



EUROPEAN CENTRAL BANK
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Economic and monetary developments

Overview

At its monetary policy meeting on 10 September 2020, the Governing Council decided to keep its accommodative monetary policy stance unchanged.

Incoming information suggests a strong – though incomplete – rebound in activity broadly in line with previous expectations, although the level of activity remains well below the levels prevailing before the coronavirus (COVID-19) pandemic. While activity in the manufacturing sector has continued to improve, momentum in the services sector has slowed somewhat recently. The strength of the recovery remains surrounded by significant uncertainty, as it continues to be highly dependent on the future evolution of the pandemic and the success of containment policies. Euro area domestic demand has recorded a significant recovery from low levels, although elevated uncertainty about the economic outlook continues to weigh on consumer spending and business investment. Headline inflation is being dampened by low energy prices and weak price pressures in the context of subdued demand and significant labour market slack. Against this background, ample monetary stimulus remains necessary to support the economic recovery and to safeguard medium-term price stability. Therefore, the Governing Council decided to reconfirm its accommodative monetary policy stance at its meeting on 10 September 2020.

Economic and monetary assessment at the time of the Governing Council meeting of 10 September 2020

The coronavirus pandemic remains the main source of uncertainty for the global economy. After a temporary stabilisation around mid-May, which led to a gradual lifting of containment measures, the number of daily new cases started picking up again more recently which has fuelled fears of a strong resurgence in coronavirus infections. These fears have been weighing on consumer confidence. Incoming data confirm that global economic activity bottomed out in the second quarter and started to rebound in line with the gradual lifting of containment measures from mid-May onwards. The September 2020 ECB staff macroeconomic projections envisage that world real GDP (excluding the euro area) will contract by 3.7% this year and expand by 6.2% and 3.8% in 2021 and 2022, respectively. The contraction in global trade will be more severe given both its strong procyclicality, especially during economic downturns, and the peculiar nature of the coronavirus crisis, which has entailed disruptions in global production chains and increased trade costs because of the containment measures. Risks to the global outlook remain skewed to the downside given the persistent uncertainty about the evolution of the pandemic, which may leave lasting scars on the global economy. Other downside risks relate to the outcome of the Brexit negotiations, the risk of a rise in trade protectionism, and longer-term negative effects on global supply chains.

Although financial conditions in the euro area have loosened somewhat further since the Governing Council’s meeting in June 2020, they have not yet returned to the levels seen before the coronavirus pandemic.

Over the review period (from 4 June to 9 September 2020), the forward curve of the euro overnight index average (EONIA) shifted slightly downwards and, although mildly inverted at the short end, it does not signal firm expectations of an imminent rate cut. Long-term euro area sovereign bond spreads decreased over the review period amid a combination of monetary and fiscal support. Prices of risky assets increased somewhat, mainly against the backdrop of a generally more positive short-term earnings outlook. In foreign exchange markets, the euro appreciated relatively strongly in trade-weighted terms and against the US dollar.

Euro area real GDP contracted by 11.8%, quarter on quarter, in the second quarter of 2020.

Incoming data and survey results indicate a continued recovery of the euro area economy and point to a rebound in GDP in the third quarter although remaining below pre-crisis levels. Alongside a significant rebound in industrial and services production, there are signs of a clear recovery in consumption. Recently, momentum has slowed in the services sector compared with the manufacturing sector, which is also visible in survey results for August. The increases in coronavirus infection rates during the summer months constitute headwinds to the short-term outlook. Looking ahead, a further sustained recovery remains highly dependent on the evolution of the pandemic and the success of containment policies. While the uncertainty related to the evolution of the pandemic will likely dampen the strength of the recovery in the labour market and in consumption and investment, the euro area economy should be supported by favourable financing conditions, an expansionary fiscal stance and a strengthening in global activity and demand.

This assessment is broadly reflected in the September 2020 ECB staff macroeconomic projections for the euro area.

These projections foresee annual real GDP growth at -8.0% in 2020, 5.0% in 2021 and 3.2% in 2022. Compared with the June 2020 Eurosystem staff macroeconomic projections, the outlook for real GDP growth has been revised up for 2020 and is largely unchanged for 2021 and 2022. Given the exceptional uncertainty currently surrounding the outlook, the projections include two alternative scenarios, a mild one and a severe one, corresponding to different assumptions regarding the evolution of the pandemic.¹ Overall, the balance of risks to the euro area growth outlook is seen to remain on the downside. This assessment largely reflects the still uncertain economic and financial implications of the pandemic.

According to Eurostat’s flash estimate, euro area annual HICP inflation decreased to -0.2% in August, from 0.4% in July.

On the basis of current and futures prices for oil and taking into account the temporary reduction in the German VAT rate, headline inflation is likely to remain negative over the coming months before turning positive again in early 2021. Moreover, in the near term price pressures will remain subdued owing to weak demand, lower wage pressures and the appreciation of the euro exchange rate, despite some upward price pressures related to supply

¹ See the “[ECB staff macroeconomic projections for the euro area, September 2020](#)” published on the ECB’s website on 10 September 2020.

constraints. Over the medium term, a recovery in demand, supported by accommodative monetary and fiscal policies, will put upward pressure on inflation. Market-based indicators of longer-term inflation expectations have returned to their pre-pandemic levels, but still remain very subdued, while survey-based measures remain at low levels.

This assessment is broadly reflected in the September 2020 ECB staff macroeconomic projections for the euro area, which foresee annual inflation at 0.3% in 2020, 1.0% in 2021 and 1.3% in 2022. Compared with the June 2020 Eurosystem staff macroeconomic projections, the outlook for inflation is unchanged for 2020, has been revised up for 2021, and is unchanged for 2022. The unchanged projection for inflation in 2022 masks an upward revision to inflation excluding energy and food – in part reflecting the positive impact of the monetary and fiscal policy measures – which was largely offset by the revised path of energy prices. Annual HICP inflation excluding energy and food is expected to be 0.8% in 2020, 0.9% in 2021 and 1.1% in 2022.

The coronavirus pandemic has continued to influence significantly monetary dynamics in the euro area. Broad money (M3) growth continued to rise, reaching 10.2% in July 2020, after 9.2% in June. The strong money growth reflects domestic credit creation, the ongoing asset purchases by the Eurosystem and precautionary considerations which foster a heightened preference for liquidity in the money-holding sector. The narrow monetary aggregate M1, encompassing the most liquid forms of money, continues to be the main contributor to broad money growth. Developments in loans to the private sector continued to be shaped by the impact of the coronavirus on economic activity. The annual growth rate of loans to non-financial corporations remained broadly stable in July, standing at 7.0%, compared with 7.1% in June. These high rates reflect firms' elevated liquidity needs to finance their ongoing expenditures and working capital and to further build liquidity buffers, although the rebound in economic activity has resulted in some recovery in their revenues. The annual growth rate of loans to households also remained stable at 3.0% in July. The Governing Council's policy measures, together with the measures adopted by national governments and European institutions, will continue to support access to financing, including for those most affected by the ramifications of the pandemic.

The coronavirus pandemic continues to have an extraordinarily large impact on public finances in the euro area. The fiscal cost of containment measures has been very substantial for all euro area countries, although both the burden and the capacity to respond vary across countries. As a result of the economic downturn and the substantial fiscal support, the general government budget deficit in the euro area is projected to increase significantly to 8.8% of GDP in 2020, compared with 0.6% in 2019. The deficit ratio is expected to decline to 4.9% and 3.6% of GDP in 2021 and 2022, respectively. The extensive fiscal measures in 2020 have led to a corresponding worsening of the cyclically adjusted primary balance, in addition to a negative cyclical component reflecting the deterioration in the macroeconomic situation. The subsequent improvement is expected to be led by the phasing-out of the emergency measures and a better cyclical situation. An ambitious and coordinated fiscal stance remains critical, in view of the sharp contraction in the euro area economy, although

measures should be targeted and temporary. In this respect, both the €540 billion package of three safety nets endorsed by the European Council and the European Commission's Next Generation EU package of €750 billion, which has the potential to significantly support the regions and sectors hardest hit by the pandemic, are strongly welcomed.

The monetary policy package

To sum up, a cross-check of the outcome of the economic analysis with the signals coming from the monetary analysis confirmed that an ample degree of monetary accommodation is necessary for the robust convergence of inflation to levels that are below, but close to, 2% over the medium term. Against this background, on 10 September 2020, the Governing Council reconfirmed the set of accommodative monetary policy measures in place.

1. The Governing Council decided to keep the key ECB interest rates unchanged. These are expected to remain at their present or lower levels until the inflation outlook robustly converges to a level sufficiently close to, but below, 2% within the projection horizon, and such convergence has been consistently reflected in underlying inflation dynamics.
2. The Governing Council decided to continue its purchases under the pandemic emergency purchase programme (PEPP) with a total envelope of €1,350 billion. These purchases contribute to easing the overall monetary policy stance, thereby helping to offset the downward impact of the pandemic on the projected path of inflation. The purchases will continue to be conducted in a flexible manner over time, across asset classes and among jurisdictions. This allows the Governing Council to effectively stave off risks to the smooth transmission of monetary policy. Net asset purchases will be conducted under the PEPP until at least the end of June 2021 and, in any case, until the Governing Council judges that the coronavirus crisis phase is over. In addition, reinvestments of the principal payments from maturing securities purchased under the PEPP will be conducted until at least the end of 2022. In any case, the future roll-off of the PEPP portfolio will be managed to avoid interference with the appropriate monetary policy stance.
3. Net purchases under the asset purchase programme (APP) will continue at a monthly pace of €20 billion, together with the purchases under the additional €120 billion temporary envelope until the end of the year. The Governing Council continues to expect monthly net asset purchases under the APP to run for as long as necessary to reinforce the accommodative impact of the ECB's policy rates, and to end shortly before the Governing Council starts raising the key ECB interest rates. In addition, the Governing Council 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.

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

The monetary policy measures that the Governing Council has taken since early March are providing crucial support to underpin the recovery of the euro area economy and to safeguard medium-term price stability. In particular, they support liquidity and funding conditions in the economy, help to sustain the flow of credit to households and firms, and contribute to maintaining favourable financing conditions for all sectors and jurisdictions. At the same time, in the current environment of elevated uncertainty, the Governing Council will carefully assess incoming information, including developments in the exchange rate, with regard to its implications for the medium-term inflation outlook. The Governing Council continues to stand ready to adjust all of its instruments, as appropriate, to ensure that inflation moves towards its aim in a sustained manner, in line with its commitment to symmetry.

1 External environment

The coronavirus (COVID-19) pandemic remains the major source of uncertainty for the global economy. Around mid-May the number of new cases stabilised temporarily, which led to a gradual lifting of containment measures. However, thereafter the numbers picked up again – especially in the United States, as well as in Brazil and other emerging market economies – until new infections globally started to plateau in early August. But the infection rate remains high and numbers of new cases are rising in Europe and some other regions, fuelling fears of a strong resurgence in coronavirus infections. These fears have been weighing negatively on consumer confidence. Incoming data confirm that global economic activity bottomed out in the second quarter and started to rebound in line with the gradual lifting of containment measures from mid-May onwards. The September 2020 ECB staff macroeconomic projections envisage that world real GDP (excluding the euro area) will contract by 3.7% this year and expand by 6.2% and 3.8% in 2021 and 2022, respectively. The contraction in global trade will be more severe than the fall in real GDP given both its more pronounced procyclicality, especially during economic downturns, and also the distinctive nature of the COVID-19 crisis, which has entailed disruptions in global production chains and increased trade costs because of the containment measures. Risks to the global outlook remain skewed to the downside given the persistent uncertainty about the evolution of the pandemic, which may leave lasting scars on the global economy. Other downside risks relate to the outcome of the Brexit negotiations, the risk of a rise in trade protectionism, and, relatedly, longer-term negative effects on global supply chains.

Global economic activity and trade

The global economy entered a deep, synchronised recession in the first half of 2020 as a result of the COVID-19 pandemic. The outbreak and the containment measures adopted to limit the spread of the virus weighed on economic activity causing an unprecedented and synchronised fall in global output, which reached its trough in April 2020. Global uncertainty soared to levels not seen since the global financial crisis. Incoming national accounts data for the second quarter confirm a sharp contraction in economic activity. The fall in global trade was even sharper, although less pronounced than envisaged in the June 2020 Eurosystem staff macroeconomic projections. This suggests a lower global trade elasticity than previously assumed. At the same time, China was able to start lifting containment measures around late March and see its economy return to positive growth rates already in the second quarter.

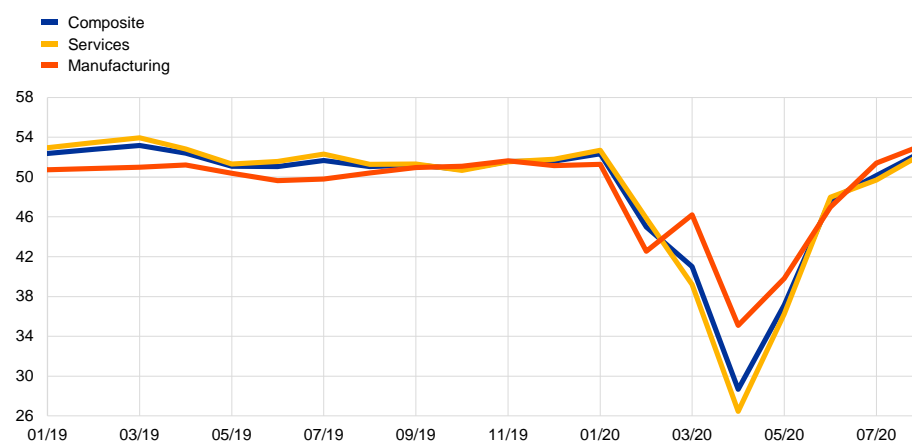
Once the spread of COVID-19 started to abate and containment measures started to be lifted, the global economy began to recover, as confirmed by survey data. With restrictions having been eased and production having started to normalise, global economic activity and trade are expected to rebound from the low levels of the second quarter. Global composite output Purchasing Managers Indices (PMIs; excluding the euro area) have been improving steadily since reaching the trough in April (see Chart 1). In August, the global composite output PMI (excluding

the euro area) rose for a fourth consecutive month, up to 52.6 from 50 in July and from a low of 28.6 in April. The rebound is broad-based across both the manufacturing and service sectors. The recovery, however, appears uneven across countries. Among advanced economies, the composite output PMI continued growing in the United States and the United Kingdom, while it remained in contractionary territory in Japan. Among emerging economies, the composite output PMI increased further in China, Russia and Brazil but continued to show a contraction in India.

Chart 1

Global composite output PMI and sub-indices (excluding the euro area)

(diffusion indices)



Sources: Markit and ECB calculations.
Notes: The latest observations are for August 2020.

Global financial conditions have eased significantly in recent months. During the summer, the recovery in financial markets that had started in late March continued, with seemingly undiminished momentum across major advanced market economies and some emerging ones. Equity markets rallied to new record levels in the United States and multi-year highs in China, and continued to quickly recover the bulk of their losses elsewhere. Other risky market segments, including corporate bonds, also benefited from the bullish market sentiment. With risk-free sovereign yields broadly unchanged at or close to historically low levels, indices of financial conditions reached an all-time high in advanced economies, and were not far off record levels in emerging market economies. The ongoing rally in risky assets was driven by a string of positive macroeconomic data surprises and a further rise in risk appetite, partly reflecting increasing optimism about the early delivery of a vaccine. However, financial markets remain in alert mode as the outlook hinges on the uncertain path of the pandemic. Volatility remains well above historical averages and market perceptions of risk remain skewed to the downside.

Global real GDP (excluding the euro area) will decline by 3.7% this year.

According to the September 2020 ECB staff macroeconomic projections, global real GDP growth (excluding the euro area) is assumed to edge into positive territory in the second half of 2020, as containment measures continue to be lifted gradually. However, the rebound is limited, as it is assumed that uncertainty about the evolution of the pandemic weighs on firms' and consumers' sentiment, some forms of social

distancing remain in place and an effective medical solution only becomes available by mid-2021. The projection baseline is therefore compatible with infections continuing in some countries, while it is assumed that renewed outbreaks are dealt with by means of targeted containment measures which are assumed to be less disruptive of economic activity than earlier lockdowns.

The lingering uncertainty about the evolution of the pandemic delivers an incomplete economic recovery by the end of the projection horizon. The COVID-19 crisis has been a triple shock for the global economy². Unlike past crises, it hit private consumption particularly hard in the first half of 2020. Looking ahead, while the negative effects of containment measures will likely dissipate and global production will gradually recover, continued uncertainty about the health and economic outlook will continue to weigh on consumption, thus holding back a more vigorous recovery in economic activity. Compared to the June 2020 Eurosystem staff macroeconomic projections, the trajectory for the level of economic activity is broadly unchanged, remaining below the pre-COVID-19 baseline projection throughout the forecast horizon. Therefore, world real GDP growth (excluding the euro area) is projected to grow at 6.2% in 2021 and 3.8% in 2022.

In the United States, economic activity is recovering in the third quarter on the back of income support measures. Real GDP contracted by 31.7% annualised (-9.1% quarter on quarter) in the second quarter, according to the second estimate. This contraction was slightly smaller than reported in the advance estimate (-9.5% quarter on quarter), reflecting upward revisions to private inventory investment and personal consumption expenditures. Recent data releases for the United States have been positive overall. After large increases in May and June, sales of retail goods and food services rose by a modest 1.2% in July, but still exceeded pre-pandemic levels. Total personal consumption expenditure, however, remains far below its pre-pandemic level, as spending on other services has fallen. Household spending had been supported by increased unemployment benefits and one-off direct income support. These payments largely expired in August, leading to a sizeable drop in income which could further undermine consumption. As lockdown measures were eased around May, workers started to return to their jobs, reversing more than half of the temporary lay-offs reported in April. However, the pace of employment creation slowed in July compared to May and June and the unemployment rate still remains at historically high levels. Annual headline consumer price index (CPI) inflation increased to 1.0% in July from 0.6% in June. Core inflation rose strongly to 1.6% in July from 1.2% in June, driven by rising prices for shelter and medical services. Various inflation expectations indicators have picked up recently, approaching their long-term averages again. Nonetheless, the outlook for inflation remains very subdued as the economy continues to operate below potential.

In China, the economy is recovering strongly but retail sales remain weak. China's GDP increased in the second quarter by 11.5% quarter on quarter, returning to above its level at the end of 2019. Investment was the largest driver of growth,

² The initial supply shock, induced by the introduction of lockdown measures in most parts of the world, was simultaneously compounded by a demand shock, due chiefly to rising unemployment. An uncertainty shock followed as the world economy came to an unprecedented sudden stop, the consequences of which remain as yet largely unknown.

together with net exports, while consumption remained a drag on growth. Incoming data suggest that most of the Chinese economy has rebounded to pre-COVID-19 levels, but retail sales remain weak. While industrial production has recovered robustly (+4.9% year on year in July) retail sales continue to decline (-2.6% year on year in July) presumably due to subdued household employment expectations. Fiscal policy remains supportive of economic activity, as expanded unemployment insurance, higher investments and tax relief measures are aimed at stabilising employment and economic growth. Monetary policy is also supportive, though given the rebounding economy the authorities are mindful that further credit growth could pose risks to financial stability.

In Japan, economic activity is recovering in the third quarter but private consumption remains weak. Real GDP declined by 7.9% quarter on quarter in the second quarter, according to the second estimate, and is slightly revised downward compared to the first estimate (-7.8% quarter on quarter). A nationwide state of emergency in April and May dampened activity, with double-digit contractions in private consumption of services and in exports accounting for the bulk of the decline in activity. The former reflects the impact of the domestic lockdown, while the latter reflects a slump in external demand. Recovery in foreign demand has contributed to a significant rebound in industrial production in July. But the pace of economic recovery remains subdued as indicated by the composite output PMI which, while increasing for the fourth consecutive month in August to 45.2, still remains in contractionary territory (i.e. below the 50 threshold). Private consumption of services remains weak. The consumption activity index published by the Bank of Japan indicates that consumption of durable and non-durable goods increased in June, pointing to pent-up demand playing an important role in the first full month after the lockdown, but it weakened again in July. Consumption of services, which accounts for 51% of household consumption, remained almost 20% below its first-quarter level in June. Although improved mobility trends for visits to restaurants, shopping centres and theme parks may suggest an ongoing recovery, consumption of services has remained broadly unchanged in July as compared with June. This, together with signals that the improvement in consumer sentiment stalled in August, points to a very gradual recovery in consumption, partly related to the resurgence of new COVID-19 infections during the months of July and August.

In the United Kingdom, after an unprecedented decline in the second quarter, the recovery in economic activity looks timid and incomplete. Real GDP declined by 20.4% quarter on quarter in the second quarter, reflecting a broad-based contraction in all expenditure components and especially domestic demand. A double-digit contraction in private consumption has been reflected in a sharp increase in the saving ratio. Business investment fell by almost a third in the second quarter in an environment of extreme uncertainty. While the composite output PMI points to a rebound in activity in the third quarter, the outlook seems rather uncertain as broader survey data suggest continued weakness in business confidence, together with growing fears of unemployment and concerns about future economic prospects. Government support for the widely used furlough scheme has been extended as of 1 August until October, but the amount of support is lower and a discontinuation of the scheme is planned thereafter. The CPI and core inflation each rose by 0.4 percentage

points in July, to 1.0% and 1.4%, respectively. The increase in prices was broad-based across items and partly related to the additional costs for “COVID-proofing” as reported by the Office for National Statistics (i.e. widespread cost increases for firms across the private sector linked to social distancing).

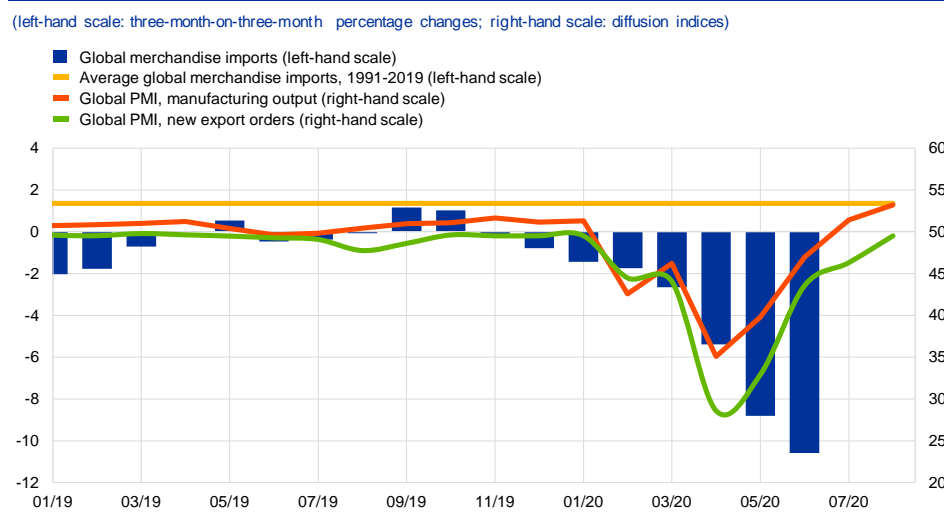
In central and eastern European countries, economic activity is expected to gradually recover, reflecting the lifting of containment measures. Real GDP in these countries contracted substantially in the first half of 2020 because of the measures adopted to limit the spread of COVID-19. With these measures gradually being relaxed and production normalising, activity is expected to bounce back and gradually recover as of the third quarter, supported by robust fiscal and monetary measures. Looking ahead, activity is expected to remain below its pre-2019 levels until the end of 2021.

In large commodity-exporting countries the outlook for economic activity remains uncertain given the still high number of infections. In Russia, real GDP in the second quarter was hit by a combination of the COVID-19 pandemic, the restrictions adopted to control domestic infections – which dampened private consumption and investment – and global oil market gyrations weakening the energy sector. Against this backdrop, fiscal and monetary policy support have been gradually increased. Economic activity is projected to start recovering in the third quarter, but the outlook remains subject to considerable uncertainty. Not only is the number of new COVID-19 cases still high, investment prospects are also subdued, given the oil production cuts maintained by OPEC+ as well as lower commodity prices. In Brazil, the contraction in real GDP in the second quarter (-9.7% quarter on quarter) was broad-based across all items, with the exception of exports of goods and services, which expanded by around 1.8% quarter on quarter. The COVID-19 crisis struck just as economic sentiment had started to brighten following a period of subdued growth. As Brazil is now one of the countries worst affected by the pandemic, the recovery in the second half of the year is likely to be shallow. Given limited fiscal space, the amount of fiscal support has been modest and this support is expected to cease in October. Monetary policy is also supportive and interest rates have reached the historical low of 2%.

In Turkey, economic activity was left relatively unscathed by the pandemic in the first quarter of 2020, though it contracted in the second quarter. Activity remained robust until late March when the COVID-19 outbreak arrived in the country. In the second quarter real GDP growth contracted by 11% quarter on quarter, mostly on account of the services sector and to a lesser extent industrial activity. Following the gradual easing of containment measures starting in mid-May, the economy started to partially recover, driven by the manufacturing sector. However, as the services sector remains subdued, especially due to the poor performance of the tourism sector, it will continue to be a drag on growth in the third quarter. In response to the crisis, the authorities have stepped up fiscal and monetary policy stimulus to stabilise the economy, but the weak external demand continues to weigh on the short-term outlook. Pressure on the Turkish lira has intensified recently, triggered by concerns about the decline in foreign exchange reserves and the national authorities’ ability to continue defending the currency.

Global trade is expected to record a double-digit contraction in 2020. The sharp fall in global imports (excluding the euro area) in 2020 reflects both the strong procyclicality of trade, especially during economic downturns, and also the distinctive nature of the COVID-19 crisis. The fall in global demand, coupled with disruptions in global production chains and increased trade costs arising from the COVID-19-related containment measures have taken a toll on global trade. In the second quarter world merchandise imports (excluding the euro area) contracted by 10.5% quarter on quarter, though the downward momentum subsided somewhat in May, and a stronger rebound was recorded in June (+6.3% month on month). Survey data also point to a rebound in trade as the manufacturing PMI for new export orders rose in August for a fourth consecutive month, from 46.1 in June to 49.5 in August, and from a low of 27 in April (see Chart 2). Looking ahead, while global trade is expected to bounce back along with the gradual lifting of containment measures, some scarring effects may materialise. In the near term, as governments decide to keep selective travel restrictions in place, at least until a medical solution is found, this may further dampen trade by raising trade costs. Finally, as the COVID-19 pandemic has exposed the dependence of several countries on external suppliers, this may result in new policies. Such policies might aim either to diversify global suppliers, so as to avoid mono-dependence, or to reshore production, thus negatively affecting complex global value chains. According to the September 2020 ECB staff macroeconomic projections, global trade is projected to contract by 11.2% in 2020 and then expand by 6.8% and 4% in 2021 and 2022 respectively. Euro area foreign demand is projected to decline by 12.5% in 2020 and to grow by 6.9% in 2021 and 3.7% in 2022.

Chart 2
Surveys and global trade in goods (excluding the euro area)



Sources: Markit, CPB Netherlands Bureau for Economic Policy Analysis and ECB calculations.
Notes: The latest observations are for August 2020 for the PMI data and June 2020 for global merchandise imports. The indices and data refer to the global aggregate excluding the euro area.

Uncertainty about the future evolution of the pandemic will continue to shape global economic prospects. Fears about a possible re-intensification of the pandemic, and the possible introduction of stricter containment measures, are weighing on firms' investment and hiring decisions. This in turn is affecting consumer confidence and implies only a rather timid rebound in consumption. The more

protracted such a situation is, the deeper the long-term scars the economy is likely to be left with. To illustrate the range of possible impacts of the COVID-19 pandemic on the global economy, in the September 2020 ECB staff macroeconomic projections the baseline is complemented by two alternative scenarios³ – the mild and severe scenarios. These scenarios can be seen as providing an illustrative range around the baseline projection. The pandemic-related risks, in addition to other downside risks linked to the Brexit negotiations and a possible rise in trade protectionism, remain relevant. However, these other risks are themselves also probably conditional, to a degree, on the future course of the COVID-19 pandemic and the policy measures taken.

Global price developments

Oil prices have recovered amid the rebound in economic activity and falling oil supply due to production cuts agreed in early May. After having plunged below USD 20 per barrel in April, Brent crude oil prices had increased to around USD 45 per barrel as at the cut-off date for the September ECB staff macroeconomic projections. However, the simultaneous decline in the USD nominal effective exchange rate implies that, in many economies, the increase in oil prices was less pronounced in domestic currency terms. The partial recovery in oil prices appears to be driven by stronger than expected demand for oil because of the easing of lockdown measures, although overall, oil demand is still expected to remain subdued and below its 2019 levels throughout 2020 and 2021. On the supply side, in early May OPEC+ agreed on cutting production by almost ten thousand barrels per day, which, together with significant shut-ins of oil production in the United States and Canada, supported oil prices. The recovery in oil prices slowed down in August, after voluntary production cuts by Saudi Arabia expired and global oil demand stalled. Compared with the June 2020 Eurosystem staff macroeconomic projections, the crude oil price assumptions in the September 2020 ECB staff macroeconomic projections have been revised upward by 18.8%, 27.8% and 20.8% in 2020, 2021 and 2022, respectively. Since the cut-off date for the September staff projections, the price of crude oil has decreased, with Brent crude standing at around USD 40 per barrel on 9 September. Looking ahead, even though the oil price futures curve is only slightly upward sloping, crude oil prices are likely to remain volatile. This is a reflection of the fact that the economic outlook remains highly uncertain and storage capacity utilisation is exceptionally high.

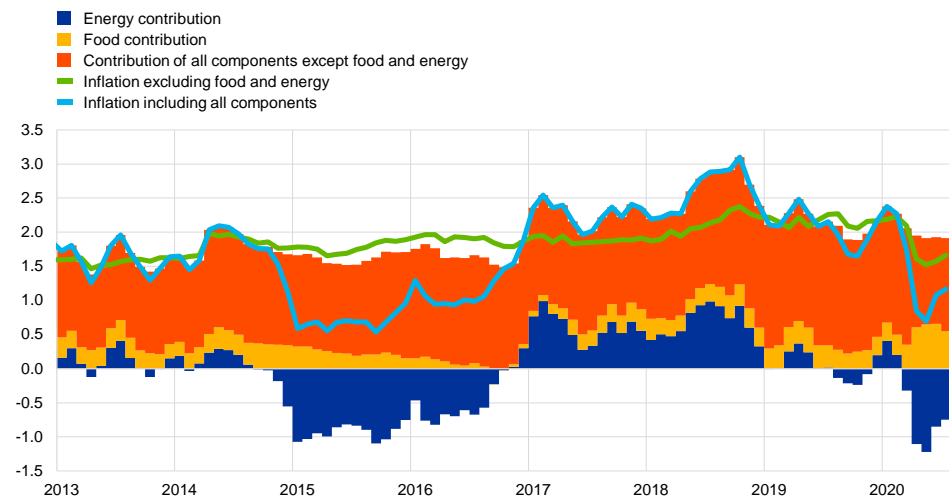
Global inflation remains subdued even though the drag from energy prices has lessened recently. Annual consumer price inflation in the OECD has increased gradually from 0.7% in May to 1.2% in July (see Chart 3). The downward drag from annual energy price inflation has lessened in recent months. Energy prices declined by 8.4%, which was less than in June (-9.5%). At the same time, food price inflation decreased to 3.8% in July compared to June's reading of 4.6%. Annual OECD CPI inflation, excluding food and energy, ticked up slightly to 1.7% in July. Across advanced economies, annual headline consumer price inflation increased in the

³ For further details, see the box entitled "[Alternative scenarios for the euro area economic outlook](#)" in the ECB staff macroeconomic projections for the euro area, September 2020.

United States, the United Kingdom and Japan while it decreased to 0.1% in Canada in July (compared with 0.7% in June). Annual headline inflation rose moderately in all major non-OECD emerging market economies in July.

Chart 3
OECD consumer price inflation

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



Sources: OECD and ECB calculations.
Note: The latest observations are for July 2020.

Global inflation is expected to remain relatively weak amid low oil prices and weak demand. Weak demand, a sharp deterioration in labour markets and greater slack are likely to dampen underlying inflation pressures globally. Lower oil prices explain much of the downward revision to euro area competitors' export prices (in national currency) in 2020. As the price of crude oil is expected to gradually increase over the projection horizon, this impact will dissipate and euro area competitors' export prices are projected to return to their long-term averages towards the end of 2021.

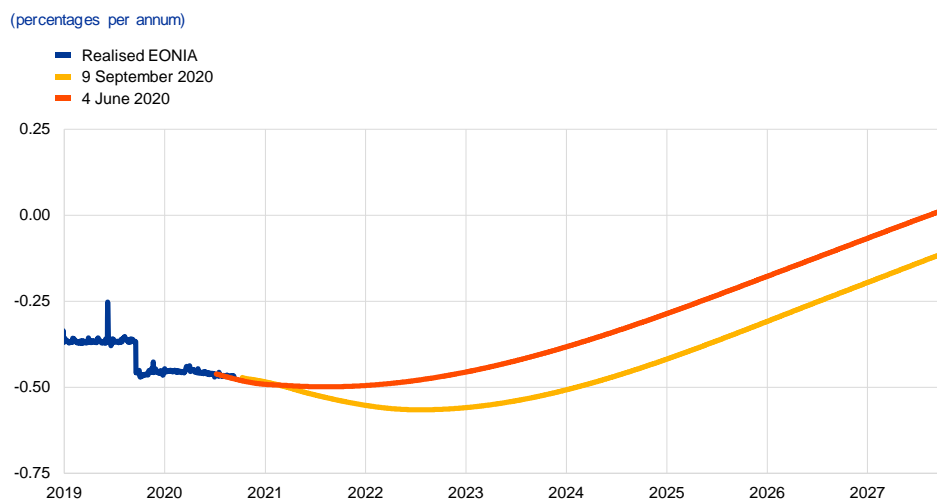
2 Financial developments

Over the review period (4 June 2020 to 9 September 2020) the forward curve of the euro overnight index average (EONIA) shifted downwards. Although mildly inverted at the short end, the curve does not signal firm expectations of a rate cut in the very near term. In a continuation of developments over the summer, long-term euro area sovereign bond spreads decreased over the review period amid a combination of monetary and fiscal support. Prices of risk assets increased somewhat, mainly against the backdrop of a generally more positive short-term earnings outlook. In foreign exchange markets, the euro appreciated strongly in trade-weighted terms.

The EONIA and the new benchmark euro short-term rate (€STR) averaged -46 and -55 basis points, respectively, over the review period.⁴ Excess liquidity increased by €807 billion to around €2,982 billion. This change mainly reflects the take-up of targeted longer-term refinancing operations (TLTRO III), as well as the pandemic emergency purchase programme (PEPP), and the asset purchase programme (APP).⁵

The EONIA forward curve shifted downwards over the review period, especially at medium and long-term horizons, and the curve has become mildly inverted (see Chart 4). Despite the inversion, the curve does not suggest firm market expectations of an imminent rate cut. Overall, EONIA forward rates remain below zero for horizons up to 2028, reflecting continued market expectations of a prolonged period of negative interest rates.

Chart 4
EONIA forward rates



Sources: Refinitiv and ECB calculations.

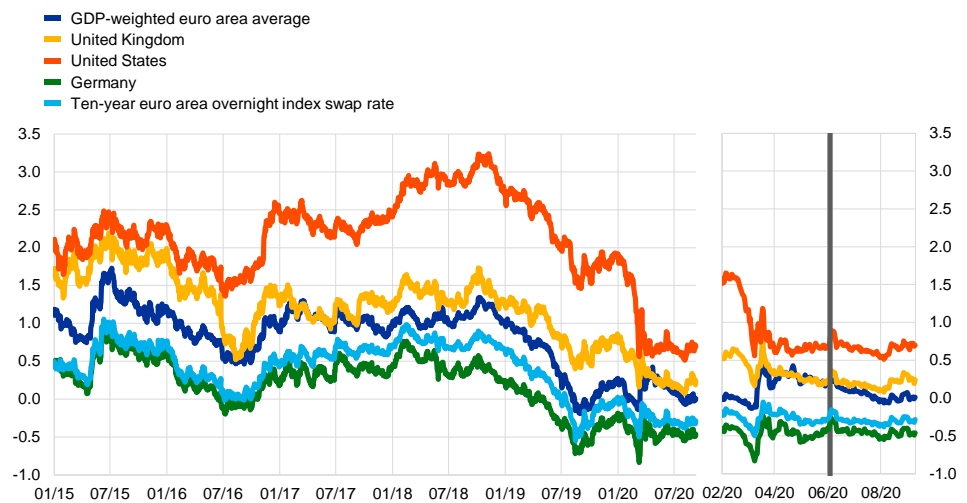
⁴ The methodology for calculating the EONIA changed on 2 October 2019; it is now the €STR plus a fixed spread of 8.5 basis points. See the box entitled “[Goodbye EONIA, welcome €STR!](#)”, *Economic Bulletin*, Issue 7, ECB, 2019.

⁵ For the period until 5 May 2020, see the box entitled “[Liquidity conditions and monetary policy operations in the period from 29 January to 5 May 2020](#)”, *Economic Bulletin*, Issue 4, ECB, 2020.

Long-term sovereign bond yields decreased across major jurisdictions in the period under review (see Chart 5). The GDP-weighted euro area ten-year sovereign bond yield declined by 23 basis points to 0.01%, owing to a combination of slightly lower risk-free rates and tightening sovereign spreads (see Chart 6). Ten-year sovereign bond yields in the United States and the United Kingdom decreased by 5 and 4 basis points respectively, bringing both close to historical lows.

Chart 5
Ten-year sovereign bond yields

(percentages per annum)



Sources: Refinitiv and ECB calculations.

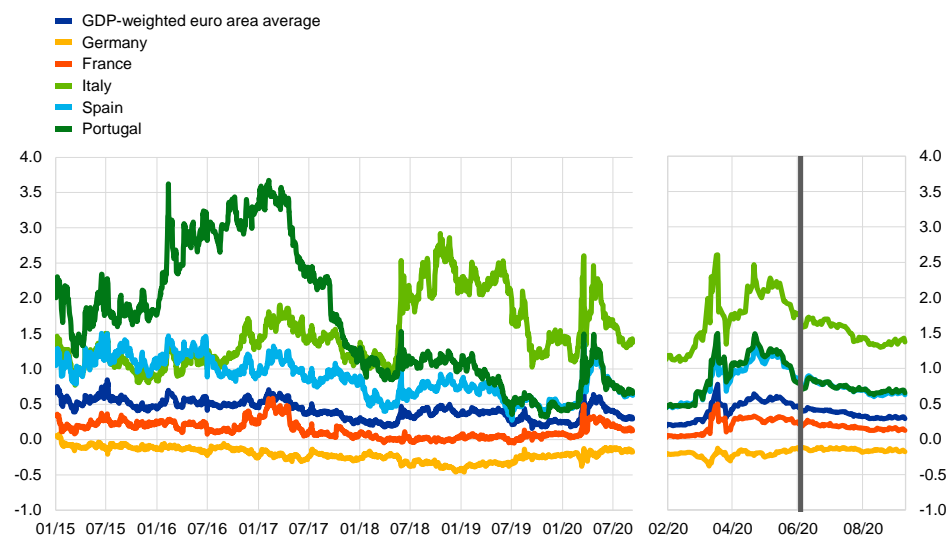
Notes: The vertical grey line denotes the start of the review period on 4 June 2020. The latest observations are for 9 September 2020.

The spreads of euro area sovereign bonds relative to overnight index swap rates narrowed further amid monetary and fiscal support (see Chart 6). A combination of monetary and fiscal policy measures put in place to support the economy (including the Next Generation EU instrument) helped sovereign spreads to decline further throughout the review period. The ten-year German, French, Italian, Spanish and Portuguese sovereign spreads decreased by 6, 12, 41, 22 and 17 basis points to reach -0.18, 0.12, 1.37, 0.63 and 0.65 percentage points respectively. Consequently, the GDP-weighted euro area ten-year sovereign spread decreased by 17 basis points to reach 0.29 percentage points, thereby standing only slightly above its level at the beginning of the year.

Chart 6

Ten-year euro area sovereign bond spreads vis-à-vis the overnight index swap rate

(percentage points)



Sources: Refinitiv and ECB calculations.

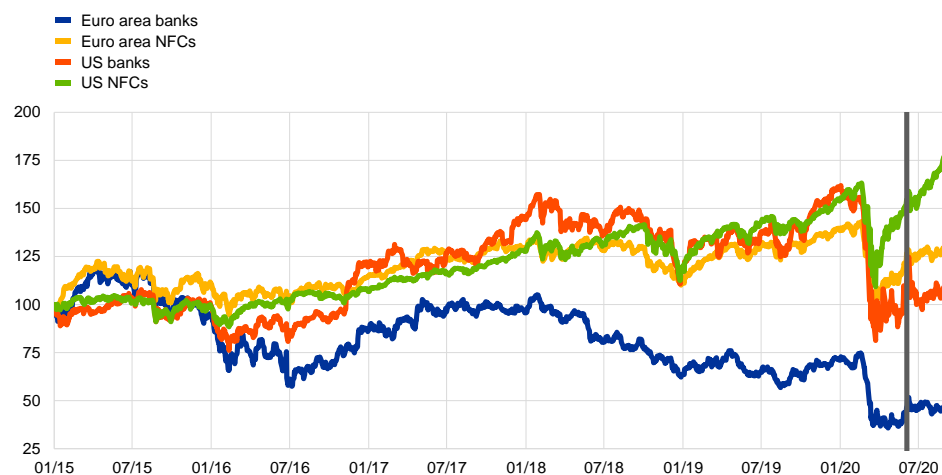
Notes: The spread is calculated by subtracting the ten-year overnight index swap rate from the ten-year sovereign bond yield. The vertical grey line denotes the start of the review period on 4 June 2020. The latest observations are for 9 September 2020.

Equity price indices for euro area and US non-financial corporations (NFCs) increased as the short-term earnings outlook improved significantly (see Chart 7). With the increased optimism on the economic outlook, the earnings expectations of euro area firms have improved markedly from extremely low levels, and earnings are consequently expected to grow throughout the remainder of the year. This had a positive influence on the equity prices of euro area NFCs in the review period, which increased by around 2%. An even stronger increase of around 10% was visible in the United States, where NFC prices are close to record highs. By contrast, bank equity prices in the euro area and the United States decreased by 2% and 5% respectively, as the still uncertain outlook and potential for rising corporate defaults continued to weigh on the sector's profit expectations.

Chart 7

Euro area and US equity price indices

(index: 1 January 2015 = 100)



Sources: Refinitiv and ECB calculations.

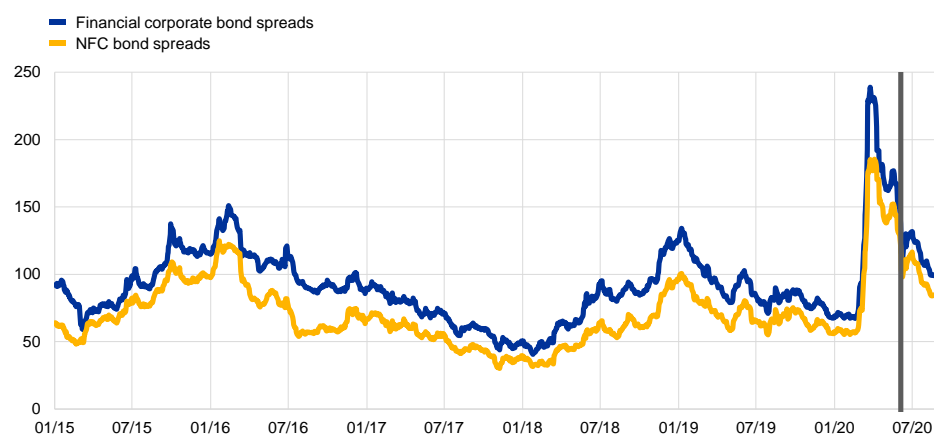
Notes: The vertical grey line denotes the start of the review period on 4 June 2020. The latest observations are for 9 September 2020.

Euro area corporate bond spreads continued to narrow (see Chart 8). Spreads on investment-grade NFC bonds and financial sector bonds (relative to the risk-free rate) decreased by 38 and 37 basis points respectively. Overall, the decrease largely reflects a decline in the excess bond premium, i.e. the component of corporate bond spreads that is not explained by credit fundamentals (as measured by ratings and expected default frequencies), which have remained largely stable. Despite the significant compression since March, corporate bond spreads remain somewhat above levels prior to the coronavirus (COVID-19) pandemic, which may reflect market expectations of a rise in corporate defaults over the next few quarters.

Chart 8

Euro area corporate bond spreads

(basis points)



Sources: Markit iBoxx indices and ECB calculations.

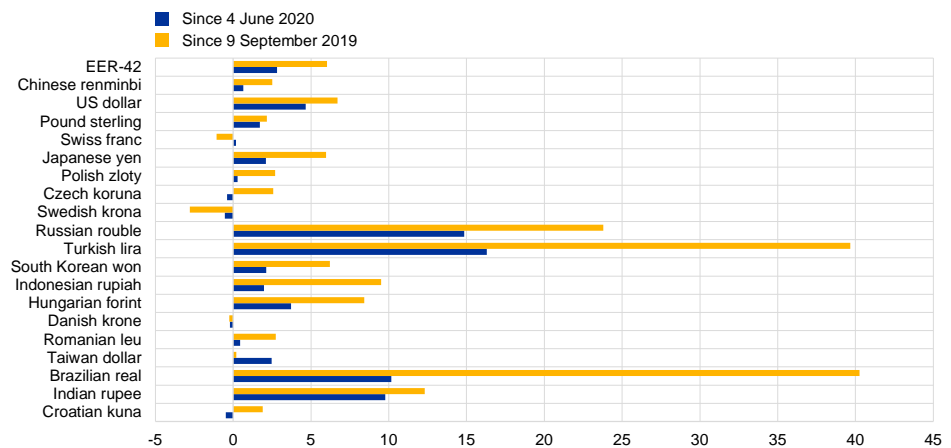
Notes: Spreads are calculated as asset swap spreads to the risk-free rate. The indices comprise bonds of different maturities (but at least one year remaining) with an investment-grade rating. The vertical grey line denotes the start of the review period on 4 June 2020. The latest observations are for 9 September 2020.

In foreign exchange markets, the euro appreciated strongly in trade-weighted terms (see Chart 9). The nominal effective exchange rate of the euro, as measured against the currencies of 42 of the euro area's most important trading partners, appreciated by 2.8% over the review period. Regarding bilateral exchange rate developments, the effective appreciation of the euro was very broad-based across the currencies of almost all major trading partners of the euro area. In particular, the euro appreciated strongly against the US dollar (by 4.6%) reflecting a broader weakening of the US dollar amid improving risk sentiment in the context of the ongoing global recovery. The euro also strengthened against the Japanese yen (by 2.1%), the pound Sterling (by 1.7%) and the Chinese renminbi (by 0.6%) and appreciated strongly against the currencies of most major emerging market economies, in particular the Russian rouble, the Turkish lira and the Brazilian real. Regarding the currencies of non-euro area EU Member States, the euro appreciated against the Hungarian forint, whereas it weakened against most others as these recovered some of the losses recorded during the intensification of the coronavirus pandemic in March and April this year.

Chart 9

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

(percentage changes)



Source: ECB.

Notes: EER-42 is the nominal effective exchange rate of the euro against the currencies of 42 of the euro area's most important trading partners. A positive (negative) change corresponds to an appreciation (depreciation) of the euro. All changes have been calculated using the foreign exchange rates prevailing on 9 September 2020.

3 Economic activity

Euro area real GDP dropped by 11.8% quarter on quarter in the second quarter of 2020 due to the coronavirus (COVID-19) pandemic that hit the global economy. While this sharp contraction was essentially driven by the collapse in activity observed in March and April, incoming data since May have signalled that the economy is recovering. Both hard data and surveys are consistent with a significant rebound in GDP growth in the third quarter. Alongside the rebound in industrial and services production, there are signs of a recovery in consumption in line with expectations. Recently, momentum has slowed in the services sector compared with the manufacturing sector, which is also visible in survey results for August. The increases in coronavirus infection rates during the summer months constitute headwinds to the short-term outlook. Looking ahead, a further sustained recovery remains highly dependent on the evolution of the pandemic and the success of containment policies. While the uncertainty related to the evolution of the pandemic will likely dampen the strength of the recovery in the labour market and in consumption and investment, the euro area economy should be supported by favourable financing conditions, an expansionary fiscal stance and a strengthening in global activity and demand. This assessment is broadly reflected in the September 2020 ECB staff macroeconomic projections for the euro area. These projections foresee annual real GDP declining by 8.0% in 2020, before increasing by 5.0% in 2021 and 3.2% in 2022. Compared with the June 2020 Eurosystem staff macroeconomic projections, the outlook for real GDP growth has been revised up by 0.7 percentage points for 2020, and revised down by 0.2 and 0.1 percentage points for 2021 and 2022, respectively.

Economic activity in the euro area experienced an unprecedented fall in the second quarter of 2020 due to the COVID-19 pandemic and the related containment measures.

Real GDP fell by 11.8% quarter on quarter in the second quarter of 2020 against the backdrop of lockdown measures at their strictest in April before being eased gradually over the following months. Compared with the fourth quarter of 2019, real GDP thus decreased by 15.1% overall in the first half of 2020, bringing it back to levels last seen in the first quarter of 2005.

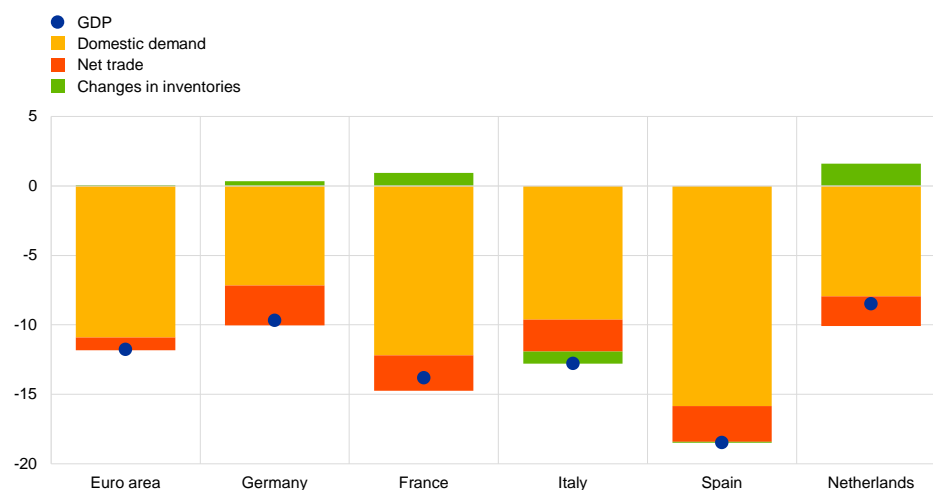
The contraction caused by the pandemic was spread broadly across countries and sectors. GDP declined in all euro area countries in the second quarter of 2020, with the size of the fall reflecting the impact of the pandemic and the timing and stringency of lockdown measures in each country. Among the larger euro area economies, GDP declined by 18.5% in Spain, 13.8% in France, 12.4% in Italy, 9.7% in Germany and 8.5% in the Netherlands quarter on quarter.

The COVID-19 pandemic has led to an unprecedented drop in domestic demand and services activity. As the expenditure-side breakdown of GDP (Chart 10) suggests, the fall in activity in the second quarter of 2020 was driven by a strong decline in domestic demand (-10.9%). Unlike during past recessions (such as the global financial crisis of 2007-08), it is activity in the services sector that has been hit hardest, due to the nature of social distancing measures. Net exports also contributed negatively to growth, albeit to a much lesser extent (-0.9%). Finally, the contribution from changes in inventories was marginally positive (+0.1%).

Chart 10

Changes in real GDP and contributions of expenditure components in the second quarter of 2020

(quarter-on-quarter percentage changes)



Source: Eurostat.

Euro area labour markets have been severely affected by COVID-19 containment measures.

Employment decreased by 2.9% in the second quarter of 2020, following a decline of 0.3% in the first quarter. This implies that, in the second quarter of 2020, there were 5.1 million fewer people employed than in the last quarter of 2019. Policy support measures, such as job retention schemes and similar arrangements aimed at preventing redundancies and supporting self-employed workers, mostly explain the smaller decline in employment compared with economic activity. These schemes preserve employment relationships and limit dismissals while helping firms to reduce their payroll costs during a cyclical downturn, so that the workers are available and the firms ready to resume activity once lockdown measures are lifted.⁶ As such, short-time work schemes limit increases in unemployment while allowing the labour market to deal flexibly with cyclical fluctuations, for instance through a substantial reduction in hours worked per person employed for a predetermined length of time. Average hours worked declined by 10.2% in the second quarter of 2020, following a quarterly decrease of 3.8% in the first quarter. This implies that the fall in average hours worked accounts for more than 75% of the adjustment in total hours worked. The rest is attributable to employment. The decline in employment recorded during the second quarter is therefore smaller than the decline in GDP, implying a marked 12.1% decline in labour productivity per person employed in that period. By contrast, total hours worked declined by more than GDP, with labour productivity per hour worked increasing by 1.2% in the second quarter of 2020 on a quarterly basis.

Labour market indicators point towards continued job losses in the third quarter.

The euro area unemployment rate increased to 7.9% in July 2020 from 7.7%

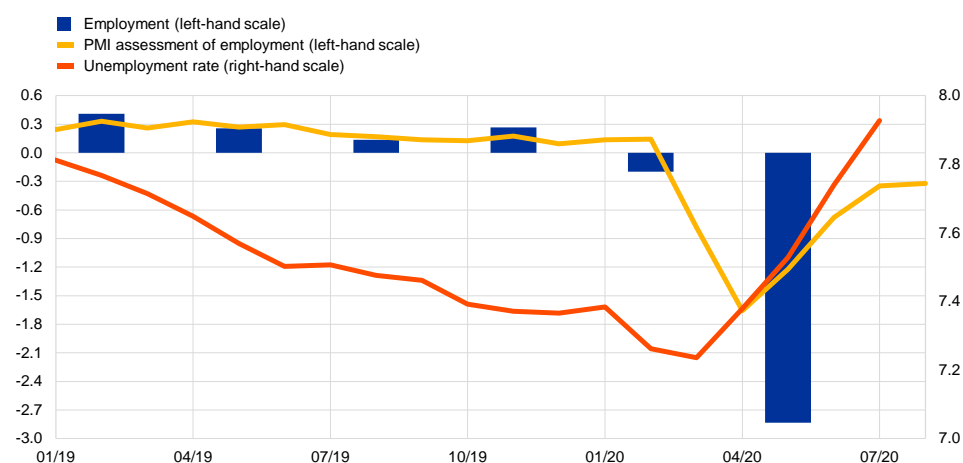
⁶ See also the box entitled “Short-time work schemes and their effects on wages and disposable income”, *Economic Bulletin*, Issue 4, ECB, 2020, and the box “A preliminary assessment of the impact of the COVID-19 pandemic on the euro area labour market”, *Economic Bulletin*, Issue 5, ECB, 2020.

in June. Between February and July 2020, the unemployment rate increased by 0.7 percentage points, which is less than the 1.3 percentage point increase observed between September 2008 and February 2009 following the bankruptcy of Lehman Brothers. This increase does not fully capture the impact of the pandemic, as it is eased by the labour market policies adopted to bolster employment and prevent permanent lay-offs. It is also linked to transitions from employment and unemployment into inactivity due to the economic effects of lockdowns and the continued difficulties faced by workers looking for jobs as the containment measures were gradually phased out. Recent survey-based indicators continue to point towards job losses in the third quarter, despite the effect of the labour market policies currently in place (Chart 11).

Chart 11

Euro area employment, PMI assessment of employment and unemployment

(quarter-on-quarter percentage changes; diffusion index; percentages of the labour force)



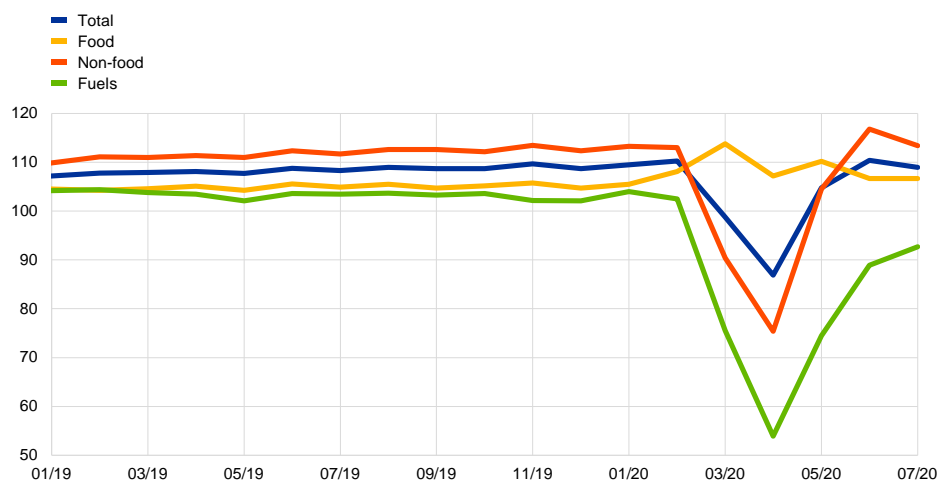
Sources: Eurostat, Markit and ECB calculations.

Notes: The Purchasing Managers' Index (PMI) is expressed as a deviation from 50 divided by 10. The latest observations are for the second quarter of 2020 for employment, August 2020 for the PMI and July 2020 for the unemployment rate.

Consumer spending increased significantly in June and July, but its recovery remains far from complete. Consumer confidence edged up in August (to -14.7), but remained well below its pre-pandemic level (-8.8 in the first quarter of 2020). The volume of retail sales experienced a month-on-month decline of 1.3% in July (see Chart 12). Due to the exceptionally strong monthly increases in May and June of 20.6% and 5.3% respectively, however, sales in July stood 8.2% above the average reading in the second quarter and close to pre-pandemic levels. Sales of food products rose at the beginning of the outbreak (reflecting their nature as essential items, the substitution of restaurant spending and hoarding), while sales of automotive fuels plummeted before recovering. At the same time, sales of non-food products contracted sharply at first, now standing again at pre-pandemic levels in July. Despite the sharp rebound in retail trade, the remaining weakness in consumer spending is largely reflected in consumer services, notably in accommodation, entertainment and transport services.

Chart 12**Euro area retail trade**

(index: 2005 = 100)



Source: Eurostat.

Looking forward, there is little sign of buoyancy in the demand for consumer goods. This can be seen in the assessment of the order books of consumer goods producers, the business expectations of retail firms and consumer intentions to make major purchases. While the drop in household incomes has been limited, the saving rate is expected to have risen sharply in the second quarter before declining again thereafter. This reflects forced or involuntary saving due to the constraints imposed by lockdown measures, while there is also evidence that standard channels, such as (countercyclical) precautionary savings, are also playing a significant role.⁷

Business investment rebounded to some extent as the economy reopened, but low demand and financial risks continue to weigh on the outlook for the coming quarters. Severe supply-side disruptions related to the COVID-19 outbreak caused the production of capital goods in the euro area to shrink by 21.3% quarter on quarter in the second quarter of 2020. At the same time, non-construction investment dropped by 20.9% quarter on quarter. These quarterly contractions do, however, mask a partial recovery in business investment from May onwards. In the course of May and June, the production of capital goods rose by 29.9%, albeit to a level that is still significantly below that seen in February this year. Survey indicators confirm the picture of a partial rebound, as highlighted by a recent improvement in the production expectations of capital goods producers for the months ahead and the assessment of their order books. In addition, the latest euro area bank lending survey⁸ shows that the strong demand for loans and credit lines from euro area firms seen in the second quarter is expected to abate in the third quarter, indicating an improvement in business expectations. Nevertheless, still weak demand and the possibility of banks tightening credit standards for enterprises amid higher credit risk are expected to limit the rebound in investment demand in the coming quarters.

⁷ See also the box entitled "COVID-19 and the increase in household savings: precautionary or forced?" in this issue of the Economic Bulletin.

⁸ See also "The euro area bank lending survey – Second quarter of 2020", ECB, July 2020.

Housing investment plummeted by almost 14% over the first half of the year, while a gradual and partial recovery is likely to have started in the last months of the second quarter and continued thereafter.

In the third quarter, short-term indicators are consistent with a strong – yet incomplete – rebound in construction activity. Despite the marked improvement in the Purchasing Managers' Index (PMI) for construction output in July and the European Commission's confidence index for construction companies in August from their troughs in April, both indices still stood at historically low levels. This weakness may be related to binding constraints on construction production due to fewer building permits being issued and more stringent containment measures being imposed following the resurgence of COVID-19 cases in the summer months. At the same time, some stronger signs of recovery came from the PMI for construction business expectations and firms' assessment of order books. These dynamics were associated with relatively unscathed demand for housing, as shown by the European Commission's indicators of households' intentions to build and renovate and the ECB's bank lending survey, which shows resilient demand for housing loans in several countries, thanks in part to debt relief measures for household loans.

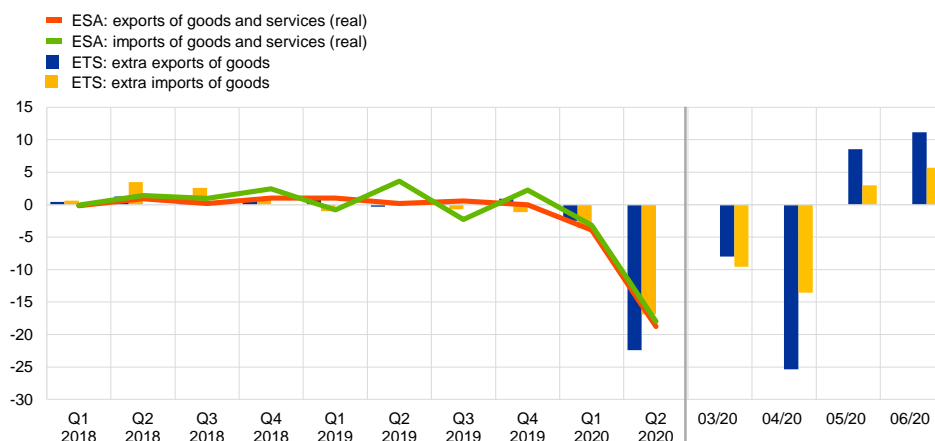
After the April trough, euro area trade rebounded at the end of the second quarter of 2020, albeit to a substantially lower level than before.

Following on from a strong contraction in the first quarter, total euro area exports and imports fell by 18.8% and 18% respectively in the second quarter (Chart 13). Monthly data covering nominal trade in goods in May and June show that euro area exports and imports recovered about half of the losses suffered since the start of the pandemic, in a context where some containment measures were being eased. Intra euro area trade, which had contracted more than external trade in previous months, rebounded to a larger extent as the easing of pandemic-related restrictions was relatively more pronounced in Europe. The collapse in trade in services was even more pronounced, at 21.1% for exports and 25.4% for imports. Tourism, in particular, has been hit hard by travel bans and other lockdown measures, as evidenced by the sharp drop in airline capacity. Looking forward, the outlook for euro area exports is expected to improve to some extent. The PMI on euro area manufacturing new export orders confirms expansion in August (52). The European Commission's assessment of export order book levels and the ECB's industrial new orders indicators have improved for two consecutive months. As regards shipping indicators, those for maritime trade point to a gradual recovery, whereas those for air transport remain well below their levels of last year. All in all, the data point to a rebound in the coming months which, however, is not complete. On the services side, the PMI on euro area services new export orders still signals contraction and airline capacity indices flag a partial rebound for travel in the third quarter of 2020, especially to tourist destinations.

Chart 13

Euro area trade based on national accounts data (ESA) and external trade statistics (ETS)

(quarter-on-quarter percentage changes, month-on-month percentage changes for March, April, May, and June 2020)



Source: Eurostat and ECB calculations.

Note: National accounts (ESA) data and external trade statistics (ETS) data are seasonally and working day adjusted. Differences in seasonal adjustment and other methodological differences can result in discrepancies between ESA and ETS data.

In the near term, a strong rebound in euro area growth is expected in the third quarter of 2020. The sharp contraction in the second quarter reflects the strong declines in activity seen in March and April. However, incoming data signal that the economy has been on a recovery path from May onwards. The improvement in surveys since May coincides with the easing of lockdown measures. The July and August readings of the composite output PMI and the European Commission's Economic Sentiment Indicator (ESI) both stand well above the average levels in the second quarter. The PMI averaged 53.4 in July-August after 31.3 in the second quarter, while the ESI averaged 85.0 and 69.4 respectively over the same time periods. While activity in the manufacturing sector has continued to improve, momentum in the services sector has slowed somewhat recently.

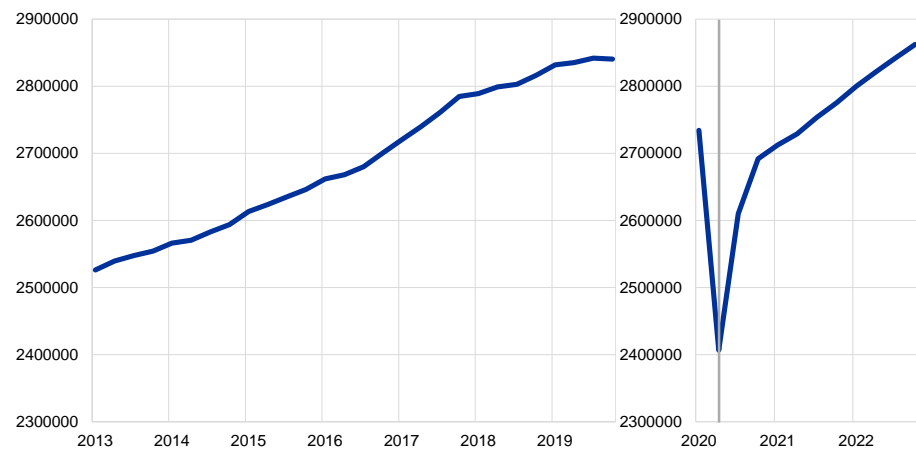
Looking ahead, the rebound in euro area economic activity is expected to continue in the remainder of 2020, provided there is no major resurgence of the pandemic. Euro area activity is projected to rebound by 8.4% in the third quarter. Thereafter, the baseline projection rests on the key assumption of a partial success in containing the virus, with some resurgence in infections over the coming quarters leading to continued containment measures, albeit less strict than in the initial wave, until a medical solution becomes available by mid-2021. These containment measures, together with elevated uncertainty and worsened labour market conditions, are expected to continue to weigh on supply and demand. Nevertheless, substantial support from monetary, fiscal and labour market policies, all of which have been strengthened since the June 2020 Eurosystem staff projections, should maintain incomes and limit the economic scars which may follow the resolution of the health crisis. Such policies are also assumed to be successful in averting large financial amplification channels. Under these assumptions, real GDP in the euro area is projected to fall by 8.0% in 2020 and to rebound by 5.0% in 2021 and by 3.2% in 2022. By the end of the projection horizon, real GDP would stand 3½% below the level

foreseen in the December 2019 Eurosystem staff projections, the last pre-pandemic projection exercise. The level of GDP in the fourth quarter of 2019 will be reached by the second half of 2022 (Chart 14). Against the background of the uncertainty around the trajectory of the pandemic, two alternative scenarios have been prepared. The mild scenario sees the pandemic shock as temporary, with the swift implementation of a medical solution allowing a further loosening of the containment measures. In this scenario, real GDP would decline by 7.2% this year, then rebound strongly in 2021. By the end of the horizon, real GDP would slightly exceed the level expected in the December 2019 Eurosystem staff projections. In contrast, the severe scenario with a strong resurgence of the pandemic implies a return to stringent containment measures, with substantial and permanent losses to activity. In this scenario, real GDP falls by 10% in 2020. By the end of the horizon, it stands around 9% below the level envisaged in the December 2019 Eurosystem staff projections.

Chart 14

Euro area real GDP (including projections)

(chain-linked volumes, million euro)



Sources: Eurostat and the article entitled "ECB staff macroeconomic projections for the euro area, September 2020", published on the ECB's website on 10 September 2020.

4 Prices and costs

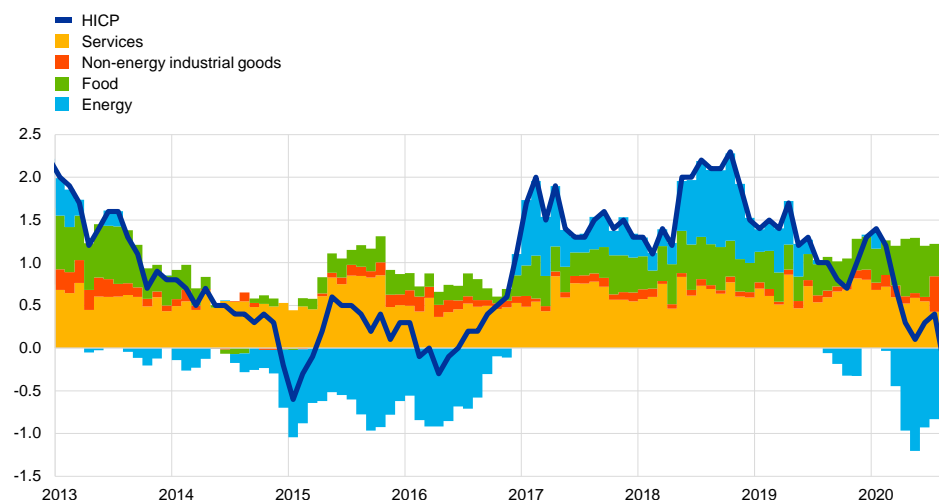
According to Eurostat's flash estimate, euro area annual HICP inflation decreased to -0.2% in August, from 0.4% in July. On the basis of current and futures prices for oil and taking into account the temporary reduction in German VAT rates, headline inflation is likely to remain negative over the coming months before turning positive again in early 2021. Moreover, in the near term, price pressures will remain subdued owing to weak demand, lower wage pressures and the appreciation of the euro exchange rate, despite some upward price pressures related to supply constraints. Over the medium term, a recovery in demand, supported by accommodative monetary and fiscal policies, will put upward pressure on inflation. This assessment is broadly reflected in the September 2020 ECB staff macroeconomic projections for the euro area, which see annual HICP inflation at 0.3% in 2020, 1.0% in 2021 and 1.3% in 2022. Compared with the June 2020 Eurosystem staff macroeconomic projections, the outlook for inflation is unchanged for 2020, has been revised up for 2021 and is unchanged for 2022. The unchanged projection for inflation in 2022 masks an upward revision to inflation excluding energy and food – in part reflecting the positive impact of the monetary and fiscal policy measures – which was largely offset by the revised path of energy prices. Annual HICP inflation excluding energy and food is expected to be 0.8% in 2020, 0.9% in 2021 and 1.1% in 2022.

According to Eurostat's flash estimate, HICP inflation fell into negative territory in August. The decrease, from 0.4% in July to -0.2% in August, reflected a drop in HICP inflation excluding energy and food (HICP X) and lower food inflation, which were partially offset by less negative energy inflation (see Chart 15). Energy price inflation continued to rise, although the annual rate remains firmly negative reflecting the sharp drop in oil prices after the onset of the coronavirus (COVID-19) pandemic. Also pointing to some normalisation, food inflation returned to pre-pandemic levels in July and August, declining to 2.0% and further to 1.7% over the two consecutive months. According to Eurostat, HICP price collection difficulties due to the COVID-19 pandemic have continued to ease, with imputation rates now essentially back to normal levels.

Chart 15

Contributions of components of euro area headline HICP inflation

(annual percentage changes; percentage point contributions)



Sources: Eurostat and ECB calculations.

Notes: The latest observations are for August 2020 (flash estimates). Growth rates for 2015 are distorted upwards owing to a methodological change (see the box entitled "A new method for the package holiday price index in Germany and its impact on HICP inflation rates", *Economic Bulletin*, Issue 2, ECB, 2019).

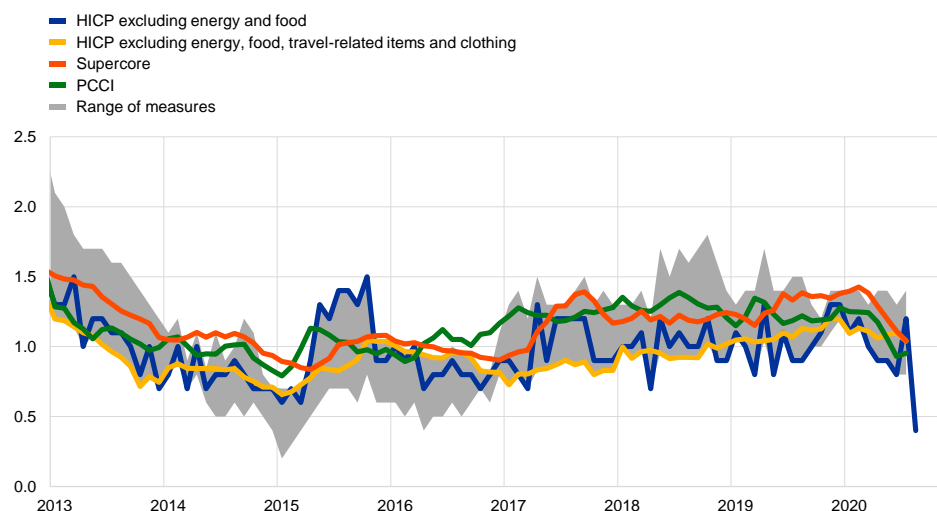
Despite a strong decline in HICPX inflation recently, overall, measures of underlying inflation point to a moderate weakening since the onset of the pandemic. HICPX inflation decreased to 0.4% in August, from 1.2% in July, due to declines in both non-energy industrial goods (NEIG) inflation and services inflation. The sharp movements in HICPX inflation during July and August are mainly explained by temporary factors. NEIG inflation was -0.1% in August, after 1.6% in July and 0.2% over previous months. The recent volatility in NEIG inflation reflects, to a large degree, the impact of a postponement in seasonal sales of clothing and footwear in some euro area countries. This exerted strong upward pressure in July, which unwound in August. The latest movements in HICPX inflation also reflect the temporary reduction in German VAT rates since July 2020. Other measures of underlying inflation have shown a more moderate weakening (data are mainly available up to July; see Chart 16). HICP inflation excluding energy, food, travel-related items and clothing, the Persistent and Common Component of Inflation (PCCI) indicator, excluding energy, and the Supercore indicator⁹ were all slightly down.

⁹ For further information on these measures of underlying inflation, see Boxes 2 and 3 in the article entitled "Measures of underlying inflation for the euro area", *Economic Bulletin*, Issue 4, ECB, 2018.

Chart 16

Measures of underlying inflation

(annual percentage changes)



Sources: Eurostat and ECB calculations.

Notes: The latest observations are for August 2020 for the HICP excluding energy and food (flash estimate) and for July 2020 for all other measures. The range of measures of underlying inflation consists of the following: HICP excluding energy; HICP excluding energy and unprocessed food; HICP excluding energy and food; HICP excluding energy, food, travel-related items and clothing; the 10% trimmed mean of the HICP; the 30% trimmed mean of the HICP; and the weighted median of the HICP. Growth rates for the HICP excluding energy and food for 2015 are distorted upwards owing to a methodological change (see the box entitled "A new method for the package holiday price index in Germany and its impact on HICP inflation rates", *Economic Bulletin*, Issue 2, ECB, 2019).

Pipeline price pressures for the HICP non-energy industrial goods component have been strengthening moderately. Producer price inflation for domestic sales of non-food consumer goods, which is an indicator of price pressures at the later stages of the supply chain, edged up to 0.7% in July (an increase of 0.1 percentage points), slightly above its long-term average of 0.6%. The corresponding annual rate of import price inflation decreased slightly, however, to -0.7% in July, down by 0.2 percentage points from its June level, which may in part reflect some downward pressure from the recent appreciation of the euro effective exchange rate. Earlier in the domestic pricing chain, intermediate goods price inflation increased marginally despite the stronger euro. For intermediate goods, producer price inflation increased to -2.0% in July, from -2.5% in June, while import price inflation was broadly unchanged at -2.7%.

Growth in compensation per employee continued to show a pronounced decline in the second quarter of 2020, largely reflecting the fall in hours worked.

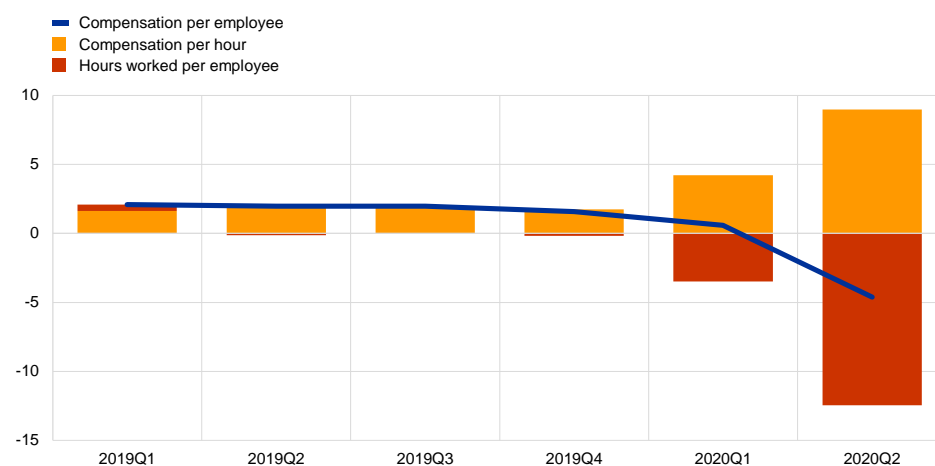
Annual growth in compensation per employee fell to -4.6% during the second quarter, from 0.6% in the first quarter (see Chart 17). The decline was broad-based across sectors (with the exception of agriculture and fishing) and countries. The continued deceleration in euro area compensation per employee essentially reflects the significant reduction in hours worked per employee after the onset of the COVID-19 pandemic and the related lockdown and containment measures. Annual growth in compensation per hour rose to 9.0% in the second quarter, from 4.2% in the previous quarter, owing to the significant reduction in actual hours worked per employee. These contrary developments reflect the impact of short-time work and temporary lay-off schemes in buffering labour income. Negotiated wages grew by 1.7% in the second quarter of the year, with the latest developments in compensation per employee

implying a strong downward impact in the wage drift. Nevertheless, the deceleration in compensation per employee has exaggerated the loss in labour income, as a number of countries record government support, for statistical purposes, under transfers rather than compensation.

Chart 17

Decomposition of compensation per employee into compensation per hour and hours worked

(annual percentage changes; percentage point contributions)



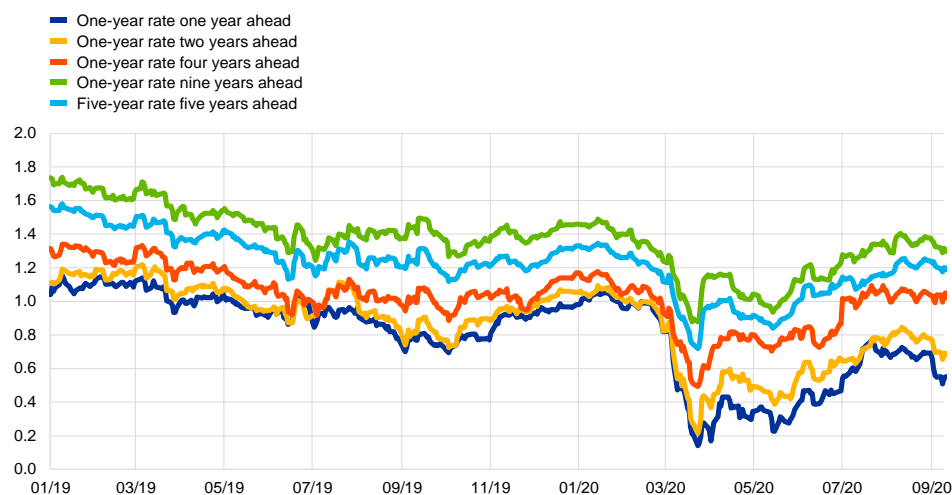
Sources: Eurostat and ECB calculations.
Note: The latest observations are for the second quarter of 2020.

After falling to historical lows around mid-March, market-based indicators of longer-term inflation expectations have continued to recover, returning to their pre-pandemic levels albeit at still low levels (see Chart 18). This development reflects improvements in the global macroeconomic outlook and risk sentiment, as well as sizeable monetary and fiscal support. In a continuation of this trend, the five-year forward inflation-linked swap rate five years ahead rose further by around 10 basis points to stand at 1.20% on 4 September 2020, i.e. almost 50 basis points above its historical (mid-March) low of 0.72%. At the same time, the forward profile of market-based indicators of inflation expectations continues to indicate a prolonged period of low inflation. Inflation options markets also still signal considerable downside risks in the near term, as underlying deflation probabilities remain around historically elevated levels. According to the ECB Survey of Professional Forecasters for the third quarter of 2020, conducted in the first week of July 2020, as well as the latest releases from Consensus Economics and the Euro Zone Barometer, survey-based longer-term inflation expectations remained at or close to historically low levels in July, reflecting the impact of the COVID-19 pandemic, mitigation measures and continuing uncertainties.

Chart 18

Market-based indicators of inflation expectations

(annual percentage changes)



Sources: Thomson Reuters and ECB calculations.
Note: The latest observations are for 9 September 2020.

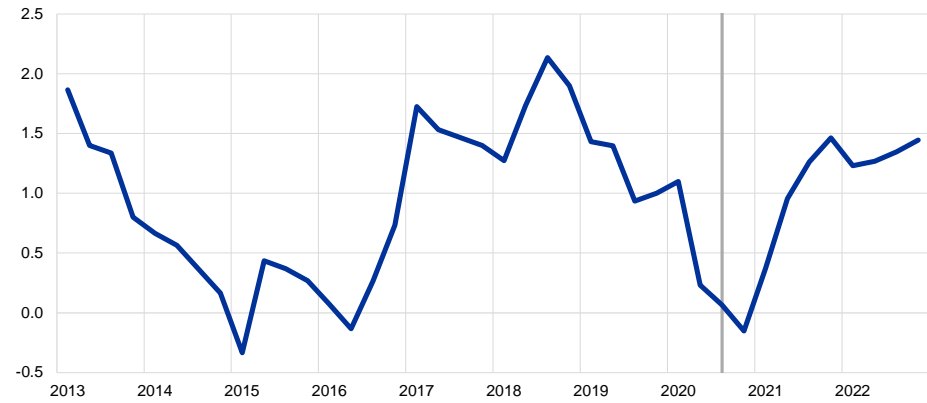
The September 2020 ECB staff macroeconomic projections foresee an increase in headline inflation over the projection horizon. The baseline projections point to headline HICP inflation averaging 0.3% in 2020, 1.0% in 2021 and 1.3% in 2022 (see Chart 19). Compared with the June 2020 Eurosystem staff projections, the projection for HICP inflation is unchanged for 2020, revised up by 0.2 percentage points for 2021 and remains unchanged for 2022. In the short term, the previous collapse in oil prices, the appreciation of the euro and a temporary reduction in the VAT rates in Germany imply that euro area headline HICP inflation is likely to remain negative over the coming months. In 2021, base effects in the energy component and, to a lesser extent, the expected reversal of the VAT rate cut in Germany subsequently cause a mechanical rebound.¹⁰ HICP inflation excluding energy and food is projected to decline until the end of 2020. Disinflationary effects are expected to be broad-based across the services and goods sectors, as demand remains weak. However, continued upward cost pressures related to supply-side limitations are expected to partly offset these effects. Over the medium term, inflation is projected to increase: oil prices are assumed to pick up and demand should recover, despite diminishing upward pressures from adverse supply effects linked to the pandemic and despite the appreciation of the euro. HICP inflation excluding energy and food is expected to be 0.8% in 2020 and 0.9% in 2021, before increasing to 1.1% in 2022.

¹⁰ For more information, see the box entitled “The role of indirect taxes for euro area inflation and its outlook” in this issue of the Economic Bulletin.

Chart 19

Euro area HICP inflation (including projections)

(annual percentage changes)



Sources: Eurostat and the article entitled "[ECB staff macroeconomic projections for the euro area, September 2020](#)", published on the ECB's website on 10 September 2020.

Notes: The vertical line indicates the start of the projection horizon. The latest observations are for the second quarter of 2020 (data) and the fourth quarter of 2022 (projection). The cut-off date for data included in the *ECB staff macroeconomic projections for the euro area, September 2020*, was 27 August 2020.

5 Money and credit

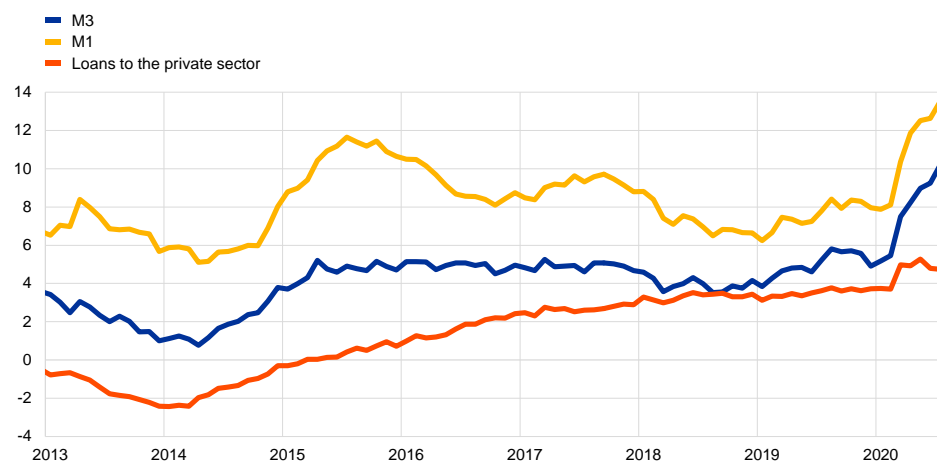
The coronavirus (COVID-19) pandemic has continued to bear a significant influence on monetary dynamics in the euro area. Domestic credit has remained the main source of money creation, driven by loans to non-financial corporations (NFCs) and the Eurosystem's net purchases of government bonds. The timely and sizeable measures taken by monetary, fiscal and supervisory authorities have supported the extension of bank credit on favourable terms to the euro area economy. This also buoyed euro area firms' total external financing in the second quarter of 2020, as issuance of debt securities and bank lending to firms increased substantially. Firms' overall cost of debt financing has remained favourable, as the cost of market-based debt has continued to moderate and bank lending rates have remained close to their historical lows.

Broad money growth accelerated further in July. On account of a very large monthly flow, the annual growth rate of the broad monetary aggregate (M3) rose further in July, to 10.2%, from 9.2% in June. The shock from the pandemic significantly influenced monetary dynamics, as illustrated by M3 growth being around 5 percentage points higher than before the COVID-19 outbreak (see Chart 20). In an environment of elevated uncertainty, the demand for liquidity by economic agents was bolstered by the considerable liquidity needs of firms and the precautionary motives of all economic agents. Money demand models identify special factors related to firms' and households' liquidity needs during the pandemic as having made a significant contribution to broad money growth. The increase in money growth was also the result of sizeable support measures by monetary and fiscal policymakers, as well as actions taken by regulatory and supervisory authorities, to ensure sufficient liquidity in the economy to deal with the economic consequences of the pandemic. Moreover, the annual growth rate of the most liquid monetary aggregate, M1, which comprises overnight deposits and currency in circulation, rose to 13.5% in July, after 12.6% in June, and thus strongly contributed to M3 growth.

Chart 20

M3, M1 and loans to the private sector

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



Source: ECB.

Notes: Loans are adjusted for loan sales, securitisation and notional cash pooling. The latest observations are for July 2020.

Overnight deposits have seen a further upswing given the elevated uncertainty.

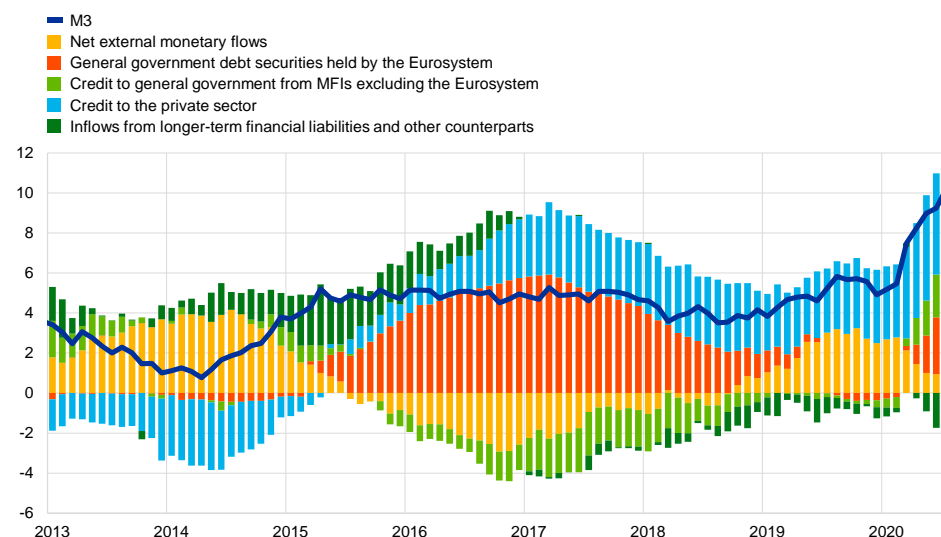
The annual growth rate of overnight deposits, which was the main contributor to money growth, increased to 14.1% in July, from 13.1% in June. The growth in deposits was mainly driven by deposit holdings of firms. Money holders' preference for overnight deposits continued to reflect precautionary motives and the very low level of interest rates, which reduces the opportunity cost of holding such instruments, especially when compared with other less liquid deposits. Furthermore, deposit holdings of firms varied across jurisdictions. This was partly related to the uneven and lagged spread of the pandemic across countries, which led to differences in the extent to which the liquidity needs of firms materialised. Differences in the size of support measures across countries also contributed to the uneven pace. Currency in circulation increased at a high, although broadly stable annual rate of 9.8% in July, reflecting a tendency to hoard cash given the substantial uncertainty. Other short-term deposits and marketable instruments made a small but increasing contribution to annual M3 growth in July, despite the low level of interest rates.

Domestic credit has remained the main source of money creation. In the context of the COVID-19 pandemic, credit growth to the private sector has remained at an elevated level (see the blue portion of the bars in Chart 21). Since 2018 this component has been the main driver of M3 growth from the counterpart perspective, with loans to non-financial corporations providing most of the momentum more recently. In addition, the Eurosystem's net purchases of government securities under the ECB's asset purchase programme (APP) and the pandemic emergency purchase programme (PEPP) increased their sizeable contribution to M3 growth in July (see the red portion of the bars in Chart 21). The ECB's non-standard monetary policy measures are providing enhanced monetary policy support to stabilise financial markets and to alleviate risks to monetary policy transmission and the euro area macroeconomic outlook during the pandemic. Furthermore, the annual growth rate of credit from the banking sector (excluding the Eurosystem) to the public sector

remained strong in July (see the light green portion of the bars in Chart 21). Euro area banks (excluding the Eurosystem) acquired large amounts of government bonds, mainly issued in the euro area. It partly reflected the sizeable increase in net issuance of government debt to cope with the pandemic, which continued despite the announcement of additional measures at the EU level (such as the Next Generation EU package). After positive readings in May and June, monetary outflows from the euro area were moderate in July and reflected (net) sales of euro area sovereign bonds by non-residents (see the yellow portion of the bars in Chart 21). Furthermore, longer-term financial liabilities and other counterparts exerted a slightly negative impact on money growth (see the dark green portion of the bars in Chart 21).

Chart 21
M3 and its counterparts

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



Source: ECB.

Notes: Credit to the private sector includes 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 purchases by the Eurosystem of non-MFI debt securities under the corporate sector purchase programme. The latest observations are for July 2020.

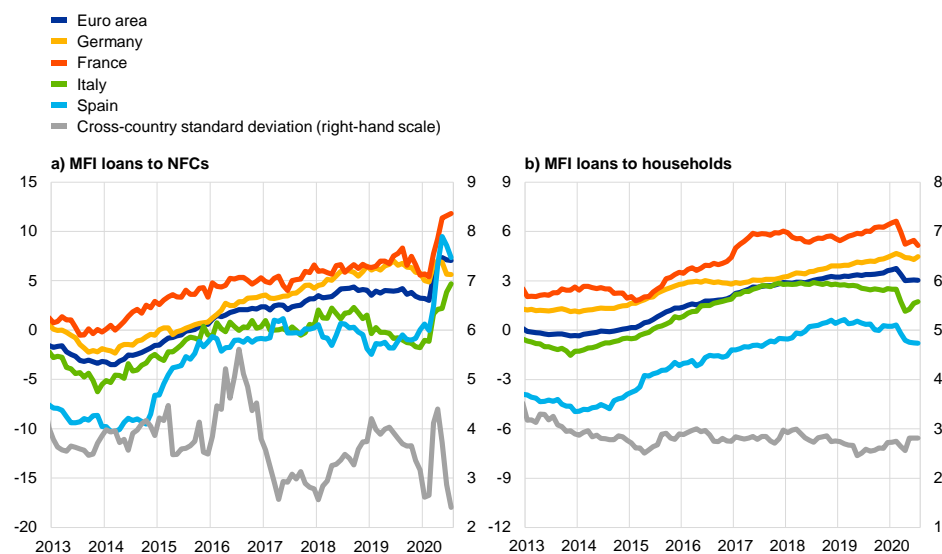
Loan growth to the private sector has remained broadly stable. The annual growth rate of monetary financial institutions' (MFI) loans to the private sector stood at 4.7% in July, after 4.8% in June, which was 1 percentage point higher than before the outbreak of the pandemic (see Chart 20). Credit growth has continued to be largely driven by loans to firms, which increased at an annual growth rate of 7.0% in July, after 7.1% in June and 7.3% in May, while growth in loans to households remained stable at 3.0% (see Chart 22). Firms' reliance on medium-term and long-term loans has continued to increase at the expense of short-term loans. The diverging developments in loans to firms and loans to households were evidenced by the results of the July 2020 [euro area bank lending survey](#) for loan demand and supply. Growth in bank lending to firms has continued to be driven by firms' operational financing needs, in an environment of reduced cash flows, also reflecting the sizeable government measures introduced in most euro area countries – such as loan guarantees – to support firms' liquidity and solvency over the coming months. Moreover, the ECB's policy measures, in particular the very favourable terms for targeted longer-term refinancing operations

(TLTRO III), have been encouraging banks to extend loans to all private sector entities. In addition, there has been considerable variation in the rate of growth of loans to firms and households across euro area countries, while across the larger countries the pattern has been broadly similar.

Chart 22

MFI loans in selected euro area countries

(annual percentage changes)



Source: ECB.

Notes: Loans are adjusted for loan sales and securitisation; in the case of NFCs, loans are also adjusted for notional cash pooling. The cross-country standard deviation is calculated using a fixed sample of 12 euro area countries. The latest observations are for July 2020.

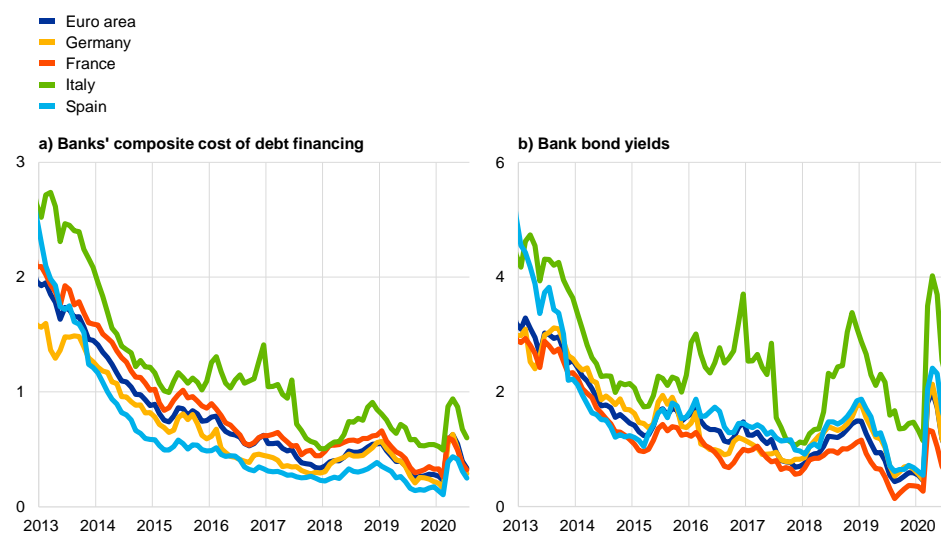
Banks' debt funding costs have stabilised at low levels, supported by the ECB's monetary policy measures. The composite cost of debt financing for euro area banks, which had risen following the COVID-19 outbreak, declined somewhat in the second quarter of 2020 but remained above pre-pandemic levels (see Chart 23). This was due mainly to a fall in bond yields, supported by the ECB's monetary policy measures. Bank funding conditions are benefiting from liquidity provisioning on very favourable terms via the third series of targeted longer-term refinancing operations (TLTRO III), as well as from the beneficial impact of the ECB's APP and PEPP on bond yields, which is mitigating the risk of adverse amplification between the real and financial sectors during the pandemic. Given their tight link with sovereign funding conditions, senior unsecured bank bond yields have also benefited from the decline in bond yields. Conditions in the market for covered bank bonds are being supported by the ECB's third covered bond purchase programme (CBPP3). In addition, deposit rates of euro area banks, which account for the bulk of bank funding, remained at historical lows in July 2020, thereby contributing to favourable bank debt funding conditions. Euro area banks have increasingly charged negative interest rates on NFC deposits held with them since the onset of the COVID-19 crisis. At the same time, a large part of banks' deposit funding, in particular retail deposits, still has a zero interest floor, and banks' net interest rate margins remain compressed. While banks have strengthened their resilience substantially since the global financial crisis, the coronavirus pandemic is having an impact on banks' capital positions through lower

asset valuations and the need for higher loan loss provisions.¹¹ Although banks are benefiting from favourable funding conditions, concerns about the pandemic having a negative impact on banks' capital positions continue to weigh on banks' market-based funding costs. Looking ahead, the eventual expiration of government support programmes will likely contribute to a tightening of banks' lending conditions.

Chart 23

Banks' composite cost of debt financing

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



Sources: ECB, Markit iBoxx and ECB calculations.

Notes: The composite cost of deposits is calculated as an average of new business rates on overnight deposits, deposits with an agreed maturity and deposits redeemable at notice, weighted by their corresponding outstanding amounts. Bank bond yields refer to monthly averages of senior-tranche bonds. The latest observations are for July 2020.

Very favourable bank lending rates continue to support economic growth.

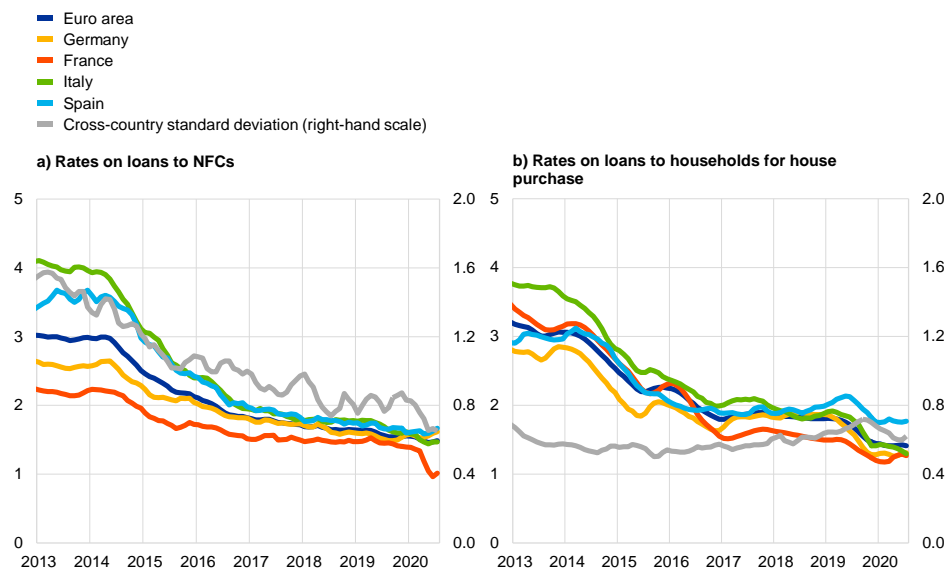
Composite bank lending rates for loans to firms and for loans to households for house purchase have remained close to their historical lows, standing in July at 1.51% and 1.40% respectively (see Chart 24). This development is widespread across euro area countries and reflects the lagged pass through of movements in market rates to bank lending rates. At the same time, the severe economic impact of the pandemic on firms' revenues, households' employment prospects and overall borrower creditworthiness has continued to put upward pressure on bank lending rates. After its earlier decline, the spread between bank lending rates on very small loans and on large loans increased somewhat in June and July in all large euro area countries, but remained below the levels observed in March. Given the effectiveness of the measures taken by the ECB, bank supervisors and governments to support credit supply, upward pressures have been contained.

¹¹ See [Financial Stability Review](#), ECB, May 2020.

Chart 24

Composite bank lending rates in selected euro area countries

(percentages per annum; three-month moving averages)



Source: ECB.

Notes: The indicator for the total cost of bank borrowing is calculated by aggregating short and long-term rates using a 24-month moving average of new business volumes. The cross-country standard deviation is calculated using a fixed sample of 12 euro area countries. The latest observations are for July 2020.

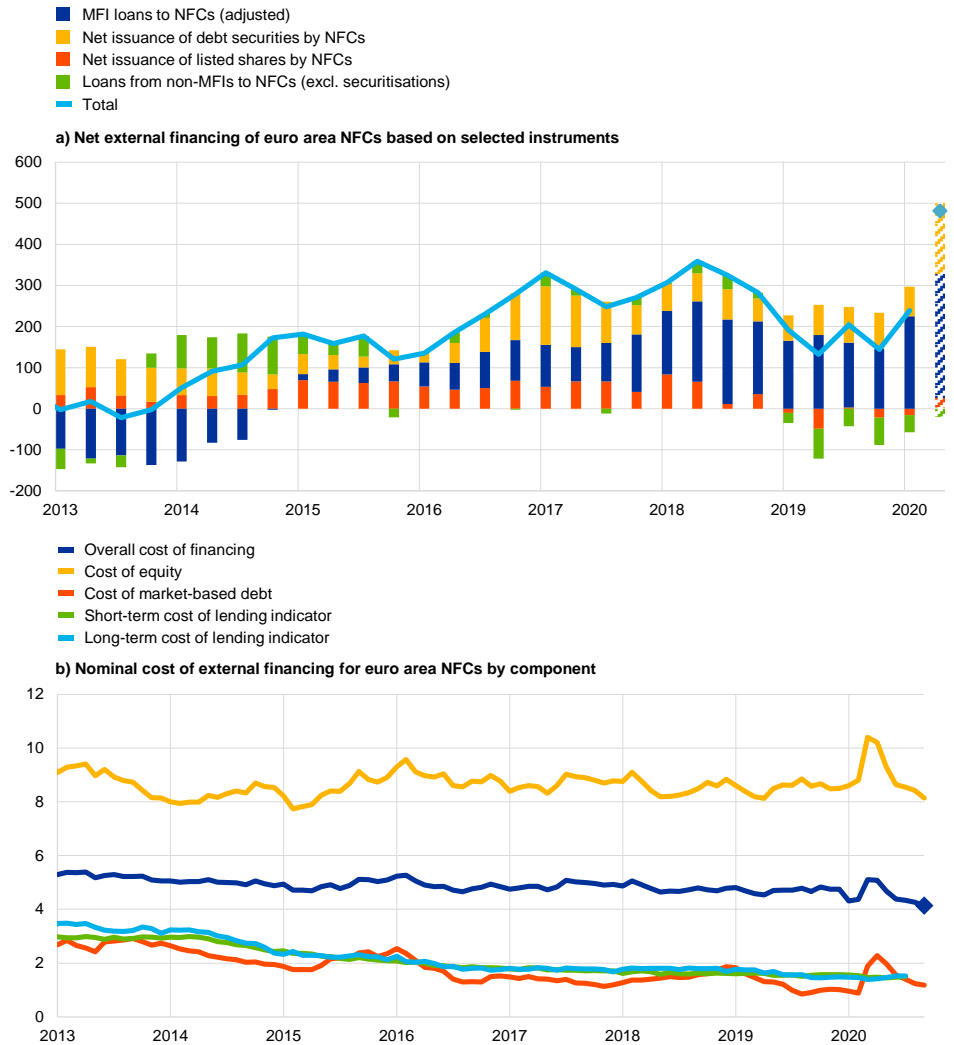
The annual flow of total external financing to euro area NFCs is estimated to have increased markedly in the second quarter of 2020, supported by a decline in the cost of financing for NFCs (see panel (b) of Chart 25). This increase reflects the continuing decline in firms' operating cash flows and their high financing needs as a result of the pandemic shock. The net issuance of debt securities by firms was strong in the second quarter and benefited from the narrowing of corporate bond spreads facilitated by the enhancement of the ECB's APP and PEPP, which include net purchases of corporate bonds. The strong recourse to credit in the second quarter mirrored a steepening of the economic contraction and continued sharp declines in corporate sales and cash flows in the early part of the quarter. Demand for bank lending was also supported by favourable bank lending rates (see panel (b) of Chart 25). Net issuance of listed shares remained subdued in the second quarter of 2020, as the number of new businesses dropped sharply in view of a worsening profit outlook and despite a marked decline in the cost of equity owing to lower risk premia. Furthermore, loan volumes from non-banks (non-MFIs) fell further in the second quarter. Overall, total external financing flows were higher in the second quarter of 2020 than during the financial and sovereign debt crises, supported by favourable financing conditions. The overall nominal cost of external financing for NFCs, comprising bank lending, debt issuance in the market and equity finance, stood at 4.4% at the end of June. This level was around 70 basis points lower than the March 2020 peak and only 7 basis points higher than in January 2020, when the series was at its historical low. Between the end of June and the end of the reference period (9 September 2020), the overall cost of financing is estimated to have declined further, by around 24 basis points, to 4.1 %, which would be a new historical low. This is consistent with the more supportive bank credit and bond market conditions, bolstered

by timely and sizeable measures introduced by monetary, supervisory and fiscal authorities, which have helped to reduce uncertainty and financial market volatility.

Chart 25

External financing of euro area NFCs

(annual flows in EUR billions – panel (a); percentages per annum – panel (b))



Sources: Eurostat, Dealogic, ECB, Merrill Lynch, Bloomberg, Thomson Reuters and ECB estimates.

Notes: Panel (a) – Net external financing is the sum of MFI loans, net issuance of debt securities, net issuance of listed shares and non-MFI loans. MFI loans are adjusted for sales, securitisation and cash pooling activities. Loans from non-MFIs include loans from other financial institutions and insurance corporations and pension funds net of securitised loans. The striped bar and light blue diamond indicate the nowcast for the second quarter of 2020. Panel (b) – The overall cost of financing for NFCs is calculated as a weighted average of the costs of bank borrowing, market-based debt and equity based on their respective amounts outstanding. The dark blue diamond indicates the nowcast of the overall cost of financing for September 2020 assuming that bank lending rates remain unchanged at their July 2020 levels. The latest observations for panel (a) are for the first quarter of 2020 for euro area accounts data; estimates for the second quarter of 2020 are based on ECB balance sheet items (BSI) and securities (SEC) data and Dealogic. The latest observations for panel (b) are for 9 September 2020 for the cost of market-based debt (monthly average of daily data), 4 September 2020 for the cost of equity (weekly data) and July 2020 for the cost of lending (monthly data).

Gross indebtedness of euro area non-financial corporations (NFCs) has risen considerably to just below its early 2015 record high.

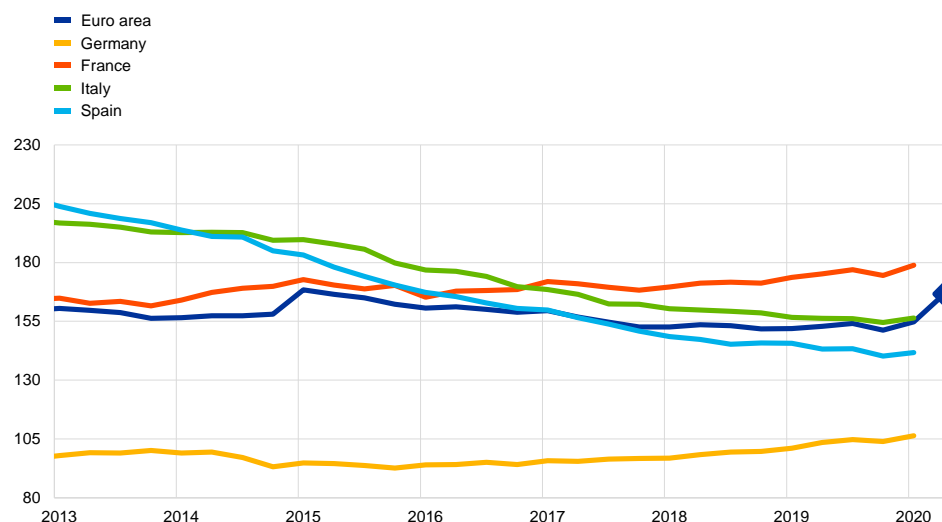
The gross debt ratio, in terms of value added of firms, increased by 12 percentage points in the second quarter of 2020, bringing the cumulative increase since the end of 2019 to 15 percentage points (see Chart 26). The broad-based increase in NFC gross indebtedness was explained by greater recourse to debt financing and by the marked

decline in gross value added. Firms have placed a substantial share of the proceeds from new bank loans and debt securities issuance in deposits to pre-fund working capital needs and necessary investment, as well as to prepare for possible cash shortages in the coming months. As a result, the net debt ratio and leverage at book value has increased much less than gross indebtedness. Notwithstanding a steep rise in corporate indebtedness, the financial vulnerability of the sector has therefore increased only mildly. This benign constellation is conditional on continued policy support, first in the form of accommodative monetary policy that keeps the cost of servicing the increased debt load in check, and second in the form of broad-based fiscal intervention, including via state guarantee and moratoria schemes that preserve the capacity of bank lending to compensate for dwindling corporate cash flows. Overall, these developments point to a risk that NFCs could become less supportive for business investment during the ongoing recovery, especially should support measures end abruptly.

Chart 26

Gross indebtedness of NFCs in selected euro area countries

(percentages of NFC gross value added)



Sources: ECB, Eurostat and ECB estimates.

Notes: Debt is defined as the sum of total loans granted to NFCs net of intra-sectoral lending, debt securities issued and pension liabilities. The blue diamond indicates the nowcast for the second quarter of 2020.

6 Fiscal developments

The coronavirus (COVID-19) pandemic continues to have an extraordinarily large impact on public finances in the euro area. In the early stages of the crisis, much of the impact was related to measures to alleviate the burden on firms, workers and households and to preserve production capacity in the economy. The policy response has gradually shifted towards measures aimed at swiftly restarting the economy and preparing it for the future beyond the pandemic. The fiscal cost of these measures has been very substantial for all euro area countries, although both the burden and the capacity to respond vary across countries. It is therefore highly welcome that Europe has responded with coordinated fiscal action, most recently with the Next Generation EU (NGEU) fund, which complements the fiscal measures at the national level. It is important that the European Council's decision leads to practical policy action and that the fiscal measures taken in response to the pandemic emergency are as much as possible targeted and temporary in nature. As a result of the economic downturn and the substantial fiscal support, the general government budget deficit in the euro area is projected to increase significantly to 8.8% of GDP in 2020, compared with 0.6% in 2019. The deficit ratio is expected to decline to 4.9% of GDP in 2021 and 3.6% of GDP in 2022. The extensive fiscal measures in 2020 have led to a corresponding worsening of the cyclically adjusted primary balance, in addition to a negative cyclical component reflecting the deterioration in the macroeconomic situation. The subsequent improvement is expected to be led by the phasing out of the emergency measures and an improvement in the cyclical situation. Uncertainty around the disbursements from the NGEU fund and further crisis measures in some countries pose downward risks to the outlook for public finances. Euro area countries have also provided envelopes of loan guarantees amounting to almost 20% of GDP to reduce risks in the corporate sector. These guarantees constitute significant contingent liabilities that will negatively affect deficits if they are called on. Reflecting the fiscal measures and the deteriorating economic situation, the euro area aggregate debt ratio is projected to rise steeply in 2020 and remain at an elevated level throughout the projection horizon.

According to the September 2020 ECB staff macroeconomic projections, the euro area general government budget balance is projected to decline strongly in 2020 and to recover somewhat in 2021 and 2022.¹² Based on these projections, the general government deficit ratio for the euro area is expected to increase from 0.6% of GDP in 2019 to 8.8% of GDP in 2020, before declining to 4.9% in 2021 and 3.6% in 2022 (see Chart 27). The decline in the budget balance in 2020 is to a large extent attributable to a deterioration in the cyclically adjusted primary balance on the back of economic support measures amounting to around 4.5% of GDP, of which the largest part is additional spending, particularly in the form of transfers and subsidies to firms and households, including through short-time work schemes. This decline is also the result of a large negative cyclical component as the euro area economy is now deep in recession.¹³ The subsequent improvement is projected to be driven by a recovery in the cyclically adjusted primary balance, as most support measures are

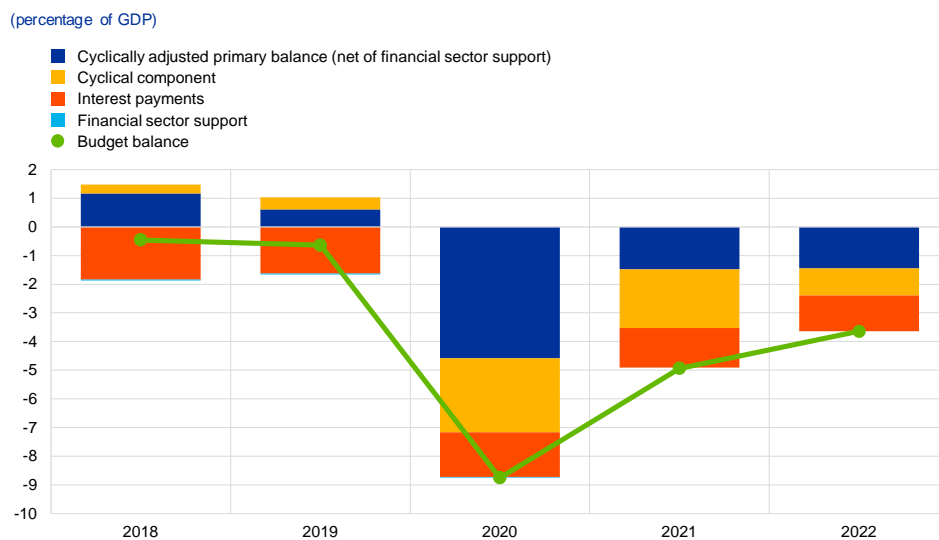
¹² See the “[ECB staff macroeconomic projections for the euro area, September 2020](#)” published on the ECB’s website on 10 September 2020.

¹³ It should be noted that there is an unusually high degree of uncertainty surrounding the decomposition of cycle and trend at the current juncture.

currently expected to be phased out from the end of this year and in 2021. The contribution from the economic cycle is expected to improve more gradually, and remains negative throughout the projection horizon.

Chart 27

Budget balance and its components



Sources: ECB and September 2020 ECB staff macroeconomic projections.
 Note: The data refer to the aggregate general government sector of the euro area.

In addition to the fiscal support for their economies, euro area countries have provided sizeable loan guarantee envelopes to bolster the liquidity position of firms. In total, these guarantees amount to around 20% of GDP for the euro area as a whole, but the size of the envelopes differs substantially across countries. The loan guarantees are contingent liabilities for governments and the amount of guarantees called on will therefore constitute additional public spending.

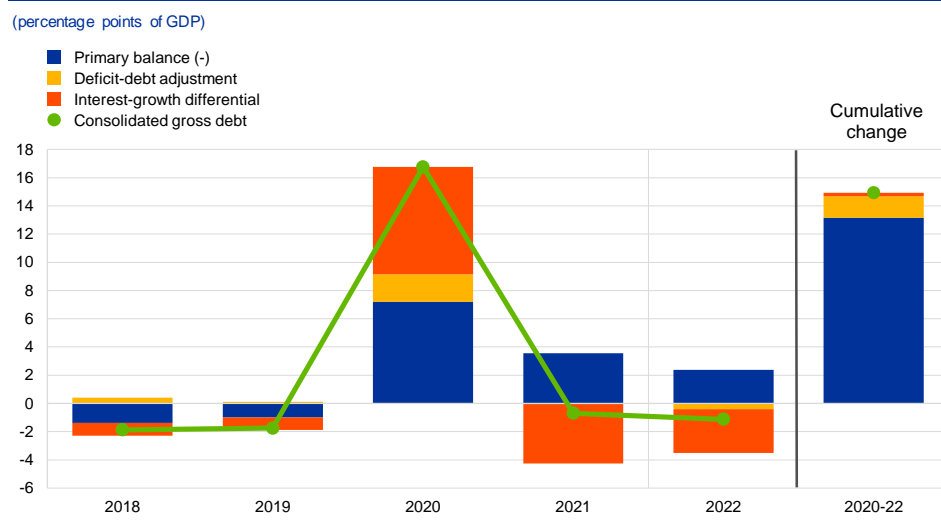
Compared with the June 2020 Eurosystem staff projections, the updated fiscal outlook is marginally more adverse in 2020 and 2021 but slightly more favourable in 2022. The euro area general government budget balance as a share of GDP has been revised down by 0.2 and 0.1 percentage points in 2020 and 2021 respectively, and revised up by 0.2 percentage points in 2022. The higher fiscal deficits in 2020 and 2021 are mainly due to a loosened cyclically adjusted balance as countries introduced additional support measures or extended existing measures. This fiscal loosening is partly offset by a less adverse cyclical component and slightly lower expected interest payments. The slightly improved outlook in 2022 is due to a combination of lower interest payments and a better cyclical component, which more than compensate for the loosened cyclically adjusted primary balance.

The aggregate fiscal stance is assessed to be highly accommodative in 2020 but contractionary in 2021, as most support measures are expected to be

phased out.¹⁴ The fiscal stance is estimated to have been mildly expansionary in 2019, but is expected to be highly accommodative at 5.4% of GDP in 2020. By contrast, in 2021 it is estimated to be contractionary at 3.1% of GDP, as most of the support measures put in place during the pandemic are currently expected to be phased out progressively next year. This notwithstanding, the overall fiscal balance will remain substantially negative with fiscal instruments continuing to support the economic recovery, not least through automatic stabilisers.¹⁵ In 2022 the fiscal stance is projected to be neutral.

The euro area aggregate public debt-to-GDP ratio is projected to surge to 100.7% of GDP in 2020, before declining very gradually. This increase of 16.6 percentage points compared with 2019 largely reflects the high primary deficits, a very adverse interest-growth differential, and a significant deficit-debt adjustment due to policy measures related to the pandemic. In 2021 and 2022 declining, albeit still significant, primary deficits will be more than offset by favourable contributions from improving interest-growth differentials, as economic activity is projected to recover, and by a negative deficit-debt adjustment in 2022 (see Chart 28). As a result, the debt-to-GDP ratio is expected to stand at 98.9% by the end of 2022, a downward revision of 1.1 percentage points compared with the June 2020 projections, mainly on account of the more favourable interest rate-growth differential over the projection horizon.

Chart 28
Drivers of change in public debt



Sources: ECB and September 2020 ECB staff macroeconomic projections.
Note: The data refer to the aggregate general government sector of the euro area.

An ambitious and coordinated fiscal stance remains critical in view of the large but uneven burden that has arisen from the coronavirus pandemic. It is therefore

¹⁴ The fiscal stance reflects the direction and size of the stimulus from fiscal policies to the economy, beyond the automatic reaction of public finances to the business cycle. It is measured here as the change in the cyclically adjusted primary balance ratio net of government support to the financial sector. For more details on the concept of the euro area fiscal stance, see the article entitled “The euro area fiscal stance”, *Economic Bulletin*, Issue 4, ECB, 2016.

¹⁵ For more details, see the article entitled “Automatic fiscal stabilisers in the euro area and the COVID-19 crisis” in this issue of the *Economic Bulletin*.

highly welcome that the European Council has agreed on the NGEU fund which, for the first time, puts in place a temporary European budget to complement the fiscal stabilisers at the national level. This fund has the potential to significantly support the regions and sectors hardest hit by the pandemic, strengthen the Single Market and build a lasting and prosperous recovery. It is important that the European Council's decision leads to practical policy action and that the fiscal measures taken in response to the pandemic emergency are as much as possible targeted and temporary in nature.

Boxes

1 The Bulgarian lev and the Croatian kuna in the exchange rate mechanism (ERM II)

Prepared by Ettore Dorrucci, Michael Fidora, Christine Gartner and Tina Zumer

The Bulgarian lev and the Croatian kuna were included in the exchange rate mechanism (ERM II) on 10 July 2020. The decision was taken by mutual agreement of the finance ministers of the euro area countries, the President of the European Central Bank, and the finance ministers and central bank governors of Denmark, Bulgaria and Croatia. This followed a common procedure involving the European Commission and the Economic and Financial Committee. The start of ERM II participation marks the final step of a detailed roadmap. This roadmap set out a process which was characterised by constructive collaboration between the Bulgarian and Croatian authorities and the ERM II parties and based on thorough economic assessments and the principle of equal treatment.

ERM II was introduced in 1999 as one of the ways to assess a country's convergence with the euro area. The mechanism has two main purposes. The first is to act as an arrangement for managing the exchange rates between the currencies of the participating countries and the euro, and the second is to assist with the assessment of convergence for the adoption of the euro as established by Article 140 of the Treaty on the Functioning of the European Union. Therefore, participation in ERM II is not only legally at the core of the convergence criterion on exchange rate stability, it is also a means of testing the sustainability of convergence before and after adoption of the euro. As participating in ERM II for at least two years without severe tensions is a precondition for the eventual adoption of the euro, all EU Member States are expected to join the mechanism at some stage.

ERM II is a multilateral arrangement of fixed, but adjustable, exchange rates which provides for a central exchange rate between participating currencies and the euro and a fluctuation band with a standard width of $\pm 15\%$ around the central rate. Other main features are central bank interventions at the margins of the agreed fluctuation band and the availability of very short-term financing from participating central banks. When joining ERM II, national central banks can unilaterally commit to a narrower fluctuation band than that provided for by ERM II, without imposing any additional obligations on the ECB or the other participants in the mechanism.¹⁶ During ERM II participation, realignments of the central rate (as has happened in the past with the Slovak koruna) or changes to the width of the fluctuation band may be necessary as a result of significant changes in the equilibrium exchange rate of a given participating country or in the presence of inconsistent economic

¹⁶ Multilaterally agreed bands that are narrower than the standard band should only be considered at a very advanced stage of convergence. This is the case with the Danish krone, for which a multilaterally agreed fluctuation band of $\pm 2.25\%$ vis-à-vis the euro is in place.

policies. Interventions at the margins of the fluctuation bands are in principle automatic and unlimited. However, the ECB and the participating national central banks can suspend these interventions at any time if they conflict with the primary objective of maintaining price stability.

Experience shows that ERM II can accommodate different exchange rate regimes, as is now the case with those of Bulgaria and Croatia. The mechanism provides sufficient room for adjustment to shocks and market developments. At the same time, the mechanism may incorporate, as a unilateral commitment, tightly managed or pegged exchange rate regimes, and even currency board arrangements.¹⁷ A currency board arrangement was used by Eesti Pank and Lietuvos bankas before euro adoption and is being used today by Българска народна банка (Bulgarian National Bank). Hrvatska narodna banka maintains the stability of the exchange rate of the kuna against the euro in order to achieve its primary objective of price stability, but does not commit to a fixed exchange rate. In any event, all participating countries are required to stay in the mechanism for at least two years before the convergence reports prepared by the ECB and the European Commission may provide a possible positive assessment with regard to adoption of the euro.¹⁸

The process leading to ERM II participation has evolved over time, but always relies on the principle of equal treatment. When the last wave of countries joined ERM II, more than 15 years ago, participating in the mechanism required making and publishing a firm, but general, commitment to pursue stability-oriented policies. In the subsequent years, a number of important policy lessons were learned from the global financial crisis. The crisis affected not only the euro area, but also several countries whose currencies were participating in ERM II. Euro area governance was reformed following the crisis, resulting in tighter economic and fiscal surveillance and the establishment of the banking union. During that period it was also better understood that participation in ERM II may have important implications, as it constitutes a regime shift that can alter the economic incentives of international and local investors. In particular, after joining the mechanism, gross capital inflows other than foreign direct investment accelerated sharply in several countries, also in comparison with other countries in the region during the same period. In some cases this proved to be unsustainable, leading to episodes of major capital flow retrenchment in the subsequent years.

A key lesson learned from the global financial crisis was that, in the run-up to euro adoption, a high level of institutional quality and good governance help to reduce the risk of a build-up of excessive imbalances. Greater structural resilience creates the preconditions for allocating capital to productive firms instead of rent-seekers, thus supporting the catching-up process rather than the formation of

¹⁷ See “Policy position of the Governing Council of the European Central Bank on exchange rate issues relating to acceding countries”, ECB, Frankfurt am Main, 18 December 2003.

¹⁸ Euro adoption is decided on by the Council of the European Union in line with the relevant Treaty provisions. After consulting the European Parliament and after discussion in the European Council, the Council, on a proposal from the Commission, decides which eligible Member States outside the euro area fulfil the necessary conditions to adopt the euro. This decision is taken on the basis of a number of criteria listed in Article 140 of the Treaty on Functioning of the European Union. The reports on the fulfilment of such criteria, called convergence reports, are prepared by the ECB and the European Commission. The Council acts on the basis of a recommendation of a qualified majority of its Member States whose currency is the euro.

bubbles. Moreover, good governance implies that policymakers are able to resist pressure from vested interests against the implementation of necessary reforms and the building-up of buffers in normal and good times, including countercyclical macroprudential and fiscal measures. In the past few years these lessons and developments have been reflected in the roadmap to ERM II designed by the national authorities of Bulgaria and Croatia in cooperation with the ERM II parties.

The inclusion of a currency in ERM II follows the procedure outlined in the Resolution of the European Council of 16 June 1997.¹⁹ Decisions on ERM II participation are taken by mutual agreement of the ERM II parties, which means achieving a consensus about the pursuit of sustainable policies by the Member State requesting the inclusion of its currency in ERM II. At the same time, it has more recently been clarified that reaching this consensus depends on three fundamental factors: (i) reflecting the lessons learned from past crises; (ii) taking into consideration the introduction of the banking union; and (iii) recognising the need to take due account of any country-specific vulnerabilities that need to be addressed to ensure smooth participation in the exchange rate mechanism.

Based on this approach, the Bulgarian and Croatian authorities identified a number of prior policy commitments, which were formally adopted in the summer of 2018 by Bulgaria and in the summer of 2019 by Croatia. They were designed in collaboration with the ERM II parties and had to be voluntarily fulfilled before starting ERM II participation. These commitments reflect the current reality in a way that is reasonable, proportional and motivated. In particular, the commitments have to be specific, realistic and verifiable in nature and they have to be implemented, monitored and verified within a relatively short space of time. Their fulfilment has been monitored and assessed by the ECB and the European Commission, each in their respective field of competence, namely banking supervision and macroprudential policy for the ECB and structural policies for the European Commission (fiscal policies fall under the provisions of the Stability and Growth Pact).

With a view to ensuring a sustainable convergence path to the euro area, Bulgaria and Croatia made additional policy commitments when they joined ERM II on 10 July 2020.²⁰ In line with past practices, Bulgaria and Croatia made voluntary policy commitments, the so-called post-entry commitments, when they began their participation in ERM II. The agreement on participation of the Bulgarian lev and the Croatian kuna in ERM II has also been accompanied by a firm commitment by the respective national authorities to pursue sound economic policies with the aim of preserving economic and financial stability and achieving a high degree of sustainable economic convergence. The authorities, together with the responsible European Union bodies, will closely monitor macroeconomic policy developments and the implementation of these policy measures, in the appropriate frameworks. All in all, the process leading to ERM II entry has acted as a catalyst for reforms that will mitigate risks under ERM II with a view to subsequent euro adoption. Although these reforms

¹⁹ Resolution of the European Council on the establishment of an exchange-rate mechanism in the third stage of economic and monetary union (OJ C 236, 2.8.1997, p. 5).

²⁰ See the ECB's website for the ERM II communiqués, the countries' application letters and the list of post-entry commitments of [Bulgaria](#) and [Croatia](#).

do not eliminate risks, their importance in preparing for sustainable participation in the monetary union should not be underestimated.

The Bulgarian lev and the Croatian kuna were included in ERM II with their current exchange rate levels. The Bulgarian lev has been included in ERM II with a central exchange rate of 1.95583 leva per euro, which corresponds to the fixed exchange rate under Bulgaria's currency board arrangement. The Croatian kuna has been included in ERM II with a central exchange rate of 7.53450 kuna per euro, which corresponds to the prevailing market rate at the time of its inclusion on 10 July 2020.

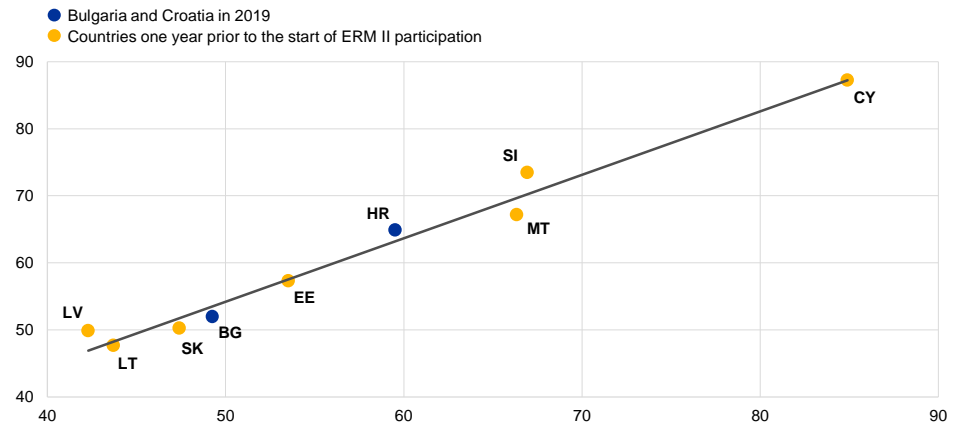
The inclusion of both currencies at their current exchange rate reflects the fact that Bulgaria and Croatia have a remarkable track record of exchange rate stability, under which both economies have undergone significant external adjustment. For more than two decades Българска народна банка (Bulgarian National Bank) has operated a currency board arrangement under which it commits to exchange leva against the euro at a fixed exchange rate. Hrvatska narodna banka has maintained a managed floating exchange rate regime under which the kuna fluctuates within a relatively narrow range around its average exchange rate against the euro. While fundamentally different in their functioning, both regimes have served their economies well. In particular, they proved resilient in periods of severe financial market stress, including during the ongoing coronavirus (COVID-19) pandemic. Moreover, both countries underwent significant external adjustment after the onset of the global financial crisis. This involved the correction of large current account deficits, which have since turned into surpluses. As a result, there has been a sizeable reduction of net external liabilities, with both central banks accumulating comfortable buffers in terms of foreign exchange reserves.

External rebalancing has been coupled with nominal adjustment in both countries, with price levels clearly reflecting the state of convergence of the two economies. Both countries recorded substantial increases in prices and costs before the global financial crisis. These were partly a by-product of the real convergence process, i.e. the fact that both countries were catching up in terms of income levels relative to the rest of the European Union. Conversely, the global financial crisis brought about some correction of price and cost levels in both Bulgaria and Croatia. As a result, their price levels relative to the euro area are now well in line with their income levels relative to the euro area. While such levels remain significantly below that of the euro area, this does not in itself constitute an impediment to participation in ERM II. Past experience has in fact shown that countries that join ERM II at comparable or even less advanced stages of convergence can subsequently introduce the euro in a successful way. In this regard, a more important prerequisite for successful participation in ERM II is that price levels are commensurate with income levels (as shown in Chart A) and, more generally, with the economic fundamentals of the country.

Chart A

GDP per capita and price levels relative to the euro area

(percentages; x-axis: GDP per capita relative to the euro area; y-axis: price level relative to the euro area)



Source: ECB.

2 The ECB's enhanced effective exchange rate measures

Prepared by Michael Fidora and Martin Schmitz

The effective exchange rate (EER) of a currency is an index of the weighted average of its bilateral exchange rates vis-à-vis the currencies of selected trading partners; a real EER is derived by adjusting this nominal index for relative prices or costs.²¹ The weighting scheme used to aggregate the bilateral rates accounts for the relative importance of each country as a trading partner. The nominal trade-weighted EER provides a summary measure of a currency's external value, whereas the real trade-weighted EER is the most commonly used indicator of the international price and cost competitiveness of an economy.

The ECB has recently enhanced the calculation of its euro EER indices to take account of the evolution of international trade linkages and, in particular, the growing importance of international trade in services.²² The ECB updates the trade weights underlying the calculation of its EER indices every three years, in order to capture medium-term changes in the pattern of euro area trade in a timely fashion. In the most recent exercise, which was finalised in July 2020, the ECB revised the weighting scheme to include not only manufacturing but also services trade.²³ While manufacturing still accounts for the largest part of euro area trade, services trade has gained in importance over the past decades in the light of globalisation and digitalisation and represented around 30% of euro area trade at the end of 2019.²⁴ In addition, improved data coverage made it easier to include services trade on the basis of the established ECB methodology. The number of trading partners covered by the EER indices was also increased from 38 to 42, accounting for close to 90% of euro area trade in manufacturing goods and services.²⁵

The new trade weights show the role of emerging market economies, which became increasingly important for euro area trade during the 2000s, to be no longer growing, whereas central and eastern European EU Member States gained in importance (see Chart A). In fact, central and eastern European EU Member States – owing to their further integration into European value chains – increased their combined share in euro area trade in the period from 2016 to 2018 to virtually equal that of China. The share of emerging market economies, on the other

²¹ Harmonised competitiveness indicators (HCIs), which are based on the same methodology and data as the euro EER indices, are computed for the individual euro area countries. They have been enhanced in the same way as the EER indices.

²² For an overview of the methodology used to calculate the EER indices, see Schmitz, M., De Clercq, M., Fidora, M., Lauro, B. and Pinheiro, C., "Revisiting the effective exchange rates of the euro", *Journal of Economic and Social Measurement*, Vol. 38, No 2, 2013, pp. 127-158; and Brisson, R. and Schmitz, M. "The ECB's enhanced effective exchange rates and harmonised competitiveness indicators – an updated weighting scheme including trade in services", *Statistics Paper Series*, ECB (forthcoming).

²³ In this exercise the average trade weights for the three-year period from 2016 to 2018 were added to the series, while the weights for previous periods (from 1995 to 2015) were revised.

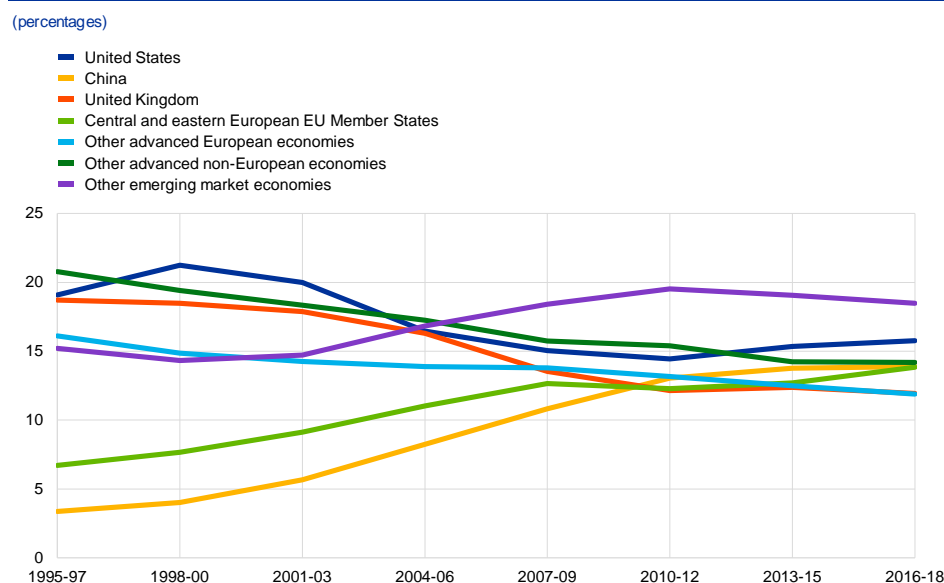
²⁴ Services trade is larger than manufacturing trade for Luxembourg, Cyprus, Malta, Ireland and Greece (in descending order).

²⁵ Colombia, Peru, Saudi Arabia, Ukraine and the United Arab Emirates were added to the group of trading partners, which now comprises all non-euro area countries in the EU, the G20 and the Organisation for Economic Co-operation and Development, as well as Algeria, Hong Kong SAR, Malaysia, Morocco, Peru, the Philippines, Taiwan, Thailand, the United Arab Emirates and Ukraine. Venezuela was excluded from the group of trading partners owing to the difficulty in obtaining reliable economic statistics for this country and to its diminished role as a trading partner for the euro area.

hand, even declined, despite China's share having marginally increased. In terms of individual countries, the United States remained the euro area's most important trading partner – its share even increasing slightly, reflecting mainly the growing importance of services trade – followed by China and the United Kingdom, whose share has, however, decreased significantly since the mid-1990s.

Chart A

The evolution of overall trade weights in the euro EER-42 over time



Source: ECB.

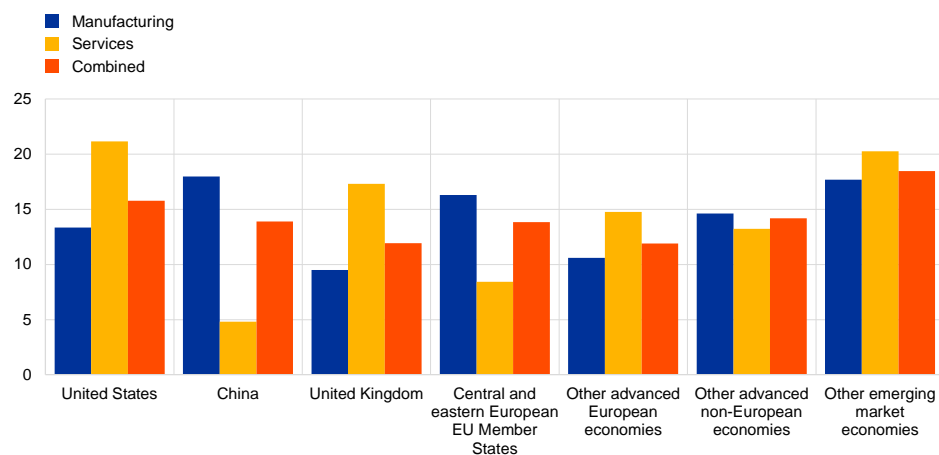
Notes: "Central and eastern European EU Member States" comprises Bulgaria, the Czech Republic, Croatia, Hungary, Poland and Romania; "other advanced European economies" comprises Denmark, Iceland, Norway, Sweden and Switzerland; "other advanced non-European economies" comprises Australia, Canada, Hong Kong SAR, Israel, Japan, New Zealand, Singapore, South Korea and Taiwan; and "other emerging market economies" comprises Algeria, Argentina, Brazil, Chile, Colombia, India, Indonesia, Malaysia, Mexico, Morocco, Philippines, Peru, Russia, Saudi Arabia, South Africa, Thailand, Turkey, Ukraine and the United Arab Emirates.

There are significant differences in the relative importance of manufacturing and services trade for the euro area's most important trading partners (see Chart B). The role of the United States as the euro area's single most important trading partner is primarily due to its large share in services trade with the euro area, in particular in terms of telecommunications, computer and information services, as well as other business services; the United States' share in manufacturing trade is well below that of China, the euro area's most important trading partner when only manufacturing is considered. Trade in services is also much higher than manufacturing trade for the United Kingdom and the group "other advanced European economies", whereas it is much lower for central and eastern European EU Member States, whose trade linkages with the euro area are to a large extent shaped by their integration in European manufacturing value chains.

Chart B

Trade weights in the euro EER-42: manufacturing, services and combined

(percentages)



Source: ECB.

Notes: Trade weights are averages over the period 2016 to 2018. Country groups are as defined in the notes to Chart A.

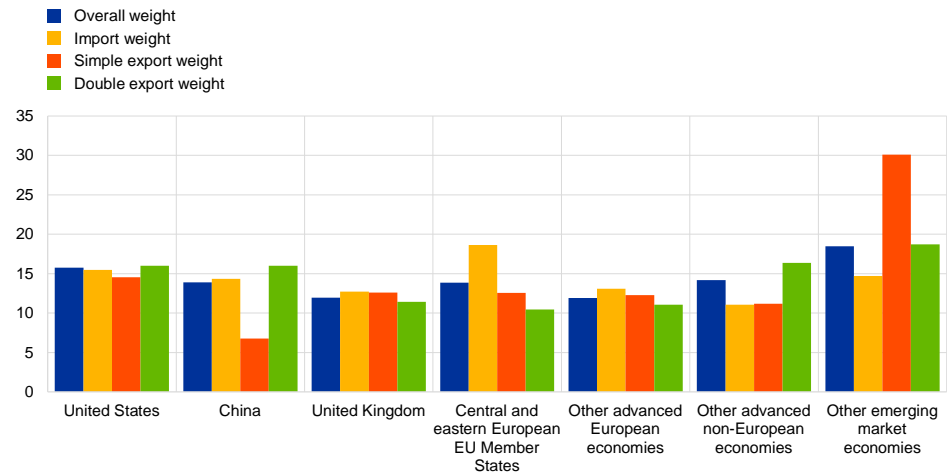
Import and export weights are broadly similar for most countries and regions, even after correcting for competition in “third markets” (see Chart C).

Overall trade weights are calculated as (weighted) averages of export and import weights measuring the share of each country in the euro area’s exports or imports respectively. On the export side, however, euro area companies compete with producers from a particular country not only in the latter’s home market but also in other foreign markets, i.e. “third markets”. To take account of this effect, “double” export weights are used to calculate the overall trade weights. While for most countries and regions the single and double export weights do not deviate much from one another, for China the difference is pronounced. This reflects China’s role as the leading global exporter of goods, which also implies that it is an important competitor in third markets. The opposite is true for other emerging market economies, which account for a significant share of the euro area’s direct exports, but compete only to a limited extent in third countries as their share in global exports is relatively small. For most countries, the import and (double) export weights are also similar. A notable exception to this general pattern is found, however, for EU Member States from central and eastern Europe. The role this region plays in Europe’s highly integrated value chains implies that it is more important for the euro area in terms of imports than exports, both on the basis of direct exports and even more so when third market competition is considered.

Chart C

Trade weights in the euro EER-42: overall weights, import weights, simple export weights and double export weights

(percentages)



Source: ECB.

Notes: Trade weights are averages over the period 2016 to 2018. Country groups are as defined in the notes to Chart A.

With the enhanced weighting scheme, it emerges that the appreciation of the euro since the beginning of 2017 has been slightly less pronounced in nominal terms than it appeared to be based on the previous weighting scheme, primarily owing to the increased weight of advanced economies.²⁶ Between the beginning of 2017 and the end of August 2020, the updated daily nominal EER of the euro vis-à-vis the EER-42 group of trading partners appreciated by 12.3%, compared with 13.8% according to the indicator based on the old manufacturing weighting scheme (see Chart D).²⁷ This revision is mainly due to the increased weight of advanced economies (reflecting mostly the inclusion of services trade in the weighting scheme), whose currencies depreciated against the euro by less, on average, than the currencies of emerging market economies. In real terms, however, developments were very consistent, with both the enhanced real EER-42 (deflated by the consumer price index) and the previously published series appreciating by just below 7% between January 2017 and August 2020 (see Chart E).

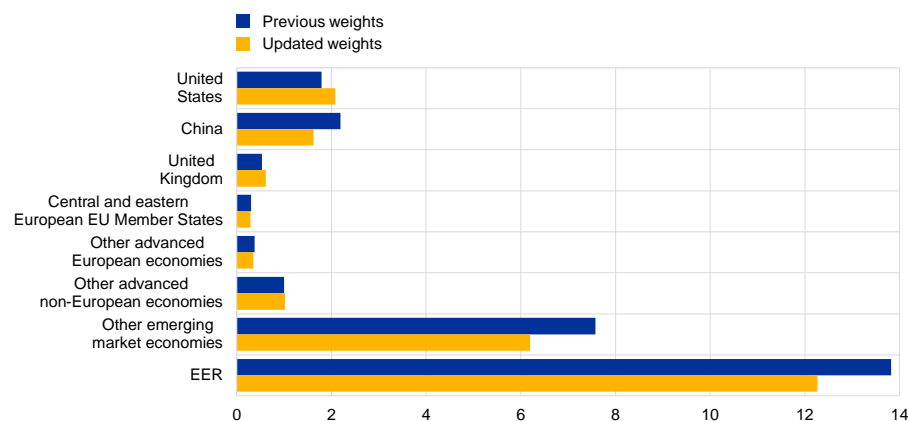
²⁶ The weights combining manufacturing and services trade are used for the nominal EER indices and the real EER indices deflated by consumer prices, the GDP deflator and unit labour costs in the total economy, whereas the real EER indices deflated by manufacturing producer prices and unit labour costs in the manufacturing sector continue to be based on manufacturing weights.

²⁷ Differences between the updated and previous EERs also arise from the fact that all trade weights – including those for manufacturing – were updated to reflect data revisions and methodological improvements.

Chart D

The evolution of the nominal euro EER based on previous and updated weights

(percentage changes, 31 August 2020 relative to 2 January 2017)



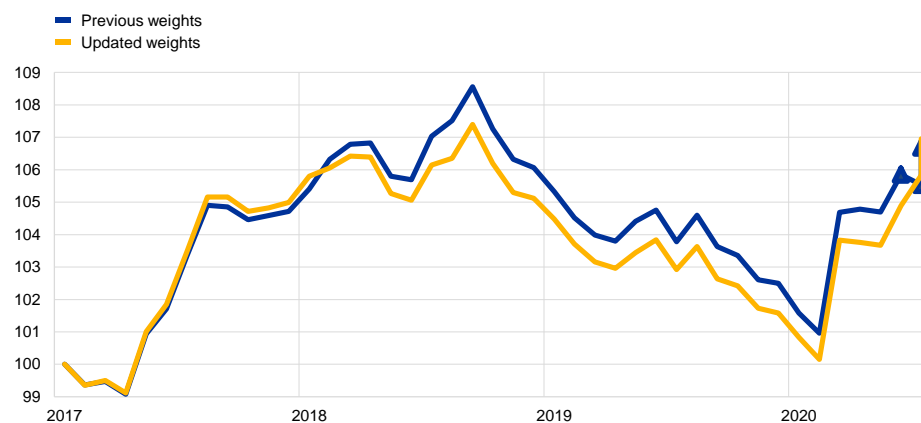
Source: ECB.

Notes: Country groups are as defined in the notes to Chart A. The "updated weights" series refers to the EER-42, encompassing 42 countries and trade weights combining manufacturing and services trade, while the "previous weights" series refers to the EER-38 based on the old manufacturing weighting scheme (i.e. excluding trade in services and covering only 38 trading partners), which was discontinued as of June 2020.

Chart E

The evolution of the real euro EER deflated by the consumer price index based on previous and updated weights

(index; rebased to January 2017 = 100)



Source: ECB.

Notes: The "updated weights" series refers to the EER-42, encompassing 42 countries and trade weights combining manufacturing and services trade, while the "previous weights" series refers to the EER-38 based on the old manufacturing weighting scheme (i.e. excluding trade in services and covering only 38 trading partners), which was discontinued as of June 2020. Observations for the period June to August 2020 (as indicated by the triangles) are mechanical updates of the discontinued series.

3 Liquidity conditions and monetary policy operations in the period from 6 May to 21 July 2020

Prepared by Simon Forsyth and Christian Lizarazo

This box describes the ECB's monetary policy operations and liquidity developments during the third and fourth reserve maintenance periods of 2020, which ran from 6 May to 21 July 2020. During this period, the market volatility associated with the coronavirus (COVID-19) crisis abated. This was helped by the implementation of measures announced by central banks, including the European Central Bank (ECB), and the fiscal support measures introduced by governments and EU authorities.

The levels of central bank liquidity in the banking system continued to rise during the third and fourth maintenance periods of 2020. This was largely due to the settlement of the targeted long-term refinancing operations (TLTRO III) and the asset purchases conducted under the asset purchase programme (APP) and the pandemic emergency purchase programme (PEPP). The Governing Council of the ECB decided on 4 June to increase the size of the PEPP envelope by €600 billion to €1,350 billion and to extend the purchase horizon until at least the end of June 2021. Moreover, it was decided that the maturing principal payments from securities purchased under the PEPP will be reinvested until at least the end of 2022.

In response to the COVID-19 crisis, the Governing Council also decided to set up a new Eurosystem repo facility for non-euro area central banks (EUREP). This facility will provide precautionary euro repo lines to non-euro area central banks, addressing possible euro liquidity needs in case of market dysfunction resulting from the COVID-19 shock that might adversely impact the smooth transmission of ECB monetary policy. Under EUREP, the Eurosystem will provide euro liquidity to a broad set of non-euro area central banks against adequate collateral, consisting of euro-denominated marketable debt securities issued by euro area central governments and supranational institutions. EUREP complements the ECB's bilateral swap and repo lines which provide euro liquidity to non-euro area central banks. New bilateral repo lines with Romania, Serbia and Albania were announced during the review period.

Liquidity needs

The banking system's average daily liquidity needs, defined as the sum of net autonomous factors and reserve requirements, stood at €1,934.7 billion in the period under review. This was €321.3 billion higher than in the previous review period comprising the first two maintenance periods of 2020 (see the section of Table A entitled "Other liquidity-based information"). Net autonomous factors increased by €316.6 billion to €1,794.3 billion, while minimum reserve requirements increased by €4.7 billion to €140.4 billion.

Government deposits were by far the main autonomous factor that absorbed liquidity during the review period. Liquidity absorption by government deposits increased on average by €261.5 billion to €583 billion. Euro area government deposits stood at record highs, making up more than 9% of the Eurosystem's balance sheet on average during the review period, compared with less than 6% during the previous review period. This growth in government deposits, which was well above trend, likely reflected fiscal measures, or the preparation thereof, undertaken by euro area governments to address the COVID-19 crisis. In addition to government deposits, banknotes and other autonomous factors contributed €58.1 billion and €19.5 billion respectively to an additional aggregate liquidity absorption of €77.6 billion compared with the previous review period. Autonomous factors that provided liquidity added €22.6 billion in liquidity relative to the previous review period, offsetting only partially the above-mentioned liquidity absorbing effect. In particular, net assets denominated in euro decreased by €37.9 billion, whereas net foreign assets increased by €60.5 billion relative to the previous review period (see the section of Table A entitled "Assets").

On the whole, during the period under review, the supply of overall liquidity through monetary policy operations was well in excess of the liquidity absorption induced by net autonomous factors.

Table A
Eurosystem liquidity conditions

	Current review period: 6 May 2020 to 21 July 2020			Previous review period: 29 January 2020 to 5 May 2020				
	Third and fourth maintenance periods		Third maintenance period: 6 May to 9 June	Fourth maintenance period: 10 June to 21 July	First and second maintenance periods			
Autonomous liquidity factors	2,849.3	(+339.1)	2,741.3	(+142.5)	2,939.4	(+198.1)	2,510.3	(+130.0)
Banknotes in circulation	1,357.6	(+58.1)	1,347.9	(+26.1)	1,365.7	(+17.7)	1,299.5	(+27.7)
Government deposits	583.0	(+261.5)	477.1	(+102.7)	671.2	(+194.2)	321.5	(+101.7)
Other autonomous factors ¹	908.8	(+19.5)	916.3	(+13.8)	902.5	(-13.8)	889.3	(+0.6)
Current accounts above minimum reserve requirements	2,033.1	(+437.5)	1,827.1	(+142.6)	2,204.7	(+377.6)	1,595.6	(+85.5)
Minimum reserve requirements ²	140.4	(+4.7)	139.4	(+3.7)	141.2	(+1.8)	135.7	(+1.4)
Deposit facility	330.5	(+72.3)	299.9	(+28.2)	356.0	(+56.0)	258.2	(+1.8)
Liquidity-absorbing fine-tuning operations	0.0	(+0.0)	0.0	(+0.0)	0.0	(+0.0)	0.0	(+0.0)

Source: ECB.

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

1) Computed as the sum of the revaluation accounts, other claims and liabilities of euro area residents, capital and reserves.

2) "Minimum reserve requirements" is a memo item that does not appear on the Eurosystem balance sheet and therefore should not be included in the calculation of total liabilities.

Assets

(averages; EUR billions)

	Current review period: 6 May 2020 to 21 July 2020						Previous review period: 29 January 2020 to 5 May 2020	
	Third and fourth maintenance periods		Third maintenance period: 6 May to 9 June		Fourth maintenance period: 10 June to 21 July		First and second maintenance periods	
Autonomous liquidity factors	1,055.4	(+22.6)	1,036.7	(-3.8)	1,071.0	(+34.3)	1,032.8	(+23.7)
Net foreign assets	907.3	(+60.5)	950.4	(+24.1)	871.3	(-79.1)	846.7	(+75.6)
Net assets denominated in euro	148.2	(-37.9)	86.3	(-27.9)	199.7	(+113.5)	186.1	(-52.0)
Monetary policy instruments	4,291.9	(+824.7)	3,971.0	(+320.5)	4,559.3	(+588.3)	3,467.2	(+195.0)
Open market operations	4,291.9	(+824.7)	3,971.0	(+320.5)	4,559.3	(+588.3)	3,467.2	(+195.0)
Tender operations	1,206.1	(+464.3)	984.1	(+117.8)	1,391.1	(+407.0)	741.8	(+97.7)
MROs	0.6	(-0.4)	0.3	(-0.2)	0.8	(+0.5)	1.0	(-1.3)
Three-month LTROs	2.2	(-0.9)	2.0	(-0.2)	2.3	(+0.3)	3.1	(-0.3)
TLTRO II operations	282.8	(-188.3)	418.1	(-13.2)	170.0	(-248.2)	471.1	(-118.8)
TLTRO III operations	691.9	(+541.5)	216.1	(+16.4)	1,088.4	(+872.3)	150.4	(+101.9)
Bridge LTROs	228.6	(+112.4)	347.5	(+115.1)	129.6	(-217.9)	116.2	(+116.2)
Outright portfolios	3,085.8	(+360.4)	2,986.9	(+202.7)	3,168.2	(+181.3)	2,725.4	(+97.3)
First covered bond purchase programme	0.6	(-0.5)	0.7	(-0.1)	0.5	(-0.2)	1.1	(-0.9)
Second covered bond purchase programme	2.9	(-0.0)	2.9	(-0.0)	2.9	(-0.0)	2.9	(-0.0)
Third covered bond purchase programme	282.3	(+9.3)	280.7	(+4.5)	283.7	(+3.1)	273.0	(+9.2)
Securities markets programme	36.7	(-5.5)	38.5	(-2.0)	35.1	(-3.4)	42.2	(-5.6)
Asset-backed securities purchase programme	30.8	(+0.9)	30.9	(-0.3)	30.7	(-0.2)	29.9	(+1.7)
Public sector purchase programme	2,230.2	(+79.4)	2,212.9	(+38.0)	2,244.5	(+31.6)	2,150.7	(+50.8)
Corporate sector purchase programme	217.0	(+18.0)	212.4	(+8.0)	220.9	(+8.5)	199.0	(+15.6)
Pandemic emergency purchase programme	285.3	(+258.7)	207.9	(+154.7)	349.8	(+141.9)	26.6	(+26.6)
Marginal lending facility	0.0	(-0.0)	0.0	(+0.0)	0.0	(-0.0)	0.0	(-0.0)

Source: ECB.

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

Other liquidity-based information

(averages; EUR billions)

	Current review period: 6 May 2020 to 21 July 2020			Previous review period: 29 January 2020 to 5 May 2020
	Third and fourth maintenance periods	Third maintenance period: 6 May to 9 June	Fourth maintenance period: 10 June to 21 July	First and second maintenance periods
Aggregate liquidity needs ¹	1,934.7 (+321.3)	1,844.4 (+150.2)	2,009.9 (+165.5)	1,613.4 (+107.7)
Net autonomous factors ²	1,794.3 (+316.6)	1,705.0 (+146.5)	1,868.8 (+163.7)	1,477.8 (+106.3)
Excess liquidity ³	2,363.6 (+509.8)	2,127.1 (+170.8)	2,560.7 (+433.6)	1,853.8 (+87.3)

Source: ECB.

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

1) Computed as the sum of net autonomous factors and minimum reserve requirements.

2) Computed as the difference between autonomous liquidity factors on the liability side and autonomous liquidity factors on the asset side. For the purpose of this table, items in course of settlement are also added to net autonomous factors.

3) Computed as the sum of current accounts above minimum reserve requirements and the recourse to the deposit facility minus the recourse to the marginal lending facility.

Interest rate developments

(averages; percentages)

	Current review period: 6 May 2020 to 21 July 2020			Previous review period: 29 January 2020 to 5 May 2020
	Third and fourth maintenance periods	Third maintenance period: 6 May to 9 June	Fourth maintenance period: 10 June to 21 July	First and second maintenance periods
MRO	0.00 (+0.00)	0.00 (+0.00)	0.00 (+0.00)	0.00 (+0.00)
Marginal lending facility	0.25 (+0.00)	0.25 (+0.00)	0.25 (+0.00)	0.25 (+0.00)
Deposit facility	-0.50 (+0.00)	-0.50 (+0.00)	-0.50 (+0.00)	-0.50 (+0.00)
EONIA ¹	-0.460 (-0.01)	-0.457 (-0.01)	-0.463 (-0.01)	-0.451 (+0.00)
€STR	-0.546 (-0.01)	-0.542 (+0.00)	-0.548 (-0.01)	-0.536 (+0.00)

Source: ECB.

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

1) Computed as the euro short-term rate (€STR) plus 8.5 basis points from 1 October 2019. Differences in the changes shown for the euro overnight index average (EONIA) and the €STR are due to rounding.

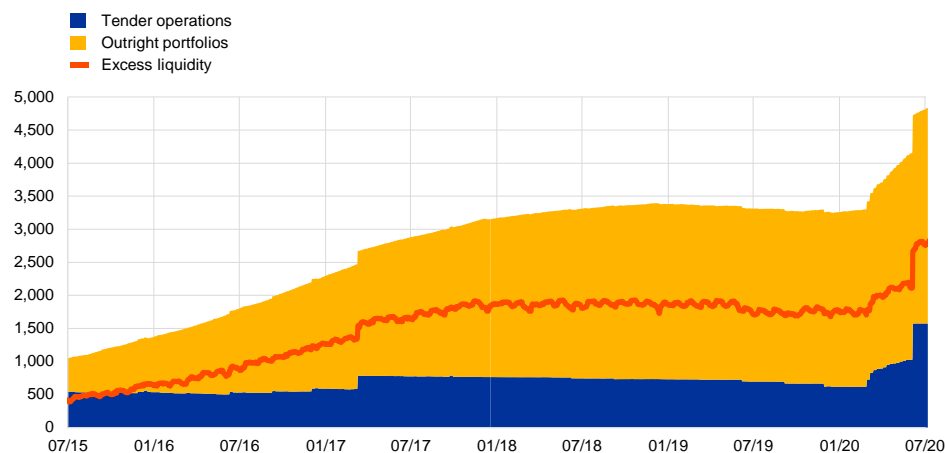
Liquidity provided through monetary policy instruments

The average amount of liquidity provided through open market operations increased by €24.7 billion to €4,291.9 billion (see Chart A). More than half (56%) of the increase in liquidity provided through monetary policy instruments was injected through credit operations; the remaining 44% was introduced through outright asset purchases. In particular, TLTRO III and the PEPP, with €541.5 billion and €258.7 billion respectively, contributed the largest amount of liquidity through monetary policy instruments.

Chart A

Evolution of liquidity provided through open market operations and excess liquidity

(EUR billions)



Source: ECB.

Note: The latest observation is for 21 July 2020.

The average amount of liquidity provided through tender operations increased by €64.3 billion during this review period, attributable largely to settlement of the fourth operation in the TLTRO III series (TLTRO III.4) in June 2020. The average increase of €541.5 billion provided through TLTRO III.4 was partially offset by maturities and/or voluntary repayments under the TLTRO II programme, representing a shift by counterparties to the more economically appealing TLTRO III.4. On average, maturities and repayments under the TLTRO II programme amounted to -€188.3 billion. Apart from the TLTRO II and III programmes, the newly introduced LTROs were an additional important instrument which added an average €12.4 billion in liquidity compared with the previous review period. These LTROs were introduced on 12 March 2020 as a transition instrument to provide immediate access to funding at particularly favourable conditions while allowing for a smoother rollover of funds into TLTRO III. The newly introduced LTROs matured before the end of the review period on 24 June 2020. During the review period, the ECB also conducted the first two of seven new pandemic emergency longer-term refinancing operations (PELTROs), which were announced in April 2020. These operations aimed at supporting the smooth functioning of money markets by providing an effective backstop to money market rates. These PELTROs added an average amount of €3.2 billion in liquidity. The main refinancing operation (MRO) and three-month LTROs played only a marginal role, recording an average aggregate decline of €1.3 billion compared with the previous review period.

At the same time, outright portfolios increased by €60.4 billion to €3,085.8 billion, owing to the continuation of net purchases under the APP and the PEPP. Average holdings in the PEPP amounted to an average of €285.3 billion, representing an increase of €258.7 billion in relation to the previous review period. Purchases under the PEPP represented the largest increase by far across all asset purchase programmes, followed by the public sector purchase programme (PSPP) and the corporate sector purchase programme (CSPP), with average increases of €79.4 billion to €2,230.2 billion and €18.0 billion to €217.0 billion respectively.

Excess liquidity

Average excess liquidity increased by €99.8 billion to €2,363.6 billion (see Chart A). Banks' deposits with the Eurosystem grew by €437.5 billion to €2,033.1 billion in the current accounts in excess of minimum reserve requirements, and by €72.3 billion to €330.5 billion in the deposit facility. The partial exemption of excess liquidity holdings from negative remuneration at the deposit facility rate applies only to balances held in the current accounts. Banks therefore have an economic incentive to hold reserves in the current account instead of the deposit facility.

Interest rate developments

The €STR fell by 0.9 basis points (bps) during this review period compared with the previous review period owing to rising excess liquidity. The €STR stood on average at -54.5 bps during the review period compared with an average of -53.6 during the previous review period. The EONIA, which as of October 2019 is calculated as the €STR plus a fixed spread of 8.5 bps, moved in parallel with the €STR. ECB policy rates including the rates on the deposit facility, the main refinancing operation and the marginal lending facility were left unchanged during the review period.

The impact of the recent spike in uncertainty on economic activity in the euro area

Prepared by Arne Gieseck and Svetlana Rujin

The coronavirus (COVID-19) pandemic has triggered an unprecedented increase in uncertainty. Substantial uncertainty surrounds all aspects of the pandemic: the infectiousness and lethality of the virus; the capability of healthcare systems to adapt to a surge in demand and to develop a medical solution; the duration and effectiveness of containment measures (such as lockdowns and social distancing) and their impact on economic activity and employment; the speed of the recovery once containment measures are eased; and the extent to which the pandemic will permanently impact consumption, investment and growth potential.

This box shows how uncertainty has evolved in the euro area and the impact it will likely have on real economic activity. While uncertainty is not directly observable, a number of proxies have been proposed and applied in the literature.²⁸ This box shows how selected measures of uncertainty have evolved during the past few months and exploits the information embedded in a measure of macroeconomic uncertainty to assess its impact on economic activity. This is done using a Bayesian vector autoregressive (BVAR) model which allows us to estimate the dynamic effect of an uncertainty shock on the variable of interest.

Selected measures confirm a steep increase in uncertainty coinciding with the spread of COVID-19 in the euro area. Chart A shows how four selected measures of uncertainty in the euro area have evolved over the past 13 years. The analysis includes two measures of macroeconomic and financial uncertainty. They are based on the difficulty of predicting future economic outcomes, which is a function of the increase in the projection errors for a broad range of business cycle and financial variables.²⁹ In addition, the analysis includes a widely used proxy of forecast uncertainty, measured through the disagreement among professional forecasters³⁰, and a measure of economic policy uncertainty which is based on newspaper coverage³¹. The chart shows that macroeconomic uncertainty, forecast disagreement and economic policy uncertainty have increased to historically high levels since early 2020, while financial uncertainty has increased more modestly. While the increase in financial uncertainty is likely to reflect an exogenous increase in uncertainty, the rather strong increase of the former group of uncertainty measures is likely to partly reflect an endogenous response of these measures to business cycle fluctuations.³² In the

²⁸ For an overview, see the article entitled “The impact of uncertainty on activity in the euro area”, *Economic Bulletin*, Issue 8, ECB, 2016.

²⁹ See Jurado, K., Ludvigson, S.C. and Ng, S., “Measuring Uncertainty”, *American Economic Review*, Vol. 105, No 3, 2015, pp. 1177-1216.

³⁰ See, for example, Zamowitz, V. and Lambros, L.A., “Consensus and Uncertainty in Economic Prediction”, *Journal of Political Economy*, Vol. 95, No 3, 1987, pp. 591-621.

³¹ See Baker, S.R., Bloom, N. and Davis, S.J., “Measuring Economic Policy Uncertainty”, *The Quarterly Journal of Economics*, Vol. 131, No 4, 2016, pp. 1593-1636; and the box entitled “Sources of economic policy uncertainty in the euro area: a machine learning approach”, *Economic Bulletin*, Issue 5, ECB, 2019.

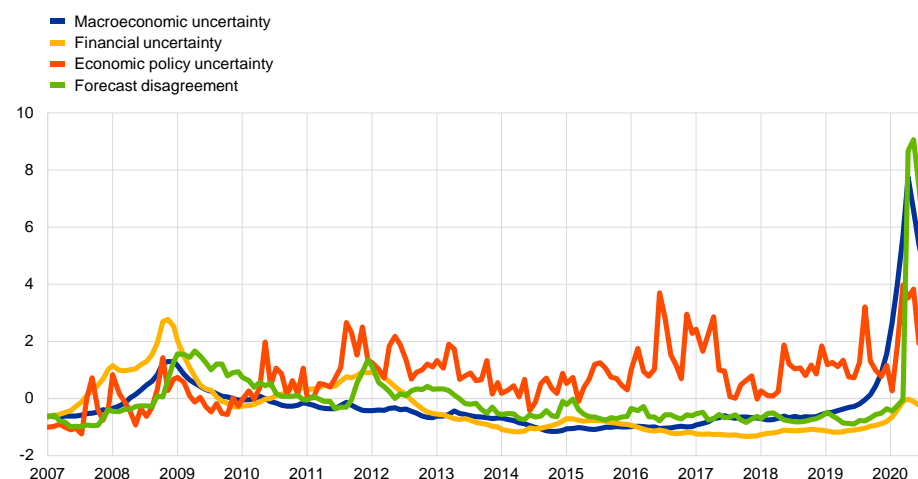
³² See Ludvigson, S.C., Ma, S. and Ng, S., “Uncertainty and Business Cycles: Exogenous Impulse or Endogenous Response?”, *American Economic Journal: Macroeconomics*, forthcoming.

current context, the imposition of lockdown measures led to hard-to-predict variations in macroeconomic variables and is thus responsible for at least part of the increase in these uncertainty measures. All this suggests that most of the observed increase in uncertainty can likely be attributed to the COVID-19 outbreak, which started to affect the euro area in February 2020.

Chart A

Measures of uncertainty in the euro area

(standard deviation from mean)



Sources: Eurostat, Haver and ECB staff calculations.

Notes: All measures of uncertainty are standardised to mean zero and unit standard deviation over the full horizon starting in June 1991. A value of 2 should be read as meaning that the uncertainty measure exceeds its historical average level by two standard deviations. The latest observations are for August 2020.

Heightened uncertainty is likely to dampen activity via a number of channels.³³

First, as investment and employment decisions may be costly to revert or even irreversible, it might be preferable for a company to postpone a decision until further information has become available or uncertainty about the future economic outlook has diminished. Second, high uncertainty may dampen activity through increasing risk premia and the rising costs of debt financing, as reduced predictability is generally associated with higher risk aversion. Third, high uncertainty could lead households to increase their precautionary savings, which would reduce current private consumption and further dampen GDP growth. Fourth, episodes of very high uncertainty might cause permanent changes in the behaviour of households and businesses, especially if they occur frequently. Finally, and given the above-mentioned channels, high uncertainty could make an economy less sensitive to monetary and fiscal policy actions; at the same time, if uncertainty is high, economic policy can be particularly effective by reducing uncertainty through several of the above-mentioned channels.

Model-based analysis suggests that uncertainty shocks have a substantial impact on real economic activity in the euro area. The BVAR model includes a set of monetary, real and nominal variables, as well as oil prices and a confidence

³³ For an overview, see Bloom, N., "Fluctuations in Uncertainty", *Journal of Economic Perspectives*, Vol. 28, No 2, 2014, pp. 153-176.

indicator.³⁴ The measure of macroeconomic uncertainty discussed above is used as a proxy for uncertainty in the euro area. It is included as the first, and most exogenous, variable in the model, which implies that the estimated impact can be regarded as the upper end of the possible range.³⁵ The model is estimated over the period from the second quarter of 1991 to the second quarter of 2020 using quarterly data, with four lags.³⁶ The model is then used to simulate the dynamic effects of an uncertainty shock on the euro area economy.³⁷

An adverse macroeconomic uncertainty shock has a significant negative effect on real GDP in the euro area in the short term (see Chart B).

Following an increase in macroeconomic uncertainty by one standard deviation, real GDP growth is adversely affected for up to four quarters. The biggest impact is observed in the first and second quarters after the shock occurs, when the dent in real GDP growth amounts to 0.1 percentage points in each quarter. The cumulated impact on the level of real GDP one year after the shock is estimated to amount to around 0.4%. Afterwards, the significance of the impact diminishes. As is to be expected, real fixed capital formation reacts much more strongly to an increase in uncertainty (down about 0.7% six quarters after the shock) than real GDP, while real private consumption is less affected than GDP (down 0.2% one year after the shock). In the context of the model, a shock to uncertainty causes an immediate and substantial decline in economic sentiment and has a lasting impact on employment, which would decline by about 0.2% after two years.³⁸

³⁴ The BVAR model includes 11 variables with the following ordering: (1) the macroeconomic uncertainty proxy, (2) the EURO STOXX 50 index, (3) the European economic sentiment indicator, (4) the USD/EUR exchange rate, (5) the long-term interest rate, (6) the oil price in EUR/barrel, (7) the GDP deflator, (8) total employment, (9) real private consumption, (10) real total fixed investment, and (11) real GDP. This ordering is based on the assumptions that financial markets and monetary variables are fast-moving, whereas real macroeconomic aggregates are comparatively slower-moving.

³⁵ A robustness analysis in which uncertainty is ordered last, and thus is the most endogenous variable, broadly confirms the results presented below.

³⁶ The BVAR methodology used in this analysis follows Lenza, M. and Primiceri, G.E., "How to estimate a VAR after March 2020", *Working Paper Series*, No 2461, ECB, August 2020. A Cholesky decomposition is applied on the variance-covariance matrix of the residuals to recover orthogonal shocks.

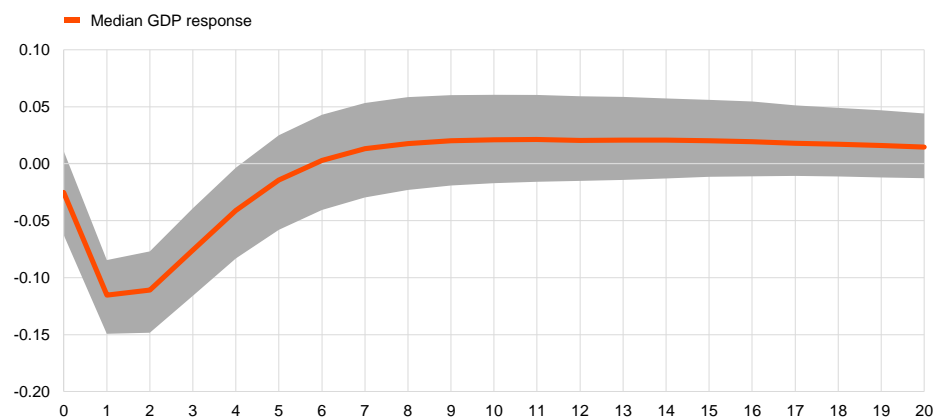
³⁷ The adverse macroeconomic uncertainty shock corresponds to an increase in the respective shock series of one standard deviation.

³⁸ The impulse response functions suggest that an increase in financial uncertainty (ordered first in the BVAR) has a broadly comparable impact on activity.

Chart B

Response of real GDP growth to a macroeconomic uncertainty shock of one standard deviation

(x-axis: quarters following the uncertainty shock; y-axis: percentage points)



Source: ECB staff calculations.

Notes: Impulse response of real GDP growth to a macroeconomic uncertainty shock of one standard deviation derived from the estimation of an 11-variable BVAR using quarterly data over the period from the second quarter of 1991 to the second quarter of 2020. The solid line is the median response and the range shows the 68% standard error bands.

The spike in macroeconomic uncertainty is likely to have contributed significantly to the decline in euro area real GDP in the first half of 2020. Most measures of uncertainty increased very sharply during this period, and the estimated impulse response functions suggest that the biggest impact of an uncertainty shock occurs shortly after the shock and in the following quarter. Against this background, heightened uncertainty is estimated to have accounted for around one-fifth of the decline in activity in the first half of 2020, notably in the second quarter, with a particularly strong impact on fixed capital formation.

Looking ahead, heightened uncertainty is likely to persist for some time and might therefore continue to dampen euro area real GDP growth during the next few quarters. The observed measures of uncertainty remained at highly elevated levels in July and August 2020, and they will likely remain elevated in the near term, at least until an effective medical solution to the COVID-19 pandemic has been found. Moreover, the impulse response functions shown in Chart B suggest that uncertainty shocks may dampen real GDP growth for up to four quarters. All this implies that, while economic activity is expected to recover over the next few quarters, uncertainty might continue to dampen the speed and momentum of the rebound in the near term. The BVAR model used for this exercise suggests that the current uncertainty shock will fade away only gradually and could dampen the expected rebound in activity by a cumulative 5% until mid-2021.³⁹ Should heightened uncertainty persist for a longer period, it could also imply an adverse impact for the longer-term growth potential.

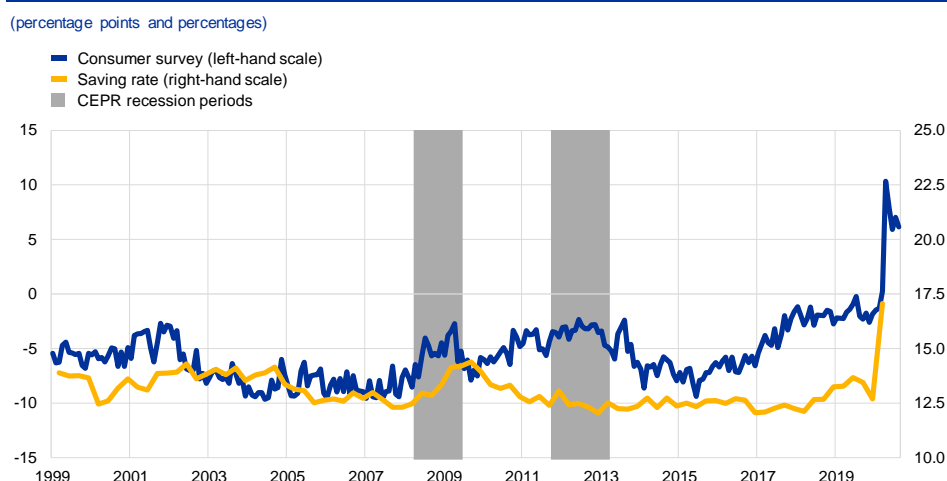
³⁹ This is broadly comparable to recent estimates for the United States. See Baker, S.R., Bloom, N., Davis, S.J. and Terry, S.J., "COVID-Induced Economic Uncertainty", *NBER Working Paper Series*, No 26983, National Bureau of Economic Research, 2020.

5 COVID-19 and the increase in household savings: precautionary or forced?

Prepared by Maarten Dossche and Stylianos Zlatanov

The propensity of households to save has reached unprecedented levels in response to COVID-19. The household saving rate derived from the sectoral accounts (Chart A) shows a sharp increase in the first quarter of 2020. As quarterly sectoral accounts are released with a lag of about three months, real time information on the household saving rate is usually scarce. However, using the European Commission's consumer survey, a qualitative but more timely monthly indicator of the propensity to save can be constructed. The indicator is computed as the difference between the answers to the survey question about households' expected savings and the answers to the question about their expected financial situation. The indicator has reached unprecedented levels, pointing to a sharp increase in household savings in the second quarter of 2020. This is also reflected in the increase in households' bank deposits since March 2020, as discussed below.

Chart A
Households' propensity to save



Sources: DG-ECFIN, Eurostat and authors' calculations.

Notes: Grey bars represent the recession periods as defined by the Centre for Economic Policy Research. The latest observation is the first quarter of 2020 for the household saving rate, and August 2020 for the measure based on the consumer survey. All data are seasonally adjusted.

The increase in household savings is potentially explained by two prominent factors. First, the lockdown measures imposed to contain the virus prohibited households from consuming a large share of their normal expenditure basket, leading to forced, or in other words involuntary, savings.⁴⁰ Second, the sudden outbreak of the pandemic caused uncertainty regarding future income, and in particular the risk of

⁴⁰ Note that given the infection risk of COVID-19 this factor may also include the impact of consumers' voluntary restraints on certain types of expenditure (e.g. restaurant visits, travel), even if such consumption was not prohibited.

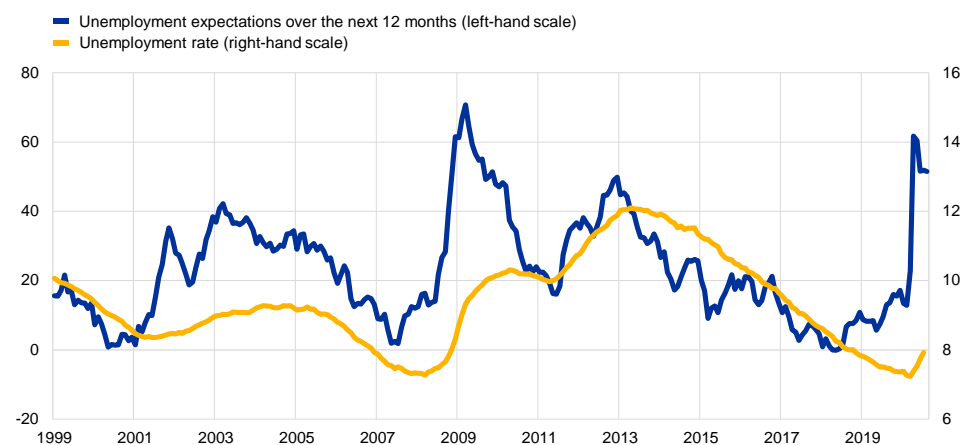
future unemployment, to shoot up, leading to precautionary savings.⁴¹ This raises the question of how to quantify the contribution of both factors to the increase in household savings during the first half of 2020.

This box uses a parsimonious panel model to estimate the determinants of the saving rate. Following Mody et al., a panel model for the saving rate can be estimated using quarterly data for the five largest euro area countries from 2003 to 2019.⁴² While this model includes most standard drivers of household savings, this box uses household expectations about future unemployment to estimate the impact of precautionary savings.⁴³ This is in line with existing literature approximating household-specific unemployment risk by household expectations about the aggregate unemployment rate (for example, Carroll et al.). This choice matters particularly in the current situation where, despite a spike in household expectations about future unemployment (Chart B), the actual unemployment rate has so far been very sticky.⁴⁴

Chart B

Unemployment rate and unemployment expectations

(percentage balance and percentage of labour force)



Sources: DG-ECFIN and Eurostat.

Note: The latest observation is August 2020 for unemployment expectations and July 2020 for the unemployment rate.

Using the estimated model, the contribution of precautionary savings can be computed.

The expected unemployment rate explains a large share of the historical variation in the saving rate. During downturns precautionary motives are typically an important factor in explaining the increase in household savings. As information on

⁴¹ For existing evidence on unemployment risk and precautionary savings, see Campos, R. and Reggιο, I., "Consumption in the shadow of unemployment", *European Economic Review*, Vol. 78, 2015, pp. 39-54, and Ravn, M. and Sterk, V., "Job uncertainty and deep recessions", *Journal of Monetary Economics*, Vol. 90, 2017, pp. 125-141.

⁴² See Mody, A., Ohnsorge, F. and Sandri, D., "Precautionary savings in the Great Recession", *IMF Economic Review*, Vol. 60, 2012, pp. 114-138, and Carroll, C., Slacalek, J. and Sommer, M., "Dissecting Saving Dynamics: Measuring Wealth, Precautionary, and Credit Effects", National Bureau of Economic Research Working Paper No 26131, August 2019.

⁴³ In the model the saving rate is the dependent variable, with households' unemployment expectations, expected household income growth, the lagged household financial wealth ratio and credit conditions for households as explanatory variables. Expected household income is proxied by the next quarter's realised income.

⁴⁴ European Commission, European Economic Forecast, Summer 2020, Institutional Paper 132, July 2020.

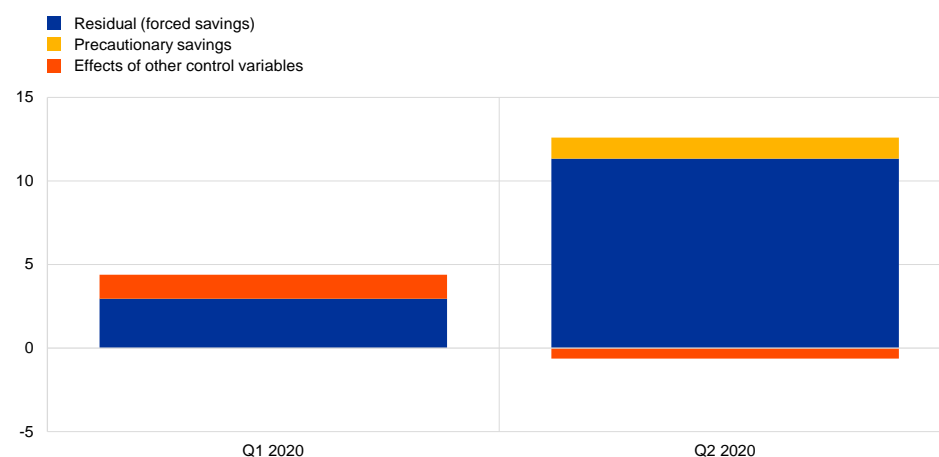
household expectations about future unemployment is available until June 2020, we can use the estimated model to compute the contribution of precautionary savings in the first half of 2020.

Forced savings seem to be the main driver of the recent spike in household savings. Chart C shows how the recent rise in expected unemployment has led to a significant contribution of precautionary savings to the rise in the saving rate in the second quarter. While the model fits the data quite well over the estimation sample, it is not able to explain most of the recent increase in the saving rate. Most of this unexplained residual seems to be attributable to constraints on the consumption of many goods and services during periods of lockdown and therefore constitutes an estimate of forced savings. In the chart, the contribution of precautionary savings looks very small compared with the estimate of forced savings in the second quarter. However, it should be noted that this contribution of precautionary savings is large in historical perspective, even though it appears small relative to forced savings.

Chart C

Drivers of the increase in the household saving rate

(change with respect to Q4 2019, percentage points of disposable income)



Sources: Eurostat and authors' calculations.

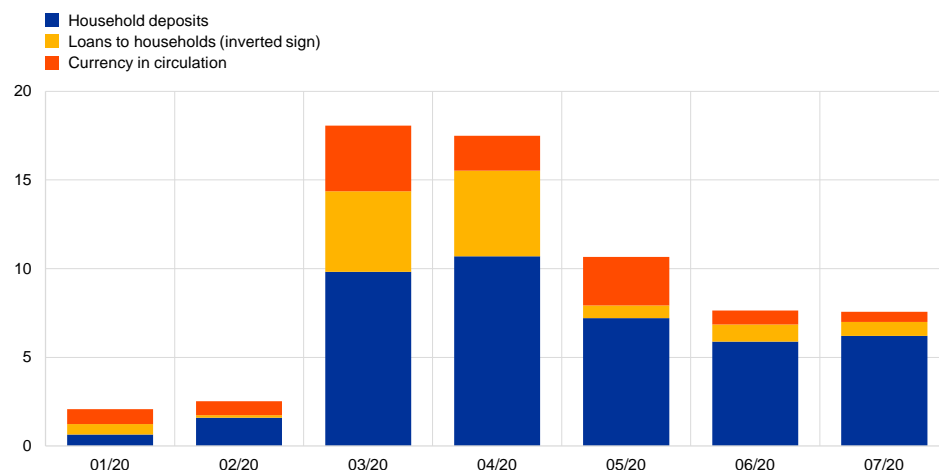
Note: The change in the saving rate in the first quarter of 2020 is based on official statistics, while the change in the second quarter of 2020 is an internal estimate.

Household bank deposits surged during periods of lockdown. In line with a large contribution from forced savings, the spike in savings is mainly reflected in a spike in bank deposits, although lower credit flows to households also seem to have played a role in March and April (Chart D). In this regard, it should be noted that the decline in credit to households over those months may also have been explained by the impact of lockdown measures. Consumer credit is typically driven by consumption, while lower mortgage flows may have reflected difficulties in conducting real estate purchases.

Chart D

Household deposits, loans and currency in circulation

(change with respect to December 2019, percentage points of disposable income)



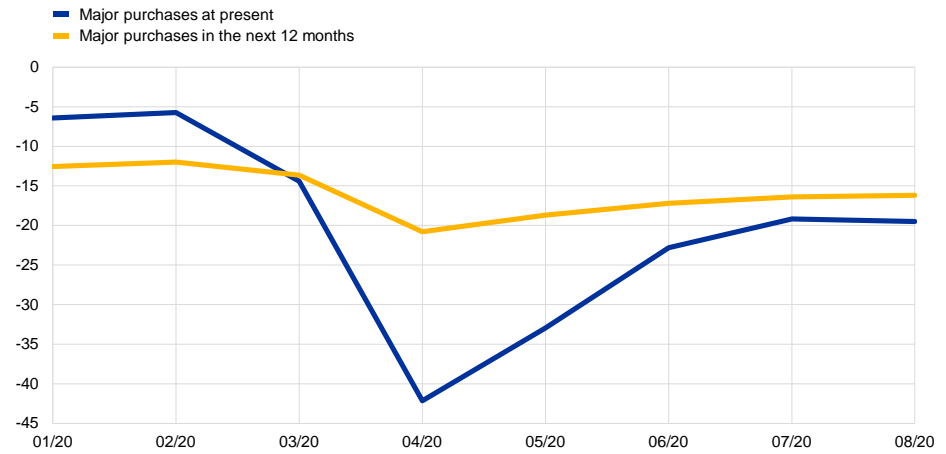
Sources: Eurostat and ECB.

Notes: Loans to households are reported with an inverted sign. The contribution of currency flows is to be considered as an upper bound, as a breakdown by holding sector is not available. The latest observation is for July 2020.

Despite accumulated savings, there is considerable uncertainty regarding pent-up demand in the short term. Pent-up demand describes a rapid increase in the demand for goods, temporarily exceeding pre-downturn levels. As consumers tend to hold off making purchases during a recession, they build up a backlog of demand that is unleashed when signs of economic recovery emerge. The COVID-19 downturn is, however, different given the partly forced nature of the contraction in household spending. Nearly half of the contraction in private consumption reflects expenditure components which could be postponed (e.g. electronics, cars). Recent retail trade data indeed show a strong rebound in a number of product categories which could partly reflect a catching-up effect. However, at this stage it is hard to distinguish this effect from an apparent shift in consumption baskets in response to COVID-19 (e.g. bicycles, home office equipment). The EC consumer survey covering the period up to August (Chart E) suggests that in the next twelve months households expect to spend less on major purchases than at the beginning of 2020, despite the amount of savings they have accumulated. Therefore, over the next year precautionary motives may still keep households' propensity to save at levels that are higher than before the COVID-19 crisis.

Chart E Major purchases

(percentage balance)



Source: DG-ECFIN.

Note: The latest observation is for August 2020.

The role of indirect taxes in euro area inflation and its outlook

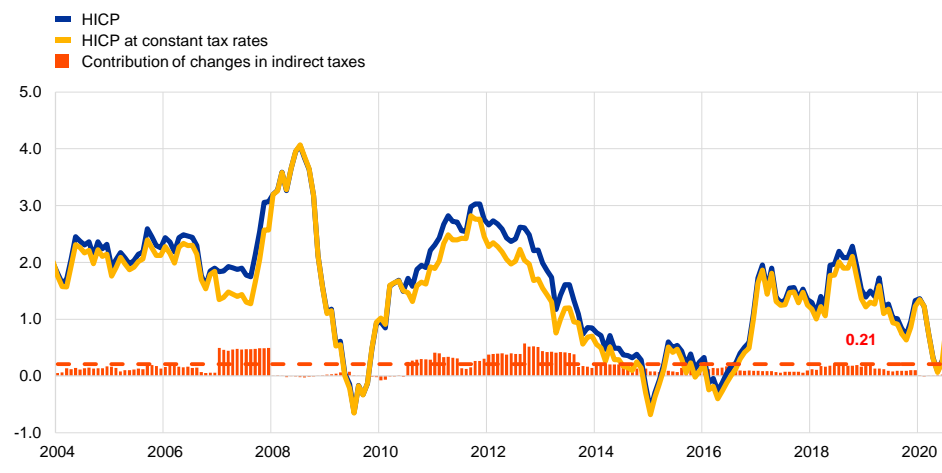
Prepared by Gerrit Koester, Ferdinand Dreher and Aurelian Vlad

Changes in indirect tax rates can have a visible impact on consumer prices. The precise magnitude of this impact is uncertain, as it depends on decisions by firms on how much of the tax increase they can – or wish to – pass on to consumers. Since 2004 Eurostat has compiled a measure of HICP at constant tax rates. This assumes the full and immediate pass-through of changes in indirect taxes to consumer prices and therefore, on balance, tends to overstate the effects of tax changes.⁴⁵ Based on this measure, the contribution from changes in indirect taxes to euro area HICP inflation has been, on average, 0.2 percentage points, but was much stronger during periods when tax rates increased, such as in 2007 and between 2011 and 2014 (see Chart A).

Chart A

HICP and HICP at constant tax rates

(annual percentage changes; percentage point contributions)



Sources: Eurostat and ECB calculations.

Notes: The latest observation is for July 2020. The dashed line represents the long-term average calculated from 2004 onwards.

Over the past two decades indirect tax rates have mostly increased. However, in response to the coronavirus (COVID-19) pandemic, several euro area countries have reduced indirect tax rates on a scale not seen before in the euro area. In addition to temporary reductions in broad-based value added taxes (VAT) in Germany and Ireland, many other euro area countries have recently introduced targeted reductions in indirect taxes (see Chart B).⁴⁶ Assuming full and immediate pass-through, Eurostat's HICP at constant tax rates implies that the reduction in VAT in Germany would have a downward impact on euro area HICP inflation in July 2020 of

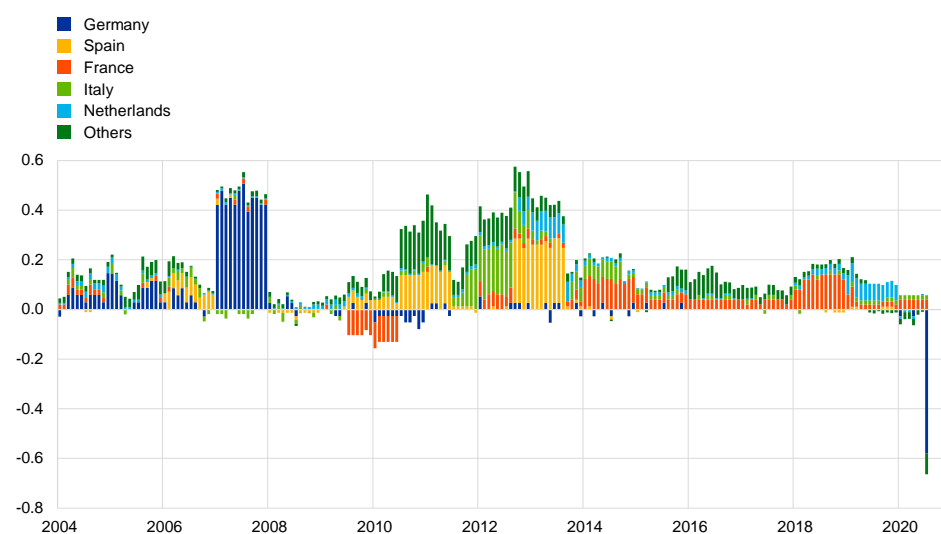
⁴⁵ See the box entitled "[New statistical series measuring the impact of indirect taxes on HICP inflation](#)", *Monthly Bulletin*, ECB, Frankfurt am Main, November 2009.

⁴⁶ These cover some sectors that have been hit especially hard by the pandemic, such as travel-related services (for example in Belgium, Greece, Cyprus and Austria) and gym memberships/sport classes (the Netherlands and Portugal), but also food and beverages (Germany, Italy, Austria and Slovakia) and medical supplies (Belgium, Greece, France, Malta, the Netherlands, Austria, Portugal and Slovakia).

around 0.6 percentage points. As the temporary reduction in rates will be applied from July to December 2020, this could translate into an effect roughly half this size for the full year. The mechanically calculated downward impact on HICP inflation excluding energy and food (HICPX) would be of a similar magnitude and would increase by an additional 0.1 percentage points when also taking into account the net effect of all other changes in indirect taxes in euro area countries.⁴⁷

Chart B
Impact of changes in indirect taxes on HICP inflation

(percentage point contributions based on difference between HICP and HICP at constant tax rates)



Sources: Eurostat and ECB calculations.

Notes: The latest observation is for July 2020. The impact of changes in indirect taxes is calculated as the difference between HICP inflation and HICP at constant tax rates inflation, assuming full and immediate pass-through of indirect taxes.

The actual impact of the recent reductions in indirect taxes on inflation is surrounded by considerable uncertainty. First, historically there are few examples of cuts in indirect tax rates in euro area countries that could shed light on the likely degree of pass-through.⁴⁸ Second, the abrupt and strong deterioration in the overall economic environment as a result of the COVID-19 pandemic may affect firms' pricing and profit margin considerations differently from those of a normal business cycle, thereby affecting the degree of pass-through (see the box entitled "The impact of the recent spike in uncertainty on economic activity in the euro area" in this issue of the Economic Bulletin). Lastly, the lion's share of the current reduction in indirect taxes results from the VAT rate cut in Germany, which is only temporary (and very rare in euro area countries), and might thus generate unusual anticipation effects. All of this suggests that the high pass-through found in the empirical literature for permanent increases in indirect tax rates cannot be easily mapped into similarly high

⁴⁷ With respect to large euro area countries, increases in indirect taxes on food and energy implemented in France and Italy at the beginning of 2020 are slightly offsetting the recent pandemic-related reductions in indirect taxes. Other indirect tax increases target tobacco (Estonia, France, Lithuania, Luxembourg, the Netherlands and Austria) and energy (Latvia, Lithuania, Luxembourg and Finland).

⁴⁸ Decreases in the standard rate of VAT included typically small cuts in the Netherlands in 1989 and 1992, Portugal in 1992 and 2008, Latvia in 2012, Italy in 1980, France in 2000 and Ireland in 1990, 1991, 2001 and 2010.

pass-through effects for the current temporary reductions in rates.⁴⁹ The United Kingdom implemented a temporary VAT cut for a period of 13 months in 2008-09. The pass-through was initially estimated to have been complete but, owing to some reversals, ultimately it was only partial.^{50,51}

The pass-through of recent reductions in indirect taxes is likely to vary across sectors and to be overall incomplete. In the case of Germany, the pass-through can be assumed to be substantial in some sectors, such as the energy sector or in the supermarket retail sector. However, in sectors suffering higher revenue losses from the lockdown or facing higher menu costs, the pass-through can be assumed to be much lower, for example in the service sector or for retailers of durable goods. Furthermore, a substantial share of the HICP basket is not subject to VAT, for example rents, and is thus not affected by the VAT change. It is therefore likely that the recent reductions in indirect taxes will have a substantial impact on food and energy inflation, while the impact on HICP excluding energy and food will be less marked.

The reductions in indirect tax rates in euro area countries shape the inflation profile for 2020 and 2021 in the September 2020 ECB staff projections. HICP excluding energy and food inflation is expected to increase continuously from 0.8% in 2020 to 0.9% in 2021 and 1.1% in 2022. However, excluding the estimated actual impact of changes in indirect taxes, HICP inflation excluding energy and food is projected to decline from 0.9% in 2020 to 0.8% in 2021⁵² before increasing to 1.1% in 2022 (see Chart C). While these projections expect only a quite limited pass-through of the reductions in indirect taxes to inflation (only around 50%), the effects are large enough to transform a continuous increase in inflation from 2020-22 into a slight V-shape profile for underlying inflation. Understanding the impact of indirect taxes on the inflation profile and outlook is relevant for the communication of monetary policy.

⁴⁹ The paper by Benzarti, Y., Carloni, D., Harju, J. and Kosonen, T., "What Goes Up May Not Come Down: Asymmetric Incidence of Value-Added Taxes", *Journal of Political Economy*, forthcoming, 2020 presents evidence that the pass-through of VAT changes is larger for VAT increases than for VAT decreases.

⁵⁰ Empirical findings suggest that "firms initially passed through the lower VAT rate (complete pass-through), [however] they subsequently reversed at least part of the cut after around two months" (see Crossley, T.F., Low, H.W. and Sleeman, C. "Using a Temporary Indirect Tax Cut as a Fiscal Stimulus: Evidence from the UK", *IFS Working Paper, No W14/16*, 2014.

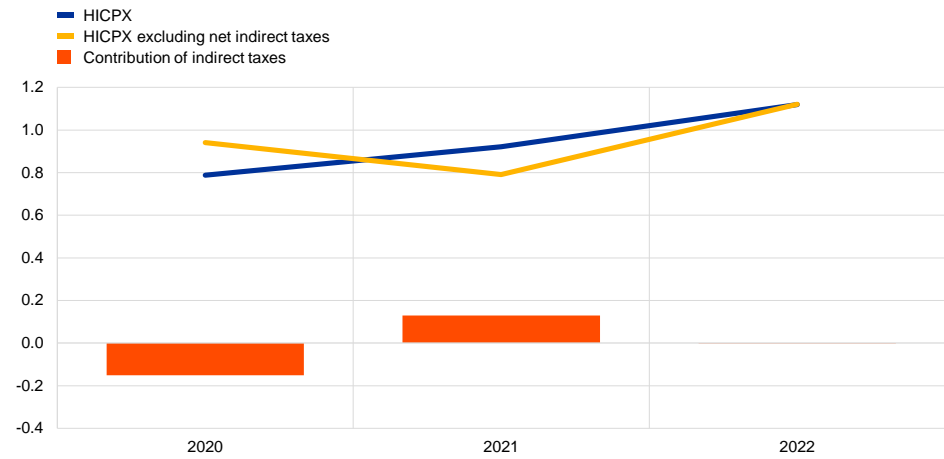
⁵¹ Whether companies apply the change in the indirect tax rate by adjusting the prices for each individual product on the shelf or by applying it at the till should not affect inflation numbers if price collections also take into account tax changes applied at the till, as they do for example in Germany.

⁵² The temporary nature of the VAT decrease in Germany, which will be reversed in 2021, implies an upward impact on HICPX in the second half of 2021, which explains the positive difference between HICPX inflation and HICPX excluding net indirect taxes.

Chart C

Impact of changes in indirect taxes on HICPX inflation projections

(annual percentage changes; percentage point contributions)



Sources: Eurostat, ECB calculations, September 2020 Macroeconomic Projection Exercise.

Note: The calculation of the contribution from changes in indirect taxes is based on estimates of actual pass-through.

7 Public loan guarantees and bank lending in the COVID-19 period

Prepared by Matteo Falagiarda, Algirdas Prapiestis and Elena Rancoita

Most euro area governments have launched large programmes of public loan guarantees to preserve access to bank loans for businesses. Demand from firms for bank loans has soared to record levels since March 2020 as firms have scrambled to bridge liquidity gaps originating from the coronavirus (COVID-19) shock. This increase in demand was driven by a decline in the capacity of firms to finance their ongoing costs via operating cash flows, owing to a sharp fall in their revenues during the lockdown period. This resulted in acute liquidity needs to finance working capital and necessary investments. Moreover, in a context of high uncertainty, firms sought loans with a view to building up precautionary liquidity buffers or adapting their business to the new environment. To help banks accommodate the surge in loan demand at favourable conditions, most euro area governments have implemented schemes to provide public guarantees for bank loans. These schemes transfer some of the credit risk and potential credit losses from banks to governments, thereby mitigating the costs for banks. This box first discusses the characteristics of these public loan guarantee schemes and their take-up across the large euro area countries. Then it examines how firms' take-up of guaranteed loans is reflected in aggregate lending figures.

The features of the loan guarantee schemes vary across countries but they must all comply with the guidelines adopted by the European Commission.⁵³

Guarantee schemes aim at supporting firms and self-employed persons that have been affected by the COVID-19 crisis but had not been in financial difficulties at the end of 2019. The schemes generally apply to new lending and typically to medium and long-term loans (with an average maturity of five years).⁵⁴ The window for applying for loans covered by guarantee schemes is set to close at the end of 2020 in most cases. The maximum amount per borrower is typically 25% of the beneficiary's turnover in 2019 or twice the wage bill in 2019. The share that is guaranteed ranges between 70% and 90% of the loan principal, although 100% guarantee schemes are also available in a few countries, including Italy and Germany, especially for smaller loans to small and medium-sized enterprises (SMEs) and the self-employed. The extent of the coverage is smaller in some other euro area countries. In some countries, firms benefiting from such programmes are subject to conditions, such as a prohibition on distributing dividends, limits on the remuneration of managers or a commitment to retaining employees.⁵⁵ The apparently complex design of such programmes reflects the

⁵³ See Section 3.2 of the Communication from the European Commission on the "[Temporary Framework for State aid measures to support the economy in the current COVID-19 outbreak](#)". In some countries, governments have simply enhanced existing guarantee schemes. While this box focuses on guarantee programmes launched by governments, similar schemes have also been implemented at the regional level as well as at the supranational level, for example the [Pan-European Guarantee Fund](#) managed by the European Investment Bank.

⁵⁴ In some countries, guarantees also apply to refinancing and loans granted in the months immediately preceding the COVID-19 outbreak.

⁵⁵ Typically the conditions are stricter for guaranteed loans granted to big companies and may include conditions related to business investment plans, governance, competition and transparency. This is because the guarantees are often part of large aid plans that may also include recapitalisation by the State.

trade-off between responding quickly to the crisis and maintaining a sufficient level of prudence in order to mitigate any undesirable behaviour on the part of banks, such as excessive risk-taking, or on the part of firms, for example shedding labour while receiving credit support from the government.⁵⁶

The use of public loan guarantees has been heterogeneous across countries, with higher take-ups being reported in Spain and France, while lower amounts have been taken up in Italy and Germany. Since the implementation of the programmes in April, firms have drawn down around €120 billion in guaranteed loans in France and around €100 billion in Spain (see Chart A, panel a). Relative to the gross indebtedness of non-financial corporations, the take-up has been highest in Spain (about 11% of gross indebtedness), followed by France (about 5% of gross indebtedness). By contrast, the take-up has been more moderate in Italy (around €55 billion, i.e. about 4% of gross indebtedness) and in Germany (around €45 billion, i.e. about 2% of gross indebtedness). In Spain, the greater recourse to guaranteed loans can be partly attributed to the lower availability of alternative fiscal relief measures for corporations (e.g. debt moratoria and direct grants of State aid). In France, the higher take-up of guaranteed loans reflects their very favourable pricing conditions, especially during the first year of the loan. In Germany, the relatively limited use of such loans mainly reflects: (i) lower financing needs of firms compared with other countries, owing to a less stringent lockdown and firms' greater use of a combination of other policy measures, including direct grants and tax deferrals and short-time working schemes; (ii) less favourable conditions associated with the schemes (e.g. concerning the pricing of loans, a prohibition on distributing dividends and limits on the remuneration of managers); and (iii) some supply-side bottlenecks related to the risk assessment required for large loans. In Italy, the low recourse recorded so far mainly reflects operational bottlenecks that initially existed on the supply side. These bottlenecks have gradually receded and in July and August the monthly provision of these types of loan was higher in Italy than in the other countries (see Chart A, panel b).

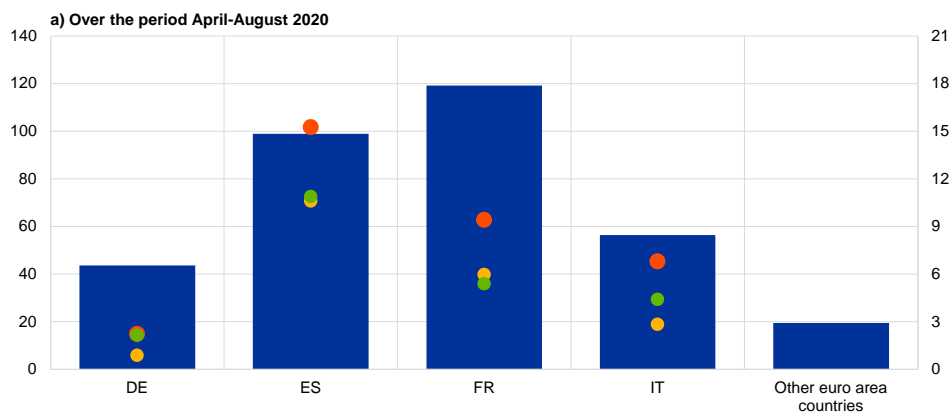
⁵⁶ For more details on the key parameters of the schemes and the channel through which they operate, see the box entitled "[Potential impact of government loan guarantee schemes on bank losses](#)", *Financial Stability Review*, ECB, May 2020.

Chart A

Take-up of loans under public guarantee schemes

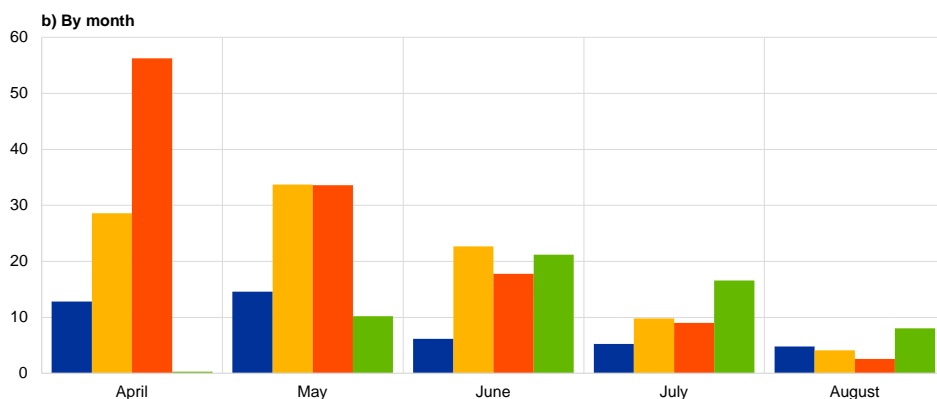
(left-hand scale: EUR billions, percentages; right-hand scale: percentages)

- Take-up, absolute amounts
- Take-up as a percentage of scheme size
- Take-up as a percentage of gross value added in 2019 (right-hand scale)
- Take-up as a percentage of gross indebtedness in 2019 (right-hand scale)



(EUR billions)

- Germany
- Spain
- France
- Italy



Sources: Kreditanstalt für Wiederaufbau for Germany, Instituto de Crédito Oficial for Spain, Ministère de l'Économie et des Finances for France, Ministero dell'Economia e delle Finanze and Banca d'Italia for Italy, various national authorities for other euro area countries, news sources, Eurostat and ECB calculations.

Notes: The take-up data refer to approved amounts of guaranteed loans. As guaranteed loans can also be granted in the form of revolving credit facilities, the approved amount is higher than the amount actually disbursed. The overall size of the schemes is €757 billion for Germany, €140 billion for Spain, €300 billion for France and €300 billion for Italy.

SMEs in the sectors that are most affected by the crisis (e.g. trade, tourism and transport) seem to have benefited the most from public loan guarantee schemes.

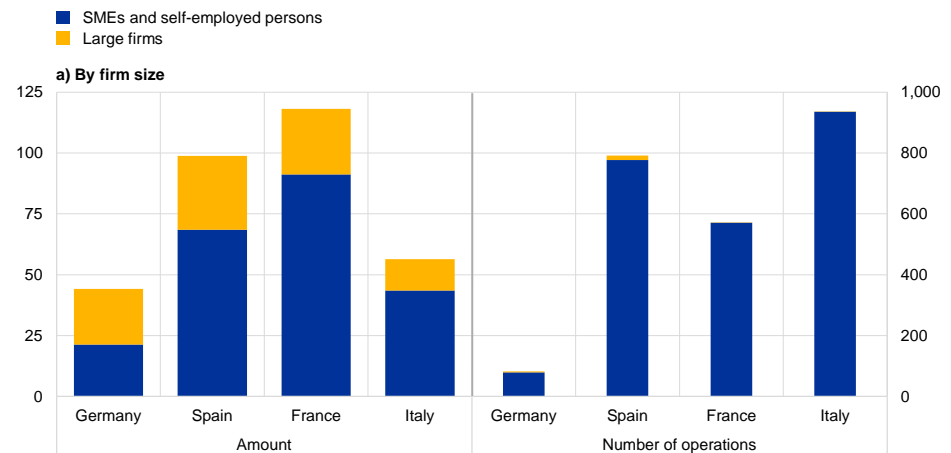
The take-up of guaranteed loans has been significantly higher for SMEs and the self-employed than for large firms, except in Germany (see Chart B, panel a). The higher take-up by SMEs reflects their relatively greater emergency liquidity needs, their greater dependence on banks for financing and the fact that there are fewer bottlenecks in the banking sector affecting the provision of guaranteed loans for smaller amounts. In particular, while the amount of the take-up is relatively low in Italy, the highest number of guaranteed loans have been granted in this country, reflecting the predominance of very small loans. From a sectoral perspective, the take-up of guaranteed loans has been highest in the sectors hardest hit by COVID-19-related

concerns about physical contact, and the concomitant lockdown policies, resulting in a sharp decline in their gross value added in the first half of 2020, with trade, transport and food services accounting for the highest take-up, followed by manufacturing (see Chart B, panel b).

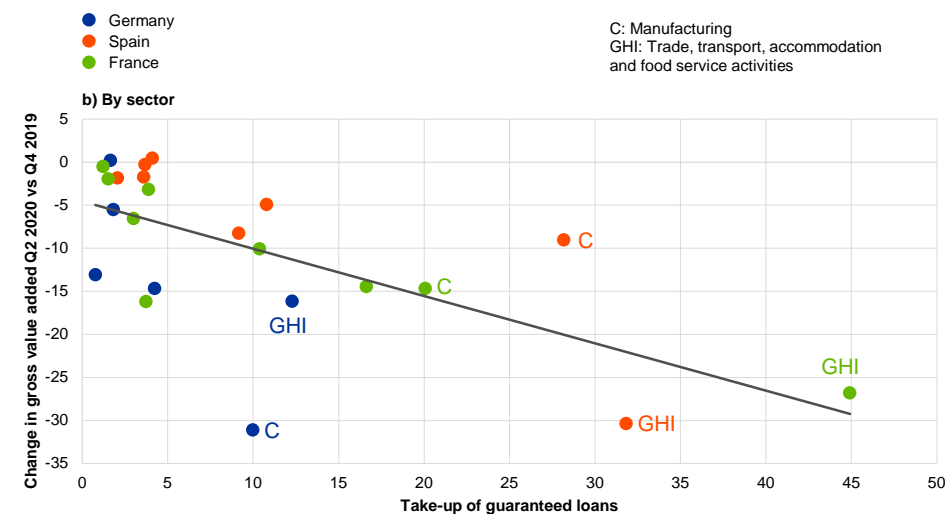
Chart B

Take-up of loans under public guarantee schemes

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



(EUR billions)



Sources: Kreditanstalt für Wiederaufbau for Germany, Instituto de Crédito Oficial for Spain, Ministère de l'Économie et des Finances for France, Ministero dell'Economia e delle Finanze and Banca d'Italia for Italy. Eurostat and ECB calculations.

Notes: The data on the take-up of guaranteed loans are for the period April-August 2020. In the absence of a breakdown by firm size for Italy it is assumed that guaranteed loans to SMEs are those granted via the Fondo di Garanzia, while guaranteed loans to large firms are those granted via SACE (the Italian export credit agency). In panel (b), the sector classifications are those of NACE Rev 2.

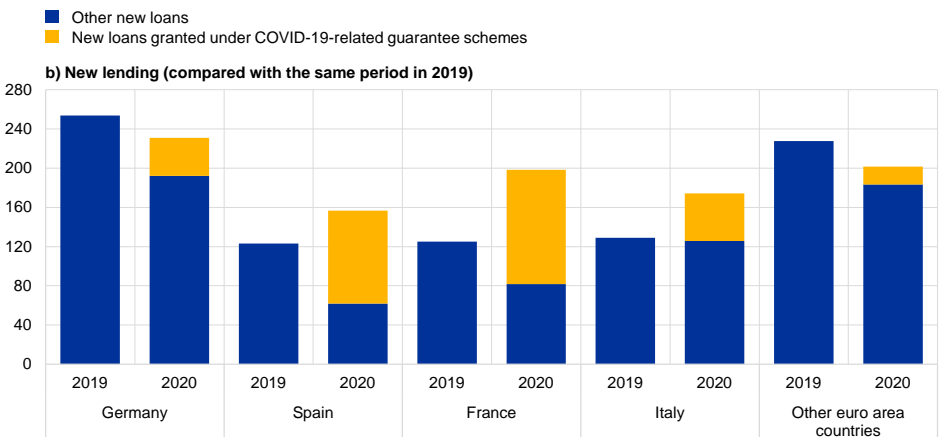
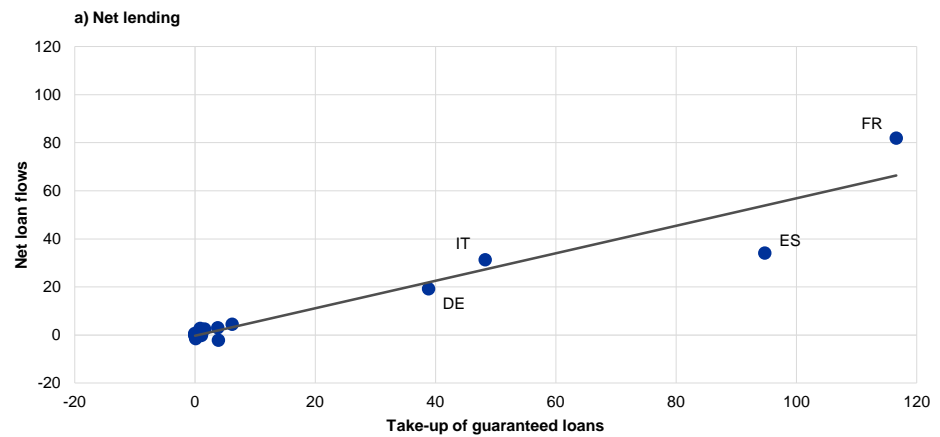
Public loan guarantee schemes have played a key role in supporting corporate lending dynamics since April, especially in Spain and France. Bank lending flows to euro area firms have surged since the outbreak of the COVID-19 pandemic in Europe, owing to acute emergency liquidity needs during the lockdown period. In March 2020 this increase was facilitated by drawing down previously agreed credit lines, but in later months the substantial lending flows largely reflected the take-up of loans covered by public guarantees. Over the period April-July gross flows of guaranteed loans were higher than overall net lending flows in all large euro area

countries, implying a shift from non-guaranteed loans into guaranteed loans (see Chart C, panel a). Moreover, lending dynamics were proportionally stronger in countries with a higher take-up of guaranteed loans.⁵⁷ Focusing on gross new lending, in Spain and France, where fiscal support for firms was delivered mainly via guarantee schemes, about 65% and 70% respectively of new business volumes in the period April-July consisted of guaranteed loans (see Chart C, panel b). In Germany and Italy, guaranteed loans represented about 20% of new lending flows over this period, while they comprised a negligible share of new lending in other euro area countries.

Chart C

Take-up of guaranteed loans and loans to non-financial corporations and the self-employed over the period April-July 2020

(EUR billions)



Sources: Kreditanstalt für Wiederaufbau for Germany, Instituto de Crédito Oficial for Spain, Ministère de l'Économie et des Finances for France, Ministero dell'Economia e delle Finanze and Banca d'Italia for Italy, various national authorities for other euro area countries, news sources, ECB and ECB calculations.

Notes: Net lending refers to loans net of repayments, as reported in the MFI balance sheet statistics. New lending refers to pure new loans, as reported in the MFI interest rate statistics. Net and new loan flows are non-seasonally adjusted. Net loan flows are adjusted for sales, securitisation and loan transfers.

The impact of loan guarantee schemes can also be detected in the maturity and loan size of recent bank lending flows, the positive flows of undrawn credit

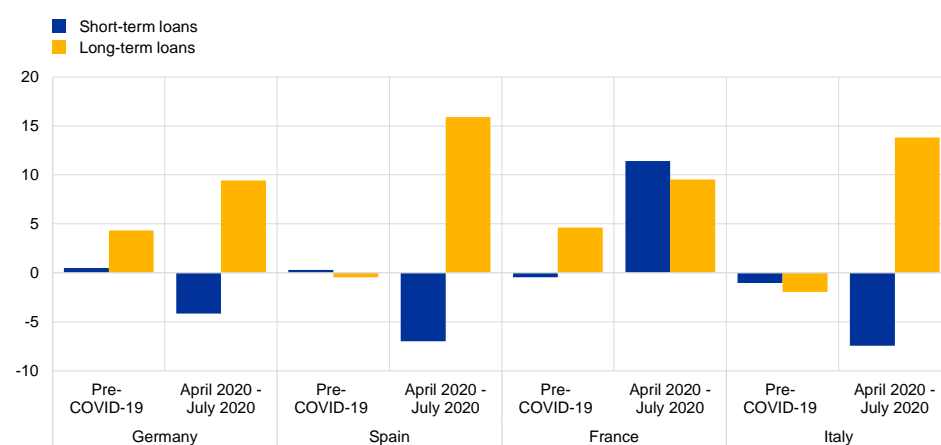
⁵⁷ For recent developments in the growth of loans to non-financial corporations, see Chart 22 in this issue of the Economic Bulletin.

lines and the preservation of favourable lending conditions. First, while short-term loan flows have been generally negative during the COVID-19 period, the flows of medium and long-term loans – maturities which are typically backed by guarantees – have increased notably (see Chart D). This contrasts with historical regularities, as acute liquidity needs for working capital are typically associated with higher demand for short-term loans, while long-term loans are used to finance fixed investment projects.⁵⁸ Second, strong new lending flows have been recorded for small loans (below €1 million), especially in Spain, France and Italy, in line with the greater take-up of guaranteed loans by SMEs in these countries. Third, evidence of increased volumes of undrawn credit in the second quarter of the year suggests that only a part of the approved guaranteed loans has actually been disbursed, likely reflecting the precautionary build-up of liquidity buffers by firms and pointing to ample funds remaining available for firms to meet their financing needs in the near term. Fourth, public loan guarantees have also contributed to preserving favourable financing conditions, as reflected in the fact that lending rates still remain at historically low levels (especially for the types of loan typically backed by guarantees),⁵⁹ and broadly unchanged credit standards, as shown in the euro area bank lending survey for the second quarter of 2020.

Chart D

Loans to non-financial corporations and the self-employed broken down by maturity

(monthly averages in EUR billions)



Sources: ECB and ECB calculations.

Notes: Non-seasonally adjusted flows (not adjusted for sales and securitisation). Short-term loans are those with a maturity of up to one year. Long-term loans are those with a maturity of over one year. The pre-COVID-19 period refers to March 2019-February 2020.

The phasing-out of public loan guarantee schemes needs to be carefully assessed against corporate financing needs in the months ahead, while their potential side effects warrant monitoring. The loan guarantee schemes were crucial for supporting the financing needs of firms in the early COVID-19 period, contributing, jointly with other bold policy measures, to preventing viable businesses

⁵⁸ For more details on the drivers of loan demand during the COVID-19 pandemic, see the box entitled “Drivers of firms’ loan demand in the euro area – what has changed during the COVID-19 pandemic?”, *Economic Bulletin*, Issue 5, ECB, 2020.

⁵⁹ See Chart 24 in this issue of the Economic Bulletin. For example, bank lending rates in France have dropped significantly since April. This decline was driven by small loans and reflects the massive demand by SMEs for public guaranteed loans, which banks grant at rates very close to zero in France.

from becoming illiquid. Terminating these schemes prematurely and too abruptly may risk precipitating severe liquidity squeezes for firms and triggering bankruptcies, which would, in turn, deplete bank capital. This would possibly result in a sudden reduction in credit flows and a tightening of credit conditions, thereby instigating more bankruptcies and also hampering the financing of surviving firms' adjustment towards a "new normal" way of conducting business. At the same time, if the policy support provided in the current crisis were to lead to a permanent large-scale expansion of the role of government in steering economic outcomes, it may hamper allocative efficiency and reduce the productive capacity of the euro area economy over a longer horizon by artificially keeping afloat firms that are not viable or sufficiently profitable. Moreover, the specific design and calibration of guarantee schemes may entail side effects, for instance in the form of incentives for excessive indebtedness and imprudent risk allocation. These side effects will require close monitoring over the coming months and, once the economic and financial fallout of the COVID-19 crisis abates, a careful and well-timed phasing-out strategy.

8 The fiscal implications of the EU's recovery package

Prepared by **Alessandro Giovannini, Sebastian Hauptmeier, Nadine Leiner-Killinger and Vilém Valenta**

The EU's recovery package represents an important milestone in European economic policy integration. On 21 July 2020 the European Council agreed on an exceptional temporary recovery instrument known as Next Generation EU (NGEU). Together with the regular Multiannual Financial Framework (MFF), NGEU will ensure a coordinated European fiscal response to the economic fallout from the coronavirus (COVID-19) pandemic. While the 2008 European Economic Recovery Plan⁶⁰ was only intended to coordinate national budgetary stimulus packages to be financed by each Member State, NGEU establishes a joint funding model to support government spending and reform in the EU.

For NGEU, the European Commission has been authorised to raise up to €750 billion on the capital markets on behalf of the European Union. The funds can be used to provide loans of up to €360 billion and grants of up to €390 billion. These will be disbursed up to the end of 2026 and repaid by 31 December 2058 at the latest. The NGEU issuance will increase outstanding Union debt by a multiple of around 15, constituting the largest ever euro-denominated issuance at supranational level. While the loans will be repaid by the beneficiary Member States, the European Council agreed to reform the own resources system and ensure that grant repayments will be covered by gross national income-based contributions and new EU own resources.

The Recovery and Resilience Facility (RRF) constitutes the core of NGEU. The entire loan portfolio and 80% of the grants will be assigned to the RRF, the purpose of which is to support investment and reform in Member States to pave the way for a sustainable, resilient recovery, while promoting the Union's green and digital priorities. The remaining part of NGEU will mainly be used to reinforce EU-wide spending programmes under the MFF.

To receive financial support under the RRF, EU Member States need to prepare national recovery and resilience plans setting out their reform and investment agenda for the years 2021-23. These plans are expected to feature coherent packages of reforms and public investment projects and address the challenges identified in the context of the European Semester. They should also strengthen the growth potential, job creation and economic and social resilience of the Member State concerned. The financial support will be disbursed in instalments when milestones and targets identified in these plans are reached.

The financial support to be provided under NGEU is intended to have a meaningful volume in macroeconomic terms, totalling almost 5% of euro area GDP. The idea is for the financial support under NGEU to be fully committed by the

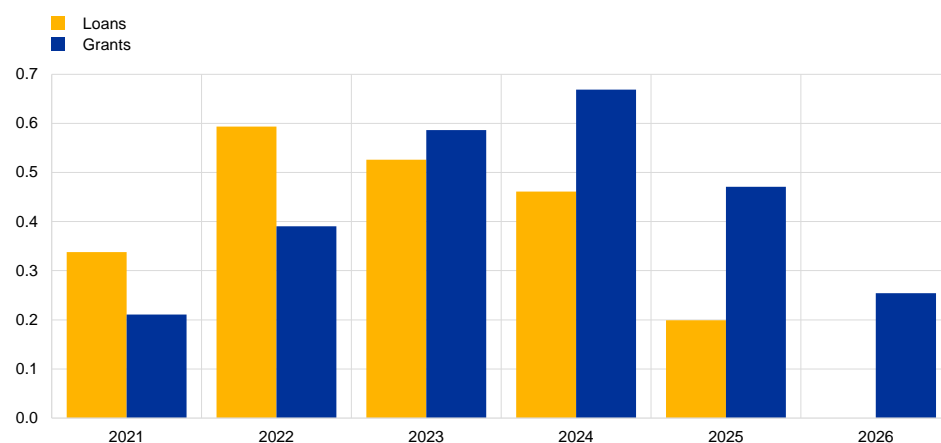
⁶⁰ See [A European Economic Recovery Plan](#) COM(2008) 800 final, 26 November 2008

end of 2023 and largely disbursed over the period from 2021 to 2024 (see Chart A).⁶¹ Based on currently available information, the grants will have a more back-loaded time profile than the loans. While there is still uncertainty regarding the implications for national budgets, NGEU would imply a debt-based fiscal expansion of around 1% of GDP on average in the euro area over the period from 2021 to 2024, assuming that the support is used at the national level to finance additional expenditure. Provided it is deployed for productive spending and accompanied by growth-enhancing reforms, NGEU would not only help to underpin the recovery but also increase the resilience and growth potential of Member State economies going forward.

Chart A

NGEU: expected disbursements of funds to euro area countries

(percentages of GDP)



Sources: European Council conclusions of 21 July 2020, European Commission and ECB calculations.

Notes: The allocation of grants to euro area countries is assumed to follow agreed allocation keys. Only countries with a cost of borrowing above the expected interest rate on NGEU loans are assumed to draw loans up to the ceiling of 6.8% of gross national income. The time profile is based on the estimates presented in the European Commission's proposal for establishing NGEU.

The RRF allocation key ensures stronger macroeconomic support for more vulnerable countries. In 2021-22 funds will be distributed on the basis of income per capita and past unemployment developments; for 2023 the past unemployment developments will be replaced by the observed declines in real GDP in 2020-21. The agreed distribution of funds will imply sizeable net financial support for those euro area countries that face the biggest economic and fiscal challenges after the pandemic (see Chart B)⁶². Greece will be the largest net recipient of support from the RRF relative to GDP, but Spain and Italy, which are expected to be among most heavily affected states in terms of both deaths and economic fallout, will also receive sizeable fiscal support.

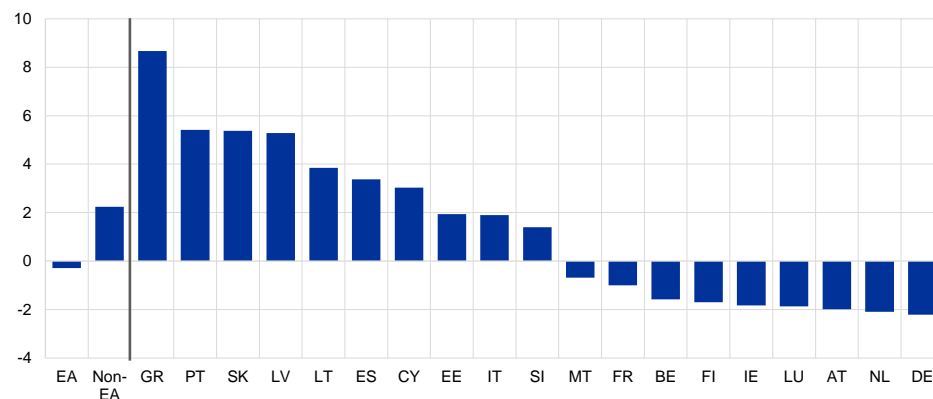
⁶¹ The European Council agreed that 70% of the grants provided by the RRF would be committed in 2021 and 2022. The remaining 30% would be fully committed by the end of 2023. It should be noted that a key characteristic of the EU budget is that decisions on commitments are separate from those on payments. The timing of the two is therefore different. The reported timing of payments is based on the estimates in the [European Commission's proposal for a regulation establishing a Recovery and Resilience Facility](#), adjusted to reflect the European Council conclusions of 21 July 2020.

⁶² Table 1 in the European Commission [Staff Working Document "Identifying Europe's recovery needs"](#) suggests that those countries with below average GDP per capita and high debt (notably Cyprus, Greece, Spain, Italy and Portugal) would receive 50% of the support (under the Commission's allocation key that will be used in 2021 and 2022) while their share in EU GDP (used as proxy for the contributions to the EU budget) is quantified at around 25%.

Chart B

RFF: allocation of grants, net of expected repayments

(percentages of 2019 GDP)



Sources: European Council conclusions of 21 July 2020, European Commission and ECB calculations.

Note: 70% of grants are expected to be allocated in 2021-22 based on the allocation key proposed by the European Commission (taking into account population, inverse GDP per capita and average unemployment rate in 2015-19). For the 30% of grants allocated in 2023, average unemployment is replaced by GDP losses in 2020 (15%) and over 2020-21 on a cumulative basis (15%) as currently projected by the European Commission. Repayments are assumed to correspond to countries' shares in EU gross national income.

A coordinated European policy response to COVID-19 is essential to avoid an uneven recovery and economic fragmentation, while promoting economic resilience in Member States. NGEU comes in addition to the regular MFF worth around €1 trillion over the next seven years and the three European “safety nets” worth €540 billion agreed in April 2020.⁶³ As such, the European response to the crisis is ambitious and commensurate to the challenge the continent faces. Moreover, it is important that monetary and fiscal policies, although implemented independently in the euro area, are currently acting in a mutually reinforcing way.

It will be essential to ensure that the fiscal support provided through NGEU is not counteracted by the premature withdrawal of fiscal support funded at the national level. In view of the depth of the pandemic shock and the associated uncertainty, the general escape clause set out in the Stability and Growth Pact was activated in March 2020 with extension through 2021 considered likely. This allows governments to take the measures needed to combat the pandemic, deviating from the adjustment requirements that would normally apply under the pact while not endangering fiscal sustainability.

While macroeconomic stabilisation remains a priority, it will be important to maintain fiscal sustainability throughout the recovery. The ongoing crisis has highlighted how very high levels of government debt may imply vulnerabilities and fiscal constraints when a country is hit by a large economic shock. It is therefore essential that fiscal support is used effectively to boost growth potential and resilience, which in turn improves fiscal sustainability. EU funding should be spent in line with country-specific needs and reform priorities agreed at the European level.

The way that the EU has responded to the crisis also has implications for the future design and implementation of the European governance framework. First,

⁶³ See the box entitled “The COVID-19 crisis and its implications for fiscal policies”, *Economic Bulletin*, Issue 4, ECB, 2020.

while expansionary fiscal policy is necessary to sustain the recovery, going forward it will be important for the fiscal rules to effectively support the reduction of high government debt in good economic times. Second, NGEU constitutes a new and innovative element of the European fiscal framework. It will result in the issuance of sizeable supranational debt over the coming years, and its establishment has signalled a political readiness to design a common fiscal tool when the need arises. This innovation, while a one-off, could also imply lessons for Economic and Monetary Union, which still lacks a permanent fiscal capacity at supranational level for macroeconomic stabilisation in deep crises. The review of the economic governance framework,⁶⁴ which was launched by the Commission in February 2020 and postponed because of the pandemic, provides a good opportunity to incorporate these important considerations.

⁶⁴ For details, see https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/economic-governance-review_en

Articles

1 China's path to normalisation in the aftermath of the COVID-19 pandemic

Prepared by Alexander Al-Haschimi, Apostolos Apostolou and Martino Ricci

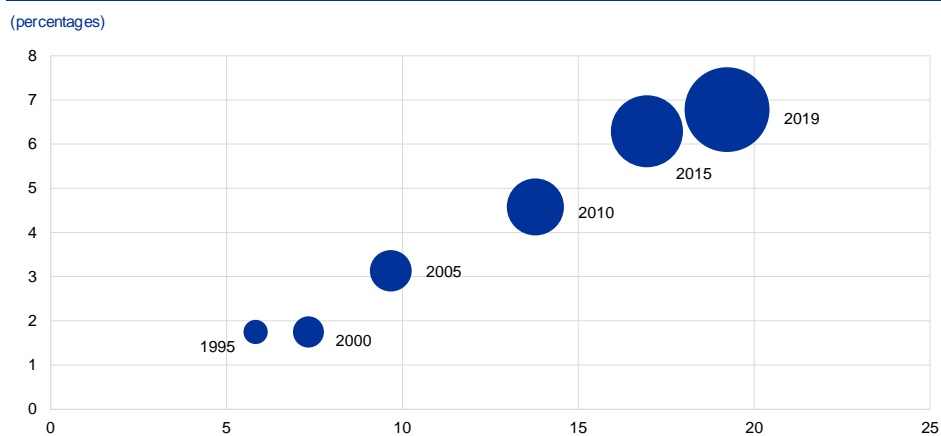
This article will trace the decline and subsequent recovery of China's economy following the outbreak of the coronavirus (COVID-19). It employs high-frequency data to assess the speed at which activity in different sectors of the economy is normalising after businesses were allowed to resume operations. One particular focus will be on differentiating between the industrial and services sectors, which are subject to different health and safety measures. The article finds that China's economic activity rose from a trough of around 20% of normal levels in February 2020 to 90% in the span of just three months. While production capacity recovered swiftly, activity normalised more gradually in the services sector, where COVID-19 containment measures had continued to weigh heavily. The recovery was driven primarily by private domestic demand and the authorities' policy response, as the normalisation in China coincided with the implementation of lockdown measures by many of its trading partners and hence also with a fall in external demand. Looking ahead, uncertainty and risks surrounding the recovery path remain exceptionally high, owing in large part to the uncertainty regarding how the COVID-19 pandemic will develop and if and when a medical solution to the virus can be found.

1 Introduction

Since the mid-1990s, China's economy has experienced a period of rapid growth resulting in greater interconnectedness with the global economy. In conjunction with a gradual process of reform and opening-up, this has turned China into one of the largest economies in the world and a trading powerhouse. Over the past five years, the country's economy has grown at an average rate of 6.7%, accounting for around one-third of global growth. At the same time, China's demand for foreign goods and services from many economies, including the euro area, has increased considerably. From 1995 to 2019, its share in euro area foreign demand increased from 2% to around 7% (see Chart 1). This trend highlights that the extent to which China recovers from the COVID-19 pandemic is critical outside as well as inside its borders.

Chart 1

China's share in world GDP and euro area foreign demand



Sources: International Monetary Fund, World Economic Outlook, April 2020 (for GDP figures) and ECB (for China's share in euro area foreign demand).

Notes: The x-axis shows China's GDP as a percentage share of total world GDP and the y-axis shows China's percentage share in euro area foreign demand. The size of each bubble represents China's GDP based on purchasing power parity in nominal international dollars.

The COVID-19 pandemic affected China earlier than it affected other

economies. According to official statistics, the number of confirmed COVID-19 cases rose from under 1,000 at the end of January 2020 to over 80,000 by early March. Strict lockdown measures were put in place to bring the epidemic quickly under control. These containment measures necessitated the powering down of the economy for an extended period of time, leading to a significant short-term decline in economic activity. While the outbreak was brought largely under control in China, COVID-19 spread rapidly across the globe, with the number of confirmed cases in other countries surpassing those in China by mid-March. As of early August, worldwide cases had climbed to over 19 million.

The nature of the downturn during the COVID-19 pandemic is very different

from other cyclical downturns. In the current episode, both supply and demand have been suppressed through business closures and mobility restrictions. As such, there is a higher than usual degree of overall uncertainty surrounding the economic recovery path, not least because of fears that a flare-up in new cases could derail the recovery. Furthermore, the length of time it will take to develop and implement a medical solution remains uncertain, as does the medium-term impact of continued containment measures on the labour market. In this regard, the recovery in China, which commenced earlier than in the rest of the world, can be instructive for other economies that are in the process of easing their containment measures.

2 The COVID-19 outbreak in China and its economic impact

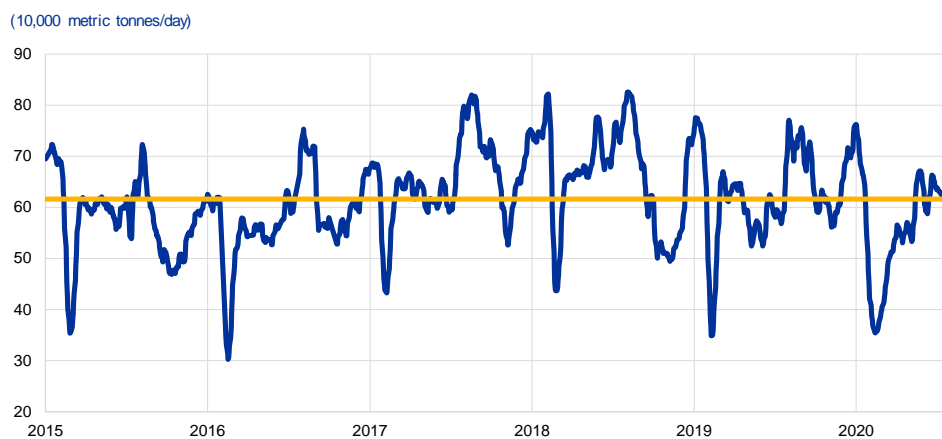
The rapid intensification of the COVID-19 outbreak in China broadly coincided

with the start of the Lunar New Year holiday. The Lunar New Year is a seven-day national public holiday which starts between late January and mid-February and for which virtually all factories close down for a prolonged period of time. During this period, migrant workers traditionally return home, giving rise to a peak travel season

which involves several hundred million passengers travelling across China every year. Towards the end of January 2020, the Chinese economy powered down, as can be seen, for instance, by the coal consumption of major electricity producers (see Chart 2). The extent of the decline in coal consumption in January 2020 was not unusual compared with that of previous Lunar New Year holidays. However, owing to the COVID-19 outbreak, the public holiday was extended and the resumption of business activity was considerably delayed. A comparison of a number of high-frequency indicators of economic activity with their corresponding levels the previous year shows that it took more than three months for several of these indicators, such as coal consumption, real estate sales and traffic density, to return to their 2019 levels (see Chart 3).

Chart 2

Coal consumption of major electricity-generating power plants



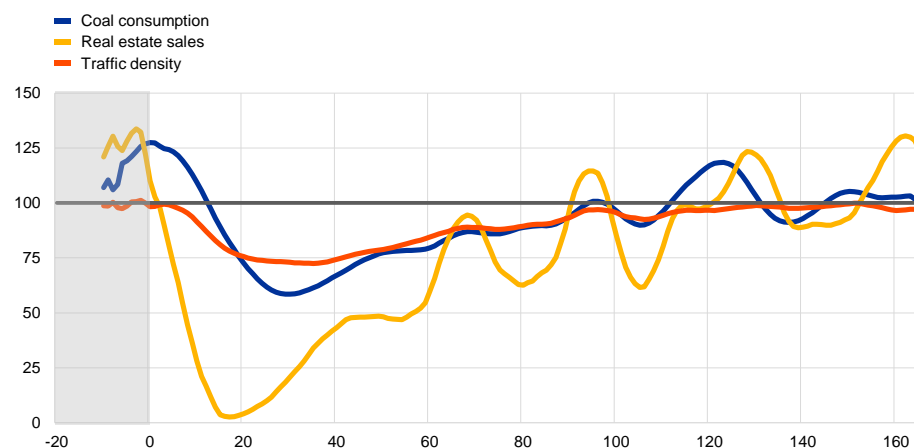
Sources: Beijing China Coal Times Technology Development Co., Ltd via Haver Analytics.

Notes: The chart shows the daily coal consumption of six major electricity-generating power plants in China (seven-day moving average). The yellow line shows the five-year average. The latest observation is for 27 July. The series was discontinued thereafter.

Chart 3

High-frequency indicators of economic activity

(percentages of level at same point in 2019)



Sources: Wind Economic Database and ECB staff calculations.

Notes: "Coal consumption" shows the use of coal by major energy producers; "Real estate sales" shows the volume of real estate transactions for 30 major cities; "Traffic density" shows the average traffic density across 100 Chinese cities. Data show seven-day average deviations from levels at the same point following the start of the 2019 Lunar New Year. The x-axis shows days since the start of the Lunar New Year. The shaded area shows the days in 2020 preceding the beginning of the 2020 Lunar New Year holiday. The latest observation is for 8 July 2020.

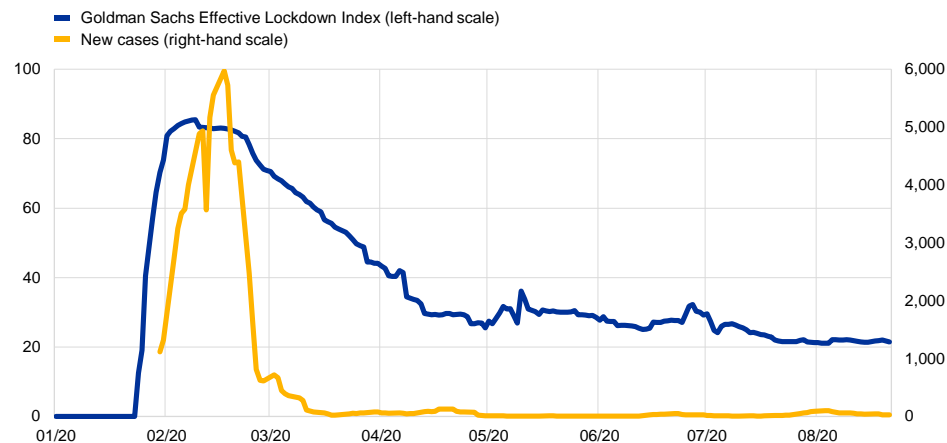
The COVID-19 outbreak led the authorities to implement strict and comprehensive containment measures. The city of Wuhan, which was at the centre of the outbreak, was placed under lockdown just ahead of the Lunar New Year holiday. Transport into and out of the city was shut down and businesses were closed, with few exceptions. Within days, residents were prohibited from leaving their homes except to make essential purchases, and the quarantine measures were strictly enforced. The containment measures were extended to the province of Hubei (in which Wuhan is located) and to the rest of the country, while the public health response level was escalated to its highest state of emergency nationwide. The holiday was officially extended and both national and international travel restrictions were put in place. In the course of February and March, decisions on reopening non-essential businesses were taken at the province level, depending on local developments in COVID-19.

The containment measures limited the spread of COVID-19. Daily new cases increased exponentially for a period of roughly three weeks, before rapidly falling from around mid-February. The lockdown measures introduced swiftly at the end of January, as reflected in the Goldman Sachs Effective Lockdown Index (see Chart 4), were gradually relaxed again with the decline in the growth rate of new COVID-19 cases. The overall official number of COVID-19 cases stabilised at approximately 85,000. National data suggest that the strict lockdown measures greatly limited the spread of the virus throughout China. According to official data, about 80% of all COVID-19 cases and over 95% of COVID-19 deaths in China were registered in Hubei province (see Charts 5 and 6). As Hubei only accounts for 4% of China's population, this would imply that cases in the rest of China were exceptionally sparse.

Chart 4

Containment measures and daily new COVID-19 cases

(left-hand scale: index; right-hand scale: daily new COVID-19 cases)



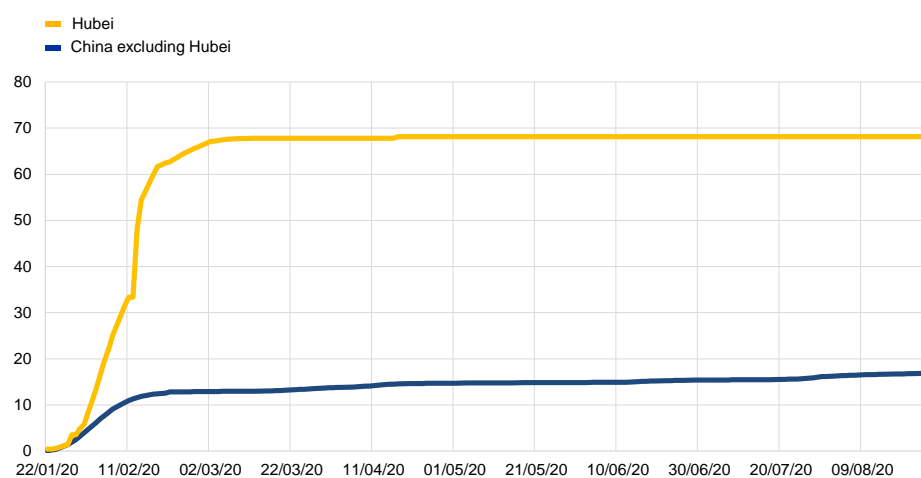
Sources: Johns Hopkins University, Goldman Sachs and ECB staff calculations.

Notes: The Goldman Sachs Effective Lockdown Index combines official restrictions with mobility data. The latest observations are for 21 August 2020.

Chart 5

Confirmed COVID-19 cases

(thousands)

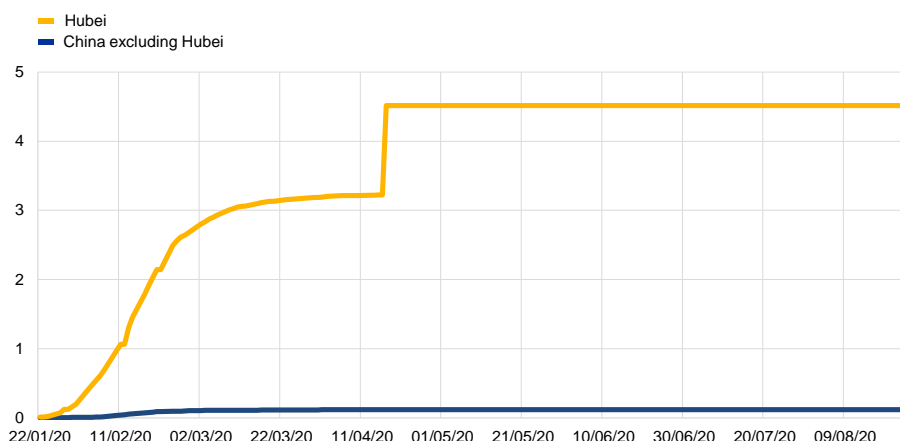


Sources: Johns Hopkins University and ECB staff calculations. The latest observations are for 25 August 2020.

Chart 6

Confirmed COVID-19 deaths

(thousands)



Sources: Johns Hopkins University and ECB staff calculations.

Note: On 17 April, China revised its official figures for COVID-19 deaths up by 1,290, all in the city of Wuhan. The latest observations are for 25 August.

The containment measures were successful in curbing the spread of the virus but weighed heavily on China's economy.

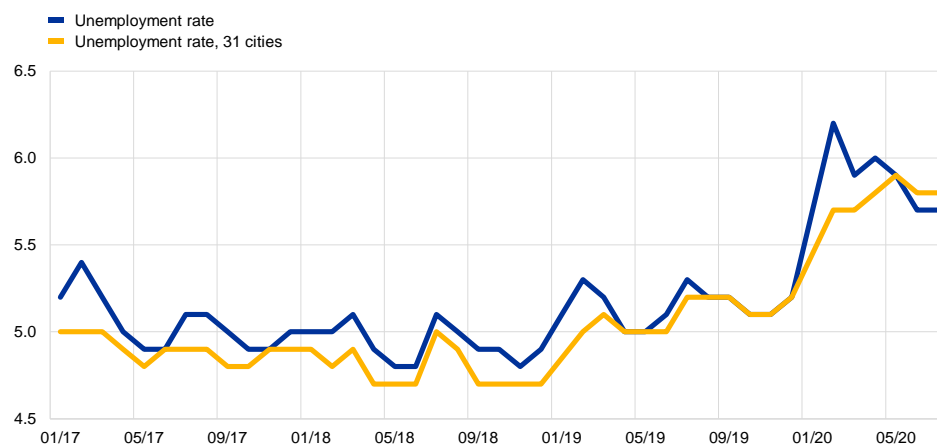
In the first quarter of 2020, real GDP contracted by 10.0% quarter on quarter and by 6.8% year on year. Weak consumption made the largest negative year-on-year contribution to GDP, at -4.4%, while investment contributed -1.5% and net trade -1%. The decline in economic activity was sharp and swift and GDP decreased for the first time in decades. The Caixin China General Manufacturing Output Purchasing Managers' Index (PMI) fell in February to 28.6 points, far below the level observed during the global financial crisis. The Caixin China General Services Business Activity PMI also fell substantially, from 51.8 in January to 26.5 in February. These PMI declines proved to be short-lived, however, because in March the manufacturing PMI rebounded to above 50, implying that the trough in business activity had occurred in February. Nevertheless, overall PMI readings signalled sharp contractions across China's economy amid prolonged production cuts. The marked fall in economic activity in January and February was also reflected in the large year-on-year contractions in industrial production (-13.5%), fixed asset investment (-24.4%) and retail sales (-20.5%). For the first quarter as a whole, year-on-year industrial production declined by 9.3%, while retail sales contracted by around 19%.

Labour market conditions have deteriorated since the outbreak of the pandemic.

Official measures show a relatively modest increase in unemployment since the outbreak, from 5% to just below 6% (see Chart 7). This might be due to the authorities' efforts to persuade many businesses to keep their employees. However, unemployment might be higher when non-urban workers are included and could be a drag on future economic recovery. Indeed, employment surveys point to a mixed picture regarding expected employment rates, with businesses foreseeing a quick rebound, while consumers remain more pessimistic about employment prospects (see Chart 8).

Chart 7 Unemployment rate

(percentages)

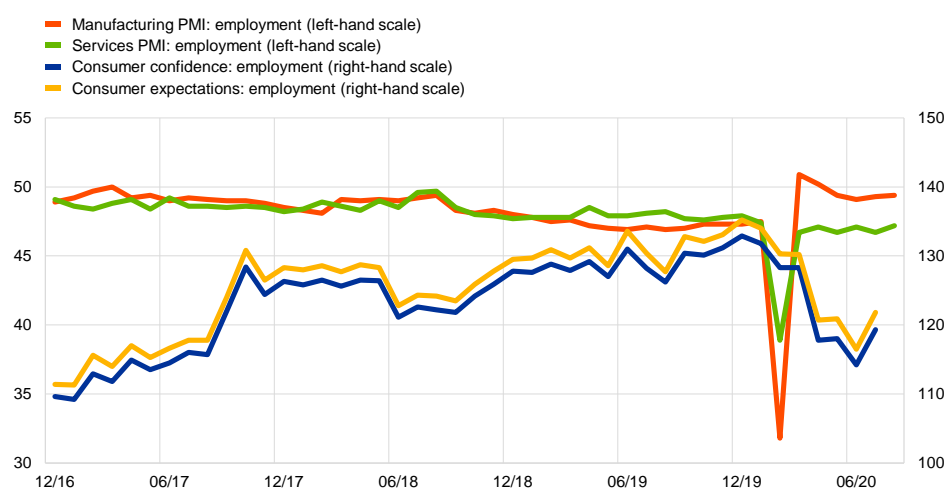


Sources: National Bureau of Statistics of China via Haver Analytics.

Notes: "Unemployment rate" refers to the urban unemployment rate; "Unemployment rate, 31 cities" refers to the urban unemployment rate for 31 major cities. The latest observations are for July 2020.

Chart 8 Employment expectations surveys

(left-hand scale: diffusion index; right-hand scale: index)



Sources: National Bureau of Statistics of China, CEIC Data, Caixin and IHS Markit.

Note: The latest observations are for August 2020 for the PMIs and July 2020 for the consumer surveys.

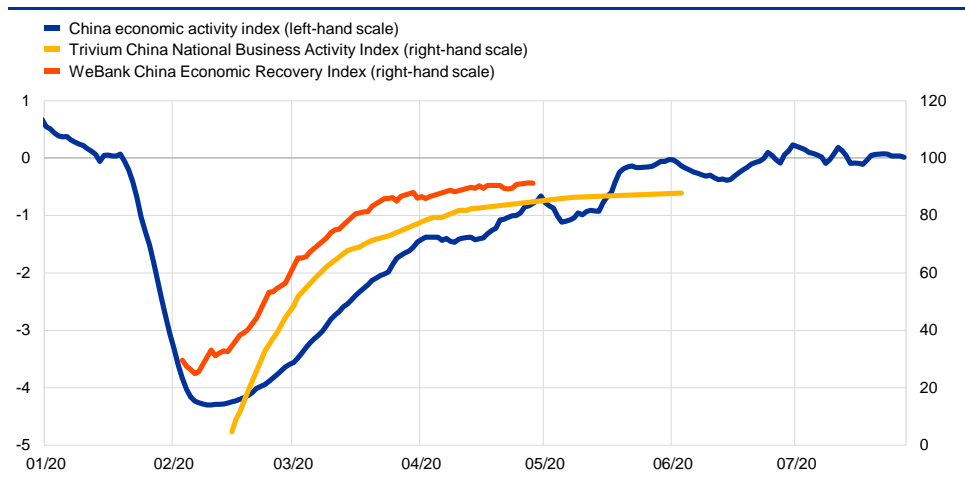
3 The gradual normalisation of the economy after the containment of the outbreak

Following the containment of new COVID-19 cases, the Chinese authorities gradually lifted the protective measures. The easing of restrictions was contingent on local developments in the growth rate of COVID-19. In most provinces, the Lunar New Year holiday had been extended by a week or more into February 2020, while in Hubei province the holiday was extended to 10 March. In terms of the order in which these restrictions were lifted, businesses were allowed to resume operations first,

while travel restrictions initially remained in place. The reopening of businesses presented a logistical challenge, as in some instances supply chains had been disrupted and travel constraints meant that workers were still dispersed across the country.

Following the sharp contraction in economic activity in China during the first quarter, the economy made a relatively swift recovery. In the second quarter, China's GDP increased by 11.5% quarter on quarter and 3.2% year on year, driven primarily by investment, while consumption growth remained negative in year-on-year terms. A broad number of indicators suggest that, within three months, China's economic activity rose from its trough to around 90% of normal levels. A newly developed daily activity indicator⁶⁵ that summarises information from electricity plant coal consumption, real estate market activity, traffic density data and changes in pollution levels shows that economic activity bottomed out in the first half of February and had already recovered to close to its long-term average level by mid-May. Other indicators, such as the [Trivium China National Business Activity Index](#), which estimated China's economic capacity utilisation, and the WeBank China Economic Recovery Index, which tracked the number of businesses reopening, also show resumption rates of around 90% by the beginning of May (see Chart 9).

Chart 9
Economic activity indices



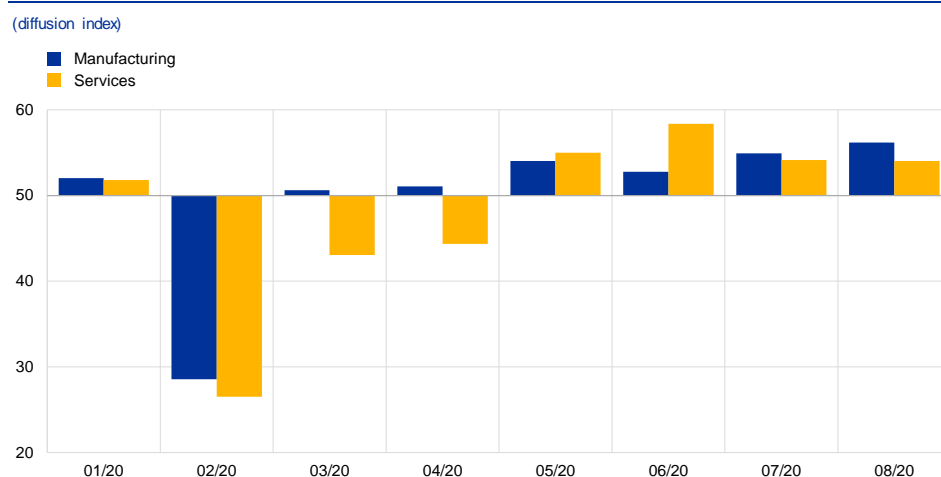
Sources: Trivium China, WeBank and ECB staff calculations.
Notes: 100 denotes the normal level of activity. The latest observations are for 27 July for the China economic activity index, which is measured in standard deviations, 3 June for the Trivium China National Business Activity Index and 28 April for the WeBank China Economic Recovery Index (the latter two indices were discontinued when resumption exceeded 90%).

Survey data point to an uneven recovery, with manufacturing rebounding earlier than the services sector. While the elevated uncertainty necessitates some caution in interpreting PMIs, the manufacturing PMI returned to expansionary territory as early as March, whereas the services PMI continued to signal a softening of activity until May, when it rose above the neutral threshold (see Chart 10). Although the services PMI reached 58.4 in July, its levels in the period from February to April imply that the contraction in the services sector was larger than in manufacturing. Overall,

⁶⁵ The high-frequency China economic activity index is an ECB internal measure which uses principal component analysis to combine data for the above-mentioned indicators.

the manufacturing and construction sectors returned to almost full capacity in the course of May. On the other hand, services sectors, in particular those associated with close physical interaction such as tourism, business travel, and cultural and sporting events, have tended to remain well below pre-outbreak capacity, with activity ranging between 20% and 80% of normal levels.

Chart 10
PMI: manufacturing and services



Sources: Caixin and IHS Markit.
Note: "Manufacturing" refers to the Caixin China General Manufacturing Output PMI and "Services" to the Caixin China General Services Business Activity PMI.

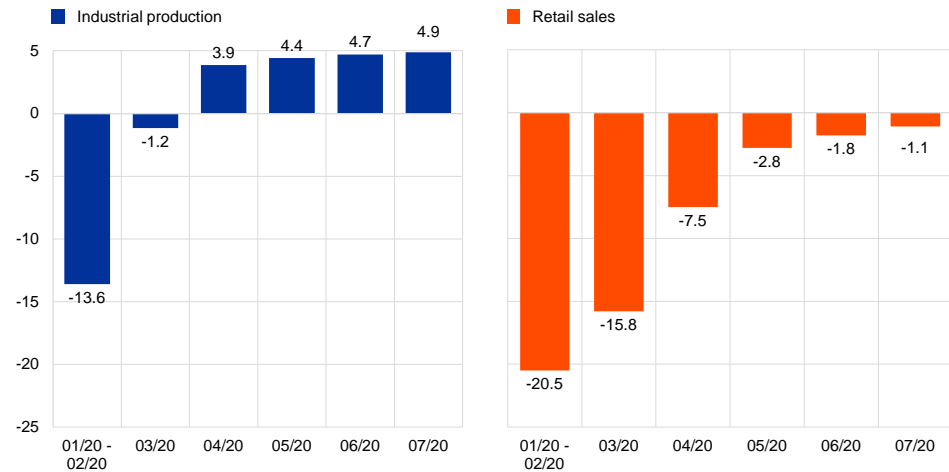
The differential speed of recovery is also apparent in production and sales data.

After a weak first quarter, industrial production growth in year-on-year terms returned to positive rates in April and rose further in May. Retail sales, on the other hand, continued to contract in year-on-year terms in the first two months of the second quarter; sales growth improved markedly after the trough in January and February but has not yet returned to positive rates (see Chart 11). The slower rate of recovery in services is due to several factors. Ongoing mandatory social distancing measures are limiting the capacity of businesses in a number of sectors, including catering, entertainment, tourism and cultural services. Uncertainty regarding the renewed rise in COVID-19 cases, particularly in the absence of a medical solution, is further weighing on the demand for services where social distancing remains challenging, such as transportation. Finally, increased unemployment and economic uncertainty are lowering domestic demand for non-essential purchases, which disproportionately affects the services sector. The slow recovery in services is significant for the Chinese economy, as the services sector now contributes more than 50% of China's real GDP growth.

Chart 11

Industrial production and retail sales

(year-on-year percentage change)



Sources: National Bureau of Statistics of China via Haver Analytics and ECB staff calculations.

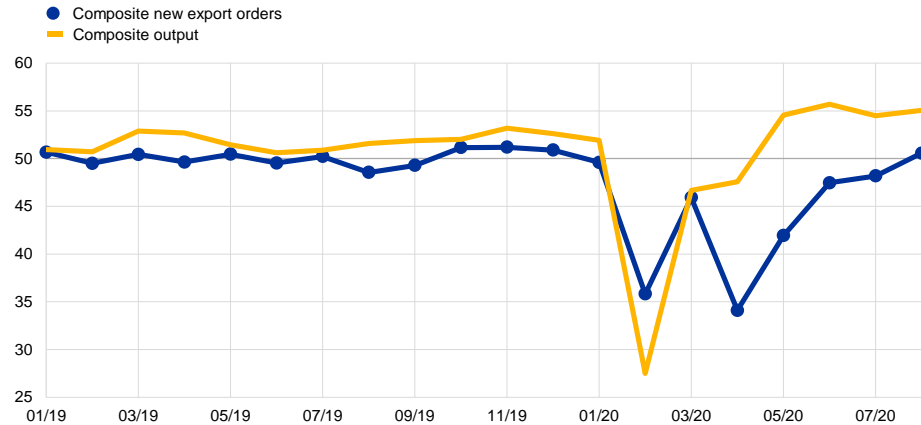
Notes: "Retail sales" data are not seasonally adjusted. January and February data are not individually available, so the sum of data for these months is compared with the sum of the previous year's data for January and February.

At the same time, weak foreign demand is impeding China's recovery. Since China was the first country to experience the COVID-19 outbreak, its recovery has coincided with the implementation of strict containment measures among its trading partners as the COVID-19 pandemic took hold across the globe. The lockdown measures in Europe, the United States and the rest of Asia gave rise to a strong decline in demand for China's exports, as can be seen in the Caixin China Composite New Export Orders PMI. In February, a supply shock reduced exports as producers and shipping ports operated at a fraction of their capacity. Following a nascent recovery in March, new export orders declined significantly again in April as external demand plummeted during lockdowns of trading partners. Data for May to August show that foreign demand for China's goods is once again recovering, but also that the spread of the COVID-19 pandemic has led to a decoupling of broader economic growth, as reflected in the Caixin China Composite Output PMI, from its new export orders component (see Chart 12). With export orders passing the neutral threshold of 50 only in August, China's recovery thus far has been driven primarily by domestic factors.

Chart 12

PMI: composite output and new export orders

(diffusion index)



Sources: Caixin and IHS Markit.

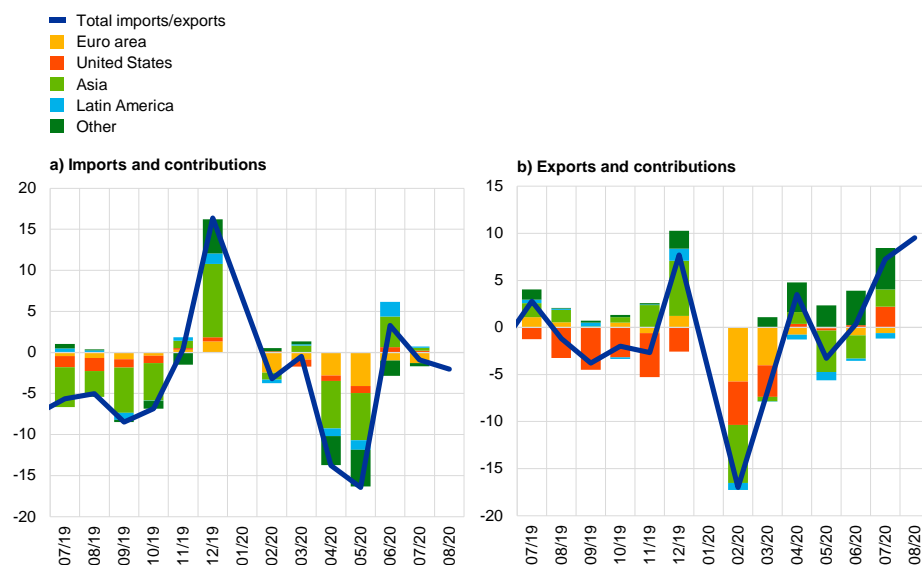
Note: "Composite output" shows the Caixin China Composite Output PMI; "Composite new export orders" shows the Caixin China Composite New Export Orders PMI. The latest observation is for August 2020.

Looking ahead, global developments outside China will also be important for the economy's near-term outlook. As China emerged from the lockdown, lifting restrictions on businesses and citizens, important trading partners, such as Europe and the United States, enforced containment measures. This has affected China's foreign demand at a time when its domestic recovery also remains relatively fragile. Trade collapsed in the first few months of the year and the sharp decline in exports implied a negative contribution of net trade to growth (see Chart 13). In April, growth in goods exports returned to positive territory, only to contract again the following month as China's main trading partners implemented containment measures. However, since June year-on-year growth in exports has been increasing. Imports have remained very subdued owing to weaker domestic demand and lower oil prices. In addition, the dynamics of exports and imports are intertwined – a considerable share of China's imports ultimately feeds into its exports given its prominent position in global value chains. Recent debates in a number of countries about access to medical equipment and medications may also have longer-term implications for global supply chains. For a number of sectors, such as those considered critical to health or national security, countries may choose to repatriate certain production stages to assume greater domestic control over their production, effectively delinking supply chains. This could weigh on the economic growth of countries that are strongly interlinked with the relevant global value chains.

Chart 13

Imports and exports by trading partner

(year-on-year percentage changes)



Sources: China's General Administration of Customs, CEIC Data and ECB staff calculations.

Note: Figures for January and February 2020 are aggregated, as monthly contributions are not available.

Meanwhile, some domestic demand components are showing signs of

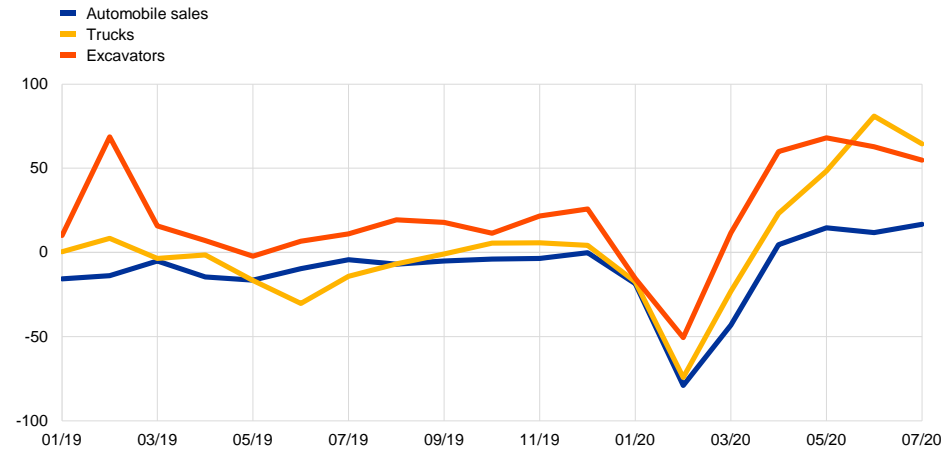
strengthening.

For instance, automobile sales turned positive in April for the first time since mid-2018 (see Chart 14). This reflects in part pent-up domestic demand, following a period of very low car sales. It also potentially reflects a shift away from public transport. Moreover, increasing infrastructure spending has led to particularly strong growth in sales of commercial vehicles such as trucks and construction vehicles. Real estate sales have also recovered to reach their 2019 levels, which points to a broader recovery in domestic demand. Revenue from restaurants, on the other hand, was still down in mid-June, at around 34% of the previous year's level.

Chart 14

Vehicle sales in China

(year-on-year percentage changes)



Sources: China Association of Automobile Manufacturers and ECB staff calculations.
Note: The latest observation is for August 2020.

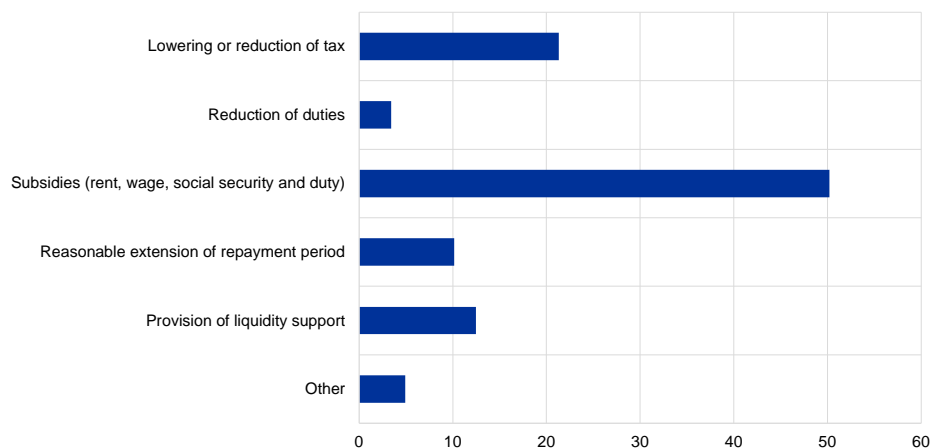
The Chinese authorities have been implementing substantial fiscal and monetary stimuli to cushion the economic shock. With regard to fiscal policy, they are aiming to stabilise employment and economic growth by expanding unemployment insurance, investment and tax relief. Discretionary fiscal measures amounting to around 4% of GDP have been announced, but the total fiscal package is expected to be bigger (see Chart 15). In particular, small and medium-sized enterprises (SMEs) seem to expect substantial additional government support, including tax relief and subsidies, according to a survey conducted by Tsinghua University and Peking University.⁶⁶ The authorities are planning to bring forward infrastructure spending, reduce the tax burden on exporting industries and subsidise durable goods purchases.

⁶⁶ See Huang, Y. et al., "Saving China from the coronavirus and economic meltdown: Experiences and lessons", *VoxEU*, March 2020, based on Zhu, W. et al., "COVID-19 and Impacts on SMEs: Survey Evidences", *CEIBS Business Review*, 2020.

Chart 15

Expectations of government support in the light of COVID-19 shocks

(percentages)



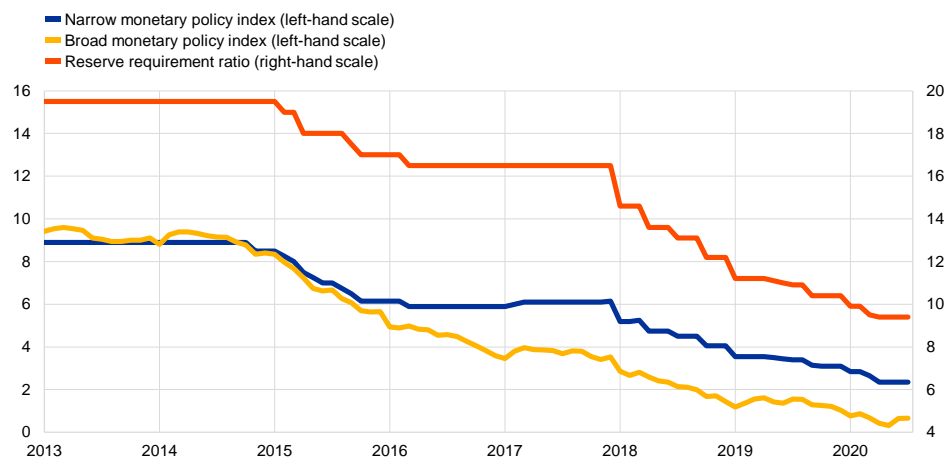
Source: Huang, Y. et al., "Saving China from the coronavirus and economic meltdown: Experiences and lessons", *VoxEU*, March 2020, based on Zhu, W. et al., "COVID-19 and Impacts on SMEs: Survey Evidences", *CEIBS Business Review*, 2020.
Note: The x-axis shows the percentage of respondents expecting the given support measures to materialise.

Monetary policy measures are complementing fiscal policy by ensuring sufficient liquidity in the banking system. The People's Bank of China has cut key policy rates and reserve requirements. Monetary policy has been further loosened since the beginning of 2020 in order to support economic activity, according to summary measures of monetary policy conditions (see Chart 16). Furthermore, the People's Bank of China has directed banks to accommodate delayed loan repayments by businesses, and the banking regulators have provided regulatory relief to banks. These policies have prevented larger increases in bankruptcies and unemployment.

Chart 16

Monetary policy index and reserve requirement ratio

(percentages)



Sources: Lodge, D. and Soudan, M., "Credit, financial conditions and the business cycle in China", *Working Paper Series*, No 2244, ECB, Frankfurt am Main and ECB staff calculations.

Note: The monetary policy index is an ECB summary measure of different monetary policy instruments of the People's Bank of China, including interest rates and quantity-based instruments, adjusting for their relative importance over time.

4 Outlook and risks to the recovery

China's economic outlook remains highly uncertain despite the gradual recovery.

In the near term, China's prospects will depend on the resilience of domestic demand in the presence of increased uncertainty and on developments in the external environment. In addition, the outlook is partially shaped by the extent to which the impact of COVID-19 leads to entrenched changes in the structural and behavioural patterns of the economy. At the last National People's Congress in May 2020, the authorities did not announce an official growth target for the year for the first time in 20 years. This underscores the current uncertainty surrounding China's economic performance, while also pointing to the difficulties of achieving a rate of growth even close to that expected before the current crisis. Furthermore, pandemics can have long-lasting effects through increased precautionary saving and fewer investment opportunities. These potential effects pose additional risks to China's medium-term outlook and reduce the possibility of a quick convergence towards the income levels expected prior to the initial COVID-19 outbreak.

In the absence of a medical solution to COVID-19, social distancing measures will continue to compress economic growth.

Until a medical solution has been developed and is widely available, social distancing measures are likely to remain in place. Distancing measures, while essential to control the pandemic, will continue to affect the economy in a number of ways. In some industries, distancing requirements directly reduce capacity, for instance in restaurants and other venues which host large numbers of customers. More broadly, health risks discourage demand for services which are associated with denser customer and staff attendance. Furthermore, some industries may experience permanent demand losses. For instance, increased experience with remote working arrangements may permanently reduce the demand for business travel and associated services. It will require time for workers in these sectors who have been made redundant to be relocated to other sectors of the economy. In turn, the loss of jobs reduces disposable income and can further weigh on consumption.

China's recovery is subject to a number of risks and could be jeopardised if the country experiences a second wave of infections later this year.

As there is still high uncertainty regarding the availability of a medical solution to COVID-19, it cannot be excluded that – as containment measures are relaxed and social distancing is reduced – a second wave of infections might force the government to reimpose restrictions. Protracted subdued external demand as a result of the pandemic's development in the rest of the world might also weigh on China's recovery. For example, longer-lasting effects on China's trading partners, delays in containing the pandemic across the globe or the emergence of second waves could all affect China's export sector. Further risks to the recovery stem from a potential reescalation of the trade dispute between China and the United States. Although these trade tensions have been attenuated by the "Phase one" trade deal agreed earlier this year, the pandemic and its economic implications have increased the risk that agreed targets will not be met. A further escalation of trade tensions between the two economies and the resultant negative spillovers could further impinge on China's recovery. Ongoing high levels of leverage and other financial imbalances continue to indicate risks to

financial stability. While the Chinese authorities have successfully clamped down on credit growth in recent years, the stock of debt is still relatively high, both at the household and at the corporate level. In addition, although macroprudential policies have curbed the growth of the shadow banking sector, its level remains elevated. In particular, the short-term funding structure in large parts of the shadow banking system could be susceptible to sudden changes in investors' risk appetite, and thus subject to liquidity and rollover risks.

5 Conclusion

This article reviews both traditional data and non-conventional high-frequency indicators to assess the pace of the economic recovery in China. Following a downturn that materialised with unprecedented speed in early 2020, the economy rebounded to activity levels close to those seen prior to the COVID-19 outbreak in a matter of three months. This relatively swift pace of recovery is due to the supply shock nature of the downturn, which meant that production capacity was able to resume in a relatively short period of time. However, the contraction of demand will take longer to fully normalise as the ongoing need for social distancing weighs on activities that involve denser congregations of people.

The outlook for China's economy hinges on several uncertain factors. The first and most significant factor is the time required to develop and implement a medical solution to the pandemic. The second is the potential for flare-ups and second waves of COVID-19 prior to the availability of a medical solution. The third factor is the pace of the recovery of China's trading partners. Finally, a number of structural and geopolitical factors also affect the future growth path of China, including the extent of a potential decoupling from global value chains, as well as future trade relations with major trading partners, particularly the United States. While a normalisation of economic activity in the course of 2021 appears the most likely scenario, the above factors could lead to considerable deviations from this baseline. In view of China's increasing role in determining global growth, the uncertain factors surrounding China's recovery are of utmost importance for the world's economic outlook.

2 The viral effects of foreign trade and supply networks in the euro area

Prepared by Virginia Di Nino and Bruno Veltri

Adverse shocks induced by containment measures introduced in response to the coronavirus (COVID-19) are not limited to the originating country; while not the sole propagation mechanism, foreign trade transmits these shocks across economies. In the euro area, the deep integration of firms within regional supply chains – as well as strong demand ties – acts as a magnifying mechanism. This article quantifies the propagation and impact of adverse shocks originating in the euro area on euro area GDP, foreign trade and trade balances. It concludes that the transmission to the rest of the euro area of a shock originating in one of the five largest Member States ranges between 15% and 28% of the original shock's size. The negative spillover effects are most severe for open countries and those most intertwined in regional production networks.

1 Introduction

In their attempts to limit the spread of the COVID-19 pandemic, all euro area governments introduced lockdowns and containment measures, spurring a blend of supply and demand shocks which adversely affected their economies in addition to the economic consequences of the disease itself. As the pandemic unfolded across the globe, many other countries adopted similar measures, thus putting the euro area under further strain, as commercial and business activities were closed, movement permitted only for necessities, and travel limited to essential business or where *force majeure* made it necessary. The severe repercussions at national level on the spending capability, consumption and investment preferences of economic agents have spread across the globe, with their intensity depending on the degree of economic and industrial interconnectedness.

This article employs multi-regional input-output tables to evaluate the transmission via foreign trade of adverse shocks generated by lockdowns and containment measures across the euro area.⁶⁷ This methodology offers several benefits. Opting for a full representation of country-sector production and demand linkages allows us to evaluate the spillover and the spillback effects of any idiosyncratic shock on output, value added, and domestic and foreign trade of any

⁶⁷ The literature on the macroeconomic effects of COVID-19 has been rapidly expanding, touching also upon the effects of lockdowns and containment measures on GDP and trade of partner economies. See Barrot, J.-N., Grassi, B. and Sauvagnat, J., "[Sectoral Effects of Social Distancing](#)", HEC Paris Research Paper No FIN-2020-1371, 2 April 2020, Navaretti, G.B., Calzolari, G., Dossena, A., Lanza, A. and Pozzolo, A.F., "In and out of lockdowns: Identifying the centrality of economic activities", Covid Economics, Vetted and Real-Time Papers, No 17, Centre for Economic Policy Research, 13 May 2020, Bonadio, B., Huo, Z., Levchenko, A.A. and Pandalai-Nayar, N., "[Global Supply Chains in the Pandemic](#)", Working Paper, No 27224, National Bureau of Economic Research, Cambridge, Massachusetts, May 2020, Bodenstein, M., Corsetti, G. and Guerrieri, L., "[Social Distancing and Supply Disruptions in a Pandemic](#)", *Finance and Economics Discussion Series 2020-031*, Board of Governors of the Federal Reserve System, Washington, 16 April 2020, and Baqaee, D. and Farhi, E., "[Nonlinear Production Networks with an Application to the Covid-19 Crisis](#)", Working Paper, No 27281, National Bureau of Economic Research, Cambridge, Massachusetts, May 2020.

other country and sector within a single overarching framework. The methodology enables us to obtain a breakdown of the full shock-transmission mechanism into direct effects on trading partners and spillover effects on third countries via trading partners and on industries. The latter are only indirectly affected as a result of effects on the inputs of the sector directly affected by suppression measures. Our methodology accommodates the analysis of a variety of shocks, in particular, single country, multi-country, sector specific and foreign trade specific shocks. The abovementioned properties are particularly relevant given the strong interdependence of euro area economies and this article's focus on shocks originating in the euro area. In this context, analyses based on methodologies that fail to consider euro area interconnectedness are likely to underestimate the effective impact of the COVID-19 shock.

The remainder of this article is structured as follows. The methodological framework, scenarios and related assumptions are described in Section 2. Section 3 describes the channels of transmission and Section 4 discusses the effects on the euro area economy of lockdowns and containment measures implemented in its five largest economies. It also delves into the mitigation effects expected to result from the policies designed by governments to support citizens' income and business activity in times of pandemic. Section 5 concludes by reviewing the main takeaways from our analysis and discusses the potential structural economic changes triggered by COVID-19.

2 Data and methodology

The article takes data from the Multi-Regional Input-Output (MRIO) database of the Asian Development Bank (ADB) that reconstructs national and international flows between country-sector pairs and sectoral final demand. The database encompasses all euro area economies and a broad set of other countries. Compared with alternative sources, it also provides more recent information up to 2018 (see Box 1 for a detailed description of the database and our methodology).⁶⁸

The analysis uses a static representation of the economic linkages across sectors and countries to evaluate the economic effects on individual industries of virus-suppression policies. Different sectors are affected to varying degrees by supply disruptions and lockdown measures. The entire manufacturing industry, except for food, beverages, tobacco and pharmaceuticals, has been significantly affected by COVID-19 containment measures. Repercussions on agriculture and aquaculture have been less severe, as is the case for certain services that can be provided remotely, such as telecommunications (which may even have received a boost as a

⁶⁸ The conclusions of our empirical assessments have been cross-checked using the world input-output tables (WIOT) in the World Input-Output Database (WIOD), an alternative source of inter-country sector linkages that includes 45 countries and spans 56 sectors, but contains outdated information (the latest data are from 2014). The WIOD is a project covering the years 2000-2014 financed by the European Commission and developed by a consortium of universities and research institutes. The MRIO database expands on the WIOD along two main dimensions – it extends the tables to include more recent data (the latest are from 2018) and several additional Asian economies. However, it features a more limited number of sectors (35 versus 56 in the WIOD) as service activities are less finely defined. The MRIO database has been extensively used in the literature.

result of the changing behaviour of economic agents during the pandemic). We account for this through the careful differentiation of production shocks in Section 4. Conversely, other areas, namely transport, tourism and accommodation, are assumed to have experienced the severest adverse hits.

Box 1

A working tool: the inter-country input-output tables

This box describes the structure of the inter-country input-output tables (ICIOTs) and how different types of shocks can be applied to them. An ICIOT (see Table A) is structured around two main matrices: the international market for intermediates, Z , and the international market for final goods, Y . The rows of Z are producing country-sectors and the columns are consuming country-sectors. The columns of Y are pairs of countries and final demand sectors (such as private consumption and investment), only one of which is depicted in the simplified illustration below. Both Y and Z consist of G times G submatrices that contain the bilateral sectoral supply linkages between all country pairs.

Table A

Structure of inter-country input-output table with G countries and N sectors

		Outputs				Final demand				Total output
		1	2	...	G	1	2	...	G	
Inputs	1	Z11	Z12	...	Z1G	Y11	Y12	...	Y1G	X1
	2	Z21		...	Z2G	Y21		...	Y2G	X2

	G	ZG1	ZG2	...	ZGG	YG1	YG2	...	YGG	XG
Value added		VA1	VA2	...	VAG					
Total output		(X1)'	(X2)'	...	(XG)'					

Note: Z_{ijst} is the $N \times N$ matrix of intermediate inputs produced in country $i \in \{1, \dots, G\}$ and consumed in country $j \in \{1, \dots, G\}$, VA_i is the $1 \times N$ vector of value generated in country $i \in \{1, \dots, G\}$, X_i is the $N \times 1$ vector of gross output produced in country $i \in \{1, \dots, G\}$ and Y_{ij} is the $N \times 1$ vector of final goods and services completed in country i and absorbed in country $j \in \{1, \dots, G\}$.

A number of aggregate and more granular descriptive statistics can be obtained from the ICIOTs. This is illustrated below by some examples. Let $z_{ijst}, y_{ijs}, x_{is}, va_{is}$ denote the elements of the respective matrices, where $s, t \in \{1, \dots, N\}$ denote the exporting and the importing sector respectively. The sectoral value added for country 1 is then calculated for each sector as total output minus intermediate input,

$$(1) \quad va_{1\sigma} = x_{1\sigma} - \sum_{i=1}^G \sum_{s=1}^N z_{i1s\sigma} = \sum_{j=1}^G \sum_{t=1}^N z_{1j\sigma t} + \sum_{j=1}^G y_{1j\sigma} - \sum_{i=1}^G \sum_{s=1}^N z_{i1s\sigma} \quad \forall \sigma \in \{1, \dots, N\}.$$

Sectoral exports of country 1 equal total sectoral output minus sectoral output consumed on the domestic intermediate and final market,

$$(2) \quad exp_{1\sigma} = \sum_{j=1}^G \sum_{t=1}^N z_{1j\sigma t} + \sum_{j=1}^G y_{1j\sigma} - \sum_{t=1}^N z_{11\sigma t} - y_{11\sigma} \quad \forall \sigma \in \{1, \dots, N\} \quad \forall \sigma \in \{1, \dots, N\},$$

while sectoral imports equal total intermediate inputs plus final demand produced by the sector minus intermediate and final consumption originating from domestic sectoral production,

$$(3) \quad imp_{1\sigma} = \sum_{i=1}^G \sum_{t=1}^N z_{i1\sigma t} + \sum_{i=1}^G y_{i1\sigma} - \sum_{t=1}^N z_{11\sigma t} - y_{11\sigma} \quad \forall \sigma \in \{1, \dots, N\}.$$

The sum across sectors of (1), (2) and (3) yields, respectively, the GDP, total export values and total import values of country 1.

We apply sectoral supply shocks to rows and demand shocks to columns. Shocks are calibrated based on internal and external analyses of the repercussions of countries' containment measures.⁶⁹ In Table A, the matrices affected by a single-country production shock are represented by a red solid line, an intermediate demand shock by a green dashed line and a final demand shock by a blue dotted line. Depending on the scenario, a shock (s) can be single-country or multi-country and model production disruptions or final demand shocks. The ICIOT ($Z^* Y^*$) including the production shock is obtained by multiplying the rows of the affected matrices by the $N \times 1$ shock vector \mathbf{s} ($Z_{ij}^* = Z_{ij} \otimes s1'$, where \otimes is the Hadamard product) and the ICIOT including the demand shock by multiplying the columns of the affected matrices by the transposed shock vector ($Z_{ij}^* = Z_{ij} \otimes 1s'$). The impact of each shock on euro area activity and foreign trade is the difference between the values obtained from the pre-shock ICIOT and the post-shock ICIOT.⁷⁰ In a second stage, indirect shocks are applied to model the supply chain adjustment to the shock in the first stage. Their calibration is a function of the initial shock, the WIOT structure and the assumption on the elasticity of output with respect to intermediates, which is discussed below. The economic mechanism is explained in Section 3.

There is, however, a caveat to this approach, which concerns the treatment of shock vector intersections. Take, for instance, a single-country shock to economy c affecting all sectors differently. The linkage $Z_{cc}(1,2)$, i.e. the intermediate inputs of country c sector 1 to country c sector 2, could be reduced either by the production shock in sector 1 or by the intermediate demand shock of sector 2. In these situations, we assume that equilibrium is determined by supply, which means that the production shocks are the initial triggers and do not account for further fallout on the activity of sector 1 due to lower intermediate demand from sector 2.⁷¹

An important simplifying assumption made in our approach is that a production shock in one country-sector pair triggers an equivalent intermediate demand shock and vice versa. Our strict proportionality assumption is akin to assuming that the base reproduction number (r_0) is equal to unity and constant over time, hence each additional shock will always have a similar effect on the economy.⁷² This is nevertheless a simplification since, in this rapidly changing reality, the dynamics of propagation of a shock through foreign trade are similar to those of the spread of a virus and the contagion rate in the economic "epidemic" process rises rapidly in the early stages when few sectors and economies are infected. In the very short run, key components and crucial services that suddenly cannot be delivered anymore can paralyse entire production chains, but contagion progressively flattens and abates as more and more economies are hit.

⁶⁹ These assessments consider the effects of fiscal and monetary measures on sectors' activity and countries' GDP. Therefore, while we do not explicitly evaluate the effects of policy measures, we indirectly take their effects into account in the shock calibration.

⁷⁰ Pre- and post-shock values of economic statistics were obtained through ICIO, a built-in tool in Stata; see Belotti, F., Borin, A. and Mancini, M., "[icio: Economic Analysis with Inter-Country Input-Output Tables in Stata](#)", Policy Research Working Paper No 9156, World Bank, Washington DC, February 2020.

⁷¹ As a result, the production shock is not exactly equal to the value-added shock; according to our computations, such discrepancies are of a two-decimal order of magnitude. Moreover, this concerns sector spillover effects in the domestic market whereas the article focuses on the international transmission of idiosyncratic shocks, which is not affected.

⁷² In the extreme scenario, when no substitution across inputs, sources or final destinations is possible in the production process, the entire supply network is already disrupted by the first shock; in a situation of this kind, r_0 goes to infinite but then falls rapidly to zero for any subsequent shock.

In our framework, as long as the relative magnitude of sectoral innovations is preserved, the final effects of a given shock are proportional to the original shock. Because of the linearity of our model, shock effects on macroeconomic variables can be scaled up or down if the sectoral distribution (in a single-country shock) or inter-country relative distribution (in a multi-country shock) remains the same. In this way, our assessments can be adapted to analyse the effects of milder or more severe trajectories that the pandemic might take. Sectoral shocks are reported as percentages of the largest shock. Thus, the industry experiencing the sharpest contraction in production takes the value of 100 and shocks in other sectors are indexed to it. We calibrate the shocks based on sectoral information available on the effects of suppression measures and on analyses from internal experts as well as external sources. For example, the shock to weighted aggregate activity in each country is set equal to the GDP contraction projected in the June 2020 Broad Macroeconomic Projection Exercise (BMPE).

The analyses rest on some key assumptions and have certain limitations, such as:

- they strip out the price effects of implemented policies;
- they provide no information on the implications of and interaction with significant monetary policy measures, although the effects of implemented fiscal and monetary policies indirectly influence the exercises to the extent that they modify the forecasts of aggregate output developments in 2020;
- moreover, since they are static, the assessments ignore potential permanent changes in the structure of economies that may ensue from reshoring or the diversification of essential production processes and changes in lifestyle, time allocation across activities, consumption preferences and daily needs.

Possible trade diversion effects are ignored as their appearance may be delayed and our analysis focuses on 2020. The assumption of non-substitutability of supply and demand (lower exports by a country will not be replaced by other countries' exports) across origins and destinations is strong,⁷³ drawing on the idea that, as with viruses, immunisation from shocks disrupting global value chains (GVCs) requires time. It may entail, for instance, starting new lines of production or diverting demand to other suppliers, which may prove to be imperfect substitutes as a result of limited supply capacity or other factors.

3 Transmission channels

There are several contributions in the literature on GVCs showing that production networks propagate idiosyncratic shocks and can be a source of

⁷³ This is a reasonable assumption in the short to medium run for some highly specialised services and manufacturing, where alternative suppliers for specific parts and components are difficult to find, especially during global shocks.

aggregate fluctuations.⁷⁴ In this section, we discuss the various channels that are at play when this occurs and how shocks originate in country-sectors and spill over to the rest of the world, amplified by foreign trade.

Domestic production shocks applied to the ICIOT are transmitted to upstream and downstream trading partners and further up and down the chain to partners of trading partners via export and import channels. Intuitively, by halting domestic production, lockdown measures are conducive to shortages of intermediate goods produced domestically that enter foreign production processes via trading partners (known as the export channel). These shortages generate negative supply shocks for companies located downstream in the chain. At the same time, they reduce the demand for foreign intermediates entering domestic production processes (known as the import channel). The closure of businesses also results in a negative demand shock for companies located upstream in the production process relative to the original locked-down businesses. To the extent that intermediates cannot be substituted, the entire foreign production line is hampered and, consequently, purchases of intermediates from any other country are reduced proportionately. The operation of the export channel propagates initial supply shocks further down the chain. Likewise, lower import demand for foreign intermediates has a negative effect not only on their production in partner economies, but also in other countries that supply inputs for the same processes. The import channel hence has an indirect impact on all companies upstream. Besides intermediate-production linkages, lockdown measures also reduce exports of final products, hence constraining consumption possibilities and potentially generating unintended and temporary extra savings.

Final demand shocks in the ICIOT are only transmitted up the value chain and therefore have a more limited direct impact on foreign countries. Negative demand shocks have a direct negative impact on imports, leading to a reduction in the production in other countries, unless firms replace them with exports to other destinations; this in turn leads to a decrease in their demand for intermediates. This process could be reiterated several times up the value chain. We, however, only model the first two steps, the reduction in imports and foreign production and the foreign intermediates demand shock. This is to account for the time lag that production adjustment needs, but also because the magnitude of indirect effects shrinks with each iteration.

To illustrate the transmission mechanism, let us consider shop closures and, more specifically, look at the case of a bar forced to lock down. Intuitively, if hypothetically the output of food and entertainment services goes down by 10% and these services account for 10% of GDP; such measures will have a direct negative effect on GDP of 1%. However, the bar will reduce its purchases of beer, which will have an impact on the revenues of beer producers which is equal to their share of the

⁷⁴ See Acemoglu, D., Akcigit, U. and Kerr, W., “[Networks and the Macroeconomy: An Empirical Exploration](#)”, NBER Macroeconomics Annual 2015, Vol. 30, National Bureau of Economic Research, University of Chicago Press, June 2016, pp. 273-335, Acemoglu, D., Carvalho, V.M., Ozdaglar, A. and Tahbaz-Salehi, A., “The Network Origins of Aggregate Fluctuations”, *Econometrica*, Vol. 80, No 5, September 2012, pp. 1977-2016 and Gabaix, X., “The Granular Origins of Aggregate Fluctuations”, *Econometrica*, Vol. 79, No 3, May 2011, pp. 733-772.

total costs of bars. If we assume this to be 20%, then an additional contraction of 0.2% in GDP will ensue. Looking further upstream in the beer production process, when beer sales wane, producers order and purchase fewer hops by an amount proportional to the share of hops in total costs. If this ingredient accounts for 25% of beer production costs, a further 0.05% is shaved off the GDP. The overall effect on the country GDP will be equal to -1.25% if the production chain is entirely domestic, while the negative impact is shared internationally if foreign companies are part of the supply chain. Our analysis of spillover effects stops at hops although it encompasses all the economic ties that the bar and the beer producers maintain with other sectors and economies.

4 Euro area-wide repercussions of containment measures in the five largest economies

COVID-19 migrated from China across the euro area before spreading to the rest of the western hemisphere, hence containment measures outside of China were first enforced in Europe.⁷⁵ Using the transmission channels explained above, we assess spillovers from the lockdowns, temporary closures, restrictions on movement and other containment measures adopted by the five largest euro area economies (Germany, France, Italy, Spain and the Netherlands) since early March 2020.

The sectoral distribution of production shocks reflects the expected differential impact of containment measures across industries. The distribution by major NACE⁷⁶ category is presented in Table 1. As expected, trade, transport, accommodation and food services are among the hardest hit in all countries, while for other sectors, particularly manufacturing, there are significant differences. The initial aggregate GDP shocks to the five largest euro area economies in 2020 correspond to the projections for euro area economies in the June 2020 BMPE.⁷⁷ However, as mentioned above, the overall magnitude of the shock does not matter for the computation of shock transmission in this framework, since the results can be scaled up.

⁷⁵ COVID-19 initially concerned China before migrating to Europe and spreading globally to become a true pandemic. This article studies its effects in the euro area, i.e. focusing on the period in which contagion spread mainly across Europe. However, since suppression measures were adopted around the globe, additional analyses have been conducted to quantify their impact on the euro area economy. We find that the euro area would experience a 2% GDP contraction % when the GDP weighted aggregate demand in the rest of the world falls by 9.7%. The direct effects on euro area economies are a result of lower exports of final products to the rest of the world. Output in the euro area adjusts to lower exports and the demand for intermediates by euro area producers, both from within and outside the region, also contracts. Therefore, the proper supply chain transmission mechanism is triggered in a second stage and contributes about a quarter to the propagation of the foreign demand shock within the euro area (0.5 percentage points).

⁷⁶ The “Statistical classification of economic activities in the European Community” (derived from the French *Nomenclature statistique des activités économiques dans la Communauté européenne*).

⁷⁷ See the box entitled “[Alternative scenarios for the impact of the COVID-19 pandemic on economic activity in the euro area](#)”, *Economic Bulletin*, Issue 3, ECB, 2020.

Table 1

Shock calibration: indices of sectoral output shocks due to containment measures by main sector of activity

Sector	Germany	France	Italy	Spain	The Netherlands
Agriculture	25.0	6.2	25.0	15.0	25.0
Industry (excluding manufacturing and construction)	75.0	9.9	75.0	15.0	75.0
Manufacturing	75.0	35.8	75.0	31.3	75.0
Construction	75.0	100.0	75.0	73.1	75.0
Retail trade, transport, accommodation and food service activities	100.0	64.2	100.0	98.5	100.0
Private services	47.5	22.1	25.0	41.5	51.6
Public administration	25.0	18.5	25.0	-3.0	25.0
Arts, entertainment, recreation and other activities	75.0	70.4	75.0	100.0	75.0

Source: ECB staff calculations.

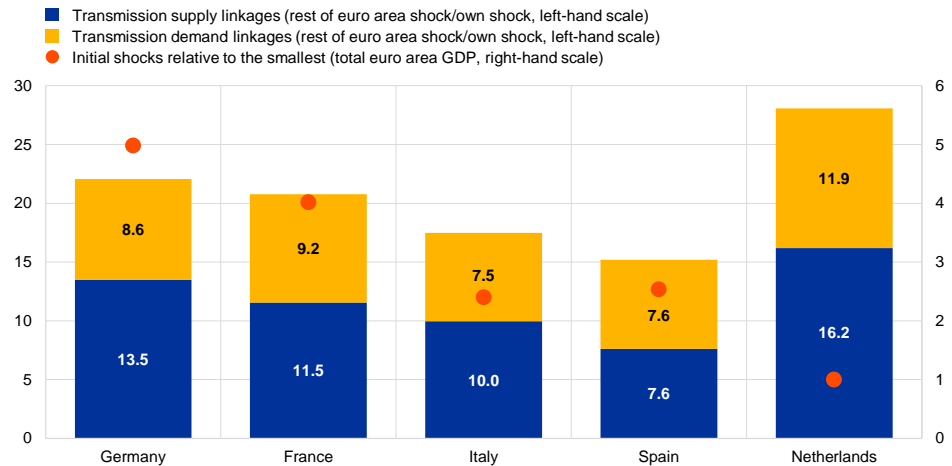
Note: The shock in the most severely hit sector resulting from containment measures is indexed to 100, shocks in the other sectors are a percentage of this. Private services include several activities: information and communication, financial and insurance activities, real estate activities and professional, scientific, administrative and technical activities

There is very substantial transmission of domestic shocks in the five largest euro area economies to aggregate activity in the rest of the area. Aggregate results are reported in Chart 1. Based on the current structure of euro area countries and their interdependencies, our assumptions and the sectoral calibration above, the impact of a shock similar to the COVID-19 suppression measures applied to the five largest euro area economies would be amplified by 15-28%. This happens in two steps. First, in this scenario, a GDP loss of €100 in Germany causes a loss of €13.50 in the rest of the euro area through supply linkages (see blue bars in Chart 1). Lost output results in a reduction in income if the original shock is not countered through policy measures. The income shock then triggers an identical demand shock that is distributed homogeneously across expenditure components, domestic and foreign production, leading to a contraction in euro area GDP of a further €8.60 (see yellow bars in Chart 1). The main finding of this exercise is that the degree of interconnectedness influences the amplification of the initial shocks.

Chart 1

Transmission of single-country shocks to the five largest euro area economies through supply and demand linkages

(left-hand scale: percentage; right-hand scale: multiples)



Source: WIOD, MRIO database of the ADB, ECB staff calculations

Notes: Shocks are indexed to the smallest shock in terms of euro area GDP (the Netherlands), which is set to 1; the other aggregate shocks are multiples of it. For instance, the initial shock to Germany takes on the value of five because it has five times more weighting in euro area GDP.

Euro area foreign trade contracts by more than aggregate activity and

lockdown measures lead to GVC retrenchments. The box entitled “The fall in manufacturing and services activity in the euro area: foreign versus domestic shocks” in the April edition of the Economic Bulletin discusses the euro area regional production network, focusing on how it has changed since the global financial crisis (GFC).

COVID-19-induced shocks have caused a deterioration in the net trade

positions of euro area Member States. Net trade has contracted in all of the five largest euro area economies, substantially contributing to the transmission of the initial domestic shock to GDP. We find that the deterioration is greatest for the most open countries, those running large trade surpluses and for economies (the Netherlands and Germany) that are most intertwined with those experiencing the shocks. Based on monthly trade data for April and May, partial indications on changes to the euro area trade balance in the second quarter of 2020 support our conclusion of a deterioration in the euro area’s external position.

Table 2**Most affected countries and sectors in the euro area**

Shocked country	Production shock: most affected countries and effects relative to average effect in the rest of the euro area	Final demand shock: most affected countries and effects relative to average effect in the rest of the euro area	Production shock: most affected sectors and effects relative to average euro area effect	Final demand shock: most affected sectors and effects relative to average euro area effect
Germany	NL (5.5), LU (4.1), BE (3.3)	LU (4.7), NL (3.6), SK (3.2)	Coke, Petroleum, Fuel (2.8), Transport equipment manufacturing (2.4), Electrical and optical equipment (2.2)	Coke, Petroleum, Fuel (2.4), Wood products (1.0), Non-metallic minerals (1.0)
France	BE (3.4), LU (3.3), NL (1.9)	LU (2.9), BE (2.8), NL (1.7)	Construction (3.5), Air transport (2.8), Retail trade (2.0)	Coke, Petroleum, Fuel (1.5), Construction (1.1), Food & Bev, Tobacco (1.1)
Italy	SI (5.0), LU (4.0), MT (3.9)	LU (4.8), MT (3.7), SI (3.0)	Leather & Footwear (4.3), Textiles (3.7), Activities of households as employers (3.4)	Activities of households as employers (2.7), Coke, Petroleum, Fuel (1.8), Mining & Quarrying (1.3)
Spain	PT (4.9), FR (1.8), NL (1.1)	PT (3.4), LU (1.6), IE (1.3)	Hotels and restaurants (5.2), Activities of households as employers (4.0), Air transport (3.1)	Coke, Petroleum, Fuel (2.4), Activities of households as employers (2.0), Hotels and restaurants (1.9)
Netherlands	BE (7.3), IE (6.7), LU (6.5)	BE (3.9), LU (3.5), IE (2.5)	Mining & Quarrying (4.6), Coke, Petroleum, Fuel (3.7), Wholesale trade (2.8)	Health and social work (1.0), Coke, Petroleum, Fuel (1.0), Financial intermediation (0.8)

Source: ECB staff calculations.

Note: The numbers in brackets denote multiples of average effect, i.e. how much bigger the effect on the respective country or sector is compared to the average effect on the euro area excluding the shocked country (countries) or compared to the average effect on the euro area (sectors).

Box 2**The euro area regional production network**

The euro area is a unique example of a regional production network. GVC linkages in the region reflect an intricate supply web with more than one hub, comprising production, shipping and financial centres. Intermediates travelling across several borders in such networks form the majority of euro area trade, while disruptions are transmitted across the region either because inputs from another euro area country become unavailable (forward linkages) or because as firms in the rest of the euro area reduce their output, foreign demand for domestic intermediates wanes (backward linkages). In this context, demand and supply shocks blend and reinforce each other as they propagate among member states.

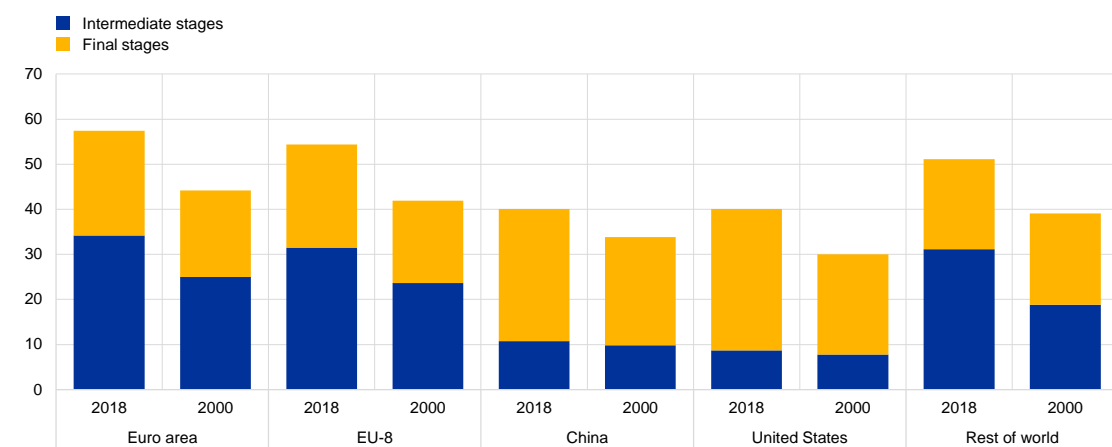
This box describes the euro area production network and discusses how it has changed, focusing in particular on the period after the GFC. Intra-euro area GVC trade is compared with trade with other main trading partners/regions (the eight non-euro area economies in the European Union, China, the United States and the rest of the world). The analysis uses a refined definition of GVC trade that distinguishes between shallow and deep GVC linkages. In particular, GVC trade is defined in the literature as the share of exports and imports that crosses at least two borders (concerning three

economies) before reaching the final destination.⁷⁸ We further separate it into deep and shallow GVC trade. The former is the share of exported and imported intermediates entering intermediate stages of production in the importing-exporting country (blue bars in Chart A) while shallow GVC trade occurs when the goods and services produced in a global network are traded directly with the final absorbing partner (yellow bars in Chart A). This distinction is key when disentangling trade within a production network from GVC trade with other production networks.

Chart A

GVC exports by main euro area trading partner/region

(as a percentage of total bilateral exports)



Source: WIOD, MRIO database of the ADB, ECB staff calculations.

Notes: The sum of blue and yellow bars represents GVC exports, i.e. the share of total exports that crosses at least two borders before reaching the final destination. The chart breaks down total GVC trade into shallow GVC linkages, that is the share reaching the final transforming economy (yellow bars), and deep GVC exports, that is intermediates processed and then re-exported for further processing (blue bars).

The European production network remains the engine behind aggregate activity in the euro area. In 2018, three-quarters of the intermediates exported by euro area countries within the European Union were destined for further processing and re-exporting; two-thirds reached another euro area member. The share of GVC trade in intermediates exported at intermediate stages of production (of total intra-euro area trade) is three times as large as that with China (33% versus 11%, see blue bars in Chart A) and four times as great as that with the United States (8%). Indeed, the bulk of GVC trade with other regions occurs at the final stages of production, i.e. it concerns intermediates directly embedded in finished goods (see yellow bars in Chart A).

Supply chains in the euro area continued to develop amid a decline in GVCs' share of total global exports since before the GFC. While the global trade slowdown did not spare euro area trade, the euro area actually strengthened its position as a leader in GVCs relative to other regions after the GFC. More than half of total exports consist of production that is processed across several borders, a share far greater than in China or the United States (both around 30%).

Since the GFC, the euro area has reorganised its internal production network, further deepening its regional core and expanding its influence on the rest of the EU.⁷⁹ Chart B breaks down the change in GVC exports that occurred between 2008 and 2018 within the euro area and with its main foreign trading partners (the United States, China and non-euro area economies in the EU), highlighting

⁷⁸ Borin A. and Mancini, M., "Measuring What Matters in Global Value Chains and Value-Added Trade", World Bank Policy Research Working Paper No 8804, World Development Report 2020, 4 April 2019.

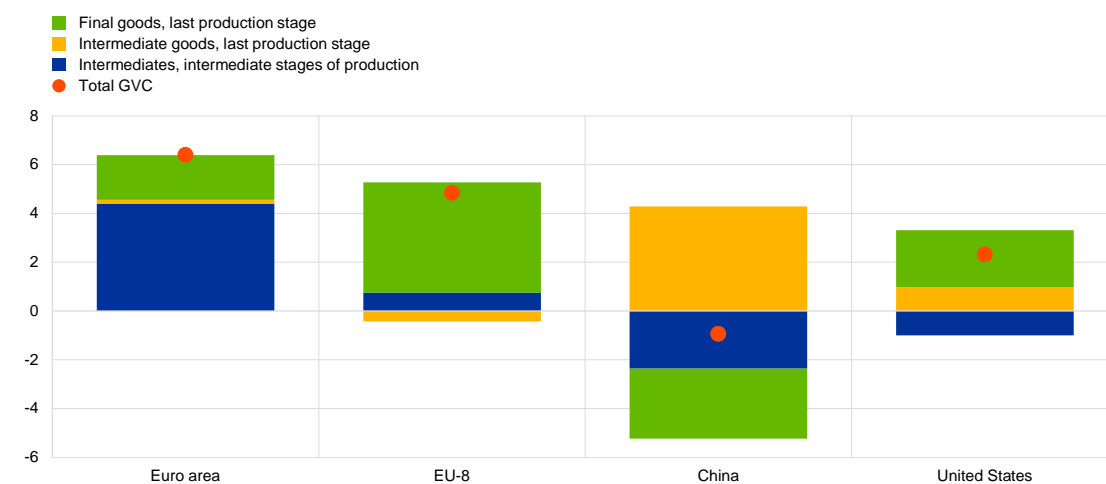
⁷⁹ The rest of the EU is composed of Bulgaria, Czech Republic, Denmark, Croatia, Hungary, Poland, Romania, and Sweden.

shallow GVC exports (green and yellow bars) and deep GVC exports (blue bars). From a euro area perspective, the global shortening of value chains was counterbalanced by further integration within the regional network in the euro area and with the rest of the EU (6 percentage points and almost 5 percentage points respectively, see red dots in Chart B). Such progress is in contrast to the decline with China and the significant slowdown with the United States. Moreover, the core of euro area supply chains deepened further (blue bars in Chart B) whereas GVC trade with other regions mainly concerned shallow linkages (green or yellow).

Chart B

Change in euro area GVC exports, shallow and deep linkages (2018-2008)

(as a percentage of total bilateral exports)



Source: WIOD, MRIO database of the ADB, ECB staff calculations.

Notes: The chart breaks down the total change in GVC exports (the share of trade that crosses at least two borders before reaching the final destination, red dots) between 2008 and 2018 into three main components: the share that consists of intermediates embedded in finished production (yellow), the share of exports in final goods that were produced in a supply chain (green) and the share of intermediates that are processed by the importer and then re-exported for further processing (blue).

Integration within the euro area is clustered around a few economies (Germany and the Netherlands in particular). Based on the bilateral flows in intermediates crossing at least two borders, the five largest euro area economies are primarily integrated with the Netherlands, which acts as the euro area delivery and arrival point for exports and imports from the rest of the world. Germany is the manufacturing hub but Italy also appears to have a more central position compared with France and Spain. Other members of the European Union share a dense matrix of bilateral GVC trade with the euro area, especially with Germany, Austria and Italy.

Eastern enlargement of the euro area and improvements in stressed countries explain the success of its regional supply chains after the GFC. Our analysis indicates that, despite less favourable global conditions, rising protectionist measures and a globalisation reset in other regions, supply networks in the euro area were boosted by the greater integration of new members (Lithuania, Slovakia and Estonia) with the core.⁸⁰ These countries not only strengthened their position in the regional network as both an origin and destination for parts and components, but some of them attracted a growing share of production from other regions (the United States and China) that they embedded in their

⁸⁰ For Latvia, empirical evidence is less strong; the country's importance as a producer of intermediates has grown but it has not attracted more GVC exports into its borders.

processes.⁸¹ A significant contribution also comes from countries like Spain, Portugal and Greece that improved their participation in regional GVCs relative to their pre-GFC values.⁸²

Since 2008, imports of intermediates from the rest of the world that are further processed in the euro area have expanded substantially as other emerging economies have gained traction in terms of participation in GVCs.⁸³ While too early to draw a conclusion, the role of the heterogeneous group of countries composing the “Rest of the World”, which encompasses commodities exporters as well as Vietnam, Turkey and the Philippines, is growing steadily in terms of GVC participation. A benign interpretation of this evidence from a global perspective is that GVCs may not be falling apart but rather changing to accommodate a diversified set of players, leading to a less concentrated global production network.

5 Conclusion

This article analyses how domestic adverse shocks generated by containment measures are transmitted and magnified within the euro area. International country-sector interconnectedness and openness determine the strength of the propagation of shocks via foreign trade, but our analysis has shown that the amplification effects and the transmission channels vary depending on the type of shock.

Shocks propagate strongly in the euro area because the region is a typical example of a regional production network in which final demand linkages are also very important. Transmission to the rest of the euro area of a shock originating in one of the five largest Member States ranges from 15% to 28% when supply and demand channels are taken into account. A common or coordinated response through targeted fiscal measures can help forestall such amplification effects. In addition, these effects need to be taken into account when assessing the impact on real GDP and inflation and when deciding on the appropriate monetary policy response.

⁸¹ Euro area integration with the United States was broadly stable after the GFC. However, the aggregate data conceals Germany's decline as a destination, which was offset by an increase in the trade of parts and components from the United States to new Member States.

⁸² Euro area GVC integration with other regions remains shallow. 60% of exports to China and the United States consist of domestic production for direct final absorption; this compares with just 40% of domestic production exported by one Member State directly to another euro area absorbing Member State. Similarly, almost 50% of the intermediates exported to Asia and America are directly delivered to the final destination which deals only with the transformation into final goods and absorbs them domestically. When intermediates originating in the euro area are further traded by Asian and American firms, they are mostly re-exported within the region. See also Li, X., Meng, B. and Wang, Z., “Recent patterns of global production and GVC participation”, Global Value Chain Development Report 2019: Technological Innovation, Supply Chain Trade, and Workers in a Globalized World, World Trade Organization, 13 April 2017, pp. 9-43.

⁸³ The expansion of intra-euro area supply chains did not entail a retrenchment of its trade integration with the rest of the world. Although they were initially set back, exports and imports from the rest of the world progressed at a pace comparable to global activity in the aftermath of the GFC. Trade integration with China has taken a new path as demand for euro area production has grown steadily, making China a top destination for European firms' output. Indeed, the domestic production content of euro area exports to China expanded after the GFC; intermediates, parts and components delivered elsewhere, however, experienced a decline. A possible interpretation of this evidence is that euro area companies moved gradually to local production, i.e. trade has been replaced with foreign direct investments. Nonetheless, the Chinese production content of euro area imports did not decline but remained stable.

The complex chain structure of the production model can be improved.

International cooperation could be strengthened with a view to avoiding shortages of essential products, such as medicines or medical appliances, by reducing the excessive concentration of the production of key components in single factories and allowing for greater geographical diversification. While economies of scale will continue to work in favour of the concentration of production, the balance of costs and benefits goes beyond the purely short-term outlook and economic convenience. As highlighted by COVID-19, non-economic considerations regarding critical situations are also factors to be taken into account.

At the same time, production networks can represent a safety net for participating companies in times of crisis. During a crisis, the weakest links in the network may be rescued, merged or acquired and the financial holdings of large groups can provide liquidity to avoid credit crunches. Financing difficulties can also be eased by temporarily relying on more favourable payment conditions from suppliers in the network. Lastly, in cases of production curtailments, firms inside the network will receive preferential treatment over those outside it and will be the last to experience shortages of intermediate supplies. However, the safety net mainly helps overcome temporary setbacks but will not protect companies under strain in the medium term; it therefore remains the duty of governments to avoid long-term scarring effects from the pandemic.

The analysis presented abstracts from new trends in the way people and economies will interact in the future. COVID-19 accelerated transformations that were already underway. Remote working, teleconferencing, fewer meetings held in public or at the workplace, a reduction in the use of public transport, more controlled tourism and a reduction in movement and travel – all are likely to remain prominent for a considerable time. At the same time, significant changes are occurring in our lifestyles and how we spend our work and leisure time. This is likely to have lasting implications for how economies and their production systems are structured.

3 Automatic fiscal stabilisers in the euro area and the COVID-19 crisis

Prepared by Othman Bouabdallah, Cristina Checherita-Westphal, Maximilian Freier, Carolin Nerlich and Kamila Sławińska

1 Introduction

Authorities in the euro area have taken exceptional policy action to stem the economic fallout from the coronavirus (COVID-19) pandemic. The ECB committed to using the full potential of the monetary policy tools at its disposal within its mandate. At the same time, euro area governments implemented sizeable packages of fiscal measures, consisting, in particular, of discretionary fiscal stimulus measures. As of end-May 2020, the discretionary fiscal measures by themselves amounted to about 3.25% of GDP at the aggregate euro area level.⁸⁴ Furthermore, leaders at the European level have agreed on a major recovery plan embedded in the EU budget. When implemented, the EU budget will temporarily almost double in size to around 2% of GDP.⁸⁵

In addition to these discretionary measures, automatic fiscal stabilisers in the euro area countries play an important role in cushioning the economic shock caused by the pandemic. Automatic fiscal stabilisers refer to elements, built into government revenues and expenditures, that reduce fluctuations in economic activity without the need for discretionary government actions. Together with discretionary fiscal policy measures, these are especially important in a currency union such as Economic and Monetary Union (EMU), where – alongside the common monetary policy – instruments are needed that address idiosyncratic, country-specific shocks. In principle, automatic stabilisers have the advantage of being timely, targeted and temporary in smoothing the economic cycle. Furthermore, these do not suffer some of the same drawbacks as discretionary fiscal measures, such as the need for measurement of the economic cycle or implementation lags.

This article examines automatic fiscal stabilisers in the euro area and their ability to provide economic stabilisation during the COVID-19 crisis.⁸⁶ While the concept is well-established in macroeconomics, the term “automatic fiscal stabilisers” is not used entirely consistently in the literature and may refer to somewhat different concepts, which are presented in Section 2. Estimates made by the European System of Central Banks (ESCB), as presented in Section 3, suggest that automatic fiscal stabilisers are generally sizeable but vary significantly across euro area countries. Box 1 shows that this assessment is also broadly confirmed by other comparable estimates. Even though they are related, the size of automatic fiscal stabilisers should be distinguished from their effectiveness in terms of their impact on reducing

⁸⁴ See the box entitled “[The COVID-19 crisis and its implications for fiscal policies](#)”, *Economic Bulletin*, Issue 4, ECB, 2020.

⁸⁵ See [Conclusions of the special meeting of the European Council](#), Brussels, 17-21 July 2020.

⁸⁶ This article also draws on the work of national central banks and the European Central Bank (ECB) in the Working Group on Public Finance, a sub-committee of the Monetary Policy Committee.

fluctuations in economic activity. During the COVID-19 crisis a number of factors may have limited the effectiveness of automatic stabilisers in contributing to macroeconomic stabilisation (Section 4). In this respect, Box 2 provides a model-based quantification of the effectiveness of automatic stabilisers at the euro area level under normal conditions and under conditions akin to the lockdown phase of the COVID-19 crisis. Overall, both the depth and the nature of the COVID-19 crisis provide a strong rationale for additional fiscal measures, as decided and implemented at the national and European level. In this context, the article discusses policy proposals to establish quasi-automatic fiscal instruments that could provide additional timely, targeted and temporary macroeconomic stabilisation for the euro area. The article also reflects on important efficiency considerations over the cycle, and the need to build fiscal buffers in good economic times (Section 5). An overall conclusion can be found in Section 6.

2 Elements of automatic stabilisation in the government budget balance

Faced with a recessionary shock, governments can provide support to the economy in different ways. Most noticeably, governments can decide to take discretionary fiscal policy measures. Typical discretionary measures include policies to boost household and firm confidence, and consumption and investment opportunities. They may also include, among many other things, tax rate cuts, higher tax allowances, car scrapping schemes and support for private investment programmes. Governments can also decide to provide guarantees (or other forms of implicit and explicit contingent liabilities), e.g. to provide liquidity support to the economy, preventing severe supply side disruptions or contagion through financial channels. Less noticeably, most government revenues, and part of government expenditures, also adjust automatically with the economy cycle and without any specific action from the government. Even less obviously, the government contributes implicitly to mitigating the repercussions of a negative macroeconomic shock by keeping a large part of its expenditure at the budgeted level, and not cutting it in a recession.

Automatic fiscal stabilisers refer to those elements built into the government budget that reduce fluctuations in economic activity without the need for discretionary actions. The first source of automatic stabilisation is found in those elements of the government budget that react to the economic cycle. We will refer to these components of the budget balance as cyclical elements of the automatic fiscal stabilisers. The second source is found in non-cyclical components of the budget balance (mainly in the form of public spending) which are characterised by relatively high inertia and can also be considered to provide automatic stabilisation. We will refer to these components of the budget balance as the non-cyclical, implicit elements of the automatic fiscal stabilisers.⁸⁷ While this article will focus on recessionary shocks – such as the one presented by the COVID-19 crisis – in principle automatic fiscal stabilisers operate in both directions. They cushion the macroeconomic impact of a

⁸⁷ These are often referred to the size of government or expenditure inertia in the literature.

downward (e.g. recessionary) as well as an upward (e.g., overheating) shock. These two sources of automatic stabilisation are examined in more detail below.

- **First, elements of automatic fiscal stabilisation in the government budget balance are cyclically-sensitive budgetary items.** These are the items that closely follow their macroeconomic bases – the macroeconomic variable that determines government revenue and spending; for example, the number of unemployed persons in the case of unemployment benefits – and react immediately to a shock. On the revenue side, the drop in tax and social security contributions, alongside increasing transfers to households, are the source of automatic stabilisation that most economists will have in mind. However, this drop in revenues can be further broken down into two elements: (i) the proportional drop in revenues with respect to GDP as taxes and contributions of households and firms drop in line with their income – this can reduce economic fluctuations compared to, for example, a counterfactual scenario with a poll or lump-sum tax;⁸⁸ and (ii) the progressivity of the tax system typically implies that revenues decline in excess of the drop in GDP, e.g. as households fall into a lower tax bracket in the personal income tax system. Tax progressivity is considered to have an important stabilisation effect on demand in case of a negative income shock, as personal income taxes play an important role in reducing volatility of disposable income.⁸⁹ On the expenditure side, unemployment benefits represent the most relevant automatic stabiliser of this type.⁹⁰
- **Second, the budget balance also provides implicit stabilisation via non-cyclical items, particularly on the spending side.** Governments typically do not significantly reduce their spending level (i.e. in millions of euro) in times of a temporary economic downturn. This inertia in government expenditure helps stabilise total output in a downturn because the bulk of government expenditure already approved – such as wages, transfers or intermediate consumption – does not react to the drop in output. In the counterfactual, the government would reduce its expenditure to keep its budget balance unchanged in reaction to the economic slowdown. This would imply no stabilisation. The size of the government is thus often considered a proxy for the size of automatic fiscal stabilisers in a country. It should be noted that the size of the government also contributes to dampening an overheating economy, given that budgeted public expenditures are not immediately increased in times of an economic upswing. Research shows that there is a negative relationship between government size

⁸⁸ A poll tax is a tax levied as a fixed sum on a taxable individual, household or other entity.

⁸⁹ The degree of personal income tax progressivity is found to be negatively associated with output volatility in a sample of OECD countries. The effect is in addition to the stabilising role of a government's size. See Rieth, M., Checherita-Westphal, C. and Attinasi, M., "Personal income tax progressivity and output volatility: Evidence from OECD countries", *Canadian Journal of Economics/Revue canadienne d'économique*, Vol. 49, No 3, Wiley, Hoboken, 2016, pp 968-996.

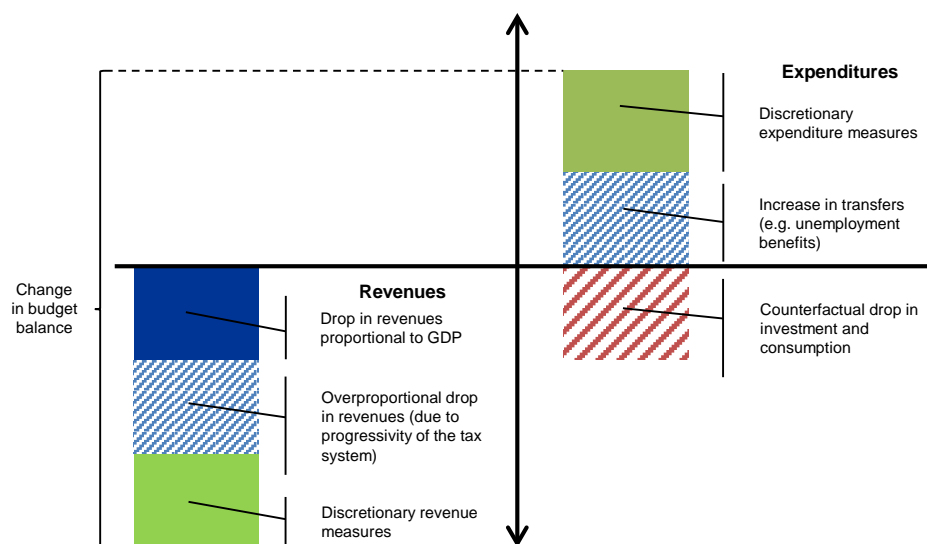
⁹⁰ Some authors argue that age and health-related social expenditure also react to the cycle in a stabilising manner. This is, for example, because the propensity of older employees to enrol in early retirement schemes increases in a cyclical downturn. See Darby, J. and Melitz J., "Social Spending and Automatic Stabilizers in the OECD", *Economic Policy*, Vol. 23, No 56, Oxford University Press, 2008, pp 715-756.

and business-cycle volatility for the Organisation for Economic Co-operation and Development (OECD) economies.⁹¹

An illustration of these stabilising elements in the government budget balance is presented in Chart 1. Governments provide fiscal support to the economy, which is broadly captured ex post by the change in the general government budget balance as a share of GDP. This total fiscal support through the budget can be decomposed into two main categories: the discretionary and the cyclical components of the budget balance (green and blue bars respectively).⁹² The non-cyclical elements of the automatic fiscal stabilisers – which act as a stabilisers vis-à-vis a counterfactual drop in government investment and consumption – are not part of the change in the budget balance (red bar).

Chart 1

Elements of fiscal stabilisation in the government budget balance in reaction to a negative macroeconomic shock



Source: Own illustration.

Notes: The sum of green bars reflects discretionary fiscal policy measures. The sum of blue bars reflects the cyclical elements of automatic fiscal stabilisers. The red bar is a counterfactual scenario where the government reduces investment and consumption during an economic downturn. The size of the bars is illustrative.

Automatic fiscal stabilisers are considered to be particularly efficient in cushioning country-specific shocks. As demonstrated during the COVID-19 crisis, discretionary fiscal measures can provide quick support in times of crisis, helping to stabilise expectations. However, discretionary measures – especially those with the

⁹¹ See, for example, Gali, J., “Government size and macroeconomic stability”, *European Economic Review*, Vol. 38, No 1, 1994, pp. 117-132, and Fatás, A. and Mihov, I., “Government size and automatic stabilizers: international and intranational evidence”, *Journal of International Economics*, Vol. 55, No 1, Fontainebleau, 2001, pp 3-28.

⁹² More precisely, the discretionary part of the change in the budget balance is captured by the cyclically adjusted (or structural) primary balance or fiscal stance, which consists of discretionary fiscal policy measures and a number of non-policy factors. The cyclical component of the budget balance captures those changes in the budget balance associated with the business cycle. Besides the discretionary and cyclical component of the budget balance, another component (in part exogenous to the budget) is the change in interest payments, which represents a financial flow between the government and other domestic or external sectors of the economy. See Van Riet, A. (ed.), “Euro area fiscal policies and the crisis”, *Occasional Paper Series*, No 109, ECB, Frankfurt am Main, April 2010.

largest positive long-term impact (such as productive government investment) – may only be implemented with lags. Furthermore, governments may find it difficult to reverse spending hikes after the crisis subsides. Automatic fiscal stabilisers have the advantage of providing fiscal support: (i) as the downturn occurs and without delay (this is the “timely” aspect); (ii) to those entities that require it most (the “targeted” aspect); and (iii) only for as long as is needed (the “temporary” aspect).

While automatic fiscal stabilisers provide benefits in terms of macroeconomic stabilisation, they may also have costs in terms of economic efficiency. As

described above, large automatic fiscal stabilisers are associated with large government revenues and expenditures as a share of GDP and a progressive tax system. As pointed out by the literature, since taxes generally distort economic decisions, very large governments can be a drag on (potential) growth, especially when accompanied by high public debt ratios. When assessing tax structure effects on output volatility, there is evidence that for high ratios of total taxes to GDP further tax increases can be economically destabilising.⁹³ Moreover, automatic stabilisers can cushion temporary shocks, while their effectiveness is limited when it comes to persistent or permanent shocks.⁹⁴ In such cases, automatic stabilisers may lead to increasing government debt and induce risks to fiscal sustainability. Other types of measures and policies, especially structural reforms (including on the fiscal side) are needed to deal with these long-term or permanent shocks.

3 Estimating the size of automatic fiscal stabilisers in euro area countries

To estimate the size of automatic stabilisers, a microeconomic, a macroeconomic or a statistical approach can be used.⁹⁵ The microeconomic approach estimates the extent to which a shock to household market income translates into a change in disposable income, using micro data on the tax and benefits system. The macroeconomic method additionally takes into account feedback effects and the behavioural responses of economic agents – it quantifies the stabilising impact of fiscal policy on total income. Finally, the statistical approach evaluates the automatic stabilisation effect of a budget balance in terms of changes in economic activity. It considers not only stabilisation properties related to the size of the government – as measured by public expenditure ratio – but also direct taxes paid by households, indirect taxes and transfers. The latter approach captures the cyclical

⁹³ For the growth impact, several OECD studies, inter alia, point to evidence that too large governments – on either the tax side or the expenditure side – tend to reduce growth unless governments function in a highly effective way. See, for example, Johansson Å., “Public Finance, Economic Growth and Inequality: A Survey of the Evidence”, *OECD Economics Department Working Papers*, No. 1346, OECD Publishing, Paris, 2016. In addition to the growth impact, some studies provide evidence for nonlinear effects of government size on output volatility, i.e. the macroeconomic stabilisation effects of governments decline, or even vanish, when their size is very large. See, for instance, Crespo Cuaresma, J., Reitschuler, G. and Silgoner, M., “On the effectiveness and limits of fiscal stabilizers”, *Applied Economics*, Vol. 43, No. 9, 2009, pp 1079-1086.

⁹⁴ See also discussion in 't Veld J., Larch M. and Vandeweyer M., “Automatic Fiscal Stabilisers: What they are and what they do,” *European Economy - Economic Papers 2008 - 2015* 452, European Commission, Brussels, 2012.

⁹⁵ See Mohl, P., Mourre, G. and Stovicek, K., “Automatic fiscal stabilisers in the EU: size and effectiveness”, *European Economy Economic Briefs*, Brief 045, European Commission, Brussels, May 2019.

component of the budget balance (in percentage of GDP) and is the most widely used approach in institutional fiscal surveillance.

This section focuses on the statistical approach and therefore estimates the size of automatic fiscal stabilisers as the part of the budget balance that automatically adjusts to the economic cycle.⁹⁶ The statistical approach can capture both elements of the automatic stabilisers discussed in Section 2. When the elasticities of revenues and cyclical expenditures to the output gap are used, automatic fiscal stabilisers are estimated as changes in cyclical budgetary items.⁹⁷ If the focus is shifted to the elasticities of revenues and expenditures as a ratio to GDP (the concept of semi-elasticities⁹⁸), the statistical approach delivers an estimate of the size of automatic fiscal stabilisers, focusing mainly on the stabilising effect of the inert public expenditures and, to a lesser extent, on the other components of a budget balance. These react non-proportionally to the economic cycle, e.g. income tax progressivity induces tax revenues to grow faster than GDP.

The ESCB method of estimating the cyclical component uses the concept of semi-elasticity to gauge the reaction of the budget balance-to-GDP ratio to cyclical conditions.⁹⁹ In this approach the budgetary semi-elasticity is measured as the difference between semi-elasticities of revenue and expenditure components. Semi-elasticities of the relevant budgetary categories are estimated considering both a response of the budgetary category to its macroeconomic base and a reaction of the base to the output gap.¹⁰⁰ One of the main novelties of the ESCB method is the incorporation of the lagged response of a budget to macroeconomic shocks. Potential lagged collection of the revenues and lagged responses of macroeconomic bases to the cycle, e.g. a lagged reaction of wages to the business cycle, not only result in a contemporaneous change of the budget balance as a reaction to the economic cycle but also contribute to further adjustments in later years.

According to ESCB estimates, the standardised cumulative size of automatic stabiliser is 0.48 in the euro area but there is a large heterogeneity among the euro area countries (Chart 2).^{101,102} In general, across all countries, the bulk of

⁹⁶ The automatic reaction of a budget balance can be estimated using two different approaches, namely, the aggregate approach or the disaggregate approach. The aggregate approach uses one synthetic measure of an economic cycle, i.e. the output gap, and applies it to all budget items. In the disaggregate approach cyclical patterns are identified separately for all budget balance components. The aggregate method is currently used by all major international institutions, including the ESCB, to estimate the cyclical component of a budget balance.

⁹⁷ Cyclical revenues increase in a boom and decrease in a recession, while the opposite relationship occurs for cyclical expenditure.

⁹⁸ Budget semi-elasticity measures the change of the budget balance, as a percentage of GDP, for a 1% change in the output gap.

⁹⁹ Bouabdallah, O., Morris, R. and Reiss, L. (eds.) (forthcoming). "Gauging the typical influence of the economic cycle on government finances: New (Eurosystem) methodology." *Working Paper Series*, ECB, Frankfurt am Main.

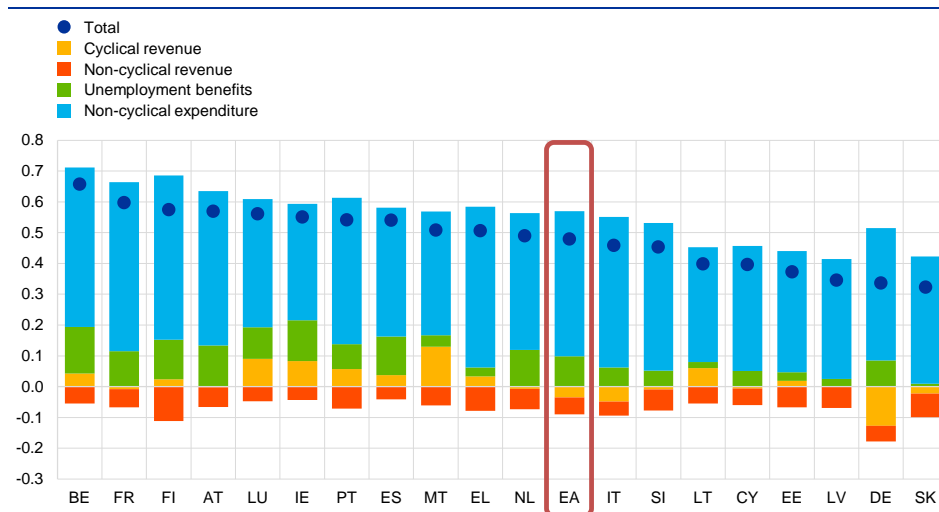
¹⁰⁰ The macroeconomic base determines the amount of revenues collected and expenditures made by a government. For example, all goods and services that are subject to tax comprise a tax base. Due to the fact that exact bases are difficult to measure and forecast, proxy variables are used as macroeconomic bases, e.g. household consumption is a proxy base for VAT revenues.

¹⁰¹ In general the size of automatic stabilisers is estimated as a semi-elasticity multiplied by an output gap. Hence, the size of automatic stabilisers is proportional to the size of an output gap. To improve comparability of results, it is assumed that an output gap equals 1% of potential GDP in all euro area countries.

automatic stabilisation is provided by non-cyclical expenditures, i.e. reflecting spending inertia. The amount of stabilisation is larger in the western European countries such as Belgium or France, while it is noticeably smaller in the central and eastern European countries, e.g. Slovakia or Latvia. The larger size of automatic fiscal stabilisers in western and, to some extent, southern European countries is a consequence of three main factors: (i) larger size of government; (ii) more generous social security system; and (iii) more progressive direct taxes. The generosity of unemployment benefits partly explains the observed cross-country differences in the contribution of this expenditure to the overall semi-elasticity, which is marginal in central and eastern European countries and largest in the case of Belgium. Other aspects of automatic fiscal stabilisers are the progressivity of tax systems and the cyclicity of social security contributions. For example, even if the progressivity of tax systems is comparable among countries, the stabilisation properties of personal income tax could still differ due to the existence of collective wage bargaining, which could increase wage rigidity. Relative stability of wages and employment, as well as a tendency of households to smoothen their consumption over the business cycle, can partly explain the negative impact of cyclical revenues in some countries, such as Germany or Italy.

Chart 2

The size of automatic fiscal stabilisers in euro area countries



Source: ESCB.

Notes: The size of automatic stabilisers is estimated as a semi-elasticity multiplied by a standardised output gap of 1% of potential GDP. Due to the fact that the ESCB method incorporates the lagged response of a budget to macroeconomic shocks and the lagged effect of tax collections, the presented automatic stabilisers are expressed in cumulative terms over three years ($T - T + 2$). The euro area average is indicatively calculated as a weighted average of individual semi-elasticities for all euro area countries, using nominal GDP in 2019.

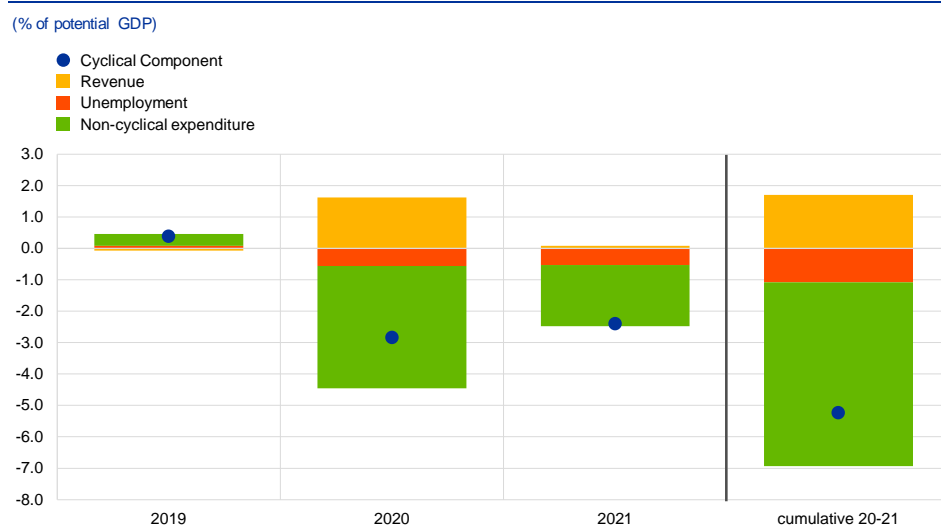
Automatic fiscal stabilisers during the COVID-19 crisis are expected to be sizeable on in the euro area as a consequence of the significant size of the shock. Automatic stabilisers are forecasted to account for around one-third of the large budget deficit in 2020, namely 2.8% out of 8.5% of GDP. This rises to 5.2% of

¹⁰² To simplify the analysis and ensure comparability of results we use the cumulative size of automatic stabilisers in this article.

GDP cumulatively over the 2020-21 period (Chart 3).¹⁰³ Most of the size of automatic fiscal stabilisers is accounted for by the inertia of non-cyclical public expenditure, while revenues reduce the overall impact. This is partly explained by lower-than-unity elasticity of social security contributions to output in most euro area countries more than counter-balancing the stabilising effect of the progressivity of income taxes.

Chart 3

The expected size of automatic fiscal stabilisers in the euro area during the COVID-19 crisis



Source: Eurosystem staff macroeconomic projections for the euro area, June 2020.

Note: The ESCB method of estimating semi-elasticities incorporates the lagged response of a budget to macroeconomic shocks and lagged effect of tax collections. Therefore, the projected output gap cannot be inferred on the basis of values presented in Chart 2 and Chart 3.

In the wake of a severe economic downturn, the precision of the estimated size of automatic stabilisers should be carefully assessed. First, the estimation of the cyclical component relies on one synthetic measure of the business cycle, i.e. the output gap, which is surrounded by uncertainty, notably in real time.¹⁰⁴ Second, the nature of the initial shock may lead to differentiated reaction from the main macroeconomic bases used for the fiscal revenues. Third, as semi-elasticities are estimated based on the past data, these reflect the typical reaction of a general government budget to economic cyclical fluctuations. In the current crisis, the unusual nature of the initial shock, its size and its implication for different macroeconomic variables invite prudence regarding the estimated size of the automatic stabilisers.

¹⁰³ In the literature, the year-on-year change of the cyclical component is also used as a proxy for the size of automatic stabilisers. See for instance [the overview and assessment of Stability and Convergence Programmes](#) conducted by the European Commission.

¹⁰⁴ See for instance Grigori, F., Herman, A., Swiston, A. and Di Bella, G., "Output gap uncertainty and real-time monetary policy", *Russian Journal of Economics*, Vol. 1, No. 4, Moscow, 2015.

Box 1

Comparison of estimates of automatic fiscal stabilisers

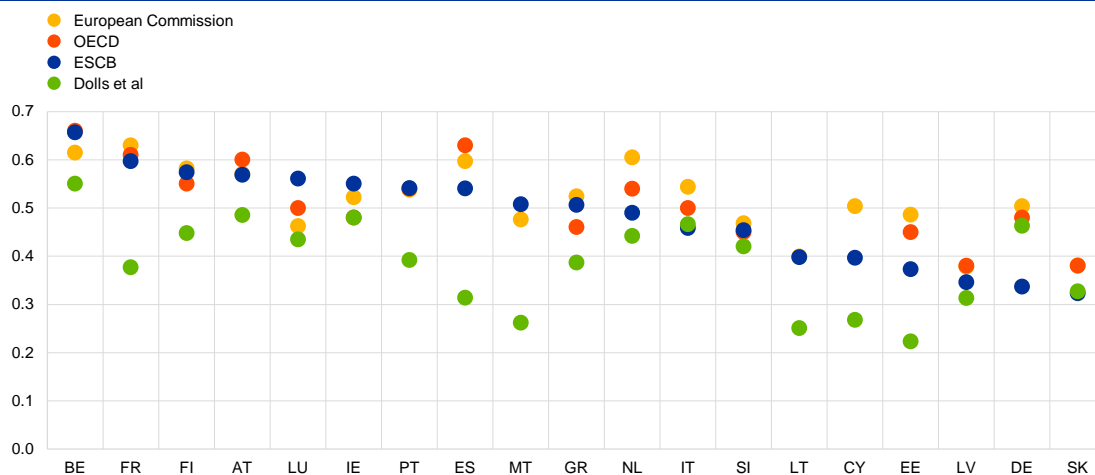
Prepared by Carolin Nerlich and Kamila Sławińska

The literature offers rather different estimates of the size of automatic stabilisers for the euro area. This box compares the ESCB estimates with those of other studies for both the euro area aggregate and across euro area countries. The results are then put into perspective by both looking at estimates of automatic fiscal stabilisers in the United States, and briefly touching upon differences in the US institutional settings.

For the euro area aggregate, the estimates of automatic fiscal stabilisers differ across studies. This differentiation results from: (i) differences in approaches to the estimation process; (ii) the underlying source of automatic fiscal stabilisers, as discussed in chapter 2; and (iii) the relevant time horizon under consideration. The European Commission's estimate is 0.56 for the euro area,¹⁰⁵ which is higher than the estimates from the ESCB and the OECD (which stand at 0.48 and 0.54, respectively).¹⁰⁶ All three institutions use the same measurement concept, i.e. semi-elasticities. Nevertheless, the results may not be fully comparable due to the lagged responses that are included in the ESCB method. In contrast, estimates of automatic stabilisers from Dolls et al. (based on a microsimulation approach) are lower.¹⁰⁷ In this study, the size of the automatic stabiliser is derived by estimating the response in households' disposable income following a market income shock and an unemployment shock. For the euro area, the results for the income stabilisation coefficient are 0.38 and 0.42, respectively.

Chart A

Size of automatic fiscal stabilisers across euro area countries



Sources: ESCB, European Commission, OECD, and Dolls et al.

Notes: This shows the size of automatic stabilisers, assuming a 1% of potential GDP output gap, depending on the underlying methodology. For Dolls et al. a 5% income shock is assumed – only the results for the income shock scenario are shown. The ESCB estimates shown here include the lagged impact. In the chart, countries are ordered according to the size of their estimates based on the ESCB method.

¹⁰⁵ See Moure, G., Poissonnier, A. and Lausegger, M., "The Semi-Elasticities Underlying the Cyclically-Adjusted Budget Balance: An Update & Further Analysis", *European Economy Discussion Papers*, No 098, European Commission, Luxembourg, 2019. The euro area estimate is the weighted sum of the country estimates.

¹⁰⁶ See Price, R., Dang, T. and Guillemette, Y., "New Tax and Expenditure Elasticity Estimates for EU Budget Surveillance", *OECD Economics Department Working Papers*, No 1174, OECD Publishing, Paris, 2014. The euro area aggregate is computed as weighted average and corrected for missing values for Cyprus, Lithuania and Malta.

¹⁰⁷ See Dolls, M., Fuest, C., Peichl, A. and Witneben, C., "Fiscal Consolidation and Automatic Stabilization: New Results", *CESifo Working Papers*, No 8021, CESifo, Munich, 2019.

Looking at the euro area countries, estimates of automatic fiscal stabilisers vary widely across countries and studies. The estimated size by the ESCB ranges from 0.66 in Belgium to around 0.35 in Slovakia (see Chart A). Compared to the ESCB figures, estimates by the European Commission are higher for the majority of countries, most notably for Germany, Estonia, Cyprus and the Netherlands, but considerably lower for Luxembourg. Similarly, OECD estimates are mostly higher than those of the ESCB, notably in Germany, Estonia and Spain.

Compared to euro area countries, automatic fiscal stabiliser estimates appear to be much smaller for the United States. For the United States, most estimates point to a size of around 0.3 to 0.4.¹⁰⁸ The lower size of automatic stabilisers in the United States compared to the euro area results, in particular, from the smaller size of the government, a less progressive personal income tax structure and a less generous benefit system. Consequently, the income stabilisation effect following, for example, an unemployment shock is estimated to be considerably lower in the United States than in the euro area.¹⁰⁹ Moreover, automatic stabilisers in the United States might be less effective because of the strict fiscal frameworks, including the requirements for balanced budget, established in the majority of US states.¹¹⁰ In fact, these balanced budget rules were found to react in a procyclical manner, therefore largely offsetting the stabilising effect at the federal level.¹¹¹

4 The effectiveness of automatic fiscal stabilisers for macroeconomic stabilisation

Automatic fiscal stabilisers typically translate into the effective cushioning of economic fluctuations by stabilising aggregate demand. The degree to which these automatic fiscal stabilisers translate into demand stabilisation depends on the behaviour of economic agents. Households' propensity to consume plays an important role. Whether and how individuals adjust their consumption to fluctuations in their disposable income depends on the share of liquidity-constrained and credit-constrained households. Only households limited in their ability to borrow in the market reduce their spending one-for-one in reaction to a temporary fall in income, while an income shock does not affect the consumption behaviour of households without liquidity constraints.

Model simulations for the euro area suggest that automatic fiscal stabilisers cushion around 10 to 30% of a standard GDP shock (see Box 2). That is, the euro

¹⁰⁸ The US Congressional Budget Office estimates the automatic stabiliser in the US at, on average, 0.3% of potential GDP since 1970. See Russek, F. and Kowalewski, K., "[How CBO Estimates Automatic Stabilizers](#)", *Working Paper Series*, No 7, Congressional Budget Office, Washington, DC, 2015. The studies by Dolls et al come to similar results for the income shock stabilisation in the United States. See Dolls, M., Fuest, C., Kock, J., Peichl, A., Wehrhöfer, N. and Wittneben, C., "Automatic stabilizers in the Eurozone: analysis of their effectiveness at the member states and euro area level and in international comparison", ZEW Abschlussbericht zu Forschungsvorhaben fe 5/14, 2014; Dolls, M., Fuest, C., Kock, J. and Peichl, A., "Automatic stabilizers and economic crisis: US vs Europe", *Journal of Public Economics*, 96, 2012. In contrast to most estimates for the US, the latest OECD estimate, (see Price et al. op. cit.), stands out as pointing to an upward revision of the estimate to 0.5% of GDP.

¹⁰⁹ See for Dolls et al op. cit.

¹¹⁰ For a comparison of fiscal frameworks at sub-national level, see article "[Fiscal rules in the euro area and lessons from other monetary unions](#)", *Economic Bulletin*, Issue 3, ECB, 2019.

¹¹¹ See Lee, V. and L. Sheiner, L., "[What are automatic stabilisers?](#)", *The Hutchins Center Explains Series*, Brookings Institution, Washington DC, July 2019.

area aggregate automatic fiscal stabiliser of 0.48 implies that between 10% and 30% of a standardised shock to the economy is cushioned. The bounds of this range of estimates are determined first and foremost by which elements of automatic fiscal stabilisation are included in the analysis. Including only the cyclical elements of automatic stabilisation reduces the macroeconomic stabilisation significantly vis-à-vis an analysis that also includes the (larger) non-cyclical elements of automatic stabilisation. Further modelling uncertainty arises from the state-dependent nature of economic variables. For example, the share of liquidity-constrained households is not independent of the state of the economy and may increase during a crisis.

Most estimates of the output smoothing effect of automatic fiscal stabilisers in advanced economies fall within the range presented in this article. Estimates depend on the source of the initial shock (e.g. external versus domestic demand). In general, an export-led shock is less tax-rich and, thus, less stabilised by the budget in most models. Automatic stabilisers tend to absorb a private consumption shock much more strongly than a private investment shock and an export shock.¹¹² Estimates also depend on the model-specific budget elasticities (reaction of budget components to macroeconomic bases) and the embedded fiscal multipliers (reaction of output to a fiscal shock).¹¹³ In addition, estimates depend, not least, on the definition of automatic fiscal stabilisers used (which determines the counterfactual scenario without automatic fiscal stabilisers). According to the cyclical view of automatic fiscal stabilisers, in which taxes and transfers to households play the stabilising role, the degree of output smoothing after the shock is found to be at around 9% to 17%. For a size-of-government view of automatic fiscal stabilisers, assuming that mostly the expenditure side plays the stabilising role, the degree of output smoothing is found to be at 25% to 27%.¹¹⁴

The nature of the economic shock has implications for the effectiveness of automatic fiscal stabilisers. The contraction in the COVID-19 crisis is not only faster, and its magnitude greater, than during the great financial crisis, but the current downturn is also of a different nature than in the past. Historically, recessions typically result from economic and financial imbalances. The correction of these imbalances is associated with a drop in economic aggregate demand on account of price and income adjustments, and on account of economic uncertainty. In this situation, a stabilisation of household income through the tax and benefit system in particular can help prop up economic demand. By contrast, the COVID-19 crisis is largely an

¹¹² See, for instance, Tödter, K-H and Schamagl M., "How effective are automatic stabilisers? Theory and empirical results for Germany and other OECD countries", *Discussion Paper Series 1: Economic Studies*, No 2004,21, Deutsche Bundesbank. The authors use the Deutsche Bundesbank's BbkM model and find the smoothing power of a private consumption shock for Germany at maximum of 26%; of an investment shock at 15%; and of exports at 13%. In the same setting, using the QUEST model, they find a maximum smoothing power of 24%, 13%, and 14%, respectively.

¹¹³ Regarding fiscal multipliers (directly relevant in the context of discretionary measures), most model-based estimates for a one-year temporary fiscal shock with no monetary policy accommodation hover around 1 for expenditure items such as government consumption and investment and are much lower, i.e. between 0.2 and 0.4 for general transfers and (direct and indirect) taxes.

¹¹⁴ For the euro area, two analyses from 2002 and 2017 using the QUEST model, find estimates of output smoothing of 13% to 17% for the first benchmark and of 26% to 27% for the second, concluding that dampening of cyclical fluctuations through the inertia of discretionary spending largely exceeds the smoothing effect of tax revenue. See 't Veld J et al., op. cit. and European Commission, "Automatic stabilisers in the euro area: A model-based assessment", *European Economic Forecast Autumn 2017*, pp. 65-68.

exogenous shock with strong repercussions not only for demand but also for supply in the economy. In the first phase of the crisis, governments introduced severe restrictions on social and economic activities to contain the spread of the virus. This put severe constraints on the supply side of the economy, where, for example, border closures disrupted global supply chains, factory closures exhausted product stockpiles and the lockdown curtailed high-street retail. As a result, income stabilisation, supported by both automatic stabilisers and discretionary government measures, have not translated into stabilising consumption and investment to the same extent as in past downturns but have instead led to a temporary increase in the private sector's saving rate. For example, household consumption stabilisation was temporarily inhibited, as even liquidity-constrained households were forced to change their consumption behaviour and increase their savings rate. At the same time, governments in some countries were forced to suspend their investments due to, among others things, restrictions that were introduced on the movement of people.

As the lockdown lifts in most euro area countries, automatic fiscal stabilisers should regain their normal effectiveness. On the one hand, as much of the supply-side and lockdown restrictions on the economy are lifted, households are expected to consume the part of the disposable income they were forced to save during the lockdown. Private and government investment that might have been impaired during that phase are also expected to resume. On the other hand, even if the precautionary saving motive related to the large uncertainty induced by the crisis may persist for longer, the presence of automatic fiscal stabilisers (and other supporting government measures) should cushion such effects.

It should be noted that the COVID-19 crisis may leave a lasting mark on the size of fiscal stabilisers. Tax bases and spending profiles may have shifted with the structure of the economy or in the social security system. For example, the COVID-19 crisis could in many countries act as a catalyst for a quicker digitalisation, which in turn may result in changes in the employment structure of the economy. Some measures implemented by governments – such as short-term work schemes – may remain in place after the crisis, which could have a lasting positive impact on the effectiveness of automatic fiscal stabilisers in stabilising the economy.

Box 2

Simulating the effectiveness of automatic fiscal stabilisers in the euro area

Prepared by Cristina Checherita-Westphal, Philip Muggenthaler, Georg Müller

This box assesses, through the lens of macroeconomic models, the effectiveness of automatic stabilisers in smoothing output. The simulations are conducted with two sets of models regularly used in the Eurosystem's forecasting exercises, namely, the European Central Bank's New Multi-Country Model (NMCM)¹¹⁵ and the Basic Model Elasticities (BMEs) – a platform based on national central banks' macroeconomic models. The focus of these stylised simulations is on the real GDP smoothing effects, at the euro area level, of automatic stabilisers estimated in Section 3. In our simulations, we

¹¹⁵ See: Dieppe, A., Gonzalez Pandiella, A., Hall, S. and Willman, A., "Limited information minimal state variable learning in a medium-scale multi-country model". *Economic Modelling*, Vol. 33, Issue C, Elsevier, Netherlands, 2013, pp. 808-825.

also attempt to recreate the characteristics of the COVID-19 crisis related to the effects of the lockdown measures that might reduce the effectiveness of automatic stabilisers.

This box employs the semi-elasticities presented in Section 3. That is, assuming a standardised negative GDP shock (opening of the output gap by 1 percentage point in year T), the euro area budget balance-to-GDP ratio is estimated to fall cumulatively by 0.48 percentage points over a three year period (from T to T+2 – see Chart 2), out of which 0.35 percentage points in the year of the shock (T). We focus on the output smoothing effects upon impact (T), which are the most relevant in size given the temporary nature of the stabilisers.¹¹⁶ In terms of the modelling approach, we construct fiscal shocks on the basis of the semi-elasticities mentioned above and their disaggregation by components (those which have a direct impact on demand), which we then feed into the macroeconomic models to gauge the output effect.

Following the model-based literature, we evaluate the degree of automatic stabilisation in relation to benchmark scenarios of “no automatic stabilisers”. The results for two scenarios, reflecting the two main aspects of automatic fiscal stabilisers in the literature as touched upon in Section 2, and their average (taken as the overall proxy for output stabilisation) are presented in Chart A.

- Scenario 1 reflects the countercyclical aspect of automatic fiscal stabilisers (changes of budget balance in *levels*), taking account of those budgetary components that are sensitive to the cycle, such as changes in taxes and unemployment benefits. In the construction of this scenario, we map the fiscal instruments into shocks on the labour income tax rate, the consumption tax rate and government transfer to households.¹¹⁷
- Scenario 2 reflects the government size/expenditure inertia aspect of automatic stabilisers (changes of budget balance in *ratios to GDP*). In the construction of this scenario, the shocks are implemented as changes to government consumption, investment and transfers (other than unemployment benefits) following their respective budgetary shares.

The contribution of fiscal automatic stabilisers to output cushioning is calculated as the real GDP effect in these two scenarios relative to the standardised initial shock.¹¹⁸

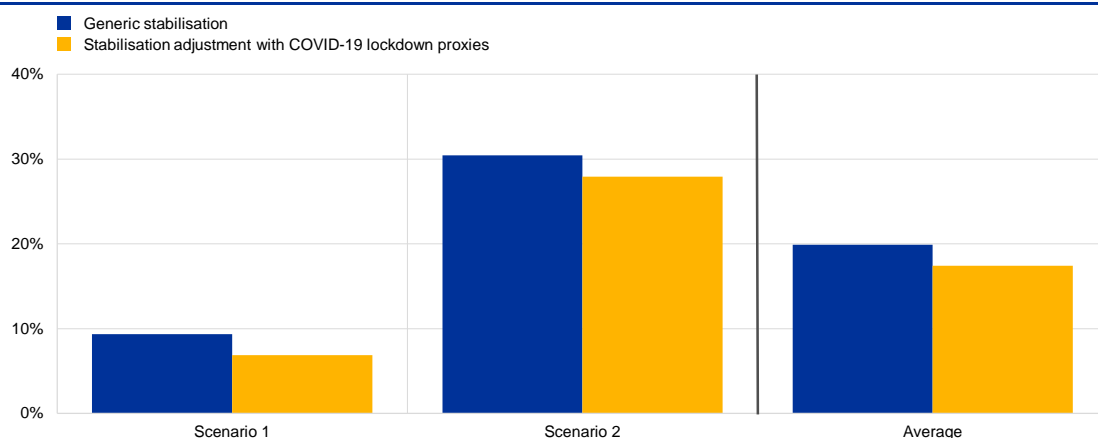
¹¹⁶ On the revenue side, we also consider the lag effects from T+1 and T+2 in the simulation.

¹¹⁷ Adjusting the semi-elasticities in Section 3 to measure elasticities of the revenue and expenditure levels rather than elasticities of the ratios to GDP gives an estimated budget balance deterioration in year T of 0.33 percentage points.

¹¹⁸ This is broadly equivalent with another counterfactual scenario, in which we would determine the ex-ante fiscal shock needed to offset the budget balance impact of the automatic stabilisers, and then we would estimate the real GDP impact of such a shock. The relative difference between this impact and the initial shock would give the output smoothing of automatic stabilisers.

Chart A

Output smoothing of euro area automatic stabilisers



Sources: ECB calculations.

Notes: The degree of output smoothing is calculated as the average percent deviation of the GDP level during the first year in a scenario with automatic stabilisers react on relative to the percent deviation of the GDP level in a scenario without AS reaction (counterfactual). For Scenario 1 the counterfactual with no fiscal stabilisation is a scenario in which government revenue and expenditure are fixed (the countercyclical view of automatic stabilisers). In Scenario 2 the counterfactual is a scenario in which revenue and expenditure are kept constant in ratios to GDP (mostly the expenditure inertia). Price effects are not reflected in the construction of the standardised shocks under automatic stabilisers in any of the scenarios (standardised or with crisis adjustment). The results for Scenario 1 and Scenario 2 are the model averages of the output smoothing obtained from simulations using the BMEs and NMCM. In the scenarios with COVID-19 restriction proxies, simulations reflect increased savings ratios by reducing the model-implied propensities to consume. For the BMEs the simulations of the increased saving ratio do not take into account general equilibrium effects but only the direct effect of lower consumption on real GDP growth.

Turning to the COVID-19 crisis, given the extreme uncertainty associated with the shock and its macroeconomic (supply versus demand) and fiscal effects, we use illustrative adjustments to mimic the conditions of the crisis and gauge the potential impact in terms of the effectiveness of automatic stabilisers. To illustrate the impact of the unprecedented COVID-19 lockdown measures, we consider an increase in savings (both forced and precautionary), in line with estimations from the early stages of the crisis. We evaluate this alternative scenario by reducing the model-implied propensity to consume, in line with the savings-ratio increase. As a result, fiscal instruments supporting households' disposable income have a lower effect on consumption profiles. In addition, we slightly adjust the counterfactual on the expenditure side, i.e. government investment, which is likely to be most affected by lockdown measures.¹¹⁹ Altogether, this leads to a smaller implied automatic fiscal stabilisation contribution, as shown in Chart A. Averaging across the models and scenarios, the smoothing of automatic fiscal stabilisers declines from around 20% to 17% in year T. There is a larger relative effect for Scenario 1, where the effectiveness of automatic fiscal stabilisers drops by almost 25%, given that mostly transfers and taxes are considered, which are strongly affected by the increase in the saving ratio.¹²⁰

These estimates are surrounded by high uncertainty. First, there is model-related uncertainty implying fiscal multiplier uncertainty. On the one hand, the literature points to evidence of larger fiscal multipliers during recessions, as well as in a low interest rate environment. On the other hand, particularly in high-debt countries, fiscal multipliers are found to be lower and the effectiveness of automatic stabilisers may be reduced through Ricardian effects and the anticipation of future consolidation needs. Second, there is uncertainty regarding the cyclical adjustment method, as described in Section 3. Third, and most importantly, the estimates of both the size and the

¹¹⁹ See the [June 2020 Eurosystem staff macroeconomic projections for the euro area](#) and the euro area sectoral accounts for Q1 2020, which both point to increased households savings. The Q1 2020 sectoral accounts also point to a deceleration in government investment growth.

¹²⁰ It should be noted that a more persistent shock with larger consequences on potential output than currently assumed would reduce both the size and the effectiveness of automatic stabilisers.

effectiveness of automatic stabilisers during the COVID-19 crisis are particularly uncertain, given the unprecedented nature of the crisis in the euro area. Moreover, these model exercises rely on proxies for calibration and only partially reflect the possible channels through which the efficiency of fiscal stabilisation could be altered during the COVID-19 crisis (see Section 4).

5 Towards a second generation of automatic fiscal stabilisers

The COVID-19 crisis gives cause to review the role of fiscal policy in a severe economic downturn. On the one hand, monetary policy remains close to the effective lower bound, which would motivate a stronger role for fiscal policy.¹²¹ On the other hand, traditional automatic fiscal stabilisers might be too small to counterbalance the sharp economic downturn and less effective than under normal circumstances. Also, automatic fiscal stabilisers are quite heterogeneous across euro area countries in terms of size and composition. At the same time, discretionary policy measures may react too slowly to sufficiently cushion a massive economic downturn, such as the one experienced as a result of the pandemic, and avoid hysteresis effects. These considerations have led to proposals to strengthen quasi-automatic fiscal instruments.¹²²

So-called second generation automatic fiscal stabilisers could help deliver more timely, targeted and sizeable policy responses. In contrast to traditional automatic fiscal stabilisers, which are mostly a by-product of the structure and size-of-government revenues and expenditures, second generation automatic fiscal stabilisers – also referred to as “asymmetric” or “quasi-automatic” fiscal stabilisers – are fiscal tools specifically designed and implemented to provide macroeconomic stabilisation. Second-generation automatic stabilisers work as programmes that only turn active when the economy heads into deep recession and automatically revert to normal levels once specific indicators are back to pre-crisis levels. They are automatic in that their activation is rules-based rather than subject to a government decision. In contrast to traditional automatic stabilisers, they are asymmetric in that they are activated only in case of a severe downturn of the economy.¹²³

Two types of asymmetric automatic fiscal stabilisers can be identified, depending on whether they work via public expenditure or via revenues. First, on the expenditure side, asymmetric automatic fiscal stabilisers can mainly help to

¹²¹ Fiscal multipliers are conventionally higher when monetary policy reaches the lower bound. See, for instance, Christiano, L., Eichenbaum, M. and Rebelo, S., “When is the Government Spending Multiplier Large?” *Journal of Political Economy*, Vol. 119, No 1, The University of Chicago Press, Chicago, February 2011, pp. 78-121, and Coenen, G. et al., “Effects of Fiscal Stimulus in Structural Models”, *IMF Working Paper*, Vol. 10, No 73, International Monetary Fund, Washington DC, March 2010.

¹²² An evoking discussion of second generation stabilisers can be found in Eichenbaum, M., “Rethinking fiscal policy in an era of low interest rates”, mimeo, April 2019; Blanchard, O. and Summers, L., “Automatic stabilisers in a low-rate environment”, PIIE Policy Brief 20-2, Peterson Institute of International Economics, Washington, February 2020; Boushey, H., Nunn, R. and Shambaugh, J., “Recession Ready: Fiscal policies to stabilize the American economy, Brookings Report, Washington, 2019. The idea of asymmetric stabilisers is not completely new. See for instance Baungsgaard, T. and Symansky, S., “Automatic fiscal stabilisers”, IMF Staff Position Paper, 23, September 2009.

¹²³ Traditional automatic fiscal stabilisers reduce economic fluctuations in both directions, also mitigating risks for the economy to overheat.

stabilise household spending, e.g. through higher or longer individual unemployment benefit or social assistance payments once a certain pre-defined threshold is reached.¹²⁴ Short-time work schemes that activate in deep recessions are a notable example. Alternatively, asymmetric automatic fiscal stabilisers can work directly through higher government spending, e.g. on infrastructure investment projects.¹²⁵ Second, asymmetric stabilisers that work via the revenue side can influence the timing of household spending through intertemporal substitution effects. Typical examples are temporary tax deferrals or tax credits, such as a temporary decrease in the VAT rate to boost consumption in the short run.¹²⁶

The design of quasi-automatic fiscal stabilisers influences their effectiveness.

Crucial choices relate to the economic indicators and the threshold that triggers the activation of the programme, as well as the design of the spending programmes or temporary tax cuts. For asymmetric stabilisers via unemployment benefit payments, Blanchard and Summers suggest basing the trigger on the unemployment rate rather than on output movements, as the latter might also be driven by shocks related to potential output.¹²⁷

If well designed, asymmetric automatic fiscal stabilisers could be a powerful instrument to effectively cushion a severe economic downturn.

They are likely to be more effective than traditional stabilisers in that they are specifically designed to provide macroeconomic stabilisation in a downturn. While asymmetric automatic stabilisers usually do not respond to normal cyclical developments, they are of a much larger scale once they are activated. As such, they do not contribute to a further, permanent increase of the size of the government. Using a stylised counterfactual analysis, Blanchard and Summers show that asymmetric automatic stabilisers can be successful in limiting the impact of a recession, although the results are contingent on the role of discretionary measures and the length of the automatic stimulus period.¹²⁸ The IMF argues that countries with a relatively small tax and benefit system could benefit from the introduction of asymmetric automatic fiscal stabilisers.¹²⁹

At the same time, asymmetric automatic fiscal stabilisers do not come without limitations.

This is for at least three reasons: (i) they might lower incentives to take up necessary adjustments of the economy, in particular if a crisis results from the build-up of economic and financial imbalances, as was the case during the financial crisis; (ii) due to the asymmetry embedded in these instruments they do not automatically contribute to fiscal consolidation during good economic times, as countries have moved to a high debt trajectory during the downturn – to mitigate sustainability risks, it

¹²⁴ For example, it was proposed that lump sum payments to individuals should be triggered automatically when the three-month-moving average of the unemployment rate increase by at least 0.5 percentage points relative to its low in the previous 12 months. See Sahm, C., “Direct stimulus payments to individuals”, in Boushey, H. et al. op. cit.

¹²⁵ However, Auerbach (2009) raised doubts about the usefulness of “ready-to-go” infrastructure projects, which would only be realised once the economy is heading towards a recession. Holding back necessary public investment might be sub-optimal for the economy. See Auerbach, A., “Fiscal policy”, Conference paper, Peterson Institute of International Economics, October 2017.

¹²⁶ See Braungsgaard and Symansky op. cit.

¹²⁷ See Blanchard and Summers, op. cit.

¹²⁸ See Blanchard and Summers, op. cit.

¹²⁹ International Monetary Fund, “Fiscal Monitor”, April 2020.

is important that countries build up fiscal buffer in good economic times; and (iii) as these instruments are meant to be sizeable, they might de facto not be available for countries with high debt levels, facing difficulties in accessing financial markets.

Until recently only a few examples of asymmetric automatic fiscal stabilisers existed in practice. In the United States, the length of unemployment benefit payments automatically increases as soon as the unemployment rate exceeds a certain threshold. Also social payments in kind, such as food stamps, automatically rise once a threshold is hit.

During the COVID-19 crisis, most euro area countries relied, to a large extent, on quasi-automatic discretionary fiscal instruments, which closely resemble asymmetric automatic stabilisers. In particular, short-time work schemes as well as temporary tax deferrals and tax credits have been widely used.¹³⁰ Short-time work schemes involve compensation payments, in the form of subsidies or grants to firms, that are contingent on firms not laying off workers who may otherwise have been made temporarily redundant due to the economic crisis. The aim is to limit households' loss of income and firms' wage costs. Short-time work schemes already existed in several countries, notably in Germany, France and Belgium, although legislation was required for their activation and for the instrument to be stepped up.¹³¹ The scheme was newly introduced in several countries during the COVID-19 crisis. Tax deferrals and temporary VAT cuts have also been widely employed by most euro area countries.

6 Conclusions

In normal times automatic fiscal stabilisers play an important role for macroeconomic stabilisation in the euro area. According to ESCB estimates, automatic fiscal stabilisers are generally sizeable in the euro area, but vary significantly across Member States. They are particularly sizeable in some western European countries, which typically have in place more generous transfer schemes and a larger size of the government sector. In normal times they seem sufficient to cushion between 10% and 30% of an economic shock.

The effectiveness of automatic fiscal stabilisers in cushioning the economy is less apparent during the COVID-19 crisis, especially during the lockdown phase. Due to the massive economic downturn experienced by the euro area, and with monetary policy close to the effective lower bound, this gives cause to review the role of fiscal policy. So-called second generation automatic fiscal stabilisers could help deliver more timely, targeted and sizeable policy responses to preserve potential growth and avoid hysteresis effects. During the COVID-19 crisis, most euro area countries adopted measures aimed at protecting potential output by preserving those

¹³⁰ Estimates for the five largest euro area countries indicate that indeed a substantial share of employees is on short-time work or temporary lay-off, ranging from 45% of total employees in France to 21% in the Netherlands. See the boxes entitled "[Short-time work schemes and their effects on wages and disposable income](#)", Economic Bulletin, Issue 4, ECB, Frankfurt am Main, 2020", and "[A preliminary assessment of the impact of the COVID-19 pandemic on the euro area labour market](#)", *Economic Bulletin*, Issue 5, ECB, 2020.

¹³¹ The ESCB estimates for automatic stabilisers do not include the short-time work schemes, except in Germany.

economic structures expected to remain viable after the crisis. More specifically, authorities in some countries provided short-time work schemes to keep employees in their jobs and offered liquidity support to firms to prevent them from going out of business.

Looking ahead, there are strong arguments for efficient second generation automatic fiscal stabilisers to play a more prominent role. The institutionalisation of asymmetric automatic fiscal stabilisers – such as a statutory short-time work schemes – could provide for more macroeconomic stability without overburdening the government sector. However, such instruments would need to be well designed to ensure that incentive structures are in place. Moreover, to mitigate sustainability risk, it is important that all euro area countries build up fiscal buffer in good times.

Statistics

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Further information

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

Conventions used in the tables

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

1 External environment

1.1 Main trading partners, GDP and CPI

	GDP ¹⁾ (period-on-period percentage changes)						CPI (annual percentage changes)						
	G20	United States	United Kingdom	Japan	China	Memo item: euro area	OECD countries		United States	United Kingdom (HICP)	Japan	China	Memo item: euro area ²⁾ (HICP)
							Total	excluding food and energy					
	1	2	3	4	5	6	7	8	9	10	11	12	13
2017	3.8	2.3	1.9	2.2	6.8	2.6	2.3	1.9	2.1	2.7	0.5	1.6	1.5
2018	3.6	3.0	1.3	0.3	6.6	1.8	2.6	2.1	2.4	2.5	1.0	2.1	1.8
2019	2.8	2.2	1.5	0.7	6.1	1.3	2.1	2.2	1.8	1.8	0.5	2.9	1.2
2019 Q3	0.7	0.6	0.5	0.0	1.4	0.3	1.9	2.2	1.8	1.8	0.3	2.9	1.0
Q4	0.6	0.6	0.0	-1.8	1.3	0.1	1.9	2.1	2.0	1.4	0.5	4.3	1.0
2020 Q1	-3.4	-1.3	-2.2	-0.6	-10.0	-3.7	2.1	2.2	2.1	1.7	0.5	5.0	1.1
Q2	-	-9.1	-20.4	-7.9	11.5	-11.8	0.9	1.6	0.4	0.6	0.1	2.7	0.2
2020 Mar.	-	-	-	-	-	-	1.7	2.1	1.5	1.5	0.4	4.3	0.7
Apr.	-	-	-	-	-	-	0.8	1.6	0.3	0.8	0.1	3.3	0.3
May	-	-	-	-	-	-	0.7	1.5	0.1	0.5	0.1	2.4	0.1
June	-	-	-	-	-	-	1.1	1.6	0.6	0.6	0.1	2.5	0.3
July	-	-	-	-	-	-	.	.	1.0	1.0	0.3	2.7	0.4
Aug. ³⁾	-	-	-	-	-	-	-0.2

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

1) Quarterly data seasonally adjusted; annual data unadjusted.

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

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

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

	Purchasing Managers' Surveys (diffusion indices; s.a.)									Merchandise imports ¹⁾		
	Composite Purchasing Managers' Index					Memo item: euro area	Global Purchasing Managers' Index ²⁾			Global	Advanced economies	Emerging market economies
	Global ²⁾	United States	United Kingdom	Japan	China		Manufacturing	Services	New export orders			
	1	2	3	4	5	6	7	8	9	10	11	12
2017	53.2	54.3	54.7	52.5	51.8	56.4	53.8	53.8	52.8	5.9	3.1	7.7
2018	53.4	55.0	53.3	52.1	52.3	54.6	53.1	53.8	50.8	4.3	3.0	5.2
2019	51.7	52.5	50.2	50.5	51.8	51.3	50.3	52.2	48.8	-0.5	0.3	-1.1
2019 Q3	51.3	51.4	50.1	51.3	51.4	51.2	50.4	51.6	48.5	1.2	1.6	0.9
Q4	51.3	51.9	49.5	49.2	52.6	50.7	51.3	51.3	49.5	-0.8	-2.9	0.6
2020 Q1	46.1	47.9	47.4	44.4	42.0	44.2	46.7	45.9	46.0	-2.7	-3.1	-2.4
Q2	37.9	37.3	30.5	31.5	52.6	31.3	40.6	36.9	35.0	-10.6	-11.1	-10.2
2020 Mar.	41.0	40.9	36.0	36.2	46.7	29.7	46.2	39.2	44.0	-2.7	-3.1	-2.4
Apr.	28.7	27.0	13.8	25.8	47.6	13.6	35.1	26.5	28.6	-5.4	-6.2	-4.9
May	37.2	37.0	30.0	27.8	54.5	31.9	39.8	36.2	32.9	-8.8	-9.3	-8.5
June	47.7	47.9	47.7	40.8	55.7	48.5	47.0	48.0	43.6	-10.6	-11.1	-10.2
July	50.2	50.3	57.0	44.9	54.5	54.9	51.4	49.7	46.3	.	.	.
Aug.	52.6	54.6	59.1	45.2	55.1	51.9	53.2	52.3	49.5	.	.	.

Sources: Markit (col. 1-9); CPB Netherlands Bureau for Economic Policy Analysis and ECB calculations (col. 10-12).

1) Global and advanced economies exclude the euro area. Annual and quarterly data are period-on-period percentages; monthly data are 3-month-on-3-month percentages. All data are seasonally adjusted.

2) Excluding the euro area.

2 Financial developments

2.1 Money market interest rates

(percentages per annum; period averages)

	Euro area ¹⁾						United States	Japan
	Euro short-term rate (€STR) ²⁾	Overnight deposits (EONIA)	1-month deposits (EURIBOR)	3-month deposits (EURIBOR)	6-month deposits (EURIBOR)	12-month deposits (EURIBOR)	3-month deposits (LIBOR)	3-month deposits (LIBOR)
	1	2	3	4	5	6	7	8
2017	-	-0.35	-0.37	-0.33	-0.26	-0.15	1.26	-0.02
2018	-0.45	-0.36	-0.37	-0.32	-0.27	-0.17	2.31	-0.05
2019	-0.48	-0.39	-0.40	-0.36	-0.30	-0.22	2.33	-0.08
2020 Feb.	-0.54	-0.45	-0.47	-0.41	-0.36	-0.29	1.68	-0.07
Mar.	-0.53	-0.45	-0.48	-0.42	-0.36	-0.27	1.10	-0.09
Apr.	-0.54	-0.45	-0.43	-0.25	-0.19	-0.11	1.09	-0.01
May	-0.54	-0.46	-0.46	-0.27	-0.14	-0.08	0.40	-0.03
June	-0.55	-0.46	-0.49	-0.38	-0.22	-0.15	0.31	-0.05
July	-0.55	-0.46	-0.51	-0.44	-0.35	-0.28	0.27	-0.05
Aug.	-0.55	-0.47	-0.52	-0.48	-0.43	-0.36	0.25	-0.05

Source: Refinitiv and ECB calculations.

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

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

2.2 Yield curves

(End of period; rates in percentages per annum; spreads in percentage points)

	Spot rates					Spreads			Instantaneous forward rates			
	Euro area ^{1), 2)}					Euro area ^{1), 2)}	United States	United Kingdom	Euro area ^{1), 2)}			
	3 months	1 year	2 years	5 years	10 years	10 years - 1 year	10 years - 1 year	10 years - 1 year	1 year	2 years	5 years	10 years
	1	2	3	4	5	6	7	8	9	10	11	12
2017	-0.78	-0.74	-0.64	-0.17	0.52	1.26	0.67	0.83	-0.66	-0.39	0.66	1.56
2018	-0.80	-0.75	-0.66	-0.26	0.32	1.07	0.08	0.51	-0.67	-0.45	0.44	1.17
2019	-0.68	-0.66	-0.62	-0.45	-0.14	0.52	0.34	0.24	-0.62	-0.52	-0.13	0.41
2020 Feb.	-0.68	-0.74	-0.79	-0.78	-0.57	0.16	0.13	-0.06	-0.80	-0.85	-0.64	-0.13
Mar.	-0.70	-0.69	-0.71	-0.67	-0.41	0.28	0.49	0.22	-0.70	-0.73	-0.48	0.09
Apr.	-0.54	-0.61	-0.71	-0.72	-0.46	0.16	0.47	0.16	-0.72	-0.85	-0.51	0.01
May	-0.57	-0.60	-0.63	-0.61	-0.36	0.24	0.48	0.14	-0.64	-0.69	-0.42	0.12
June	-0.57	-0.64	-0.69	-0.69	-0.45	0.19	0.50	0.14	-0.71	-0.77	-0.52	0.03
July	-0.58	-0.65	-0.71	-0.72	-0.49	0.16	0.42	0.07	-0.73	-0.80	-0.57	-0.04
Aug.	-0.58	-0.62	-0.66	-0.63	-0.37	0.25	0.58	0.30	-0.68	-0.71	-0.43	0.15

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
2017	376.9	3,491.0	757.3	268.6	690.4	307.9	182.3	605.5	468.4	272.7	339.2	876.3	2,449.1	20,209.0
2018	375.5	3,386.6	766.3	264.9	697.3	336.0	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	721.5	324.4	155.8	650.9	528.2	322.0	294.2	772.7	2,915.5	21,697.2
2020 Feb.	407.1	3,734.9	797.3	292.3	734.5	301.0	168.4	722.8	635.8	391.4	298.1	895.0	3,282.5	23,180.4
Mar.	308.5	2,824.2	622.6	233.6	578.8	210.5	116.1	519.9	500.5	315.7	242.6	731.2	2,652.4	18,974.0
Apr.	310.3	2,839.6	657.9	245.7	588.3	216.7	107.2	508.9	539.3	296.4	242.8	786.8	2,763.2	19,208.4
May	322.1	2,909.3	678.1	251.2	601.3	219.9	109.3	539.7	576.8	307.1	249.9	829.2	2,919.6	20,543.3
June	353.9	3,237.4	733.8	270.5	656.5	236.6	124.7	604.7	637.2	341.5	264.2	866.9	3,104.7	22,486.9
July	362.0	3,316.3	773.2	271.5	666.9	226.7	125.9	617.5	681.3	358.0	262.7	877.5	3,207.6	22,529.5
Aug.	361.8	3,297.7	785.5	278.3	666.1	225.5	123.8	641.3	677.3	355.8	253.6	841.5	3,391.7	22,874.2

Source: Refinitiv.

2 Financial developments

2.4 MFI interest rates on loans to and deposits from households (new business) ^{1), 2)}

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

	Deposits				Revolving loans and overdrafts	Extended credit card credit	Loans for consumption			Loans to sole proprietors and unincorporated partnerships	Loans for house purchase				Composite cost-of-borrowing indicator		
	Over-night	Redeemable at notice of up to 3 months	With an agreed maturity of:				By initial period of rate fixation	APRC ³⁾	Floating rate and up to 1 year		Over 1 year	By initial period of rate fixation				APRC ³⁾	
			Up to 2 years	Over 2 years								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	
2019 Aug.	0.03	0.43	0.28	0.78	5.75	16.45	6.15	5.75	6.35	2.25	1.51	1.69	1.54	1.50	1.84	1.56	
Sep.	0.03	0.43	0.27	0.78	5.82	16.46	5.65	5.61	6.17	2.22	1.46	1.65	1.49	1.44	1.77	1.48	
Oct.	0.03	0.42	0.24	0.83	5.70	16.50	5.88	5.55	6.19	2.26	1.45	1.59	1.44	1.39	1.74	1.44	
Nov.	0.03	0.42	0.23	0.73	5.61	16.49	5.36	5.53	6.26	2.21	1.43	1.59	1.61	1.48	1.80	1.47	
Dec.	0.03	0.42	0.22	0.79	5.58	16.55	5.44	5.28	5.89	2.09	1.46	1.58	1.43	1.39	1.75	1.41	
2020 Jan.	0.02	0.42	0.27	0.73	5.62	16.55	5.62	5.69	6.25	2.21	1.46	1.52	1.43	1.40	1.73	1.43	
Feb.	0.02	0.36	0.32	0.70	5.63	16.60	5.56	5.58	6.15	2.20	1.43	1.54	1.38	1.36	1.71	1.41	
Mar.	0.02	0.36	0.30	0.65	5.61	16.18	5.58	5.45	5.91	2.06	1.39	1.54	1.35	1.35	1.64	1.39	
Apr.	0.02	0.36	0.22	0.73	5.39	16.06	3.71	5.50	5.58	1.99	1.30	1.54	1.36	1.44	1.67	1.44	
May	0.02	0.36	0.23	0.70	5.27	16.06	4.22	5.30	5.67	1.83	1.47	1.58	1.40	1.41	1.70	1.42	
June	0.02	0.35	0.23	0.72	5.29	16.01	4.52	5.14	5.59	1.87	1.44	1.64	1.38	1.39	1.68	1.42	
July ^(p)	0.02	0.35	0.22	0.71	5.17	15.92	4.86	5.26	5.72	2.00	1.43	1.58	1.34	1.38	1.67	1.40	

Source: ECB.

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

2) Including non-profit institutions serving households.

3) Annual percentage rate of charge (APRC).

2.5 MFI interest rates on loans to and deposits from non-financial corporations (new business) ^{1), 2)}

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

	Deposits			Revolving loans and overdrafts	Other loans by size and initial period of rate fixation									Composite cost-of-borrowing indicator
	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
2019 Aug.	0.03	-0.04	0.54	2.08	2.07	2.36	2.19	1.64	1.59	1.53	1.06	1.32	1.40	1.52
Sep.	0.03	-0.05	0.88	2.16	2.03	2.25	2.15	1.61	1.51	1.45	1.10	1.26	1.29	1.54
Oct.	0.02	-0.03	0.43	2.08	2.01	2.41	2.11	1.61	1.54	1.40	1.14	1.40	1.27	1.56
Nov.	0.02	-0.04	0.39	2.06	2.02	2.36	2.13	1.59	1.55	1.41	1.14	1.34	1.29	1.55
Dec.	0.01	0.00	0.42	2.09	2.00	2.28	2.08	1.58	1.54	1.39	1.26	1.21	1.37	1.56
2020 Jan.	0.01	-0.06	0.34	2.09	2.17	2.31	2.10	1.63	1.57	1.44	1.11	1.25	1.28	1.55
Feb.	0.00	-0.12	0.33	2.07	1.99	2.29	2.11	1.57	1.54	1.41	1.11	1.22	1.25	1.52
Mar.	0.00	-0.08	0.25	2.00	1.90	2.17	1.97	1.57	1.52	1.47	1.14	1.10	1.18	1.46
Apr.	0.00	-0.06	0.31	1.99	2.00	1.17	1.70	1.61	0.93	1.48	1.22	1.12	1.26	1.47
May	0.00	-0.10	0.39	1.91	1.87	1.22	1.62	1.54	0.87	1.56	1.23	1.07	1.31	1.46
June	0.00	-0.12	0.33	1.96	1.87	1.51	1.79	1.55	1.15	1.50	1.23	1.17	1.42	1.49
July ^(p)	0.00	-0.18	0.27	1.87	1.96	1.84	1.87	1.60	1.31	1.51	1.23	1.17	1.38	1.51

Source: ECB.

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

2) In accordance with the ESA 2010, in December 2014 holding companies of non-financial groups were reclassified from the non-financial corporations sector to the financial corporations sector.

2 Financial developments

2.6 Debt securities issued by euro area residents, by sector of the issuer and initial maturity (EUR billions; transactions during the month and end-of-period outstanding amounts; nominal values)

	Outstanding amounts							Gross issues ¹⁾						
	Total	MFIs (including Euro- system)	Non-MFI corporations			General government		Total	MFIs (including Euro- system)	Non-MFI corporations			General government	
			Financial corporations other than MFIs	FVCs	Non- financial corporations	Central govern- ment	Other general govern- ment			Financial corporations other than MFIs	FVCs	Non- financial corporations	Central govern- ment	Other general govern- ment
1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Short-term														
2017	1,240	519	155	.	70	438	57	367	167	54	.	37	79	31
2018	1,217	504	170	.	72	424	47	389	171	66	.	41	76	35
2019	1,283	550	181	.	84	406	61	415	177	80	.	47	73	38
2020 Jan.	1,368	598	177	.	99	422	73	507	208	84	.	56	100	57
Feb.	1,371	601	178	.	103	415	74	416	173	89	.	47	69	37
Mar.	1,368	546	182	.	103	450	86	407	111	86	.	46	103	61
Apr.	1,477	527	185	.	117	537	111	552	150	88	.	65	171	78
May	1,593	521	183	.	129	617	144	544	162	81	.	60	159	81
June	1,668	535	187	.	119	673	153	505	191	78	.	46	139	50
Long-term														
2017	15,353	3,560	3,059	.	1,223	6,866	643	247	66	73	.	18	83	7
2018	15,745	3,688	3,161	.	1,247	7,022	627	228	64	68	.	15	75	6
2019	16,312	3,818	3,397	.	1,321	7,151	626	247	69	74	.	20	78	7
2020 Jan.	16,400	3,855	3,408	.	1,325	7,188	625	322	118	68	.	16	110	10
Feb.	16,487	3,866	3,408	.	1,338	7,244	630	265	72	60	.	22	101	10
Mar.	16,514	3,845	3,422	.	1,335	7,276	636	250	58	67	.	16	91	19
Apr.	16,706	3,942	3,417	.	1,373	7,326	648	459	135	69	.	54	180	20
May	16,875	3,944	3,413	.	1,406	7,449	663	341	58	50	.	50	164	19
June	17,096	3,967	3,445	.	1,435	7,575	675	414	96	86	.	38	176	19

Source: ECB.

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

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

(EUR billions; percentage changes)

	Debt securities							Listed shares			
	Total	MFIs (including Eurosystem)	Non-MFI corporations			General government		Total	MFIs	Financial corporations other than MFIs	Non- financial corporations
			Financial corporations other than MFIs	FVCs	Non- financial corporations	Central government	Other general government				
1	2	3	4	5	6	7	8	9	10	11	
Outstanding amount											
2017	16,593.1	4,079.8	3,214.5	.	1,293.2	7,304.7	700.9	7,963.3	612.5	1,258.3	6,092.6
2018	16,962.1	4,192.8	3,331.2	.	1,318.8	7,445.8	673.5	7,033.1	465.0	1,108.9	5,459.2
2019	17,595.1	4,368.1	3,578.0	.	1,405.3	7,557.2	686.5	8,595.6	546.0	1,410.7	6,638.8
2020 Jan.	17,768.8	4,452.4	3,585.3	.	1,424.0	7,609.8	697.4	8,478.3	525.3	1,391.5	6,561.6
Feb.	17,857.9	4,466.9	3,586.4	.	1,441.8	7,659.1	703.7	7,754.9	488.4	1,238.7	6,027.8
Mar.	17,881.8	4,391.5	3,603.8	.	1,438.7	7,725.9	721.9	6,448.6	333.9	975.0	5,139.7
Apr.	18,182.4	4,469.0	3,601.2	.	1,489.9	7,863.6	758.7	6,971.3	343.3	1,081.6	5,546.4
May	18,468.8	4,465.1	3,595.3	.	1,534.9	8,066.2	807.3	7,278.3	362.9	1,115.6	5,799.7
June	18,763.5	4,501.3	3,632.2	.	1,553.5	8,248.1	828.4	7,515.4	392.0	1,170.8	5,952.6
Growth rate											
2017	1.3	-0.5	0.1	.	6.0	2.2	0.4	1.0	6.1	2.8	0.2
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	5.0	.	5.6	1.5	1.8	0.0	0.5	0.0	0.0
2020 Jan.	3.1	4.1	4.7	.	5.7	1.4	2.0	0.0	0.5	0.0	0.0
Feb.	3.0	3.6	4.6	.	6.0	1.5	2.4	0.0	0.5	-0.1	0.0
Mar.	2.7	1.7	4.2	.	4.2	2.1	3.6	0.0	0.1	0.0	0.0
Apr.	4.4	3.4	4.5	.	6.9	4.2	7.7	0.0	0.1	0.0	0.0
May	5.8	3.1	4.0	.	10.2	6.5	16.3	0.0	0.0	0.1	0.0
June	7.2	4.3	4.3	.	11.8	8.3	20.1	0.1	-0.2	0.1	0.1

Source: ECB.

2 Financial developments

2.8 Effective exchange rates ¹⁾

(period averages; index: 1999 Q1=100)

	EER-19						EER-42	
	Nominal	Real CPI	Real PPI	Real GDP deflator	Real ULCM	Real ULCT	Nominal	Real CPI
	1	2	3	4	5	6	7	8
2017	97.5	93.5	92.4	89.0	80.3	94.2	112.4	91.9
2018	100.0	95.7	93.9	90.4	80.6	95.5	117.3	95.1
2019	98.2	93.3	92.2	88.6	78.8	92.9	115.5	92.4
2019 Q3	98.5	93.5	92.3	88.8	79.1	93.2	115.6	92.5
Q4	97.7	92.4	91.8	88.2	78.0	92.0	114.9	91.4
2020 Q1	97.5	91.8	91.6	88.0	77.9	92.9	115.2	91.2
Q2	98.8	93.2	92.7	.	.	.	118.1	93.4
2020 Mar.	99.0	93.1	92.8	-	-	-	117.8	93.1
Apr.	98.2	92.7	92.4	-	-	-	117.5	93.1
May	98.4	92.8	92.1	-	-	-	117.6	93.0
June	99.8	94.0	93.6	-	-	-	119.1	94.1
July	100.5	94.6	94.1	-	-	-	120.3	94.9
Aug.	101.6	95.0	95.0	-	-	-	122.4	96.0
	<i>Percentage change versus previous month</i>							
2020 Aug.	1.1	0.5	1.0	-	-	-	1.7	1.1
	<i>Percentage change versus previous year</i>							
2020 Aug.	2.7	1.2	2.6	-	-	-	5.3	3.2

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
2017	7.629	7.464	26.326	7.439	309.193	126.711	4.257	0.877	4.5688	9.635	1.112	1.130
2018	7.808	7.418	25.647	7.453	318.890	130.396	4.261	0.885	4.6540	10.258	1.155	1.181
2019	7.735	7.418	25.670	7.466	325.297	122.006	4.298	0.878	4.7453	10.589	1.112	1.119
2019 Q3	7.800	7.394	25.734	7.463	328.099	119.323	4.318	0.902	4.7314	10.662	1.096	1.112
Q4	7.801	7.439	25.577	7.471	331.933	120.323	4.287	0.861	4.7666	10.652	1.096	1.107
2020 Q1	7.696	7.490	25.631	7.472	339.137	120.097	4.324	0.862	4.7973	10.669	1.067	1.103
Q2	7.808	7.578	27.058	7.458	351.582	118.410	4.503	0.887	4.8378	10.651	1.061	1.101
2020 Mar.	7.768	7.571	26.575	7.470	345.682	118.897	4.441	0.895	4.8282	10.875	1.059	1.106
Apr.	7.686	7.593	27.262	7.462	356.688	116.970	4.544	0.875	4.8371	10.884	1.054	1.086
May	7.748	7.575	27.269	7.458	350.762	116.867	4.525	0.887	4.8371	10.597	1.057	1.090
June	7.973	7.568	26.681	7.455	347.686	121.120	4.445	0.899	4.8392	10.487	1.071	1.125
July	8.035	7.530	26.514	7.447	351.163	122.380	4.449	0.905	4.8383	10.354	1.071	1.146
Aug.	8.195	7.508	26.167	7.446	348.928	125.404	4.400	0.901	4.8376	10.309	1.077	1.183
	<i>Percentage change versus previous month</i>											
2020 Aug.	2.0	-0.3	-1.3	0.0	-0.6	2.5	-1.1	-0.4	0.0	-0.4	0.5	3.2
	<i>Percentage change versus previous year</i>											
2020 Aug.	4.3	1.6	1.4	-0.2	6.7	6.1	1.2	-1.6	2.3	-4.0	-1.1	6.3

Source: ECB.

2 Financial developments

2.10 Euro area balance of payments, financial account

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

	Total ¹⁾			Direct investment		Portfolio investment		Net financial derivatives	Other investment		Reserve assets	Memo: Gross external debt
	Assets	Liabilities	Net	Assets	Liabilities	Assets	Liabilities		Assets	Liabilities		
	1	2	3	4	5	6	7	8	9	10	11	12
<i>Outstanding amounts (international investment position)</i>												
2019 Q2	26,677.5	27,027.6	-350.1	10,948.6	9,055.7	9,193.8	11,378.6	-75.5	5,839.8	6,593.3	770.8	14,786.3
Q3	27,833.8	27,966.7	-132.9	11,345.4	9,372.2	9,646.7	11,849.4	-91.0	6,105.8	6,745.1	827.0	15,131.5
Q4	27,565.7	27,645.3	-79.5	11,214.8	9,334.5	9,908.2	11,943.4	-48.4	5,677.6	6,367.4	813.6	14,541.2
2020 Q1	27,220.8	27,363.4	-142.6	11,065.8	9,307.4	8,900.1	11,058.9	-71.2	6,459.7	6,997.0	866.3	15,316.9
<i>Outstanding amounts as a percentage of GDP</i>												
2020 Q1	228.7	229.9	-1.2	93.0	78.2	74.8	92.9	-0.6	54.3	58.8	7.3	128.7
<i>Transactions</i>												
2019 Q3	492.1	382.6	109.5	180.8	150.9	149.2	191.5	4.2	157.8	40.2	0.1	-
Q4	-295.7	-375.7	80.0	-82.4	-49.4	145.0	0.9	-5.5	-350.3	-327.2	-2.5	-
2020 Q1	587.7	563.6	24.1	-41.7	-62.3	-144.9	50.6	42.2	728.6	575.3	3.4	-
Q2	199.3	149.5	49.8	115.5	158.5	364.6	195.9	28.9	-312.9	-204.9	3.3	-
2020 Jan.	415.9	425.4	-9.6	7.2	-8.0	61.7	114.9	16.4	329.5	318.5	1.0	-
Feb.	188.4	162.3	26.2	15.2	-4.2	9.4	40.6	16.9	148.1	125.8	-1.1	-
Mar.	-16.5	-24.1	7.6	-64.1	-50.1	-216.0	-104.9	8.9	251.1	131.0	3.6	-
Apr.	111.8	118.3	-6.5	-6.1	6.6	161.4	10.2	4.0	-49.1	101.5	1.7	-
May	152.1	144.0	8.1	131.8	151.4	99.1	70.8	3.5	-83.9	-78.2	1.7	-
June	-64.6	-112.8	48.2	-10.3	0.5	104.1	114.9	21.5	-179.9	-228.3	-0.1	-
<i>12-month cumulated transactions</i>												
2020 June	983.5	720.0	263.4	172.2	197.8	513.9	438.8	69.8	223.2	83.4	4.3	-
<i>12-month cumulated transactions as a percentage of GDP</i>												
2020 June	8.5	6.2	2.3	1.5	1.7	4.5	3.8	0.6	1.9	0.7	0.0	-

Source: ECB.

1) Net financial derivatives are included in total assets.

3 Economic activity

3.1 GDP and expenditure components

(quarterly data seasonally adjusted; annual data unadjusted)

	GDP											
	Total	Domestic demand							External balance ¹⁾			
		Total	Private consumption	Government consumption	Gross fixed capital formation			Changes in inventories ²⁾	Total	Exports ¹⁾	Imports ¹⁾	
	Total construction				Total machinery	Intellectual property products						
1	2	3	4	5	6	7	8	9	10	11	12	
<i>Current prices (EUR billions)</i>												
2017	11,221.4	10,733.1	6,043.2	2,301.2	2,313.8	1,100.8	716.5	490.0	75.0	488.2	5,300.8	4,812.6
2018	11,583.7	11,110.1	6,221.8	2,368.4	2,430.7	1,176.4	748.9	498.7	89.2	473.6	5,569.2	5,095.7
2019	11,934.2	11,488.8	6,378.4	2,452.8	2,626.2	1,258.1	775.8	585.0	31.3	445.4	5,751.7	5,306.3
2019 Q3	2,994.8	2,861.2	1,600.6	616.5	641.1	316.5	194.8	128.0	3.1	133.6	1,446.9	1,313.3
Q4	3,014.2	2,905.2	1,607.2	620.8	678.9	317.4	193.9	165.8	-1.7	109.0	1,449.6	1,340.6
2020 Q1	2,918.0	2,819.2	1,539.5	624.4	649.4	312.0	175.1	160.4	5.9	98.8	1,387.1	1,288.3
Q2	2,598.7	2,515.9	1,348.9	621.8	542.4	273.7	141.0	125.8	2.9	82.8	1,108.5	1,025.7
<i>as a percentage of GDP</i>												
2019	100.0	96.3	53.4	20.6	22.0	10.5	6.5	4.9	0.3	3.7	-	-
<i>Chain-linked volumes (prices for the previous year)</i>												
<i>quarter-on-quarter percentage changes</i>												
2019 Q3	0.3	-1.0	0.4	0.6	-5.1	0.7	-0.6	-21.3	-	-	0.6	-2.3
Q4	0.1	1.1	0.1	0.3	5.7	-0.3	-0.5	29.6	-	-	0.0	2.2
2020 Q1	-3.7	-3.4	-4.5	-0.7	-5.2	-2.3	-10.0	-4.9	-	-	-3.9	-3.2
Q2	-11.8	-11.2	-12.4	-2.6	-17.0	-12.5	-19.6	-23.1	-	-	-18.8	-18.0
<i>annual percentage changes</i>												
2017	2.6	2.3	1.8	1.1	3.8	3.4	5.2	2.6	-	-	5.5	5.1
2018	1.8	1.8	1.5	1.1	3.1	3.5	3.8	1.0	-	-	3.6	3.6
2019	1.3	1.9	1.3	1.8	5.7	3.4	2.2	16.3	-	-	2.5	4.0
2019 Q3	1.4	1.4	1.5	2.1	3.3	3.4	1.7	5.4	-	-	2.8	2.9
Q4	1.0	1.4	1.2	1.9	5.0	2.0	0.6	17.1	-	-	1.8	2.7
2020 Q1	-3.2	-1.7	-3.8	0.6	1.2	-2.3	-10.4	27.7	-	-	-3.1	0.2
Q2	-14.7	-14.1	-15.9	-2.5	-21.1	-14.2	-28.5	-25.5	-	-	-21.5	-20.7
<i>contributions to quarter-on-quarter percentage changes in GDP; percentage points</i>												
2019 Q3	0.3	-1.0	0.2	0.1	-1.1	0.1	0.0	-1.2	-0.2	1.3	-	-
Q4	0.1	1.0	0.1	0.1	1.2	0.0	0.0	1.3	-0.3	-1.0	-	-
2020 Q1	-3.7	-3.3	-2.4	-0.1	-1.2	-0.2	-0.6	-0.3	0.5	-0.5	-	-
Q2	-11.8	-10.8	-6.6	-0.6	-3.8	-1.3	-1.2	-1.3	0.1	-0.9	-	-
<i>contributions to annual percentage changes in GDP; percentage points</i>												
2017	2.6	2.2	1.0	0.2	0.8	0.3	0.3	0.1	0.3	0.4	-	-
2018	1.8	1.7	0.8	0.2	0.6	0.3	0.2	0.0	0.0	0.2	-	-
2019	1.3	1.8	0.7	0.4	1.2	0.3	0.1	0.7	-0.5	-0.5	-	-
2019 Q3	1.4	1.3	0.8	0.4	0.7	0.3	0.1	0.2	-0.6	0.1	-	-
Q4	1.0	1.4	0.7	0.4	1.1	0.2	0.0	0.8	-0.8	-0.4	-	-
2020 Q1	-3.2	-1.6	-2.0	0.1	0.3	-0.2	-0.7	1.2	0.0	-1.6	-	-
Q2	-14.7	-13.7	-8.5	-0.5	-4.8	-1.5	-1.9	-1.4	0.1	-1.0	-	-

Sources: Eurostat and ECB calculations.

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

2) Including acquisitions less disposals of valuables.

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)												
2017	10,060.3	176.1	2,003.9	501.7	1,909.5	470.0	464.6	1,135.8	1,147.9	1,899.8	350.9	1,161.1
2018	10,380.0	175.2	2,050.4	532.0	1,967.9	498.1	471.5	1,170.1	1,201.5	1,957.4	355.8	1,203.7
2019	10,692.5	178.4	2,061.7	574.7	2,030.4	526.7	479.7	1,208.1	1,246.9	2,020.1	365.8	1,241.7
2019 Q3	2,683.1	44.7	516.1	144.9	509.6	132.7	120.5	302.7	313.1	506.8	91.9	311.7
Q4	2,701.1	45.1	518.3	146.4	511.8	134.0	120.9	306.1	314.9	511.3	92.4	313.1
2020 Q1	2,624.9	45.0	497.7	143.1	480.2	132.1	121.4	304.3	304.0	510.6	86.5	293.1
Q2	2,343.2	44.7	429.0	126.5	382.0	126.5	117.3	299.6	256.5	493.3	67.6	255.5
<i>as a percentage of value added</i>												
2019	100.0	1.7	19.3	5.4	19.0	4.9	4.5	11.3	11.7	18.9	3.4	-
Chain-linked volumes (prices for the previous year)												
<i>quarter-on-quarter percentage changes</i>												
2019 Q3	0.3	0.2	0.1	0.5	0.3	0.3	0.5	0.3	0.2	0.2	0.5	0.7
Q4	0.0	0.8	-0.7	0.0	0.0	0.4	0.2	0.5	0.2	0.3	-0.3	0.2
2020 Q1	-3.4	-1.4	-4.1	-3.1	-6.4	-1.3	-0.7	-0.8	-3.6	-2.1	-6.8	-6.4
Q2	-11.9	-2.4	-14.3	-12.8	-20.8	-4.4	-1.8	-2.2	-16.3	-7.2	-22.0	-11.0
<i>annual percentage changes</i>												
2017	2.6	0.4	3.4	2.6	2.8	6.4	1.3	0.9	5.1	1.1	1.7	2.4
2018	1.9	-0.5	1.6	2.8	2.1	6.0	0.8	1.3	3.2	1.0	0.7	1.4
2019	1.2	0.2	-1.0	3.1	1.8	4.3	2.1	1.4	1.6	1.1	1.8	1.6
2019 Q3	1.3	0.6	-0.8	3.2	1.9	4.5	2.3	1.4	1.8	1.2	2.3	2.0
Q4	0.9	0.5	-1.4	1.6	1.5	4.0	2.3	1.6	0.8	1.1	1.5	1.8
2020 Q1	-3.0	-0.8	-5.1	-2.8	-6.1	1.6	0.9	0.3	-3.0	-1.4	-6.2	-5.4
Q2	-14.6	-2.7	-18.3	-15.1	-25.6	-5.0	-1.8	-2.2	-19.1	-8.6	-27.1	-16.0
<i>contributions to quarter-on-quarter percentage changes in value added; percentage points</i>												
2019 Q3	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	-
Q4	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	-
2020 Q1	-3.4	0.0	-0.8	-0.2	-1.2	-0.1	0.0	-0.1	-0.4	-0.4	-0.2	-
Q2	-11.9	0.0	-2.7	-0.7	-3.8	-0.2	-0.1	-0.3	-1.9	-1.4	-0.7	-
<i>contributions to annual percentage changes in value added; percentage points</i>												
2017	2.6	0.0	0.7	0.1	0.5	0.3	0.1	0.1	0.6	0.2	0.1	-
2018	1.9	0.0	0.3	0.1	0.4	0.3	0.0	0.1	0.4	0.2	0.0	-
2019	1.2	0.0	-0.2	0.2	0.3	0.2	0.1	0.2	0.2	0.2	0.1	-
2019 Q3	1.3	0.0	-0.2	0.2	0.4	0.2	0.1	0.2	0.2	0.2	0.1	-
Q4	0.9	0.0	-0.3	0.1	0.3	0.2	0.1	0.2	0.1	0.2	0.1	-
2020 Q1	-3.0	0.0	-1.0	-0.2	-1.2	0.1	0.0	0.0	-0.4	-0.3	-0.2	-
Q2	-14.6	0.0	-3.5	-0.8	-4.9	-0.2	-0.1	-0.2	-2.2	-1.6	-0.9	-

Sources: Eurostat and ECB calculations.

3 Economic activity

3.3 Employment ¹⁾

(quarterly data seasonally adjusted; annual data unadjusted)

	Total	By employment status		By economic activity									
		Employees	Self-employed	Agriculture, forestry and fishing	Manufacturing, energy and utilities	Construction	Trade, transport, accommodation and food services	Information and communication	Finance and insurance	Real estate	Professional, business and support services	Public administration, education, health and social work	Arts, entertainment and other services
	1	2	3	4	5	6	7	8	9	10	11	12	13
Persons employed													
<i>as a percentage of total persons employed</i>													
2017	100.0	85.6	14.4	3.2	14.6	6.0	24.9	2.8	2.5	1.0	13.8	24.3	6.9
2018	100.0	85.8	14.2	3.1	14.6	6.0	24.9	2.9	2.4	1.0	14.0	24.2	6.8
2019	100.0	86.0	14.0	3.0	14.6	6.1	24.9	2.9	2.4	1.0	14.0	24.3	6.8
<i>annual percentage changes</i>													
2017	1.6	2.0	-0.6	-0.5	1.1	1.5	1.8	3.4	-1.5	1.8	3.7	1.1	1.1
2018	1.5	1.8	-0.1	-0.4	1.5	2.4	1.4	3.6	-1.0	1.8	2.8	1.2	0.4
2019	1.2	1.5	-0.1	-1.8	0.8	2.4	1.3	3.7	-0.4	1.1	1.4	1.5	0.7
2019 Q3	1.2	1.4	-0.4	-1.9	0.7	2.1	1.1	3.5	-0.3	0.7	1.3	1.5	0.9
Q4	1.1	1.3	-0.6	-1.7	0.3	1.6	1.3	2.8	0.2	0.0	1.2	1.4	0.9
2020 Q1	0.4	0.7	-1.3	-3.6	-0.3	1.5	0.3	2.4	0.0	-0.4	0.3	1.3	-0.2
Q2	-2.9	-3.0	-2.3	-4.7	-2.2	-0.8	-5.9	-0.1	-1.8	-2.1	-4.0	0.3	-5.5
Hours worked													
<i>as a percentage of total hours worked</i>													
2017	100.0	80.7	19.3	4.3	15.1	6.7	25.8	3.0	2.5	1.0	13.6	21.8	6.2
2018	100.0	81.0	19.0	4.2	15.0	6.8	25.7	3.0	2.5	1.0	13.8	21.8	6.2
2019	100.0	81.3	18.7	4.1	14.9	6.8	25.7	3.1	2.4	1.0	13.8	21.9	6.1
<i>annual percentage changes</i>													
2017	1.1	1.6	-1.0	-1.0	0.7	1.3	1.2	3.2	-2.0	1.5	3.5	0.5	0.5
2018	1.4	1.8	-0.2	0.4	1.2	2.8	1.1	3.3	-1.1	2.5	2.8	1.3	0.4
2019	1.1	1.4	-0.4	-1.4	0.4	2.0	1.0	2.8	-0.1	1.0	1.3	1.8	0.7
2019 Q3	1.0	1.4	-0.8	-1.8	0.4	1.5	0.8	2.7	0.2	1.2	1.1	2.0	0.8
Q4	0.8	1.2	-0.6	-0.9	-0.4	0.6	1.0	2.0	0.3	0.9	1.1	1.6	1.1
2020 Q1	-3.7	-2.8	-7.5	-4.0	-4.2	-4.3	-5.8	0.5	-2.5	-5.1	-2.4	-0.9	-8.0
Q2	-16.2	-15.1	-21.0	-7.3	-15.8	-17.7	-27.1	-5.2	-4.9	-11.1	-16.5	-5.4	-24.4
Hours worked per person employed													
<i>annual percentage changes</i>													
2017	-0.5	-0.3	-0.4	-0.5	-0.4	-0.2	-0.6	-0.2	-0.6	-0.3	-0.2	-0.7	-0.6
2018	-0.1	0.0	-0.1	0.8	-0.3	0.4	-0.3	-0.3	-0.2	0.7	0.0	0.0	0.0
2019	-0.1	0.0	-0.2	0.4	-0.5	-0.3	-0.3	-0.9	0.3	-0.2	-0.1	0.3	0.0
2019 Q3	-0.1	0.0	-0.4	0.1	-0.3	-0.6	-0.3	-0.8	0.4	0.5	-0.2	0.4	0.0
Q4	-0.2	-0.2	0.0	0.8	-0.7	-1.0	-0.3	-0.8	0.1	1.0	-0.1	0.2	0.2
2020 Q1	-4.1	-3.5	-6.3	-0.4	-3.9	-5.7	-6.1	-1.9	-2.4	-4.7	-2.7	-2.1	-7.8
Q2	-13.7	-12.5	-19.1	-2.7	-14.0	-17.0	-22.5	-5.1	-3.1	-9.2	-13.0	-5.7	-20.0

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-employment, % of labour force	Unemployment ¹⁾											Job vacancy rate ³⁾
			Total		Long-term unemployment, % of labour force ²⁾	By age				By gender				
			Millions	% of labour force		Adult		Youth		Male		Female		
						Millions	% of labour force	Millions	% of labour force	Millions	% of labour force	Millions	% of labour force	
			1	2	3	4	5	6	7	8	9	10	11		12	13	14
% of total in 2019			100.0		81.8	18.3			51.3		48.7			
2017	161.860	4.1	14.585	9.0	4.4	11.946	8.1	2.640	18.6	7.556	8.7	7.029	9.4	1.9
2018	162.485	3.7	13.211	8.1	3.8	10.823	7.3	2.388	16.8	6.809	7.8	6.402	8.5	2.1
2019	163.297	3.5	12.268	7.5	3.3	10.030	6.7	2.238	15.6	6.291	7.2	5.977	7.9	2.3
2019 Q3	163.039	3.5	12.171	7.5	3.2	9.942	6.7	2.229	15.5	6.282	7.2	5.890	7.8	2.2
Q4	163.675	3.4	12.010	7.3	3.2	9.787	6.6	2.222	15.5	6.130	7.0	5.880	7.7	2.2
2020 Q1	162.865	3.4	11.846	7.3	.	9.609	6.5	2.237	15.6	6.021	6.9	5.826	7.7	1.9
Q2	.	.	12.167	7.5	.	9.902	6.7	2.265	16.8	6.327	7.3	5.840	7.8	.
2020 Feb.	-	-	11.955	7.3	-	9.753	6.5	2.202	15.3	6.059	6.9	5.896	7.7	-
Mar.	-	-	11.835	7.2	-	9.669	6.5	2.166	15.4	6.050	6.9	5.784	7.6	-
Apr.	-	-	11.942	7.4	-	9.693	6.5	2.249	16.4	6.230	7.2	5.712	7.6	-
May	-	-	12.110	7.5	-	9.874	6.7	2.236	16.7	6.286	7.3	5.824	7.8	-
June	-	-	12.449	7.7	-	10.140	6.9	2.309	17.2	6.465	7.5	5.984	8.0	-
July	-	-	12.793	7.9	-	10.455	7.1	2.338	17.3	6.601	7.6	6.192	8.3	-

Sources: Eurostat and ECB calculations.

1) Where annual and quarterly Labour Force Survey data have not yet been published, annual and quarterly data are derived as simple averages of the monthly data.

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.

3.5 Short-term business statistics

	Industrial production						Construction production	ECB indicator on industrial new orders	Retail sales				New passenger car registrations
	Total (excluding construction)		Main Industrial Groupings						Total	Food, beverages, tobacco	Non-food	Fuel	
	Manufacturing	Intermediate goods	Capital goods	Consumer goods	Energy								
1	2	3	4	5	6	7	8	9	10	11	12	13	
% of total in 2015	100.0	88.7	32.1	34.5	21.8	11.6	100.0	100.0	100.0	40.4	52.5	7.1	100.0
annual percentage changes													
2017	3.0	3.2	3.4	3.9	1.4	1.1	3.1	7.9	2.5	1.6	3.5	0.8	5.6
2018	0.7	0.9	0.6	1.1	1.4	-1.5	1.7	2.7	1.6	1.3	1.9	0.6	0.9
2019	-1.3	-1.3	-2.4	-1.8	1.5	-1.9	2.0	-4.3	2.3	0.9	3.6	0.8	1.8
2019 Q3	-1.6	-1.5	-3.2	-1.1	0.4	-1.9	1.2	-4.7	2.7	0.9	4.2	1.3	0.6
Q4	-2.0	-2.1	-3.8	-2.8	2.0	-2.5	0.0	-5.8	2.0	0.6	3.5	-0.7	12.5
2020 Q1	-6.1	-6.1	-5.4	-10.2	-0.7	-5.6	-3.6	-6.5	-1.3	4.8	-4.7	-10.1	-27.3
Q2	-20.3	-21.5	-19.7	-28.2	-13.6	-10.5	-13.6	-26.6	-6.8	3.0	-11.3	-29.4	-50.8
2020 Feb.	-2.1	-1.9	-0.8	-4.3	1.0	-3.0	-0.1	-1.4	2.6	4.0	2.2	-2.0	-6.3
Mar.	-13.5	-14.3	-12.6	-22.6	-3.8	-6.3	-16.4	-16.6	-8.1	9.1	-18.7	-27.2	-60.3
Apr.	-28.6	-30.2	-26.7	-41.1	-18.6	-13.3	-31.0	-37.2	-19.3	2.1	-32.2	-47.8	-79.6
May	-20.4	-21.6	-19.6	-28.0	-14.7	-10.3	-10.5	-28.4	-2.6	5.9	-5.9	-27.0	-48.6
June	-12.3	-12.9	-13.1	-15.9	-7.7	-7.6	-5.9	-13.9	1.3	1.1	3.7	-14.2	-27.9
July	.	.	.	.	.	.	.	.	0.4	1.5	0.5	-10.8	.
month-on-month percentage changes (s.a.)													
2020 Feb.	-0.1	0.0	0.8	-2.2	0.4	0.2	-0.8	-1.3	0.7	2.5	-0.3	-1.4	1.3
Mar.	-11.8	-12.8	-11.7	-18.0	-5.7	-3.3	-15.0	-14.7	-10.4	5.3	-20.0	-26.3	-57.4
Apr.	-18.0	-19.5	-16.8	-26.3	-13.1	-5.9	-18.2	-24.2	-12.0	-5.8	-16.6	-28.6	-45.7
May	12.3	13.4	9.7	26.0	6.1	3.0	29.4	11.9	20.6	2.8	38.6	38.2	139.9
June	9.1	10.0	6.7	14.2	5.6	2.6	4.0	20.1	5.3	-3.2	11.8	19.3	41.0
July	.	.	.	.	.	.	.	.	-1.3	0.0	-2.9	4.3	.

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

3 Economic activity

3.6 Opinion surveys (seasonally adjusted)

	European Commission Business and Consumer Surveys (percentage balances, unless otherwise indicated)							Purchasing Managers' Surveys (diffusion indices)				
	Economic sentiment indicator (long-term average = 100)	Manufacturing industry		Consumer confidence indicator	Construction confidence indicator	Retail trade confidence indicator	Service industries		Purchasing Managers' Index (PMI) for manufacturing	Manufacturing output	Business activity for services	Composite output
		Industrial confidence indicator	Capacity utilisation (%)				Services confidence indicator	Capacity utilisation (%)				
	1	2	3	4	5	6	7	8	9	10	11	12
1999-15	98.7	-5.2	80.6	-11.7	-15.4	-8.6	7.3	-	51.2	52.5	53.0	52.8
2017	110.4	5.7	83.1	-5.4	-3.0	2.3	14.7	89.9	57.4	58.5	55.6	56.4
2018	111.5	6.7	83.7	-4.9	7.0	1.3	15.2	90.4	54.9	54.7	54.5	54.6
2019	103.1	-5.1	81.9	-7.1	6.4	-0.4	10.7	90.5	47.4	47.8	52.7	51.3
2019 Q3	102.0	-7.1	81.4	-6.8	5.1	0.0	9.7	90.4	46.4	47.0	52.8	51.2
Q4	100.6	-9.2	80.9	-7.7	4.9	-0.1	9.8	90.2	46.4	46.7	52.3	50.7
2020 Q1	100.0	-8.1	74.6	-8.8	3.4	-3.0	6.6	88.0	47.2	45.1	43.9	44.2
Q2	69.4	-27.2	70.2	-18.5	-14.9	-26.4	-39.2	85.6	40.1	34.2	30.3	31.3
2020 Mar.	94.1	-11.2	-	-11.6	-1.0	-8.6	-2.3	-	44.5	38.5	26.4	29.7
Apr.	64.9	-32.5	68.3	-22.0	-16.1	-30.1	-38.6	85.7	33.4	18.1	12.0	13.6
May	67.5	-27.5	-	-18.8	-17.5	-29.8	-43.6	-	39.4	35.6	30.5	31.9
June	75.8	-21.6	-	-14.7	-11.3	-19.4	-35.5	-	47.4	48.9	48.3	48.5
July	82.4	-16.2	72.1	-15.0	-11.4	-15.1	-26.2	85.6	51.8	55.3	54.7	54.9
Aug.	87.7	-12.7	-	-14.7	-11.8	-10.5	-17.2	-	51.7	55.6	50.5	51.9

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

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

	Households							Non-financial corporations						
	Saving ratio (gross)	Debt ratio	Real gross disposable income	Financial investment	Non-financial investment (gross)	Net worth ²⁾	Housing wealth	Profit share ³⁾	Saving ratio (net)	Debt ratio ⁴⁾	Financial investment	Non-financial investment (gross)	Financing	
	Percentage of gross disposable income (adjusted) ¹⁾	Annual percentage changes					Percentage of net value added	Percentage of GDP	Annual percentage changes					
	1	2	3	4	5	6	7	8	9	10	11	12	13	
2017	12.1	93.9	1.5	2.3	5.1	4.7	4.7	34.1	7.3	77.5	4.6	8.7	3.1	
2018	12.5	93.5	1.8	2.0	6.8	2.5	4.5	34.3	6.0	77.5	2.2	6.9	1.5	
2019	13.2	93.8	1.9	2.6	4.8	5.4	3.6	33.6	6.3	77.5	2.2	4.0	1.7	
2019 Q2	13.1	93.3	2.4	2.4	4.7	4.0	3.9	33.9	6.1	78.2	1.5	18.6	1.2	
Q3	13.3	93.4	2.4	2.5	4.1	4.5	3.6	33.7	6.2	79.0	1.7	-0.8	1.3	
Q4	13.2	93.8	0.8	2.6	3.1	5.4	3.6	33.6	6.3	77.5	2.2	-6.9	1.7	
2020 Q1	14.1	93.6	0.6	2.7	-1.7	2.8	4.0	32.6	5.2	79.0	2.1	1.7	1.8	

Sources: ECB and Eurostat.

1) Based on four-quarter cumulated sums of saving, debt and gross disposable income (adjusted for the change in pension entitlements).

2) Financial assets (net of financial liabilities) and non-financial assets. Non-financial assets consist mainly of housing wealth (residential structures and land). They also include non-financial assets of unincorporated enterprises classified within the household sector.

3) The profit share uses net entrepreneurial income, which is broadly equivalent to current profits in business accounting.

4) Defined as consolidated loans and debt securities liabilities.

3 Economic activity

3.8 Euro area balance of payments, current and capital accounts

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

	Current account											Capital account ¹⁾	
	Total			Goods		Services		Primary income		Secondary income		Credit	Debit
	Credit	Debit	Balance	Credit	Debit	Credit	Debit	Credit	Debit	Credit	Debit		
1	2	3	4	5	6	7	8	9	10	11	12	13	
2019 Q3	1,089.0	996.1	92.9	604.3	519.6	251.2	222.3	205.2	184.8	28.3	69.4	9.8	7.8
Q4	1,089.2	1,010.5	78.7	609.2	519.7	252.9	247.8	198.0	180.1	29.2	62.9	16.5	18.7
2020 Q1	1,050.0	1,000.7	49.3	585.8	498.2	241.8	257.8	193.2	180.8	29.3	63.8	10.8	10.8
Q2	860.7	814.9	45.9	473.3	414.0	194.0	181.4	166.2	151.9	27.3	67.6	10.7	8.7
2020 Jan.	364.0	350.5	13.4	201.6	174.4	84.9	88.9	67.3	61.3	10.2	25.9	2.9	3.3
Feb.	362.6	339.9	22.7	200.8	171.2	84.2	90.0	67.5	60.2	10.1	18.5	3.8	3.3
Mar.	323.5	310.3	13.2	183.4	152.6	72.7	78.9	58.5	59.3	8.9	19.5	4.1	4.3
Apr.	275.8	261.8	13.9	144.9	131.4	63.1	58.9	58.2	50.3	9.5	21.3	4.0	3.6
May	283.8	272.5	11.3	157.0	136.4	64.6	60.5	53.8	49.0	8.4	26.6	3.4	2.3
June	301.2	280.5	20.7	171.4	146.2	66.3	62.0	54.1	52.6	9.4	19.7	3.3	2.8
<i>12-month cumulated transactions</i>													
2020 June	4,089.0	3,822.2	266.8	2,272.5	1,951.5	939.8	909.2	762.5	697.7	114.1	263.7	47.7	46.0
<i>12-month cumulated transactions as a percentage of GDP</i>													
2020 June	35.5	33.2	2.3	19.7	16.9	8.2	7.9	6.6	6.1	1.0	2.3	0.4	0.4

1) The capital account is not seasonally adjusted.

3.9 Euro area external trade in goods¹⁾, values and volumes by product group²⁾

(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: Manu- facturing	Oil		
			Intermediate goods	Capital goods	Consumption goods		Intermediate goods	Capital goods	Consumption goods				
	1	2	3	4	5	6	7	8	9	10	11	12	13
<i>Values (EUR billions; annual percentage changes for columns 1 and 2)</i>													
2019 Q3	3.3	0.5	586.5	279.3	117.9	177.9	489.1	531.7	298.3	88.0	137.3	388.2	60.2
Q4	2.2	-2.1	591.9	276.5	125.1	179.0	496.6	525.7	291.3	86.4	138.5	385.2	60.7
2020 Q1	-1.7	-4.2	577.3	275.1	115.3	175.5	480.4	506.8	283.4	82.3	133.5	369.7	56.7
Q2	-23.5	-21.7	447.9	.	.	.	369.4	421.3	.	.	.	317.8	.
2020 Jan.	0.2	-0.6	196.8	93.5	39.0	60.1	164.7	177.7	100.1	28.7	46.1	129.0	22.3
Feb.	1.2	-1.7	198.2	93.1	41.0	61.0	166.3	172.8	97.1	27.0	46.1	126.8	20.0
Mar.	-6.0	-10.2	182.3	88.5	35.3	54.4	149.4	156.3	86.3	26.5	41.3	113.9	14.4
Apr.	-30.0	-25.4	136.1	69.4	26.3	37.4	109.6	135.1	72.1	24.6	36.0	99.5	7.8
May	-29.9	-26.8	147.7	71.7	28.6	44.3	123.3	139.1	71.6	25.2	39.7	106.8	7.8
June	-10.0	-12.3	164.2	.	.	.	136.5	147.0	.	.	.	111.5	.
<i>Volume indices (2000 = 100; annual percentage changes for columns 1 and 2)</i>													
2019 Q3	1.0	1.5	106.9	109.4	103.4	106.3	106.2	109.9	108.5	111.4	113.2	112.0	96.7
Q4	0.0	-1.8	107.2	108.4	108.3	105.8	107.1	107.4	105.5	105.6	112.9	109.9	96.4
2020 Q1	-4.1	-5.0	103.6	106.7	100.0	102.3	102.3	103.7	103.4	99.7	108.4	104.7	98.9
Q2	.	.	.	.	.	.	.	.	.	.	.	.	.
2019 Dec.	2.1	-0.9	106.3	107.7	106.6	104.1	105.6	105.7	104.2	101.1	111.2	107.7	99.2
2020 Jan.	-2.8	-3.6	105.5	107.7	101.3	105.2	105.0	107.1	106.2	105.4	111.4	109.3	102.0
Feb.	-1.3	-2.1	106.9	108.1	107.3	106.9	106.6	106.8	106.3	100.2	113.4	109.2	101.1
Mar.	-7.8	-9.1	98.5	104.2	91.3	94.8	95.3	97.3	97.7	93.5	100.4	95.7	93.6
Apr.	-30.0	-20.3	74.5	82.4	67.6	67.0	70.4	88.2	88.4	87.9	88.4	84.6	82.9
May	-29.5	-21.3	81.1	85.4	75.5	78.9	79.4	91.6	88.7	92.5	97.2	91.6	79.6

Sources: ECB and Eurostat.

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

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

4 Prices and costs

4.1 Harmonised Index of Consumer Prices ¹⁾

(annual percentage changes, unless otherwise indicated)

	Total					Total (s.a.; percentage change vis-à-vis previous period) ²⁾						Administered prices	
	Index: 2015 = 100	Total		Goods	Services	Total	Processed food	Unprocessed food	Non-energy industrial goods	Energy (n.s.a.)	Services	Total HICP excluding administered prices	Administered prices
		1	2											Total excluding food and energy	3	4	5	6	7	8	9	10	11	12	13
% of total in 2019	100.0	100.0	70.9	55.5	44.5	100.0	14.5	4.5	26.4	10.1	44.5	87.0	13.0
2017	101.8	1.5	1.0	1.6	1.4	-	-	-	-	-	-	1.6	1.0
2018	103.6	1.8	1.0	2.0	1.5	-	-	-	-	-	-	1.7	2.1
2019	104.8	1.2	1.0	1.0	1.5	-	-	-	-	-	-	1.1	1.9
2019 Q3	105.1	1.0	0.9	0.7	1.3	0.2	0.5	1.7	0.2	-1.5	0.4	0.9	1.6
Q4	105.3	1.0	1.2	0.4	1.7	0.3	0.4	0.0	0.1	0.2	0.4	1.0	1.2
2020 Q1	104.7	1.1	1.1	0.8	1.5	0.1	0.6	1.2	0.1	-1.3	0.1	1.2	0.8
Q2	105.5	0.2	0.9	-0.6	1.2	-0.4	0.8	3.6	-0.1	-7.9	0.3	0.2	0.5
2020 Mar.	105.1	0.7	1.0	0.3	1.3	-0.3	0.3	-0.1	0.0	-3.3	0.0	0.8	0.7
Apr.	105.4	0.3	0.9	-0.4	1.2	-0.2	0.3	3.7	-0.1	-4.8	0.2	0.3	0.6
May	105.3	0.1	0.9	-0.9	1.3	-0.1	0.2	-0.3	0.0	-1.7	0.1	0.0	0.6
June	105.7	0.3	0.8	-0.5	1.2	0.2	0.1	-0.2	0.0	1.7	0.1	0.2	0.4
July	105.3	0.4	1.2	-0.1	0.9	0.2	-0.4	-1.9	1.5	0.5	-0.2	0.4	0.4
Aug. ³⁾	104.9	-0.2	0.4	.	0.7	-0.4	0.1	0.2	-1.6	0.0	0.0	.	.

	Goods						Services					
	Food (including alcoholic beverages and tobacco)			Industrial goods			Housing	Transport	Communication	Recreation and personal care	Miscellaneous	
	Total	Processed food	Unprocessed food	Total	Non-energy industrial goods	Energy	Rents					
14	15	16	17	18	19	20	21	22	23	24	25	
% of total in 2019	19.0	14.5	4.5	36.5	26.4	10.1	11.0	6.5	7.2	2.6	15.3	8.4
2017	1.8	1.5	2.4	1.5	0.3	4.9	1.3	1.2	2.1	-1.1	2.1	0.8
2018	2.2	2.1	2.3	1.9	0.3	6.4	1.2	1.2	1.5	-0.1	2.0	1.4
2019	1.8	1.9	1.4	0.5	0.3	1.1	1.4	1.3	2.0	-0.7	1.7	1.5
2019 Q3	1.8	1.9	1.6	0.0	0.3	-0.7	1.5	1.5	2.2	-0.8	1.1	1.5
Q4	1.8	1.9	1.6	-0.3	0.4	-2.1	1.5	1.5	2.4	-0.2	2.0	1.5
2020 Q1	2.2	2.0	2.8	0.0	0.5	-1.0	1.6	1.4	1.7	0.0	1.6	1.5
Q2	3.4	2.3	6.7	-2.7	0.2	-10.3	1.4	1.3	1.1	0.1	1.2	1.5
2020 Mar.	2.4	2.1	3.6	-0.9	0.5	-4.5	1.5	1.4	1.2	0.1	1.4	1.5
Apr.	3.6	2.3	7.6	-2.4	0.3	-9.7	1.4	1.3	0.7	-0.4	1.3	1.5
May	3.4	2.4	6.7	-3.2	0.2	-11.9	1.4	1.3	1.4	0.3	1.3	1.6
June	3.2	2.3	6.0	-2.4	0.2	-9.3	1.4	1.3	1.1	0.3	1.2	1.5
July	2.0	1.6	3.1	-1.2	1.6	-8.4	1.3	1.2	0.2	-0.6	0.9	1.5
Aug. ³⁾	1.7	1.6	2.3	.	-0.1	-7.8	.	.	.	.	.	.

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) Estimate based on provisional national data, as well as on early information on energy prices.

4 Prices and costs

4.2 Industry, construction and property prices

(annual percentage changes, unless otherwise indicated)

	Industrial producer prices excluding construction ¹⁾										Con- struction ²⁾	Residential property prices ³⁾	Experimental indicator of commercial property prices ³⁾
	Total (index: 2015 = 100)	Total	Industry excluding construction and energy						Energy				
			Manu- facturing	Total	Intermediate goods	Capital goods	Consumer goods						
							Total	Food, beverages and tobacco		Non- food			
1	2	3	4	5	6	7	8	9	10	11	12	13	
% of total in 2015	100.0	100.0	77.3	72.1	28.9	20.7	22.5	16.5	5.9	27.9			
2017	100.8	3.0	3.0	2.1	3.2	0.9	1.9	2.9	0.2	5.6	2.0	4.4	4.7
2018	104.0	3.2	2.4	1.5	2.6	1.0	0.4	0.2	0.6	8.1	2.5	4.8	4.1
2019	104.7	0.7	0.6	0.7	0.1	1.5	1.0	1.1	0.8	-0.1	1.9	4.2	4.6
2019 Q3	104.2	-0.6	0.0	0.5	-0.4	1.5	1.0	1.2	0.8	-4.3	1.1	4.0	4.3
Q4	104.4	-1.2	0.0	0.4	-1.2	1.4	1.7	2.4	0.7	-5.9	1.7	4.3	4.3
2020 Q1	103.8	-1.5	0.0	0.4	-1.4	1.2	2.3	3.4	0.6	-7.3	1.4	4.9	.
Q2	100.2	-4.4	-3.0	-0.4	-2.6	1.0	1.1	1.5	0.6	-15.5	.	.	.
2020 Feb.	104.1	-1.3	0.3	0.5	-1.1	1.2	2.3	3.4	0.7	-6.6	-	-	-
Mar.	102.5	-2.8	-1.4	0.2	-1.9	1.1	2.3	3.5	0.6	-11.1	-	-	-
Apr.	100.4	-4.5	-3.1	-0.3	-2.6	1.1	1.7	2.5	0.6	-16.5	-	-	-
May	99.8	-5.0	-3.5	-0.6	-2.9	0.9	1.0	1.3	0.5	-17.2	-	-	-
June	100.5	-3.7	-2.3	-0.5	-2.5	1.1	0.7	0.8	0.6	-12.8	-	-	-
July	101.1	-3.3	-2.1	-0.4	-2.0	0.9	0.6	0.5	0.7	-11.6	-	-	-

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

1) Domestic sales only.

2) Input prices for residential buildings.

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

4.3 Commodity prices and GDP deflators

(annual percentage changes, unless otherwise indicated)

	GDP deflators						Oil prices (EUR per barrel)	Non-energy commodity prices (EUR)							
	Total (s.a.; index: 2015 = 100)	Total	Domestic demand					Exports ¹⁾	Imports ¹⁾	Import-weighted ²⁾			Use-weighted ²⁾		
			Total	Private consump- tion	Govern- ment consump- tion	Gross fixed capital formation				Total	Food	Non-food	Total	Food	Non-food
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
% of total									100.0	45.4	54.6	100.0	50.4	49.6	
2017	102.0	1.1	1.5	1.3	1.6	1.7	1.9	2.8	48.1	5.8	-3.5	16.6	6.7	-1.6	17.8
2018	103.4	1.4	1.7	1.5	1.8	1.9	1.4	2.2	60.4	-0.7	-5.8	4.3	-0.1	-5.3	5.7
2019	105.2	1.7	1.5	1.2	1.7	2.2	0.7	0.2	57.2	1.6	3.7	-0.1	2.6	7.5	-2.3
2019 Q3	105.3	1.8	1.3	1.0	1.7	2.2	0.2	-1.0	55.7	1.8	3.7	0.2	1.7	6.5	-3.1
Q4	106.0	1.8	1.2	1.1	1.6	1.7	0.4	-0.8	56.5	3.7	8.6	-0.6	5.1	13.7	-3.6
2020 Q1	106.6	1.9	1.4	1.2	2.6	2.1	0.0	-1.3	45.9	1.9	7.6	-3.1	1.4	7.5	-4.9
Q2	107.6	2.4	1.4	0.7	4.5	1.7	-1.8	-4.4	28.5	-2.6	3.7	-8.1	-4.8	-0.9	-9.2
2020 Mar.	-	-	-	-	-	-	-	-	29.7	-3.2	3.9	-9.4	-4.3	1.4	-10.4
Apr.	-	-	-	-	-	-	-	-	21.5	-4.5	4.2	-12.1	-7.3	-2.0	-13.0
May	-	-	-	-	-	-	-	-	28.4	-1.4	5.5	-7.5	-3.5	1.3	-8.7
June	-	-	-	-	-	-	-	-	35.5	-1.8	1.3	-4.6	-3.7	-2.0	-5.7
July	-	-	-	-	-	-	-	-	37.3	-2.3	-1.4	-3.2	-5.0	-5.7	-4.2
Aug.	-	-	-	-	-	-	-	-	37.4	.	.	.	.	.	.

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	-	-	-4.5	32.3	56.7	56.3	-	49.7
2017	9.3	5.2	7.1	2.8	12.9	64.6	56.3	55.1	51.6
2018	11.6	7.5	9.5	12.5	20.6	65.4	57.9	56.1	52.7
2019	4.3	7.2	9.0	7.4	18.3	48.8	57.1	50.4	52.4
2019 Q3	1.9	6.6	8.4	4.9	17.9	46.4	56.5	48.9	52.0
Q4	1.4	6.9	7.9	5.9	14.7	44.2	56.9	48.6	52.0
2020 Q1	2.0	6.6	7.4	3.9	13.3	45.6	54.7	48.0	49.7
Q2	-6.8	-3.7	-7.5	-11.7	11.0	44.2	48.1	46.1	43.3
2020 Mar.	-0.3	3.9	2.8	-1.1	10.6	44.2	49.7	47.2	45.3
Apr.	-7.5	-8.0	-9.9	-12.9	5.9	44.6	44.5	45.8	40.2
May	-8.6	-3.1	-8.8	-11.3	12.6	43.0	47.7	45.8	43.3
June	-4.4	0.1	-3.9	-10.8	14.5	45.1	52.2	46.6	46.3
July	-1.1	-0.6	-0.1	-9.9	12.7	47.5	52.5	49.0	47.8
Aug.	-2.1	0.7	-1.2	-7.7	13.9	50.1	53.4	49.4	48.2

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

4.5 Labour cost indices

(annual percentage changes, unless otherwise indicated)

	Total (index: 2016 = 100)	Total	By component		For selected economic activities		Memo item: Indicator of negotiated wages ¹⁾
			Wages and salaries	Employers' social contributions	Business economy	Mainly non-business economy	
	1	2	3	4	5	6	7
% of total in 2018	100.0	100.0	75.3	24.7	69.0	31.0	
2017	101.8	1.8	1.7	1.8	1.8	1.7	1.5
2018	104.2	2.4	2.3	2.6	2.5	2.1	2.1
2019	106.8	2.5	2.6	2.2	2.4	2.6	2.2
2019 Q3	103.4	2.5	2.7	2.3	2.6	2.4	2.6
Q4	113.2	2.4	2.3	2.2	2.2	2.6	2.0
2020 Q1	103.2	3.4	3.4	3.6	3.1	4.2	1.9
Q2	.	.	.	.	.	.	1.7

Sources: Eurostat and ECB calculations.

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

4 Prices and costs

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

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

	Total (index: 2015 =100)	Total	By economic activity									
			Agriculture, forestry and fishing	Manu- facturing, energy and utilities	Con- struction	Trade, transport, accom- modation and food services	Information and commu- nication	Finance and insurance	Real estate	Professional, business and support services	Public ad- ministration, education, health and social work	Arts, enter- tainment and other services
	1	2	3	4	5	6	7	8	9	10	11	12
Unit labour costs												
2017	106.3	0.7	0.1	-0.7	0.6	0.6	-0.9	-1.7	4.2	1.3	1.9	1.1
2018	108.3	1.9	1.5	1.8	1.5	1.4	0.3	0.4	4.7	2.4	2.3	2.6
2019	110.3	1.9	-0.8	3.4	1.0	1.6	1.1	-0.5	2.5	1.1	2.5	1.7
2019 Q3	110.6	1.7	-1.8	3.6	0.7	1.5	0.9	-0.9	2.3	0.9	2.4	0.9
Q4	110.9	1.6	-0.2	2.5	1.3	1.4	0.2	-0.6	-0.2	1.5	2.7	1.9
2020 Q1	114.1	4.4	-2.1	4.5	2.5	5.7	2.7	-1.3	1.9	4.7	5.2	6.9
Q2	119.6	8.6	-0.6	10.2	7.0	13.3	2.8	-1.0	-3.9	11.2	10.8	21.0
Compensation per employee												
2017	111.4	1.7	1.1	1.6	1.6	1.5	2.0	1.1	3.3	2.6	1.9	1.7
2018	113.8	2.2	1.4	1.9	1.8	2.1	2.6	-2.2	4.2	2.8	2.0	3.0
2019	116.0	1.9	1.3	1.5	1.8	2.1	1.7	2.0	2.8	1.3	2.2	2.7
2019 Q3	116.6	2.0	0.7	2.0	1.7	2.3	1.8	1.7	3.0	1.3	2.1	2.3
Q4	116.7	1.6	2.0	0.8	1.2	1.6	1.3	1.5	1.4	1.1	2.3	2.5
2020 Q1	115.9	0.6	0.8	-0.5	-1.9	-1.0	1.9	-0.4	2.5	1.2	2.4	0.4
Q2	110.4	-4.6	1.5	-8.0	-8.4	-10.4	-2.2	-0.9	-4.0	-6.3	1.0	-6.7
Labour productivity per person employed												
2017	104.8	1.0	0.9	2.3	1.0	0.9	2.9	2.8	-0.9	1.4	0.0	0.6
2018	105.1	0.3	-0.1	0.1	0.3	0.7	2.4	1.8	-0.5	0.4	-0.2	0.3
2019	105.1	0.0	2.0	-1.8	0.7	0.5	0.6	2.4	0.3	0.2	-0.4	1.1
2019 Q3	105.4	0.3	2.6	-1.5	1.0	0.8	0.9	2.6	0.7	0.5	-0.3	1.4
Q4	105.2	-0.1	2.2	-1.7	-0.1	0.2	1.1	2.1	1.6	-0.4	-0.4	0.6
2020 Q1	101.6	-3.6	2.9	-4.8	-4.2	-6.3	-0.8	1.0	0.7	-3.3	-2.6	-6.1
Q2	92.3	-12.2	2.1	-16.5	-14.4	-20.9	-4.9	0.1	-0.1	-15.7	-8.9	-22.9
Compensation per hour worked												
2017	113.4	2.1	1.3	1.9	1.7	1.9	2.1	1.8	3.3	2.6	2.5	2.3
2018	115.9	2.2	0.9	2.0	1.2	2.2	2.8	2.4	3.4	2.8	2.0	2.7
2019	118.1	1.9	0.8	2.0	2.2	2.2	2.5	1.5	2.8	1.3	1.7	2.8
2019 Q3	118.2	2.0	0.9	2.4	2.3	2.3	2.5	0.9	2.4	1.3	1.5	2.4
Q4	118.6	1.8	1.3	1.6	2.3	1.8	2.4	1.2	0.7	1.1	2.1	2.5
2020 Q1	121.7	4.2	3.0	3.2	2.9	4.3	3.7	1.8	5.7	3.4	4.5	8.1
Q2	128.1	9.0	5.4	6.2	7.4	12.7	4.5	4.4	6.3	6.1	6.5	15.0
Hourly labour productivity												
2017	107.2	1.5	1.5	2.7	1.2	1.5	3.1	3.4	-0.6	1.6	0.6	1.2
2018	107.6	0.4	-0.9	0.3	0.0	1.0	2.7	2.0	-1.2	0.4	-0.3	0.3
2019	107.7	0.2	1.6	-1.4	1.1	0.8	1.5	2.2	0.5	0.3	-0.7	1.0
2019 Q3	107.6	0.4	2.4	-1.2	1.6	1.1	1.8	2.1	0.2	0.7	-0.8	1.5
Q4	107.6	0.2	1.4	-1.0	0.9	0.5	2.0	2.0	0.6	-0.3	-0.5	0.4
2020 Q1	108.0	0.5	3.3	-0.9	1.6	-0.3	1.1	3.5	5.6	-0.7	-0.5	1.9
Q2	109.3	1.7	5.0	-2.9	3.1	2.0	0.2	3.3	10.0	-3.1	-3.4	-3.6

Sources: Eurostat and ECB calculations.

5 Money and credit

5.1 Monetary aggregates ¹⁾

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

	M3											
	M2						M3-M2					
	M1		M2-M1				Repos	Money market fund shares	Debt securities with a maturity of up to 2 years			
	Currency in circulation	Overnight deposits	Deposits with an agreed maturity of up to 2 years	Deposits redeemable at notice of up to 3 months								
1	2	3	4	5	6	7	8	9	10	11	12	
Outstanding amounts												
2017	1,112.0	6,638.1	7,750.1	1,196.6	2,261.8	3,458.3	11,208.5	74.4	512.0	72.6	659.1	11,867.5
2018	1,163.3	7,114.7	8,278.1	1,124.9	2,299.0	3,423.9	11,702.0	74.3	524.0	71.5	669.8	12,371.8
2019	1,220.0	7,724.2	8,944.2	1,069.5	2,363.8	3,433.4	12,377.5	78.5	531.6	7.9	618.0	12,995.6
2019 Q3	1,204.1	7,605.6	8,809.6	1,110.0	2,354.8	3,464.7	12,274.4	74.5	546.3	19.1	640.0	12,914.4
Q4	1,220.0	7,724.2	8,944.2	1,069.5	2,363.8	3,433.4	12,377.5	78.5	531.6	7.9	618.0	12,995.6
2020 Q1	1,261.8	8,075.3	9,337.1	1,077.5	2,361.4	3,439.0	12,776.1	109.9	533.5	56.5	700.0	13,476.0
Q2	1,304.5	8,401.0	9,705.5	1,076.0	2,403.1	3,479.1	13,184.5	96.4	584.6	16.7	697.7	13,882.3
2020 Feb.	1,236.2	7,826.7	9,062.8	1,065.0	2,359.7	3,424.8	12,487.6	84.9	551.3	26.0	662.2	13,149.8
Mar.	1,261.8	8,075.3	9,337.1	1,077.5	2,361.4	3,439.0	12,776.1	109.9	533.5	56.5	700.0	13,476.0
Apr.	1,276.8	8,229.6	9,506.5	1,071.0	2,376.7	3,447.7	12,954.2	94.9	546.6	37.7	679.3	13,633.4
May	1,296.5	8,334.7	9,631.3	1,095.1	2,389.1	3,484.2	13,115.4	96.6	556.9	26.8	680.2	13,795.6
June	1,304.5	8,401.0	9,705.5	1,076.0	2,403.1	3,479.1	13,184.5	96.4	584.6	16.7	697.7	13,882.3
July ^(p)	1,311.1	8,473.0	9,784.1	1,082.7	2,409.4	3,492.0	13,276.1	109.5	607.5	10.3	727.3	14,003.4
Transactions												
2017	36.0	592.6	628.6	-109.5	34.5	-74.9	553.7	6.5	-10.8	-18.5	-22.7	530.9
2018	50.3	465.1	515.4	-74.0	45.2	-28.9	486.6	-0.9	12.3	-3.3	8.1	494.7
2019	56.7	603.1	659.8	-60.0	62.8	2.7	662.5	4.1	-1.8	-57.6	-55.3	607.2
2019 Q3	15.1	181.2	196.3	-4.6	14.8	10.2	206.5	-0.6	21.1	-18.1	2.5	209.0
Q4	15.9	122.8	138.8	-38.0	8.1	-29.9	108.8	4.5	-16.0	-9.5	-21.1	87.8
2020 Q1	41.8	346.6	388.3	6.1	-2.5	3.7	392.0	31.1	2.0	46.7	79.8	471.7
Q2	42.7	322.7	365.4	0.4	42.1	42.5	407.8	-12.9	51.1	-40.7	-2.4	405.4
2020 Feb.	7.9	81.9	89.8	1.2	-2.6	-1.4	88.4	9.0	3.0	1.3	13.3	101.7
Mar.	25.6	249.3	274.9	12.8	1.7	14.5	289.5	25.0	-17.6	28.7	36.1	325.6
Apr.	15.1	151.4	166.5	-7.8	15.2	7.4	173.9	-15.4	13.2	-18.5	-20.7	153.2
May	19.7	103.3	123.0	26.7	12.8	39.5	162.5	2.4	10.3	-11.7	1.0	163.5
June	7.9	67.9	75.9	-18.5	14.0	-4.4	71.4	0.1	27.7	-10.4	17.4	88.8
July ^(p)	6.6	151.5	158.1	11.7	6.5	18.1	176.2	14.1	22.9	-4.3	32.8	209.0
Growth rates												
2017	3.3	9.8	8.8	-8.3	1.6	-2.1	5.2	9.5	-2.1	-21.1	-3.3	4.7
2018	4.5	7.0	6.6	-6.2	2.0	-0.8	4.3	-1.3	2.4	-4.7	1.2	4.2
2019	4.9	8.5	8.0	-5.3	2.7	0.1	5.7	5.4	-0.4	-86.7	-8.2	4.9
2019 Q3	4.7	8.5	7.9	-2.6	3.0	1.1	5.9	3.0	8.7	-65.4	1.1	5.7
Q4	4.9	8.5	8.0	-5.3	2.7	0.1	5.7	5.4	-0.4	-86.7	-8.2	4.9
2020 Q1	7.0	10.9	10.4	-3.7	1.8	0.0	7.4	47.5	2.0	51.5	9.8	7.5
Q2	9.7	13.1	12.6	-3.3	2.7	0.8	9.2	29.4	11.1	-54.1	9.2	9.2
2020 Feb.	5.4	8.6	8.1	-5.6	2.0	-0.4	5.6	17.6	6.0	-47.4	2.5	5.5
Mar.	7.0	10.9	10.4	-3.7	1.8	0.0	7.4	47.5	2.0	51.5	9.8	7.5
Apr.	8.0	12.5	11.9	-5.2	2.1	-0.3	8.3	28.2	3.8	2.0	6.2	8.2
May	9.3	13.0	12.5	-2.5	2.3	0.7	9.1	35.9	5.8	-34.2	6.3	9.0
June	9.7	13.1	12.6	-3.3	2.7	0.8	9.2	29.4	11.1	-54.1	9.2	9.2
July ^(p)	9.8	14.1	13.5	-1.5	2.7	1.4	10.1	46.2	13.4	-64.3	12.8	10.2

Source: ECB.

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

5 Money and credit

5.2 Deposits in M3 1)

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

	Non-financial corporations 2)					Households 3)					Financial corporations other than MFIs and ICPFs 2)	Insurance corporations and pension funds	Other general government 4)
	Total	Overnight	With an agreed maturity of up to 2 years	Redeemable at notice of up to 3 months	Repos	Total	Overnight	With an agreed maturity of up to 2 years	Redeemable at notice of up to 3 months	Repos			
	1	2	3	4	5	6	7	8	9	10	11	12	13
Outstanding amounts													
2017	2,240.3	1,797.4	285.0	149.1	8.8	6,317.6	3,702.8	562.1	2,051.9	0.8	991.1	206.6	415.3
2018	2,331.4	1,898.7	277.3	147.8	7.6	6,644.9	4,035.9	517.6	2,090.1	1.4	998.2	202.9	435.5
2019	2,476.2	2,062.7	256.9	150.1	6.5	7,040.7	4,395.5	492.5	2,151.8	0.9	1,036.9	214.4	467.8
2019 Q3	2,450.9	2,031.3	262.2	151.4	5.9	6,964.9	4,318.1	504.5	2,141.3	1.0	1,042.3	221.3	465.5
Q4	2,476.2	2,062.7	256.9	150.1	6.5	7,040.7	4,395.5	492.5	2,151.8	0.9	1,036.9	214.4	467.8
2020 Q1	2,609.4	2,190.9	263.2	147.5	7.7	7,161.4	4,530.5	472.0	2,158.3	0.6	1,151.7	226.4	475.3
Q2	2,867.6	2,392.7	320.1	148.6	6.2	7,349.8	4,681.9	462.7	2,204.3	0.9	1,067.8	225.3	466.0
2020 Feb.	2,507.0	2,097.6	253.7	150.3	5.4	7,086.6	4,452.7	482.5	2,150.6	0.8	1,051.7	215.3	475.7
Mar.	2,609.4	2,190.9	263.2	147.5	7.7	7,161.4	4,530.5	472.0	2,158.3	0.6	1,151.7	226.4	475.3
Apr.	2,715.5	2,277.9	284.8	146.5	6.3	7,242.1	4,596.8	467.1	2,177.4	0.8	1,120.1	229.8	464.8
May	2,824.5	2,355.8	316.8	147.2	4.7	7,299.7	4,642.9	464.8	2,191.1	1.0	1,100.8	231.1	459.4
June	2,867.6	2,392.7	320.1	148.6	6.2	7,349.8	4,681.9	462.7	2,204.3	0.9	1,067.8	225.3	466.0
July (p)	2,919.1	2,433.7	333.1	147.1	5.2	7,400.2	4,729.7	456.1	2,213.3	1.1	1,037.8	243.5	473.8
Transactions													
2017	180.7	182.4	-1.9	-0.8	0.9	254.7	304.7	-82.1	33.6	-1.5	54.9	7.2	26.7
2018	93.1	105.3	-9.7	-1.1	-1.4	326.5	324.8	-45.0	46.1	0.5	0.5	-3.9	19.1
2019	146.1	163.7	-18.8	1.7	-0.5	394.5	358.4	-25.7	62.4	-0.5	29.1	10.2	30.1
2019 Q3	40.7	43.9	-2.9	1.0	-1.3	116.9	109.6	-6.0	13.9	-0.6	25.1	3.8	4.4
Q4	28.8	34.6	-4.3	-2.2	0.7	76.8	76.9	-11.5	11.5	-0.2	-3.0	-6.9	1.8
2020 Q1	130.6	126.4	5.6	-2.5	1.2	119.5	134.2	-20.9	6.4	-0.3	112.1	11.7	7.4
Q2	260.4	203.1	57.7	1.1	-1.5	190.4	152.7	-9.0	46.5	0.3	-88.7	-0.6	-9.2
2020 Feb.	31.3	33.6	-3.3	-0.2	1.3	25.2	30.9	-4.9	-0.8	0.0	27.0	-2.5	8.5
Mar.	102.7	93.5	9.6	-2.7	2.3	74.9	77.8	-10.4	7.7	-0.2	100.6	11.1	-0.4
Apr.	104.6	86.0	21.0	-1.0	-1.4	80.2	66.0	-5.1	19.1	0.2	-34.4	3.5	-10.5
May	112.3	80.2	33.0	0.7	-1.5	59.1	46.7	-1.9	14.2	0.1	-22.4	1.6	-5.4
June	43.5	36.9	3.7	1.4	1.5	51.1	40.0	-2.0	13.2	-0.1	-32.0	-5.7	6.7
July (p)	59.2	46.3	15.2	-1.5	-0.8	53.1	49.6	-5.8	9.1	0.2	44.5	19.0	7.9
Growth rates													
2017	8.6	11.2	-0.7	-0.5	11.5	4.2	9.0	-12.7	1.7	-65.1	5.8	3.6	6.9
2018	4.2	5.9	-3.5	-0.7	-16.5	5.2	8.8	-8.0	2.3	67.7	0.0	-1.9	4.6
2019	6.3	8.6	-6.8	1.2	-6.8	5.9	8.9	-5.0	3.0	-36.8	2.9	5.0	6.9
2019 Q3	6.4	8.0	-2.6	2.8	-11.8	6.3	9.3	-4.1	3.1	-10.1	3.6	4.3	6.6
Q4	6.3	8.6	-6.8	1.2	-6.8	5.9	8.9	-5.0	3.0	-36.8	2.9	5.0	6.9
2020 Q1	9.7	12.1	-2.2	-1.0	24.8	6.0	9.8	-8.4	2.3	-56.7	16.8	5.9	2.9
Q2	19.1	20.5	21.2	-1.7	-13.5	7.4	11.2	-9.3	3.7	-48.3	4.5	3.7	0.9
2020 Feb.	6.5	9.0	-7.6	1.1	-13.8	5.4	8.6	-6.8	2.3	-46.9	7.1	3.1	4.6
Mar.	9.7	12.1	-2.2	-1.0	24.8	6.0	9.8	-8.4	2.3	-56.7	16.8	5.9	2.9
Apr.	13.7	16.1	5.5	-2.2	-11.6	6.7	10.6	-9.1	2.9	-48.2	12.2	8.0	1.0
May	17.7	19.2	18.3	-2.0	-31.8	7.0	10.9	-9.2	3.2	-37.5	9.6	7.1	-0.2
June	19.1	20.5	21.2	-1.7	-13.5	7.4	11.2	-9.3	3.7	-48.3	4.5	3.7	0.9
July (p)	20.4	21.4	27.2	-2.8	-15.8	7.4	11.3	-10.2	3.8	-40.1	9.2	10.4	3.2

Source: ECB.

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

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

3) Including non-profit institutions serving households.

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

5 Money and credit

5.3 Credit to euro area residents ¹⁾

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

	Credit to general government			Credit to other euro area residents								
	Total	Loans	Debt securities	Total	Loans					Debt securities	Equity and non-money market fund investment fund shares	
					Total	To non-financial corporations ³⁾	To households ⁴⁾	To financial corporations other than MFIs and ICPFs ³⁾	To insurance corporations and pension funds			
												Adjusted loans ²⁾
1	2	3	4	5	6	7	8	9	10	11	12	
Outstanding amounts												
2017	4,617.2	1,032.3	3,571.0	13,114.0	10,870.5	11,165.8	4,323.4	5,600.3	838.0	108.7	1,440.4	803.2
2018	4,676.7	1,006.2	3,659.0	13,415.9	11,122.4	11,482.8	4,402.3	5,742.1	851.2	126.8	1,517.9	775.6
2019	4,652.5	984.4	3,656.3	13,865.6	11,452.2	11,838.5	4,472.5	5,930.9	896.1	152.6	1,560.5	852.9
2019 Q3	4,696.5	999.8	3,685.1	13,776.5	11,394.4	11,764.2	4,488.5	5,876.3	883.5	146.2	1,570.6	811.5
Q4	4,652.5	984.4	3,656.3	13,865.6	11,452.2	11,838.5	4,472.5	5,930.9	896.1	152.6	1,560.5	852.9
2020 Q1	4,775.0	1,006.9	3,756.3	14,046.9	11,688.3	12,063.7	4,601.8	5,966.5	958.5	161.5	1,558.2	800.3
Q2	5,300.8	1,005.8	4,283.3	14,245.5	11,783.1	12,165.5	4,717.7	5,993.9	917.8	153.7	1,644.2	818.2
2020 Feb.	4,672.1	993.0	3,667.3	13,942.3	11,531.5	11,897.5	4,488.9	5,983.3	909.1	150.1	1,565.3	845.5
Mar.	4,775.0	1,006.9	3,756.3	14,046.9	11,688.3	12,063.7	4,601.8	5,966.5	958.5	161.5	1,558.2	800.3
Apr.	4,962.3	1,015.5	3,935.0	14,122.9	11,728.0	12,103.9	4,670.7	5,960.9	939.7	156.8	1,609.0	785.9
May	5,131.2	1,017.5	4,101.9	14,225.1	11,805.1	12,179.2	4,719.2	5,981.8	949.7	154.4	1,627.1	793.0
June	5,300.8	1,005.8	4,283.3	14,245.5	11,783.1	12,165.5	4,717.7	5,993.9	917.8	153.7	1,644.2	818.2
July ^(p)	5,589.1	1,003.6	4,573.7	14,126.8	11,813.4	12,183.2	4,729.6	6,015.7	914.0	154.1	1,496.8	816.6
Transactions												
2017	287.5	-43.7	330.6	363.2	274.2	316.4	84.9	173.2	19.7	-3.5	63.6	25.4
2018	90.3	-28.4	118.7	374.8	307.3	382.1	123.6	166.3	-0.4	17.8	88.1	-20.6
2019	-88.3	-23.5	-65.2	453.0	378.7	426.0	115.0	199.9	42.5	21.2	30.6	43.8
2019 Q3	-2.6	-0.9	-1.7	129.7	102.3	104.5	27.2	52.0	9.2	13.9	20.7	6.6
Q4	-5.2	-15.6	10.2	90.2	78.5	104.6	2.8	60.2	9.1	6.5	-7.8	19.5
2020 Q1	134.0	21.9	112.2	228.6	246.0	238.3	135.7	41.8	59.6	8.8	15.0	-32.3
Q2	506.4	-1.7	508.0	194.8	102.5	110.3	123.1	33.0	-45.9	-7.7	80.8	11.5
2020 Feb.	6.7	-1.5	8.2	40.7	20.9	26.1	6.5	22.9	-5.0	-3.4	20.6	-0.9
Mar.	136.3	13.8	122.5	143.5	167.1	176.9	118.6	-11.6	48.7	11.4	8.9	-32.6
Apr.	194.0	8.3	185.6	68.4	38.2	38.0	71.6	-5.3	-23.5	-4.7	46.7	-16.4
May	159.0	1.6	157.5	103.8	79.1	76.9	51.4	22.1	7.9	-2.4	19.2	5.6
June	153.4	-11.5	164.9	22.6	-14.8	-4.6	0.0	16.2	-30.4	-0.6	14.9	22.4
July ^(p)	96.6	-2.1	98.7	75.0	47.7	37.7	21.6	24.4	1.1	0.6	26.7	0.7
Growth rates												
2017	6.6	-4.1	10.2	2.8	2.6	2.9	2.0	3.2	2.4	-3.2	4.6	3.2
2018	2.0	-2.8	3.4	2.9	2.8	3.4	2.9	3.0	-0.1	16.4	6.1	-2.6
2019	-1.9	-2.3	-1.8	3.4	3.4	3.7	2.6	3.5	5.0	16.2	2.0	5.6
2019 Q3	-1.1	-0.5	-1.3	3.2	3.2	3.6	2.9	3.2	3.5	14.4	3.3	2.6
Q4	-1.9	-2.3	-1.8	3.4	3.4	3.7	2.6	3.5	5.0	16.2	2.0	5.6
2020 Q1	1.6	0.4	1.9	4.2	4.8	5.0	4.9	3.3	11.4	20.7	3.0	-0.6
Q2	13.6	0.4	17.3	4.7	4.7	4.8	6.5	3.2	4.1	16.3	7.1	0.7
2020 Feb.	-2.0	-1.0	-2.2	3.4	3.5	3.7	2.4	3.9	5.0	14.8	2.0	4.1
Mar.	1.6	0.4	1.9	4.2	4.8	5.0	4.9	3.3	11.4	20.7	3.0	-0.6
Apr.	6.2	1.5	7.5	4.4	4.7	4.9	6.0	3.0	7.7	21.2	6.3	-3.4
May	9.8	1.1	12.2	4.9	5.2	5.3	6.7	3.3	8.5	20.9	6.8	-2.4
June	13.6	0.4	17.3	4.7	4.7	4.8	6.5	3.2	4.1	16.3	7.1	0.7
July ^(p)	15.5	0.2	19.8	5.0	4.7	4.7	6.5	3.3	4.0	14.8	9.3	0.4

Source: ECB.

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

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

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

4) Including non-profit institutions serving households.

5 Money and credit

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

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

	Non-financial corporations ²⁾					Households ³⁾				
	Total	Adjusted loans ⁴⁾	Up to 1 year	Over 1 and up to 5 years	Over 5 years	Total	Adjusted loans ⁴⁾	Loans for consumption	Loans for house purchase	Other loans
	1					2					3	4	5	6	7	8	9	10
Outstanding amounts										
2017	4,323.4	4,358.7	986.2	821.2	2,516.1	5,600.3	5,867.4	654.8	4,216.4	729.0
2018	4,402.3	4,487.6	993.0	843.7	2,565.6	5,742.1	6,025.2	682.6	4,356.8	702.7
2019	4,472.5	4,575.5	970.7	877.0	2,624.8	5,930.9	6,224.3	719.8	4,524.2	686.9
2019 Q3	4,488.5	4,581.9	982.0	873.5	2,633.0	5,876.3	6,165.7	711.2	4,473.5	691.6
Q4	4,472.5	4,575.5	970.7	877.0	2,624.8	5,930.9	6,224.3	719.8	4,524.2	686.9
2020 Q1	4,601.8	4,703.7	1,002.0	915.8	2,683.9	5,966.5	6,254.2	715.5	4,566.5	684.5
Q2	4,717.7	4,827.0	957.9	991.5	2,768.3	5,993.9	6,277.6	700.6	4,602.9	690.3
2020 Feb.	4,488.9	4,586.3	957.4	880.0	2,651.5	5,983.3	6,264.7	728.4	4,567.3	687.6
Mar.	4,601.8	4,703.7	1,002.0	915.8	2,683.9	5,966.5	6,254.2	715.5	4,566.5	684.5
Apr.	4,670.7	4,775.2	988.4	961.2	2,721.1	5,960.9	6,247.1	701.0	4,574.6	685.3
May	4,719.2	4,822.8	958.1	997.9	2,763.2	5,981.8	6,265.1	698.6	4,593.9	689.3
June	4,717.7	4,827.0	957.9	991.5	2,768.3	5,993.9	6,277.6	700.6	4,602.9	690.3
July ^(p)	4,729.6	4,831.4	950.7	997.9	2,781.1	6,015.7	6,292.4	703.2	4,620.5	692.0
Transactions										
2017	84.9	134.8	0.6	39.1	45.2	173.2	165.6	45.0	134.0	-5.9
2018	123.6	175.7	18.6	32.7	72.3	166.3	188.6	41.3	134.3	-9.3
2019	115.0	144.7	-11.7	43.1	83.6	199.9	217.2	40.7	168.7	-9.4
2019 Q3	27.2	34.0	3.6	6.3	17.3	52.0	54.9	8.4	46.5	-2.9
Q4	2.8	21.7	-5.3	7.5	0.5	60.2	63.7	9.4	53.7	-2.9
2020 Q1	135.7	135.2	28.9	43.4	63.3	41.8	37.6	-2.9	45.9	-1.1
Q2	123.1	130.4	-38.0	80.8	80.3	33.0	30.0	-13.2	36.8	9.4
2020 Feb.	6.5	7.5	-8.0	4.2	10.3	22.9	22.3	4.5	17.5	0.9
Mar.	118.6	121.4	48.0	36.1	34.6	-11.6	-4.3	-11.9	3.5	-3.1
Apr.	71.6	72.8	-13.4	47.0	38.0	-5.3	-6.1	-14.2	7.0	1.9
May	51.4	50.5	-28.4	39.1	40.8	22.1	18.8	-2.1	19.7	4.6
June	0.0	7.2	3.9	-5.3	1.5	16.2	17.3	3.2	10.1	3.0
July ^(p)	21.6	15.9	-6.0	10.2	17.4	24.4	18.4	3.0	18.8	2.6
Growth rates										
2017	2.0	3.2	0.1	5.0	1.8	3.2	2.9	7.3	3.3	-0.8
2018	2.9	4.1	1.9	4.0	2.9	3.0	3.2	6.4	3.2	-1.3
2019	2.6	3.2	-1.2	5.1	3.3	3.5	3.6	6.0	3.9	-1.3
2019 Q3	2.9	3.6	-0.8	5.1	3.6	3.2	3.4	6.0	3.5	-1.6
Q4	2.6	3.2	-1.2	5.1	3.3	3.5	3.6	6.0	3.9	-1.3
2020 Q1	4.9	5.5	2.9	9.1	4.3	3.3	3.4	3.8	4.0	-1.2
Q2	6.5	7.1	-1.1	16.1	6.2	3.2	3.0	0.2	4.1	0.4
2020 Feb.	2.4	3.0	-2.1	5.0	3.2	3.9	3.7	6.2	4.3	-1.0
Mar.	4.9	5.5	2.9	9.1	4.3	3.3	3.4	3.8	4.0	-1.2
Apr.	6.0	6.6	1.1	13.7	5.3	3.0	3.0	1.3	3.9	-0.8
May	6.7	7.3	-1.5	17.5	6.3	3.3	3.0	0.3	4.2	0.1
June	6.5	7.1	-1.1	16.1	6.2	3.2	3.0	0.2	4.1	0.4
July ^(p)	6.5	7.0	-2.2	16.5	6.4	3.3	3.0	0.2	4.2	0.9

Source: ECB.

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

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

3) Including non-profit institutions serving households.

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

5 Money and credit

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

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

	MFI liabilities						MFI assets			
	Central government holdings ²⁾	Longer-term financial liabilities vis-à-vis other euro area residents					Net external assets	Other		
		Total	Deposits with an agreed maturity of over 2 years	Deposits redeemable at notice of over 3 months	Debt securities with a maturity of over 2 years	Capital and reserves		Total		
								Repos with central counterparties ³⁾	Reverse repos to central counterparties ³⁾	
1	2	3	4	5	6	7	8	9	10	
Outstanding amounts										
2017	342.7	6,771.1	1,967.5	59.8	2,017.5	2,726.2	933.7	316.3	143.5	92.5
2018	379.3	6,818.7	1,940.7	56.1	2,099.1	2,722.8	1,033.7	443.4	187.0	194.9
2019	350.3	7,062.0	1,946.5	50.1	2,156.1	2,909.3	1,459.9	429.9	178.9	187.2
2019 Q3	388.0	7,101.1	1,948.1	57.2	2,162.2	2,933.6	1,484.9	445.6	184.2	198.1
Q4	350.3	7,062.0	1,946.5	50.1	2,156.1	2,909.3	1,459.9	429.9	178.9	187.2
2020 Q1	413.2	7,036.8	1,935.5	47.2	2,121.7	2,932.4	1,573.5	530.7	183.7	196.5
Q2	676.1	7,039.4	1,931.4	43.9	2,080.5	2,983.7	1,555.9	495.6	158.3	173.7
2020 Feb.	417.1	7,130.4	1,942.5	48.2	2,162.2	2,977.4	1,613.8	469.2	177.9	191.2
Mar.	413.2	7,036.8	1,935.5	47.2	2,121.7	2,932.4	1,573.5	530.7	183.7	196.5
Apr.	521.0	7,059.6	1,930.3	46.1	2,125.7	2,957.4	1,568.2	560.6	187.6	203.3
May	598.8	7,046.5	1,934.1	45.1	2,101.8	2,965.4	1,543.7	540.8	196.5	211.4
June	676.1	7,039.4	1,931.4	43.9	2,080.5	2,983.7	1,555.9	495.6	158.3	173.7
July ^(p)	756.4	7,041.6	1,931.5	43.7	2,046.7	3,019.8	1,529.3	556.1	159.8	172.6
Transactions										
2017	39.0	-73.4	-83.5	-6.6	-71.1	87.8	-96.1	-58.2	-61.2	-28.5
2018	40.5	51.2	-37.8	-4.9	16.0	77.9	89.0	32.3	16.2	23.6
2019	-28.2	106.9	-5.3	-3.3	27.5	88.1	310.1	11.1	-2.7	-2.5
2019 Q3	14.6	12.7	-14.6	-1.0	4.8	23.6	93.5	15.8	6.9	7.4
Q4	-37.5	4.3	-1.4	-3.7	-14.3	23.7	-1.0	-29.4	-5.3	-10.9
2020 Q1	63.2	-47.7	-8.9	-2.9	-45.2	9.3	74.3	50.2	4.7	9.3
Q2	263.0	-4.7	-2.3	-3.3	-16.0	16.9	-47.6	10.2	-25.4	-22.8
2020 Feb.	45.0	0.5	-6.8	-0.6	-5.0	12.8	58.2	41.6	6.8	9.0
Mar.	-3.9	-40.8	0.5	-1.0	-42.7	2.4	-27.2	28.2	5.8	5.3
Apr.	107.9	-19.3	-6.0	-1.0	-1.1	-11.1	-62.5	41.9	4.0	6.8
May	77.8	16.4	5.7	-1.0	-8.1	19.6	1.8	-7.0	8.9	8.1
June	77.4	-1.8	-2.0	-1.2	-6.8	8.3	13.2	-24.7	-38.2	-37.6
July ^(p)	17.3	-9.4	-2.1	-0.2	-9.0	1.9	-33.4	78.6	1.5	-1.1
Growth rates										
2017	12.6	-1.1	-4.0	-9.6	-3.4	3.4	-	-	-29.8	-23.5
2018	11.8	0.8	-1.9	-8.1	0.8	2.9	-	-	8.1	7.7
2019	-7.4	1.6	-0.3	-6.0	1.3	3.2	-	-	-1.5	-1.5
2019 Q3	-3.2	1.8	-0.3	-0.7	2.2	3.1	-	-	6.9	11.0
Q4	-7.4	1.6	-0.3	-6.0	1.3	3.2	-	-	-1.5	-1.5
2020 Q1	11.9	0.2	-0.1	-11.1	-2.5	2.8	-	-	-0.3	0.6
Q2	81.3	-0.5	-1.4	-19.6	-3.3	2.5	-	-	-10.9	-9.2
2020 Feb.	4.2	0.9	-0.3	-9.1	-0.7	3.0	-	-	-7.6	-6.9
Mar.	11.9	0.2	-0.1	-11.1	-2.5	2.8	-	-	-0.3	0.6
Apr.	42.3	0.0	-0.4	-13.4	-2.2	2.1	-	-	-6.6	-4.9
May	63.1	0.1	0.0	-15.9	-2.6	2.5	-	-	-0.3	0.2
June	81.3	-0.5	-1.4	-19.6	-3.3	2.5	-	-	-10.9	-9.2
July ^(p)	85.6	-0.6	-0.1	-20.2	-4.1	2.2	-	-	-16.6	-16.3

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	
2016	-1.5	-1.7	0.0	0.2	0.1	0.7
2017	-1.0	-1.4	0.1	0.2	0.1	1.0
2018	-0.5	-1.0	0.1	0.2	0.3	1.4
2019	-0.6	-1.0	0.1	0.0	0.2	1.0
2019 Q2	-0.7	.	.	.	.	1.1
Q3	-0.8	.	.	.	.	0.9
Q4	-0.6	.	.	.	.	1.0
2020 Q1	-1.0	.	.	.	.	0.6

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	
	1	2	3	4	5	6	7	8	9	10	11	12	13
2016	46.2	45.7	12.6	13.0	15.3	0.5	47.7	44.1	10.0	5.3	2.1	22.7	3.6
2017	46.2	45.8	12.8	13.0	15.2	0.4	47.2	43.4	9.9	5.3	1.9	22.5	3.8
2018	46.5	46.0	13.0	13.0	15.2	0.5	47.0	43.3	9.9	5.3	1.8	22.3	3.7
2019	46.5	46.0	13.0	13.1	15.1	0.5	47.1	43.4	9.9	5.3	1.6	22.5	3.7
2019 Q2	46.4	46.0	12.9	13.1	15.1	0.5	47.1	43.4	9.9	5.3	1.8	22.4	3.7
Q3	46.4	45.9	12.9	13.1	15.1	0.5	47.2	43.4	9.9	5.3	1.7	22.5	3.8
Q4	46.5	46.0	13.0	13.1	15.1	0.4	47.1	43.4	9.9	5.3	1.6	22.5	3.7
2020 Q1	46.6	46.1	13.1	13.0	15.1	0.5	47.6	43.9	10.0	5.4	1.6	22.9	3.8

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	
	1	Currency and deposits	Loans	Debt securities	Resident creditors	Non-resident creditors	7	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
		2	3	4	5	MFIs		6	8	9	10	11	12	13	14
2016	90.0	3.3	15.7	71.0	47.5	30.9	42.5	9.4	80.7	17.9	29.8	42.3	87.9	2.1
2017	87.8	3.2	14.6	70.0	48.3	32.2	39.5	8.6	79.1	16.4	29.0	42.3	86.0	1.8
2018	85.8	3.1	13.8	68.9	48.1	32.5	37.8	8.0	77.8	16.0	28.4	41.3	84.4	1.5
2019	84.1	3.0	13.1	68.0	45.5	30.7	38.6	7.7	76.4	15.7	28.0	40.4	82.8	1.3
2019 Q2	86.2	3.1	13.4	69.7	.	.	.	.	.	.	.	.	.	.
Q3	85.9	3.2	13.3	69.3	.	.	.	.	.	.	.	.	.	.
Q4	84.1	3.0	13.1	68.0	.	.	.	.	.	.	.	.	.	.
2020 Q1	86.3	3.1	13.4	69.8	.	.	.	.	.	.	.	.	.	.

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 ¹⁾

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

	Change in debt-to-GDP ratio ²⁾	Primary deficit (+)/surplus (-)	Deficit-debt adjustment							Interest-growth differential	Memo item: Borrowing requirement	
			Total	Transactions in main financial assets				Revaluation effects and other changes in volume	Other			
				Total	Currency and deposits	Loans	Debt securities					Equity and investment fund shares
	1	2	3	4	5	6	7	8	9	10	11	12
2016	-0.8	-0.7	0.2	0.3	0.3	-0.1	0.0	0.1	0.0	-0.1	-0.3	1.6
2017	-2.3	-1.0	-0.1	0.4	0.5	0.0	-0.2	0.1	-0.1	-0.4	-1.2	0.9
2018	-1.9	-1.4	0.4	0.5	0.4	-0.1	0.0	0.2	0.0	-0.1	-0.9	0.8
2019	-1.7	-1.0	0.1	0.2	0.0	0.0	0.1	0.2	-0.2	0.1	-0.8	0.9
2019 Q2	-1.0	-1.1	0.8	0.7	0.7	-0.1	0.0	0.2	0.1	0.0	-0.8	1.4
Q3	-1.2	-0.9	0.6	0.3	0.2	-0.1	0.0	0.2	-0.1	0.3	-0.9	1.4
Q4	-1.7	-1.0	0.1	0.2	0.0	0.0	0.1	0.2	-0.2	0.1	-0.9	0.9
2020 Q1	-0.1	-0.6	0.5	0.7	0.5	0.0	0.0	0.1	-0.2	0.1	-0.1	1.8

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

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

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

6.5 Government debt securities ¹⁾

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

	Debt service due within 1 year ²⁾					Average residual maturity in years ³⁾	Average nominal yields ⁴⁾						
	Total	Principal		Interest			Outstanding amounts				Transactions		
		Maturities of up to 3 months	Maturities of up to 3 months	Total	Floating rate		Zero coupon	Fixed rate	Maturities of up to 1 year	Issuance	Redemption		
	1	2	3	4	5	6	7	8	9	10	11	12	13
2017	12.9	11.2	4.2	1.7	0.4	7.1	2.4	1.1	-0.2	2.8	2.3	0.3	1.1
2018	12.6	11.1	3.7	1.5	0.4	7.3	2.3	1.1	-0.1	2.7	2.5	0.4	0.9
2019	12.2	10.8	3.6	1.4	0.3	7.5	2.1	1.3	-0.1	2.4	2.1	0.3	1.1
2019 Q2	12.5	11.0	3.6	1.4	0.4	7.4	2.3	1.3	0.0	2.6	2.3	0.5	0.9
Q3	12.7	11.3	3.8	1.4	0.4	7.4	2.2	1.3	-0.1	2.6	2.3	0.3	1.0
Q4	12.2	10.8	3.6	1.4	0.3	7.5	2.1	1.3	-0.1	2.4	2.1	0.3	1.1
2020 Q1	12.3	11.0	4.1	1.3	0.3	7.5	2.0	1.2	-0.2	2.4	1.9	0.1	1.0
2020 Feb.	12.0	10.7	4.1	1.3	0.3	7.6	2.1	1.2	-0.1	2.4	1.9	0.2	1.1
Mar.	12.3	11.0	4.1	1.3	0.3	7.5	2.0	1.2	-0.2	2.4	1.9	0.1	1.0
Apr.	13.1	11.8	4.5	1.3	0.3	7.5	2.0	1.2	-0.2	2.3	2.1	0.1	1.1
May	14.1	12.7	4.2	1.4	0.4	7.4	2.0	1.2	-0.2	2.4	2.1	0.1	1.1
June	14.7	13.3	4.7	1.4	0.4	7.5	2.0	1.1	-0.2	2.3	2.0	0.1	0.9
July	14.5	13.2	4.6	1.4	0.4	7.5	1.9	1.1	-0.2	2.3	2.0	0.1	1.0

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 1	Germany 2	Estonia 3	Ireland 4	Greece 5	Spain 6	France 7	Italy 8	Cyprus 9	
Government deficit (-)/surplus (+)										
2016	-2.4	1.2	-0.5	-0.7	0.5	-4.3	-3.6	-2.4	0.3	
2017	-0.7	1.2	-0.8	-0.3	0.7	-3.0	-2.9	-2.4	2.0	
2018	-0.8	1.9	-0.6	0.1	1.0	-2.5	-2.3	-2.2	-3.7	
2019	-1.9	1.4	-0.3	0.4	1.5	-2.8	-3.0	-1.6	1.7	
2019 Q2	-1.6	1.7	-0.9	0.4	0.6	-2.8	-2.9	-2.2	-4.9	
Q3	-1.8	1.4	-1.0	0.5	0.6	-2.7	-3.2	-2.0	2.2	
Q4	-1.9	1.5	-0.3	0.4	1.5	-2.8	-3.0	-1.6	1.7	
2020 Q1	-2.7	1.3	-1.3	0.0	1.0	-3.3	-3.5	-2.4	2.2	
Government debt										
2016	104.9	69.2	10.2	73.8	178.5	99.2	98.0	134.8	103.4	
2017	101.7	65.3	9.3	67.7	176.2	98.6	98.3	134.1	93.9	
2018	99.8	61.9	8.4	63.5	181.2	97.6	98.1	134.8	100.6	
2019	98.6	59.8	8.4	58.8	176.6	95.5	98.1	134.8	95.5	
2019 Q2	102.4	61.1	9.1	63.0	179.5	98.6	99.2	137.7	107.0	
Q3	102.2	61.1	9.0	61.3	178.1	97.5	100.1	137.0	97.9	
Q4	98.7	59.8	8.4	57.3	176.6	95.5	98.1	134.8	95.5	
2020 Q1	104.4	61.3	8.9	59.1	176.7	98.8	101.2	137.6	97.7	
	Latvia 10	Lithuania 11	Luxembourg 12	Malta 13	Netherlands 14	Austria 15	Portugal 16	Slovenia 17	Slovakia 18	Finland 19
Government deficit (-)/surplus (+)										
2016	0.2	0.2	1.8	1.0	0.0	-1.5	-1.9	-1.9	-2.5	-1.7
2017	-0.8	0.5	1.3	3.3	1.3	-0.8	-3.0	0.0	-1.0	-0.7
2018	-0.8	0.6	3.1	1.9	1.4	0.2	-0.4	0.7	-1.0	-0.9
2019	-0.2	0.3	2.2	0.5	1.7	0.7	0.2	0.5	-1.3	-1.1
2019 Q2	-1.4	0.0	4.0	1.0	1.5	0.3	0.1	0.5	-1.0	-1.3
Q3	-1.1	-0.3	3.2	0.5	1.3	0.3	-0.1	0.6	-1.1	-1.9
Q4	-0.2	0.3	2.2	0.5	1.7	0.7	0.2	0.5	-1.3	-1.0
2020 Q1	-0.6	-0.4	1.2	-1.7	1.5	0.4	-0.1	-0.8	-1.9	-1.1
Government debt										
2016	40.9	39.7	20.1	55.5	61.9	82.9	131.5	78.7	52.0	63.2
2017	39.3	39.1	22.3	50.3	56.9	78.3	126.1	74.1	51.3	61.3
2018	37.2	33.8	21.0	45.6	52.4	74.0	122.0	70.4	49.4	59.6
2019	36.9	36.3	22.1	43.1	48.6	70.4	117.7	66.1	48.0	59.4
2019 Q2	37.5	35.9	20.3	45.5	51.0	71.7	120.7	67.7	48.7	61.5
Q3	37.1	35.7	20.0	43.2	49.3	71.0	120.2	68.1	48.5	60.1
Q4	36.9	36.2	22.1	42.9	48.7	70.3	117.7	66.1	48.0	59.2
2020 Q1	37.1	33.2	22.3	44.4	49.5	72.8	120.0	69.6	49.3	64.2

Source: Eurostat.

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