I. The macroeconomic impact of the COVID-19 pandemic in the euro area

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Abstract: The COVID-19 pandemic brought about a sharp contraction in economic activity in 2020, through an exogenous shock that hit the euro area and the global economy. This section discusses the macroeconomic impact of the COVID-19 pandemic in the euro area and highlights how uneven the contraction of economic activity has been across sectors, with a much stronger negative impact on activities requiring physical interaction. It also analyses how the unprecedented policy response has cushioned the socio-economic impact of the shock. However, there remains significant uncertainty over the long-term economic impact of COVID-19 and potential subsequent damages to potential GDP through capital, technology and labour market channels. On the upside, the current crisis may help to speedup the digital and green transitions. Some policy implications for the euro area are also presented.

I.1. Introduction

The COVID-19 pandemic and the lockdown measures that restricted economic activity to combat the spread of the virus led to a sudden and deep recession in 2020. There was an early broad consensus that the shock would be largely temporary and an expectation that the recovery could be swift following a 'V-shape'. However, the health crisis turned out to be more persistent than initially expected, raising concerns around its medium-term impact. The pandemic and the lockdown measures translated into a combination of shocks (Box I.1) that implied a large negative output gap. More than one year after the pandemic hit Europe, the economic situation is still uncertain. Although there are reasons for optimism, the longer the pandemic lasts, the more likely it is that the economy might suffer long-lasting damages.

This section looks at the macroeconomic impact of the COVID-19 crisis in the euro area. First, it summarises the main macroeconomic developments following the outbreak of the pandemic. The contraction of economic activity has been uneven across sectors, as COVID-19 has had a much stronger negative impact on activities that require physical interaction. It then considers what we can expect over the medium term. As the health situation improves and lockdown measures are lifted, the economy will recover. The possibility of scarring is however real, and the main channels through which this could occur are discussed together with the potential benefits from the acceleration of the digital and green transitions. Finally, this section translates the evidence presented into initial policy implications for the euro area.

I.2. Main macroeconomic developments

Following the COVID-19 pandemic, the euro area economy entered a deep recession in the second quarter of 2020. After an initial rebound in the third quarter, economic activity declined in the rest of the year due to the intensification of the health crisis in the autumn. Overall, the euro area economy contracted by 6.6% in 2020, an impact significantly larger than experienced during the Great Recession (Graph I.1) or any other downturn since WWII. In comparison, in the United States, real GDP fell less in Q2, leading to an overall contraction of 3.5% in 2020. ([1])

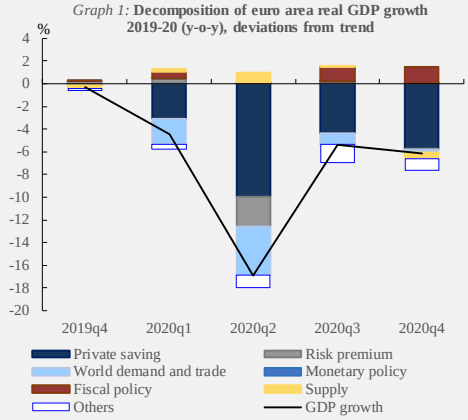
The euro-area economy is expected to recover faster than after the Great Recession ([2]), with GDP back to its pre-crisis level by 2022Q1. Still, the recovery is set to be uneven across Member States. According to the Commission's Spring 2021 Economic Forecast, annual GDP growth increases by around 4.3% in 2021 and 4.4% in 2022, on the back of the vaccination campaign roll-out that will allow the removal of restrictions and therefore rising mobility. This rebound will also be thanks to the continued policy support of Member States and EU, which includes NextGenerationEU – and its centrepiece the Recovery and Resilience Facility (RRF), which can support the recovery and increase the euro area's resilience to future shocks ([3]).

([1]) See IMF (2021), Europe Regional Economic Outlook, April 2021.
([2]) It took about 7 years before GDP returned to its 2008 level after the global financial crisis.
([3]) These projections are subject to significant uncertainty and elevated risks, mostly linked to how the pandemic evolves and the success of vaccination campaigns.

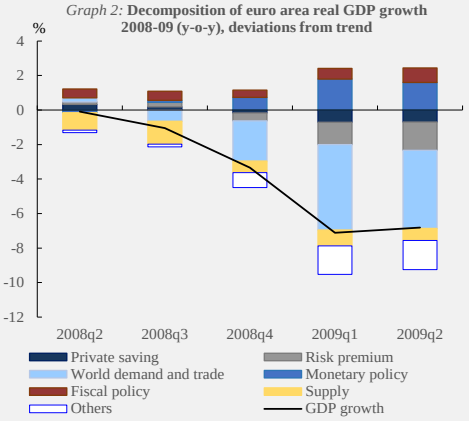
Box I.1: A decomposition of economic growth in the euro area in 2020

This box provides an economic assessment of the COVID-19 pandemic through the lens of the European Commission's Global Multi-Country Model (GM), a structural macro-economic model focusing on the euro area ([1]). The discussion focuses on the 2020 recession in the euro area and compares it to the global financial crisis. To capture important demand and supply effects of the pandemics and the related policy response, the analysis augments the GM model with a 'forced savings' shock (lockdowns, social distancing), labour hoarding (short-time work), and liquidity-constrained firms.

Graph 1: **Decomposition of euro area real GDP growth 2019-20 (y-o-y), deviations from trend**



Graph 2: **Decomposition of euro area real GDP growth 2008-09 (y-o-y), deviations from trend**



This analysis finds that the recession associated with the pandemic in 2020 was largely driven by the collapse of domestic demand, especially private consumption, in the first half of 2020, followed by a partial recovery in the second half of the year. By contrast, global demand and trade-related factors played a dominant role in shaping the profile of the global financial crisis and the recession. Household savings were the single most important driver of the 2020 recession. 'Forced savings' shaped the profile of household savings in 2020 and were quantitatively greater than the increase in precautionary saving, which is also included in 'private savings' (Graph 1). The increase in 'forced savings' reflects lower consumption due to lockdown measures and sectoral shutdowns. By contrast, the increase in 'precautionary saving' is more persistent and arguably linked to elevated (income) uncertainty.

The pandemic's impact on 'world demand and trade' was a second important driver of GDP growth in 2020, with falling export demand on the downside and some moderating effect from an increase in home bias also on the euro-area side. A third relevant element in the fall and (partial) recovery of activity in 2020 were shocks to investment demand ('risk premium').

'Supply factors' play only a minor role in explaining the 2020 recession. The group includes shocks to productivity (output divided by effective factor input) and to price and wage mark-ups. Closing entire sectors of the economy, which leads to a decline in output and factor inputs alike, would not (necessarily) show up as a productivity shock. Instead, the one-sector model attributes the sectoral shutdowns to 'forced savings', although, more generally, they can also be portrayed as tightening supply constraint. Without further knowledge about consumers' intentions, labelling 'forced savings' as either demand or supply shock is largely a question of language rather than a matter of substance. Regarding macroeconomic policies, the estimates in Graph 1 point to a stabilising impact of discretionary fiscal measures in the second half of 2020. This complements the endogenous response of automatic fiscal stabilisers in the tax and benefit system,

([1]) The Global Multi-Country (GM) DSGE model was developed by the Directorate-General for Economic and Financial Affairs and the Joint Research Centre of the European Commission. It uses a two-region configuration with the euro area and the rest of the world (RoW), estimated for the period from 1999Q1 to 2020Q4. For a detailed description of the GM model see Albonico, A., L. Calès, R. Cardani, O. Croitorov, F. Di Dio, F. Ferroni, M. Giovannini, S. Hohberger, B. Pataracchia, F. Pericoli, P. Pfeiffer, R. Raciborski, M. Ratto, W. Roeger and L. Vogel (2019). 'The Global Multi-Country Model (GM): An Estimated DSGE Model for the Euro Area Countries'. European Economy Discussion Paper No. 102.

(Continued on the next page)

Box (continued)

which is not a policy shock ([2]). The lack of a stabilising contribution from monetary policy shocks (via the Taylor rule) reflects the binding effective lower bound constraint on nominal interest rates in the euro area in 2020 ([3]).

Negative shocks to 'world demand and trade' (including appreciation pressure on the euro) and investment demand (elevated 'risk premium'), by comparison, were the main drivers of the global financial crisis and recession (Graph 2). Shocks to private consumption ('private saving') played a much lesser role, instead. At the same time, the expansionary monetary policy in late 2008 and early 2009 and fiscal stimulus had a stabilising impact on the economy.

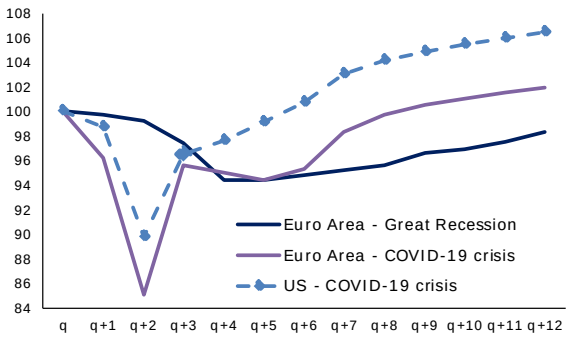
The dominant role of the 'forced saving' shock as driver of the 2020 recession would suggest a rather rapid recovery after the easing or lifting of the restrictions on contact-intensive demand and supply ([4]). However, the prospect of recovery must also take into account the likely persistence, or possible resurgence, of the underlying health crisis. The pandemic could last longer than currently expected, increasing the risk of permanent scarring or further divergences across Member States (see Section 5).

([2]) Fiscal shocks, as mentioned in the text, capture only discretionary policy measures with immediate impact on the government balance. They do not include the expansionary impact of automatic stabilisers (operating mainly through the tax and benefit system) in the 2020 recession, which are captured by the endogenous response of fiscal variables to changes in tax bases and spending targets rather than by fiscal shocks. The fiscal shocks also exclude measures such as government guarantees to firms to the extent that these guarantees have no immediate impact on the government budget. Finally, the role of fiscal shocks in the decomposition is also dampened by the dominant role of transfers for which the fiscal multiplier is relatively small compared to the short-term multiplier on government consumption and investment. In fact, euro area data show a decline in government purchases and public investment in 2020Q2, in combination with higher transfers. This change in the composition of the primary deficit lowers the short-term fiscal multiplier.

([3]) Contrary to the shock to short-term policy rates in the Taylor rule, unconventional monetary policy enters the model as part of the estimated savings, risk premium and exchange rate shocks. See, e.g., Burgert, M., W. Roeger, J. Varga, J. in 't Veld and L. Vogel (2020). 'A Global Economy Version of QUEST: Simulation Properties'. European Economy Discussion Papers No. 126.

([4]) A return to zero of the 'forced saving' shock implies a return of consumption demand to pre-pandemic patterns. Households do not immediately spend their accumulated additional savings when the economy re-opens ('pent-up demand'). Instead, the modelling assumes that additional household savings translate into stronger consumption gradually in the medium and longer term.

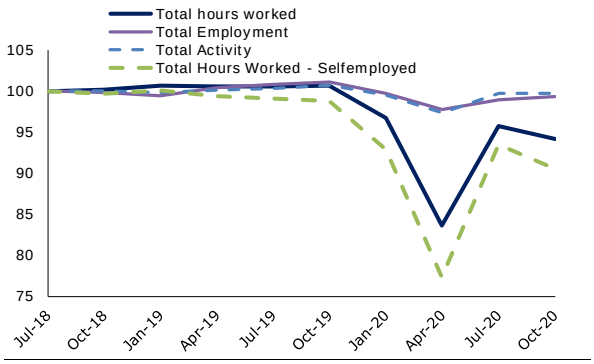
Graph I.1: **Recovery in real GDP compared to previous crises**



(1) Real GDP (on a seasonally adjusted basis) in Commission Spring 2021 Economic Forecast (index, 2019Q4 = 100). Recession 2008 - 2009 (index, 2008Q1 = 100).
Source: Commission Spring Economic 2021 Forecast.

The euro-area labour market has been remarkably resilient. While total working hours dropped by more than 15 pps. (more than 20 pps. for self-employed) over the period 2019Q4-2020Q2, in line with the decline in GDP, headcount employment dropped by only around 3 pps (Graph I.2). This is considerably less than in the United States, where employment fell by around 10 pps. over the same period (before partially recovering in the following quarters) despite the smaller contraction of GDP.

Graph I.2: **Hours worked, total employment and activity (20 - 64)**



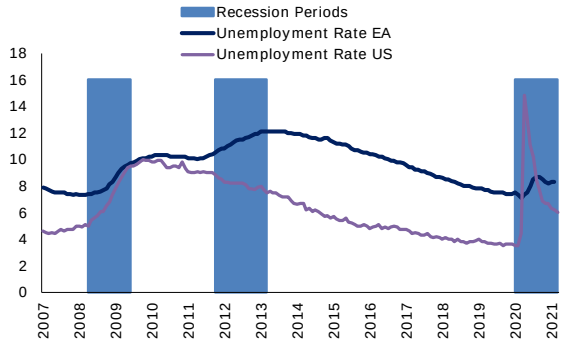
(1) Index, 2018Q3 = 100.
Source: Eurostat, Labour Force Survey.

The reasons for the relatively limited scale of job losses in the euro area include the large policy support measures that have been put in place to preserve employment (such as short-time work

schemes), but also the employment protection regulations in the euro-area Member States, which in some cases have been tightened, and the overall expectation that the economic shock would be short-lived. By 2020Q4, despite lockdown measures being tightened again in autumn 2020, working hours and employment had recovered around two thirds and one third respectively of the initial contraction, as households and firms seemed to have partially adapted to shutdowns and lockdown measures.

So far, the euro area unemployment rate appears to have been only mildly affected by the pandemic. The unemployment rate reached 8.7% in August 2020 (1.2 pps. above pre-pandemic levels) and stabilised after that at a slightly lower level. This increase remains well below what would be implied by the historical relationship between unemployment and GDP growth ([4]). Despite the stronger GDP contraction, the unemployment rate in the euro area fluctuated markedly less than in the United States (Graph I.3) ([5]).

Graph I.3: **Unemployment rate in the euro area and the US**

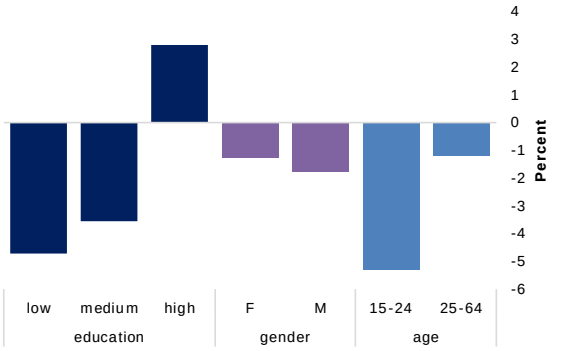


(1) Recession periods correspond to the periods of recession identified by the Centre for Economic Policy Research.
Source: Eurostat and U.S. Bureau of Economic Analysis, retrieved from FRED, Federal Reserve Bank of St. Louis.

An important feature of the impact on the labour market was that, especially in the first phase of the pandemic, companies under lockdown were not hiring. The result was that job-seekers got discouraged and dropped out of the job market, going straight into inactivity ([6]), as revealed by broader measures of labour market slack. Over time, once the gradual relaxation of the restrictions enabled people to resume looking for work, registered unemployment started to slowly increase.

The economic impact of the COVID-19 pandemic has been uneven across population groups. Employment fell most among low-skilled workers (Graph I.4), as they are more likely to work in jobs that require physical proximity, and less likely to be able to telework. Young people and those on temporary contracts were particularly hit by the broad halt in recruitment. The groups of workers most affected already had lower and less stable incomes prior to the pandemic, thus exacerbating the risk of inequalities ([7]). The gender impacts are less clear. While employment losses have been similar for men and women, preliminary data show that women have carried a much heavier burden of the additional childcare responsibilities created by school closures. It is unclear whether this will have ramifications beyond the crisis.

Graph I.4: **Change in employment, persons**
(between 2019 and 2020)



(1) Annual data are averages over 4 quarters. Results are unchanged with the difference between 2020Q4 and 2019Q4.
Source: Eurostat Labour Force Survey.

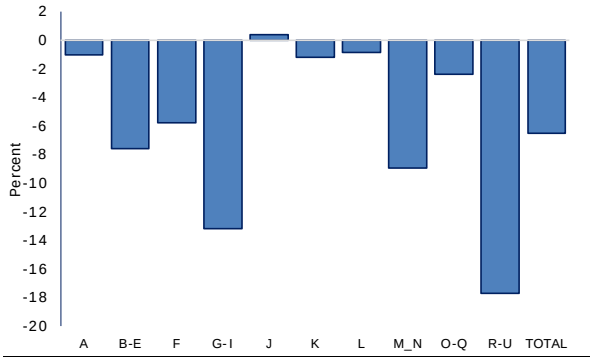
I.3. Sectoral impact of the COVID-19 crisis

The contraction of economic activity has been uneven across sectors. Businesses relying on close physical interactions either in production or in the delivery of their goods and services have experienced significant adverse shocks to turnover

([4]) See European Commission (2020), 'Labour Market and Wage Development in Europe'.
([5]) The presence of short-time work schemes implied that, in most cases, workers were not considered unemployed. In the EU, workers in temporary lay-off are considered employed if they have an assurance to return to work within 3 months or receive at least 50% of their salary. Conversely, the US classifies all persons on layoff as unemployed. Sorrentino, C. (2020), 'International unemployment rates: how comparable are they?', BLS.
([6]) During the first half of 2020, the number of individuals classified as economically inactive increased by about 4 million (up by 9.3% from 2019 Q4), reaching nearly 23% of the 20-64 age group.
([7]) See also ECB Economic Bulletin, Issue 8/2020.

since the beginning of the crisis, as they had to shut down or change the nature of their operations (e.g. tourism, non-essential offline retail, arts and entertainment) (Graph I.5). Moreover, cyclically-sensitive sectors like the automotive industry experienced strong reductions in sales.

Graph I.5: **Change in sectoral value added**
(between 2019 and 2020)

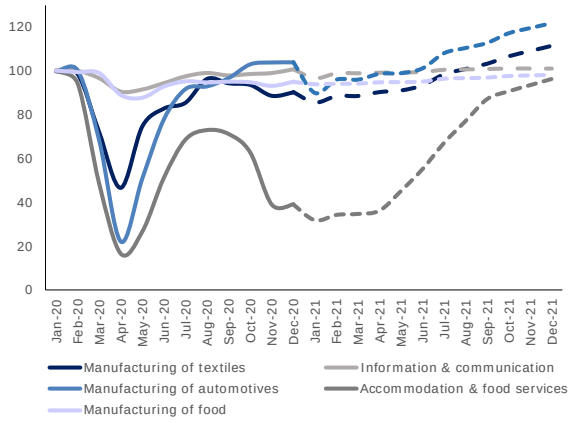


(1) A: Agriculture; B-E: Industry; F: Construction; G-I: Trade & tourism; J: IT; K: Finance and insurance; L: Real estate; M-N: Professional and business services; O-Q: Public sector; R-U: Arts & entertainment; TOTAL: All sectors.
Source: Eurostat, national accounts data.

In contrast, sectors producing digital goods ([8]) or essential goods such as food, saw a rather modest reduction in turnover. Finally, sectors such as IT, finance and insurance, and the public sector were also relatively shielded from the crisis, partly owing to their high proportion of teleworkable jobs ([9]).

All sectors rebounded over the summer of 2020. The recovery was subdued in a subset of sectors (e.g. accommodation and food services) because of the remaining restrictions, in particular on (international) travel (Graph I.6). In other sectors, such as the automotive industry, consumption appears to have been simply postponed as sales increased strongly during the summer, reaching above the pre-crisis level on the back of pent-up demand being unleashed. The prospects for recovery over 2021 differ across sectors. Estimations point to a protracted impact over the first half of 2021 and a gradual recovery towards the end of the year (Graph I.6) ([10]). The strength of the recovery is expected to differ across sectors, with manufacturing industries generally recovering faster than services, as was the case after the first wave of the pandemic in summer 2020 ([11]).

Graph I.6: **Actual and predicted turnover**
(Index, January 2020 = 100)



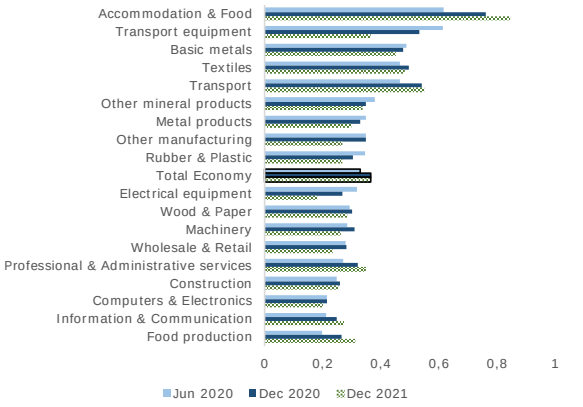
(1) Euro Area turnover-weighted average for all countries except CY and MT. Monthly turnover from Eurostat until Dec. 2020. Predictions (dash) are based on a simulation at the sector level to estimate the not-yet-observed levels of activity and the pattern of turnover over 2021. See footnote (10).
Source: Eurostat STS, EU Commission 2021 Winter Economic Forecast and Business & Consumer Survey, OECD Economic Outlook and ICIO Tables, Google Mobility, University of Oxford Government Response Tracker, Our World in Data, LFS, O*NET and DG ECFIN elaborations.

The crisis had a severe impact on the corporate sector. Companies operating in the sectors most affected by the pandemic suffered from the largest financial pressures (Graph I.7). Firms have so far relied heavily on their cash buffer to make it through the crisis. Yet, due to the large fall in revenue, around one third of all euro-area businesses are currently estimated to have accumulated losses beyond their cash buffers and

([8]) Under Manufacturing of Computers & Electronics in Graph I.7.
([9]) The euro-area aggregate hides wide cross-country variation in impact on sectoral turnover. Spanish tourism, for instance, saw a 95% reduction in turnover in April 2020, whereas the sector retained almost half of its sales in the Netherlands.
([10]) Sectoral turnover estimations are obtained using the methodology developed in Archanskaia, E., Nikolov, P. and W. Simons (2021), 'The sectoral nature of the COVID-19 shock: a novel approach to quantifying its economic impact', *forthcoming*. See also European Commission (2021), 'The Sectoral Impact of the COVID-19 crisis'. Technical note for the Eurogroup. This approach allows nowcasting and forecasting sectoral turnover by leveraging the diversity of data sources at the sectoral and macroeconomic level that have become available to track the diffusion of COVID-19. The set of variables includes economic growth, epidemiological information, business and consumer confidence, mobility, government stringency and economic support measures as well as variables controlling for GVC participation and sectoral teleworkability. The presented scenario assumes restrictions are in place until April-May 2021 and gradually loosened to reach pre-crisis levels by the end of 2021. This framework was used in the complementary QREA Section 'Cross-country differentiated real macro-economic effects of the COVID-19 pandemic'.
([11]) There is uncertainty surrounding the impact of the third wave of the pandemic although the difference between the second and third wave is likely to be limited (at aggregate euro-area level) as restrictions remained high throughout most of Q1-2021.

in the absence of additional external sources of financing, they would be in a state of illiquidity ([12]). The aggregate data hide considerable heterogeneity across sectors, with the incidence of financial distress mimicking the impact on turnover presented above. The substantial reduction in turnover in manufacturing of transport equipment translates into considerable financial distress across automotive producers, with more than 60% estimated to experience liquidity issues during the first wave. Manufacturers of digital goods (computers & electronics), on the other hand, managed to keep losses within bounds, with only one fifth of the producers requiring additional external funding to cover losses.

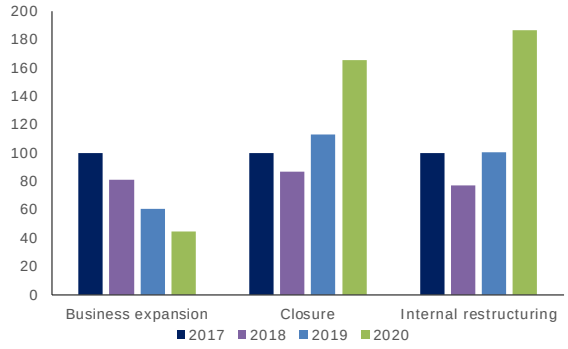
Graph I.7: **Share of euro-area firms in financial distress**



(1) Weighted euro-area average, excluding Cyprus, Ireland, Malta and Netherlands due to lack of data. A firm is financially distressed if it depletes its cash reserves, after relying on support from short-time work schemes.
Source: ORBIS, Eurostat and own elaborations.

Prospects for an easing of the pressure on euro-area companies vary across sectors. Simulations show that firms in accommodation and food services are likely to continue to experience liquidity distress throughout 2021 because of weak demand and remaining restrictions ([13]). In contrast, while the share of distressed firms in the transport equipment sector was similar during the first wave at around 60%, automotive producers have benefitted from the release of pent-up demand during the second half of 2020, and are projected to further improve their financial situation towards the end of 2021. Indeed, the share of illiquid automotive manufacturers would decrease to less than 40% in the presented scenario of sectoral turnover evolution as presented in Graph I.6 that assumes a gradual return to more normal conditions by the end of 2021, implying that one fifth of producers in this sector would restore their cash position thanks to the renewed demand.

Graph I.8: **Largest changes in announcements of restructuring events**
(Index, 2017=100)



(1) The database gathers restructuring events based on announcements in national media sources.
Source: Eurofound restructuring monitor.

Remarkably, there were fewer insolvencies in the corporate sector in 2020. Since the COVID-19 crisis began in 2020, there has been a downward trend in bankruptcies, and the rise in credit risk triggered by the crisis has not translated into an increase in non-performing loans in the corporate sector. By contrast, during the global financial crisis there was a rapid upsurge in bankruptcy filings. This difference is largely due to policy measures, such as public credit support and moratoria, which helped to stave off bankruptcies, but it is also due to capacity constraints on administrators and courts caused by the pandemic. As a result, a backlog of pent-up insolvencies is likely to emerge once these constraints diminish and policy support is reduced. This is especially the case in sectors that rely on face-to-face contacts where restrictions continue to weigh heavily on revenues. Although some metrics of firms in financial trouble (e.g. non-performing loans) have so far been benign, survey evidence (Graph I.8) suggests that euro area firms carried out, or were about to carry out, significantly

([12]) Results on the quantification of financial distress are taken from Archanskaia et al. (2021), who build on the methodology proposed by Schivardi F. and G. Romano (2020). 'A simple method to estimate firms' liquidity needs during the COVID-19 crisis with an application to Italy', Covid Economics, Issue 35, p. 51-69. See also European Commission (2020). 'Identifying Europe's recovery needs'. Staff Working Document 98.

([13]) This is consistent with Arnold N. and V. Nguyen, IMF (2020), 'Five Charts on the Euro Area's Post-COVID-19 Recovery and Growth', IMF European Department, December.

more restructuring and closures and fewer business expansions in 2020 than they had since 2017 ([14]).

I.4. Policy response

There is broad consensus that support measures have played an important role in stabilising the euro-area economy. The policy response at EU and Member State level has cushioned the impact of the COVID-19 shock and the lockdown measures. This is also supported by the internal quantitative assessment presented in Box I.1, which highlights the contribution of discretionary fiscal policy to GDP growth during the COVID-19 crisis and during the global financial crisis ([15]).

The increase in government deficits in response to the COVID-19 crisis has been sizeable and synchronised. In 2020, Member States have provided total fiscal support estimated at above 6 ½% of GDP. The headline deficit increased from 0.6% of GDP in 2019 to 7.2% in 2020, on the back of both automatic stabilisers and discretionary budgetary measures. Together with the contraction of GDP, this resulted in a strong increase in public debt-to-GDP ratios, reaching on aggregate around 98% of GDP in 2020. In addition, liquidity measures (without a direct and immediate budgetary impact) accounted for almost 20% of GDP in 2020.

Unprecedented EU actions have supported and complemented national fiscal policy. Measures at EU level have facilitated national responses including the activation of the 'General Escape Clause' of the Stability and Growth Pact, and the use of the temporary framework for State aid. In addition, EU actions, in particular the creation of the SURE ([16]) instrument and, subsequently, the launch of Next Generation EU (NGEU), on top of an accommodative monetary policy, helped to keep favourable financing conditions. NGEU, and in particular the Recovery and Resilience Facility (RRF), part of NGEU, will support Member States' investments and reforms and is expected to have positive effects both on growth and debt levels, while contributing to the green and digital transitions ([17]). While the RRF is coming on stream in the course of 2021, its unprecedented nature and size has already likely had important confidence effects ([18]).

Monetary and supervisory policy actions have also played an important role in shielding the euro-area economy. The ECB's monetary policy response mainly consisted of additional asset purchases, ample liquidity provision, and easing of collateral standards, while maintaining the deposit facility rate at a record low of -0.5% (since September 2019). A key initiative consisted in the new pandemic emergency purchase programme (PEPP). The PEPP was set up in March 2020 and gradually expanded its size to EUR 1.850 trillion ([19]). It played an important role in stabilising financial markets in the early stages of the crisis and in keeping favourable financing conditions for sovereign and through them to the whole economy. The risk of a credit crunch was also significantly mitigated through the provision of bank funding on very attractive terms through the easing of conditions for the third series of targeted longer-term refinancing operations ([20]). Reflecting these ECB measures, nominal financing conditions, as measured by the composite credit cost indicator (CCCI) ([21]), reached historically low levels at the beginning of 2021, while between January 2020 and February 2021 credit to businesses and households increased by almost 3½%, similar to pre-crisis credit growth. Measures from the European banking supervision and national macro-prudential authorities also supported the lending capacity of banks ([22]).

([14]) By contrast, the latest evidence available from Eurostat (Q1 2021) shows that declarations of bankruptcies fell in 2020 and are still below 2019 levels, despite starting to pick up again.

([15]) See additional explanation in footnote 2 in box 1.

([16]) The European instrument for temporary Support to mitigate Unemployment Risks in an Emergency (SURE).

([17]) For simulations on the impact of the NGEU, see the 2020 Debt Sustainability Monitor and the Autumn 2020 Economic Forecast.

([18]) Credit rating agencies have identified the Next Generation EU agreement as a net supportive factor of Member States' sovereign ratings. See, for example, Fitch ratings. 'EU Recovery Fund Is a Step Towards a More Resilient Eurozone', 2020.

([19]) At the end of March 2021, actual net asset purchases under the PEPP amounted to EUR944 billion.

([20]) In particular, banks could borrow funds at interest rates as low as -1%, on the condition that they continued providing lending to the real economy. The temporary easing of the collateral standards for commercial banks' borrowing from the ECB made it easier for banks to access central bank funding and facilitated access to credit for firms and households.

([21]) The CCCI is a weighted average of interest rates on bank loans and corporate bonds (in case of non-financial corporations).

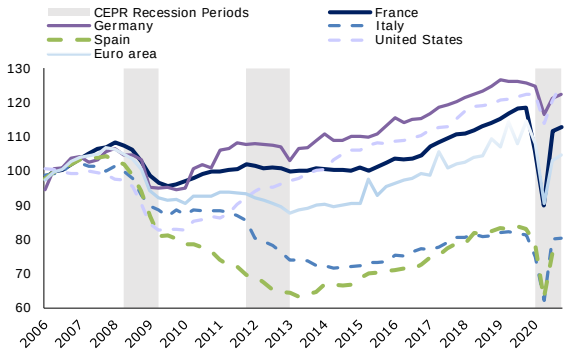
([22]) At euro area level, these measures included temporary regulatory capital relief and supervisory flexibility to the treatment of non-performing loans to allow banks to benefit from support measures by public authorities. National level initiatives included most notably the reduction, or revocation of the Countercyclical capital buffer (CCyB), which requires credit institutions to set aside additional capital during periods of high credit growth.

There have been strong and mutually-reinforcing effects between fiscal and monetary policies. Monetary policy helped to avoid fragmentation in euro-area sovereign debt markets while supporting the fiscal stance by providing additional fiscal space. At the same time, government interventions across euro-area countries reduced the risk of a severe impairment of the transmission of monetary policy, notably via public guarantees to bank loans. The fiscal response also helped to reduce the risk of an increase in funding costs, as the sharper deterioration in macro-financial conditions that would have occurred without fiscal action would have likely led to a surge in sovereign risk premia, as the countries with highest public debt were often also those most severely hit by the crisis.

I.5. Risk of long-term scarring

There are different channels through which the COVID-19 crisis could permanently damage future growth ([23]). 'Capital' scarring could occur as business investments contracted during the pandemic, diminishing the capital stock available and as a result reducing labour productivity and incomes. This was due to a reduction in both demand for investment – as firms become more reticent to invest – and a supply of internal funds for investment. In particular, the negative impact on capital might be larger if the debts accumulated act as a drag on investment and if people expect health emergencies to become more likely ([24]). In the recent past, health crises have had a permanent impact on productivity, through heightened uncertainty and a negative impact on investment ([25]). The global financial crisis already produced long-lasting consequences on investment, resulting in diverging paths in the accumulation of capital across Member States (Graph I.9), which have reduced the resilience of the euro area ([26]). The large COVID-19 shock risks amplifying such patterns while further reducing the economy's resilience and ability to adjust. In addition, cutbacks in investment in intangible assets such as R&D, training, software, data and organisational innovation could also lead to lower total factor productivity growth going forward ('**technology scarring**').

Graph I.9: **Gross fixed capital formation**



(1)Gross fixed capital formation, volume estimates. For each series, the average for 2006=100. Grey bars represent the recession periods in the euro area as defined by the CEPR.
Source: OECD Database.

'Labour scarring' might result from permanent damage being inflicted on human capital. High rates of job losses - without upskilling or reskilling schemes - lead to the destruction of valuable firm and job-specific knowledge. The human capital of younger generations is particularly at risk of permanent scarring. While, in other recessions, this impact may have been somewhat mitigated by staying longer in education, COVID-19 has also significantly disrupted skills formation through school closures and the broad switch to online teaching, which in addition disproportionately hurts children and young people from disadvantaged backgrounds ([27]). The disruptions in learning have also been felt at the level of labour market training. Without strong targeted remedial action, this may result in skills gaps, and therefore less labour market choice and ultimately productivity, as well as lower levels of entrepreneurship in the long-run ([28]).

([23]) See Portes J. (2020), 'The lasting scars of the Covid-19 crisis: Channels and impacts' in VoxEU; Cerra V, A Fatas and S C Saxena (2020), 'The persistence of a COVID-induced global recession', in VoxEU.

([24]) Kozlowski, J, L Veldkamp and V Venkateswaran, 2020, 'Scarring body and mind: the long-term belief-scarring effects of covid-19', NBER WP 27439.

([25]) A World Bank study on four epidemics since 2000 - SARS, MERS, Ebola, and Zika - found that the average lasting impact on labour productivity and output amounted to 4% cumulatively after 3 years. See A. Dieppe (2020), 'Global Productivity: Trends, Drivers, and Policies', Advance Edition, World Bank.

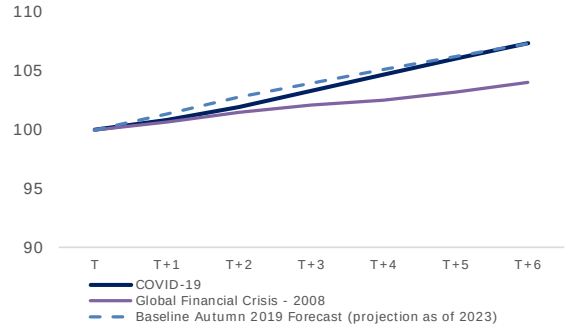
([26]) These diverging paths may also partially reflect different starting positions of countries and correction of prior imbalances.

([27]) See Burgess, S. and H.H. Sievertsen (2020), 'Schools, skills and learning: the impact of Covid-19 on education', VoxEU. Fernarld J, H Li and M Ochse (2021), 'Future output loss from COVID-induced school closures', FRBSF Economic Letter 2021-04.

([28]) Research suggests that students affected by the closures might expect some 3 percent lower income over their lifetimes. For nations, such losses might yield an average of 1.5 percent lower annual GDP for the remainder of the century. See Hanushek, E,

So far, the extensive policy support has prevented more substantial damage to the economy. A key element of the policy support concerned the short-time working schemes which covered around 20% of EU employment or around 30 million workers. Although the number of jobs protected by government measures has fallen sharply since spring 2020, the latest data available suggest that they were still elevated in several euro-area countries at the end of 2020 ([29]), especially in sectors such as tourism and hospitality ([30]).

Graph I.10: **Recovery in euro area, potential GDP levels compared to pre-crisis path and the global financial crisis**



(1) T refers to the respective pre-crisis value of the global financial crisis (i.e. 2008) and the COVID-19 crisis (i.e. 2019). T+1, T+2, etc. refers to 1,2, etc. years after the pre-crisis value. For 'COVID-19' and 'Baseline Autumn 2019 Forecast', the graph is based on realised data for 2020, the short-term forecast by the Directorate-General for Economic and Financial Affairs for 2021 and 2022 and a technical extension of the short-term forecasts for 2023 to 2026. For the global financial crisis of 2008, the graph shows only realised data (2008-2014) i.e. it also includes the effects of the subsequent euro area debt crisis (double-dip recession).
Source: Own estimations.

The negative impact of the COVID-19 pandemic on potential GDP could be limited if policy measures support a smooth transition. An extension of the Commission Spring 2021 Economic Forecast suggests that pandemic-related scarring effects could be contained and relatively short-lived (see the modest gap between the 2019 projection and the 2021 projection in Graph I.10, which closes after half a decade), largely as a result of the robust policy response at the EU and national levels ([31]). In particular, the effect on potential output appears less severe than during the global financial crisis and recession and subsequent debt crisis. The latter was characterised by a protracted decline in investment, with a persistent negative impact on the capital stock and labour demand, in contrast to the more transitory and consumption-driven contraction in 2020, which has less negative (direct) medium-term supply-side effects (see also Box I.1 Graph 1 and Graph I.1). At the same time, given the extraordinary nature of the shock and the protracted recession, concerns that some of its impacts may persist over a longer time horizon, remain. A recent study by the IMF shows that past recessions in advanced economies have had long lasting effects, with GDP on average about 4¾ percent below their pre-crisis trend 3 years after the start of a recession ([32]).

Temporary policy support measures should not be maintained for longer than necessary. Leaving capital and labour (partially) inactive over a protracted time frame, might hamper the processes of reallocation of economic resources ([33]). Given the differential sectorial impact of the crisis, insolvencies and higher unemployment may be concentrated in certain sectors and create skill mismatches. Targeted policy measures should therefore help viable but still-vulnerable firms to adjust their business models. Moreover, the emphasis of the support should gradually be shifted to building up capabilities.

Finally, despite significant downside risks, the crisis has led to an acceleration in a number of structural trends that could bring long-lasting positive effects, including the digital and green transitions. The COVID-19 shock is also a re-allocation shock, which will require an adjustment of business models and economic structures ([34]). The strong boost in digital technology fostered by the COVID-19 crisis could in the longer-term increase productivity, though not all sectors would be affected equally and the effect could take time

Woessmann, Ludger (2020), 'The economic impacts of learning losses', OECD WP No. 225.

([29]) See European Commission (2021), 'SURE: Taking Stock After Six Months'.

([30]) See Financial Times, 17 February 2021, 'European workers' reliance on furlough fuels call for retraining'.

([31]) The model-based projection beyond 2022 illustrates what would happen if the trends emanating from the latest forecasts (up to 2022) for labour, capital and total factor productivity were to persist over a longer time horizon. The forecasts for 2021 and 2022 are significantly affected by the impact of the RRF on investment.

([32]) See IMF (2021), World Economic Outlook, April 2021, Chapter 2 and Bannister G., H. Finger, Y Kido, S Kothari and E Loukoianova (2020), 'Addressing the Pandemic's Medium-Term Fallout in Australia and New Zealand' WP No. 2020/272.

([33]) See Laeven L., G. Schepens and I. Schnabel (2020), 'Zombification in Europe in times of pandemic', 11 October.

([34]) Barrero, J. M., Bloom, N. and S. J. Steven (2020), 'COVID-19 Is Also a Reallocation Shock', *Brookings Papers on Economic Activity* Special Edition (COVID-19 and the Economy), forthcoming.

to materialise ([35]). Some sectors are likely to benefit permanently from the transformations induced by the pandemic. In particular, firms in healthcare, communications, IT and e-commerce have seen market capitalisation increase considerably ([36]). Across sectors, the pandemic has given a strong boost to the digitalisation of work processes, which offers potential for efficiency gains if supported by adequate investment in complementary capital such as IT infrastructure and digital skills. Together with the structural transformations linked to the pandemic, in particular in the digital sector, the Recovery and Resilience Facility will also offer an opportunity to reinforce the commitment to the green and digital transitions ([37]).

I.6. Conclusions and policy implications

The COVID-19 pandemic has resulted in a very sharp contraction in economic activity, which carries risks of permanent economic damage. A fast recovery supported by a strong policy reaction will reduce the risks of layoffs, skills losses, and human and fixed capital obsolescence. The progress of vaccination campaigns will also be a critical factor in enabling the lifting of lockdown measures and allowing the normal resumption of economic activity. The early signs of recovery are encouraging, thanks in no small part to a congruent response of macroeconomic policies. However, there remains significant uncertainty over the long-term economic impact of COVID-19 and subsequent scarring risks. At this stage, appropriate crisis-mitigating policies remain crucial. To limit the risk of more permanent damage to the economy, fiscal policy needs to remain supportive in 2021 and 2022, continuing to cushion the effect of the crisis; in this respect, fiscal policy should remain agile ([38]). Risks of an early withdrawal are considered higher than risks linked to keeping measures in place for too long.

Ensuring effective policies and support to job transitions, in particular towards the green and digital economy, and addressing shortfalls in skills development could reduce the risks of labour market scarring. The focus of policy should shift from macroeconomic stabilisation to preparing the recovery. This means, among other things, gradually shifting from preserving jobs to helping workers develop their skills and move, where relevant, to other sectors with better employment prospects ([39]). Strengthening inclusive education and training systems and addressing skills shortages will improve employment prospects and increase labour productivity. Education policies should reinforce support for younger generations (especially from disadvantaged backgrounds) that have experienced a disproportionate impact from the pandemic. Policies fostering fair working conditions and addressing labour market segmentation can also help strengthen the resilience of labour markets.

More broadly, once conditions allow, the policy focus will need to shift from an emergency mode providing macroeconomic stabilisation to a recovery regime. Policy support needs to be meticulously monitored and evaluated in order to avoid, on the one hand, locking workers into inactivity for a protracted time, by subsidising firms that do not need support or are structurally insolvent; and on the other hand, withholding necessary support from firms that face immediate liquidity constraints but otherwise have strong economic potential. Effective insolvency frameworks play a crucial role in supporting viable firms undergoing temporary problems and providing for the orderly exit of non-viable firms.

Finally, the crisis will have a strong effect within sectors, with a potential reallocation across sub-segments. Significant long-lasting changes will also be strongly driven by policy action to meet the EU climate and environmental targets and objectives, with some sectors attracting more resources than others. The structural changes need to be supported by appropriate reforms and investments. Next Generation EU, with the RRF as its centrepiece, is crucial in this respect.

([35]) For instance, see 'Will productivity and growth return after the COVID-19 crisis?' McKinsey Global Institute Report.

([36]) See Financial Times, 18 June 2020, 'Prospering in the pandemic: the top 100 companies'.

([37]) Each recovery and resilience plan will have to include a minimum of 37% of expenditure for climate investments and reforms, and a minimum of 20% of expenditure to foster the digital transition. As a result, most of recovery and resilience plans include climate-friendly measures and support the digitalisation of the economy.

([38]) See European Commission (2021), 'One year since the outbreak of COVID-19: fiscal policy response', COM(2021) 105 Final. See also the forthcoming horizontal assessment of Stability and Convergence Programmes, for a more detailed investigation of the response of fiscal policies and the policy mix in the euro area.

([39]) An EU Recommendation on Effective Active Support to Employment (EASE) offers guidance on the principle 'Active support to employment' of the European Pillar of Social Rights.