic effects of labor and product market reforms in advanced economies", *World Economic Outlook*, Chapter 3, April 2016.

out a clear framework for the approval of national reform and investment plans, as well as their implementation. Second, the RRF Regulation sets out a balance of roles for the Member States, the European Commission and the Council, which has resulted in close cooperation between national governments and these institutions. It also has the potential to increase national ownership of policy design and the effectiveness of peer reviews. Third, and most importantly, disbursements are made conditional on the fulfilment of milestones and targets set out in each Member State's RRP, providing positive incentives and accountability for productive investment and reforms. Thus, the RRF could provide useful lessons for the economic governance framework and for a potential permanent fiscal capacity for the euro area in the future.

**The process of approval of the RRP and of disbursement requests involves the Commission and the Council.** As illustrated in Figure 2, in the approval phase, Member States submit their RRP, which set out a package of reforms and investment, including the envisaged milestones and targets for their implementation. These RRP are assessed by the Commission and approved by the Council.<sup>27</sup> In the subsequent implementation phase, Member States submit requests for payments up to twice per year. The Commission must assess whether the milestones and targets associated with each payment have been fulfilled, taking into account the opinion of the Council's Economic and Financial Committee (EFC).<sup>28</sup> The Commission then decides whether to approve the disbursement of the relevant portion of grants and loans to the Member State concerned.<sup>29</sup> By end-2021, the RRP of all euro area countries except for the Netherlands (which has not yet submitted an RRP) had been approved, and €50 billion of pre-financing payments had been disbursed. On 27 December 2021, the Commission disbursed the first payment of €10 billion to Spain. Throughout the approval and implementation phases, the Commission must keep the European Parliament fully informed, both through the regular provision of information and through attendance at regular Recovery and Resilience Dialogues. Moreover, the Commission must prepare reports on the implementation of the RRF. The first review report will be prepared by 31 July 2022, taking into account common indicators and a recovery and resilience scoreboard as provided in the RRF Regulation. A comprehensive interim evaluation report will follow by 20 February 2024.

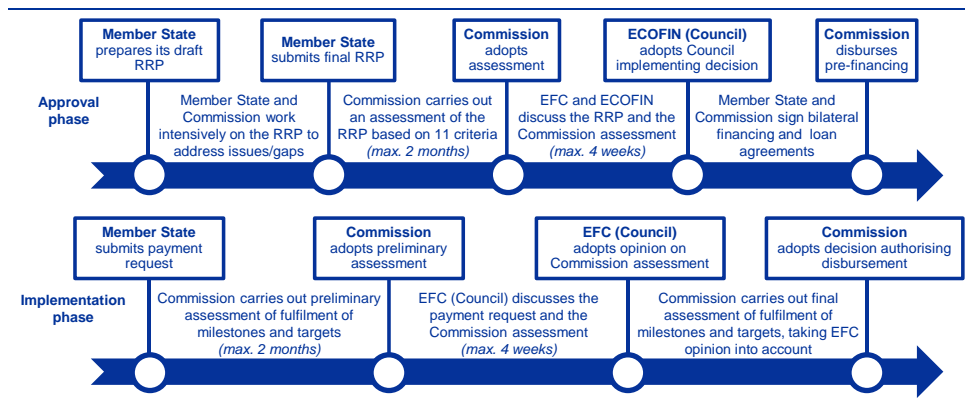
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<sup>27</sup> On this basis, the Commission makes the first disbursements in the form of pre-financing payments of up to 13% of the total amount allocated to each country.

<sup>28</sup> The Council can also prevent the adoption of a Commission disbursement decision by qualified majority through the examination procedure. Furthermore, within the EFC, any Member State with concerns about serious deviations from milestones and targets can escalate the matter to the European Council for discussion.

<sup>29</sup> Bańkowski, K., Domingues, J., Dorrucchi, E., Freier, M., Jacquinot, P., Modery, W., Rodríguez-Vives, M., Valenta, V. and Zorell, N., "The economic impact of Next Generation EU: A euro area perspective", *Occasional Paper Series*, ECB, forthcoming.



**Figure 2****Procedures under the Recovery and Resilience Facility (RRF)**

Source: Authors based on the [RRF Regulation](#).

Note: EFC stands for Economic and Financial Committee.

**Thanks to its design and procedural features, the RRF has the potential to strengthen the partnership between the Commission and Member States.**

Member States prepared RRP within the framework set by the RRF Regulation and with guidance from the Commission. In contrast to previous EU structural reform instruments, Member States and the Commission engaged in extensive bilateral dialogue on the draft RRP before they were formally submitted to address gaps and outstanding issues. The Commission notes that this process has the potential to promote mutual trust and understanding of policy priorities and challenges at national and EU level while also ensuring national ownership of the plans.<sup>30</sup>

**The RRF also has the potential to strengthen the peer review process in the Council.**

The Council plays an important role in both phases of the RRP process. This allows Member States to scrutinise the design and implementation of important elements of economic policy in each Member State. The detailed milestones and targets in the plans have the potential to enhance transparency and accountability. However, the effectiveness of this peer review process will critically depend on the willingness and ability of Member States to closely scrutinise requests by other Member States. For example, in the implementation phase, the highly technical nature of individual milestones and targets implies a high administrative burden to monitor their effective implementation. The Council may need to rely on the Commission's assessment for its discussions, particularly in smaller Member States. This may reduce the scope for Member States to engage in robust scrutiny, and it will therefore be important to ensure the benefits of multilateral surveillance are reinforced.

**Through its design and procedural features, the RRF also offers a new way to look at economic policy coordination.**

By linking disbursements of RRF grants and loans to the successful completion of reforms and investments, the RRF in principle provides stronger incentives for Member States to implement reforms. The RRF also takes a forward-looking approach to economic policy, placing a key focus

<sup>30</sup> European Commission Communication, "The EU economy after COVID-19: implications for economic governance", COM(2021) 662 final, 19 October 2021.

on the need to make EU economies more sustainable, resilient and better prepared for future challenges. In addition to the country-specific recommendations under the European Semester, which focus mostly on macroeconomic imbalances and structural reforms, the RRF gives high priority to measures aimed at supporting the climate and digital transitions. In doing so, the RRF includes several key features of a system of positive financial incentives for reforms as advocated in the political economy literature (see Box 2). Not only are the RRFs designed to address critical common challenges in a manner specific to each Member State, the ongoing assessment of milestones and targets fosters national ownership and accountability, along with promoting continual dialogue between the Member States and the Commission.

## Box 2

### Financial incentive mechanisms for structural reforms in the political economy literature

Prepared by Navid Armeli and Marguerite O’Connell

The political economy literature has discussed various ways of using financial incentive mechanisms to promote structural reforms. It finds these incentives to be more persuasive for reform implementation than the mere threat of sanctions.<sup>31</sup> Moreover, financial incentives can be useful to overcome the issue of veto players in the political system that have vested interests and benefit from the institutional status quo.<sup>32</sup>

The literature has identified two main criteria that should be met for positive incentives to exert the most influence. First, to avoid moral hazard, ex ante conditionality and transparent selection criteria need to be applied, together with a clear indication of the division of national and European responsibilities.<sup>33</sup> Financial support should then be granted on a conditional basis and in accordance with a transparent set of rules. Moreover, positive incentive schemes should encourage complementarities in the sequencing of reforms. Second, positive incentives need to support ownership and accountability. To do so, they must be sufficiently country-specific and take into account the domestic institutional set-up and administrative capacity.<sup>34</sup> Reform agendas to address common challenges should not be detached from country-specific problems and should not give the impression that they have been formulated by external actors. Ownership is stronger when national

<sup>31</sup> See Dolls, M., Fuest, C., Krolage, C., Neumeier, F. and Stöhlker, D., “Incentivising structural reforms in Europe? A blueprint for the European Commission’s Reform Support Programme”, *EconPol Policy Brief*, Vol. 3, No 14, February 2019; Grüner, H., “The political economy of structural reform and fiscal consolidation revisited”, *Economic Papers*, No 487, European Commission, April 2013; Steinbach, A., “Structural reforms in EU member states: exploring sanction-based and reward-based mechanisms”, *European Journal of Legal Studies*, Vol. 9, No 1, 2016, pp. 173-210; Kiess, S., French, D., Sloan, N., Vallance, D. and Williams, D., *The use of sanctions and rewards in the public sector*, UK National Audit Office, 2008; Welch, S. and Thompson, K. “The impact of Federal Incentives on State Policy Innovation”, *American Journal of Political Science*, Vol. 24, No 4, 1980, pp. 715-729.

<sup>32</sup> Banerji, A., Ebeke, C., Koloskova, K., Schölermann, H. and Siminitz, J., “Can Structural Reforms Foster Real Convergence in the Euro Area?”, in *IMF Country Reports*, No 17/236, IMF, July 2017, pp. 15-22; Fernandez, R. and Rodrik, D., “Resistance to Reform: Status Quo Bias in the Presence of Individual-Specific Uncertainty”, *American Economic Review*, Vol. 81, No 5, pp. 1146-1155, 1991. The European Commission took up the idea of positive incentives in its proposal for a Reform Support Programme (COM(2018) 391 final), intended to promote structural reforms by financing reform agendas in the context of the European Semester.

<sup>33</sup> See Dolls et al., op. cit.

<sup>34</sup> See Banerji, A., Barkbu, B., John, J., Kinda, T., Saksonovs, S., Schölermann, H., Wu, T. and Kang, K., “Building a Better Union: Incentivizing Structural Reforms in the Euro Area”, *IMF Working Paper*, Issue 201, IMF, 2015; Steinbach, op. cit.

electorates see the benefits of implementing reforms.<sup>35</sup> For this to occur, it is important to communicate that the EU is positively supporting reforms instead of merely sanctioning non-compliance. Moreover, funds need to be well targeted and efficiently used, promoting critical reforms that provide cross-border spillovers across the EU.

The RRF's design and its clear focus on performance broadly fulfil the criteria set out in the literature. Making RRF funding conditional on reform performance provides a positive incentive for compliance. Furthermore, the RRF encourages reform implementation by mitigating short-term negative effects and enabling countries to complement legislative changes with adequate resources, such as improvements in digital systems. The RRFs are designed to address critical common challenges in a manner tailored to each Member State. The funding is thus expected to deliver significant cross-border spillovers, along with contributing to European public goods,<sup>36</sup> particularly by facilitating the climate and digital transitions. Milestones and targets must be met throughout the lifecycle of the RRF and measures related to such milestones and targets must not be reversed by the Member State.<sup>37</sup> This promotes continual dialogue between the Member States and the European Commission and offers the possibility for a more effective peer review process.

Nevertheless, there are some aspects of the RRF not fully aligned with the criteria for financial incentives to exert the most influence noted in the literature. For example, in some cases the RRFs may lack the level of detail needed to ensure transparency and clarity in the implementation. Finally, it remains to be seen how well the RRF, which is designed as a one-off programme ending in 2026, can encourage long-term structural reforms beyond that time horizon.

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**Some weaknesses in the formulation of RRFs might complicate an effective implementation of NGEU and delay the detection of slippages.** The content of some reforms in the RRFs is not specified in detail, which could lead to ambiguities regarding the policy action expected from Member States. Moreover, “hard” quantitative targets are relatively scarce in relation to reforms and backloaded for both reforms and investments (see Chart 6). This increases the risk that some structural reforms will not be implemented effectively and that slippages will be detected only at a relatively late stage. Thus, a clear picture of the effectiveness of NGEU might only become available towards the end of its envisaged lifespan.

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<sup>35</sup> See Grüner, H., “Externalities, Institutions and Public Perception: The Political Economy of European Integration Revisited”, *European Economy Discussion Paper*, No 57, European Commission, July 2017.

<sup>36</sup> The concept of European public goods draws on the welfare-economic concept of public goods, i.e. in contrast to private goods, public goods justify the provision of services by the State when certain types of market failure occur. Within a federal system, public goods can be provided by different levels of government. A policy can be considered to be a *European* public good if the net benefits of carrying out the policy at the European level are higher than the benefits of carrying it out at the national level, i.e. when it entails European added value. See Thöne, M. and Kreuter, H., “European public goods – their contribution to a strong Europe”, *Vision Europe*, Paper No 3, FiFo Institute for Public Economics and Bertelsmann Stiftung, September 2020.

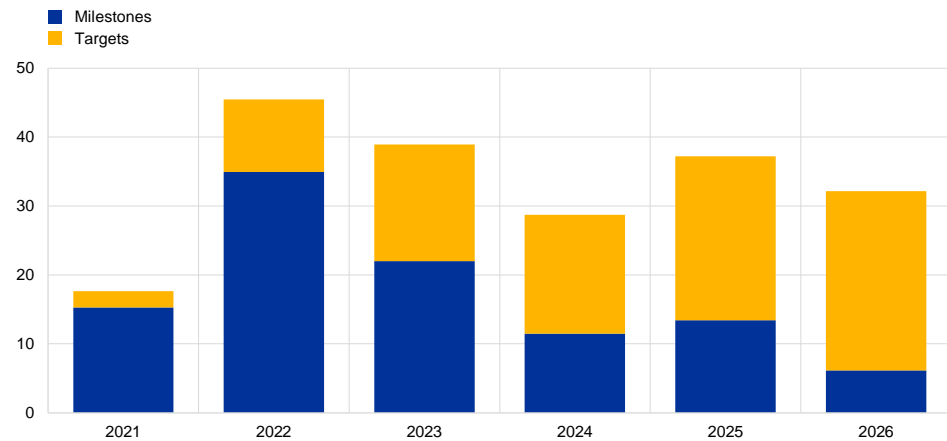
<sup>37</sup> See Article 24(3) [RRF Regulation](#).

## Chart 6

### Distribution of RRP milestones and targets

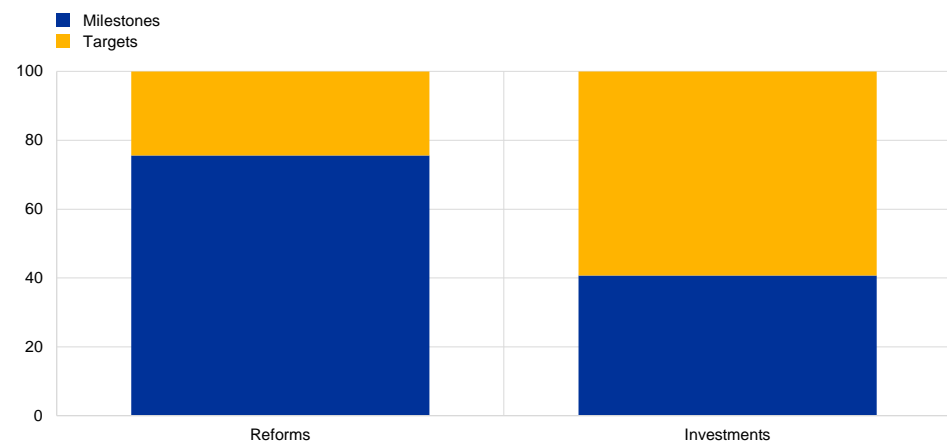
#### a) Time profile

(average number per country for investments and reforms)



#### b) Breakdown by type of policy measure

(percentages)



Sources: European Commission and ECB staff calculations.

Note: Milestones are qualitative achievements, such as the adoption of legislation, while targets are quantitative objectives.

## 5 Conclusion

**As an immediate crisis response to the COVID-19 pandemic, NGEU is expected to contribute significantly to the recovery in Europe.** NGEU funding loosens the budget constraint of the Member States over the programme period. This will help to avoid the need for a potentially strong fiscal contraction like the one observed in some countries in the context of the global financial crisis. ECB staff simulations suggest that fiscal stimulus provided in the short term is high and expected to increase real GDP. In addition, linking the NGEU disbursements to the completion of milestones and targets in the RRP is expected to have positive confidence effects. In tandem with accommodative monetary policy, the fiscal and structural policy response may contribute to preventing scarring effects in the euro area.

**Over the medium term, NGEU has the potential to act as a catalyst for the modernisation and economic convergence of the euro area economies.**

The investments and reforms envisaged by the RRP of euro area countries complement each other and are overall well designed to support the green and digital transitions, also by unlocking necessary private investment. The RRP also include structural reforms that can further enhance potential growth and resilience, particularly in the main recipient countries. Higher growth prospects and lower cost of financing (i.e. interest savings), in turn, will help to reduce debt sustainability concerns in vulnerable countries and may provide more fiscal space for economic stabilisation in the future. In the countries with high debt-related risks, it is also key with a view to reducing the stock of public debt through more favourable economic conditions and improved quality of public finances. At the same time, structural reforms and catching-up of investment in some Member States could enhance economic convergence.

**NGEU is expected to have a net benefit for all euro area countries.** First, in a closely integrated euro area economy, aiding the recovery of the more vulnerable countries will have positive effects via spillovers for all countries. Spillovers result, not least, from the confidence effects that NGEU has on the euro area economy. Second, the transformative momentum of NGEU can further support the structural transition towards more sustainable economies across the euro area.

**NGEU's effectiveness will crucially depend on a timely and effective implementation of the RRP.**

Fiscal implementation risks relate to lower-than-expected absorption capacities and the substitution of productive investment expenditure with consumption/social expenditure. Regarding structural reforms, some measures are not set out in detail and “hard” targets are relatively scarce in relation to reforms and typically backloaded. Taken together, these features increase the risk that some reforms will not be implemented effectively and that slippages will be detected only at a relatively late stage. Against this backdrop, a careful monitoring and implementation of the reporting and review mechanisms in place at the European and national level is key for the success of the NGEU project. Shortcomings in this respect could impair the effectiveness of NGEU and public trust in this novel policy instrument. Finally, depending on the experience with the implementation of the temporary NGEU project, a more permanent central fiscal capacity could play a key role in enhancing macroeconomic stabilisation and convergence in the euro area in the longer run.

# 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
2019	2.9	2.3	1.7	-0.2	6.0	1.6	2.1	2.2	1.8	1.8	0.5	2.9	1.2
2020	-3.2	-3.4	-9.7	-4.5	2.3	-6.4	1.4	1.8	1.2	0.9	0.0	2.5	0.3
2021	.	5.7	.	.	8.1	.	.	.	4.7	2.6	-0.3	0.9	2.6
2021 Q1	0.7	1.5	-1.3	-0.7	0.2	-0.2	1.9	1.7	1.9	0.6	-0.5	0.0	1.1
Q2	0.4	1.6	5.4	0.5	1.2	2.2	3.7	2.8	4.8	2.0	-0.8	1.1	1.8
Q3	1.7	0.6	1.1	-0.9	3.5	2.3	4.4	3.2	5.3	2.8	-0.2	0.8	2.8
Q4	.	1.7	.	.	1.6	0.3	.	.	6.7	4.9	0.5	1.8	4.6
2021 Aug.	-	-	-	-	-	-	4.4	3.1	5.3	3.2	-0.4	0.8	3.0
Sep.	-	-	-	-	-	-	4.6	3.2	5.4	3.1	0.2	0.7	3.4
Oct.	-	-	-	-	-	-	5.2	3.5	6.2	4.2	0.1	1.5	4.1
Nov.	-	-	-	-	-	-	5.8	3.8	6.8	5.1	0.6	2.3	4.9
Dec.	-	-	-	-	-	-	.	.	7.0	5.4	0.8	1.5	5.0
2022 Jan. <sup>3)</sup>	-	-	-	-	-	-	.	.	.	.	.	.	5.1

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

1) Quarterly data seasonally adjusted; annual data unadjusted.

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

3) The figure for the euro area is an estimate based on provisional national data, as well as on early information on energy prices.

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

	Purchasing Managers' Surveys (diffusion indices; s.a.)									Merchandise imports <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
2019	51.7	52.5	50.2	50.5	51.8	51.3	50.3	52.2	48.8	-0.4	-0.3	-0.5
2020	47.5	48.8	46.5	42.4	51.4	44.0	48.5	46.3	45.3	-4.2	-4.5	-4.0
2021	54.9	59.6	55.9	49.4	52.0	54.9	53.7	55.2	52.1	.	.	.
2021 Q1	54.3	59.3	49.1	48.4	52.3	49.9	53.8	54.5	50.3	4.5	1.9	7.3
Q2	57.5	65.3	61.9	49.6	53.0	56.8	53.9	58.8	52.9	1.9	1.8	1.9
Q3	53.0	56.8	56.3	47.4	50.6	58.4	51.8	53.4	50.3	-1.1	-0.5	-1.8
Q4	54.6	57.3	56.3	52.1	51.9	54.3	52.2	55.5	50.4	.	.	.
2021 Aug.	51.2	55.4	54.8	45.5	47.2	59.0	50.6	51.5	49.5	-0.8	-0.2	-1.5
Sep.	52.8	55.0	54.9	47.9	51.4	56.2	51.4	53.2	50.1	-1.1	-0.5	-1.8
Oct.	54.7	57.6	57.8	50.7	51.5	54.2	51.2	55.9	49.7	-0.5	-0.6	-0.3
Nov.	54.7	57.2	57.6	53.3	51.2	55.4	52.2	55.6	50.7	-0.1	0.1	-0.3
Dec.	54.5	57.0	53.6	52.5	53.0	53.3	53.3	55.0	50.7	.	.	.
2022 Jan.	.	50.8	.	.	.	52.4	50.8	.	49.0	.	.	.

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) <sup>3)</sup>	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
2019	-0.48	-0.39	-0.40	-0.36	-0.30	-0.22	2.33	-0.08
2020	-0.55	-0.46	-0.50	-0.43	-0.37	-0.31	0.64	-0.07
2021	-0.57	-0.48	-0.56	-0.55	-0.52	-0.49	0.16	-0.08
2021 July	-0.57	-0.48	-0.56	-0.54	-0.52	-0.49	0.13	-0.08
Aug.	-0.57	-0.48	-0.56	-0.55	-0.53	-0.50	0.12	-0.10
Sep.	-0.57	-0.49	-0.56	-0.55	-0.52	-0.49	0.12	-0.08
Oct.	-0.57	-0.49	-0.56	-0.55	-0.53	-0.48	0.13	-0.08
Nov.	-0.57	-0.49	-0.57	-0.57	-0.53	-0.49	0.16	-0.09
Dec.	-0.58	-0.49	-0.60	-0.58	-0.54	-0.50	0.21	-0.08
2022 Jan.	-0.58	-	-0.56	-0.56	-0.53	-0.48	0.25	-0.03

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.

3) The European Money Markets Institute discontinued EONIA on 3 January 2022.

### 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
2019	-0.68	-0.66	-0.62	-0.45	-0.14	0.52	0.34	0.24	-0.62	-0.52	-0.13	0.41
2020	-0.75	-0.76	-0.77	-0.72	-0.57	0.19	0.80	0.32	-0.77	-0.77	-0.60	-0.24
2021	-0.73	-0.72	-0.68	-0.48	-0.19	0.53	1.12	0.45	-0.69	-0.58	-0.12	0.24
2021 July	-0.66	-0.75	-0.80	-0.75	-0.44	0.31	1.16	0.52	-0.83	-0.86	-0.50	0.16
Aug.	-0.68	-0.73	-0.77	-0.68	-0.39	0.34	1.24	0.56	-0.79	-0.79	-0.43	0.16
Sep.	-0.71	-0.73	-0.72	-0.54	-0.17	0.56	1.41	0.78	-0.74	-0.66	-0.16	0.46
Oct.	-0.74	-0.69	-0.62	-0.37	-0.07	0.62	1.43	0.45	-0.63	-0.46	0.03	0.34
Nov.	-0.90	-0.85	-0.82	-0.64	-0.35	0.50	1.23	0.49	-0.81	-0.73	-0.30	0.07
Dec.	-0.73	-0.72	-0.68	-0.48	-0.19	0.53	1.12	0.45	-0.69	-0.58	-0.12	0.24
2022 Jan.	-0.70	-0.66	-0.57	-0.27	0.03	0.69	1.00	0.37	-0.59	-0.36	0.17	0.40

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
2021 July	453.8	4,062.6	979.0	300.5	190.2	91.2	162.2	835.4	875.2	372.0	290.2	896.1	4,363.7	28,118.8
Aug.	468.5	4,177.0	1,014.5	303.3	191.9	91.6	169.0	865.0	938.2	380.0	303.6	922.1	4,454.2	27,692.7
Sep.	465.5	4,158.3	993.9	295.0	188.1	93.9	169.0	863.3	969.5	371.3	294.8	917.5	4,449.6	29,893.6
Oct.	461.4	4,132.2	976.8	294.4	185.0	101.7	175.8	836.1	925.6	367.5	285.7	897.1	4,460.7	28,586.2
Nov.	478.7	4,306.4	1,020.6	311.7	191.9	100.4	176.9	859.8	1,002.3	380.2	286.3	933.0	4,668.9	29,370.6
Dec.	469.1	4,207.9	1,020.3	303.9	189.5	99.9	172.3	846.9	961.1	383.4	283.8	909.0	4,677.0	28,514.2
2022 Jan.	471.0	4,252.3	1,031.4	300.2	190.1	107.0	185.0	846.7	910.8	385.5	281.3	887.8	4,573.8	27,904.0

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 Dec.	0.01	0.35	0.17	0.72	4.99	15.77	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	15.80	4.84	5.32	5.87	1.91	1.35	1.49	1.29	1.35	1.60	1.33
Feb.	0.01	0.35	0.23	0.66	5.01	15.74	5.05	5.25	5.86	1.98	1.30	1.48	1.27	1.32	1.59	1.31
Mar.	0.01	0.35	0.20	0.61	4.98	15.77	4.88	5.12	5.72	1.94	1.32	1.43	1.24	1.32	1.58	1.31
Apr.	0.01	0.35	0.21	0.62	4.89	15.75	5.16	5.17	5.78	1.98	1.32	1.49	1.27	1.31	1.59	1.31
May	0.01	0.34	0.18	0.57	4.88	15.76	5.16	5.31	5.93	2.04	1.31	1.43	1.26	1.31	1.61	1.32
June	0.01	0.34	0.16	0.59	4.88	15.71	5.16	5.15	5.77	1.94	1.31	1.43	1.26	1.30	1.60	1.32
July	0.01	0.34	0.19	0.58	4.77	15.67	5.31	5.24	5.85	1.98	1.34	1.45	1.27	1.30	1.61	1.32
Aug.	0.01	0.34	0.17	0.59	4.83	15.71	5.70	5.30	5.90	2.04	1.33	1.47	1.24	1.28	1.59	1.32
Sep.	0.01	0.34	0.18	0.57	4.89	15.64	5.43	5.24	5.87	1.93	1.32	1.46	1.25	1.29	1.58	1.30
Oct.	0.01	0.34	0.19	0.58	4.81	15.91	5.55	5.21	5.83	2.01	1.32	1.47	1.26	1.30	1.60	1.31
Nov. <sup>(p)</sup>	0.01	0.34	0.19	0.57	4.81	15.90	5.04	5.19	5.81	2.08	1.32	1.48	1.30	1.32	1.60	1.32

Source: ECB.

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

2) Including non-profit institutions serving households.

3) Annual percentage rate of charge (APRC).

### 2.5 MFI interest rates on loans to and deposits from non-financial corporations (new business) <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 Dec.	-0.01	-0.18	0.25	1.83	2.01	1.94	1.94	1.61	1.42	1.44	1.34	1.23	1.27	1.51
2021 Jan.	-0.01	-0.14	0.39	1.84	2.14	2.00	1.92	1.61	1.44	1.41	1.17	1.18	1.29	1.50
Feb.	-0.01	-0.21	0.25	1.84	1.96	2.00	1.95	1.58	1.44	1.43	1.15	1.22	1.23	1.48
Mar.	-0.01	-0.11	0.22	1.82	1.91	1.97	2.02	1.56	1.45	1.40	1.09	0.71	1.23	1.39
Apr.	-0.01	-0.18	0.25	1.80	2.04	1.96	1.98	1.57	1.44	1.40	1.32	1.33	1.38	1.56
May	-0.01	-0.23	0.19	1.79	1.87	1.95	2.04	1.57	1.45	1.42	1.16	1.17	1.27	1.46
June	-0.02	-0.31	0.27	1.84	1.89	1.97	2.02	1.55	1.43	1.54	1.20	1.13	1.24	1.46
July	-0.02	-0.31	0.13	1.72	1.82	2.14	2.00	1.59	1.43	1.37	1.28	1.32	1.16	1.48
Aug.	-0.03	-0.35	0.17	1.76	1.79	1.94	2.02	1.56	1.45	1.37	1.23	1.11	1.14	1.44
Sep.	-0.03	-0.35	0.15	1.78	1.80	2.00	2.00	1.52	1.43	1.34	1.27	1.25	1.28	1.49
Oct.	-0.03	-0.36	0.17	1.73	1.81	2.09	1.99	1.55	1.42	1.32	1.15	1.19	1.24	1.43
Nov. <sup>(p)</sup>	-0.03	-0.35	0.16	1.69	1.80	2.02	2.03	1.50	1.43	1.36	1.07	1.11	1.23	1.39

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 government	Other general government			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	12	13	14
Short-term														
2018	1,215	503	170	.	72	424	47	389	171	66	.	41	76	35
2019	1,283	550	181	.	85	406	61	415	177	80	.	47	73	38
2020	1,530	455	145	.	98	714	118	455	177	70	.	45	114	49
2021 June	1,542	481	152	.	90	694	126	451	216	57	.	34	106	39
July	1,540	478	150	.	101	688	124	473	224	46	.	39	113	50
Aug.	1,540	493	148	.	99	678	121	415	232	41	.	25	93	25
Sep.	1,571	506	142	.	99	697	127	474	220	45	.	39	124	46
Oct.	1,527	485	136	.	103	686	117	419	203	39	.	41	105	32
Nov.	1,525	498	136	.	97	680	113	427	223	44	.	31	102	27
Long-term														
2018	15,748	3,688	3,162	.	1,249	7,022	627	228	64	68	.	15	75	6
2019	16,315	3,817	3,397	.	1,324	7,152	626	247	69	74	.	20	78	7
2020	17,290	3,892	3,203	.	1,464	8,006	725	296	68	71	.	27	114	16
2021 June	18,092	3,980	3,361	.	1,498	8,473	780	341	75	87	.	29	136	15
July	18,187	3,992	3,397	.	1,503	8,515	780	300	56	97	.	18	119	10
Aug.	18,214	3,990	3,390	.	1,501	8,554	779	132	27	32	.	4	66	3
Sep.	18,313	4,021	3,423	.	1,522	8,558	788	303	72	79	.	22	114	15
Oct.	18,399	4,039	3,493	.	1,527	8,553	787	294	64	102	.	22	92	13
Nov.	18,548	4,063	3,541	.	1,555	8,597	792	268	49	84	.	35	90	9

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	16,962.7	4,190.4	3,332.4	.	1,320.6	7,445.8	673.5	7,023.4	465.0	1,099.2	5,459.2
2019	17,598.3	4,367.4	3,577.7	.	1,408.7	7,558.1	686.5	8,586.6	538.4	1,410.6	6,637.6
2020	18,819.4	4,346.8	3,347.6	.	1,561.4	8,720.3	843.3	8,448.2	469.3	1,321.5	6,657.4
2021 June	19,634.2	4,461.5	3,512.9	.	1,588.3	9,166.3	905.1	9,773.2	564.9	1,521.5	7,686.9
July	19,727.4	4,470.0	3,546.6	.	1,603.3	9,202.9	904.7	9,895.0	559.2	1,526.8	7,809.0
Aug.	19,753.9	4,483.4	3,538.1	.	1,600.1	9,232.7	899.6	10,166.4	587.9	1,612.9	7,965.7
Sep.	19,883.7	4,527.4	3,565.2	.	1,620.6	9,255.6	914.9	9,899.5	597.2	1,616.9	7,685.4
Oct.	19,926.0	4,524.1	3,628.6	.	1,629.9	9,239.3	904.0	10,292.4	613.8	1,700.7	7,977.8
Nov.	20,072.9	4,560.7	3,676.6	.	1,652.2	9,277.6	905.7	9,991.8	566.5	1,608.4	7,816.9
Growth rate											
2018	1.9	1.7	3.0	.	3.3	1.9	-4.3	0.7	0.3	2.4	0.4
2019	3.1	3.8	4.9	.	5.6	1.5	1.8	0.0	0.5	0.0	0.0
2020	7.5	1.2	2.7	.	12.4	10.9	24.3	1.1	0.1	3.1	0.8
2021 June	4.4	-0.3	4.0	.	4.1	6.6	9.7	2.3	1.9	6.4	1.5
July	4.5	0.3	4.7	.	3.8	6.1	10.1	2.3	1.9	6.5	1.5
Aug.	4.0	0.8	3.8	.	3.5	5.3	9.2	2.3	1.8	7.7	1.3
Sep.	4.0	1.0	4.0	.	3.7	5.0	8.6	2.4	1.8	8.0	1.4
Oct.	4.2	1.4	4.8	.	4.0	5.3	5.6	2.2	1.7	6.3	1.4
Nov.	4.9	2.2	6.3	.	4.8	5.7	5.3	2.0	1.9	6.2	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
2019	98.1	93.1	92.9	88.9	77.5	87.0	115.4	92.3
2020	99.6	93.5	94.1	89.4	76.9	87.5	119.4	93.8
2021	99.6	93.4	94.5	.	.	.	120.8	94.2
2021 Q1	100.7	94.6	95.2	90.0	74.5	87.6	121.7	95.3
Q2	100.5	94.1	94.9	88.9	72.7	85.5	121.9	94.9
Q3	99.5	93.3	94.4	88.0	72.3	84.6	120.5	93.9
Q4	97.7	91.7	93.6	.	.	.	119.1	92.6
2021 Aug.	99.3	93.2	94.3	-	-	-	120.4	93.9
Sep.	99.4	93.2	94.5	-	-	-	120.4	93.8
Oct.	98.4	92.3	93.7	-	-	-	119.5	93.0
Nov.	97.6	91.6	93.4	-	-	-	118.8	92.5
Dec.	97.1	91.1	93.8	-	-	-	119.0	92.3
2022 Jan.	96.6	90.6	93.9	-	-	-	118.6	91.7
<i>Percentage change versus previous month</i>								
2022 Jan.	-0.5	-0.5	0.1	-	-	-	-0.4	-0.7
<i>Percentage change versus previous year</i>								
2022 Jan.	-4.6	-4.9	-1.9	-	-	-	-3.1	-4.5

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
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
2021	7.628	7.528	25.640	7.437	358.516	129.877	4.565	0.860	4.9215	10.146	1.081	1.183
2021 Q1	7.808	7.572	26.070	7.437	361.206	127.806	4.546	0.874	4.8793	10.120	1.091	1.205
Q2	7.784	7.528	25.638	7.436	354.553	131.930	4.529	0.862	4.9240	10.141	1.098	1.206
Q3	7.626	7.497	25.500	7.437	353.871	129.763	4.566	0.855	4.9319	10.195	1.083	1.179
Q4	7.310	7.518	25.374	7.438	364.376	130.007	4.617	0.848	4.9489	10.128	1.054	1.144
2021 Aug.	7.624	7.496	25.470	7.437	351.843	129.284	4.569	0.853	4.9232	10.216	1.076	1.177
Sep.	7.601	7.492	25.392	7.436	352.514	129.656	4.568	0.857	4.9471	10.171	1.086	1.177
Oct.	7.450	7.513	25.496	7.440	360.822	131.212	4.591	0.847	4.9480	10.056	1.071	1.160
Nov.	7.293	7.520	25.391	7.437	364.504	130.118	4.646	0.848	4.9494	10.046	1.052	1.141
Dec.	7.199	7.520	25.246	7.436	367.499	128.800	4.614	0.849	4.9492	10.273	1.041	1.130
2022 Jan.	7.192	7.525	24.470	7.441	358.680	130.009	4.552	0.835	4.9454	10.358	1.040	1.131
<i>Percentage change versus previous month</i>												
2022 Jan.	-0.1	0.1	-3.1	0.1	-2.4	0.9	-1.3	-1.6	-0.1	0.8	-0.1	0.1
<i>Percentage change versus previous year</i>												
2022 Jan.	-8.6	-0.5	-6.4	0.0	-0.1	2.9	0.4	-6.5	1.5	2.6	-3.6	-7.0

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
<b>Outstanding amounts (international investment position)</b>												
2020 Q4	28,404.4	28,923.5	-519.1	11,051.2	9,359.9	10,737.8	12,825.4	-94.4	5,830.0	6,738.2	879.7	14,839.8
2021 Q1	29,716.7	30,252.6	-535.9	11,390.2	9,479.9	11,486.1	13,623.3	-132.1	6,123.2	7,149.4	849.4	15,477.1
Q2	30,235.9	30,621.4	-385.5	11,421.3	9,467.6	12,003.1	13,994.9	-123.6	6,066.0	7,158.9	869.0	15,367.0
Q3	30,985.5	31,256.9	-271.4	11,649.1	9,436.7	12,222.1	14,310.7	-92.6	6,204.5	7,509.5	1,002.4	15,733.0
<b>Outstanding amounts as a percentage of GDP</b>												
2021 Q3	258.1	260.3	-2.3	97.0	78.6	101.8	119.2	-0.8	51.7	62.5	8.3	131.0
<b>Transactions</b>												
2020 Q4	80.6	-48.6	129.1	-59.1	45.4	348.7	-225.1	-14.5	-196.6	131.2	2.1	-
2021 Q1	528.3	429.9	98.4	101.6	-7.3	266.3	178.5	6.0	157.6	258.7	-3.1	-
Q2	177.2	89.5	87.8	-28.7	-19.9	226.8	57.7	1.0	-28.4	51.7	6.5	-
Q3	369.7	288.4	81.3	49.0	-78.2	117.3	64.6	14.1	66.9	302.1	122.4	-
2021 June	-21.0	-52.0	31.0	-8.4	18.4	81.3	33.3	3.7	-102.1	-103.7	4.5	-
July	190.5	152.7	37.7	34.9	-26.4	38.7	59.3	21.7	95.5	119.9	-0.3	-
Aug.	155.1	143.8	11.3	-10.2	-54.8	35.2	11.9	-8.3	16.6	186.7	121.9	-
Sep.	24.1	-8.1	32.2	24.2	3.0	43.5	-6.6	0.7	-45.2	-4.5	0.8	-
Oct.	262.8	249.6	13.1	15.2	-7.0	39.9	19.3	4.6	199.9	237.4	3.2	-
Nov.	118.9	76.0	43.0	42.5	30.7	54.8	-40.5	21.9	-0.9	85.8	0.6	-
<b>12-month cumulated transactions</b>												
2021 Nov.	1,238.0	880.6	357.4	52.9	-99.8	877.9	164.6	17.7	158.2	815.8	131.3	-
<b>12-month cumulated transactions as a percentage of GDP</b>												
2021 Nov.	10.3	7.3	3.0	0.4	-0.8	7.3	1.4	0.1	1.3	6.8	1.1	-

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	11,600.2	11,132.8	6,223.1	2,369.5	2,430.6	1,177.5	746.1	500.5	109.6	467.4	5,571.6	5,104.2
2019	11,982.5	11,576.9	6,378.6	2,456.6	2,652.7	1,253.7	770.3	621.7	89.0	405.6	5,765.4	5,359.7
2020	11,400.3	10,976.3	5,902.0	2,573.6	2,494.9	1,216.4	681.9	589.6	5.8	424.0	5,173.4	4,749.5
2020 Q4	2,927.3	2,787.0	1,486.4	661.0	642.0	318.7	183.2	138.3	-2.4	140.3	1,364.7	1,224.4
2021 Q1	2,940.0	2,806.3	1,469.6	662.3	646.7	325.3	185.5	134.0	27.7	133.8	1,401.7	1,268.0
Q2	3,010.9	2,888.5	1,531.7	675.5	661.9	337.5	187.6	135.0	19.4	122.4	1,465.0	1,342.6
Q3	3,113.7	2,985.6	1,609.8	686.6	669.1	343.6	186.7	136.9	20.1	128.1	1,525.4	1,397.3
as a percentage of GDP												
2020	100.0	96.3	51.8	22.6	21.9	10.7	6.0	5.2	0.1	3.7	-	-
Chain-linked volumes (prices for the previous year)												
quarter-on-quarter percentage changes												
2021 Q1	-0.2	-0.3	-2.3	-0.6	0.0	0.5	1.8	-3.7	-	-	1.2	1.0
Q2	2.2	2.4	3.9	2.1	1.2	1.9	0.3	0.8	-	-	2.5	3.0
Q3	2.3	2.1	4.3	0.5	-0.9	-0.9	-1.5	0.2	-	-	1.4	1.0
Q4	0.3	.	.	.	.	.	.	.	-	-	.	.
annual percentage changes												
2018	1.8	1.8	1.5	1.1	3.1	3.9	3.7	0.4	-	-	3.6	3.8
2019	1.6	2.5	1.3	1.8	6.7	3.3	1.8	22.0	-	-	2.7	4.7
2020	-6.4	-6.2	-7.9	1.3	-7.0	-4.6	-12.0	-5.9	-	-	-9.1	-9.1
2021 Q1	-1.1	-3.8	-5.7	2.8	-5.9	2.7	6.9	-31.5	-	-	-0.1	-5.8
Q2	14.4	12.3	12.3	7.8	18.5	19.7	30.0	3.4	-	-	26.0	21.7
Q3	3.9	3.9	2.7	2.7	3.1	3.2	2.4	3.5	-	-	9.7	10.1
Q4	4.6	.	.	.	.	.	.	.	-	-	.	.
contributions to quarter-on-quarter percentage changes in GDP; percentage points												
2021 Q1	-0.2	-0.3	-1.2	-0.1	0.0	0.1	0.1	-0.2	1.0	0.1	-	-
Q2	2.2	2.3	1.9	0.5	0.3	0.2	0.0	0.0	-0.4	-0.1	-	-
Q3	2.3	2.0	2.2	0.1	-0.2	-0.1	-0.1	0.0	-0.1	0.2	-	-
Q4	0.3	.	.	.	.	.	.	.	.	.	-	-
contributions to annual percentage changes in GDP; percentage points												
2018	1.8	1.7	0.8	0.2	0.6	0.4	0.2	0.0	0.1	0.1	-	-
2019	1.6	2.4	0.7	0.4	1.4	0.3	0.1	0.9	-0.1	-0.8	-	-
2020	-6.4	-6.0	-4.2	0.3	-1.5	-0.5	-0.8	-0.3	-0.5	-0.4	-	-
2021 Q1	-1.1	-3.7	-3.0	0.6	-1.4	0.3	0.4	-2.1	0.1	2.5	-	-
Q2	14.4	11.9	6.3	1.9	3.9	2.1	1.7	0.2	-0.2	2.5	-	-
Q3	3.9	3.6	1.4	0.6	0.7	0.3	0.1	0.2	1.0	0.3	-	-
Q4	4.6	.	.	.	.	.	.	.	.	.	-	-

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	10,395.4	175.4	2,055.6	525.8	1,963.1	499.9	477.2	1,170.0	1,210.2	1,960.3	358.0	1,204.8
2019	10,740.8	178.3	2,100.7	561.2	2,041.4	531.3	478.8	1,204.6	1,249.8	2,025.5	369.3	1,241.7
2020	10,268.7	176.6	1,971.0	552.4	1,799.8	544.9	469.0	1,210.9	1,167.9	2,054.3	321.8	1,131.6
2020 Q4	2,634.0	43.8	521.7	146.7	458.4	139.5	117.2	305.6	301.7	522.1	77.5	293.3
2021 Q1	2,647.1	44.0	533.3	145.9	455.6	141.4	118.2	306.0	302.1	523.3	77.3	292.9
Q2	2,699.8	44.9	536.0	150.3	480.5	144.7	118.1	308.2	305.9	530.4	80.9	311.1
Q3	2,783.6	45.6	545.1	150.5	521.1	146.1	118.9	310.8	316.1	541.8	87.7	330.1
as a percentage of value added												
2020	100.0	1.7	19.2	5.4	17.5	5.3	4.6	11.8	11.4	20.0	3.1	-
Chain-linked volumes (prices for the previous year)												
quarter-on-quarter percentage changes												
2020 Q4	-0.4	0.7	3.5	2.0	-3.6	-1.0	-0.3	-0.4	1.7	-1.4	-11.5	0.0
2021 Q1	0.1	-2.7	1.0	-1.0	-1.0	1.9	1.3	-0.1	0.1	0.0	-0.4	-2.6
Q2	1.9	0.5	0.6	1.9	4.6	1.9	0.6	0.8	1.3	1.7	6.0	4.9
Q3	2.3	-0.9	0.1	-0.6	7.2	1.3	0.4	0.5	2.9	1.5	10.8	1.6
annual percentage changes												
2018	1.8	-0.7	1.9	2.2	1.5	6.4	0.2	1.4	4.0	0.7	1.3	1.7
2019	1.6	1.6	0.2	2.1	2.4	5.7	0.3	1.5	1.7	1.1	1.7	1.6
2020	-6.3	-0.5	-6.8	-5.3	-13.7	1.2	-1.0	-0.8	-7.9	-2.9	-17.2	-6.5
2020 Q4	-4.5	-0.6	-1.2	-0.7	-12.8	1.2	-0.8	-0.7	-5.7	-1.5	-21.9	-3.6
2021 Q1	-1.3	-0.9	3.1	0.6	-8.1	3.6	1.5	0.1	-2.8	0.8	-16.5	0.4
Q2	14.3	-0.7	21.7	18.6	23.0	11.1	4.3	3.6	15.5	9.9	15.8	15.3
Q3	4.0	-2.5	5.2	2.3	7.0	4.0	1.9	0.9	6.2	1.9	3.6	3.8
contributions to quarter-on-quarter percentage changes in value added; percentage points												
2020 Q4	-0.4	0.0	0.7	0.1	-0.6	-0.1	0.0	0.0	0.2	-0.3	-0.4	-
2021 Q1	0.1	0.0	0.2	-0.1	-0.2	0.1	0.1	0.0	0.0	0.0	0.0	-
Q2	1.9	0.0	0.1	0.1	0.8	0.1	0.0	0.1	0.1	0.3	0.2	-
Q3	2.3	0.0	0.0	0.0	1.3	0.1	0.0	0.1	0.3	0.3	0.3	-
contributions to annual percentage changes in value added; percentage points												
2018	1.8	0.0	0.4	0.1	0.3	0.3	0.0	0.2	0.5	0.1	0.0	-
2019	1.6	0.0	0.0	0.1	0.5	0.3	0.0	0.2	0.2	0.2	0.1	-
2020	-6.3	0.0	-1.3	-0.3	-2.6	0.1	0.0	-0.1	-0.9	-0.5	-0.6	-
2020 Q4	-4.5	0.0	-0.2	0.0	-2.4	0.1	0.0	-0.1	-0.7	-0.3	-0.8	-
2021 Q1	-1.3	0.0	0.6	0.0	-1.5	0.2	0.1	0.0	-0.3	0.2	-0.6	-
Q2	14.3	0.0	4.0	1.0	3.8	0.6	0.2	0.5	1.7	2.0	0.5	-
Q3	4.0	0.0	1.0	0.1	1.3	0.2	0.1	0.1	0.7	0.4	0.1	-

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	85.9	14.1	3.1	14.6	6.0	25.0	2.9	2.4	1.0	14.0	24.3	6.8
2019	100.0	86.0	14.0	3.0	14.6	6.1	25.0	2.9	2.4	1.0	14.0	24.3	6.7
2020	100.0	86.0	14.0	3.0	14.5	6.2	24.5	3.0	2.4	1.0	13.9	24.9	6.6
annual percentage changes													
2018	1.6	1.9	0.0	-0.4	1.5	2.6	1.6	3.8	-1.0	2.4	2.8	1.4	0.3
2019	1.3	1.5	0.2	-2.4	1.1	2.5	1.5	3.3	0.0	1.7	1.4	1.4	0.5
2020	-1.5	-1.5	-1.7	-2.4	-1.8	0.7	-3.6	1.4	-0.5	-0.2	-2.4	0.9	-3.4
2020 Q4	-1.8	-1.8	-1.5	-1.5	-2.3	0.8	-4.7	1.6	-0.4	1.7	-2.2	1.2	-4.0
2021 Q1	-1.7	-1.8	-1.5	0.0	-2.2	1.4	-5.4	2.1	-0.5	1.3	-1.6	1.4	-4.8
Q2	2.0	2.4	-0.2	3.4	-0.4	4.8	0.5	4.6	0.7	2.2	4.5	2.6	1.6
Q3	2.0	2.3	0.5	0.9	0.3	3.0	1.5	5.5	0.7	1.4	4.4	2.1	1.0
Hours worked													
as a percentage of total hours worked													
2018	100.0	81.1	18.9	4.3	15.0	6.7	25.9	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	25.9	3.1	2.4	1.0	13.9	21.7	6.1
2020	100.0	82.0	18.0	4.3	15.0	6.9	24.3	3.3	2.6	1.1	13.8	23.1	5.7
annual percentage changes													
2018	1.8	2.2	0.0	-0.1	1.5	3.2	1.8	3.8	-0.9	3.1	3.1	1.2	0.7
2019	1.0	1.3	-0.2	-3.3	0.5	2.3	1.1	3.4	0.3	2.0	1.3	1.3	0.2
2020	-7.8	-7.0	-11.2	-2.6	-7.5	-6.3	-13.7	-1.7	-2.8	-6.6	-8.0	-2.0	-13.4
2020 Q4	-6.3	-5.8	-8.8	-1.2	-5.5	-2.9	-13.5	-0.5	-1.7	-2.6	-5.6	-0.7	-12.4
2021 Q1	-2.8	-3.1	-1.7	2.0	-1.4	4.9	-11.1	1.8	1.0	3.5	-1.8	2.1	-8.6
Q2	16.4	14.9	23.3	7.7	14.6	25.2	23.8	11.7	6.2	20.2	18.5	8.4	25.0
Q3	3.0	3.3	1.9	-0.3	2.2	2.8	3.9	7.6	1.3	4.7	6.3	1.3	1.2
Hours worked per person employed													
annual percentage changes													
2018	0.1	0.3	0.0	0.3	-0.1	0.5	0.2	0.1	0.1	0.7	0.3	-0.2	0.4
2019	-0.3	-0.2	-0.4	-1.0	-0.6	-0.2	-0.4	0.0	0.2	0.3	-0.1	-0.1	-0.2
2020	-6.3	-5.6	-9.7	-0.3	-5.8	-7.0	-10.5	-3.1	-2.3	-6.4	-5.8	-2.9	-10.4
2020 Q4	-4.7	-4.0	-7.4	0.3	-3.3	-3.6	-9.2	-2.1	-1.2	-4.2	-3.5	-1.9	-8.7
2021 Q1	-1.1	-1.3	-0.2	2.0	0.8	3.5	-6.0	-0.4	1.4	2.2	-0.2	0.7	-3.9
Q2	14.0	12.2	23.5	4.1	15.1	19.5	23.1	6.8	5.5	17.6	13.4	5.6	23.0
Q3	1.0	1.0	1.4	-1.2	1.9	-0.2	2.4	2.0	0.5	3.3	1.9	-0.7	0.1

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			80.6		19.4		51.4		48.6		
2019	164.133	3.6	12.448	7.6	3.3	10.131	6.8	2.316	16.0	6.373	7.3	6.074	8.0	2.2
2020	162.271	3.6	12.817	7.9	3.0	10.325	7.0	2.492	17.8	6.592	7.6	6.225	8.2	1.8
2021	.	.	12.652	7.7	.	10.174	6.8	2.479	16.9	6.425	7.4	6.228	8.2	.
2021 Q1	162.187	3.7	13.445	8.3	3.2	10.849	7.3	2.596	18.3	6.829	7.9	6.616	8.8	2.1
Q2	163.542	3.5	13.016	8.0	3.3	10.431	7.0	2.585	17.7	6.582	7.5	6.433	8.4	2.3
Q3	164.423	3.3	12.448	7.6	3.1	10.002	6.7	2.446	16.4	6.323	7.2	6.125	8.0	2.6
Q4	.	.	11.700	7.1	.	9.413	6.3	2.287	15.3	5.964	6.8	5.737	7.5	.
2021 July	-	-	12.560	7.7	-	10.118	6.8	2.442	16.5	6.345	7.3	6.215	8.1	-
Aug.	-	-	12.371	7.5	-	9.965	6.7	2.405	16.2	6.270	7.2	6.101	7.9	-
Sep.	-	-	12.102	7.4	-	9.724	6.5	2.378	15.9	6.165	7.1	5.937	7.7	-
Oct.	-	-	11.953	7.3	-	9.614	6.4	2.340	15.6	6.083	7.0	5.870	7.6	-
Nov.	-	-	11.666	7.1	-	9.366	6.3	2.300	15.4	5.927	6.8	5.739	7.5	-
Dec.	-	-	11.481	7.0	-	9.260	6.2	2.222	14.9	5.881	6.7	5.600	7.3	-

Sources: Eurostat and ECB calculations.

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

2) Not seasonally adjusted.

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

### 3.5 Short-term business statistics

	Industrial production						Con- struction produc- tion	Retail sales				Services turnover <sup>1)</sup>	New passenger car regis- trations
	Total (excluding construction)		Main Industrial Groupings					Total	Food, beverages, tobacco	Non-food	Fuel		
	1	2	3	4	5	6		7	8	9	10		
% of total in 2015	100.0	88.7	32.1	34.5	21.8	11.6	100.0	100.0	40.4	52.5	7.1	100.0	100.0
annual percentage changes													
2019	-1.1	-1.1	-2.6	-1.1	1.4	-1.8	2.2	2.4	0.9	3.7	0.8	2.9	1.8
2020	-7.9	-8.4	-7.2	-11.8	-4.2	-4.6	-5.8	-0.9	3.7	-2.4	-14.4	-8.6	-25.0
2021	.	.	.	.	.	.	.	.	.	.	.	.	-3.1
2021 Q1	4.7	5.1	4.9	8.7	1.3	-0.1	2.9	2.4	2.6	3.2	-5.2	0.0	3.4
Q2	23.1	25.2	25.6	31.3	18.5	5.5	17.9	11.9	2.1	18.7	29.8	25.1	53.8
Q3	6.1	6.9	7.7	5.1	9.3	-0.9	0.8	2.5	0.2	4.1	3.5	13.1	-23.5
Q4	.	.	.	.	.	.	.	.	.	.	.	.	-25.2
2021 July	8.5	9.5	11.2	7.6	11.1	-0.6	2.2	3.4	1.3	4.9	4.2	-	-22.0
Aug.	5.7	6.7	6.9	4.8	9.8	-1.9	-2.3	1.4	-1.4	3.3	1.4	-	-24.8
Sep.	4.1	4.5	5.0	2.9	7.1	-0.1	2.2	2.8	0.7	4.0	4.9	-	-24.2
Oct.	0.2	0.5	2.4	-2.3	1.7	-1.1	3.6	1.7	-1.4	3.0	8.6	-	-28.6
Nov.	-1.5	-2.0	1.9	-9.8	5.9	3.7	0.5	7.8	0.9	11.8	19.5	-	-21.8
Dec.	.	.	.	.	.	.	.	.	.	.	.	-	-25.1
month-on-month percentage changes (s.a.)													
2021 July	0.8	1.3	0.3	2.3	1.8	-0.4	-0.6	-2.2	-0.5	-3.8	0.9	-	-4.8
Aug.	-1.7	-2.0	-1.3	-2.5	-2.3	0.6	-1.0	0.8	-0.9	2.4	-0.5	-	-3.4
Sep.	-0.9	-1.0	-0.3	-1.5	0.2	1.2	1.2	0.0	0.8	-1.3	1.1	-	2.0
Oct.	-1.3	-1.3	-0.2	1.3	-4.1	0.5	0.6	0.3	0.1	0.3	0.7	-	-2.1
Nov.	2.3	2.4	0.9	1.5	2.6	1.2	-0.2	1.0	0.6	1.6	-1.5	-	0.5
Dec.	.	.	.	.	.	.	.	.	.	.	.	-	2.8

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

1) Including wholesale trade.



## 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	98.8	-5.2	80.6	-11.6	-15.4	-8.6	7.3	-	51.2	52.5	53.0	52.8
2019	103.3	-5.1	81.9	-6.9	6.7	-0.5	10.8	90.5	47.4	47.8	52.7	51.3
2020	88.0	-14.3	73.9	-14.3	-7.4	-12.9	-16.5	86.3	48.6	48.0	42.5	44.0
2021	110.1	9.5	81.7	-7.6	3.4	-2.5	7.1	87.6	60.2	58.3	53.6	54.9
2021 Q1	94.6	-2.4	79.8	-13.7	-5.7	-16.6	-14.7	85.9	58.4	58.5	46.9	49.9
Q2	113.2	11.8	82.6	-5.5	4.4	0.7	10.5	87.3	63.1	62.7	54.7	56.8
Q3	116.8	14.2	82.4	-4.6	5.7	3.5	16.9	88.5	60.9	58.6	58.4	58.4
Q4	115.7	14.4	82.0	-6.7	9.2	2.2	15.7	88.6	58.2	53.6	54.5	54.3
2021 Aug.	116.3	13.9	-	-5.3	5.5	4.6	16.8	-	61.4	59.0	59.0	59.0
Sep.	116.4	14.2	-	-4.0	7.5	1.4	15.1	-	58.6	55.6	56.4	56.2
Oct.	117.2	14.4	82.0	-4.9	8.7	1.9	18.0	89.0	58.3	53.3	54.6	54.2
Nov.	116.2	14.3	-	-6.8	9.0	3.7	18.2	-	58.4	53.8	55.9	55.4
Dec.	113.8	14.6	-	-8.4	10.1	1.1	10.9	-	58.0	53.8	53.1	53.3
2022 Jan.	112.7	13.9	81.9	-8.5	8.1	3.8	9.1	88.1	58.7	55.4	51.2	52.4

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
2018	12.5	93.0	1.9	1.9	6.2	2.5	4.6	35.5	5.9	75.3	2.0	7.7	1.5
2019	13.1	93.3	1.9	2.7	3.8	6.0	4.0	35.3	6.3	74.9	2.0	7.9	1.8
2020	19.4	96.1	-0.6	4.1	-3.5	4.6	3.9	31.3	4.5	82.0	3.3	-14.5	2.0
2020 Q4	19.4	96.1	0.2	4.1	1.9	4.6	3.9	31.3	4.5	82.0	3.3	-20.7	2.0
2021 Q1	20.6	96.6	-0.4	4.6	11.0	6.9	3.9	32.4	5.9	83.2	4.0	-10.6	2.2
Q2	19.0	96.7	3.2	4.1	31.1	5.9	4.3	34.3	7.6	80.6	4.5	19.1	2.3
Q3	18.5	97.0	0.8	3.9	16.9	6.6	5.6	34.5	8.1	79.8	4.6	14.7	2.5

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 Q4	1,022.3	938.1	84.2	583.9	480.7	224.0	200.2	183.9	177.6	30.5	79.6	23.8	24.6
2021 Q1	1,048.5	952.9	95.6	601.5	501.1	226.9	202.9	189.7	174.5	30.4	74.5	15.6	12.4
Q2	1,071.5	992.1	79.4	617.9	536.3	233.4	208.7	190.3	174.9	29.9	72.3	18.3	11.5
Q3	1,109.5	1,040.8	68.7	626.3	554.4	249.5	234.4	191.9	176.6	41.8	75.3	30.7	13.2
2021 June	351.5	329.2	22.2	202.2	177.6	78.7	68.1	60.6	59.8	9.9	23.6	8.0	4.9
July	371.7	340.8	30.9	210.4	182.7	82.1	74.4	64.1	59.6	15.1	24.1	12.5	5.3
Aug.	368.8	354.0	14.8	207.8	185.5	82.4	83.4	63.7	60.2	14.9	25.0	8.0	3.3
Sep.	369.0	346.0	23.0	208.1	186.3	85.0	76.6	64.1	56.8	11.8	26.2	10.2	4.6
Oct.	375.0	355.7	19.4	215.3	199.0	90.2	72.6	59.0	58.7	10.6	25.4	8.5	4.3
Nov.	389.5	365.9	23.6	225.5	209.9	92.7	69.8	60.7	60.6	10.7	25.6	5.6	3.7
12-month cumulated transactions													
2021 Nov.	4,336.9	4,017.2	319.7	2,483.4	2,162.8	967.4	854.0	752.8	702.2	133.3	298.2	93.5	58.5
12-month cumulated transactions as a percentage of GDP													
2021 Nov.	36.2	33.5	2.7	20.7	18.0	8.1	7.1	6.3	5.9	1.1	2.5	0.8	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:  Manu- facturing	Total				Memo items:		
			Intermediate goods	Capital goods	Consump- tion goods		Intermediate goods	Capital goods	Consump- tion goods	Manu- facturing	Oil		
	1	2	3	4	5	6	7	8	9	10	11	12	13
Values (EUR billions; annual percentage changes for columns 1 and 2)													
2020 Q4	-2.7	-5.5	567.4	264.9	114.8	177.0	479.2	491.7	260.5	87.2	134.8	379.8	35.2
2021 Q1	0.7	0.3	581.8	280.7	115.0	174.2	487.3	512.5	284.7	91.6	129.8	383.3	46.9
Q2	34.4	33.9	596.2	291.4	117.0	177.3	493.4	559.1	324.0	92.2	136.0	405.3	53.5
Q3	13.6	22.7	606.9	304.7	118.4	171.6	500.9	579.4	343.9	93.3	135.2	414.7	59.0
2021 June	24.0	29.0	198.3	98.4	38.3	58.0	163.7	187.2	109.1	30.7	45.2	135.5	18.2
July	12.0	18.1	201.7	99.4	40.7	57.6	167.0	188.9	112.5	30.5	43.9	134.8	19.7
Aug.	19.5	29.2	202.9	103.1	39.2	56.7	166.9	194.1	115.1	31.6	45.2	140.2	19.7
Sep.	10.2	21.6	202.2	102.3	38.4	57.2	167.1	196.4	116.3	31.2	46.1	139.8	19.6
Oct.	7.3	24.3	207.0	104.1	37.6	60.6	170.5	205.2	123.6	30.4	47.4	143.0	22.7
Nov.	14.4	32.0	213.2	.	.	.	174.2	214.5	.	.	.	147.1	.
Volume indices (2000 = 100; annual percentage changes for columns 1 and 2)													
2020 Q4	-1.4	-0.8	104.0	105.6	100.1	105.7	103.5	105.2	102.0	108.0	110.7	109.1	84.4
2021 Q1	0.8	0.2	104.5	108.6	100.8	101.5	103.9	104.9	103.3	112.7	105.5	108.3	85.5
Q2	29.3	20.4	104.7	109.1	101.7	101.7	103.4	109.8	110.4	113.7	108.4	112.1	85.0
Q3	4.4	5.4	103.4	109.6	100.8	96.5	101.9	107.9	108.9	111.8	105.0	110.7	85.3
2021 May	29.3	20.5	105.0	109.6	101.2	101.9	103.5	110.1	111.1	113.6	108.0	113.0	87.3
June	19.1	15.9	104.4	110.1	100.0	100.2	102.8	109.3	109.3	114.4	108.1	112.1	83.7
July	4.8	3.1	104.2	109.0	104.5	97.7	103.0	106.8	108.6	109.6	103.6	108.7	86.1
Aug.	9.1	11.4	103.3	110.7	100.1	95.5	101.3	108.7	109.4	114.5	105.3	112.4	86.2
Sep.	0.1	2.5	102.7	109.2	97.9	96.4	101.3	108.3	108.7	111.4	106.0	110.9	83.5
Oct.	-2.9	2.5	104.0	109.6	95.0	101.3	102.7	110.1	111.8	105.2	108.0	111.6	88.8

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	Total excluding food and energy	Goods	Services	Total	Processed food	Unprocessed food	Non-energy industrial goods	Energy (n.s.a.)	Services	Total HICP excluding administered prices	Administered prices
	1	2		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
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
2021	107.8	2.6	1.5	3.4	1.5	-	-	-	-	-	-	2.5	3.1
2021 Q1	105.8	1.1	1.2	0.8	1.3	1.3	0.5	-0.6	1.5	6.5	0.6	1.0	1.4
Q2	107.4	1.8	0.9	2.5	0.9	0.6	0.4	1.5	-0.2	3.7	0.3	1.8	2.4
Q3	108.0	2.8	1.4	4.1	1.2	1.1	0.7	0.6	1.2	4.3	0.5	2.7	3.5
Q4	109.9	4.6	2.4	6.2	2.4	1.5	0.9	1.1	-0.2	9.1	1.0	4.6	5.1
2021 Aug.	108.0	3.0	1.6	4.5	1.1	0.3	0.3	0.7	0.1	1.0	0.2	2.9	3.5
Sep.	108.5	3.4	1.9	4.6	1.7	0.2	0.2	0.3	-0.6	1.4	0.4	3.3	3.6
Oct.	109.4	4.1	2.0	5.5	2.1	0.7	0.3	-0.1	-0.1	5.6	0.3	4.0	4.6
Nov.	109.9	4.9	2.6	6.3	2.7	0.7	0.2	0.7	0.2	2.9	0.5	4.8	5.2
Dec.	110.4	5.0	2.6	6.8	2.4	0.3	0.5	0.9	0.3	0.4	0.1	4.9	5.6
2022 Jan. <sup>3)</sup>	110.7	5.1	2.3	.	2.4	.	0.6	0.8	1.4	6.0	.	.	.

	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	
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	
2021	1.5	1.5	1.6	4.5	1.5	13.0	1.4	1.2	2.1	0.3	1.5	1.6	
2021 Q1	1.3	1.2	1.7	0.5	0.9	-0.6	1.3	1.2	1.1	-0.4	1.4	1.5	
Q2	0.6	0.8	-0.2	3.6	0.8	12.0	1.4	1.3	0.8	-0.1	0.5	1.6	
Q3	1.9	1.7	2.5	5.4	1.8	15.8	1.4	1.1	2.4	0.7	1.1	1.6	
Q4	2.5	2.4	2.7	8.4	2.4	25.7	1.6	1.1	4.0	1.2	3.1	1.7	
2021 Aug.	2.0	1.7	3.0	6.0	2.6	15.4	1.4	1.1	2.3	0.7	1.0	1.6	
Sep.	2.0	1.9	2.6	6.1	2.1	17.6	1.5	1.2	3.3	0.6	1.9	1.5	
Oct.	1.9	2.1	1.4	7.6	2.0	23.7	1.6	1.2	3.6	1.5	2.3	1.7	
Nov.	2.2	2.3	1.9	8.8	2.4	27.5	1.6	1.1	4.4	1.0	3.8	1.7	
Dec.	3.2	2.8	4.7	8.9	2.9	25.9	1.6	1.1	4.0	1.0	3.3	1.8	
2022 Jan. <sup>3)</sup>	3.6	3.1	5.2	.	2.3	28.6	.	.	.	.	.	.	

Sources: Eurostat and ECB calculations.

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

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

3) Flash estimate.

## 4 Prices and costs

### 4.2 Industry, construction and property prices

(annual percentage changes, unless otherwise indicated)

	Industrial producer prices excluding construction <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	1.9	4.2	4.5
2020	102.0	-2.6	-1.7	-0.1	-1.6	0.9	1.0	1.1	0.6	-9.7	1.2	5.4	1.7
2020 Q4	102.6	-1.7	-1.7	0.0	-0.6	0.8	0.0	-0.5	0.7	-6.7	1.6	6.0	-0.9
2021 Q1	105.9	2.1	1.3	1.4	2.7	1.0	0.0	-0.7	0.7	3.8	2.7	6.1	-1.6
Q2	109.4	9.2	6.8	4.7	9.0	1.7	1.8	1.8	1.2	23.7	4.7	7.3	-4.3
Q3	115.6	14.0	9.3	7.5	14.1	3.0	2.8	2.9	2.1	34.3	7.7	9.0	.
2021 June	110.9	10.3	7.4	5.6	10.7	2.0	2.4	2.6	1.4	25.5	-	-	-
July	113.7	12.4	8.4	6.8	12.8	2.5	2.7	2.8	1.9	30.1	-	-	-
Aug.	115.0	13.5	9.2	7.5	14.3	3.1	2.8	2.9	2.2	32.0	-	-	-
Sep.	118.1	16.1	10.4	8.1	15.3	3.6	3.0	3.1	2.3	40.8	-	-	-
Oct.	124.5	21.9	11.9	9.0	16.9	4.0	3.4	3.2	2.7	62.4	-	-	-
Nov.	126.7	23.7	12.7	9.8	18.3	4.4	3.9	3.9	3.1	66.0	-	-	-

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
2019	105.3	1.7	1.5	1.1	1.8	2.3	0.8	0.3	57.2	2.0	4.4	-0.1	3.0	8.2	-2.3
2020	107.1	1.6	1.1	0.5	3.5	1.2	-1.3	-2.6	37.0	1.4	3.3	-0.3	-1.0	-0.3	-1.8
2021	.	.	.	.	.	.	.	.	59.8	29.5	21.3	37.2	28.9	21.7	37.1
2021 Q1	108.1	1.5	1.5	1.1	2.4	1.1	0.9	0.7	50.4	18.3	9.2	27.3	14.1	5.5	24.6
Q2	108.3	0.5	1.5	1.5	-1.3	2.4	4.3	7.0	57.0	38.3	20.2	56.4	35.7	20.5	54.4
Q3	109.5	2.7	3.5	2.6	3.0	4.4	7.1	9.5	61.9	31.0	26.1	35.4	32.3	28.2	36.7
Q4	.	.	.	.	.	.	.	.	69.4	30.7	30.1	31.3	33.7	33.4	34.0
2021 Aug.	-	-	-	-	-	-	-	-	59.5	29.9	29.0	30.7	32.1	32.5	31.8
Sep.	-	-	-	-	-	-	-	-	63.4	26.8	23.5	29.9	29.9	27.1	33.0
Oct.	-	-	-	-	-	-	-	-	72.1	33.3	26.6	39.7	34.0	26.3	42.7
Nov.	-	-	-	-	-	-	-	-	70.8	29.8	31.0	28.7	33.4	35.7	30.8
Dec.	-	-	-	-	-	-	-	-	65.7	29.2	32.6	26.4	33.8	38.2	29.4
2022 Jan.	-	-	-	-	-	-	-	-	75.5	.	.	.	.	.	.

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
2019	4.3	7.3	9.1	7.5	18.2	48.8	57.1	50.4	52.4
2020	-1.1	1.6	-0.8	-5.7	10.9	49.0	52.1	48.7	47.2
2021	31.1	22.8	9.4	18.6	28.7	84.0	61.9	66.8	53.4
2021 Q1	10.9	4.9	-1.8	-3.5	8.2	74.0	54.0	56.5	48.6
Q2	30.2	18.1	8.5	16.2	20.4	85.9	60.1	68.2	53.1
Q3	37.0	27.8	12.3	26.3	35.0	87.7	63.8	70.3	55.1
Q4	46.5	40.6	18.5	35.5	51.3	88.4	69.5	72.1	56.9
2021 Aug.	37.0	27.1	11.7	28.0	34.4	87.0	63.3	68.6	54.7
Sep.	38.4	30.4	13.1	25.0	39.3	86.9	65.2	70.4	55.1
Oct.	42.3	36.7	16.5	32.9	46.3	89.5	67.5	72.6	55.8
Nov.	49.3	44.1	19.7	37.8	52.5	88.9	71.4	73.7	57.8
Dec.	48.0	40.9	19.3	35.7	55.2	86.7	69.6	70.2	57.2
2022 Jan.	47.7	42.5	21.0	37.0	57.9	83.5	70.4	72.7	58.0

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	104.4	2.5	2.3	3.2	2.6	2.4	2.0
2019	106.9	2.4	2.6	2.0	2.4	2.5	2.2
2020	110.3	3.1	3.7	1.0	2.8	3.8	1.8
2020 Q4	116.6	2.9	3.5	0.6	2.2	4.3	2.0
2021 Q1	104.8	1.5	2.3	-1.1	1.2	2.0	1.4
Q2	116.0	-0.1	-0.5	1.2	-0.9	1.8	1.8
Q3	107.6	2.5	2.3	3.0	2.4	2.6	1.4

Sources: Eurostat and ECB calculations.

1) Experimental data based on non-harmonised sources (see [https://www.ecb.europa.eu/stats/ecb\\_statistics/governance\\_and\\_quality\\_framework/html/experimental-data.en.html](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	1.2	1.5	2.6	2.1	0.1	1.1	3.9	1.5	2.6	2.0
2019	105.4	1.9	-0.8	2.3	1.8	0.7	0.9	1.8	2.5	2.4	2.6	2.0
2020	110.1	4.5	-1.3	2.8	4.7	6.5	0.7	0.2	1.6	5.6	6.3	13.6
2020 Q4	109.8	3.7	-0.7	-1.1	3.0	5.4	1.9	1.0	4.9	4.9	6.1	22.4
2021 Q1	110.3	1.5	2.9	-3.3	5.2	2.1	0.6	1.1	4.4	3.1	2.8	15.3
Q2	108.9	-4.4	7.0	-10.6	-3.1	-7.7	1.3	-2.2	8.7	-2.3	-4.6	-2.5
Q3	109.7	1.1	5.7	-1.3	2.1	-0.8	4.8	0.8	4.1	0.7	2.3	0.7
Compensation per employee												
2018	105.2	2.1	0.9	1.8	2.2	2.0	2.6	2.3	2.9	2.7	1.9	2.9
2019	107.4	2.1	3.2	1.4	1.4	1.6	3.2	2.2	2.4	2.8	2.3	3.3
2020	106.7	-0.6	0.5	-2.3	-1.6	-4.6	0.4	-0.3	0.9	-0.4	2.4	-2.6
2020 Q4	109.0	0.9	0.2	0.0	1.5	-3.5	1.4	0.7	2.4	1.1	3.3	-0.4
2021 Q1	109.3	2.1	1.9	2.0	4.3	-0.8	2.1	3.1	3.1	1.9	2.2	1.2
Q2	109.6	7.2	2.7	9.2	9.6	13.0	7.6	1.2	10.2	8.0	2.1	11.1
Q3	111.7	3.0	2.1	3.5	1.4	4.6	3.3	2.0	3.6	2.4	2.2	3.2
Labour productivity per person employed												
2018	101.7	0.2	-0.3	0.3	-0.4	-0.2	2.5	1.2	-1.0	1.1	-0.7	1.0
2019	102.0	0.3	4.0	-0.9	-0.4	0.9	2.4	0.3	-0.2	0.3	-0.3	1.3
2020	97.0	-4.9	1.9	-5.0	-6.0	-10.5	-0.2	-0.5	-0.7	-5.6	-3.7	-14.3
2020 Q4	99.3	-2.7	1.0	1.1	-1.4	-8.4	-0.4	-0.4	-2.4	-3.6	-2.6	-18.7
2021 Q1	99.2	0.6	-0.9	5.5	-0.8	-2.8	1.4	1.9	-1.2	-1.2	-0.6	-12.3
Q2	100.6	12.1	-4.0	22.2	13.1	22.3	6.2	3.5	1.4	10.6	7.1	14.0
Q3	101.9	1.9	-3.4	4.9	-0.7	5.4	-1.4	1.2	-0.4	1.7	-0.2	2.5
Compensation per hour worked												
2018	104.9	1.9	1.3	1.8	1.5	1.4	2.4	2.3	2.0	2.2	2.2	2.4
2019	107.4	2.3	3.7	1.9	1.7	2.0	3.1	1.8	2.1	2.8	2.4	3.7
2020	113.0	5.2	2.7	3.2	4.0	5.9	2.8	1.3	5.6	4.5	4.9	6.7
2020 Q4	113.6	5.2	1.9	3.0	3.9	6.1	2.5	1.3	6.1	3.8	4.9	7.1
2021 Q1	114.4	3.4	0.8	1.1	1.2	6.3	2.6	1.6	3.2	2.5	1.7	4.6
Q2	112.6	-4.5	-2.2	-4.2	-7.1	-6.6	1.6	-3.3	-0.6	-3.0	-2.5	-5.6
Q3	113.5	2.0	2.7	1.6	1.5	1.9	1.7	1.7	0.5	0.7	3.1	2.6
Hourly labour productivity												
2018	101.9	0.1	-0.5	0.4	-0.9	-0.4	2.4	1.1	-1.7	0.8	-0.5	0.6
2019	102.5	0.6	5.1	-0.3	-0.2	1.3	2.3	0.1	-0.5	0.4	-0.2	1.5
2020	104.1	1.5	2.2	0.8	1.0	0.0	3.0	1.8	6.2	0.2	-0.8	-4.3
2020 Q4	104.7	2.1	0.6	4.5	2.3	0.9	1.7	0.9	1.9	-0.1	-0.8	-10.9
2021 Q1	104.8	1.7	-2.8	4.6	-4.1	3.4	1.8	0.5	-3.3	-1.0	-1.2	-8.7
Q2	104.3	-1.7	-7.8	6.2	-5.3	-0.6	-0.6	-1.9	-13.8	-2.5	1.4	-7.3
Q3	104.3	0.9	-2.2	2.9	-0.5	3.0	-3.3	0.6	-3.6	-0.2	0.6	2.4

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												
2019	1,222.4	7,721.9	8,944.3	1,069.7	2,364.2	3,433.9	12,378.2	79.3	528.8	-1.4	606.6	12,984.8
2020	1,360.8	8,886.2	10,247.0	1,034.9	2,450.1	3,485.0	13,731.9	101.5	636.5	-0.7	737.3	14,469.2
2021 <sup>(p)</sup>	1,464.6	9,793.1	11,257.8	927.2	2,507.7	3,434.9	14,692.6	117.2	660.0	13.7	790.9	15,483.5
2021 Q1	1,392.9	9,137.6	10,530.4	991.4	2,477.0	3,468.4	13,998.9	109.3	617.9	15.8	743.1	14,741.9
Q2	1,419.7	9,350.5	10,770.2	936.3	2,489.6	3,425.9	14,196.1	111.9	613.7	27.5	753.2	14,949.2
Q3	1,444.4	9,617.8	11,062.2	903.2	2,493.4	3,396.6	14,458.7	120.4	601.0	38.7	760.1	15,218.8
Q4 <sup>(p)</sup>	1,464.6	9,793.1	11,257.8	927.2	2,507.7	3,434.9	14,692.6	117.2	660.0	13.7	790.9	15,483.5
2021 July	1,427.4	9,428.9	10,856.3	931.1	2,490.4	3,421.5	14,277.8	115.7	618.0	35.6	769.3	15,047.1
Aug.	1,435.8	9,519.2	10,955.1	914.2	2,487.1	3,401.3	14,356.4	112.7	617.9	37.2	767.8	15,124.1
Sep.	1,444.4	9,617.8	11,062.2	903.2	2,493.4	3,396.6	14,458.7	120.4	601.0	38.7	760.1	15,218.8
Oct.	1,451.6	9,664.2	11,115.8	926.9	2,495.7	3,422.6	14,538.5	133.5	618.9	39.8	792.2	15,330.7
Nov.	1,459.8	9,697.8	11,157.5	928.7	2,499.4	3,428.1	14,585.7	126.0	645.0	38.9	809.9	15,395.6
Dec. <sup>(p)</sup>	1,464.6	9,793.1	11,257.8	927.2	2,507.7	3,434.9	14,692.6	117.2	660.0	13.7	790.9	15,483.5
Transactions												
2019	57.7	604.8	662.5	-61.6	62.4	0.8	663.3	4.2	-4.1	-58.5	-58.3	605.0
2020	138.4	1,250.1	1,388.5	-28.9	86.7	57.8	1,446.3	19.5	113.8	0.1	133.4	1,579.8
2021 <sup>(p)</sup>	105.1	901.0	1,006.1	-118.7	67.3	-51.4	954.7	11.6	24.0	11.6	47.2	1,001.9
2021 Q1	32.1	238.9	271.0	-47.1	28.5	-18.6	252.3	6.9	-18.6	18.1	6.4	258.7
Q2	26.9	217.3	244.2	-54.0	12.6	-41.4	202.8	2.9	-3.6	11.7	11.0	213.8
Q3	25.0	254.5	279.4	-34.4	11.7	-22.6	256.8	5.5	-12.8	10.0	2.7	259.5
Q4 <sup>(p)</sup>	21.2	190.3	211.5	16.8	14.4	31.2	242.8	-3.7	59.0	-28.2	27.1	269.8
2021 July	8.0	77.6	85.6	-5.0	0.9	-4.1	81.5	3.8	4.3	8.1	16.2	97.6
Aug.	8.4	81.1	89.5	-17.2	4.7	-12.5	76.9	-3.1	-0.1	1.3	-2.0	75.0
Sep.	8.6	95.8	104.4	-12.1	6.2	-5.9	98.4	4.8	-16.9	0.6	-11.5	86.9
Oct.	8.2	47.4	55.6	23.9	2.3	26.2	81.8	13.2	18.0	1.5	32.7	114.5
Nov.	8.1	44.2	52.3	-5.1	3.6	-1.5	50.8	-8.0	26.2	-4.1	14.0	64.8
Dec. <sup>(p)</sup>	4.9	98.7	103.6	-2.0	8.5	6.5	110.1	-8.9	14.9	-25.6	-19.6	90.5
Growth rates												
2019	5.0	8.5	8.0	-5.4	2.7	0.0	5.7	5.5	-0.8	-	-8.8	4.9
2020	11.3	16.2	15.6	-2.7	3.7	1.7	11.7	24.4	21.6	-	22.0	12.2
2021 <sup>(p)</sup>	7.7	10.1	9.8	-11.5	2.7	-1.5	6.9	11.5	3.8	-	6.4	6.9
2021 Q1	10.1	14.2	13.7	-7.8	4.9	0.9	10.2	-3.6	16.5	-	7.7	10.1
Q2	9.0	12.2	11.8	-12.9	3.8	-1.4	8.3	13.5	8.5	-	10.6	8.4
Q3	8.5	11.5	11.1	-15.5	3.2	-2.5	7.6	12.6	1.0	-	7.5	7.6
Q4 <sup>(p)</sup>	7.7	10.1	9.8	-11.5	2.7	-1.5	6.9	11.5	3.8	-	6.4	6.9
2021 July	8.9	11.3	11.0	-13.7	3.5	-1.8	7.6	5.0	6.8	-	10.5	7.8
Aug.	8.6	11.4	11.0	-12.7	3.3	-1.5	7.8	15.3	7.7	-	12.7	8.0
Sep.	8.5	11.5	11.1	-15.5	3.2	-2.5	7.6	12.6	1.0	-	7.5	7.6
Oct.	8.5	11.1	10.7	-12.3	2.9	-1.7	7.5	28.8	3.9	199.2	11.2	7.7
Nov.	8.1	10.3	10.0	-11.0	2.6	-1.4	7.1	20.5	8.2	94.8	12.2	7.4
Dec. <sup>(p)</sup>	7.7	10.1	9.8	-11.5	2.7	-1.5	6.9	11.5	3.8	-	6.4	6.9

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													
2019	2,483.9	2,070.3	256.7	150.5	6.4	7,044.4	4,399.1	492.0	2,152.4	1.0	1,026.5	215.7	464.7
2020	2,988.5	2,531.8	310.0	143.5	3.2	7,651.2	4,956.1	437.2	2,257.1	0.9	1,097.1	234.6	501.2
2021 <sup>(p)</sup>	3,248.5	2,823.0	290.3	128.7	6.5	8,081.7	5,373.6	373.1	2,334.2	0.7	1,236.0	228.9	550.2
2021 Q1	3,060.5	2,609.4	300.2	143.5	7.5	7,813.5	5,104.5	422.0	2,286.1	0.9	1,133.2	217.0	491.1
Q2	3,100.2	2,660.9	290.8	140.0	8.5	7,906.0	5,197.8	407.0	2,300.5	0.7	1,164.8	222.5	494.6
Q3	3,160.5	2,736.3	283.8	130.9	9.6	8,020.8	5,314.2	388.9	2,317.1	0.7	1,210.5	227.4	515.6
Q4 <sup>(p)</sup>	3,248.5	2,823.0	290.3	128.7	6.5	8,081.7	5,373.6	373.1	2,334.2	0.7	1,236.0	228.9	550.2
2021 July	3,108.6	2,679.9	284.9	135.9	7.8	7,944.3	5,236.6	399.2	2,307.7	0.8	1,186.6	227.3	499.3
Aug.	3,128.9	2,707.2	282.4	130.7	8.7	7,988.4	5,282.3	394.6	2,310.8	0.7	1,186.9	227.1	501.9
Sep.	3,160.5	2,736.3	283.8	130.9	9.6	8,020.8	5,314.2	388.9	2,317.1	0.7	1,210.5	227.4	515.6
Oct.	3,187.9	2,758.2	292.6	128.9	8.2	8,040.1	5,332.2	383.5	2,323.3	1.0	1,244.5	239.3	508.6
Nov.	3,211.8	2,783.6	291.2	129.5	7.5	8,058.1	5,353.6	377.9	2,325.6	1.0	1,233.0	232.0	517.1
Dec. <sup>(p)</sup>	3,248.5	2,823.0	290.3	128.7	6.5	8,081.7	5,373.6	373.1	2,334.2	0.7	1,236.0	228.9	550.2
Transactions													
2019	149.5	167.0	-18.9	1.8	-0.4	396.1	361.2	-26.3	61.7	-0.5	25.1	9.8	29.3
2020	515.7	469.6	55.8	-6.8	-2.9	612.0	560.6	-53.8	105.3	0.0	142.6	20.4	36.7
2021 <sup>(p)</sup>	254.4	279.9	-21.7	-6.9	3.0	421.4	408.8	-64.8	77.6	-0.2	146.3	-7.7	46.8
2021 Q1	67.0	72.8	-9.9	0.0	4.2	160.8	146.1	-15.7	30.5	0.0	27.5	-18.2	-10.0
Q2	42.0	53.6	-9.2	-3.4	1.1	93.3	93.9	-14.9	14.4	-0.1	34.2	5.6	3.6
Q3	61.0	69.3	-8.0	-1.2	0.9	108.3	111.2	-18.3	15.4	-0.1	44.2	1.9	21.9
Q4 <sup>(p)</sup>	84.3	84.3	5.4	-2.3	-3.1	59.0	57.6	-15.9	17.2	0.1	40.4	2.9	31.3
2021 July	16.0	23.3	-5.9	-0.8	-0.7	30.0	33.8	-7.8	4.1	0.0	21.9	4.7	4.7
Aug.	18.8	21.0	-2.6	-0.5	0.8	44.8	44.4	-4.6	5.0	0.0	-0.6	-0.2	2.6
Sep.	26.2	24.9	0.5	0.1	0.8	33.4	33.0	-5.9	6.4	-0.1	22.9	-2.6	14.7
Oct.	27.9	22.6	8.7	-2.0	-1.4	19.4	18.1	-5.3	6.2	0.4	34.6	12.0	-7.0
Nov.	19.8	23.1	-2.9	0.5	-0.8	16.9	20.5	-5.8	2.2	-0.1	-1.5	-5.8	5.3
Dec. <sup>(p)</sup>	36.6	38.7	-0.4	-0.7	-1.0	22.7	18.9	-4.8	8.8	-0.2	7.3	-3.3	33.0
Growth rates													
2019	6.4	8.8	-6.8	1.2	-6.5	6.0	8.9	-5.1	3.0	-35.6	2.5	4.8	6.7
2020	20.7	22.7	21.6	-4.5	-47.0	8.7	12.7	-10.9	4.9	-5.2	14.3	9.4	7.9
2021 <sup>(p)</sup>	8.5	11.0	-7.0	-4.9	98.2	5.5	8.2	-14.8	3.4	-18.6	13.3	-3.3	9.3
2021 Q1	17.9	19.6	15.2	-2.7	9.2	9.1	12.6	-10.4	6.0	40.9	4.6	-5.7	4.1
Q2	8.4	11.4	-8.3	-5.7	47.4	7.6	11.0	-11.8	4.5	-20.2	15.9	-2.7	5.6
Q3	7.1	10.3	-12.1	-5.4	38.0	7.0	10.2	-13.1	4.0	-31.8	14.9	-6.8	9.1
Q4 <sup>(p)</sup>	8.5	11.0	-7.0	-4.9	98.2	5.5	8.2	-14.8	3.4	-18.6	13.3	-3.3	9.3
2021 July	6.8	10.4	-14.2	-5.4	47.1	7.3	10.6	-12.6	4.3	-28.6	14.7	-4.1	4.4
Aug.	6.9	10.1	-13.0	-5.6	97.0	7.3	10.7	-12.6	4.1	-27.9	16.6	-1.8	6.1
Sep.	7.1	10.3	-12.1	-5.4	38.0	7.0	10.2	-13.1	4.0	-31.8	14.9	-6.8	9.1
Oct.	7.4	10.5	-10.1	-6.8	44.7	6.5	9.6	-13.7	3.9	6.7	18.2	-0.4	6.0
Nov.	7.9	10.6	-7.6	-6.1	35.6	6.0	8.9	-14.4	3.4	0.0	15.5	-3.9	6.9
Dec. <sup>(p)</sup>	8.5	11.0	-7.0	-4.9	98.2	5.5	8.2	-14.8	3.4	-18.6	13.3	-3.3	9.3

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) 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												
2019	4,654.5	989.2	3,653.5	13,856.8	11,446.4	11,835.1	4,474.3	5,930.1	891.0	151.0	1,560.6	849.9
2020	5,914.6	998.8	4,903.9	14,333.2	11,919.8	12,299.4	4,721.5	6,118.8	911.7	167.8	1,548.1	865.3
2021 <sup>(p)</sup>	6,551.8	997.2	5,552.9	14,811.2	12,337.8	12,721.6	4,865.7	6,366.1	944.8	161.1	1,584.7	888.6
2021 Q1	6,069.4	994.5	5,073.2	14,457.5	12,058.9	12,411.5	4,777.0	6,176.5	953.7	151.6	1,518.4	880.2
Q2	6,217.0	1,003.7	5,211.7	14,488.0	12,077.6	12,441.9	4,746.7	6,239.8	942.0	149.1	1,523.1	887.2
Q3	6,364.7	999.2	5,363.9	14,611.6	12,182.5	12,536.2	4,774.8	6,311.0	952.0	144.7	1,532.4	896.7
Q4 <sup>(p)</sup>	6,551.8	997.2	5,552.9	14,811.2	12,337.8	12,721.6	4,865.7	6,366.1	944.8	161.1	1,584.7	888.6
2021 July	6,305.8	1,006.9	5,297.2	14,530.9	12,114.7	12,475.5	4,747.8	6,273.3	945.7	147.9	1,527.9	888.3
Aug.	6,347.9	1,004.0	5,342.2	14,556.8	12,137.3	12,492.9	4,759.2	6,292.7	939.4	146.0	1,524.0	895.5
Sep.	6,364.7	999.2	5,363.9	14,611.6	12,182.5	12,536.2	4,774.8	6,311.0	952.0	144.7	1,532.4	896.7
Oct.	6,392.0	987.4	5,402.9	14,682.5	12,231.0	12,591.9	4,795.0	6,334.3	947.1	154.6	1,556.0	895.5
Nov.	6,476.2	987.3	5,487.3	14,738.6	12,309.2	12,658.5	4,820.3	6,359.6	968.7	160.6	1,542.0	887.4
Dec. <sup>(p)</sup>	6,551.8	997.2	5,552.9	14,811.2	12,337.8	12,721.6	4,865.7	6,366.1	944.8	161.1	1,584.7	888.6
Transactions												
2019	-88.4	-23.2	-65.6	449.7	376.1	422.9	115.0	200.3	40.6	20.2	30.2	43.4
2020	1,042.0	13.5	1,028.4	737.0	538.1	559.9	288.2	209.1	23.9	16.9	170.7	28.2
2021 <sup>(p)</sup>	665.6	-0.6	675.8	558.5	469.6	501.7	172.2	259.3	47.8	-9.7	80.3	8.6
2021 Q1	150.1	-3.8	164.3	150.6	139.6	111.2	55.9	60.8	39.2	-16.4	2.7	8.3
Q2	163.8	9.1	154.1	53.3	43.5	51.7	-18.5	75.3	-10.9	-2.4	4.8	5.0
Q3	150.5	-4.7	155.2	132.0	117.5	120.5	39.9	65.8	18.8	-7.0	9.6	4.9
Q4 <sup>(p)</sup>	201.2	-1.2	202.2	222.6	169.1	218.3	95.0	57.4	0.6	16.0	63.2	-9.6
2021 July	63.1	3.2	59.9	44.5	42.7	42.5	14.6	25.3	4.1	-1.2	4.1	-2.3
Aug.	51.1	-3.1	54.1	32.6	30.6	29.0	10.3	19.9	2.4	-1.9	-3.1	5.1
Sep.	36.4	-4.8	41.2	54.9	44.2	49.0	15.0	20.7	12.4	-3.9	8.6	2.1
Oct.	31.9	-12.0	43.9	79.2	47.5	59.5	19.2	23.0	-4.6	9.9	35.4	-3.7
Nov.	65.0	1.0	64.0	52.1	72.6	65.4	25.3	23.0	18.7	5.6	-13.8	-6.7
Dec. <sup>(p)</sup>	104.2	9.7	94.3	91.4	49.0	93.5	50.5	11.4	-13.4	0.5	41.6	0.8
Growth rates												
2019	-1.9	-2.3	-1.8	3.4	3.4	3.7	2.6	3.5	4.8	16.0	2.0	5.5
2020	22.2	1.4	27.8	5.4	4.7	4.7	6.4	3.5	2.7	10.3	11.4	3.4
2021 <sup>(p)</sup>	11.3	-0.1	13.8	3.9	3.9	4.1	3.7	4.2	5.2	-4.7	5.3	1.0
2021 Q1	21.7	-0.8	28.0	4.6	3.6	3.5	4.6	3.8	-1.2	-3.5	10.1	8.3
Q2	13.1	0.5	16.2	3.6	3.1	3.0	1.4	4.5	3.4	-3.5	5.3	7.5
Q3	11.0	0.0	13.5	3.4	3.2	3.3	1.6	4.3	5.8	-10.1	3.0	7.3
Q4 <sup>(p)</sup>	11.3	-0.1	13.8	3.9	3.9	4.1	3.7	4.2	5.2	-4.7	5.3	1.0
2021 July	12.4	1.0	15.1	3.4	3.1	3.0	1.3	4.5	4.1	-4.9	4.5	6.9
Aug.	12.1	1.0	14.8	3.2	3.0	3.0	1.0	4.5	5.1	-6.0	2.7	7.1
Sep.	11.0	0.0	13.5	3.4	3.2	3.3	1.6	4.3	5.8	-10.1	3.0	7.3
Oct.	10.5	-1.2	13.1	3.7	3.3	3.4	1.9	4.3	5.8	-5.6	4.6	7.7
Nov.	10.8	-1.2	13.5	3.7	3.6	3.7	2.4	4.4	5.6	0.5	3.2	6.2
Dec. <sup>(p)</sup>	11.3	-0.1	13.8	3.9	3.9	4.1	3.7	4.2	5.2	-4.7	5.3	1.0

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	Adjusted loans <sup>4)</sup>	Up to 1 year	Over 1 and up to 5 years	Over 5 years	Total	Adjusted loans <sup>4)</sup>	Loans for consumption	Loans for house purchase	Other loans
	1					6				
	2	3	4	5	6	7	8	9	10	
Outstanding amounts										
2019	4,474.3	4,576.5	966.7	877.5	2,630.1	5,930.1	6,221.7	720.1	4,523.5	686.5
2020	4,721.5	4,842.9	898.1	1,011.2	2,812.1	6,118.8	6,387.3	700.2	4,723.8	694.8
2021 <sup>(p)</sup>	4,865.7	4,996.3	887.2	1,006.8	2,971.7	6,366.1	6,628.7	697.7	4,970.2	698.2
2021 Q1	4,777.0	4,899.0	894.4	1,017.8	2,864.9	6,176.5	6,439.7	696.3	4,786.6	693.6
Q2	4,746.7	4,867.8	832.9	971.6	2,942.2	6,239.8	6,498.6	693.7	4,851.9	694.2
Q3	4,774.8	4,889.8	835.1	972.0	2,967.7	6,311.0	6,569.3	696.6	4,914.4	699.9
Q4 <sup>(p)</sup>	4,865.7	4,996.3	887.2	1,006.8	2,971.7	6,366.1	6,628.7	697.7	4,970.2	698.2
2021 July	4,747.8	4,861.9	828.2	968.1	2,951.4	6,273.3	6,531.5	695.6	4,874.6	703.1
Aug.	4,759.2	4,873.8	828.1	969.4	2,961.7	6,292.7	6,552.2	695.4	4,894.9	702.4
Sep.	4,774.8	4,889.8	835.1	972.0	2,967.7	6,311.0	6,569.3	696.6	4,914.4	699.9
Oct.	4,795.0	4,912.9	859.2	971.4	2,964.3	6,334.3	6,590.2	698.9	4,935.1	700.3
Nov.	4,820.3	4,932.4	869.8	979.7	2,970.8	6,359.6	6,615.2	702.3	4,956.8	700.5
Dec. <sup>(p)</sup>	4,865.7	4,996.3	887.2	1,006.8	2,971.7	6,366.1	6,628.7	697.7	4,970.2	698.2
Transactions										
2019	115.0	142.5	-13.1	44.8	83.2	200.3	216.2	41.0	168.5	-9.2
2020	288.2	325.2	-54.1	138.6	203.6	209.1	193.9	-11.8	210.6	10.4
2021 <sup>(p)</sup>	172.2	203.6	-3.5	1.7	174.0	259.3	263.7	8.3	254.4	-3.3
2021 Q1	55.9	58.1	-3.9	6.8	52.9	60.8	58.1	-2.2	63.3	-0.3
Q2	-18.5	-22.2	-57.6	-42.9	82.0	75.3	70.6	2.4	72.0	0.9
Q3	39.9	44.2	4.0	1.8	34.1	65.8	67.6	4.1	63.9	-2.2
Q4 <sup>(p)</sup>	95.0	123.5	53.9	36.0	5.1	57.4	67.3	4.0	55.1	-1.7
2021 July	14.6	10.5	-3.0	-1.2	18.8	25.3	25.0	1.7	23.8	-0.2
Aug.	10.3	14.1	0.0	0.8	9.5	19.9	21.3	0.3	20.3	-0.7
Sep.	15.0	19.6	7.0	2.2	5.8	20.7	21.4	2.1	19.9	-1.3
Oct.	19.2	25.4	23.8	-1.0	-3.6	23.0	22.8	2.7	20.3	0.0
Nov.	25.3	22.5	10.6	9.3	5.4	23.0	24.0	4.6	18.7	-0.3
Dec. <sup>(p)</sup>	50.5	75.6	19.5	27.8	3.3	11.4	20.5	-3.3	16.1	-1.4
Growth rates										
2019	2.6	3.2	-1.3	5.3	3.2	3.5	3.6	6.0	3.9	-1.3
2020	6.4	7.1	-5.7	15.9	7.8	3.5	3.1	-1.6	4.7	1.5
2021 <sup>(p)</sup>	3.7	4.2	-0.4	0.2	6.2	4.2	4.1	1.2	5.4	-0.5
2021 Q1	4.6	5.3	-9.2	11.1	7.5	3.8	3.3	-1.6	5.0	1.5
Q2	1.4	1.9	-11.8	-2.1	7.3	4.5	4.0	0.6	5.7	0.6
Q3	1.6	2.1	-8.6	-3.6	6.9	4.3	4.1	0.5	5.6	-0.1
Q4 <sup>(p)</sup>	3.7	4.2	-0.4	0.2	6.2	4.2	4.1	1.2	5.4	-0.5
2021 July	1.3	1.7	-11.4	-3.1	7.2	4.5	4.1	0.4	5.7	0.4
Aug.	1.0	1.5	-11.0	-3.8	6.8	4.5	4.2	0.1	5.8	0.2
Sep.	1.6	2.1	-8.6	-3.6	6.9	4.3	4.1	0.5	5.6	-0.1
Oct.	1.9	2.5	-5.1	-3.5	6.1	4.3	4.1	0.6	5.5	-0.2
Nov.	2.4	2.9	-3.6	-2.2	5.9	4.4	4.2	1.6	5.5	-0.3
Dec. <sup>(p)</sup>	3.7	4.2	-0.4	0.2	6.2	4.2	4.1	1.2	5.4	-0.5

Source: ECB.

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

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

3) Including non-profit institutions serving households.

4) 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										
2019	363.4	7,055.1	1,944.5	50.2	2,155.2	2,905.3	1,474.7	417.4	178.9	187.2
2020	744.6	6,961.3	1,914.8	42.1	1,991.8	3,012.5	1,437.6	489.7	130.1	139.2
2021 <sup>(p)</sup>	796.9	6,889.2	1,839.1	37.1	1,998.3	3,014.7	1,371.8	434.8	118.8	136.4
2021 Q1	704.0	6,891.1	1,897.4	41.2	1,985.5	2,967.0	1,409.5	400.7	127.2	130.2
Q2	680.1	6,847.1	1,868.8	40.2	1,956.0	2,982.1	1,411.7	359.7	123.7	134.5
Q3	690.9	6,856.4	1,850.7	38.6	1,975.9	2,991.1	1,379.8	410.0	139.0	146.0
Q4 <sup>(p)</sup>	796.9	6,889.2	1,839.1	37.1	1,998.3	3,014.7	1,371.8	434.8	118.8	136.4
2021 July	686.8	6,889.7	1,860.9	39.4	1,962.6	3,026.7	1,441.8	345.2	133.4	133.2
Aug.	708.7	6,873.4	1,851.2	39.0	1,960.7	3,022.5	1,450.1	351.5	125.3	128.4
Sep.	690.9	6,856.4	1,850.7	38.6	1,975.9	2,991.1	1,379.8	410.0	139.0	146.0
Oct.	739.5	6,872.1	1,842.8	38.1	2,002.6	2,988.6	1,397.0	470.9	140.0	147.6
Nov.	706.9	6,905.2	1,831.0	37.7	2,011.9	3,024.6	1,398.5	394.3	144.5	149.9
Dec. <sup>(p)</sup>	796.9	6,889.2	1,839.1	37.1	1,998.3	3,014.7	1,371.8	434.8	118.8	136.4
Transactions										
2019	-25.0	107.9	-5.5	-2.9	28.0	88.3	312.6	14.2	-2.7	-2.5
2020	316.3	-35.0	-14.9	-8.0	-101.2	89.0	-60.2	142.3	-48.8	-48.0
2021 <sup>(p)</sup>	53.0	-39.5	-74.4	-5.0	-38.5	78.5	-114.4	-94.3	-11.3	-2.8
2021 Q1	-40.5	-27.3	-20.9	-0.9	-29.6	24.0	10.9	-120.7	-2.9	-8.9
Q2	-24.0	-19.4	-21.9	-1.0	-24.5	28.1	-16.6	-30.1	-3.6	4.3
Q3	10.8	0.0	-18.6	-1.5	8.3	11.8	-40.8	28.6	15.3	11.5
Q4 <sup>(p)</sup>	106.6	7.3	-13.1	-1.6	7.3	14.6	-67.9	27.9	-20.2	-9.6
2021 July	6.7	-0.6	-7.6	-0.7	8.1	-0.4	7.8	-11.6	9.7	-1.3
Aug.	22.0	-9.4	-10.0	-0.4	-3.9	4.9	4.3	-0.5	-8.0	-4.8
Sep.	-17.9	10.0	-1.0	-0.4	4.1	7.3	-52.9	40.7	13.7	17.6
Oct.	48.6	17.1	-7.6	-0.5	23.9	1.3	4.9	64.2	0.9	1.6
Nov.	-32.3	-12.1	-13.3	-0.5	0.8	0.9	-32.7	-63.9	4.6	2.2
Dec. <sup>(p)</sup>	90.2	2.3	7.8	-0.6	-17.3	12.4	-40.2	27.5	-25.7	-13.5
Growth rates										
2019	-6.4	1.6	-0.3	-5.3	1.3	3.2	-	-	-1.5	-1.5
2020	87.4	-0.5	-0.8	-15.9	-4.7	3.0	-	-	-27.3	-25.7
2021 <sup>(p)</sup>	7.1	-0.6	-3.9	-11.9	-1.9	2.6	-	-	-8.7	-2.0
2021 Q1	56.2	-0.3	-1.6	-12.6	-4.1	3.5	-	-	-30.7	-33.7
Q2	-10.3	-0.6	-2.7	-8.2	-4.8	3.9	-	-	-22.3	-22.9
Q3	-12.9	-0.7	-3.6	-9.9	-4.3	3.8	-	-	-0.6	-0.9
Q4 <sup>(p)</sup>	7.1	-0.6	-3.9	-11.9	-1.9	2.6	-	-	-8.7	-2.0
2021 July	-9.5	-0.5	-3.0	-9.4	-4.0	3.7	-	-	-17.9	-23.5
Aug.	-12.0	-0.8	-3.9	-9.4	-3.8	3.5	-	-	-26.5	-27.7
Sep.	-12.9	-0.7	-3.6	-9.9	-4.3	3.8	-	-	-0.6	-0.9
Oct.	-11.3	-0.3	-3.9	-10.5	-2.1	3.4	-	-	-5.9	-4.3
Nov.	-5.6	-0.5	-5.1	-11.2	-1.4	3.4	-	-	-2.4	1.9
Dec. <sup>(p)</sup>	7.1	-0.6	-3.9	-11.9	-1.9	2.6	-	-	-8.7	-2.0

Source: ECB.

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

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

3) Not adjusted for seasonal effects.

## 6 Fiscal developments

### 6.1 Deficit/surplus

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

	Deficit (-)/surplus (+)					Memo item: Primary deficit (-)/ surplus (+)
	Total	Central government	State government	Local government	Social security funds	
	1	2	3	4	5	6
2017	-0.9	-1.4	0.1	0.2	0.2	1.0
2018	-0.4	-1.0	0.1	0.2	0.3	1.4
2019	-0.6	-1.0	0.0	0.0	0.3	1.0
2020	-7.2	-5.9	-0.4	0.0	-0.9	-5.7
2020 Q4	-7.2	.	.	.	.	-5.7
2021 Q1	-8.3	.	.	.	.	-6.8
Q2	-6.9	.	.	.	.	-5.4
Q3	-6.2	.	.	.	.	-4.8

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
2017	46.2	45.8	12.8	13.0	15.2	0.4	47.1	43.3	9.9	5.3	1.9	22.4	3.8
2018	46.4	45.9	12.9	13.0	15.2	0.5	46.9	43.2	9.9	5.3	1.8	22.3	3.7
2019	46.3	45.8	12.9	13.0	15.0	0.5	46.9	43.2	9.9	5.3	1.6	22.4	3.7
2020	46.6	46.1	13.0	12.8	15.6	0.5	53.8	49.2	10.7	6.0	1.5	25.5	4.6
2020 Q4	46.6	46.1	13.0	12.8	15.6	0.5	53.8	49.2	10.7	6.0	1.5	25.5	4.6
2021 Q1	46.6	46.1	13.0	12.7	15.7	0.5	54.9	50.2	10.8	6.1	1.5	25.8	4.7
Q2	46.5	45.9	12.9	12.8	15.5	0.6	53.4	48.7	10.5	6.0	1.5	25.0	4.7
Q3	46.7	46.0	13.0	12.9	15.4	0.7	52.9	48.2	10.4	6.0	1.5	24.7	4.7

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

### 6.3 Government debt-to-GDP ratio

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

	Total	Financial instrument			Holder		Original maturity		Residual maturity			Currency		
		Currency and deposits	Loans	Debt securities	Resident creditors	Non-resident creditors	Up to 1 year	Over 1 year	Up to 1 year	Over 1 and up to 5 years	Over 5 years	Euro or participating currencies	Other currencies	
	MFIs													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2017	87.5	3.2	14.5	69.9	48.0	32.0	39.5	8.6	78.9	16.4	28.9	42.3	85.7	1.8
2018	85.5	3.1	13.7	68.7	47.9	32.2	37.7	8.1	77.5	16.0	28.3	41.2	84.1	1.5
2019	83.6	3.0	12.9	67.6	45.2	30.4	38.4	7.6	75.9	15.6	27.7	40.3	82.2	1.4
2020	97.3	3.2	14.2	79.9	54.6	39.1	42.7	11.3	86.0	19.1	31.5	46.7	95.6	1.7
2020 Q4	97.3	3.2	14.2	79.9	.	.	.	.	.	.	.	.	.	.
2021 Q1	100.0	3.2	14.1	82.7	.	.	.	.	.	.	.	.	.	.
Q2	98.3	3.1	13.9	81.3	.	.	.	.	.	.	.	.	.	.
Q3	97.7	3.0	13.8	80.8	.	.	.	.	.	.	.	.	.	.

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
2017	-2.5	-1.0	-0.1	0.4	0.5	0.0	-0.1	0.1	-0.2	-0.4	-1.3	1.0
2018	-2.0	-1.4	0.4	0.5	0.4	-0.1	0.0	0.2	0.1	-0.1	-1.0	0.8
2019	-2.0	-1.0	0.1	0.3	0.1	0.0	0.0	0.2	-0.2	0.0	-1.1	0.9
2020	13.8	5.7	2.3	2.5	2.0	0.4	-0.1	0.1	-0.1	-0.1	5.8	9.6
2020 Q4	13.8	5.7	2.3	2.5	2.0	0.4	-0.1	0.1	-0.1	-0.2	5.8	9.6
2021 Q1	14.2	6.8	1.9	2.2	1.6	0.5	0.0	0.2	-0.1	-0.2	5.5	10.3
Q2	3.9	5.4	-1.1	-0.4	-1.0	0.4	0.0	0.2	0.0	-0.7	-0.4	5.8
Q3	1.1	4.8	-1.0	-0.3	-0.7	0.2	0.0	0.2	0.0	-0.7	-2.8	5.3

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

1) Intergovernmental lending in the context of the financial crisis is consolidated except in quarterly data on the deficit-debt adjustment.

2) Calculated as the difference between the government debt-to-GDP ratios at the end of the reference period and a year earlier.

### 6.5 Government debt securities <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	12.5	11.0	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	14.9	13.6	4.2	1.4	0.3	7.6	1.9	1.1	-0.2	2.2	2.3	0.0	0.8
2020 Q3	15.8	14.4	4.7	1.4	0.3	7.5	1.9	1.1	-0.2	2.3	2.2	0.1	0.8
Q4	14.9	13.6	4.2	1.4	0.3	7.6	1.9	1.1	-0.2	2.2	2.3	0.0	0.8
2021 Q1	15.7	14.2	5.5	1.4	0.4	7.8	1.8	1.1	-0.2	2.1	2.1	0.0	0.5
Q2	15.5	14.1	5.2	1.4	0.3	7.9	1.7	0.5	-0.3	2.0	2.1	-0.1	0.5
2021 July	15.4	14.1	5.2	1.3	0.3	7.9	1.6	0.5	-0.3	2.0	1.9	-0.1	0.5
Aug.	15.4	14.0	5.4	1.4	0.3	7.9	1.7	1.1	-0.3	2.0	1.9	-0.1	0.5
Sep.	15.6	14.2	4.7	1.4	0.3	7.9	1.7	1.1	-0.3	2.0	1.8	-0.1	0.5
Oct.	15.4	14.1	4.3	1.4	0.3	8.0	1.6	1.1	-0.3	2.0	1.9	-0.1	0.5
Nov.	15.5	14.1	4.2	1.4	0.3	8.0	1.6	1.1	-0.3	1.9	1.9	-0.1	0.5
Dec.	15.2	13.9	4.6	1.4	0.3	7.9	1.6	1.1	-0.4	1.9	1.9	-0.1	0.5

Source: ECB.

1) At face value and not consolidated within the general government sector.

2) Excludes future payments on debt securities not yet outstanding and early redemptions.

3) Residual maturity at the end of the period.

4) Outstanding amounts at the end of the period; transactions as 12-month average.

## 6 Fiscal developments

### 6.6 Fiscal developments in euro area countries

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

	Belgium	Germany	Estonia	Ireland	Greece	Spain	France	Italy	Cyprus
	1	2	3	4	5	6	7	8	9
Government deficit (-)/surplus (+)									
2017	-0.7	1.3	-0.5	-0.3	0.6	-3.0	-3.0	-2.4	1.9
2018	-0.8	1.9	-0.6	0.1	0.9	-2.5	-2.3	-2.2	-3.5
2019	-1.9	1.5	0.1	0.5	1.1	-2.9	-3.1	-1.5	1.3
2020	-9.1	-4.3	-5.6	-4.9	-10.1	-11.0	-9.1	-9.6	-5.7
2020 Q4	-9.1	-4.3	-5.6	-4.9	-10.1	-11.0	-9.1	-9.6	-5.7
2021 Q1	-8.8	-5.7	-5.6	-5.5	-12.6	-11.6	-10.3	-10.1	-7.4
Q2	-6.3	-5.0	-4.3	-4.3	-10.9	-8.7	-8.7	-8.9	-6.2
Q3	-6.5	-4.3	-3.8	-3.3	-9.5	-8.1	-8.6	-8.0	-4.6
Government debt									
2017	102.0	64.7	9.1	67.8	179.5	98.6	98.1	134.2	92.9
2018	99.9	61.3	8.2	63.1	186.4	97.5	97.8	134.4	98.4
2019	97.7	58.9	8.6	57.2	180.7	95.5	97.5	134.3	91.1
2020	112.8	68.7	19.0	58.4	206.3	120.0	115.0	155.6	115.3
2020 Q4	112.8	68.7	19.0	58.4	206.3	120.0	115.0	155.6	115.3
2021 Q1	116.9	69.9	19.6	60.4	209.8	125.3	117.9	159.6	121.4
Q2	113.7	69.7	19.6	59.0	207.3	122.7	114.5	156.4	111.9
Q3	111.4	69.4	19.6	57.6	200.7	121.8	116.0	155.3	109.6

	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Austria	Portugal	Slovenia	Slovakia	Finland
	10	11	12	13	14	15	16	17	18	19
Government deficit (-)/surplus (+)										
2017	-0.8	0.4	1.4	3.2	1.3	-0.8	-3.0	-0.1	-1.0	-0.7
2018	-0.8	0.5	3.0	1.9	1.4	0.2	-0.3	0.7	-1.0	-0.9
2019	-0.6	0.5	2.3	0.5	1.7	0.6	0.1	0.4	-1.3	-0.9
2020	-4.5	-7.2	-3.5	-9.7	-4.2	-8.3	-5.8	-7.7	-5.5	-5.5
2020 Q4	-4.5	-7.2	-3.5	-9.7	-4.2	-8.3	-5.8	-7.7	-5.5	-5.6
2021 Q1	-6.6	-7.1	-2.5	-9.9	-5.8	-10.6	-7.1	-8.2	-6.3	-6.1
Q2	-7.1	-5.3	-0.3	-8.4	-4.2	-8.5	-5.9	-6.3	-6.1	-4.5
Q3	-5.6	-3.4	-0.2	-8.5	-3.6	-7.1	-3.9	-6.3	-5.7	-3.7
Government debt										
2017	39.0	39.1	21.8	47.7	56.9	78.5	126.1	74.2	51.6	61.2
2018	37.1	33.7	20.8	43.6	52.4	74.0	121.5	70.3	49.6	59.8
2019	36.7	35.9	22.3	40.7	48.5	70.6	116.6	65.6	48.1	59.5
2020	43.2	46.6	24.8	53.4	54.3	83.2	135.2	79.8	59.7	69.5
2020 Q4	43.2	46.6	24.8	53.3	54.3	83.2	135.2	79.8	59.7	69.6
2021 Q1	45.4	45.1	28.0	57.3	54.9	87.0	139.1	85.0	59.8	70.4
Q2	43.3	44.6	26.1	59.1	54.2	86.2	135.4	80.0	61.0	69.4
Q3	43.6	45.1	25.3	57.2	52.6	84.1	130.5	79.6	61.1	68.7

Source: Eurostat.

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