

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

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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.

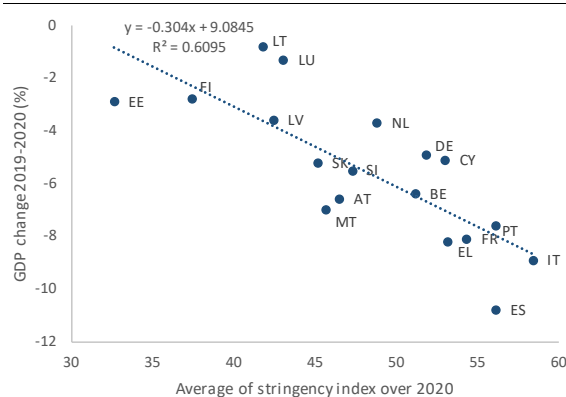
Unsurprisingly, the differences in the average level of stringency imposed by a country's government over 2020 strongly correlates with the differences in GDP growth (Graph II.1) (42). Such strong divergence in real GDP across the euro area has not been seen since the onset of the global financial crisis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

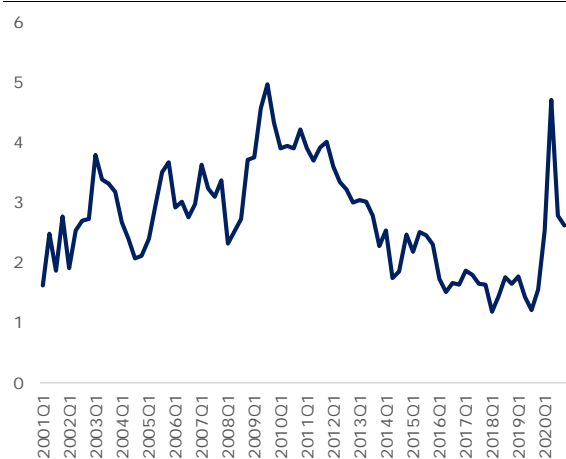
Graph II.1: Government stringency correlates strongly with GDP impact



(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)'*.

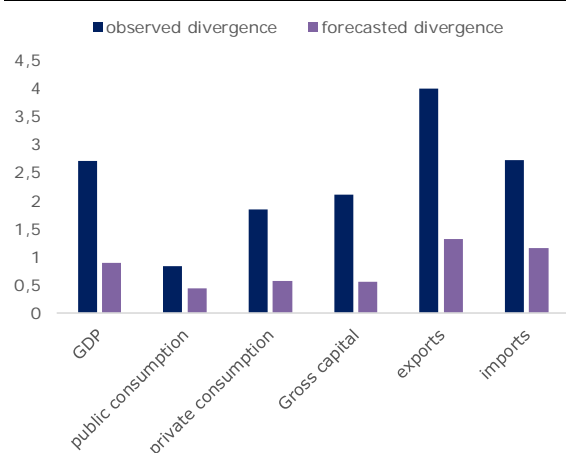
(43) Making use of the European Economic Forecast, Autumn 2019 and based on annual data as quarterly forecasts are not available.

(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.

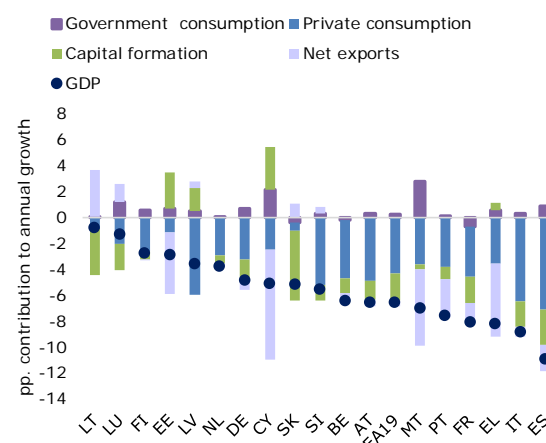
Net exports had an especially large negative impact on real GDP growth in the small countries such as Estonia, Cyprus and Malta, while having small contributions for most other countries. Its contribution to GDP growth divergence (as suggested by Graph II.3) was overall very strong in 2020.

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.

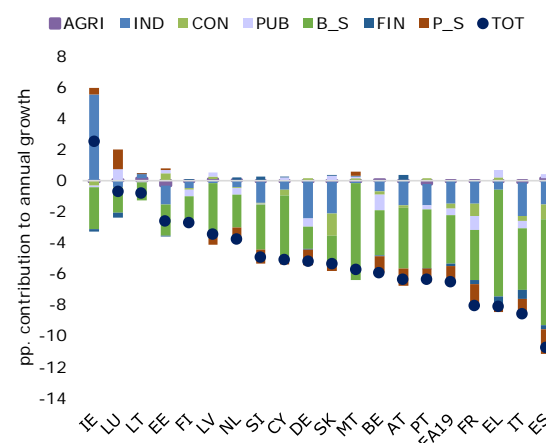
Graph II.4: Real GDP growth and its expenditure components – 2020 (annual data)



(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.

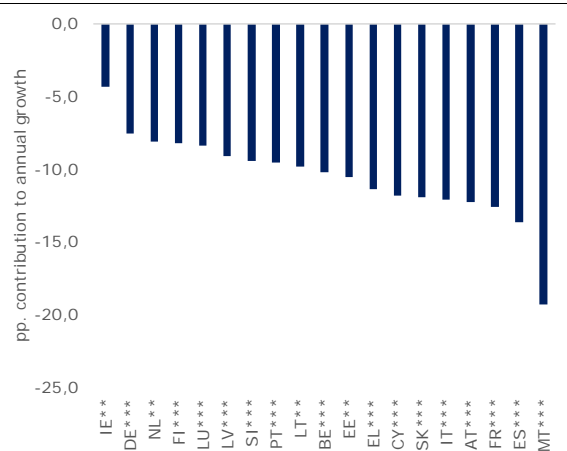
Interpreting these results, the following caveats should be taken into account. First, equation (1) in Box II.1 is a linear approximation of a complex process that can only be used to compare GDP growth of countries that impose lockdown measures that are broadly the same (45). Second, data for only 4 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

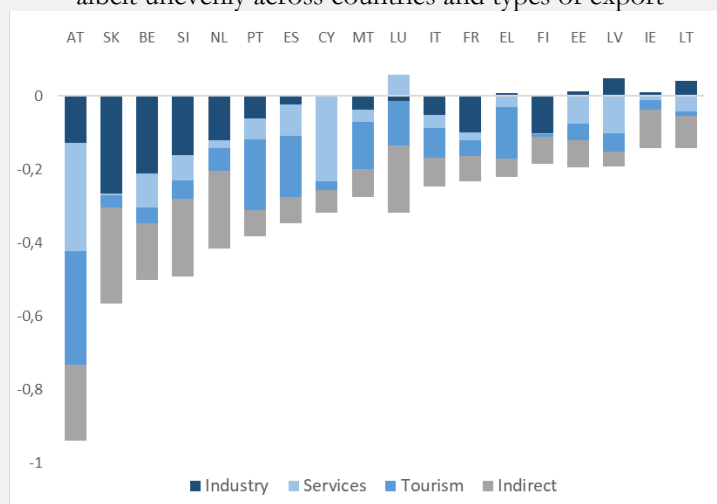
Box 11.2: Spillover effects add to the domestic impact of the crisis

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.

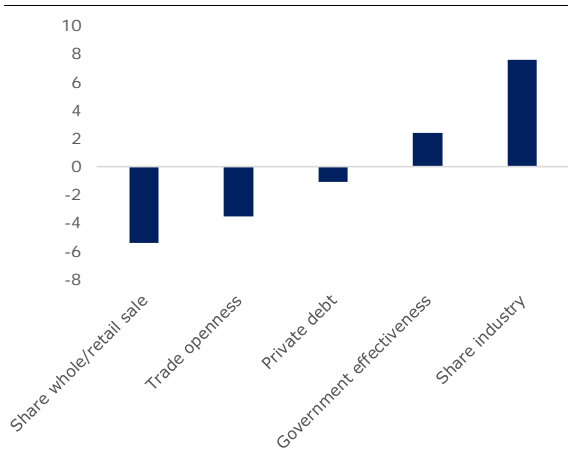
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Box (continued)

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.

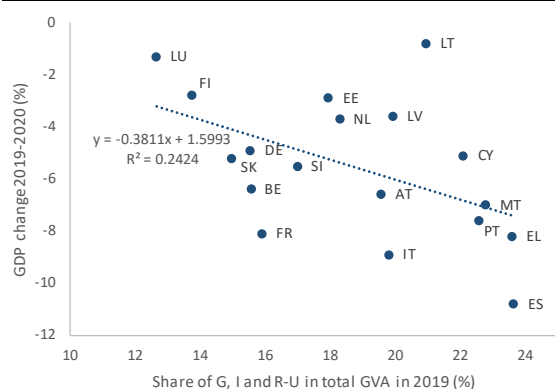
II.4.1. Asymmetries in sectoral impact translate into uneven contractions across Member States

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

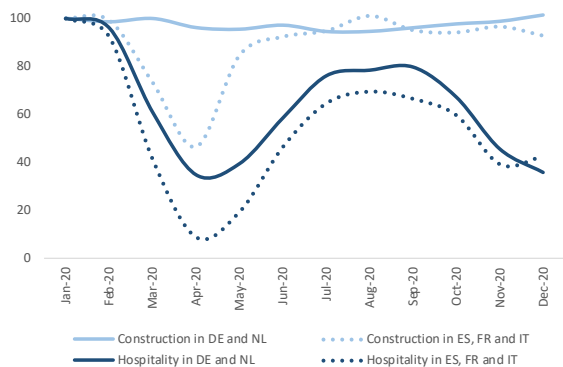
Total economy turnover patterns over 2020 vary across Member States, and recovery prospects for 2021 are bound to differ across countries. The sectoral heterogeneity in sensitivity to the pandemic, coupled with cross-country differences in the sectoral composition and severity of the pandemic, has resulted 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.

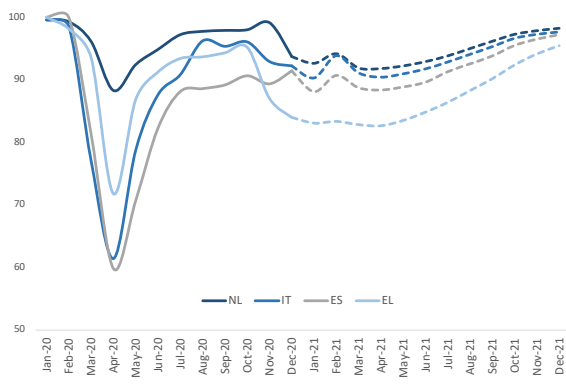
Graph II.9: Turnover patterns within a sector differ strongly across countries



(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.

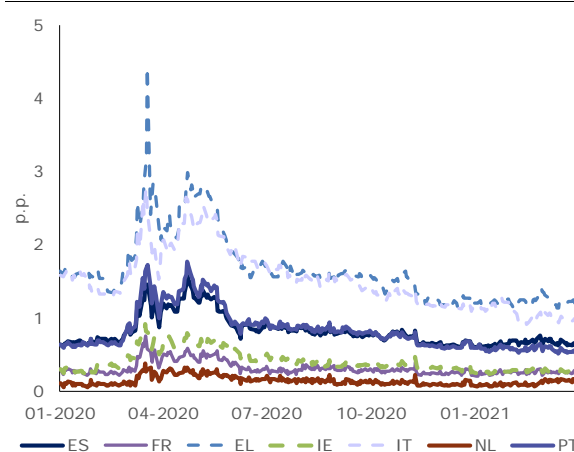
Financing costs faced by the real economy have also remained favourable benefiting from euro area national governments support schemes such as credit guarantee programmes⁽⁵⁵⁾ and a range of monetary policy easing measures such as sizeable asset purchases, liquidity backstops⁽⁵⁶⁾, and an easing of collateral 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

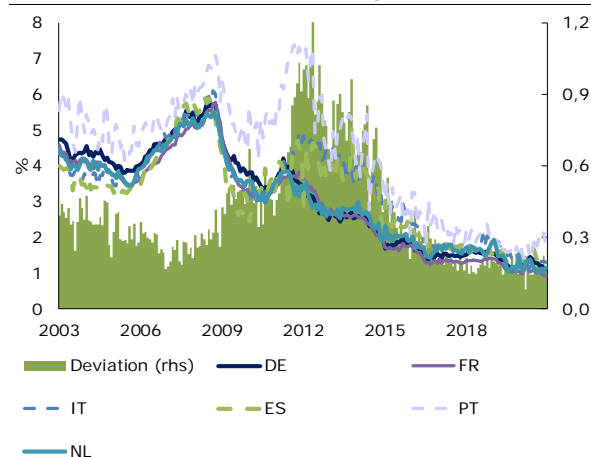
European Guarantee Fund to channel support to SMEs most affected by the coronavirus; and it provided also guarantees worth €2.2 billion to its existing intermediaries providing financing to businesses including micro- and social enterprises as well as SMEs in the cultural and creative sectors⁽⁶⁰⁾.

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>

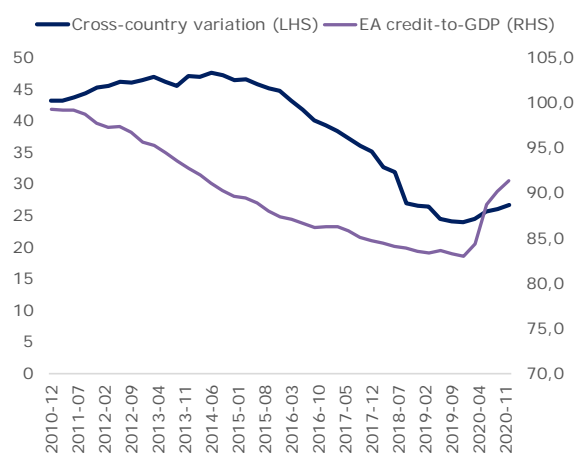
⁽⁵⁹⁾ ECB (2020), ‘FAQs on ECB supervisory measures in reaction to the coronavirus’.

⁽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).

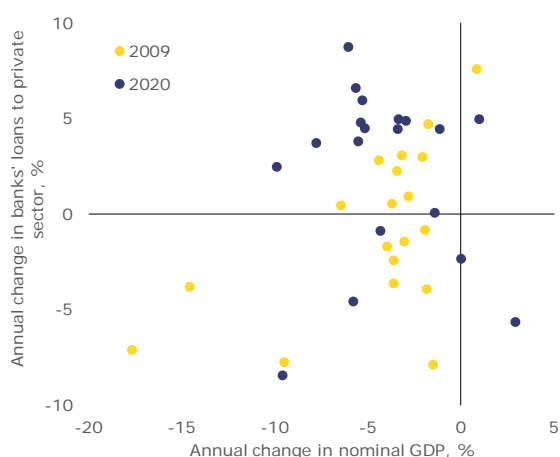
Graph II.13: Credit-to-GDP ratio and cross-country deviation in credit-to-GDP ratio



(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

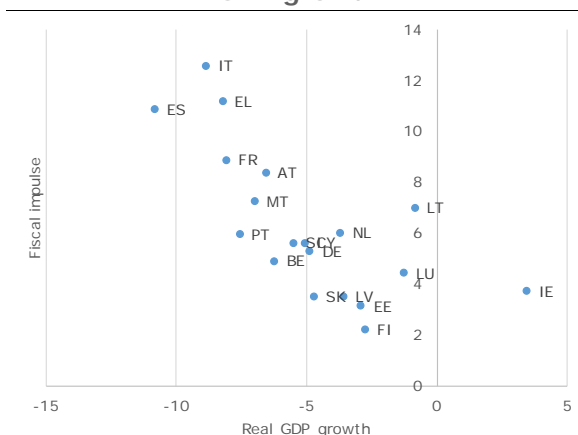
From the onset of the pandemic, the euro area countries have taken full advantage of the possibility to support their economies using both budgetary and non-budgetary measures. Additional spending included emergency spending on health care, compensations to specific sectors for income losses, and spending 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.

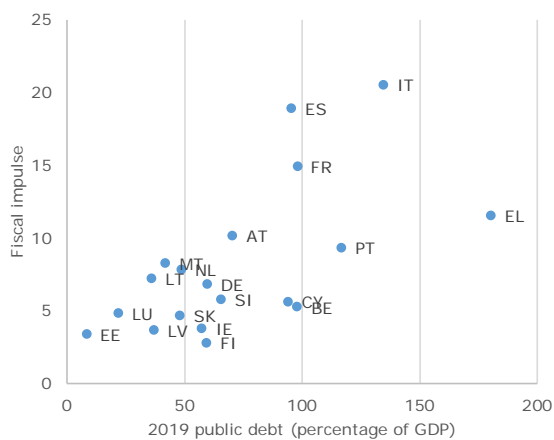
Source: Authors' estimates based on AMECO.

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>

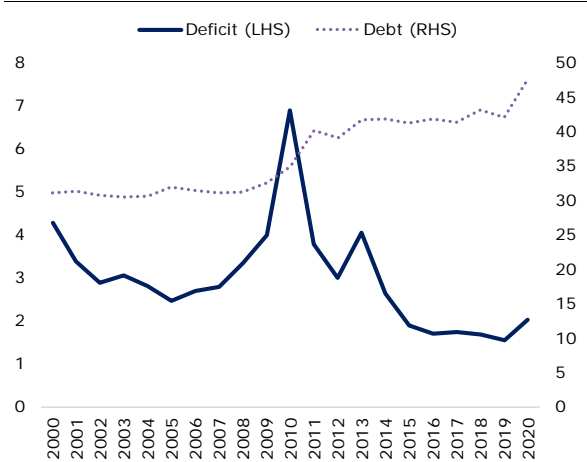
Graph II.16: Fiscal impulse and the take-up of non-budgetary measures in relation to the 2019 public debt



(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.