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- **The macroeconomic impact of the COVID-19 pandemic in the euro area** by O. Croitorov, G. Filippeschi, M. Licchetta, P. Pfeiffer, A. Reut, W. Simons, A. Thum Thysen, A. Vandeplas and L. Vogel
- **The uneven impact of the COVID-19 pandemic across the euro area** by E. Meyermans, V. Rutkauskas and W. Simons
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- **The SURE instrument – key features and first assessment** by C. McDonnell, J. Boussard, I. Justo, P. Mohl, G. Mourre and K. Stovicek
- **Annex. The euro area chronicle**

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The **Quarterly Report on the Euro Area** is written by staff of the Directorate-General for Economic and Financial Affairs. It is intended to contribute to a better understanding of economic developments in the euro area and to improve the quality of the public debate surrounding the area's economic policy.

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European Commission
Directorate-General for Economic and Financial Affairs

Quarterly Report on the Euro Area

Volume 20, No 2 (2021)

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Supported by the success of vaccination programmes and exceptional policy support, the euro area expects strong growth both this year and next. However, uncertainty remains high and we still face the risk that the severe socio-economic disruptions triggered by the pandemic leave permanent scars.

This issue of the Quarterly Report on the Euro Area (QREA) provides an analysis of the macro-economic impact of the COVID-19 pandemic on the euro area and the varying effects across countries, with a special look into the impact on tourism. It also presents the key findings of the first bi-annual report on the European instrument for temporary Support to mitigate Unemployment Risks in an Emergency (SURE), a critical element of the European response to the crisis. A short annex provides a brief overview of recent major policy developments in the euro area.

The first section looks at the macro-economic impact of the COVID-19 crisis in the euro area as a whole. It summarises the exceptional macro-economic developments, including a discussion of the economic impact of the shock and the channels of its propagation. It looks in particular at sectoral dynamics, as the impact of COVID-19 on economic activity has been much harder for activities that require physical interactions. The unprecedented policy response has cushioned the economic shock although risks of long-term scarring cannot be excluded. Indeed, the COVID-19 crisis could damage potential GDP through capital, technology and labour market channels. On the positive, it may also contribute to the acceleration of the digital and green transitions. NextGenerationEU (NGEU) will thus support the economic recovery and contribute to build a greener, more digital and more resilient future.

The second section shows how the pandemic has increased divergence in the euro area across multiple dimensions. It identifies the sectoral composition of economies and the strictness of the lockdown measures as important factors behind the divergent impact of confinement measures on economic growth across the euro area Member States. The section describes also how the pandemic has shaped differences in terms of turnover, prospects for

recovery, as well as the financial health of the corporate sector. Next, the section briefly discusses monetary and fiscal conditions across the euro area and their role in containing divergences.

The third section explores the impact of the pandemic on international tourism in the euro area Member States in 2020 and projects international travel activity in 2021 and 2022, under different assumptions on the dynamics of the pandemic. This is done by complementing the data available on international travel, which come with a time lag, with nowcasts based on total nights spent as well as scenarios for the recovery. The section also estimates the partial effect of a decline in international tourism on the trade balances of euro area countries in 2020, 2021 and 2022.

The fourth section presents key findings about the working of SURE based on the first bi-annual SURE report. Demand for SURE loans has been strong with 19 Member States having already been granted financial assistance, representing in total almost 95% of the total envelop of €100 billion. Member States have benefitted from a speedy and successful disbursement process, which is still ongoing. The section also provides a first analytical assessment of the impact of the SURE instrument. The increase in unemployment rates in 2020 has been milder than expected thanks to policy supports, including the SURE instrument. Beyond the effect on general confidence, SURE appears to have played a specific role in the decision of Member States to adopt new short-time work schemes or modify existing schemes and to temporarily increase the coverage and generosity of those schemes. In addition, it is estimated that SURE has saved Member States about €5.8 billion in interest payments.

From this issue on, the QREA will feature a chronicle of major policy developments at the euro area level. This chronicle will keep track of agreed and implemented reforms, which directly pertain to the functioning of the Economic and Monetary Union (EMU). This issue covers major surveillance milestones, the agreement on the reform of the European Stability Mechanism; the introduction of the

backstop to the Single Resolution Fund; the strategy to tackle non-performing loans; the strategy to stimulate the openness, strength and resilience of the EU's economic and financial system; as well as the agreement on the Recovery and Resilience Facility and funding strategy to finance the recovery.

This issue of the QREA illustrates how the capacity of euro area Member States to withstand the shock caused by the pandemic has differed significantly which can mainly be attributed to differences in the economies' sectoral composition. It also shows how

exceptional policy action has prevented a sharp widening in cross-country divergences. The immediate policy response, however, will have to be phased out gradually. This calls for adequate policies and reforms to effectively address the existing challenges with a joint approach. With the support of the NextGenerationEU instrument, and in particular the Recovery and Resilience Facility, Member States should be well placed to swiftly implement a comprehensive investment and reform agenda in the coming years.

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

By Olga Croitorov, Giulia Filippeschi, Mirko Licchetta, Philipp Pfeiffer, Adriana Reut, Wouter Simons, Anna Thum-Thysen, Anneleen Vandeplas and Lukas Vogel

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⁾.

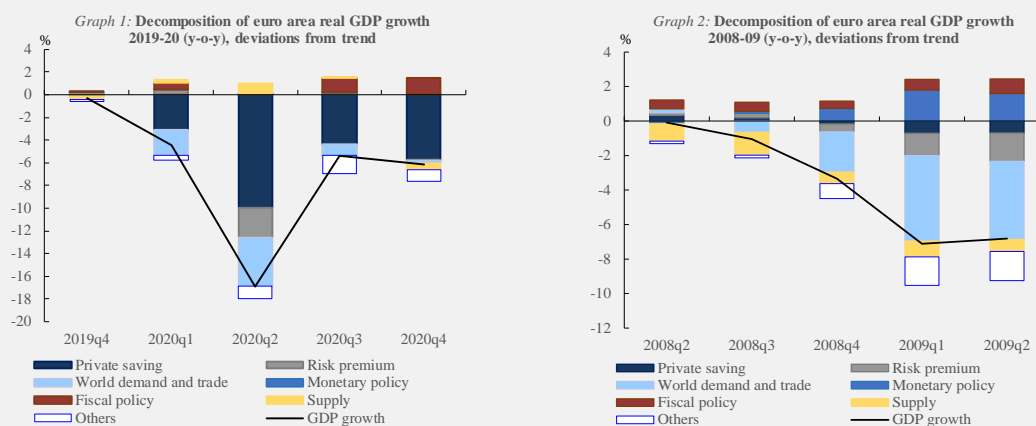
⁽¹⁾ See IMF (2021), Europe Regional Economic Outlook, April 2021.

⁽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 1.1: 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.



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.

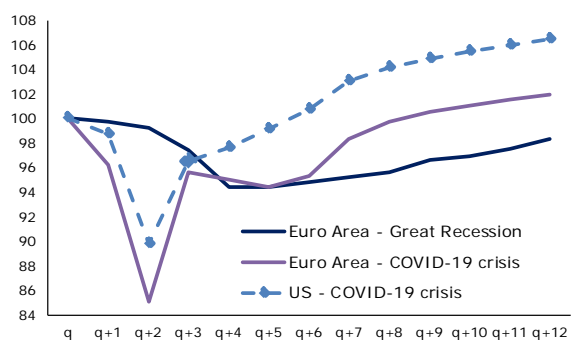
The dominant role of the ‘forced saving’ shock as driver of the 2020 recession would suggest a rather rapid recovery after the easing or lifting of the restrictions on contact-intensive demand and supply ⁽⁴⁾. However, the prospect of recovery must also take into account the likely persistence, or possible 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



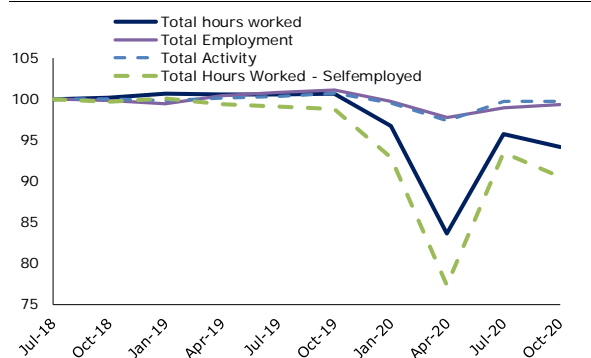
(1) Real GDP (on a seasonally adjusted basis) in Commission Spring 2021 Economic Forecast (index, 2019Q4 = 100). Recession 2008 - 2009 (index, 2008Q1 = 100).

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.

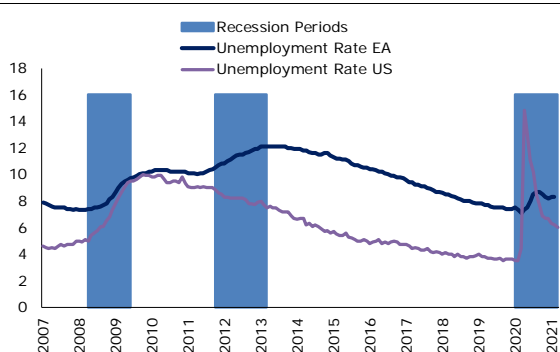
Source: Eurostat, Labour Force Survey.

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

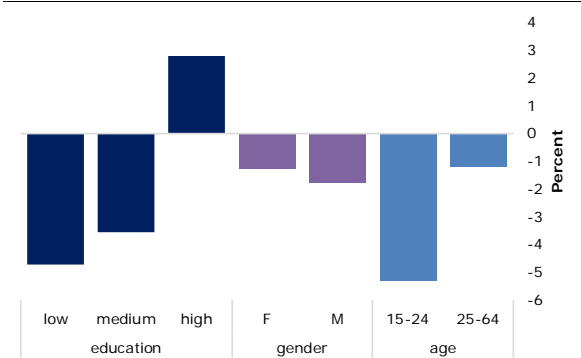
⁽⁴⁾ See European Commission (2020), 'Labour Market and Wage Development in Europe'.

⁽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.

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

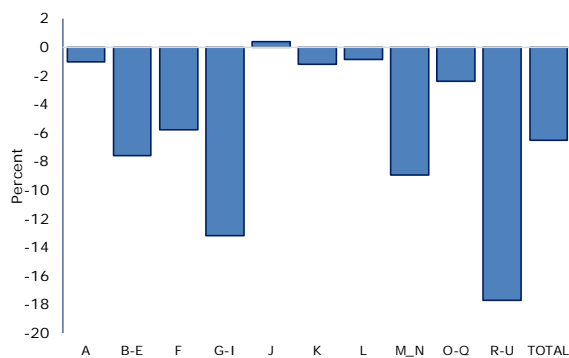
The contraction of economic activity has been uneven across sectors. Businesses relying on close physical interactions either in production or in the delivery of their goods and services have experienced significant adverse shocks to turnover

⁽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)



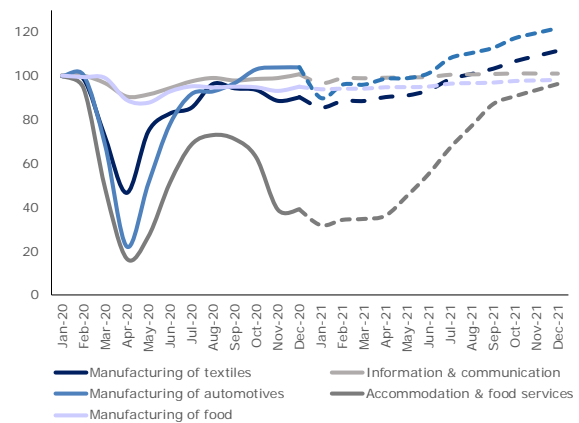
(1) A: Agriculture; B-E: Industry; F: Construction; G-I: Trade & tourism; J: IT; K: Finance and insurance; L: Real estate; M-N: Professional and business services; O-Q: Public sector; R-U: Arts & entertainment; TOTAL: All sectors.
Source: Eurostat, national accounts data.

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

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'.

⁽⁸⁾ Under Manufacturing of Computers & Electronics in Graph I.7.

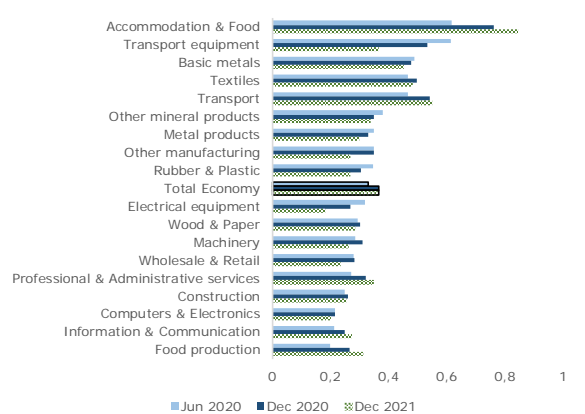
⁽⁹⁾ The euro-area aggregate hides wide cross-country variation in impact on sectoral turnover. Spanish tourism, for instance, saw a 95% reduction in turnover in April 2020, whereas the sector retained almost half of its sales in the Netherlands.

⁽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

⁽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.

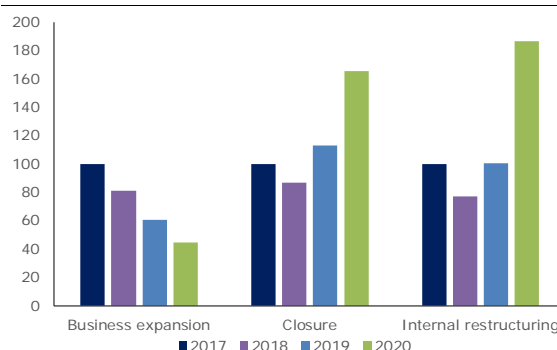
Simulations show that firms in accommodation and food services are likely to continue to experience liquidity distress throughout 2021 because of weak demand and remaining restrictions ⁽¹³⁾. In contrast, while the share of distressed firms in the transport equipment sector was similar during the first wave at around 60%,

⁽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.

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

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.

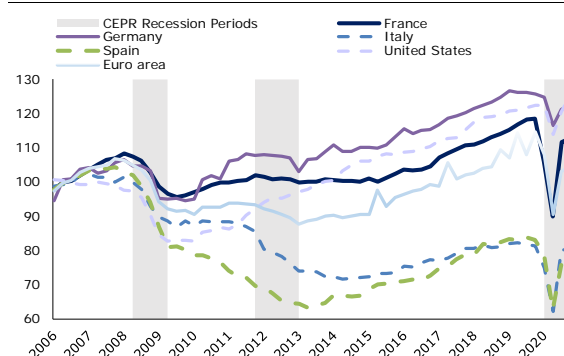
There have been strong and mutually-reinforcing effects between fiscal and monetary policies. Monetary policy helped to avoid fragmentation in euro-area sovereign debt markets while supporting the fiscal stance by providing additional fiscal space. At the same time, government interventions across euro-area 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) Kozłowski, 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.

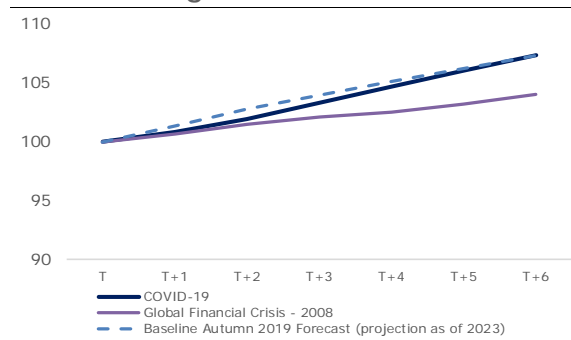
(26) These diverging paths may also partially reflect different starting positions of countries and correction of prior imbalances.

(27) See Burgess, S. and H.H. Sievertsen (2020), ‘Schools, skills and learning: the impact of Covid-19 on education’, VoxEU. Fernard 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.

II. The uneven impact of the COVID-19 pandemic across the euro area

By Eric Meyermans, Virgilijus Rutkauskas and Wouter Simons

Abstract: This section examines the differentiated effects of the COVID-19 pandemic on growth across the euro area. Persistent sharp cross-country divergences complicate the functioning of the economic and monetary union (EMU), and may weaken the socio-economic and political support for EMU. Based on a reduced-form econometric analysis of macro-data and an empirical analysis of turnover patterns and prospects for recovery, the section identifies the economy's sectoral composition and the strictness of the lockdown measures as important factors driving the divergent impact of the pandemic on economic growth. More specifically, the analysis suggests that countries with a larger share of contact-intensive activities have experienced stronger negative growth, and that a higher level of trade openness generally amplified the negative impact of the lockdown measures. A brief overview of monetary and fiscal conditions suggests that the forceful responses of monetary and fiscal policies have helped to dampen the economic shock generated by the pandemic and the related lockdown measures and in so doing have helped contain the divergence forces triggered by the crisis. The risk exists that cross-country divergence will persist well after the pandemic has subsided and the exceptional policies have ended⁽⁴⁰⁾.

II.1. Introduction

Since its outbreak, the COVID-19 pandemic has posed strong challenges to macroeconomic convergence across the euro area, as its Member States did not experience the same infection rates or introduced the same measures to contain the virus. Moreover, at the start of the pandemic these countries were also characterised by different structural and macroeconomic conditions that have a direct impact on their capacity to absorb the shock and recover from it.

While the previous section discussed the pandemic's impact on the overall euro area, this section examines whether the pandemic has increased macroeconomic divergences across the euro area. Persistent sharp cross-country divergences complicate the functioning of the economic and monetary union (EMU), including by making the single monetary policy less effective. In the long run, divergence may also weaken the socio-economic and political support of the EMU.

The analysis in this section suggests that differences in the sectoral composition of the euro area economies, together with differences in the strictness of the lockdown measures, were important factors affecting macro-economic cross-country divergence in the wake of the outbreak of the pandemic. At the same time, a higher level of

trade openness generally amplified the negative impact of the lockdown measures. However, exceptional fiscal policy measures and monetary policies supporting the functioning of the financial markets tempered mounting divergence pressures.

This section is structured as follows. The second sub-section paints a broad picture of the cross-country differentiated impact of COVID-19 on GDP growth and its main expenditure and sectoral components.

The third sub-section provides estimates of the extent to which structural factors such as the economy's sectoral composition, trade openness and government effectiveness affected growth.

While the pandemic's impact on the tourism sector is discussed in more detail in Section 3 of this report, the fourth subsection examines differences in impact at country-level, focussing on turnover patterns and prospects for recovery.

The fifth subsection discusses monetary and fiscal conditions and assesses the extent to which the policy mix has been conducive to the cross-country differences in 2020. The section closes with some policy conclusions.

The present section does not discuss developments in labour markets. Instead, Section 4 of this report provides an analysis of the labour market impact of the European instrument for temporary Support to

⁽⁴⁰⁾ The author wishes to thank colleagues for useful comments. This section represents the authors' views and not necessarily those of the European Commission.

mitigate Unemployment Risks in an Emergency (SURE) (41).

II.2. A bird's eye view

II.2.1. A common shock but a heterogeneous impact

Early March 2020, euro area Member States introduced far-reaching lockdown measures to stop the spread of the COVID-19 virus. These measures were relaxed somewhat in the third quarter of 2020 but were tightened again as infections started to rise by October.

However, not all countries introduced the same measures. While countries like Spain and Italy imposed a full lockdown during the first wave, other Member States (e.g. Finland) could resort to less stringent measures to contain the propagation of the coronavirus.

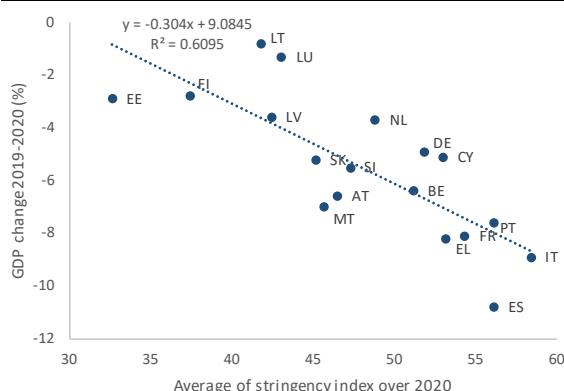
Unsurprisingly, the differences in the average level of stringency imposed by a country's government over 2020 strongly correlates with the differences in GDP growth (Graph II.1) (42). Such strong divergence in real GDP across the euro area has not been seen since the onset of the global financial crisis in early 2009 (Graph II.2).

The divergence amplifying effect of the crisis can also be illustrated by comparing the cross-country divergence in GDP and its expenditure components as projected before the outbreak of the pandemic in 2019 (43) with the observed divergence in 2020 (Graph II.3).

Specifically, on the expenditure side, the observed cross-country divergence was broadly in line with

the projected divergence for the contribution of public consumption to real GDP growth. As to the growth contributions of the other demand components the difference between observed and projected divergence was strongest for exports, followed by imports, in absolute terms (44), and for gross capital formation and private consumption in relative terms.

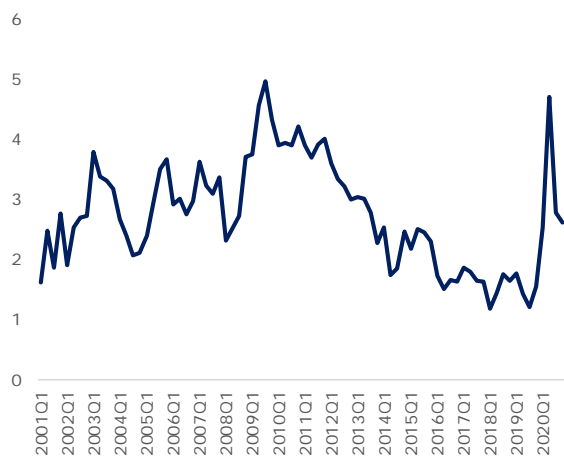
Graph II.1: Government stringency correlates strongly with GDP impact



(1) Ireland (IE) not shown

Source: Oxford COVID-19 Government Response Tracker (OxCGRT) and Eurostat

Graph II.2: Cross-country GDP growth divergence



(1) Cross-country standard deviation of year-on-year quarterly growth. Sample does not include Ireland.

Source: Authors' estimates based on Eurostat, National Accounts.

(41) On the pandemic's impact on labour markets, see also European Commission (2020 and 2021), *Employment and Social Developments Quarterly Review*, and European Commission (2020), *Labour market and wage developments in Europe*.

(42) This aggregate indicator (with values between 1 and 100) covers (i) lockdown and closure measures (including school closing, workplace closing, cancellation public events, restrictions on gathering size, closing of public transport, stay-at-home requirements, restrictions on internal movement, and restrictions on international travel), (ii) economic response (including income support, debt/contract relief for households, fiscal measures and giving international support) and (iii) health system measures (including public information campaign, testing policy, contact tracing, emergency investment in health, investment in COVID-19 vaccines, facial coverings and vaccination policies). See Halle, T. et al. (2020), *'A global panel database of pandemic policies (Oxford COVID-19 Government Response Tracker)'*.

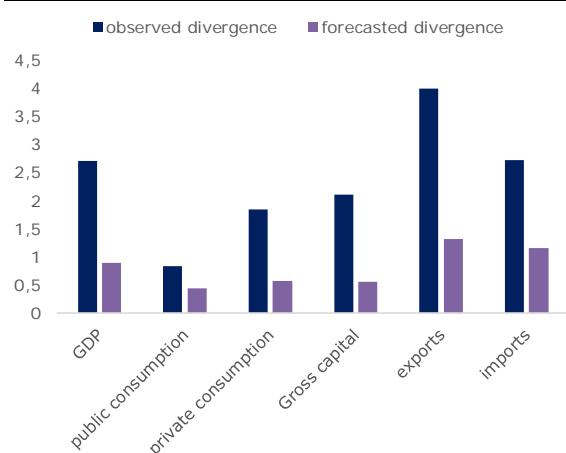
(43) Making use of the European Economic Forecast, Autumn 2019 and based on annual data as quarterly forecasts are not available.

(44) 'In absolute terms' refers to the observed standard deviation minus the forecasted standard deviation. 'In relative terms' refers to the observed standard deviation to the forecasted standard deviation ratio.

Expenditure decomposition

The expenditure decomposition of real GDP growth (Graph II.4) shows that the contraction in private consumption accounted for the largest part of the overall fall in GDP in most euro area Member States in 2020, in line with its preponderant weight in GDP. At the same time, government consumption's impact on cross-country divergence was limited and in most countries it supported GDP growth.

Graph II.3: Observed and forecasted cross-country GDP divergences - 2020



(1) Cross-country standard deviation of growth rates weighted with components' share in GDP. Sample does not include Ireland.

Source: Authors' estimates based on Eurostat data and European Economic Forecast, Autumn 2019.

The contribution of capital formation to GDP growth was mostly negative, with Lithuania and Slovakia exhibiting the strongest negative readings in, and Cyprus, Estonia and Latvia being the exceptions.

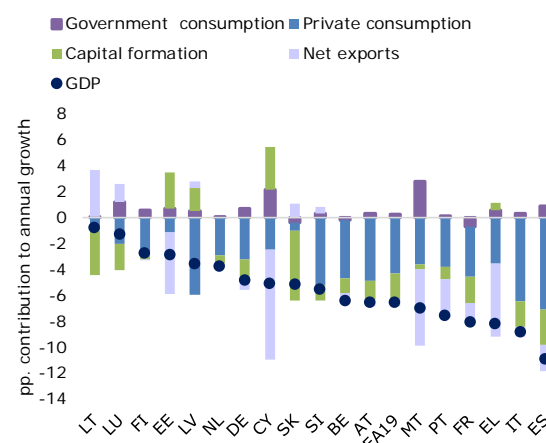
Net exports had an especially large negative impact on real GDP growth in the small countries such as Estonia, Cyprus and Malta, while having small contributions for most other countries. Its contribution to GDP growth divergence (as suggested by Graph II.3) was overall very strong in 2020.

Branch decomposition

In almost all countries the contraction of the private service sector delivered the strongest contribution to the contraction of real GDP (Graph II.5). This is an indication that the sectoral structure of the economy has been one of the

driving factors of the divergence within the euro area. The econometric analysis in the next subsection will support this view and Subsection 4 below will analyse this aspect more in depth.

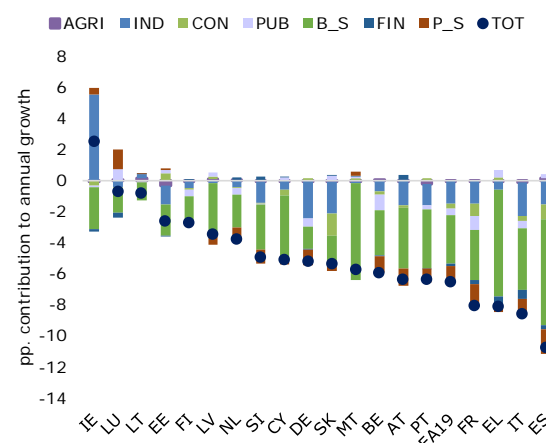
Graph II.4: Real GDP growth and its expenditure components – 2020 (annual data)



(1) Ireland (IE) not shown (excessive changes in net exports).

Source: Authors' estimates based on Eurostat national accounts.

Graph II.5: GDP growth and its sectoral composition - 2020



(1) AGR: Agriculture, forestry and fishing, IND: Industry (except construction), CON: Construction, LD_S: Wholesale and retail trade, transport, accommodation and food service activities+ Arts, entertainment and recreation, P_S: Information and communication + professional, scientific and technical activities, FIN: Financial and insurance activities + Real estate activities, PUB: Public administration, defence, education, human health.

Source: Authors' estimates based on Eurostat national accounts.

II.3. Structural drivers of cross-country divergence: an illustrative econometric exercise

The regression exercise in Box II.1 shows how structural factors such as the sectoral composition of the economy, government effectiveness, private debt and openness to international trade, conditioned the impact of the lockdown measures on real GDP across the euro area.

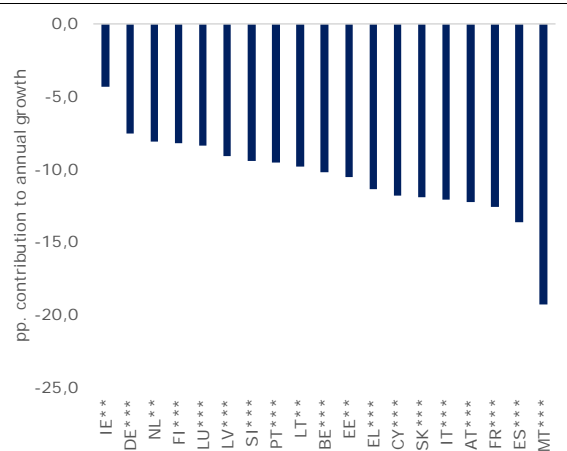
Interpreting these results, the following caveats should be taken into account. First, equation (1) in Box II.1 is a linear approximation of a complex process that can only be used to compare GDP growth of countries that impose lockdown measures that are broadly the same (45). Second, data for only 4 quarters are available which limits the degrees of freedom to estimate transmission mechanisms related to the COVID-19 shock. Third, when a shock hits an economy a distinction has to be made between the absorption of the shock and the recovery from it. Given the limited time span of the sample, the regression provides only estimates of the impact of structural factors on countries' shock absorption capacity. Fourth, the 'true' parameters may not be stable, as for instance people learn with each new wave of infections (46). As such the point estimates should be looked at as a measure of a country's relative performance rather than absolute performance.

Making use of the results in Box II.1, Graph II.6 suggest some notable differences in the response of GDP growth to the stringency of lockdown measures in 2020: low in Ireland, Germany and the Netherlands, but high in Malta and Spain.

Disaggregating this effect further, Graph II.7 suggests that a higher share of the service sector in total output amplified the impact of the lockdown measures, while a higher share of industry tempered it. Government effectiveness (47) is also

found to limit the adverse impact on GDP (48). Private debt (as a percentage of GDP) did not affect the responsiveness of real GDP to the lockdown measures (49). This counterintuitive result may owe to two effects working in opposite directions: on the one hand, a high debt level limits the capacity to borrow to overcome the temporary shock; on the other hand, high debt levels may have induced governments to provide stronger credit support programmes (including loan guarantees).

Graph II.6: Real GDP growth responsiveness to lockdown measures



Source: Point estimates of parameter β_k for Variant V0 in Table A in Box II.1 point estimate; significance *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$.

The accounting exercise in the previous subsection highlighted a strong negative contribution from net exports for (some) small countries, and modest contributions for most of the others, including a number of positive contributions, in particular for countries like Germany, Italy or Slovakia that have a relatively large manufacturing sector.

(45) For instance, putting the STRINGENCY variable equal to zero in equation (1) would generate no loss in GDP. However, such practice would lead to an exponential growth of contamination that would cripple the economy. It would be beyond the scope of this section to model the feedback of lockdown measures and the spread of the virus that in turn affects economic growth.

(46) In turn, this reduces the degrees of freedom estimating the equation as it would involve intercept and slope dummies.

(47) As measured by the World Bank Governance Indicator "government effectiveness" which captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of

policy formulation and implementation, and the credibility of the government's commitment to such policies.

(48) Studies covering the whole world, e.g. Baris, O. and R. Pelizzo (2020), 'Research note: governance indicators explain discrepancies in COVID-19 data', *World Affairs*, Vol. 183, No. 3, pp. 216–234, report that countries with higher levels of good governance withstand the shock better because they perform more tests and are more transparent. Sapir, A. (2020), 'Why has COVID-19 hit different European Union economies so differently?', Bruegel Policy Contribution Issue n°18, focussing on the EU as a whole; reports also a positive correlation between the level of governance and absorption of the COVID-19 pandemic

(49) Government debt is not considered to be a conditioning factor affecting the growth impact of the lockdown measures as governments did not experience constraints to borrow.

Box II.1: The impact of the confinement measures on GDP growth – an illustrative reduced-form regression analysis

The starting point of the empirical analysis is an autoregressive model in which the impact of the confinement measures on GDP growth is conditioned by structural factors such as the sectoral composition of the economy, i.e.

$$(1) \quad d \ln(GDP_{k,t}) = \alpha_1 d \ln(GDP_{k,t-1}) + \alpha_2 d \ln(GDP_{k,t-2}) + \alpha_3 d \ln(GDP_{k,t-3}) + \alpha_4 d \ln(GDP_{k,t-4}) + \beta_k STRINGENCY_{k,t} + \sum_{j=1}^m \gamma_j SF_{j,k,t} STRINGENCY_{k,t} + \sum_{j=1}^m \rho_j SF_{j,k,t} + \theta DUM_GFC_t + c_k + u_{k,t}$$

GDP is real GDP, STINGENCY is the level of the confinement measures, $SF_{j,k,t}$ a structural factor conditioning the impact of the confinement measures, and DUM_GFC is a dummy equal to 1 for the period of the global financial crisis. In order to avoid a missing variables bias in the point estimates $SF_{j,k,t}$ is also included as a stand-alone explanatory variable. The subscripts k and t refer to the country and time respectively. The subscript j specifies the specific structural factor $SF_{j,k,t}$. Several structural factors are considered, i.e. the sectoral composition of the economy trade openness, private debt and government effectiveness. The parameter c denotes the country specific fixed effect and u is a stochastic term.

Estimation results

Equation (1) is estimated with data retrieved from various sources including Eurostat, the IMF, the World Bank and the University of Oxford (1). The sample size ranges from the first quarter of 2000 until the fourth quarter of 2020. The structural factors, $SF_{j,k,t}$ interacting with the STRINGENCY variable are Hodrick-Prescott (HP) filtered series and lagged one year.

The data of the 19 euro area Member States are pooled and equation (1) is estimated with least squares under the following restrictions. First, assuming the error terms u are heteroskedastic and contemporaneously correlated across countries, equation (1) is estimated with seemingly unrelated regression (SUR). Second, the error terms are specified and estimated as autoregressive stochastic terms. Third, this autocorrelation of the error term implies that the error terms may be correlated with the lagged dependent variables. In addition to the lagged structural factors, lagged HP filtered GDP series have been used as instrumental variables. Fourth, the variables are centred around their mean to make their point estimate more stable (2). Fifth, as the sample covers only 4 quarters during which the confinement measures were imposed, the degrees of freedom to estimate COVID-19 related transmission mechanisms are limited.

Table A shows estimation results for 11 variants. The base model (variant V0 in Table A) assumes that the impact of the confinement measures on GDP growth is constant, but varies across countries (3). Variants V1 to V7 show how this impact varies with the sectoral composition of the economy (4), but imposes that there is a common component across countries to save on the degrees of freedom (5). The point estimates of the share of industry, basic services and professional services in total gross value added are significant. Variant V8 shows the combined effect of the share of industry and basic services. Variants V9 to V11 are variant V8

(1) Data on GDP, population, sectoral shares (measured as a sector's gross value added in current prices divided by total gross value add), trade openness (measured as imports extra euro area + exports extra euro area in current prices by GDP) are retrieved from Eurostat national accounts. The level of confinement measures is measured by the Oxford COVID-19 Government Response Tracker (OxCGRT). Private debt data are retrieved from the IMF Global Debt Database. Data on the quality of governance are retrieved from the World Bank Worldwide Governance Indicators. In case only annual data are available such as the IMF private debt data the quarterly data were interpolated.

(2) Dependent and independent variables are demeaned by subtracting the country sample average. In variant V0 the variables are not demeaned as there are no interactions.

(3) I.e. estimating β_k in equation (1) with $\gamma_j = \rho_j = 0$.

(4) I.e. γ_j in equation (1) and with $SF_{j,k,t}$ the one year lagged HP-filtered share of sector j= 1, ..., 7 in total gross value added.

(5) I.e. $\beta_k = \beta$ for k= BE, ..., FI in equation (1)

(Continued on the next page)

Box (continued)

augmented with respectively private sector debt (as percentage of GDP) (V8), trade openness (V9) and government effectiveness (V10) ⁽⁶⁾. The latter two are significant.

The lower boxes of Table A show the estimates for the autoregressive part and other variables such as crisis dummy, country fixed effects and the stand-alone factors SF_{jkt} that were included to avoid a missing variables bias in the estimates of the interaction factors (not shown in this table). Country fixed effects are only used in variant V0; they are not needed in variants V1 to V11 as the variables are demeaned. The econometric results are discussed in more detail in the main text.

Table A: Responsiveness interacting with sectoral composition

Dependent variable: d log of GDP in constant prices												
	V0	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11
Stringency and conditioning factors												
Stringency	See graph	-0.12 ***	-0.18 ***	-0.15 ***	-0.00	-0.16 ***	-0.13 ***	-0.15 ***	-0.03	-0.07	-0.03	-0.09 *
	11.6	(-6.38)	(-10.30)	(-6.03)	(-0.08)	(-6.16)	(-4.88)	(-3.36)	(-0.83)	(-0.89)	(-0.75)	(-1.71)
Share agriculture * Stringency		1.17										
		(0.95)										
Share industry * Stringency			0.53 ***						0.44 ***	0.53 ***	0.75 ***	0.47 ***
			(3.50)						(3.29)	(2.94)	(3.89)	(3.46)
Share construction * Stringency				0.94								
				(1.26)								
Share whole/retail sale * Stringency					-0.43 ***				-0.61 ***	-0.63 ***	-0.48 ***	-0.61 ***
					(-2.91)				(-4.16)	(-3.08)	(-3.07)	(-3.47)
Share professional services * Stringency						0.41 **						
						(2.23)						
Share financial services * Stringency							0.21					
							(0.99)					
Share public services * Stringency								0.30				
								(1.20)				
Private sector debt (% of GDP) * Stringency										0.02		
										(1.22)		
Openness * Stringency											-0.19 **	
											(-1.97)	
Government effectiveness * Stringency												3.69 **
												(2.12)
Autoregressive part												
Q1 lagged dependent variable	0.80 ***	0.60 ***	0.53 ***	0.54 ***	0.51 ***	0.52 ***	0.52 ***	0.50 ***	0.50 ***	0.50 ***	0.51 ***	0.51 ***
	(8.18)	(8.87)	(8.08)	(7.99)	(7.85)	(7.90)	(7.93)	(7.58)	(7.79)	(7.74)	(7.87)	(10.33)
Q2 lagged dependent variable	-0.47 ***	-0.45 ***	-0.43 ***	-0.43 ***	-0.42 ***	-0.43 ***	-0.42 ***	-0.42 ***	-0.41 ***	-0.41 ***	-0.42 ***	-0.41 ***
	(-8.40)	(-6.50)	(-6.61)	(-6.35)	(-6.42)	(-6.42)	(-6.43)	(-6.36)	(-6.43)	(-6.45)	(-6.38)	(-7.02)
Q2 lagged dependent variable	0.42 ***	0.41 ***	0.40 ***	0.40 ***	0.40 ***	0.41 ***	0.40 ***	0.40 ***	0.39 ***	0.39 ***	0.40 ***	0.38 ***
	(7.14)	(7.10)	(7.11)	(7.08)	(7.03)	(7.10)	(7.11)	(7.05)	(6.99)	(7.01)	(6.95)	(6.99)
Q4 lagged dependent variable	-0.37 ***	-0.41 ***	-0.42 ***	-0.42 ***	-0.42 ***	-0.42 ***	-0.42 ***	-0.42 ***	-0.42 ***	-0.43 ***	-0.42 ***	-0.42 ***
	(-6.67)	(-6.57)	(-7.12)	(-6.86)	(-7.12)	(-6.94)	(-6.99)	(-7.04)	(-7.19)	(-7.21)	(-7.06)	(-7.32)
Autocorrelation AR(2)	0.45 ***	0.62 ***	0.67 ***	0.65 ***	0.67 ***	0.66 ***	0.66 ***	0.67 ***	0.68 ***	0.68 ***	0.68 ***	0.69 ***
	(5.38)	(10.25)	(13.07)	(11.69)	(12.98)	(12.12)	(12.21)	(12.67)	(13.38)	(13.43)	(13.32)	(14.11)
Stand alone factors												
Global financial crisis dummy	-0.02 ***	-0.03 ***	-0.03 ***	-0.03 ***	-0.03 ***	-0.03 ***	-0.03 ***	-0.03 ***	-0.03 ***	-0.03 ***	-0.03 ***	-0.03 ***
	(-6.43)	(-4.66)	(-4.88)	(-4.85)	(-4.97)	(-4.90)	(-4.91)	(-4.97)	(-4.99)	(-4.98)	(-4.90)	(-5.10)
Country fixed effects	Yes	No	No	No	No	No	No	No	No	No	No	No
Structural factors (SF) stand-alone	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	1586	1586	1586	1586	1586	1586	1586	1586	1586	1586	1550	1584
Number of explanatory variables	44	9	9	9	9	9	9	9	11	13	13	13

Note: t-statistics between brackets; point estimate significance ***p<0.01, **p<0.05 and *p<0.1.

⁽⁶⁾ I.e. their HP-filtered value one year lagged reflecting the “structural” characteristics of the economy.

The econometric analysis (which captures behavioural responses albeit in a reduced form) indicates that on impact a higher level of trade openness towards non-euro area countries generally amplified the sensitivity of GDP to the lockdown measures. This is because stricter measures such as lockdowns and travel restrictions and the consequent negative impact on supply

chains, hinder cross-border trade (trickling down to the rest of the economy).

This is an additional effect to the impact of trade per se. Indeed, a further look at world trade data shows that world trade in goods was strongly hit in the early months of the pandemic but contracted

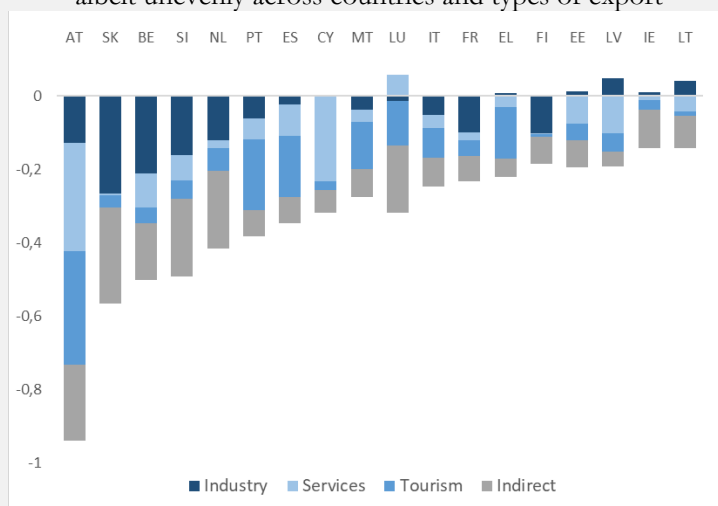
Box 11.2: Spillover effects add to the domestic impact of the crisis

In the highly integrated European economy, many countries, in particular the small and open economies, rely on intra-EU demand for a significant share of their economic activity. While forceful monetary and fiscal policy responses have helped to dampen the impact of the crisis, the COVID-19 outbreak and the ensuing lockdown measures, uncertainty, value chain distortions, etc. had an unprecedented impact on economic activity over the course of 2020. While uneven across countries and sectors, these supply and (final) demand disruptions caused substantial reductions in output across most European industries, which spilled over to other Member States and added to the purely domestic impact of the crisis.

In order to quantify these spillover effects, one can trace back the worldwide reductions in output at the sector level to changes in final demand. This can be done through the global supply chain interlinkages, as captured by the OECD's inter-country input-output (ICIO) tables. The resulting set of final demand changes can be used to simulate the impact of the COVID-19 crisis on the value added (VA) of each country. The example of German demand spillovers on the rest of the euro area illustrates the approach.

As Europe's largest economy, Germany is the euro area's driving economic power, and disruptions to its economy are likely to have substantial spillovers to its direct trade partners as well as other Member States. This box quantifies the impact of changes in German demand in 2020 on VA production across the euro area, distinguishing between types of goods or services traded. (1) Given the particular nature of this crisis, with a strong impact on the hospitality industry due to forced closures and (international) travel restrictions, the analysis distinguishes between tourism (NACE sector I), all other services (G-N excl. I) and industry (A-F). The decline in German external demand and therefore the spillovers are due to various restrictions that hampered economic activity, disrupted supply chains and limited travel possibilities.

Graph A: The contraction of Germany's economy spills over to the rest of the euro area, albeit unevenly across countries and types of export



(1) Impact on value added (% change) from a change in German demand in 2020, split by export type.

Source: Eurostat, IMF WEO, OECD ICIO and own elaborations

(1) A country's demand is made up of (i) Households final consumption expenditure, (ii) Non-profit institutions serving households, (iii) General government final consumption, (iv) Gross fixed capital formation, (v) Change in inventories and valuables and (vi) Direct purchases by non-residents.

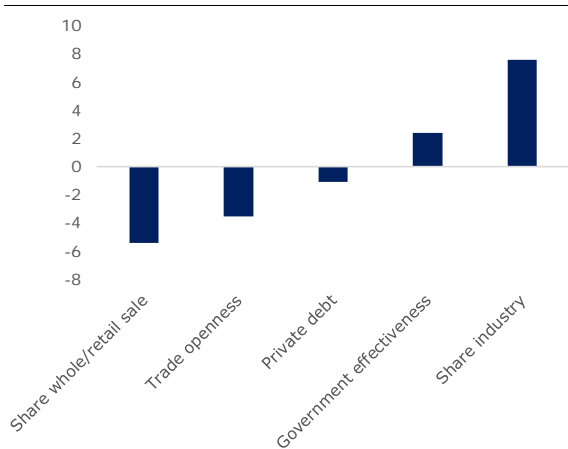
(Continued on the next page)

Box (continued)

The reduction in demand by German consumers over 2020 results in an important, yet uneven, impact on VA across most Member States (Graph A). Austria, sharing a border and language with Germany, experiences the largest spillover effect (at almost -1% of VA), which is particularly strong in tourism and other services. Unsurprisingly, reductions in German demand also significantly affected VA (ca. -0.5%) in the small and open economies of Slovakia, Belgium and Slovenia, with a major role for industry rather than tourism or services. Zooming in on tourism, the analysis suggests that the absence of German tourists in 2020 accounted for the lion's share of the spillover effect from Germany to Portugal, Spain, Malta and Greece. In some country sectors such as services in Luxembourg, the spillover effect is positive, indicating increased German demand for their output despite (or owing to) the COVID-19 crisis.

The VA impact from the German demand reduction is relatively small in Ireland and the Baltic countries. This does not imply that German demand is unimportant for these economies. It might also mean that these countries mainly export to Germany goods and services for which demand did not decrease much during the crisis. The grey bar in Graph A measures the indirect impact of reduced German demand, which is significant in several Member States. This captures the impact through, for instance, third countries (drop in German demand for Czech cars reduces Slovak production of car parts), as well as through German sectors themselves (drop in German demand for German cars reduces Slovak production of car parts).

Graph II.7: Real GDP growth – factors affecting the impact of the lockdown measures



(1) Average impact across 19 Member States. Point estimate multiplied with variable value second quarter of 2020.

Source: Variant V8-V11 in Table A in Box II.1.

over the whole year 2020 less than initially expected⁽⁵⁰⁾. At the same time, however, the very strong trade links within the euro area have entailed large and complex negative spillover effects from demand contraction in Member States to their trade partners. These trade spillovers,

⁽⁵⁰⁾ WTO (2021), World trade primed for strong but uneven recovery after COVID-19 pandemic shock, identifies the strong monetary and fiscal policies by many governments as probably the biggest factors for the smaller-than-expected contractions in trade.

which also depend on the sectoral composition of trade, are illustrated in Box II.2 which shows that the fall in demand in Germany last year has reduced value added between 0.3 and 1 pps in its trade partners.

II.4. The impact of sectoral composition across Member States: some further evidence

The econometric analysis identified the sectoral composition of the economy as one of the main drivers of divergence in the euro area. The sectoral dimension of the crisis is the topic of Section 1 of this report. This subsection provides additional insights from a country perspective, by investigating cross-country differences in patterns of turnover during the different waves of the pandemic, as well as in prospects for recovery towards the end of 2021.

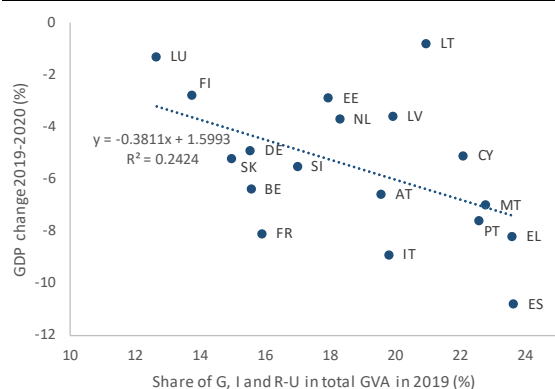
II.4.1. Asymmetries in sectoral impact translate into uneven contractions across Member States

The COVID-19 crisis is fundamentally a sectoral crisis. The pandemic has affected different sectors in very different ways, with the strongest negative impact on activities that rely on physical interaction. The tourism and hospitality sector, in particular, experienced strong reductions in sales over the course of 2020. Restrictions on (international) travel, forced restaurant closures and

social distancing requirements are among the measures that heavily distorted the sector's activity. On the other hand, the overall impact of the pandemic has been mitigated for industries that produce digital or essential goods such as food, and those where contact is easier to avoid or where teleworking is an alternative to face-to-face work.

Because of different sectoral structures, the contraction in economic activity is also very uneven across countries. Available data for 2020 suggest that countries where contact-intensive activities dominate, such as Spain and Greece, have experienced significant contractions in GDP (Graph II.8). This (together with the econometric analysis presented in the previous section) indicates that the economic structure of Member States is an important channel through which the sectoral nature of the COVID-19 crisis generates an uneven impact across countries.

Graph II.8: Share of COVID-vulnerable services differs strongly across countries and significantly explains GDP impact



(1) G: Wholesale & Retail; I: Accommodation & Food services; R-U: Arts & Recreation and Other services
(2) Ireland (IE) not shown

Source: Eurostat.

Countries also differ in the severity of the pandemic and the measures they took to mitigate its impact. Due to the differences in the depth and persistence of the epidemiological waves, countries were also affected differently within a particular sector. In the hospitality industry, turnover reductions during the first wave were dramatically larger in Spain, France and Italy than in Germany and the Netherlands (Graph II.9). In contrast, the impact of the second wave on the sector's turnover is more pronounced in Germany and the Netherlands. The cross-country heterogeneity is even more striking in the construction sector, which was unaffected in Germany and the

Netherlands while being strongly hit in the southern countries.

II.4.2. Prospects for recovery differ across Member States

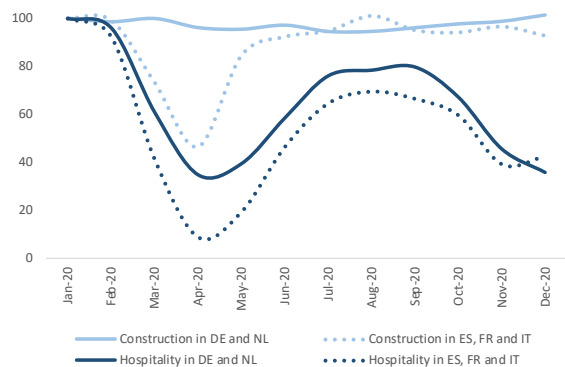
Total economy turnover patterns over 2020 vary across Member States, and recovery prospects for 2021 are bound to differ across countries. The sectoral heterogeneity in sensitivity to the pandemic, coupled with cross-country differences in the sectoral composition and severity of the pandemic, has resulted in diverging patterns of total economy turnover across the European countries (Graph II.10)⁽⁵¹⁾. The contraction in Dutch economic activity was rather modest during the first wave, with a reduction in turnover of 10% at the trough. The economies of Italy, Spain and Greece, which not only rely more on tourism (Graph II.8) but were also subject to more stringent lockdown measures (Graph II.1), experienced turnover reductions of up to 40% in April 2020.

Following the first wave, patterns of turnover diverge, with e.g. a stronger rebound in Italy than in Spain, as shown in Graph II.10. Most Member States did not recover fully to pre-crisis levels of turnover by the time the second wave washed over the continent at the end of 2020. The impact of the second and third wave⁽⁵²⁾ on the various countries is substantially different from that of the first wave, as turnover reductions were relatively subdued in the Member States that suffered most in April (notably Spain and Italy).

⁽⁵¹⁾ 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 (March). 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 that could explain sectoral turnover patterns 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 framework was used in the complementary QREA Section 'The macro-economic impact of the COVID-19 pandemic in the euro area'.

⁽⁵²⁾ The second wave refers to the increase in reported COVID-19 cases around November 2020, whereas the third wave started in March 2021. Note that the third wave, while significant in terms of new infections, did not result in a spike of new restrictions, as these remained high throughout Q1-2021 in most countries.

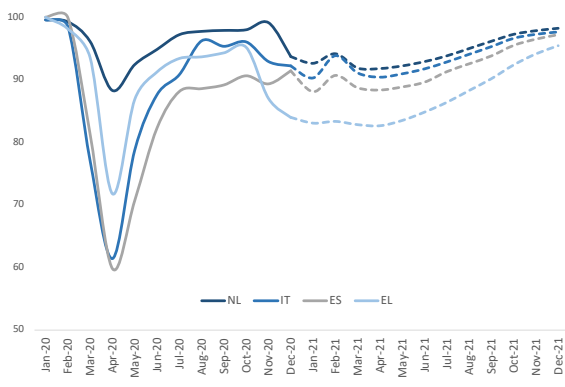
Graph II.9: Turnover patterns within a sector differ strongly across countries



(1) Unweighted averages of sectoral turnover indices (indexed at 100 in Jan 2020) across countries

Source: Eurostat, own elaborations.

Graph II.10: Turnover patterns over 2020 (solid) and prospects for recovery (dashed) differ across countries



(1) Total economy figures as weighted averages of sectoral turnover indices (indexed at 100 in Jan 2020).

(2) Monthly turnover obtained from Eurostat until Dec 2020. Turnover predictions are based on a simulation at the sector level to estimate the current not-yet-observed levels of activity and the pattern of turnover over 2021. See also footnote (14). Results are presented for a scenario that assumes restrictions to remain in place until May 2021, after which they are gradually phased out to reach pre-crisis levels by the end of 2021.

Source: Eurostat, DG ECFIN Winter Forecast, DG ECFIN Business & Consumer Survey, OECD Economic Outlook, OECD Inter-Country Input-Output Tables, Google Community Mobility Reports, Oxford COVID-19 Government Response Tracker (OxCGRT), Our World in Data, LFS, O*NET and own elaborations.

Following the first wave, patterns of turnover diverge, with e.g. a stronger rebound in Italy than in Spain, as shown in Graph II.10. Most Member States did not recover fully to pre-crisis levels of turnover by the time the second wave washed over the continent at the end of 2020. The impact of the

second and third wave⁽⁵³⁾ on the various countries is substantially different from that of the first wave, as turnover reductions were relatively subdued in the Member States that suffered most in April (notably Spain and Italy).

Prospects for recovery towards the end of 2021 depend in large part on the country's reliance on tourism, which is the sector most exposed to lockdown restrictions. While Member States are projected to gradually return to their pre-crisis levels of monthly activity (indexed at 100 in Graph II.10) towards the end of the year, the recovery will take longer for members whose economic structure is tilted towards hospitality⁽⁵⁴⁾. However, while Member States might record monthly turnover levels by the end of the year that are in line with their pre-pandemic sales, it will take years to cover the losses accumulated over the course of the crisis. Looking beyond 2021, the risk of recurrence of the pandemic may trigger structural shifts in the sectoral composition of euro-area economies, away from contact-intensive economic activities.

II.5. Monetary and fiscal conditions

As discussed in Section 1 of this report, forceful responses of monetary and fiscal policies have helped to dampen the economic shock generated by the pandemic and the related lockdown measures. This sub-section discusses to what extent these policies have also helped to reduce the cross-country divergence forces unleashed by the pandemic.

II.5.1. Tighter financial conditions and the risk of increasing market fragmentation

Financing costs

Although a temporary surge in some sovereign bond yields was observed at the beginning of the pandemic, the financing costs of euro area governments have remained favourable/low since, standing at close to or even below pre-pandemic levels at the end of 2020 (see Graph II.11). Developments in euro area sovereign spreads indicate that the ECB's asset purchases, including

⁽⁵³⁾ The second wave refers to the increase in reported COVID-19 cases around November 2020, whereas the third wave started in March 2021. Note that the third wave, while significant in terms of new infections, did not result in a spike of new restrictions, as these remained high throughout Q1-2021 in most countries.

⁽⁵⁴⁾ Prospects for this sector are discussed separately in Section 3 of this report.

the pandemic emergency purchase programme (PEPP), have helped to avoid fragmentation in the euro area sovereign debt markets.

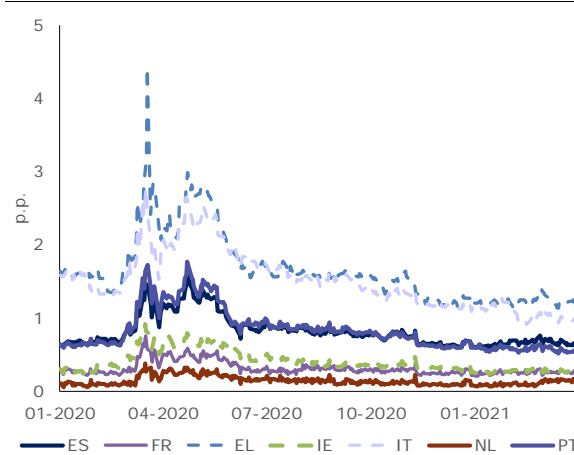
Financing costs faced by the real economy have also remained favourable benefiting from euro area national governments support schemes such as credit guarantee programmes⁽⁵⁵⁾ and a range of monetary policy easing measures such as sizeable asset purchases, liquidity backstops⁽⁵⁶⁾, and an easing of collateral rules⁽⁵⁷⁾. The ECB non-standard policy measures injected almost EUR 3 trillion of additional liquidity into the banking system per year as of end-March, 2021 – of which EUR 1.5 under the ECB’s Long Term Repo Operations (LTRO) and EUR 1.3 under the ECB’s Asset Purchase Programme (APP).

In parallel, the European banking supervision (Single Supervisory Mechanism, SSM) and national macro-prudential authorities also implemented a set of measures to support the lending capacity of banks. Several national macro-prudential authorities reduced countercyclical capital and systemic risk buffers⁽⁵⁸⁾, while the SSM allowed banks to meet part of their core capital requirements with non-core capital instruments⁽⁵⁹⁾.

At the same time, the European Investment Bank Group (comprising the European Investment Bank and European Investment Fund) reacted to address the most urgent liquidity needs of SMEs. More particularly, it launched by mid-2020 the new

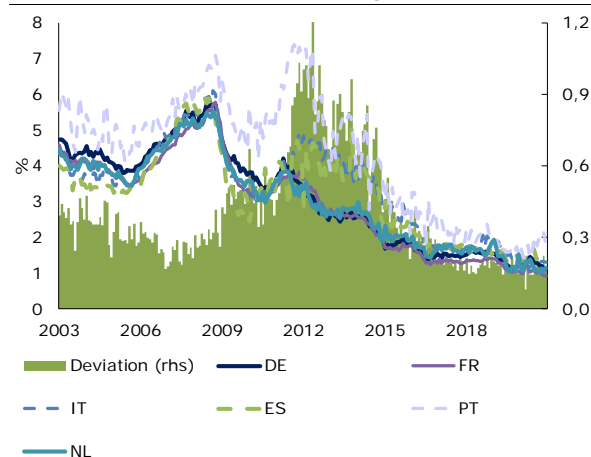
European Guarantee Fund to channel support to SMEs most affected by the coronavirus; and it provided also guarantees worth €2.2 billion to its existing intermediaries providing financing to businesses including micro- and social enterprises as well as SMEs in the cultural and creative sectors⁽⁶⁰⁾.

Graph II.11: Ten year sovereign debt securities yield spreads between Germany and selected euro area countries



Source: Macrobond and DG ECFIN calculations.

Graph II.12: Composite credit cost indicator for non financial corporations



(1) Deviation: Average Absolute Deviation of CCCI NFCs
Source: ECB, Bloomberg, BofA ML and DG ECFIN calculations.

All these measures tended to reduce the divergence in financing costs for non-financial corporations (Graph II.12) a factor that likely helped contain the divergence of euro area economies.

⁽⁵⁵⁾ See, for instance, Falagiarda, M., Prapiestis, A. and E. Rancoita (2020), ‘Public loan guarantees and bank lending in the COVID-19 period’, ECB Economic Bulletin, Issue 6/2020 and Baudino, P. (2020), ‘Public guarantees for bank lending in response to the Covid-19 pandemic’, BIS FSI Briefs No. 5. ESRB (February 2021) reports that the financial support by national governments varied strongly across euro area Member States, ranging from 35% of GDP in Italy to 2.5% in the Netherlands between March 2020 and January 2021. Financial support includes public guarantee, public loans, direct grants, tax deferral, tax relief and public support for trade credit insurance programmes. Moratoria programmes are not included.

⁽⁵⁶⁾ For instance the pandemic emergency longer-term refinancing operations (PELTROs) as well as other bridge loans offered by the ECB.

⁽⁵⁷⁾ For the Eurosystem, stabilising financial markets and protecting the supply of credit across the euro area was necessary to ensure an environment in which monetary policy can continue to foster price stability. See, for instance, Lagarde, C. (2020), How the ECB is helping firms and households, ECB Blog, and Lane, P. (2020), ‘The monetary policy response to the pandemic emergency’, ECB Blog.

⁽⁵⁸⁾ For more details see <https://www.ecb.europa.eu/pub/financial-stability/macprudential-measures/html/index.en.html>

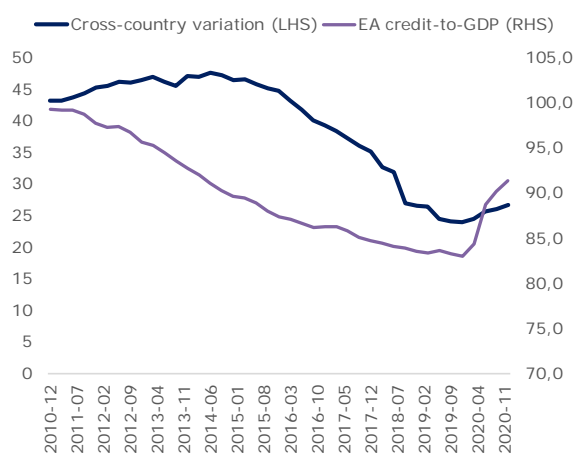
⁽⁵⁹⁾ ECB (2020), ‘FAQs on ECB supervisory measures in reaction to the coronavirus’.

⁽⁶⁰⁾ For more details see https://www.eif.org/what_we_do/covid-19-response/index.htm

Provision of credit to the real economy

As of the second quarter of 2020 the credit-to-GDP ratio rose sharply in the euro area as a whole. This was partly driven by a sharp fall in nominal GDP (denominator effect), but also by an increased demand for credit by firms that needed to finance working capital and by households for house purchase (nominator) (see Graph II.13).

Graph II.13: Credit-to-GDP ratio and cross-country deviation in credit-to-GDP ratio



(1) standard deviation

Source: ECB SDW and authors' calculations.

Graph II.14: Credit and GDP growth in the euro area, 2009 and 2020



(1) correlation between credit and GDP growth was 0.54 in 2009 and -0.07 in 2020.

Source: ECB SDW and authors' calculations.

A closer look at the data suggests that the flow of credit to the economy showed a counter-cyclical pattern in 2020 compared to a pro-cyclical pattern during the global financial crisis with a correlation

equal to 0.54 in 2009 and -0.07 in 2020. (See Graph II.14).

Indeed, while in 2009 systemic uncertainty triggered a credit crunch, the provision of credit to the real economy was much less affected in 2020, with corporations managing to ensure the necessary funding to meet working capital needs. Bank lending to households was also less affected in 2020 than in 2009, supported in particular by lending for house purchases. Overall, the cross-country dispersion of credit to GDP ratios has increased only modestly since the beginning of the pandemic (Graph II.13).

For the time being, there is little evidence of significant asymmetries in the transmission of monetary policy in the euro area⁽⁶¹⁾. Given the diverging growth effect of the crisis within the euro area and country differences in the financial health of banks and corporations, risks of future balance sheet impairment in both banks and corporations are likely to be unevenly spread across euro area Member States, thereby entailing asymmetries in the transmission of monetary policy. Available empirical analysis⁽⁶²⁾ suggests that this risk of divergence may stem also from the uneven impact of the crisis on the financial health of the corporate sector across countries driven by cross-country differences in terms of the timing and severity of the pandemic, firm demographics and the financial health of the corporate sector. This analysis suggests that a significant proportion of corporations in the worst affected Member States may continue to rely on external sources of financing by the end of 2021.

⁽⁶¹⁾ ECB (2021), ECB annual report expects that if the pandemic were to persist or if public support were to be withdrawn too quickly, a decrease in asset quality in combination with a decrease in profitability and later on in capital adequacy could weaken banks' resilience. As a consequence, banks could become more cautious in their lending decisions (see adverse scenario by ECB). ECB (2021), *op. cit.* forecasts a -10% drop in the return on equity 2021-2022 in a worst-case scenario; the CET1 ratio may be one-third lower by end -2022 than in 2019.

⁽⁶²⁾ The quantification of possible COVID-related firm liquidity needs is carried out by combining evidence from the available pre-shock corporate financial statements in the ORBIS database with actual and forecast sector-specific turnover data, while allowing for policy support in the form of short-time work schemes. The exercise relies on Archanskaia, E. et al. (2021), who build on the methodology described in 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 Annex 1 of European Commission (2020). 'Identifying Europe's recovery needs'. Staff Working Document 98.

II.5.2. Fiscal conditions

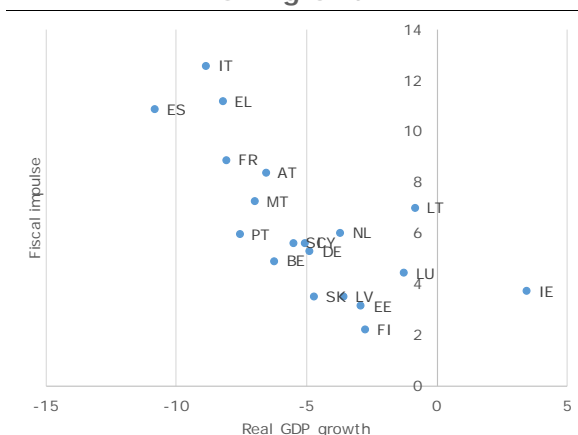
From the onset of the pandemic, the euro area countries have taken full advantage of the possibility to support their economies using both budgetary and non-budgetary measures. Additional spending included emergency spending on health care, compensations to specific sectors for income losses, and spending on short-time work schemes. Member States used non-budgetary measures to provide sizeable liquidity support in 2020, mostly in the form of public guarantees of which around a quarter was taken up by early March 2021.

At national level, such measures were made possible by the activation of the general escape clause of the Stability and Growth Pact by late March 2020 which meant that Member States were able to absorb to a varying degree part of the COVID-19 shock through increased fiscal spending.

At the European level, decisive policy action included: i) mobilising all available cash reserves from the European Structural and Investment Funds; ii) putting in place a new instrument for temporary support to mitigate Unemployment Risks in an Emergency (SURE), which is discussed in Section 4 of this report, and, iii) creating an entirely new recovery instrument, Next Generation EU, funded through the Commission's borrowing on the capital markets. These funds are being distributed to Member States as grants, loans or are serving as guarantee instruments.

Graph II.15 shows that the sum of fiscal impulse⁽⁶³⁾ and the take-up of guarantees is negatively correlated across Member States with GDP growth in 2020, pointing to the fact that fiscal support has been counter-cyclical and that governments have been able to use the fiscal lever to cushion domestic difficulties, thus likely reducing the divergent behaviour of euro area economies.

Graph II.15: Fiscal impulse and the take-up of non-budgetary measures vis-à-vis real GDP growth



(1) The fiscal impulse is measured as a fiscal stance including the support from RRF and other EU funds (temporary emergency measures are also included) plus the take-up of available public guarantees – based on the Commission 2021 Spring Economic Forecast.

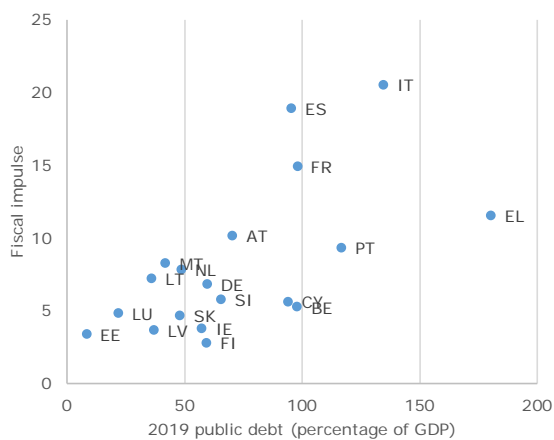
Source: Authors' estimates based on AMECO.

Graph II.16 shows that public debt at the beginning of the crisis has not constrained the fiscal response: as debt to GDP ratios at the end of 2019 are not negatively correlated with the fiscal support provided.

However, following the widespread use of the fiscal lever, the already strong cross-country divergence in public deficit and debt as percentage of GDP increased notably (Graph II.17). Reversing this upward trend once the pandemic has subsided will require timely, temporary and targeted measures that foster a smooth return to sustainable budgets in the medium-term.

⁽⁶³⁾ The fiscal impulse is measured as the changes in government primary expenditure (net of discretionary revenue measures) relative to 10-year nominal potential growth, based on the discretionary fiscal effort (DFE) concept. For further details on the methodology used to compile the DFE, see Carnot, N. and F. de Castro (2015). 'The Discretionary Fiscal Effort: an Assessment of Fiscal Policy and its Output Effect'. European Commission, Economic Papers 543 (February 2015). It should not be confused with fiscal policy multipliers, which measures the effects of changes in fiscal policy on economic activity. See Schinasi, G., Lutz, M., G. Bélanger and S. Chand (1991), 'Fiscal Impulse', IMF eLibrary, doi: <https://isni.org/isni/0000000404811396>

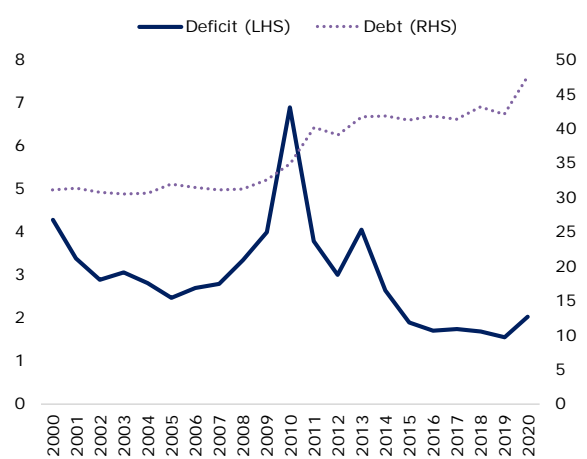
Graph II.16: Fiscal impulse and the take-up of non-budgetary measures in relation to the 2019 public debt



(1) The fiscal impulse is measured as fiscal stance including the support from the Recovery and Resilience Facility and other EU funds (temporary emergency measures are also included) plus the take-up of available public guarantees – based on the Commission 2021 Spring Economic Forecast

Source: Authors' estimates based on AMECO.

Graph II.17:



(1) standard deviation.

Source: Authors' estimates based on AMECO.

II.6. Conclusions

This section examined the increase in growth divergence triggered by the COVID-19 pandemic across the euro area. The analysis suggests that this increase reflects, as one can expect, differences in the strength of the epidemic and the stringency of the lockdown measures. However, the section highlights the role of the sectoral composition of the economic. In particular, Member States where contact-intensive activities (e.g. tourism) dominate are the countries that have been most affected. Moreover, a higher level of trade openness, which reflects the sectoral specialisation but also the

presence of interlinkages with other economies, made the economy more vulnerable on impact.

The divergence across Member States was to a certain extent mitigated by unprecedented responses of monetary and fiscal policy-makers. Among others, the ECB introduced the pandemic emergency purchase programme. Fiscal policy was expansionary at the national level, enabled by the activation of the general escape clause of the Stability and Growth Pact. This allowed in particular to increase the use of short-time working arrangements and of arrangements supporting firms' liquidity. It was also expansionary at the European level, where measures like the SURE were taken in support of Member States. Looking forward, NextGenerationEU (NGEU) will be at the heart of the response to the coronavirus crisis by supporting the economic recovery and building a greener, more digital and more resilient future.

Some of the observed divergences are very likely to be transitory. However, the risk still exists that cross-country divergence will persist well after the pandemic has subsided and the exceptional policies have ended. Such risk may arise from the differences in Member States' capacity to temper the pandemic's scarring effects. This then underscores once again the need for both national and EU-level investment and reforms that lead to stronger convergence to resilient economic structures across the euro area.

With the support of the European recovery strategy - and in particular the Next Generation EU instrument, the Recovery and Resilience Facility and the European Investment Fund capital increase - Member States should be well placed to implement a comprehensive investment and reform agenda in the coming years. This will reduce the risks that the divergence forces unleashed by the crisis across Member States become entrenched.

III. International tourism decline and its impact on external balances in the euro area

By Leonor Coutinho, Goran Vukšić and Stefan Zeugner

Abstract: Tourism was one of the activities most hard-hit by the pandemic. The containment measures to fight COVID-19 included restrictions on activities in the hospitality sector and on international travel. This section estimates the impact of the pandemic on cross-border tourism in the euro area during 2020, and evaluates the effect of the decline in international tourism on trade balances, using data on trade in value added and input-output tables to gauge direct and indirect effects. Using tentative projections of nights spent by foreign tourists in 2021 and 2022, the section also estimates the impact on the trade balances of euro area countries going forward. Results show that several tourism-intensive countries, some already with weak external positions, were hit strongly in 2020, and that the full recovery in these countries, which include Greece, Cyprus, Malta, Portugal, and Spain, may extend beyond 2022, even in an optimistic scenario. Conversely, for some euro area countries such as Belgium, Germany, Finland and the Netherlands the results point to positive partial effects from the decline in international tourism on trade balances, which in some cases helped to maintain their trade surpluses. Overall, the pandemic-induced decline in international tourism exacerbated, at least temporarily, the existing external sector imbalances within the euro area.

III.1. Introduction

International tourism is an important generator of value added and source of export revenues for the economies of several euro area Member States⁽⁶⁴⁾. Some of these countries have had external sector imbalances, in the form of either large negative net international investment positions or large current account deficits, or both. With the outbreak of the COVID-19 pandemic, far-reaching containment measures were introduced across the euro area, which included restrictions on contact-intensive services, and in particular on international travel. The restrictions were of varying intensity across countries and time, reflecting mostly differences in the spread of the virus and in health infrastructures, with policies in the EU coordinated to some extent⁽⁶⁵⁾. As a consequence of these

restrictions, tourism, in particular across borders, has been among the most severely hit economic activities, with important implications for the trade balances and GDP of countries with relatively large tourism sectors⁽⁶⁶⁾.

Subsection III.2 describes developments in 2020 to identify key patterns in international tourism during the pandemic, with a focus on the euro area⁽⁶⁷⁾. As the relevant official data come only with a delay, which varies across countries, the description also draws on nowcasts, using real-time big data. Subsection III.3 describes the importance of international travel for the external sector of euro area countries before the pandemic as well as the changes that occurred in 2020. Subsection III.4 estimates the effects of the 2020 tourism slump on trade balances⁽⁶⁸⁾. Finally, subsection III.5

⁽⁶⁴⁾ This section uses the terms ‘tourism’ and ‘travel’ interchangeably, although there may be differences in the usual understanding of the two. In the balance of payments statistics, exports of travel services (i.e. travel credit) include ‘... goods and services for own use or to give away acquired from an economy by non-residents during visits to that economy.’ (see IMF (2009), ‘Balance of Payments and International Investment Position Manual’, 6th edition, p. 166). Imports of travel services (i.e. travel debit) are defined analogously. In both cases, visits to an economy include visits whose primary purpose is business as well as other visits, with the latter recorded under the category of personal travel. Personal travel includes e.g. vacations, or visits with friends and relatives, but also trips with education and health-related purposes. The analysis does not differentiate between trips for different purposes, because more detailed data by the purpose of visit (business vs. personal) come with an additional delay and currently are only available for 2019 and not for all euro area countries.

⁽⁶⁵⁾ On 13 October, EU Member States adopted a Council Recommendation (Council Recommendation (EU) 2020/1475) on a coordinated approach to the restriction of free movement in

response to the COVID-19 pandemic. In a Communication adopted on 17 March 2021, the Commission charted the way ahead for a balanced policy and common EU approach to easing travel and other restrictions – European Commission (2021), ‘A common path to safe and sustained re-opening’, Communication to the European Parliament, the European Council and the Council, March.

⁽⁶⁶⁾ Furceri et al. (2021) show that the size of the tourism sector is a robust determinant of output losses across countries in the first phase of the Covid-19 recession. Furceri, Davide and Gansmeier, Michael and Ostry, Jonathan D. and Yang, Naihan, Initial Output Losses from the COVID-19 Pandemic: Robust Determinants (March 1, 2021). CEPR Discussion Paper No. DP15892.

⁽⁶⁷⁾ For a survey of studies that look at the impact of COVID-19 on tourism activity and also earlier literature on the impact of unexpected events in general, see Anguera-Torrell, O., Vives-Perez, J. and Aznar-Alarcón, J.P. (2021), ‘Urban tourism performance index over the COVID-19 pandemic’, International Journal of Tourism Cities, Vol. ahead-of-print.

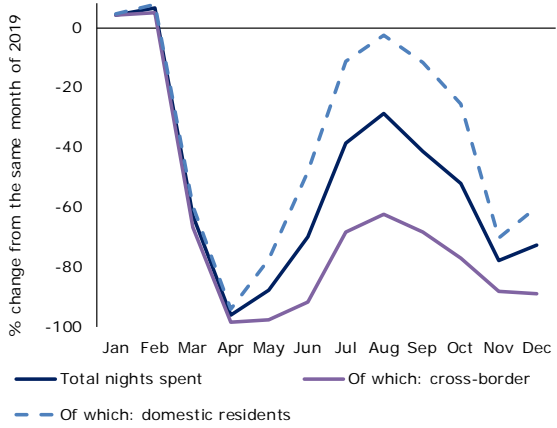
⁽⁶⁸⁾ Mariolis et al. (2020) use a similar methodology of input-output tables to estimate the impact of the Covid-19 tourism decline on

develops projections of the nights spent by foreign tourists in 2021 and 2022, and estimates the related effects on the external balances of euro area countries. While the analysis relies on the partial-equilibrium approach, it does account for the imports related to exports of travel services by focusing on value added traded. The last subsection discusses the findings and concludes.

III.2. Decline in international tourism during the pandemic

Eurostat data on nights spent by visitors in 2020 are currently fully available for 16 of the 19 euro area countries. For the other Member States, France, Ireland and (partly) Greece, this analysis relies on complementary nowcasts of nights spent per country. The nowcasts are based on a real-time dataset of 46 million customer reviews for 2.3 million AirBnB holiday listings in the EU (69). As they are currently available for up to March 2021, the nowcasts play an important role in gauging tourism developments in the current year, as discussed further below.

Graph III.1: Nights spent in tourist accommodations in the euro area in 2020



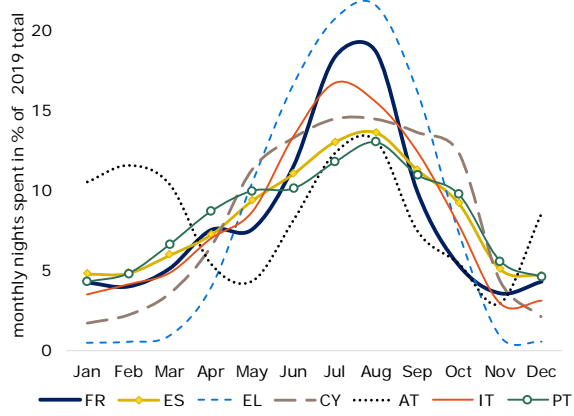
(1) Data are partially based on nowcasts. See the note to Table III.1.
 Source: Eurostat and Commission estimates.

trade balances in Greece. Mariolis, T., Rodousakis, N., & Soklis, G. (2020). The COVID-19 multiplier effects of tourism on the Greek economy. *Tourism Economics*, August, pp.1-8.
 (69) For methodological explanations see European Commission (DG ECFIN). (2020). 'Tourism in pandemic times: an analysis using real-time big data'. *European Economic Forecast – Autumn 2020*. Special Topic 3.3. Institutional Paper 136. The nowcasts use the language of each review as a proxy to differentiate between nights spent by domestic tourists and by foreign residents.

The patterns of nights spent in tourist accommodations closely reflect the first and second major wave of COVID-19 cases in 2020, with some differences (see Graph III.1). The decline in nights spent during the first wave was more pronounced and only slightly stronger for cross-border travel than for domestic tourism. In the period between June and August, tourism recovered considerably but with substantial differences between domestic and international travel. While the nights spent by domestic residents nearly reached pre-pandemic levels in August, the nights spent by cross-border travellers remained around 60% below their 2019 level. As the second wave began to intensify, tourism suffered another setback. In November and December of 2020, cross-border travel was nearly 90% below the 2019 level.

Given the varying extent of the changes in nights spent compared to the pre-pandemic situation throughout 2020-2021, especially of non-residents, it is of interest to observe the seasonal patterns of nights spent by foreign tourists in 2019. Graph III.2 shows, for selected countries, that most of the nights spent in 2019 were recorded in the summer, with visits to Greece being the most strongly concentrated in this part of the year (among all euro area countries). Still, some differences across Member States are apparent, also due to significant winter tourism, particularly in Austria, but also in Italy or France.

Graph III.2: Monthly distributions of foreign tourists' nights spent in 2019



Source: Eurostat.

For the euro area as a whole, total nights spent in 2020 declined by some 50% compared to 2019, while those by non-resident tourists dropped by 70%. This resulted from rather heterogeneous,

although consistently negative, developments across countries (Table III.1).

Table III.1: **Total and foreign tourism activity overview - nights spent in tourism accommodations**

Country	Nights spent 2020, total		Nights spent, non-residents	
	Millions	change y-o-y	Millions	change y-o-y
Cyprus	4	-78%	3	-83%
Greece	40	-72%	27	-77%
Malta	3	-70%	2	-75%
Spain	144	-69%	61	-80%
Ireland	12	-68%	6	-70%
Portugal	30	-61%	14	-74%
Italy	204	-53%	66	-70%
Belgium	20	-52%	7	-69%
EA19	1207	-51%	345	-70%
Luxembourg	1	-47%	1	-52%
Estonia	4	-47%	1	-68%
Lithuania	5	-43%	1	-73%
Slovenia	9	-42%	3	-71%
Germany	261	-40%	32	-64%
Finland	14	-38%	2	-68%
Austria	79	-38%	51	-44%
France	278	-38%	42	-69%
Netherlands	86	-30%	21	-59%

(1) Number of nights spent reported via Eurostat, augmented by nowcasts based on AirBnB-reviews for Greece (Dec 2020), France and Ireland (for the whole of 2020 except Oct).

Source: Eurostat and Commission estimates.

In 2020 as a whole, the slump in total nights spent ranged from 30% in the Netherlands to 78% in Cyprus. Cross-border tourism turned out lower than in 2019 by between 44% in Austria and 83% in Cyprus. The relatively low decline in Austria may be due to a different seasonal pattern, i.e. a comparatively large share of visitors in January and February 2020 before the outbreak of the pandemic. Another factor likely affecting the magnitude of the decline is the mode of transport used by the foreign visitors: where cross-border tourists rely comparatively less on air transport (e.g. the Netherlands, Luxembourg or Austria), the decline turned out to be less strong on average, than where air travel predominates (e.g. Cyprus, Greece, Spain, Malta or Portugal) ⁽⁷⁰⁾.

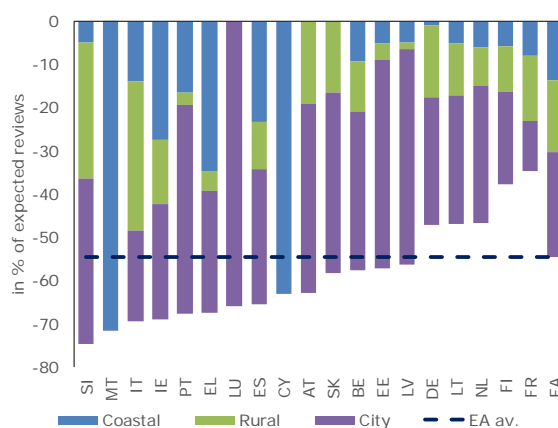
Another informative aspect in the analysis of tourism during the pandemic is the change in travel by type of the destination region, differentiating between city, coastal and rural regions ⁽⁷¹⁾. AirBnB customer reviews allow for such granular insights by statistical region (NUTS 3), namely, via a

⁽⁷⁰⁾ For data on the transport mode of tourist arrivals, see Eurostat (2020) 'Tourism statistics – intra-EU tourism flows', Statistics Explained.

⁽⁷¹⁾ This part does not differentiate between domestic and cross-border tourism, but it still provides interesting insights into tourism patterns during the pandemic.

comparison of the actual number of reviews to an estimated counterfactual based on pre-pandemic trends in tourism and the growth in AirBnB's market share ⁽⁷²⁾. Note that while existing Eurostat statistics can be used to translate AirBnB reviews into tourism nowcasts for large regions or the national level, such data is not available for detailed regional levels. Distinguishing between destination types thus has to rely on comparing raw review data to what could have been expected.

Graph III.3: **Decline in tourism activity in 2020 by the type of destination region**



(1) Decline is approximated by the number of AirBnB customer reviews, as compared to the number of reviews that could have been expected under normal circumstances. See Box III.2 for more details. Note that Cyprus is a single NUTS3 coastal-tourism region, while Malta consists of two NUTS3 coastal-tourism regions. Luxembourg is a single NUTS3 city-tourism region.

Source: Commission estimates.

In the euro area, around 35% of the expected reviews in 2020 relate to city tourism, slightly below the share for rural, which amounts to 36%, and above the share for coastal tourism with the remaining 29%. City tourism recorded the largest decline for the whole euro area, equal to around 70% relative to the expected level, widely exceeding the fall for the rural and coastal regions, which amounted to around 46%. As a result, out of the 55% decline in the number of reviews in the euro area, nearly 25 percentage points were due to the decline in city tourism (Graph III.3) ⁽⁷³⁾. Conversely, judging by the decline in the number of reviews, coastal tourism performed better and contributed less to the overall tourism decline in the euro area. In particular, the coastal regions in Germany, France, and the Netherlands saw activity

⁽⁷²⁾ For details on calculating the expected number of AirBnB reviews, see Box III.2.

⁽⁷³⁾ On city tourism, see also Anguera-Torrell et al. (2021) op. cit.

in the third quarter of 2020 close to, or even exceeding, expected levels. In contrast, most Mediterranean countries experienced a stronger coastal tourism decline than the aforementioned countries. This is linked with the fact that foreign tourists, which represent the largest share of tourism in the area, rely predominantly on air travel to access their destination and favour coastal areas. Finally, the contribution of rural tourism to the overall decline in tourism activity in Italy and France was larger than for other types of destination regions, reflecting the comparatively large share of rural regions in the expected reviews, of around 50%.

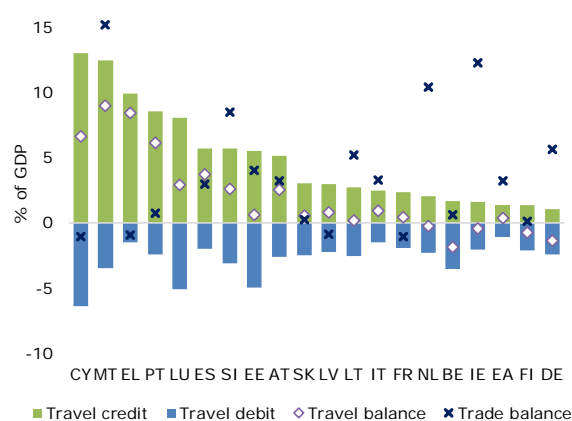
III.3. International tourism and external balances

The importance of travel services in international trade is very uneven across euro area countries, both in terms of exports (travel credit), as well as in terms of the contribution of travel to the overall trade balance. Graph III.4 depicts the travel balance from the balance of payments statistics and its main components (credit and debit – see the first footnote of this section for methodological explanations) for euro area countries in 2019. Four countries, Cyprus, Malta, Greece and Portugal, recorded a travel surplus in excess of 5% of GDP, with their exports of travel services exceeding or being very close to 10% of GDP. Except for Malta, these countries have a large negative net international investment position and recorded current account deficits (Cyprus and Greece) or very small surpluses (Portugal) in the years preceding the COVID-19 shock. Spain also has a large negative net international investment position but has been posting solid current account surpluses in recent years, though also on the back of tourism.

As for other euro area countries, considerable travel exports and surpluses could be observed in Slovenia, but also in Austria where it almost equalled the overall trade surplus⁽⁷⁴⁾. Cyprus recorded a substantial travel surplus, while at the same time being the largest importer of travel services, meaning that Cypriot travellers spend the highest share of GDP abroad. Luxembourg's substantial travel credit can largely be attributed to

visitors whose primary purpose was business⁽⁷⁵⁾. In 2019, travel deficits were observed in Belgium, Germany, Finland and Ireland. As for the euro area on aggregate, it was recording a small travel surplus in recent years before the COVID-19 shock, ranging between 0.3% and 0.4% of GDP, with travel credit ranging from 1.2% to 1.4% of GDP.

Graph III.4: International travel in 2019



(1) Luxembourg's trade balance is out of scale with a surplus of 38.7% of GDP.

Source: Eurostat.

The outbreak of the pandemic strongly affected both exports and imports of travel services, but in varying proportions. The highest travel surpluses were at around 2-2.7% of GDP (Graph III.5). Particularly large declines were recorded in the travel surpluses of Cyprus (decline of 7.6 percentage points (pp) of GDP), Greece (6.3 pp), Portugal (3.7 pp) and Spain (3 pp). In the case of Cyprus, the decline turned the surplus into a deficit. In contrast, the fall in the surpluses of Luxembourg and Austria was more limited. With the decline in international travel, travel deficits shrunk by 0.5 pp of GDP in Belgium and 0.7 pp in Finland, mainly on account of declining imports. For the same reason, in Germany, the travel deficit narrowed by 0.8 pp of GDP, while the Netherlands moved from a small deficit in trade in travel services to a small surplus. In both countries, the change in travel balance thus helped to maintain their large external surpluses. For the euro area on

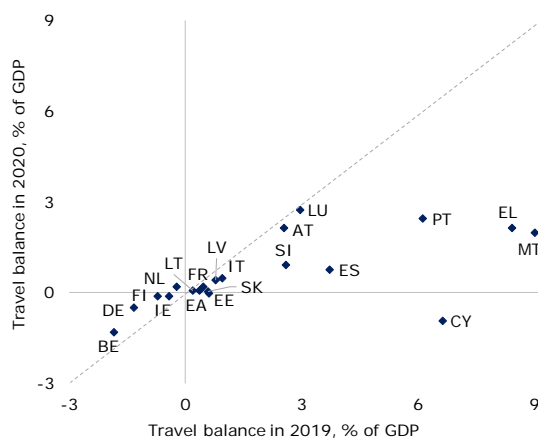
⁽⁷⁴⁾ While Luxembourg also recorded a strong travel surplus, it is of minor importance for its overall trade balance, which can be strongly affected by the presence of multinational enterprises (MNEs), as is the case also in Ireland or the Netherlands.

⁽⁷⁵⁾ The share of business travel credit in total travel credit for Luxembourg in 2019 amounted to around 47%, as compared to the euro area average of 18% (average of 17 countries where data is available). Shares higher than 30% have been recorded for Finland, the Netherlands and Germany, but these countries do not have a high overall travel credit.

aggregate, the travel balance shrank by nearly 0.3 pp of GDP, moving close to balance.

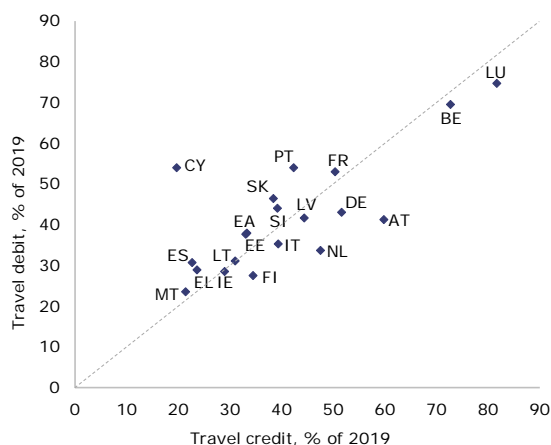
These developments in travel balances are the sum of the movements in exports and imports of travel services. In a number of euro area economies, the decline in travel credit was roughly proportional to the decline in travel debit (Graph III.6). The most notable exception is Cyprus, where, as already noted, the decline in travel exports largely exceeded the decline in imports. To a lesser extent, this also holds true for Portugal. Austria and the Netherlands represent cases in which the decline in exports of tourism services remained contained relative to the drop in imports.

Graph III.5: Travel balance in 2019 and 2020



Source: Eurostat.

Graph III.6: Travel credit and debit in 2020



Source: Eurostat.

III.4. Direct and indirect impact of international tourism on trade balances

The previous subsection presented the changes in the balance of payments items describing trade in travel services in 2020, which are largely and directly pandemic-related. The discussion did not consider the fact that producing goods and services for exports typically involves importing part of the inputs in production of these goods and services. To take account of this, the ‘trade in value added’, which considers the value each country uniquely adds in the production process, has to be analysed. For this, the values of inputs sourced from abroad have to be *subtracted* from the value of the gross exports. Additionally, in estimating the impact of a change in foreign demand on the value added traded, it is important to consider the backward linkages between different sectors of the economy, as demand by visitors indirectly generates demand for goods and services in sectors not directly related to tourists (e.g. construction), which in turn also involves imported components. Accounting for this last effect requires estimating the value added (as opposed to the total value of production) generated by foreign tourist demand in the sectors of the economy that are related to tourism via ‘backward multipliers’ ⁽⁷⁶⁾.

This subsection presents the results of an exercise to estimate the net effect of the decline in international tourism on the trade balance, accounting for changes in imports related to demand by foreign tourists and for indirect effects, i.e. those in the sectors of the economy not directly related to tourism. The partial-equilibrium nature, as well as other simplifying assumptions of the exercise should be emphasised. In particular, the estimates do not account for i) second-round effects related to a decline in domestic income and demand with likely repercussions on imports, ii) other determinants of aggregate demand, or iii) changes in relative prices.

On the credit side, the total demand by foreign tourists in 2020 is taken from the balance of payments accounts and is split into demand for local goods and services other than international passenger transport (travel account credit) and demand for international passenger transport (transport account credit), which is treated

⁽⁷⁶⁾ Backward multipliers measure the demand generated in other sectors, when the production of a sector increases.

Box III.1: Data and some methodological details

The analysis uses data from the Balance of Payments Statistics (BPM6), from the OECD TiVA database on trade in value added (available until 2015), and from the WIOD database with input-output tables (available until 2014). The breakdown of economies into sectors varies in the OECD TiVA and WIOD databases, with the latter source providing more detailed sectoral decomposition. Foreign tourist demand needs to be assigned to specific sectors of the economy to gauge the direct effects in terms of value-added trade and to estimate the indirect effects by using backward multipliers to other sectors.

The travel credit, i.e. the demand by foreign tourists for local goods and services (excluding international passenger transport), is recorded in the travel account in the balance of payments, where it can be decomposed into the following categories: (a) *goods*, (b) *local transport services*, (c) *accommodation services*, (d) *food-serving services*, and (e) *other services* (BPM6 Manual, 6th Edition). The analysis links these categories to sectors of the economy in the OECD TiVA and WIOD database, both of which have a separate sector of *Accommodation and food services*, which presumably encompasses categories (c) and (d) from the travel account. Category (a) *goods*, is assigned to *Retail trade, except of motor vehicles and motorcycles*, and category (b) *local transportation services*, to *Land transport and transport via pipelines* sectors.

There are, however, only four EU countries reporting these detailed travel credit data (and only two with complete data), with varying shares across categories, so that an alternative approach is needed in assigning parts of foreign tourist demand to single sectors of the economy. The analysis here uses data on exports of the *Accommodation and Food Services* sector from the OECD TiVA for 2015, which is assumed to be absorbed completely by foreign tourists, and calculates the share of these exports in total 2015 travel credit, i.e. in total demand by foreign tourists. Then, the same share of travel credit in 2019 is assigned to the same sector. Thereafter, the rest of the foreign tourists demand (total travel credit minus the part assigned to *Accommodation and Food Services*) is allocated to either *Retail* or to *Land transport* sectors, using the ratio of 6:1 from the detailed data available in the travel account of balance of payments for the Czech Republic. The sensitivity of results was tested using the ratio of 3:1, which is close to the data for Slovenia, and which did not affect the results substantially.

The impact of the change in foreign tourist demand on domestic value-added in these sectors constitutes a direct effect of international tourism. The indirect effect on value-added in the rest of the economy is calculated using backward multipliers. Given the more detailed sectoral breakdown of economies in the WIOD than in the OECD TiVA data, the analysis uses the former for a sectoral allocation of direct foreign tourist demand, for the information on the sectoral domestic value-added effects, as well as for the calculation of backward multipliers. Note that the *Retail* sector from WIOD (*Retail trade, except of motor vehicles and motorcycles*) is included in the broader activity in the OECD data (*Wholesale and retail trade; repair of motor vehicles*), while *Land transport and transport via pipelines* in WIOD is in OECD TiVA's more general *Transportation and storage*. Both sources have a separate *Accommodation and food services* sector.

In addition to international travel, the international transport of passengers is another type of tradable services from the balance of payments that needs to be taken into account when analysing the effects of changes in international tourism demand. It is normally presented separately for air transport, for sea transport, and for other modes of transport. Again, the WIOD database provides a more suitable sectoral breakdown to account for domestic value-added effects and backward linkages from the more narrowly defined sectors of *Air transport*, *Water transport*, and again *Land transport and transport via pipelines* for other modes of transport. However, it should be noted that the balance of payments data on the transport of passengers are not complete across all transport modes for all countries; and for Spain, these data are not available at all.

separately below. The demand for local goods and services by foreign tourists is allocated to three specific sectors of the economy: accommodation and food serving services, retail, and land transport. The demand by foreign tourists allocated to the food and accommodation sector is equal to the total exports of this sector, which should in

principle all relate to foreign visitors. What remains of the foreign tourism demand is then allocated to the other two sectors (retail and land transport) using export shares from the balance of payments (see Box III.1).

Domestic value-added created in these sectors constitutes a **direct** effect of international tourism. The **indirect** effect on the value-added in the rest of the economy is then calculated using backward multipliers. The data used and details on the methodology are presented in Box III.1.

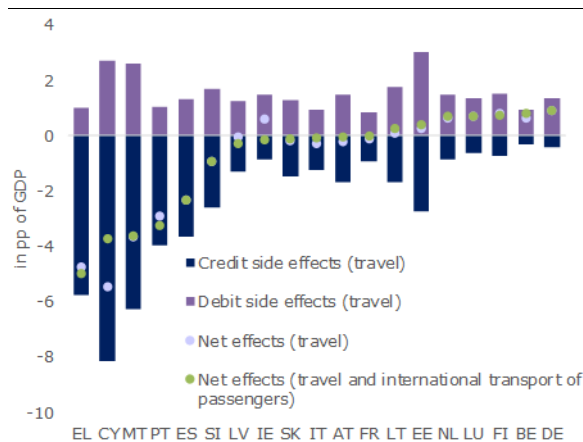
Besides the effects of changes in demand for local goods and services, there are also effects on the change in demand for the international transport of passengers, which can be observed directly in the balance of payments and are estimated separately (see Box III.1). As for the debit side, the analysis simply assumes that the money not spent for travel abroad, including on the international transport of passengers, is saved. Data on the travel debit (and partly on the debit in the international transport of passengers) in 2020 is readily available in the balance of payments statistics. Thus, the overall effect of the decline in travel consists of the reduced value-added exports due to the decline in visits of non-residents (credit side), and savings emanating from residents travelling less abroad (debit side).

Graph III.7 depicts the effects of the 2020 cross-border tourism slump on the trade balances of the euro area countries. It shows both its credit and debit side effects, as well as the corresponding net effect. In addition, it presents net effects, which also account for the changes in the international transport of passengers (for which data is directly available in the balance of payments).

The net effect of the decline in international travel is estimated to have been the strongest in Cyprus, amounting to -5.5 pp of GDP (in line with the large drop in the travel balance observed for Cyprus in 2020), followed by Greece, Malta, Portugal and Spain, with declines equal to 4.7, 3.7, 2.9 and 2.3 pp of GDP, respectively. These are the countries in which the travel surplus was the highest in 2019, as presented in Graph III.4, and which recorded the steepest declines in the nights spent by non-residents in 2020, as shown in Table III.1. In all these countries, the decline in the travel debit was less pronounced than the decline in the travel credit, even if only slightly in Malta or Greece, in line with the pattern evident from Graph III.6. This observation is relevant for the analysis of the next subsection. The next largest negative net effect was estimated for Slovenia, close to 1 pp of GDP. A different seasonal pattern of visits to Austria helped to limit the partial negative impact on the trade balances to roughly -

0.2 pp of GDP, despite its non-negligible travel surplus in 2019. Declines in Italy and France, which normally record modest travel surpluses, amounted to around 0.3 and 0.1 pp of GDP, respectively. At the other side of the spectrum, the travel decline is estimated to have led to higher trade balances in the Netherlands, Luxembourg, Finland, Belgium and Germany, in the range between 0.6 and 0.9 pp of GDP, due to the decline in their imports of tourism services.

Graph III.7: Effects of the decline in international tourism in 2020 on the trade balance



(1) Credit and debit side effects include only effects from the decline in travel that is recorded under the travel category in the balance of payments. The same holds true for 'Net effects (travel)'. The impact of the decline in the international transport of passengers is added here only in net terms in the 'Net effects (travel and international transport of passengers)', as the latter is of minor importance for the majority of countries.

Source: Authors' calculations.

The additional effects of the decline in tourism on the international transport of passengers change the results non-negligibly only for two countries, Cyprus and Ireland. Cyprus had a substantial debit in the air transport of passengers in 2019 of nearly 2.5% of GDP, which declined considerably in 2020 to 0.7% of GDP, partly offsetting the negative impact of the travel decline on its trade balances. Conversely, in 2019 Ireland had a substantial credit in the air transport of passengers, amounting to around 2.1% of GDP. For 2020 there is still no data for Ireland, so in the calculations, a decline in passengers' transport credit by 71% is assumed, in proportion to the decline in travel credit ⁽⁷⁷⁾.

⁽⁷⁷⁾ For 2019, for any missing observation in the international transport of passengers, a value of zero is imputed. Spain is the only country for which there is no data on the international

III.5. Projecting international tourism and its impact on trade balances in 2021 and 2022

Data on travel and transport credits and debits is only available until 2020. Beyond this, the analysis relies on the assumption that tourism-related demand is proportional to the level of international tourism activity, as captured by the number of nights spent by foreign tourists⁽⁷⁸⁾. Thus, tourism demand in 2021 and 2022, relative to 2019, is calculated proportionally to projections of the number of nights spent by foreign tourists (on the credit, i.e. exports, side). Data on nights spent by tourists in January 2021 is available for some countries and is supplemented by nowcasts, using data on AirBnB reviews for more recent months to obtain estimates until March 2021 for all countries. The remainder is projected as explained below.

To come up with projections for nights spent by international travellers, specific assumptions for 2021 (described below) are made for single quarters, with the projection for the whole year computed as the sum of quarterly projections, i.e. of data and nowcasts available for Q1⁽⁷⁹⁾.

The projected nights spent in 2021 and 2022 are compared to 2019 levels to estimate tourism demand and subsequently gauge, as before, the direct and indirect effects in terms of exported value added. To obtain the total effect on trade balances, debits are estimated by assuming that they changed in the same proportion to credits, as was observed in 2020.

Given the importance of visitors travelling by air that can be induced from the descriptive analysis of the declines in nights spent presented above, the explanation here focuses on the assumptions regarding the treatment of air travel in building the projection scenarios. To that end, the analysis uses country-specific forecasts of flight traffic published

by Eurocontrol in November 2020⁽⁸⁰⁾. These affect the projected number of nights spent by air travellers ('airborne tourism') from the rest of the EU-27 and the UK,⁽⁸¹⁾ as well as (separately) by tourists from third countries, which are all assumed to be travelling by air. Eurocontrol provides three scenarios for each country, which, for the ease of exposition, are labelled here as pessimistic, intermediate and optimistic. By combining with an assumption on how the passenger-per-flight ratio evolves going forward, it is possible to design three scenarios for 'airborne tourism'⁽⁸²⁾. For ground-based travel, a single assumption is made and kept constant across the three scenarios. The exact assumptions for projections of nights spent are provided in Box III.2, under 'Projections of nights spent in 2021 and 2022'.

Table III.2: Projections of the nights spent by foreign tourists in 2021 and 2022

Country	Projected nights spent, in % of 2019, intermediate scenario	
	2021	2022
Austria	46%	84%
Belgium	36%	75%
Cyprus	19%	61%
Germany	42%	74%
Estonia	34%	73%
Greece	30%	64%
Spain	17%	67%
Finland	24%	73%
France	30%	74%
Ireland	28%	54%
Italy	35%	73%
Lithuania	30%	71%
Luxembourg	56%	77%
Latvia	40%	76%
Malta	26%	66%
Netherlands	47%	78%
Portugal	31%	72%
Slovenia	26%	71%
Slovakia	40%	74%

Source: Authors' calculations.

Table III.2 presents the projected nights spent in 2021 and 2022 by foreign tourists, as a % of the nights spent in 2019, using the intermediate

transport of passengers for any mode of transport. If the data for 2020 are not available, the international transport of passengers is assumed to have changed proportionally to travel.

⁽⁷⁸⁾ The projections here do not account for the fact that tourists from different countries of origin may have different spending habits and some tend to spend more than others (per night spent). This simplification may be of consequence given that the projections of foreign tourist nights spent use different assumptions for the EU and non-EU visitors, as will be explained below, leading to changes in the composition of visitors by origin.

⁽⁷⁹⁾ In addition, projections distinguish between three types of tourists, namely EU+UK air travellers, EU+UK tourists travelling by other means, and non-EU tourists.

⁽⁸⁰⁾ The Eurocontrol forecasts, for the period 2020-2024, are available here: <https://www.eurocontrol.int/publication/eurocontrol-five-year-forecast-2020-2024>. The Eurocontrol provides forecasts for three different scenarios. Still, given the unpredictable turns in the development of the pandemic, the forecast should be taken with caution.

⁽⁸¹⁾ The UK is an important source market of tourists in EU Member States. For simplicity, UK tourists are assumed to behave more like intra-EU tourists than travellers from other continents.

⁽⁸²⁾ It should be noted that the share of air trips by EU residents varies considerably across EU destination countries, ranging from respectively 5% and 11% for Slovakia and Austria, to 95% for Cyprus and Malta. See Eurostat (2020) 'Tourism statistics – intra-EU tourism flows', Statistics Explained.

Box III.2: Details on the expected number of reviews and projections

Expected number of reviews

The expected number of AirBnB reviews is the number of reviews that could have been expected in 2020 (and beyond) under normal circumstances if the pandemic had not occurred. The calculation of the expected number of reviews takes into account the underlying trend growth of reviews, due to the strong, but decelerating expansion of AirBnB's market share in the overall tourist accommodation segment. Thus, the expected number of reviews on any day d in year y , denoted as $ER_{d,y}$, equals the average number of reviews around the same day d in year $y - 1$ (the average over 14 daily leads and lags from d), denoted with $\bar{R}_{d,y-1}$, augmented by half of the (positive) growth rate of reviews during one year (365 days) before day d in $y - 1$, denoted with R_{y-1} , as compared to 365 days before day d in year $y - 2$, denoted with R_{y-2} . Thus:

$$ER_{d,y} = \bar{R}_{d,y-1} * \max[1, 1 + 0.5 * (R_{y-1}/R_{y-2} - 1)] \quad (1)$$

If the growth rate is negative, the number of expected reviews simplifies to the average number of reviews around the same day d in year $y - 1$. Halving the growth rate of reviews in the preceding year broadly captures the deceleration in market share growth on aggregate, which would likely have materialised in 2020 in the absence of a pandemic.

Projections of nights spent in 2021 and 2022

Nights spent, denoted as NS are expressed in proportion to 2019 levels, for the corresponding period. Projections and estimates are denoted with an *. The formulas below detail the assumptions for different periods in 2021 and 2022. The assumptions differentiate between 'airborne tourism' and 'non-airborne tourism' (denoted with a and na , respectively), in which the former accounts for the country-specific Eurocontrol flight traffic forecasts (denoted with FF) and the assumed number of passengers per flight (denoted with P). Projections for airborne tourism are done separately for two groups: tourists from other EU Member States and the UK are denoted as 'eu', tourists from the rest of the world are denoted as 'row'. Nights spent in 2021Q1 (denoted as NS_{21Q1}^*) is estimated based on statistics of foreign tourist nights spent already available, or a nowcast of that where data is not yet available. Projections for different periods beyond 2021Q1 are computed as follows ⁽¹⁾:

$$NS_{21Q2}^* = 0.7 * NS_{21Q1}^* + 0.3 * NS_{21Q3}^* \quad (2)$$

$$NS_{21Q3}^* = NS_{21Q3}^{na*} + NS_{21Q3}^{a,eu*} + NS_{21Q3}^{a,row*}, \text{ where}$$

$$NS_{21Q3}^{na*} = NS_{20Q3}^{na}, \text{ and} \quad (3a)$$

$$NS_{21Q3}^{a,i*} = NS_{20Q3}^{a,i} * (FF_{21}^*/FF_{20}), i \in \{eu, row\} \quad (3b)$$

$$NS_{21Q4}^* = 0.5 * NS_{21Q3}^* + 0.5 * NS_{22}^* \quad (4)$$

$$NS_{22}^* = NS_{22}^{na*} + NS_{22}^{a*}, \text{ where}$$

$$NS_{22}^{na*} = 0.7 * NS_{19}^{na} + 0.3 * NS_{20}^{na}, \text{ and} \quad (5a)$$

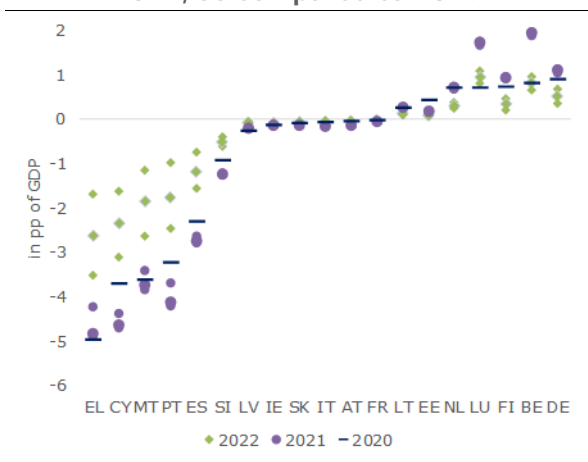
$$NS_{22}^{a,i*} = NS_{20}^{a,i} * (FF_{22}^* P_{22}^*/(FF_{20} P_{20})), i \in \{eu, row\}, \text{ with } P_{22}^* = 0.7 P_{19} + 0.3 P_{20} \quad (5b)$$

(1) The assumptions have been calibrated in order to be broadly consistent with the Commission's 2021 Spring Forecast exercise.

forecast of flight traffic by Eurocontrol. For 2021, the percentages range from only 17% and 19% in Spain and Cyprus, to close to 50% in Austria and the Netherlands and 56% in Luxembourg. In 2022, a significant increase is projected for all countries,

which in relative terms is expected to be the strongest for Spain and Cyprus, also due to the low base in 2021.

Graph III.8: Projected impact of the decline in tourism on trade balances in 2021 and 2022, as compared to 2019



(1) The projections include the impact on the international transport of passengers. There are three scenarios for each year of projection. The estimate for 2020 from Graph III.7 is reproduced here.

Source: Authors' calculations.

Finally, the projections of nights spent by foreign tourists in 2021 and 2022 are translated into the effects on the trade balances, using the approach described above for all three scenarios. The effects are depicted in Graph III.8. Note that if the impact is equal to zero, the contribution of international tourism to trade balances is the same as in 2019. Results show that estimates for 2021 are close to the effects calculated for 2020 (using balance of payments data) for most countries. Still, especially for Cyprus, Portugal and Spain, as well as for Luxembourg and Belgium, 2021 effects turn out stronger (larger in absolute value) than the effects in 2020. Furthermore, for many countries in 2022, the estimated effect of the pandemic-related tourism decline on trade balances is much smaller, meaning that the contribution of tourism is closer to the 2019 levels.

The recovery of flight traffic plays an important role, especially in our projections for 2022. This holds true for the countries most exposed to the decline in tourism due to high exports and surpluses in the trade of tourism services, but also due to the comparatively large shares of visitors travelling by air to these countries. This group of countries, which includes Greece, Cyprus, Malta, Portugal and Spain, is projected to still feel some negative consequences of the COVID-19 shock on its tourism sector and trade balances, even in 2022 for the optimistic scenario. As the development of the pandemic, which affects the projections, is

difficult to predict, the forecast should be taken with caution.

III.6. Conclusions

This section explored the impact of the pandemic on international tourism in the euro area countries in 2020, and evaluated the effect of the decline in international tourism on trade balances. Despite being partial-equilibrium, the analysis takes into account both the direct and indirect effects of the change in foreign tourist demand, i.e. also the backward linkages to sectors of the economy not directly affected by the tourist demand. It does so by focusing on trade in value-added terms, thus accounting for imports related to exports of tourism services.

The section documented a slump in tourism activity in 2020, which was more strongly pronounced for cross-border travel. Declines in nights spent by foreign tourists also varied considerably across countries. Lower tourism activity was reflected in the balance of payments travel data for 2020, but also in the estimated impact on the overall trade balances. Using projections of the nights spent by foreign tourists in 2021 and 2022, the section also gauges the impact on the trade balances of the euro area countries in these years.

A group of countries with large tourism sectors, which recorded substantial contributions of international tourism to their trade balance in the past, was hit very strongly in 2020. These countries, some with already weak external positions, experienced trade balance deteriorations due to the decline in international travel ranging from 2.3 pp of GDP in Spain to 5.5 pp of GDP in Cyprus. Our projections show that the full recovery in this group of countries, which also includes Greece, Portugal and Malta, may extend beyond 2022, even in an optimistic scenario. Conversely, some euro area countries such as Belgium, Germany, Finland and the Netherlands experienced positive partial effects from the decline in international tourism on trade balances, which in some cases maintained their trade surpluses. Overall, the pandemic-induced tourism slump exacerbated, at least temporarily, the existing external sector imbalances within the euro area.

IV. The SURE instrument – key features and first assessment

By Cliona McDonnell, Jocelyn Boussard, Isabelle Justo, Philipp Mohl, Gilles Mourre and Klara Stovicek

This section summarises the use of SURE financial assistance to date (25 May 2021) and provides early evidence of its impact, based on the Commission's first bi-annual report on the instrument. Regarding the use of the instrument to date, demand from Member States for SURE loans has been strong, with 19 Member States being granted almost 95% of the maximum amount of EUR 100 billion. Investor interest in SURE bonds has also been significant, enabling the EU to achieve favourable pricing terms and disburse the loans to Member States quickly. Member States have primarily used SURE to finance short-time work schemes and similar measures for expenditure that occurred in 2020, supporting an estimated 25-30 million people and 1½ to 2½ million firms. Regarding the first assessment of SURE's impact, an analysis using Okun's Law shows that the increase in unemployment rates in 2020 was milder than expected, largely due to policy supports including the SURE instrument. In addition to improving general confidence in the EU, SURE encouraged Member States to adopt new short-time work schemes or modify existing schemes. Furthermore, the interest savings Member States made through SURE are estimated to be almost EUR 6 billion across the first four issuances.

IV.1. Introduction

The European instrument for temporary Support to mitigate Unemployment Risks in an Emergency (SURE) has been a key element of the EU's pandemic-related policy supports ⁽⁸³⁾. This section outlines the use of SURE to date and reviews its socio-economic impacts, based on the first bi-annual report on SURE published in March 2021 ⁽⁸⁴⁾.

SURE is an EU financial assistance instrument endowed with a budget of EUR 100 billion to address the crisis. It was created by the EU to help Member States protect jobs and workers' incomes in the context of the COVID-19 pandemic. SURE provides loans to finance Member States' short-time work schemes or similar measures aimed at protecting employees and the self-employed, and as an ancillary, health-related measures, in particular in the workplace.

The guarantee system underpinning SURE is a strong expression of solidarity in the EU between Member States, ensuring necessary financial robustness and credibility. For SURE to become available, all Member States agreed to guarantee the risk borne by the EU when

borrowing resources. All Member States voluntarily provided irrevocable, callable, unconditional guarantees to the EU for the loans to Member States totalling EUR 25 billion, or 25% of the total SURE budget. These guarantees enabled the Commission to expand the volume of loans it could provide to Member States on behalf of the EU, while also ensuring a prudent financing of the SURE instrument and preserving the EU's high credit rating.

SURE has had significant success to date with a large take-up by Member States. As will be detailed in this section, among other achievements, the take-up among Member States has been strong, the bonds issued to finance SURE loans have been in high demand from investors, and between 25 and 30 million people are estimated to have been supported by SURE across the EU in 2020. One of the notable characteristics of the pandemic's economic impact in Europe has been the lower than expected increase in unemployment, in which SURE has been a factor.

This chapter is divided into two parts. First, the use of the SURE instrument is described, both from a financial point of view and in terms of the national measures SURE was used to fund. The second section provides a preliminary assessment of SURE's impact on employment and other factors, including interest savings by Member States.

⁽⁸³⁾ Council Regulation (EU) 2020/672 of 19 May 2020 on the establishment of a European instrument for temporary support to mitigate unemployment risks in an emergency (SURE) following the COVID-19 outbreak, OJ L 59, 20.5.2020, p. 1

⁽⁸⁴⁾ https://ec.europa.eu/commission/presscorner/detail/en/i_p_21_1209. The cut-off date for the report was 26th February 2021; the amounts granted and disbursements in Section 2a of this section are updated to 25 May 2021.

IV.2. The use of SURE financial assistance

IV.2.1. The amount and characteristics of financial assistance under SURE

Member State demand for financial assistance under SURE has been strong. Since its introduction, almost 95% of the EUR 100 billion budget, or EUR 94.3 billion, has been granted to 19 Member States. The amounts granted to Member States range from EUR 27.4 billion to Italy to EUR 230 million to Estonia (see Graph IV.1 for further detail).

Under SURE, the Commission borrows on capital markets by issuing bonds to finance cheap back-to-back lending to Member States.

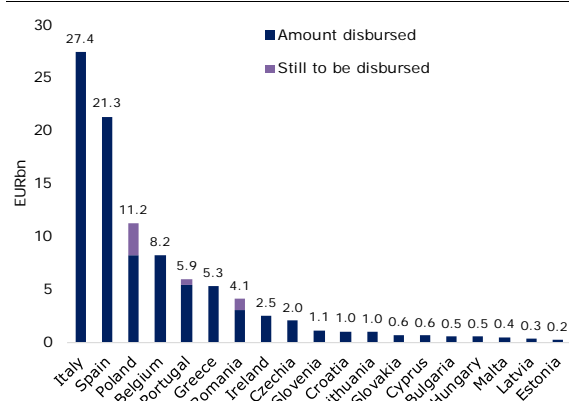
After the requests for financial assistance from Member States were granted, the Commission began borrowing, on behalf of the EU, by issuing bonds in October 2020, and then disbursing the proceeds to Member States. The first seven bond issuances were very successful, raising EUR 75.5 billion from October 2020 to March 2021. The bonds were issued with maturities ranging from 5 to 30 years, resulting in loan disbursements to Member States with an average maturity of 14.2 years, close to the maximum average maturity of the loans to Member States of 15 years. The issuances were significantly over-subscribed by investors, 10 times on average, resulting in favourable pricing terms, including negative yields on all but one of the bonds with maturities of 15 years or less.

SURE is the first instance of the EU issuing social bonds, furthering the development of the social bond market and sustainable finance. Social bonds are assets compliant with the principles defined by the International Capital Market Association (ICMA), which offers investors assurance that the proceeds of the loans are used to fund targeted social policy measures. The EU adopted and published an EU SURE Social Bond Framework to facilitate this commitment, in particular by requesting issuers to report certain information to ensure transparency, specifically on the allocation and impact of proceeds⁽⁸⁵⁾.

⁽⁸⁵⁾

https://ec.europa.eu/info/sites/default/files/about_the_european_commission/eu_budget/eu_sure_social_bond_framework.pdf

Graph IV.1: SURE amounts granted and disbursed



Note: Figures in the report were updated here beyond the cut-off date to reflect the situation on 25 May 2021.

Source: Commission.

IV.2.2. The national measures and spending covered by SURE financial assistance

SURE was primarily used to finance short-time work schemes. These are public programmes allowing businesses experiencing economic difficulties to temporarily reduce the hours worked by their employees, who are provided with public income support for the hours not worked. Out of the 18 Member States that were granted SURE support at the time of the report, 15 Member States did so in order to help finance short-time work schemes⁽⁸⁶⁾. In the majority of cases, the supported short-time work schemes are new schemes set up in response to the COVID-19 pandemic.

Most beneficiary Member States have also applied for support to finance ‘measures similar to short-time work schemes’. These are measures that do not strictly fall under the definition of short-time work schemes but achieve the same purpose of preserving employment and providing income support as a response to the COVID-19 outbreak⁽⁸⁷⁾. They are aimed at protecting employees and the self-employed, reducing the incidence of unemployment and loss of income in the context of the COVID-19 crisis.

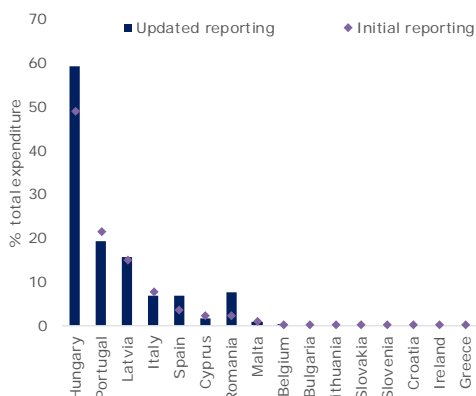
⁽⁸⁶⁾ The analysis in this section does not include Estonia, who was granted financial assistance after the cut-off date for the SURE report.

⁽⁸⁷⁾ The similar measures supported by SURE vary considerably by country but include wage subsidy schemes, such as those in Ireland and Malta, and supports for the self-employed to keep their activity afloat.

14 Member States are financing such similar measures to specifically support the self-employed.

Nine Member States also requested financial assistance to finance health-related expenditure. The SURE Regulation allows for the financing of health-related measures, in particular at the workplace, as an ancillary. This means that the financial assistance for health-related expenditure is provided only in conjunction with eligible labour market measures. In aggregate, 5% of the financial assistance under SURE has been allocated to health-related measures so far.

Graph IV.2: Share of health-related public expenditure



Note: Initial reporting was provided by Member States in August 2020, updated reporting was provided in January - February 2021.

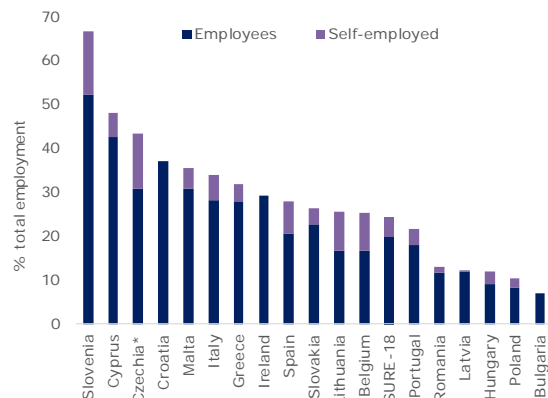
Source: Member States' reporting.

In 2020, SURE is estimated to have supported between 25 and 30 million people, accounting for one quarter of total employment across beneficiary Member States. This covers approximately 21½ million employees and 5 million self-employed workers and should be compared with a total of 35 million people who benefitted from short-time work schemes in the EU. A breakdown by Member State is shown in Graph IV.3, with coverage ranging from 7% to almost 70% of total employment. The number of people covered by health-related measures is not included in these figures. Therefore, these estimates could also be considered conservative.

Based on the reporting by Member States, it is estimated that between 1½ million and 2½ million firms were supported by SURE in 2020. This represents 12 – 16% of firms in beneficiary Member States, based on Member States reporting

(and Commission assumptions where the data are missing).

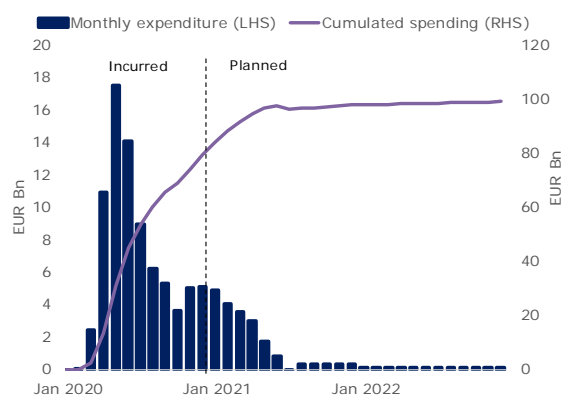
Graph IV.3: No. of workers covered by SURE (% of 2020 employment)



Source: Member States' reporting, Commission calculations.

By the end of 2020, 80% of total planned public expenditure on eligible measures had already taken place. As part of the Commission's monitoring, the two bi-annual reports present the planned and actual use of the financial assistance granted under SURE (see Graph IV.4). The graph shows that the spending dynamics tracked the first two waves of the pandemic. Updated reporting by Member States has also shown some backloading of public expenditure. They spent less than originally expected in 2020 and planned to spend more in 2021 and (marginally) in 2022 than initially reported when applying for SURE in August 2020.

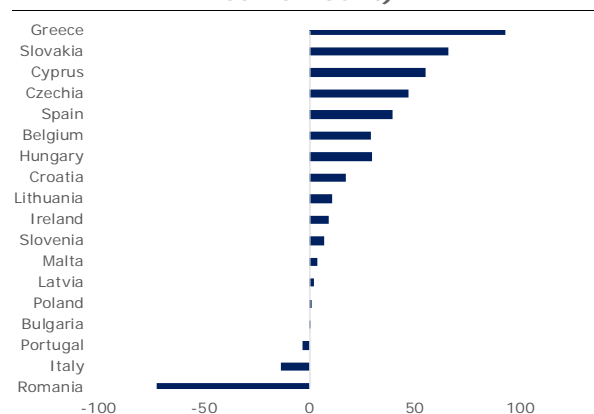
Graph IV.4: Monthly evolution of public expenditure under SURE (incurred and planned)



Source: Member States' reporting.

The instrument is not facing absorption risks in most Member States. In aggregate, Member States spent or planned to spend more on short-time work schemes and similar measures than the amount for which they have applied for under SURE financial assistance. While three Member States – Romania, Portugal and Italy – reported lower (planned or actual) public expenditure on eligible schemes than the amount granted under SURE, they have already taken or intend to take measures to use all of the financial assistance granted by the Council ⁽⁸⁸⁾.

Graph IV.5: **Excess of planned and incurred public expenditure over loan amount (% of loan amount)**



Source: Member States' reporting.

IV.3. The impact of SURE – a first analytical assessment

IV.3.1. How did employment behaviour change after SURE's introduction?

A first indicative assessment of SURE's impact is provided by the dynamic of unemployment rates in beneficiary Member States. The purpose of SURE is to help Member States preserve employment of workers and the self-employed during the COVID-19 pandemic, thus protecting citizens and facilitating a swift recovery when the pandemic abates. While it is difficult to design a counterfactual scenario of labour market performance in the absence of SURE, the analysis presented here examines the relationship between output and unemployment since the pandemic unfolded. The results should be interpreted with caution, since the output-employment relationship

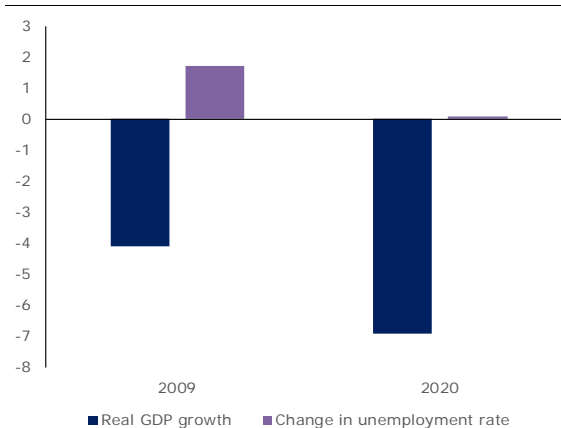
⁽⁸⁸⁾ In these Member States particularly, the Commission is closely monitoring the absorption of funds.

is impacted by a wide range of factors, including SURE.

The increase in unemployment rates in 2020 across beneficiary Member States was clearly milder than during the global financial crisis, despite the more severe drop in GDP in 2020 (see Graph IV.6). Real GDP growth fell by 6.9% in the countries that benefitted from SURE funding in 2020. This drop is larger than the one observed at the peak of the global financial crisis in 2009 for the same countries. At the same time, the unemployment rate increased by only 0.1 percentage point in 2020, compared with an increase of 1.7 percentage points in 2009.

The economic literature frequently uses an Okun's Law approach to capture the relationship between output and unemployment. The responsiveness of changes in economic growth on unemployment is often referred to in the economic literature as Okun's Law. More of an empirical 'rule of thumb' than a relationship grounded in theory, Okun's Law suggests that a decline in output growth of between 2% and 3% is associated with a one percentage point increase in the unemployment rate ⁽⁸⁹⁾.

Graph IV.6: **Changes in real GDP and unemployment in beneficiary Member States in 2009 vs. 2020**



Note: The graph shows the averages of SURE beneficiary Member States, weighted by their share of nominal GDP.

Source: Eurostat.

⁽⁸⁹⁾ Okun, A.M., 'Potential GNP: Its measurement and significance', Proceedings of the Business and Economic Statistics Section, American Statistical Association, 1962. For a more recent assessment see Furceri, D., Jalles, J.T. and Loungani, P., 2020, 'On the determinants of the Okun's Law: New evidence from time-varying estimates', *Comparative Economic Studies* 62, 661–700.

We estimate an Okun’s Law for a sample of EU countries benefitting from SURE with a regression approach. The specification looks as follows ⁽⁹⁰⁾.

$$\Delta unemp_{i,t} = \beta_1 growth_{i,t-1} + \beta_2 X_{i,t-1} + \theta_t + \vartheta_i + u_{i,t}$$

where the dependent variable corresponds to the change in unemployment rate and the key independent variable is the real GDP growth rate. We test the robustness of the relationship by using employment as an alternative dependent variable and adding further control variables (*X*), namely the change in the labour force participation rate and employment protection legislation indicators.⁽⁹¹⁾ We estimate the Okun’s Law for both a panel of up to 18 SURE-beneficiary Member States (bar Estonia, who benefited from SURE after the report’s cut-off date) and for each country in isolation (*i*). We also run the regression for all the EU countries. The sample covers up to 16 years (*t*), ranging from 2004 to 2019. The panel specification includes time-fixed effects (θ) and country-fixed effects (ϑ) to capture systematic differences across Member States and time, while *u* represents an error term.

The findings confirm that economic activity appears to be a key determinant of the change in the unemployment rate (Table IV.1). The real GDP growth variable is strongly statistically significant irrespective of the specification (specifications 1-5). The labour force participation rate appears to have no strongly significant impact on the change in the unemployment rate (3-5). Tighter employment protection measures appear to increase the unemployment rate slightly, which is usually associated with the increase in the cost of hiring. Finally, we find that stronger economic growth appears to have a positive impact on the change in the employment rate (i.e. employment over working-age population). This specification is a way to correct for the change in labour force, affecting unemployment indicators (5).

Table IV.1: **Key determinants of the change in unemployment rate – panel regression results**

Key factor	Estimator		Set of independent variables		Dep. var.
	Δ UR	Δ UR	Δ UR	Δ UR	Δ ER
Dependent variable	LSDV	FD-GMM	FD-GMM	FD-GMM	FD-GMM
Estimator	(1)	(2)	(3)	(4)	(5)
Real GDP growth rate	-0.255***	-0.283***	-0.281***	-0.215***	0.152***
	(-4.636)	(-3.949)	(-4.117)	(-3.412)	(3.515)
Δ labour force participation rate			0.557	0.859*	1.054
			(1.453)	(1.862)	(1.746)
Δ EPL (ind. and collective dismissals)				0.665*	-0.775*
				(1.853)	(-1.901)
Number of countries	18	18	18	14	14
Observations	315	315	315	224	224
R-squared	0.63				
Wald time dummies	0				
Wald country dummies	0.17				
AR(1) (p-value)	0.03		0.03	0.05	0.07
AR(2) (p-value)	0.40		0.45	0.62	0.33
Hansen (p-value)	0.90		0.85	0.82	0.88
Number of instruments	25		27	26	25

Note: The panel estimation includes EU countries benefitting from SURE, covering the period 1999 to 2019. The following two dependent variables are used, namely the change in the unemployment rate (Δ UR) and the change in the employment rate (Δ ER). The specification controls for the endogeneity of output with internal instruments by using a first-difference GMM estimator (FD-GMM). ***/**/* indicates statistical significance at the 10%/5%/1% level. The reduced country sample for the last three regressions is due to data availability.

Source: Authors’ calculations based on the AMECO vintage of the Commission Autumn 2020 forecast

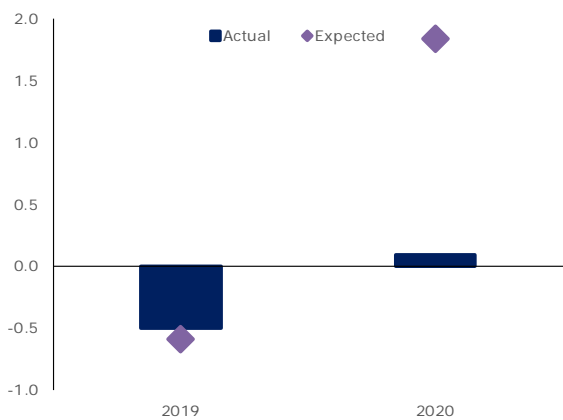
The findings show that the increase in unemployment due to changes in output in 2020 was weaker than expected in beneficiary Member States (see Graphs IV.7, IV.8). We use our panel and time series estimates of the real GDP growth coefficient to compare the actual and expected changes in unemployment rates in beneficiary Member States (see note below Graph IV.7 for details). The results suggest that the swift and sizeable policy measures taken in 2020 to address the crisis reduced the impact of the fall in output on unemployment. Therefore, the increase in the unemployment rate was, in most countries, less than expected ⁽⁹²⁾.

⁽⁹⁰⁾ A similar set-up is chosen as in European Commission (2020C).

⁽⁹¹⁾ The latter corresponds to the employment protection legislation (EPL) indicators by the OECD, namely EPL for individual as well as individual and collective dismissals.

⁽⁹²⁾ In Italy, the unemployment rate even declined in 2020.

Graph IV.7: Actual vs. expected changes in unemployment rates in beneficiary Member States in 2019 vs. 2020



Note: y-axis: The expected change in unemployment rates corresponds to the prediction stemming from a panel regression model covering beneficiary Member States and a country-specific regression model, for the period 1999 to 2019. The analysis is based on an Okun's Law approach, where the dependent variable stands for the change in unemployment rate and the independent variable refers to the real GDP growth rate. The specification controls for (non-time varying) country-specific features of the labour market via country-fixed effects and for sample-common factors via time fixed effects. The out-of-sample projection was based on the Commission Autumn 2020 Economic Forecast. The 2020 unemployment rate was the average of the monthly unemployment rates for 2020 available at the time of the analysis.

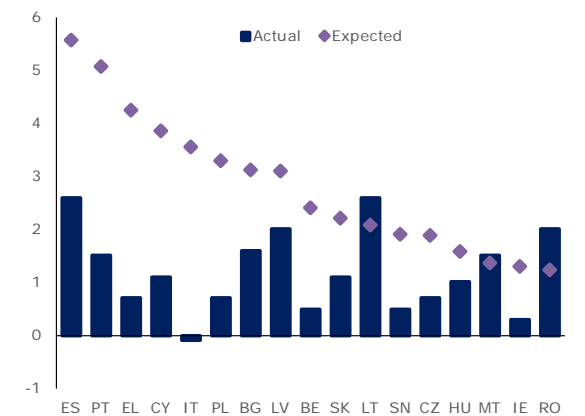
Source: Eurostat, European Commission.

A key reason for the milder increase in the unemployment rate in 2020 was the policy support measures, including SURE (Graph IV.9). Based on preliminary evidence, the lower than expected increase in unemployment can be partially attributed to the widespread use of short-time work schemes, in particular in those Member States benefitting from the SURE instrument. This helped maintain employment and limited the rise of unemployment. Other factors are related to the fact that people have been unable to, or were discouraged from, actively seeking work due to the shutdown of large parts of the economy. There are two key channels through which SURE has likely supported employment.

Through SURE, the EU has supported and encouraged Member States' use of short-time work policies, which has protected employment during the crisis. This is the first of the two key channels through which SURE has likely supported employment. A majority of beneficiary Member States indicated that SURE played a role in their decision to adopt a new short-

time work scheme or to modify an existing scheme⁽⁹³⁾. A majority of Member States also introduced new schemes similar to short-time work in response to the potential availability of financing from SURE.

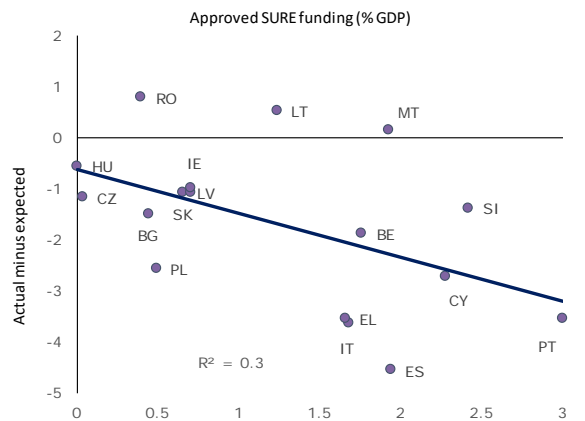
Graph IV.8: Actual vs. expected changes in unemployment rates by beneficiary Member State in 2020



Note: see note to Graph IV.7

Source: European Commission.

Graph IV.9: Relationship between the change in unemployment rate in 2020 and approved SURE funding



Note: y-axis: The expected change in unemployment rates stems from the country-specific regression model shown in Graph 10 and explained in the note to Graphs 9 and 10.

Source: European Commission.

⁽⁹³⁾ The Commission's Directorate-General for Employment, Social Affairs and Inclusion directly solicited the views of Member State authorities through a questionnaire submitted to the Employment Committee. Of the 19 Member States that have applied for support under SURE, 15 have provided answers to the questionnaire. Member States were asked whether SURE played a role in their decisions to adopt or modify short-time work schemes or similar measures and to increase the funding of those schemes.

In addition, SURE promoted Member States’ confidence to spend more on short-time work schemes than they otherwise would have.

Thanks to the favourable financing conditions offered by SURE, beneficiary Member States were keener to take on larger loans, enabling larger labour market spending. This was particularly true as SURE was an early element of the EU policy response, announced on 2 April 2020 and adopted by the Council on 22 May 2020⁽⁹⁴⁾. A majority of beneficiary Member States indicated that SURE support had a role in temporarily increasing the coverage and generosity of short-time work schemes and the overall funding of policies to address the COVID-19 crisis.

IV.3.2. Other impacts: boosting general confidence, leading the way for the Recovery and Resilience Facility and saving interest payments

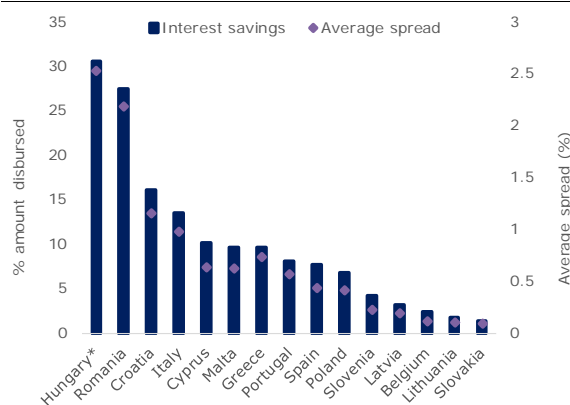
SURE’s impact goes beyond preserving jobs.

SURE has likely helped to increase general confidence in the EU’s ability to respond effectively to an unprecedented crisis. The capacity of Member States to agree on SURE – a new, innovative type of financial assistance with a strong social dimension and economic rationale – and the voluntary provision of guarantees to the Union by Member States sent a strong early signal on the EU’s ability to respond effectively and swiftly to a new type of crisis. It also asserts the efficiency of the Community method and contributed to the positive dynamic for the subsequent announcement of the Next Generation EU instrument. This collective capacity and the creation of new emergency instruments, including SURE, likely helped to support the confidence of economic agents in the EU, reducing the interest rate spread for Member States’ sovereign borrowing and improving the EU’s growth outlook⁽⁹⁵⁾. In this context, SURE could be seen

as an instrument to mobilise fiscal policy support, while an accommodative monetary policy assists fiscal policy in tackling the fallout of the crisis.

SURE allows the EU to become a large issuer of euro-denominated bonds in the financial markets, paving the way for financing under the Recovery and Resilience Facility. The volume of issuance under SURE (up to EUR 90 billion at the end of the first half of 2021) was much larger than what the EU borrowed from the market in the two years before the crisis. SURE helped build experience for the very large bond issuances planned in the context of NextGenerationEU, which represents EUR 800 billion. The large over-subscription of SURE loans is a clear indicator of the interest of financial markets in EU bonds.

Graph IV.10: Interest savings by Member State (% of loan amount received by Member State)



Note: Based on first four bond issuances only. Interest savings are computed bond by bond, and summed across issue dates and maturities. Member States have borrowed from the EU at different maturities. Total interest savings are different from the product of the amount disbursed, the average spread, and the average maturity. This is because the interest savings calculations take into account the time value of money and because the spread between EU and national yields varies non-linearly across maturities. All other things equal, Member States that borrowed at a mix of short and long maturities, total interest savings tend to be higher.

* No yield curve for euro-denominated bonds is available for Hungary. The yield curve in national currency was used instead.

Source: European Commission.

SURE has also generated a total of EUR 5.8 billion in savings on interest payments for Member States during the first four issuances (Graph IV.10) (96). The SURE social bonds were issued at very low rates, even at long maturities,

⁽⁹⁴⁾ While the first disbursement could not start before the signature of all guarantee agreements by Member States on 22 September 2020, Member States were rapidly given the certainty of a swift implementation in June when the European Council concluded to this end.

⁽⁹⁵⁾ The ECB’s expanded asset purchases under the pandemic emergency purchase programme clearly also played a role in reducing uncertainty in markets. Furthermore, according to the 7 January 2021 ECB Economic Bulletin, the Next Generation EU (NGEU) and SURE programmes are likely to have contributed to a compression of spreads via an improvement in Member States’ growth and fiscal prospects as well as in risk sentiment: (<https://www.ecb.europa.eu/pub/economic-bulletin/html/eb202008.en.html>).

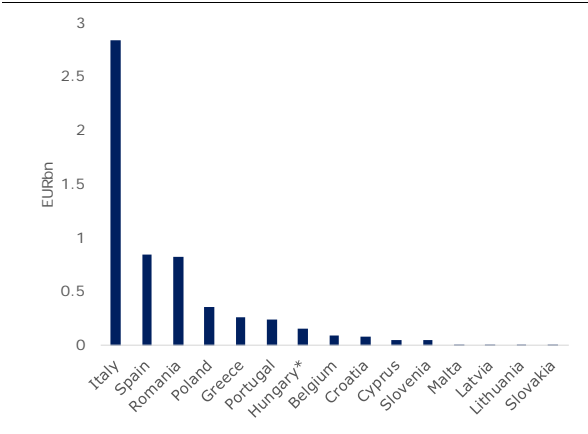
⁽⁹⁶⁾ See Box IV.1 for details about the calculations of interest savings.

due to the EU’s AAA credit rating and the liquidity of the bonds. As SURE funding terms are expected to remain favourable, further disbursements will likely generate additional savings. Therefore, the estimates shown likely correspond to a lower bound and will rise with the remaining disbursements.

IV.4. Conclusion

This section has reviewed the use of the SURE instrument up to 25 May 2021 and provided a first assessment of its impact, drawing on the first bi-annual SURE report, published on 22 March 2021. It has shown that SURE has been successful so far, with a high level of demand from Member States for this type of EU financial assistance. These 19 Member States were granted close to 95% of the maximum amount of EUR 100 billion provided for under the instrument, which was almost entirely disbursed within seven months. Demand from investors for the social bonds issued over the first seven SURE bond issuances has also been strong, with the issuances achieving very favourable pricing terms. Our first preliminary assessment has also shown that SURE, along with other EU and national forms of policy support, has helped to significantly mitigate the impact of the pandemic on employment by supporting the use of short time work schemes. Member States have also saved an estimated EUR 6 billion in interest payments (calculated over the first four bond issuances only). Further assessment will be possible when more time has elapsed and the effects of the policies become clearer.

Graph IV.11: Interest savings by Member State (EUR bn)



Note: see note to Graph IV.10.
Source: European Commission.

Box IV.1: Calculating the savings on interest payments

The favourable terms obtained by the Commission terms were directly passed on to Member States via back-to-back lending. Yields ranged from -0.51% to +0.32%, depending on the maturity and the date of issuance. Member States' own funding terms at the time of disbursement were generally less favourable than those obtained by the Commission. Therefore, the loans disbursed under SURE generated interest savings for Member States.

The savings are computed assuming that, in the absence of SURE loans, Member States would have issued bonds with the same characteristics as the EU SURE bonds. The characteristics comprise both the maturity date and coupon rate on the day the loans were disbursed. We compute the market issue price P_i^c of the counterfactual bond with a face value of EUR 1, for each individual Member State's borrowing tranche i :

$$P_i^c \cong C_i^{SURE} \left(\frac{1 - (1 + Y_i^{Nat})^{-M_i^{SURE}}}{Y_i^{Nat}} \right) + (1 + Y_i^{Nat})^{-M_i^{SURE}}$$

where C_i^{SURE} and M_i^{SURE} are, respectively, the coupon rate and time to maturity at the disbursement date (expressed in years) of the corresponding EU SURE bond, and Y_i^{Nat} is the yield to maturity at the disbursement date of a nationally issued bond with the same maturity. ⁽¹⁾ The first term corresponds to the present value of all coupon payments until maturity, and the second term corresponds to the present value of the face value paid at maturity.

An estimate of interest savings is provided by the sum of the difference between the issue price of each EU SURE bond and the counterfactual national bond. This sum is performed across all tranches and the differences in prices are weighted by the amount borrowed under each corresponding tranche:

$$\text{interest savings} = - \sum_{i=1}^I \text{Amount}_i (P_i^c - P_i^{SURE})$$

where P_i^{SURE} is the issue price – or tap issue price when the EU reopens an outstanding line – of the corresponding EU SURE bond, and Amount_i is the amount disbursed to the Member State.

This estimate of interest savings is a function of the spreads between national and EU SURE yield curves at the time of disbursement and the maturity structure of each loan. The average maturity of the SURE loans is below but close to 15 years in all Member States, and the average spread between national yields and EU SURE yields is around 0.8 pp. As a result, the total interest savings across the lifetime of the loans are estimated to be EUR 5.8 billion, or around 11% of the amount disbursed, in the 15 Member States that received a disbursement up to 2 February 2021. Member States with either higher spreads or larger disbursements benefitted the most from the favourable terms obtained by the Commission.

⁽¹⁾ The calculations are run with the exact formula, not the pedagogical approximation to the first order shown in the text. The exact formula for the price of the counterfactual bond is $P_i^c = \frac{C_i^{SURE}}{4} \left(1 - (1 + Y_i^{Nat})^{-\frac{1}{4}} \right)^{-1} \left(1 - (1 + Y_i^{Nat})^{-M_i^{SURE}} \right) + (1 + Y_i^{Nat})^{-M_i^{SURE}}$. If the yield is equal to zero, the formula reduces to $P_i^c = M_i^{SURE} C_i^{SURE} + 1$.

Annex. The euro area chronicle

The European Commission, the Ecofin Council and the Eurogroup regularly take decisions that have a bearing on the functioning of the Economic and Monetary Union (EMU). Some of these decisions are of legislative nature; others are agreements of an inter-governmental character, or strategies to tackle different challenges facing the euro area, the Banking Union, or more broadly, the EU. In order to keep track of most relevant decisions, the QREA from now on will feature a chronicle of major legal and institutional developments, presented in a chronological order and containing appropriate references. In the last few months, a number of important decisions were taken with the aim of propping up the euro area/EU economies in the face of the economic shock provoked by the COVID-19 pandemic, and to make the Economic and Monetary Union stronger in the longer term. The agreement on the introduction of the Recovery and Resilience Facility (RRF) was the most important institutional reform. The RRF offers large-scale financial support to both public investment and reforms intended to better prepare Member States for a sustainable recovery from the current crisis. In addition, the agreement on the introduction of a common backstop to the Single Resolution Fund was an important step for the Single Resolution Mechanism pillar of the Banking Union. Moreover, to address the expected worsening of asset quality on banks' balance sheets, the European Commission adopted a strategy to tackle non-performing loans.

Agreement on the reform of the European Stability Mechanism (ESM). Whilst the Commission proposal for creating a European Monetary Fund based on the ESM remains on the table, the Eurogroup reached an agreement on 30 November 2020 for incorporating some of its elements into the existing (inter-governmental) ESM. This agreement paved the way for the signing of the revised ESM Treaty and the launch of its ratification procedure at national level⁽⁹⁷⁾. Among the new changes are a role for the ESM Managing Director in the designing, negotiating and monitoring the implementation of conditionality attached to ESM financial assistance; and the establishment of a common backstop to the Single Resolution Fund in the form of a credit line from the ESM. The Single Resolution Fund is a fund established by the EU for resolving failing banks in the Banking Union. It is financed by contributions from the banking sector and will be built up progressively until it reaches the target level of at least 1% of covered deposits. The backstop is a last resort safety net that will be used if SRF resources are depleted. It will help to ensure that a bank failure does not harm the broader economy or cause financial instability. It reinforces elements of risk sharing in the Banking Union and strengthens its resilience in the event of shocks. Ministers also agreed to introduce the common backstop early, by the beginning of 2022 subject to certain conditions, which have now been met.

Conditions for the early introduction of the backstop to the Single Resolution Fund have been met. In December 2013, Member States committed to introduce the common backstop before the end of 2023 provided that risks in the banking sector had been sufficiently reduced. In November 2020, the European Commission, the European Central Bank and the Single Resolution Board prepared an extended monitoring report on risk reduction indicators, which showed that all the indicators had improved significantly, increasing the banking sector's resilience. In aggregate, a substantial reduction of non-performing loans was observed in the system as well as continuous build-up of MREL-related capacity⁽⁹⁸⁾. These were achieved thanks to the combined significant efforts of the banking sector, supervisors and authorities in the Member States.

A strategy to tackle non-performing loans (NPLs). On 16 December 2020, the European Commission adopted a communication on dealing with NPLs in the aftermath of the COVID-19 pandemic⁽⁹⁹⁾. In order to give Member States and the financial sector the necessary tools to address a

⁽⁹⁷⁾ Statement of the Eurogroup in inclusive format on the ESM reform and the early introduction of the backstop to the Single Resolution Fund: <https://www.consilium.europa.eu/en/press/press-releases/2020/11/30/statement-of-the-eurogroup-in-inclusive-format-on-the-esm-reform-and-the-early-introduction-of-the-backstop-to-the-single-resolution-fund/>

⁽⁹⁸⁾ Minimum requirements for own funds and eligible liabilities (MREL).

⁽⁹⁹⁾ European Commission, "Tackling non-performing loans in the aftermath of the COVID-19 pandemic", COM(2020)822 final. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0822&from=EN>

rise in NPLs in the EU's banking sector early on, the Commission proposed measures in four main areas: (i) the further development of secondary markets for distressed assets; (ii) to support Member States in establishing national asset management companies – if they so wish – and explore the possibilities of a European network; (iii) to make further efforts to reform the EU's corporate insolvency and debt recovery legislation; and (iv) to allow possible precautionary public support measures, where needed, to ensure the continued funding of the real economy. The strategy is particularly relevant for the euro area given the integration of its banking system and the existence of cross-border financial spillovers within the area.

A strategy to stimulate the openness, strength and resilience of the EU's economic and financial system. On 19 January 2021, the European Commission adopted a communication which aims to enhance the resilience of the EU financial system and help Europe to maintain its leading role in global economic governance and the rules-based multilateral system, while protecting the EU from unfair and abusive practices⁽¹⁰⁰⁾. Promoting a stronger international role for the euro is one of the pillars of the strategy. The strategy is built on completion of the Banking Union and on significant progress in the Capital Markets Union as a means of supporting the resilience of the EU and deepening the Economic and Monetary Union. Next to these key building blocks, the strategy proposes a number of specific actions that aim to increase the euro's international role, to improve the resilience of financial market infrastructure and to enhance the effectiveness of the EU sanctions regime. Under the plan, EU policies for sustainable and digital finance are also seen as contributing towards the objectives set out in the Communication. On 25 March 2021, EU leaders in the Euro Summit expressed their support for strengthening the position of the euro on the global stage⁽¹⁰¹⁾.

Agreement on the Recovery and Resilience Facility (RRF). On 12 February 2021, the European Parliament and Member States in the Council adopted the regulation establishing the RRF⁽¹⁰²⁾. This followed a proposal by the Commission in May 2020 and swift negotiations among the co-legislators. The RRF is the key EU instrument to fuel economic recovery from the pandemic. It is the main element of the Next Generation EU programme. It will make EUR 672.5 billion in loans and grants available to support reforms and investments undertaken by Member States. Although it is an instrument agreed and applied to the whole of the EU, the RRF will have a significant impact on the functioning of the euro area. In the short to medium term, it will provide sizeable support and help ensure an appropriate fiscal stance in the euro area. The RRF also reinforces confidence and helps to preserve macro-financial stability, thus supporting the ECB's actions in this area. Beyond its short-term stabilisation function and its role in supporting the recovery, the RRF has the potential to affect the EMU in the longer term. Implementation of structural reforms should increase the euro area's resilience to future shocks, and, additional investment financed under the RRF should raise potential output. Furthermore, the sizeable issuance of euro-denominated debt (see paragraph below) will add depth and liquidity to the market for high-quality euro-denominated debt securities and thereby help to strengthen the euro as an international reserve currency.

Guidance for Member States on the conduct of fiscal policies. On 3 March 2021, the European Commission adopted a communication providing Member States with guiding principles for the proper design and quality of fiscal measures in the period ahead.⁽¹⁰³⁾ It set out the Commission's considerations regarding the deactivation or continued activation of the general escape clause. It also provided general indications on the overall direction of fiscal policy for the period ahead, including the implications of the Recovery and Resilience Facility for fiscal policy.

Funding strategy to finance the recovery. On 14 April 2021, the European Commission presented a communication on its borrowing and lending operations to finance the RRF and other recovery

⁽¹⁰⁰⁾ European Commission, "The European economic and financial system: fostering openness, strength and resilience", COM(2021)32 final. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021DC0032&from=EN>

⁽¹⁰¹⁾ Statement of the Euro Summit of 25 March 2021: <https://www.consilium.europa.eu/media/48975/25-03-21-eurosummit-statement-en.pdf>

⁽¹⁰²⁾ Regulation (EU) 2021/241 of the European Parliament and of the Council of 12 February 2021 establishing the Recovery and Resilience Facility, OJ L 57, 18.2.2021, p. 17–75. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021R0241&from=EN>

⁽¹⁰³⁾ European Commission, "One year since the outbreak of Covid-19: fiscal policy response", COM(2021)105 final. https://ec.europa.eu/info/sites/default/files/economy-finance/1_en_act_part1_v9.pdf

instruments of the Next Generation EU ⁽¹⁰⁴⁾. The Commission will use a diversified funding strategy to raise up to around EUR 800 billion at current prices until 2026. This will translate into borrowing volumes of on average roughly EUR 150 billion per year, which will make the EU one of the largest euro issuers. While the Commission has acted as a borrower on the markets before – to support EU Member States and third countries – the volumes, frequency and complexity of the Next Generation EU borrowing programme require a fundamental change in the approach to capital markets. Use of multiple funding instruments (medium and long-term bonds, and EU-bills) will help maintaining flexibility in terms of market access, managing liquidity needs and maturity profile. Annual decisions on borrowing volumes and six-monthly communication on the funding plan’s key parameters will offer transparency and predictability to investors and other stakeholders. All borrowing will be repaid by 2058.

Further recommendations on fiscal guidance. On 2 June 2021, the European Commission presented a package of documents in the context of the yearly coordination of economic and fiscal policies. ⁽¹⁰⁵⁾ The coordination process has been adapted in 2021, and the June package focusses primarily on fiscal guidance to Member States as they continue the process of gradually reopening their economies. The European Commission suggested that fiscal policy needs to remain supportive in 2021 and 2022, and Member States should avoid a premature withdrawal of support and make full use of the RRF funding.

⁽¹⁰⁴⁾ European Commission, “Communication on a new funding strategy to finance Next Generation EU”, COM(2021)250 final. https://ec.europa.eu/info/sites/default/files/about_the_european_commission/eu_budget/com2021_250_en_act_part1_v3.pdf

⁽¹⁰⁵⁾ Documents adopted by the European Commission on 2 June 2021 can be found on the following page: https://ec.europa.eu/commission/presscorner/detail/en/ip_21_2722

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