

STUDY

Requested by the IMCO committee



The impact of COVID-19 on the Internal Market



Policy Department for Economic, Scientific and Quality of Life Policies
Directorate-General for Internal Policies
Authors: J. Scott MARCUS et al.
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Abstract

This study assesses the impact of the COVID-19 crisis on the Internal Market and consumer protection, including the impact of measures introduced at national and EU level to mitigate the consequences of the pandemic. What further measures should be considered in order to reinforce the resilience of the EU's Internal Market in the face of future crises?

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AUTHORS

Bruegel: J. Scott MARCUS, Niclas Frederic POITIERS, Lionel GUETTA-JEANRENAUD and Monika GRZEGORCZYK

VVA: Norman RÖHNER, Sophie BUCKINGHAM and Fernando HORTALFORONDA

CEPS: Jacques PELKMANS

ADMINISTRATOR RESPONSIBLE

Christina RATCLIFF

EDITORIAL ASSISTANT

Roberto BIANCHINI

LINGUISTIC VERSIONS

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To contact the Policy Department or to subscribe for email alert updates, please write to:

Policy Department for Economic, Scientific and Quality of Life Policies

European Parliament

L-2929 - Luxembourg

Email: Poldep-Economy-Science@ep.europa.eu

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LIST OF ABBREVIATIONS

AI	Artificial Intelligence
AMC	Advance Market Commitment
BEC	Broad Economic Categories
CEN	European Committee for Standardisation
CENELEC	European Committee for Electrotechnical Standardisation
COVAX	COVID-19 Vaccines Global Access
COVID-19	Coronavirus Virus Disease (which emerged in 2019)
CRII	Coronavirus Response Investment Initiative
DG COMP	Directorate-General of the European Commission for Competition
DG ECHO	Directorate-General of the European Commission for European Civil Protection and Humanitarian Aid Operations
DG GROW	Directorate-General of the European Commission for Internal Market, Industry, Entrepreneurship and SMEs
EC	European Commission
ECB	European Central Bank
EDPS	European Data Protection Supervisor
EEA	European Economic Area
EFTA	European Free Trade Association (comprised of Norway, Iceland, Liechtenstein, and Switzerland)
EMA	European Medicines Agency
EP	European Parliament
ERDF	European Regional Development Fund
ESF	European Social Fund
ESI	Emergency Support Instrument

ESO	European Standards Organisation
EU	European Union
FEAD	Fund for European Aid to the Most Deprived
G20	Group of 20 (an international forum of 19 countries and the European Union)
GATS	General Agreement on Trade in Services
GAVI	Global Alliance for Vaccines and Immunisation / Vaccine Alliance
GDP	Gross Domestic Product
GDPR	General Data Protection Regulation
GVC	Global Value Chains
ICT	Information and communications technology
ILO	International Labour Organisation
IMF	International Monetary Fund
IPR	Intellectual property rights
JPA	Joint Procurement Agreement
OECD	Organisation for Economic Co-operation and Development
PEPP	Pandemic Emergency Purchase Programme
PPE	Personal protective equipment (masks, gloves, goggles, face-shields, coveralls)
PTD	Package Travel Directive
R&D	Research and development
SME	Small and medium-sized enterprises
SURE	Start-Up Relief for Entrepreneurs
TFEU	Treaty on the Functioning of the European Union
UCC	Union Customs Code
UK	United Kingdom

UNCTAD	United Nations Conference on Trade and Development
US	United States
VAT	Value-Added Tax
WCO	World Customs Organisation
WHO	World Health Organisation
WIPO	World Intellectual Property Organisation
WTO	World Trade Organisation
YEI	Youth Employment Initiative

EXECUTIVE SUMMARY

The economic and social impacts of the crisis have been simply enormous. The European response to the first wave of the crisis was nonetheless reasonably good in terms of protecting the Internal Market and protecting consumers, and was achieved by means of measures that are consistent with European values. Over the summer, a certain amount of normality was restored. At the time of writing this study, the EU is in the midst of an even more damaging second wave.

Vaccines have been developed more rapidly than might have been anticipated, and (at the time of writing) three have been authorised for use in the EU, so there are grounds for hope. At the same time, more contagious variants of COVID-19 have recently appeared, and they are spreading in the EU. Moreover, the vaccination campaign in the EU is off to a sluggish start, primarily because large scale orders for the vaccines that have been authorised were placed too late, which in turn meant that production was late ramping up. The "situation on the ground" is fluid and rapidly evolving.

In terms of protecting the EU Internal Market, how have the EU and the Member States responded to the pandemic? What further steps are needed in order to strengthen the resilience of the EU in the face of possible future pandemics?

A huge shock with complex impacts

The COVID-19 pandemic represents the largest shock to the world economy since World War II. The IMF estimates the world economy to have contracted by 3.5% in 2020, which is considerably worse than the stagnation after the Global Financial Crisis in 2009. The economic shock to the broader European economy is also substantially greater than that of the oil shocks of 1973 and 1979. The Gross Domestic Product (GDP) of Spain is expected to decline by 12.4%, that of Italy by 9.9%.

The pandemic has represented a shock both to production and consumption. Production declined markedly in the early months of the pandemic, but production of goods has largely rebounded. Consumption has declined, partly because some workers (by no means all) are earning less, partly because there are fewer opportunities to spend money during a lockdown. Consumer savings have increased during the pandemic, as well as business investment.

Cross-border intra-EU trade in goods declined enormously during the first wave of the pandemic, but then recovered to nearly normal levels over the summer of 2020.

Large scale job retention schemes prevented a surge in unemployment, but hours worked contracted strongly during the first lockdown, and presumably during the second wave as well.

The shock has been greater to southern Europe than to northern and eastern Europe. Women have tended to be impacted to a greater extent than men because they are more likely to bear the burden of childcare. Women and youth are more likely to work in the services sector, which has been impacted more than the goods sector.

Some sectors are strongly impacted, including tourism, air transport, lodging, restaurants, and entertainment. Many others are functioning at a nearly normal pace.

A shift to digital services (including e-commerce and videoconferencing), and with it to remote work, has greatly mitigated the impact of the pandemic. Digital services and networks in the EU have generally performed well.

Tightening, loosening, and once again tightening restrictions

A range of restrictions were put in place at EU and Member State level. Restrictions on travel of individuals into and out of the EU have been prominent, as well as on travel within the EU, but the EU has been steadfast in working to avoid impediments to the free flow of goods and services across borders. Restrictions on gatherings, schools, and non-essential shops resulted in a dramatic decline in the movements of individuals during lockdown periods, which served to reduce the spread of infection but in many cases at substantial economic cost. In the second wave, most Member States have sought to implement restrictions in more selective ways so as to reduce the economic impact.

People reduced their movement, not only due to government-imposed restrictions, but also voluntarily as they recognised the risk. Compliance with restrictions in the EU has been good and generally effective, but by no means universal.

European policy

Public health is primarily a Member State competence, but the EU can and does play a supporting role. In light of the Lisbon Treaty, measures at European level have often been limited to cross-border aspects, not only into and out of the EU, but also among the Member States. The measures taken by the EU that have specifically addressed Internal Market aspects have included:

- free flow of individuals, including commuters, business travellers, and tourists;
- free flow of goods, for instance through the use of "green lanes" for trucks;
- exemptions and administrative flexibility on aspects of VAT and customs;
- free flow of medical goods;
- joint public procurement of vaccines, medical equipment and personal protective equipment (PPE); and
- consumer protection, especially for travel that was cancelled.

Recommendations

The pandemic was not anticipated. It was not the first pandemic of this century, and it might not be the last, but it was the first in one hundred years to have a dramatic impact on Europe. Most aspects of the European response were reasonably good (with the noteworthy exception of late placement of orders for authorised vaccines). Our recommendations focus on those aspects where more thought or more work are called for.

At times of crisis, Member States can be tempted to take strong, urgent actions to protect life or property, as they should; however, consideration of the EU consequences needs to be better incorporated into Member State planning, and not just as an afterthought.

Ex post studies: Studies are needed to provide a solid foundation for new policy initiatives to strengthen preparedness for future pandemics; however, it is too early to make a full and detailed assessment of the effectiveness of measures undertaken. Given the political sensitivity of these issues, it will be essential to ensure the independence and objectivity of such studies.

A long-term focus on investing in pandemic preparedness must be part of this assessment. Cutler & Summers (2020) argue that the cost of the pandemic to the US is on the order of €14 trillion (at the May 2020 USD-EUR exchange rate), and that in light of this immense cost, longer term investments in public health services and infrastructure (including testing, contact tracing, and isolation) must be maintained even after concerns about the COVID-19 pandemic recede.

Border openings and closings: The European and Member State response has been good in most cases, but not in all. The abrupt closing of borders in Poland, for instance, caused long queues of trucks until the EU intervened with a plea to establish "green lanes". The Commission has provided guidance acknowledging that Member States are entitled to close their borders to persons for various reasons, and that the different epidemiological situation among the Member States can constitute a valid justification. Nonetheless, it may be appropriate to establish a higher threshold and stronger requirements for prompt notification of any measures limiting the flow of goods (even though trucks and trains are driven by people).

Travel and tourism: Uniform, standardised EU vaccination passports and testing forms have obvious merit. These vaccination passports and testing forms, possibly in combination with other measures, might provide a valid basis for re-opening travel among the Member States. Member States that depend on tourism are understandably anxious to re-open their borders, but there are many uncertainties as to the degree to which doing so might accelerate the spread of COVID-19. Policymakers should therefore seek to identify broad risk-based decision principles that could be applied as appropriate for future pandemics.

There is also a need for uniform EU rules for safe conduct (including the use of PPE) in airplanes and airports operating within Europe. A uniform legally enforceable health regime for air travel would benefit consumers, the air travel sector, and all of the sectors that benefit from travel.

Notifications: Restrictive measures implemented by the Member States must be notified promptly to the Commission. It is doubtful that this was done in all cases. Some strengthening of laws in place for notifying restrictions on cross-border delivery of services may be needed.

Consumer protection: The Commission put useful measures in place to protect consumers whose travel was cancelled, and to foster trust in vouchers, but many consumers are still waiting for refunds to which they are entitled. Current Commission rules make it possible for Member States to compensate consumers for losses incurred due to cancelled trips booked with companies that subsequently became insolvent, but do not require it. A policy intervention where for instance firms in the sector would be obliged to fund some form of insurance against possible insolvency should be considered.

Automated contact tracing: In the interest of preserving privacy, nearly all Member States have decided to refrain from implementing the kind of automated contact tracing tools that have enjoyed good success in a number of Asian countries, opting instead for more limited exposure notification applications that play no role in contact tracing. The European public appears to be satisfied with these decisions, but a price has been paid. As the incidence of cases grew during the second wave, manual contact tracing has been abandoned in many Member States and regions because manual contact tracing staff were overwhelmed. A future pandemic might be even worse than the current one. With that in mind, a sober reflection is needed on the broad decision principles that should guide future decisions on the trade-offs between public health benefits and consumer privacy. This reflection should not wait until we are once again in crisis.

Centralised procurement of vaccines, medication, and PPE: The shift from national to European level for procurement of PPE, medical equipment and vaccines (under rescEU, the Joint Procurement Agreement (JPA), and the EU Emergency Support Initiative (ESI)) has been hugely positive and surprisingly effective. This important step would have been unthinkable in the absence of the COVID-19 health crisis. It avoided competition among the EU Member States for purchasing scarce equipment and vaccines. This has been of great benefit to the public, especially in smaller or poorer Member States that might otherwise have been shut out.

The ESI has had a mixed record in procuring vaccines. For future pandemics, the requisite contingent funding for vaccine purchase, not just for research and development, should be legally committed in advance so that funds can be tapped on very short notice (but used only if and as needed). For the early phases of a pandemic, it is appropriate to promote the development of multiple medications or vaccines; once the front-runners have begun to emerge, however, it is essential to quickly acquire a sufficient supply of the medications or vaccines that are actually authorised for use in Europe, before other countries or regions lock up all available supplies. Timely placement of orders is called for in order to enable firms in the sector to ramp up production, and to put the necessary supply chains and cooperative arrangements in place. Purchasing priorities need to reflect the fact that the value of stopping a pandemic as quickly as possible will often be vastly greater than the cost of vaccines¹. Responsible EU agencies must therefore be empowered to place well-reasoned bets, not all of which will pay off in the end.

Supply chains need proactive management. Fuest and Gros (2021) recommend, for instance, that future contracts include payment of a premium for timely delivery.

Continued attention to the international dimension: For the EU, ensuring availability of key life-saving vaccines and medications for all is not only a matter of humanity and charity, but also of enlightened self-interest. Controlling the COVID-19 pandemic worldwide (1) is essential for public health at home, in order to reduce the risk of constant re-introduction of infection; (2) reduces the risk of the Darwinian evolution of new and even more dangerous variants of a virus in non-EU populations that are still at risk; and (3) bolsters our own economy to the extent that it means that foreign trading partners are able to continue to buy the goods and services that we produce, and to produce the goods and services that we desire. COVAX is a positive initiative that should continue to be supported, but it is small in comparison to what is needed to control the COVID-19 pandemic and future pandemics worldwide. International diplomacy and political will are required going forward (possibly including the Trade and Health initiative in the WTO) to ensure an effective collective response going forward.

¹ Cutler and Summers (2020) estimated the cost of the COVID-19 pandemic in the US to be some €18,000 (May 2020 USD-EUR exchange rate) per person per year. The three vaccines currently authorised in the EU are estimated to cost between €4 and €28 per dose.

1. INTRODUCTION

The COVID-19 pandemic has been an enormous economic and social shock to the European Union. The EU and its Member States have been challenged to a greater extent than at any time in the EU's history. Solidarity among and between the Member States together with the continued effective functioning of the EU Internal Market has contributed in important ways to a generally successful response to an unanticipated and unprecedented crisis.

As we write this study, the EU is in the midst of a second wave of the COVID-19 virus that is considerably worse than the first. The availability of three vaccines which appear to be effective and safe provides hope going forward, but a great many challenges remain (see Section 1.3). The crisis will continue to be with us for many months to come, even in the best of circumstances.

1.1. Objectives

In this study, we seek to assess the impact of the COVID-19 crisis on the Internal Market and consumer protection, including the impact of measures introduced at national and EU level to mitigate the consequences of the crisis, and to suggest what more could be done to ensure a well-functioning Internal Market. What further measures should be considered in order to reinforce the resilience of the EU's Internal Market?

1.2. Scope

The study covers all 27 Member States from the beginning of the pandemic in March 2020 to the present. It reflects the restrictions that were introduced in the spring, the progressive loosening that took place in the summer as the number of cases appeared to be reasonably under control, and the strong restrictions selectively re-introduced in the autumn as the number of new documented cases and deaths per day once again increased in most of the EU Member States. We have sought to use the most recent data available in order to provide the best possible picture of the most recent developments.

The EU's Single Market is based on four freedoms. We have placed our primary focus on the free movement of goods and the free movement of services. We have considered restrictions on the free movement of individuals primarily in the context of bans on travelling, particularly as they impacted workers. The free movement of capital has not been impacted by the pandemic to any great extent, and we place little weight on it in this study.

The European institutions have been active in a number of specific areas. For public procurement, measures put in place to coordinate personal protective equipment (PPE) and medications have been impressive. For consumer protection, measures to facilitate reimbursement of cancelled travel tickets or holiday packages have played an important role. For big data and Artificial Intelligence (AI), measures to establish common standards for exposure notification applications (sometimes referred to misleadingly as contact tracing) have been important in enabling initial steps toward cross-border interoperability.

1.3. The EU's Internal Market and the EU response to the pandemic

The COVID-19 pandemic has caused a multi-dimensional crisis: a health crisis, an economic crisis, and a social crisis. At EU level, Europe generally responded very well to the first wave of the crisis, and by means of measures that are consistent with European values. Over the summer, a certain amount of normality was restored, with the loosening of the restrictions. By the end of 2020, the EU was in the midst of an even more damaging second wave, but most aspects of the public policy response continue to be effective overall.

Vaccines have been developed more rapidly than might have been anticipated, and (at the time of writing) three have been authorised for use in the EU (see Section 5.3.1), so there are grounds for hope. At the same time, more contagious variants of COVID-19 have recently appeared in the UK, in South Africa, and in Brazil. These new variants are beginning to spread in the EU. Moreover, the vaccination campaign in the EU is off to a sluggish start, primarily because large scale orders for the vaccines that have been authorised were placed too late, which in turn meant that production was late ramping up. The "situation on the ground" is thus fluid and rapidly evolving.

In order to keep the pandemic in check, various restrictions were needed at Member State level and in some cases at EU level. The restrictions exacted a substantial economic cost both within and among the Member States. The European institutions put a number of measures in place to try to mitigate the harms caused by COVID-19 restrictions, but some harm was inevitable.

Our task in this study is to provide perspective in the context of the EU Internal Market on the effects of the pandemic, on both the effects and the effectiveness of the restrictions imposed, and on measures taken at Member State and EU level to mitigate any harmful impact of those restrictions.

The pandemic was not anticipated. It was not the first pandemic of this century, and it might not be the last, but it was the first in one hundred years to have a dramatic impact on Europe. The European response was reasonably good (with the notable exception of late placement of orders for authorised vaccines), but it definitely could have been better. Improvements have been made, but many challenges remain, and there are many lessons to be learnt and enhanced processes to be put in place in order to increase the resilience of the EU in the face of future crises that, unfortunately, are likely to come.

This study is thus very timely as a means of taking stock and making a first assessment as to what the EU should do to be better prepared for future challenges.

1.4. Structure of this study

We discuss the overall impact of the pandemic on the EU and its Member States, the restrictive measures that Member States put in place to attempt to control the pandemic or to mitigate its effects, and the restrictive measures that individuals voluntarily placed on themselves in Chapters 2, 3, and 4, respectively. In Chapter 5, we discuss the measures that the EU put in place either to control the pandemic or to try to mitigate the impact of restrictive measures put in place by the Member States. We provide our assessment of the impact of the various measures on the EU Single Market in Chapter 6, and discuss corresponding sectoral impacts in Chapter 7. Finally, our recommendations on how to make the EU more resilient in the face of future health catastrophes appear in Chapter 8.

2. OVERALL IMPACT OF THE PANDEMIC ON THE EU

KEY FINDINGS

- The pandemic has caused the largest contraction of the world economy since World War II. European GDP is expected to decrease by 7.4%, far exceeding the decline in output during the 2009 Global Financial Crisis.
- Southern European Member States are more severely impacted than northern and eastern European ones, with Italy and Spain experiencing the largest decline of economic activity. The decline in tourism has hurt these countries, as well as Greece, Cyprus, Malta, and others.
- Households increased their savings substantially, while businesses decreased their investment activity.
- During the first wave of the pandemic, intra-EU trade and industrial activity strongly declined. However, they recovered during summer to pre-pandemic levels.
- Large scale job retention schemes prevented a surge in unemployment, but hours worked contracted strongly during the first lockdown.

The COVID-19 pandemic has caused great economic and social harm to the EU. At global level, it has been the greatest shock to the world economy since World War II. The IMF estimates that the world economy contracted by 3.5% in 2020, which is considerably worse than the stagnation after the Global Financial Crisis in 2009 as negative growth rates in advanced economies were offset by sustained high growth in emerging markets in Asia (see IMF (2020a; 2021)). EU Member States are among the countries experiencing the largest contraction of their economies. According to the European Commission's autumn forecast, the GDP of Spain is expected to decline by 12.4%, that of Italy by 9.9%. EU GDP as a whole is expected to decline by 7.4%, far exceeding the 2009 contraction during the Global Financial Crisis.

Table 1: Predicted evolution of real GDP in EU Member States (2020, 2021, and 2022)

	2020	2021	2022
EU	-7.4	4.1	3.0
Euro Area	-7.8	4.2	3.0
Belgium	-8.4	4.1	3.5
Germany	-5.6	3.5	2.6
Estonia	-4.6	3.4	3.5
Ireland	-2.3	2.9	2.6
Greece	-9.0	5.0	3.5
Spain	-12.4	5.4	4.8
France	-9.4	5.8	3.1
Italy	-9.9	4.1	2.8
Cyprus	-6.2	3.7	3.0
Latvia	-5.6	4.9	3.5
Lithuania	-2.2	3.0	2.6
Luxembourg	-4.5	3.9	2.7
Malta	-7.3	3.0	6.2
Netherlands	-5.3	2.2	1.9
Austria	-7.1	4.1	2.5
Portugal	-9.3	5.4	3.5
Slovenia	-7.1	5.1	3.8
Slovakia	-7.5	4.7	4.3
Finland	-4.3	2.9	2.2
Bulgaria	-5.1	2.6	3.7
Czechia	-6.9	3.1	4.5
Denmark	-3.9	3.5	2.4
Croatia	-9.6	5.7	3.7
Hungary	-6.4	4.0	4.5
Poland	-3.6	3.3	3.5
Romania	-5.2	3.3	3.8
Sweden	-3.4	3.3	2.4

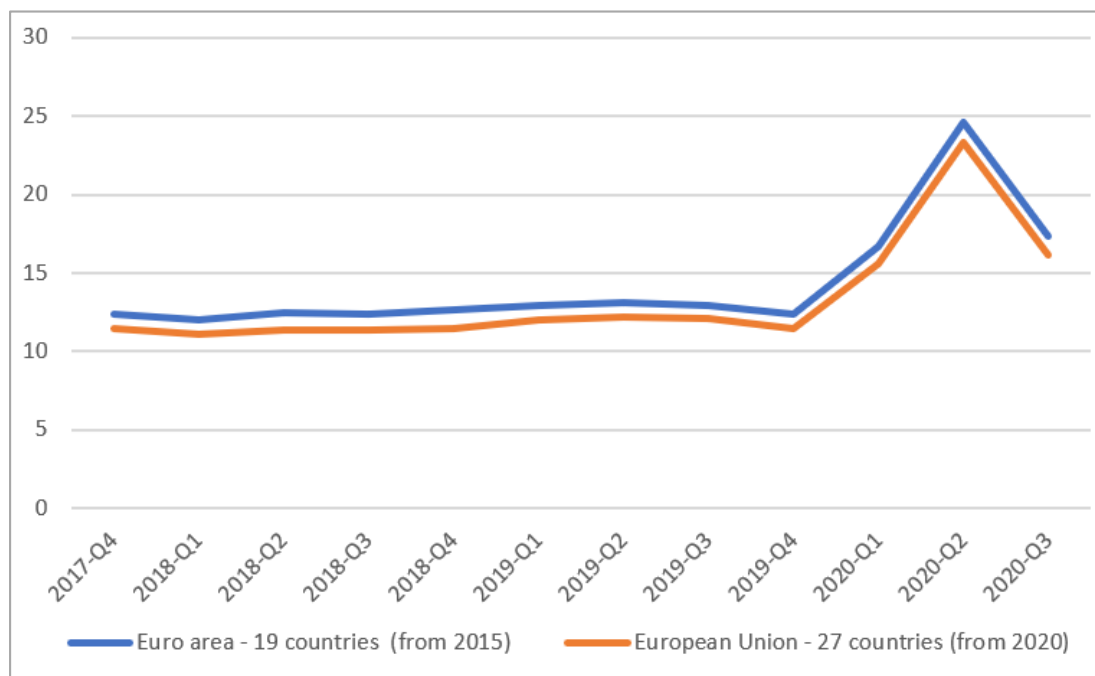
Source: European Economic Forecast autumn 2020, European Commission.

The economic contraction is the result of (1) the economic uncertainty introduced by the pandemic, (2) voluntary and mandated physical distancing of consumers, as well as (3) supply chain disruptions caused by border and factory closures. As we will discuss in Section 6.1, during the waves of high prevalence of the disease, European consumers avoided retail and recreational activities, while

"lockdowns" in many EU Member States required workers and consumers to stay home. Telework has become the norm in many industries and the lack of demand for services, in particular for hospitality services (including restaurants, hotels, and transportation), has contributed to a decline in employment.

As economic uncertainty rose with the arrival of the pandemic in Europe, households increased their savings, not only as a precaution but also due to a lack of spending opportunities. The household savings rate jumped from its longer-term level of around 12% to 24-25% in Q2 of 2020 (see Figure 1). Investment into durable consumer goods such as cars were delayed. Figure 2 shows that by April 2020, turnover of consumer durables in the EU had decreased to two-thirds of its pre-pandemic level. However, it recovered by June 2020. Household savings reverted in the third quarter to 16% as well.

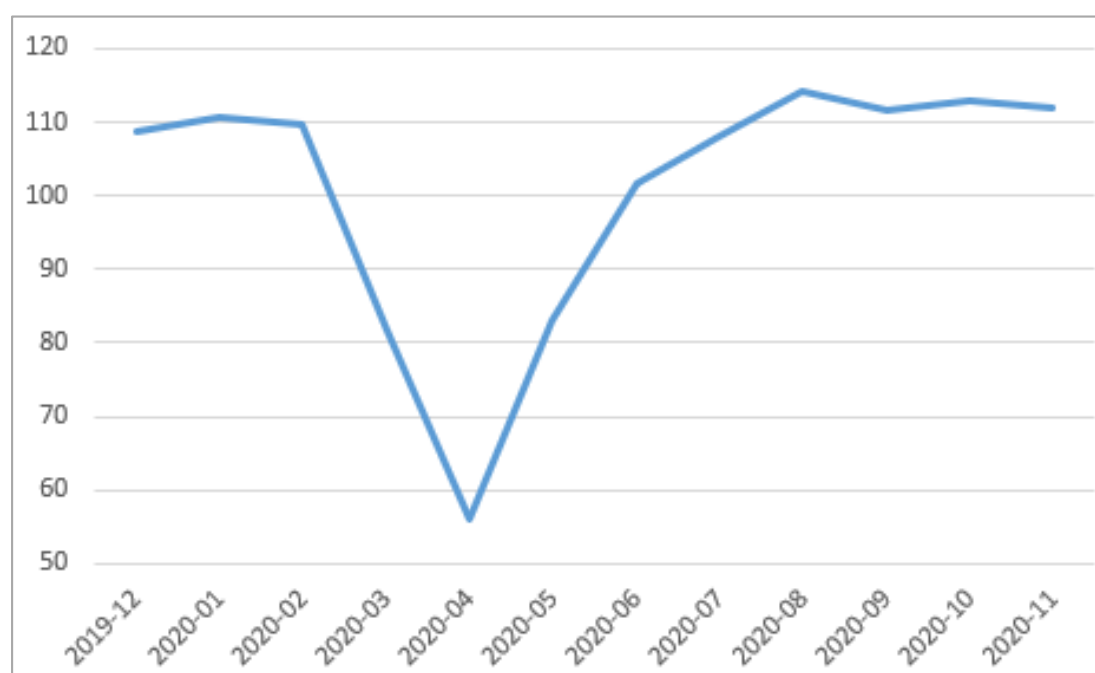
Figure 1: Gross household saving rate



Source: Eurostat, online data code: TEINA500.

Note: The gross saving rate of households is defined as gross saving divided by gross disposable income, with the latter being adjusted for the change in the net equity of households in pension funds reserves. Gross saving is the part of the gross disposable income which is not spent as final consumption expenditure. The indicator described is calculated on the basis of quarterly sector accounts data by institutional sectors. Seasonally adjusted data.

Figure 2: Production in industry - consumer durables EU-27

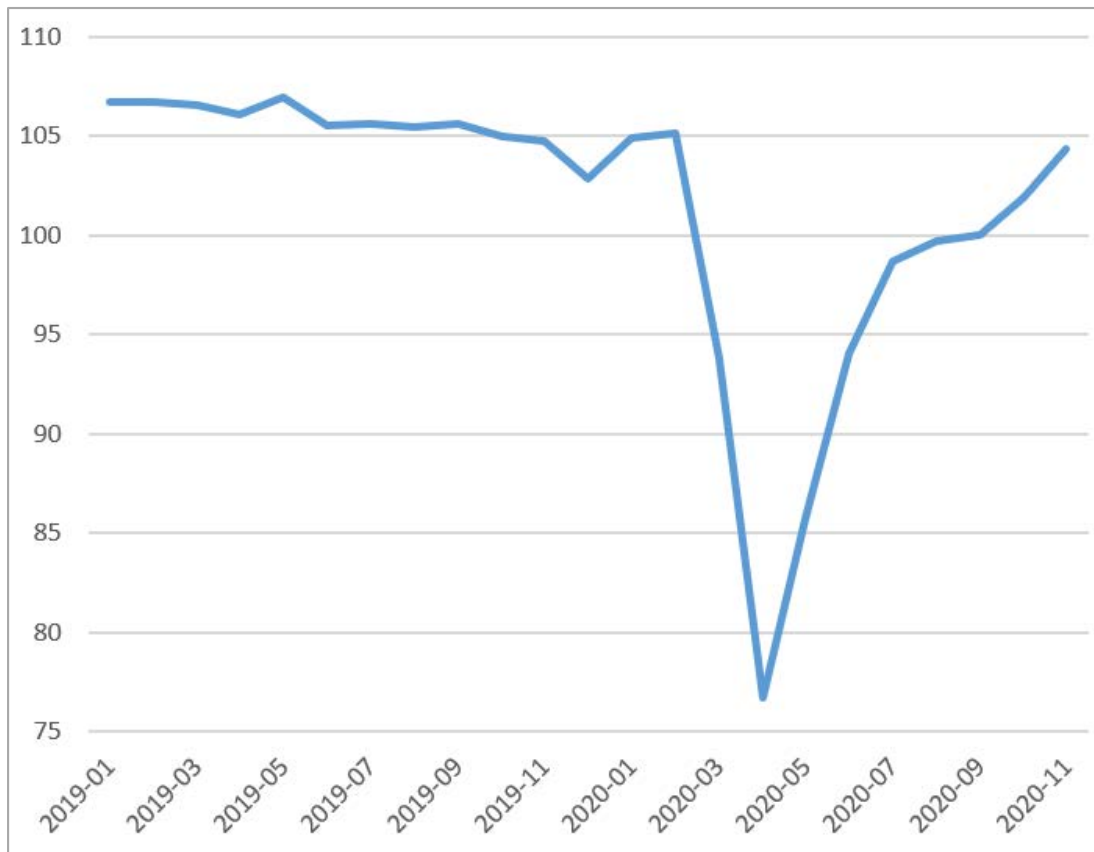


Source: Eurostat, online data code: TEIIS130.

Note: Index (2015=100), seasonally adjusted.

On the supply side, industrial production also strongly contracted during the first wave of the pandemic, as border and factory closures interrupted manufacturing activity. In April 2020, industrial production was 28% below its pre-pandemic level. Like the economy as a whole, industrial activity recovered, to only 3% below its previous level by November. This development is also mirrored when looking at electricity consumption as a proxy for industrial activity. In Italy and Spain (the most affected Member States), electricity consumption was at its lowest point in April 2020 at 40% and 30%, respectively, below the seasonal average. In all Member States, electricity consumption has recovered to its normal level since then. While we still lack statistics on industrial activity during the second wave in autumn 2020 and the winter of 2021, current electricity consumption data do not suggest a second collapse in activity (see McWilliams & Zachmann (2020)).

Figure 3: Production in industry EU-27: Mining and quarrying; manufacturing; electricity, gas, steam and air conditioning supply

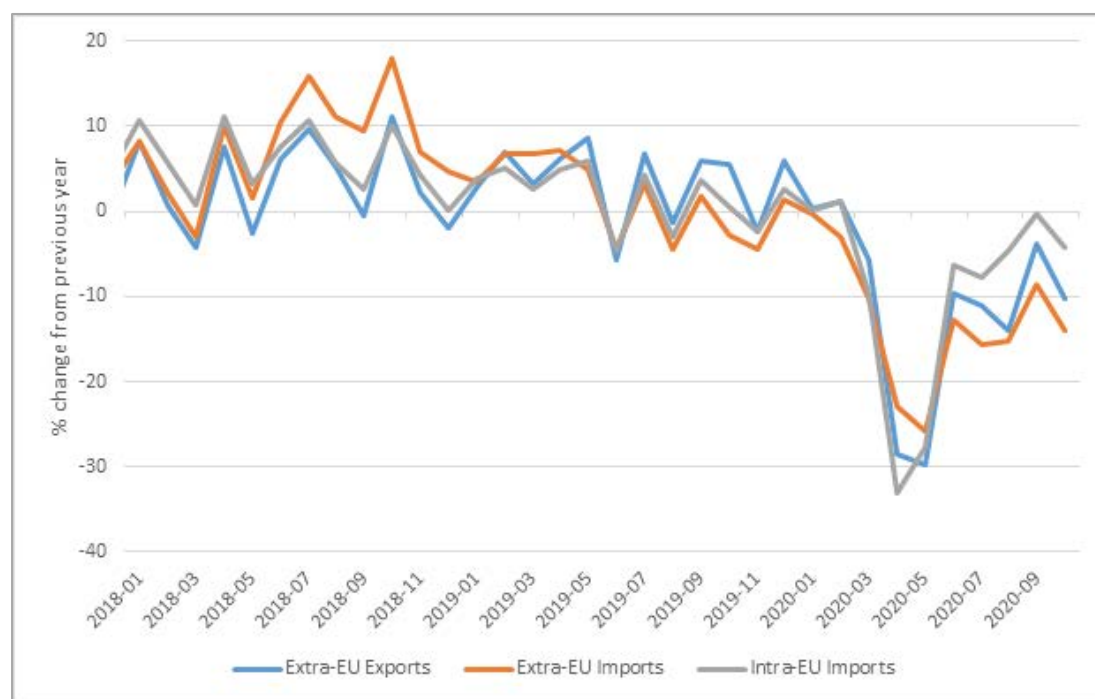


Source: Eurostat, online data code: STS_INPR_M.

Note: Index (2015=100), Volume index of production, seasonally and calendar adjusted data.

Initially, there were major concerns over the resilience of value chains against the pandemic, but they have proven remarkably resilient to the disruption caused by COVID-19. Early estimations of the World Trade Organisation (WTO) in April expected a decline of global trade in 2020 of 13 to 30%; however, the current estimates foresee a decline of "only" 9.2%. Similarly, within the EU, trade has largely recovered from the initial shock. While intra-EU trade in goods contracted by a third in April 2020, it recovered during the summer to the pre-pandemic level.

Figure 4: Intra and Extra EU Trade, percentage change from previous year (January 2018 – October 2020)

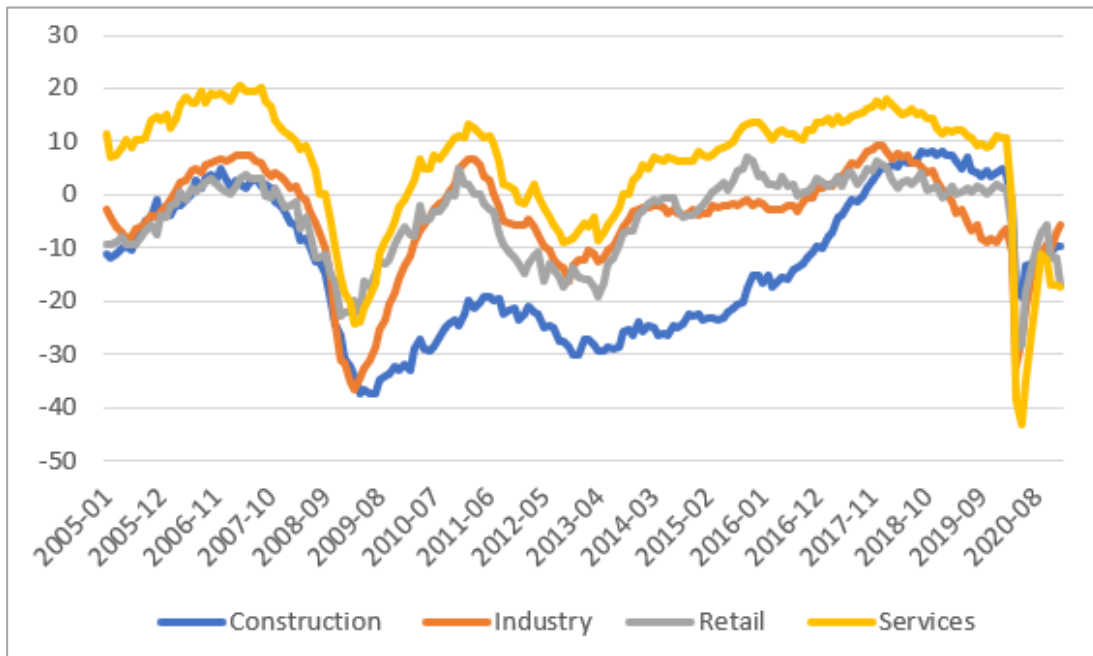


Source: Eurostat, "EU trade since 1988 by BEC" (DS-032655). Monthly Data. Intra-EU trade is computed based on exports between the different Member States of the European Union. Bruegel computations.

Hoarding and changed consumption patterns caused some storable consumption goods such as dry pasta and toilet paper to be in short supply. Differences in the type of goods consumed by the hospitality sector and by private households also contributed to oversupplies and shortages. However, overall, there were no major disruptions, and in particular, the supply chains of everyday consumer goods have proven to be resilient (as discussed in Section 6.3). The EU's "green lanes" have ensured the unimpeded flow of goods within the Internal Market after a short period since the first lockdown.

Business sentiment saw its largest drop since the 2009 Great Financial Crisis. The sentiment indicators for construction, industry, retail and services are displayed in Figure 5. Especially the services sector, which is strongly affected by social distancing, saw a drop in business confidence far exceeding the lowest readings in 2009. While it has fairly consistently remained above the 2009 value since 2015, business confidence in the service sector was at -43 in May 2020. This compares to a reading of "only" -24 at the lowest in 2009. Sentiment recovered quickly with the re-opening of the economy after the first wave, though still to a very low level. In the retail sector, the business sentiment indicator was also at record low levels with -30, compared to a level of around 0 in the five previous years. Retail confidence improved after the first lockdowns ended but collapsed again with the second wave in December. Industry business confidence initially collapsed, but unlike the service sector recovered to its pre-pandemic level by December. The overall trends in business sentiment have been similar across EU member states, but the recovery in service sentiment was less strong in parts of southern and central Europe.

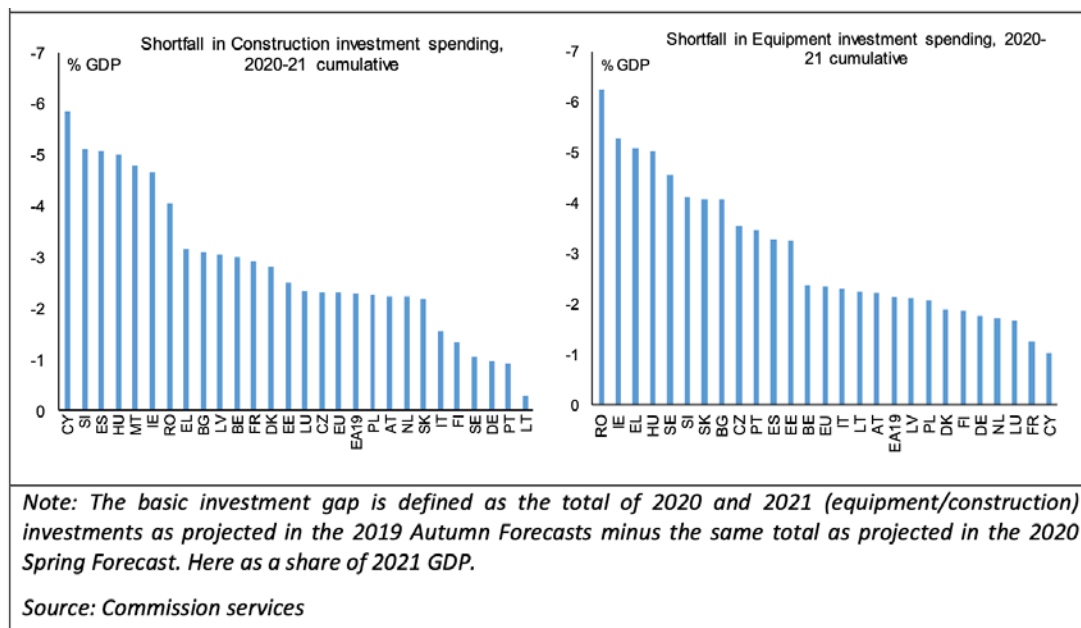
Figure 5: Sentiment indicators (January 2015 to December 2020)



Source: Eurostat, online data code: ei_bssi_m_r2. Business confidence indices, seasonally adjusted monthly data.

We have no reliable data for private investment yet, but Maurin, et al. (2020) and European Commission (2020b) both expected it to decline in 2020 by between 4 and 7% of GDP, corresponding to a decline in corporate investments between 31% and 52% (see Figure 6). This mirrors the collapse in international capital flows, which UNCTAD (2020) projects to fall to 60% of their pre-pandemic level.

Figure 6: Basic investment gap of non-financial corporations by type of investment asset (2020 - 2021 cumulative)



Source: European Commission (2020b).

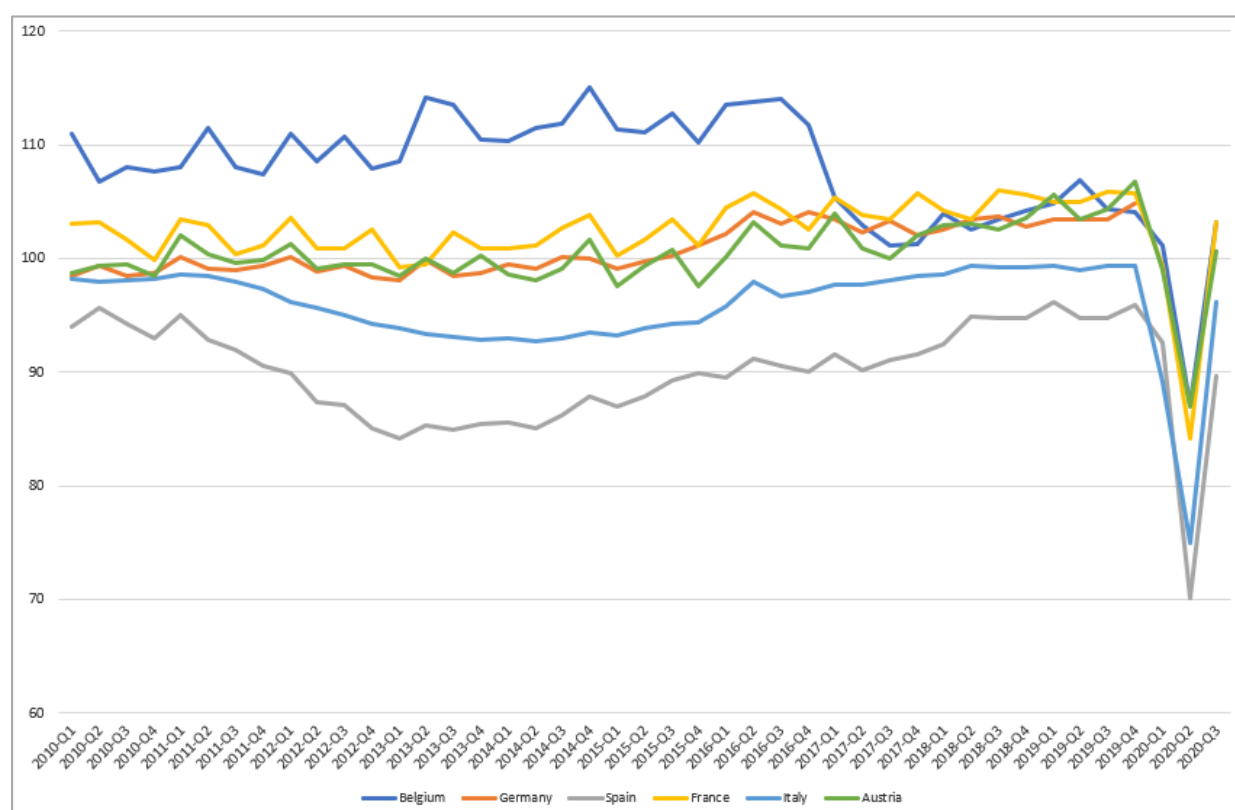
As household spending and business investments decreased substantially, governments reacted with unprecedented stimulus packages. Job retention schemes were expanded, while equity and programmes extended to 7% and 9% of GDP, respectively (Bruegel, 2020). Due to foregone tax

revenues, automatic stabilisers like unemployment benefits and discretionary fiscal stimulus, the IMF (2020b) expects government budget deficits of Spain, Italy and Germany to exceed 10% of their GDP.

Many European Member States introduced or activated and extended job retention schemes to preserve existing employment. In France and Austria, a third of dependent employees have been covered by such schemes in May 2020 (see OECD (2020)). As a result, unemployment in the European Union increased by "only" one percentage point from 6.5% in December 2019 to 7.6% in October 2020. The EU unemployment rate peaked in July 2020 at 7.8% (Eurostat (2021b)).

However, broader measures of labour market activities (such as total hours worked displayed in Figure 7) reveal the substantial decline in employment activity especially during the first wave of the pandemic. In Spain and Italy, labour hours worked declined by 28% and 24% respectively. In the third quarter, hours worked recovered from their steep decline to 6% and 3% below their pre-pandemic level for Spain and Italy, respectively.

Figure 7: Index of total hours worked



Source: Eurostat, online data code: LFSI_AHW_Q.

Note: The index indicates the percentage of change in the total actual hours of work in the considered quarter of a year compared to the total actual working hours in 2006.

3. RESTRICTIONS IMPOSED BY THE MEMBER STATES

KEY FINDINGS

- Cross-border restrictions relevant to the Single Market have had a substantial impact within the EU, but restrictions within the Member States have had, in many cases, still greater impact, and in some cases have limited the impact of the cross-border restrictions.
- PPE and medical instruments are sectors where unilateral restrictions were keenly felt in the early stages of the pandemic.
- Many of the measures implemented at EU level were well-received and contributed to restoring Single Market stability. If these measures had been delayed, the impact of disruptions to the Single Market might have been more severe.
- From the onset of the pandemic in March 2020 to December 2020, the European Commission received a total of 163 draft technical regulation notifications referring in their title to COVID-19. Many of these invoked the urgency procedure.
- Around 400 State aid measures have been adopted under Article 107 TFEU, due to the exceptional circumstances brought up by the pandemic and the serious disturbances in the economies of Member States that it has caused. The vast majority of these measures have been brought in under the Temporary Framework established by the Commission in March 2020.
- Delays in routine regulatory activity in many Member States meant that the Commission received almost a third fewer notifications under the requirements set out in the Services Directive in the six-month period of February-August 2020 than it did in the prior six months.

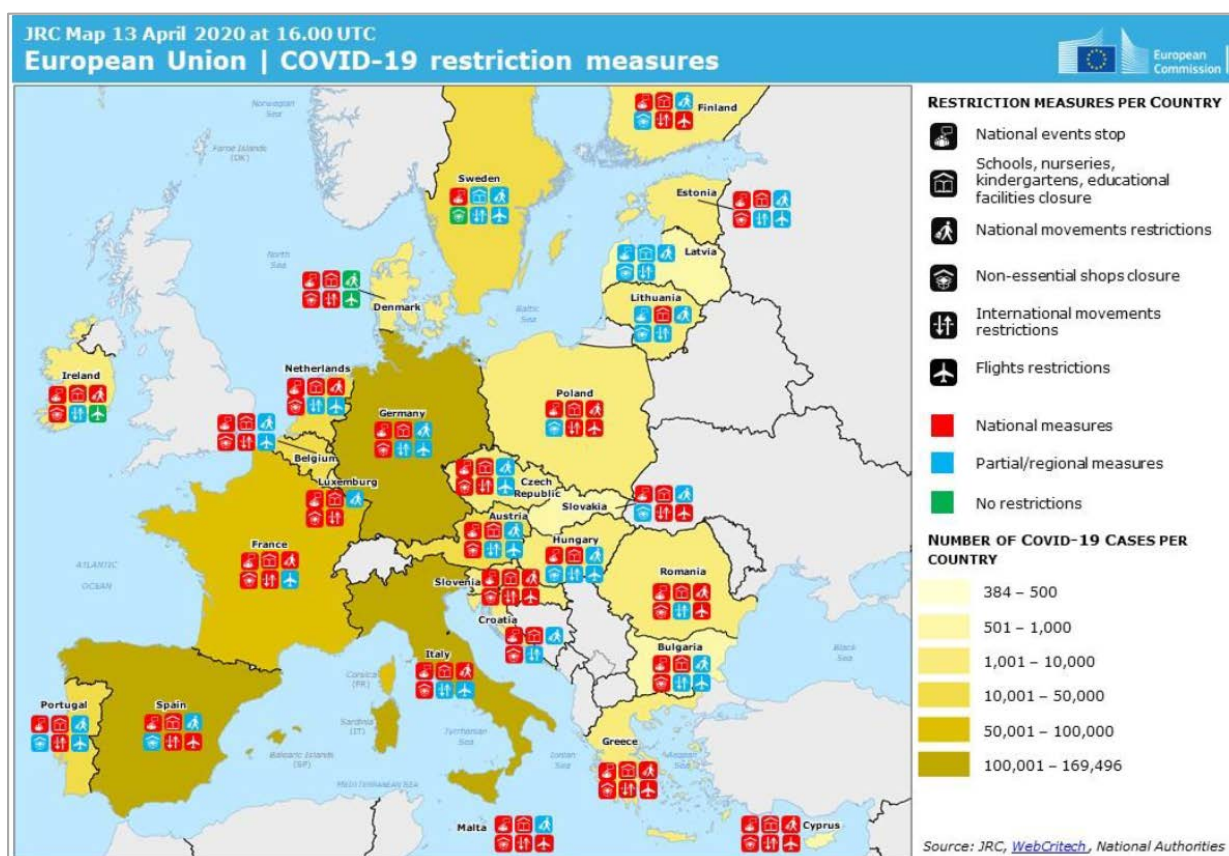
Member States have imposed a wide range of individual restrictions with the main goal to address the COVID-19 pandemic domestically. European coordination arrived only with delays and was therefore more focused on mitigating the impact of restrictions rather than implementing them, with the exception of external border controls.

As a result of the COVID-19 responses remaining at the national level, or in some cases at the regional or even local level, restrictions have been far from uniform in their timing or stringency across the Member States². Nonetheless, and despite slight interpretational differences, the restrictions in the Member States largely target the same core areas. Figure 8 illustrates both the differences at a given moment in time and the over-arching classification of restrictions.

Restrictions were not limited to the six areas highlighted in Figure 8, but our primary focus is on the key categories of restrictive measures that have been implemented at national level based on sources central to the study, among which is first and foremost the database created and maintained by Hale et al. (2020) at the Blavatnik School of Government, Oxford University. The state of restrictions applied in each Member State of the EU as of April 2020 is reflected in Figure 8, which corresponds more or less to the peak period for restrictions during the first wave of the pandemic.

² See Milieu Consulting SRL, 2020, *The impact of COVID-19 on the Internal Market and consumer protection - IMCO Webinar Proceedings*, Publication for the committee on Internal Market and Consumer Protection, Policy Department for Economic, Scientific and Quality of Life Policies, European Parliament, Luxembourg. Available at: [https://www.europarl.europa.eu/RegData/etudes/IDAN/2020/658212/IPOL_IDA\(2020\)658212_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/IDAN/2020/658212/IPOL_IDA(2020)658212_EN.pdf).

Figure 8: COVID-19 restrictive measures in the European Union on 13 April 2020



Source: European Commission (2020v).

3.1. General restrictions at EU Member State level

We begin by looking at the restrictions put in place by the Member States, with a focus primarily on how they functioned *within* the Member State.

The various measures put into place by Member States at different stages of the pandemic can be summarised and categorised into several key categories. Many intense restrictive measures were imposed in the early phases of the crisis. The sequence varied somewhat from one Member State to another. In many cases, several restrictions came into force at roughly the same time.

Restrictions were initially implemented during the first wave of the pandemic, before they were partially lifted over the course of summer 2020. As case numbers grew in the closing months of 2020, restrictions were reinstated or newly imposed.

Firstly, public events were prohibited to limit gatherings of large numbers of people, especially in closed spaces. In many cases, the prohibition followed large scale voluntary cancellations of events by the organisers. The measures presumably had an overall limited immediate impact on national economies. This measure was mostly introduced gradually, by first limiting the maximum audience size, and subsequently lowering that limit, up to prohibiting events altogether.

Another measure that was imposed was school closures, often as a second measure, and with the same general rationale as the cancellation of events. Schools are indoor spaces where large numbers of people congregate. This measure came with burdens for the wider economy, as the sudden need for childcare obliged a portion of the working population to stay at home. While there have been a number of predictive studies into the long-term impact of the disruption of education of students and pupils, the effects on the productivity of parents who suddenly had the additional requirement to provide care have not been reliably ascertained. To a large degree, the effects have been overshadowed by the

impact of large-scale closures of businesses during the first wave of the pandemic. However, preventing a renewed closure of schools has been a primary focus in the handling of the second wave since August 2020 onwards in virtually all Member States. Despite these concerns, school closures were implemented again in some Member States from late October onward.

The third restriction analysed in Kahanec, et al. (2020) is the closure of non-essential shops, which again was supposed to limit the congregation of large numbers of people with substantial contact in closed indoor spaces. The impact of the closure of non-essential shops is expected to be high, with both immediate impact (e.g. loss of revenue for the shops) and knock-on effects (loss of revenue for suppliers, loss of hours worked for employees).

Fourth, the prohibition of unnecessary movement from the residence (typically defined as leaving home other than to go to work or to purchase food or drugs) differs from the previous three in that its scope includes outdoor spaces. Here, the stringency of the restriction has varied across the Member States, ranging from the measure being mandatory, versus being only a recommendation, versus only applying in specific areas at specific hours or for a specific group of people. For instance, those over 65 years of age were allowed to leave their home only during two set hours per day in Romania in March 2020 (see Government of Romania (2020)).

The closure of workplaces reflects the same logic as closures of non-essential shops. In general, only those workplaces that were deemed non-essential and that were unable to operate with further hygiene and distancing measures in place were required to close. We consider this measure, together with the closure of non-essential shops, to have had a very high impact. It includes workplaces in the accommodation, restaurant and hospitality sector, which were among the last to reopen in many Member States during the period of eased restriction, and in many cases were only allowed to open under strict conditions. The concrete form of these restrictions took on widely different forms in different Member States and at different times. They ranged from (1) full stay-at-home orders, as for instance in Italy and France in March 2020, to (2) other measures strongly encouraging work from home where possible, as in Belgium, to (3) restricting travel to a 15 km radius of the place of residence, as in put place in parts of Germany in January 2021.

The restriction on gatherings can be considered to be a much looser form of the prohibition on needless travel from the residence; however, it follows the same rationale, which is to reduce the difficult-to-trace spread of the COVID-19 virus through the mixing of large groups of people. Over the months of May, June and July 2020, the stringency of this measure was gradually reduced in scope in most Member States, mostly by increasing the number of people permitted to attend lightly or non-restricted gatherings. While the specific number of people permitted to gather was subject to frequent changes across and within the Member States, restrictions on gatherings tended to stay in place once introduced. With the advent of the second wave, restrictions on gathering have once again intensified.

While the intensity of public transit was reduced in virtually all Member States, not all Member States closed public transit during the first wave of the pandemic. Restrictions on public transit have been more severe where they concerned cross-border travel, or where they interacted with restrictions on internal movement.

Restrictions on public transit appeared to have a somewhat similar effect to that of a prohibition on unnecessary movement from the residence when commonly applied exceptions are taken into account. The difference is that a restriction on public transit can still allow some movement from the residence³.

Each of these measures has been subject to significant exceptions. Essential workers and services were usually not within the scope of the restrictions, although there were broad and widely divergent

³ A prohibition on unnecessary movement from the residence still permits shopping for food and drugs, and may allow travel to work. A restriction on public transit will tend to limit but not prevent personal mobility.

interpretations of what constituted an essential worker, good or service. Traveling to and from work tended to be exempted from most travel restrictions, both internal and cross-border. The same applied to caring for family members. In addition, shops selling groceries or pharmaceuticals generally did not fall under restrictions applying to shops.

Another aspect to consider with all restrictions is the question of enforceability. Many restrictions put into place proved difficult or impossible to enforce, calling their effectiveness into question. In particular, restrictions on leaving the house were difficult and costly to monitor, and for the most part appeared to have been effective only when applied to relatively narrowly defined regions and only for a limited period of time. Restrictions on the number of people who can meet in private homes, or the number of different households from which they can come, have proven to be exceedingly difficult to enforce.

Most restrictions imposed by the Member States can be assigned to one of the categories described in (Hale, et al., 2020). The notable exception is the obligation to wear a mask, which has largely been introduced as a condition for the lifting or easing of measures restricting mobility. Many Member States have imposed an obligation to wear masks in shops, in dense areas, and in public transit. In January 2021, Germany intensified its mask obligations to require that operating masks or FFP2/FFP3 masks be worn in public transit and in shops. Since mask obligations have not been collected in a comprehensive database like Hale et al. (2020), they would be more tedious to research than the other measures discussed in this section.

Again, our focus in this section has been on how restrictions functioned within a Member State. Section 3.2 takes a closer look at how restrictions impacted the flow of goods, services, individuals and capital between the Member States, and consequently impacted the functioning of the EU's Single Market.

3.2. Restrictions at EU Member State level that impacted cross-border activities

Restrictions to travel have been a feature of the COVID-19 response from the earliest days of the crisis. The effort to contain the spread of the virus to affected regions saw a progressive increase in restrictions on cross-border travel. In fact, controls or restrictions at borders were the first measure to be introduced in almost all Member States. In some, such as Italy, France and Bulgaria, they began in January (see Hale et al. (2020)). Initially, these restrictions applied to travellers entering the country from China, but they were increasingly escalated as the pandemic spread across Europe.

The rationale here has been two-fold. Firstly, given that the responsibility of protecting a Member State lies primarily with its national government, there was a strong incentive to control external borders from a protectionist perspective. Secondly, national borders have infrastructure in place to implement and enforce restrictions with relative ease. For Schengen countries, restrictions have been rare for many years, but the countries have experience within human memory with restricting border crossings.

By no means were the measures implemented consistently among the Member States. In many cases, checks were introduced only at borders with specific other Member States, while in other cases enforcement was patchy at best due to insufficient availability of staff to enforce border checks. Poland is a notable exception in having introduced and enforced checks at all of its borders, which however contributed to the creation of huge queues at the borders with Lithuania, Slovakia, Czechia and Germany. Hungary is a further example, having closed its borders to foreign nationals from 1 September 2020. With the increase of infections in the second wave and the emergence of alternative strains, most Member States reintroduced tight border controls. Restrictions in the form of a

requirement to present a negative test result upon arrival, or to go into quarantine upon arrival, have been common throughout the pandemic.

Even so, national borders were not shut down completely. Travel was possible for a variety of reasons, especially when the travel was work-related. In many cases, periods of self-isolation after entering the country that otherwise would have been required were waived for business travellers. Cross-border delivery of goods was typically permitted. Nonetheless, the increased border checks created delays and costs for cross-border transport of goods and for cross-border physical service provision.

The measures also had an impact on businesses operating in border regions, many of which experienced a drop-off in retail revenue because customers were discouraged from crossing borders. In other cases, however, there appears to have been an increase in cross-border shopping traffic by customers in neighbouring Member States where counterpart stores had been shut down but borders remained (de facto if not de jure) open without restrictions.

Migrant seasonal workers, predominately those coming from eastern European Member States and working in the agricultural and care sectors in western European Member States, have benefitted from express exemptions from cross-border travel restrictions, and from an easing of overall restrictions on travel. Had this not been the case, much of the asparagus harvest in Germany in the spring would have been lost.

More generally, the Commission recognised the importance of cross-border mobility for "essential workers in critical occupations" in a Commission Communication of 30 March 2020⁴. These include not only health care professionals, but also those in occupations such as food supply, manufacturing and processing⁵.

Member State representatives and business associations interviewed for the study were in agreement that restrictive measures affecting cross-border economic activities had far less impact than restrictions within the Member States, together with reduced demand and reduced production. In other words, disruptions at the borders and resulting delivery delays mattered less when there were fewer materials and products to be delivered. In addition, many businesses managed to tide themselves over the period of border traffic disruptions by dipping heavily into available stocks. From this perspective, the agreements reached at a European level arrived just in time.

Nevertheless, individual businesses, including retailers and manufacturers and especially SMEs and businesses in specific sectors such as tourism, hospitality and entertainment, suffered from the travel restrictions and increased border controls. Impacted businesses were particularly reliant on economic support and financial relief measures introduced by the Member States which were cited as very positive by SME and retail associations. Yet these measures could only mitigate, but not fully make up for the negative economic consequences caused by the pandemic and the measures adopted in the interest of public health.

All stakeholders interviewed for this study identified restrictions on shipments of PPE and medical equipment as major disruptions in the working of the EU Internal Market. During the first wave, demand exploded, while supply struggled to keep up. This led not only to disruption, but also to brief

⁴ Communication from the Commission, Guidelines concerning the exercise of the free movement of workers during COVID-19 outbreak, 2020/C 102 I/03, C/2020/2051, OJ C 102I, 30.3.2020, pp. 12–14. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020XC0330%2803%29>.

⁵ Remarks of Prof. Robin-Olivier (Sorbonne School of Law), as reflected in the IMCO webinar proceedings. See Milieu Consulting SRL, 2020, *The impact of COVID-19 on the Internal Market and consumer protection - IMCO Webinar Proceedings*, Publication for the committee on Internal Market and Consumer Protection, Policy Department for Economic, Scientific and Quality of Life Policies, European Parliament, Luxembourg. Available at: [https://www.europarl.europa.eu/RegData/etudes/IDAN/2020/658212/IPOL_IDA\(2020\)658212_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/IDAN/2020/658212/IPOL_IDA(2020)658212_EN.pdf).

export bans. Many hailed the European Commission's efforts in unifying the sourcing and purchase of PPE and medical equipment.

When questioned about other impediments to business, some interviewees mentioned delays in the supply chains for various industries, both in retail and in manufacturing, but these barriers were consistently viewed as having been transitory, and limited in scope and impact.

Even though the transition from unilateral decisions protecting individual national interests to joint measures on an EU-wide scale is widely perceived as having been well-managed overall, interviewees also expressed a real sense of the fragility of the EU Internal Market in a crisis, and expressed relief about the Commission's various rules (see Section 5.2) coming into force. Had they been delayed even further, according to stakeholders, the impact of Single Market disruptions might have been more severe.

3.3. Notifications to the Commission

There are four central notification obligations for Member States concerning COVID-19 measures.

First, Member States are obliged to notify measures transposing a directive adopted under a legislative procedure (see European Commission (2008)). Given that to date there has been no such directive specifically relating to COVID-19 requiring transposition into national law, this requirement is not of relevance for this study.

Secondly, Member States have the obligation to communicate any draft technical regulation to the Commission prior to its adoption (see also Section 3.3.1)⁶. Directive (EU) 2015/1535 governs this procedure, defining a technical regulation as "technical specifications and other requirements or rules on services, including the relevant administrative provisions, the observance of which is compulsory, de jure or de facto, in the case of marketing, provision of a service, establishment of a service operator or use in a Member State or a major part thereof, as well as laws, regulations or administrative provisions of Member States, except those provided for in Article 7, prohibiting the manufacture, importation, marketing or use of a product or prohibiting the provision or use of a service, or establishment as a service provider"⁷.

The third notification obligation relates to requirements under the Services Directive, namely for Member States to notify the Commission of any new laws, regulations or administrative provisions⁸ which set requirements detailed under Article 15(2) of the Directive (see also Section 3.3.2). This means that States have to examine whether their legal system makes access to a service activity or the exercise of it subject to compliance with any of a pre-defined list of non-discriminatory requirements⁹. Concerning the cross-border provision of services, Member States are also required to transmit to the Commission any changes in their requirements, including new requirements, that affect the right of providers to provide services in a Member State other than that in which they are established¹⁰.

The fourth and final obligation of relevance in this context concerns EU State aid control and the prior notification of all new aid measures to the Commission (see also Section 3.3.3). Article 107(1) of the

⁶ Directive (EU) 2015/1535 of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services, Art. 5, available at: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A32015L1535>.

⁷ *Ibid*, Art. 1(1)(f).

⁸ Directive 2006/123/EC of 12 December 2006 on services in the Internal Market, Art. 15(7), available at: <https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX%3A32006L0123>.

⁹ *Ibid*, Art. 15(1) and (2).

¹⁰ *Ibid*, Art. 39(5).

Treaty on the Functioning of the European Union (TFEU) ensures that aid granted by a Member State or through State resources does not distort competition and trade within the EU by favouring certain companies or the production of certain goods¹¹. Given the significant economic impact of the COVID-19 outbreak, many Member States have announced support measures for citizens or companies, some of which may entail State aid within the meaning of Article 107(1) (see European Commission (2021c)).

The second, third and fourth notification obligations are therefore of much greater relevance than the first for this study, and are discussed in more detail in the following sections.

3.3.1. Notification of Draft Technical Regulations

As noted, Directive (EU) 2015/1535 requires Member States to inform the European Commission of any draft technical regulation prior to its adoption. Starting from the date of notification of the draft, a three-month standstill period enables the Commission and the other Member States to examine the notified text and to respond appropriately. During this period, the notifying Member State cannot adopt the technical regulation in question (see European Commission (2020n)).

The Directive also provides for an urgency procedure¹², designed to allow the immediate adoption of a national draft, subject to certain conditions (see European Commission (2020n)). An example of an urgent reason is one occasioned by serious and unforeseeable circumstances relating to the protection of public health or safety¹³ – something that is clearly relevant during the COVID-19 pandemic.

Since the onset of the pandemic in March 2020, the European Commission has received a total of 163 draft technical regulation notifications referring in their title to COVID-19 (see European Commission (2020o)). Many of these notifications contained proposed legislation in which the urgency procedure was invoked. Indeed, of the 163 notifications mentioned, 128 of them were "urgency" measures¹⁴.

One of the first measures to be adopted under the urgency procedure was a French Order on the preparation of hydro-alcoholic solutions such as disinfectants that were intended for human hygiene in the context of the fight against the spread of the COVID-19 virus (see European Commission (2020h)). This draft Order allowed pharmacies open to the public and in-house pharmacies to prepare hydro-alcoholic solutions in order to reduce the spread of the virus. The Hungarian Governmental Decree on end-of-year restrictions concerning the distribution and use of pyrotechnic products (see European Commission (2020i)) serves as another example of an urgency notification. These measures are, in our view, quite reasonable.

3.3.2. Notification requirements under the Services Directive

According to Article 15(2) of Directive 2006/123/EC on services in the Internal Market, 'Member States shall examine whether their legal system makes access to a service activity or the exercise of it subject to compliance with any of the following non-discriminatory requirements:

¹¹ Consolidated version of the Treaty on the Functioning of the European Union, Art. 107, available at: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A12008E260>.

¹² Directive (EU) 2015/1535 of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services, Art. 6(7), available at: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A32015L1535>.

¹³ *Ibid.*, Art. 6(7)(a).

¹⁴ *Ibid.*

- quantitative or territorial restrictions, in particular in the form of limits fixed according to population or of a minimum geographical distance between providers;
- an obligation on a provider to take a specific legal form;
- requirements which relate to the shareholding of a company;
- requirements, other than those concerning matters covered by Directive 2005/36/EC or provided for in other Community instruments, which reserve access to the service activity in question to particular providers by virtue of the specific nature of the activity;
- a ban on having more than one establishment in the territory of the same State;
- requirements fixing a minimum number of employees;
- fixed minimum and/or maximum tariffs with which the provider must comply; or
- an obligation on the provider to supply other specific services jointly with his service'¹⁵.

They must notify the Commission of any new laws, regulations or provisions which set requirements of the kind listed above, together with the reasons for those requirements¹⁶. However, given that measures used by Member States to combat the effects of the pandemic are extremely unlikely to fall within the relatively limited scope of the notification obligation concerning services set out in Article 15(2), notifications received by the European Commission from Member States in this regard have not been particularly affected¹⁷.

Concerning the cross-border provision of services, Member States are required to transmit to the Commission any changes in their existing requirements, or new requirements, that affect the right of providers to provide services in a Member State other than that in which they are established¹⁸. More specifically, this means that Member States must not make access to or exercise of a service activity in their territory subject to compliance with any requirements which do not respect the principles of non-discrimination, necessity and proportionality¹⁹. This does not prevent a Member State to which a provider moves from imposing requirements with regard to the provision of a service activity where they are justified, *inter alia*, for reasons of public health²⁰.

Table 2 provides statistics concerning the notifications received by the Commission from Member States between July 2019 and August 2020.

¹⁵ Directive 2006/123/EC of 12 December 2006 on services in the Internal Market, Art. 15(2), available at: <https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX%3A32006L0123>.

¹⁶ *Ibid*, Art. 15(7).

¹⁷ Interview conducted on 09/12/2020 with an official from DG GROW.

¹⁸ Directive 2006/123/EC of 12 December 2006 on services in the Internal Market, Art. 39(5).

¹⁹ *Ibid*, Art. 16(1).

²⁰ *Ibid*, Art. 16(3).

Table 2: Statistics concerning Member State notifications received under the Services Directive

	Reception period July 2019 – January 2020	Reception period February 2020 – August 2020
Total number of notifications	96	66
Notifications relating to establishment only (Type A)	40	18
Notifications concerning the cross-border provision of services, or both cross-border and establishment (Type B)	56	48
Average number of comments from the European Commission	13	9

Source: Author's own elaboration based on input from an official of DG GROW.

As Table 2 shows, the Commission received almost a third fewer notifications under the requirements set out in the Services Directive in the six-month period of February-August 2020 than it did in the preceding six months. One of the factors behind this reduction in the number of notifications is that regulatory activity in many Member States has been delayed due to COVID-19.

As was the case prior to the outbreak of the pandemic, more notifications concerned the cross-border provision of services (which are subject to Article 39 of the Services Directive) as opposed to the establishment of a service provider (Article 15). The reason behind this is the wider scope of Article 39.

3.3.3. Notification of new State aid measures

In this part, we will consider standard practice under the Treaty on the Functioning of the European Union (TFEU) in Section a, and the Temporary Framework that was put in place in response to the pandemic in March 2020 in Section b.

a. TFEU provisions

Article 107(1) of the TFEU states that "any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall, in so far as it affects trade between Member States, be incompatible with the Internal Market"²¹.

In the current context of the COVID-19 pandemic, Article 107(2)(b) states that aid granted to make good the damage caused by natural disasters or exceptional occurrences *must* be compatible with the Internal Market²². Furthermore, "aid to remedy a serious disturbance in the economy of a Member State"²³ and "aid to facilitate the development of certain economic activities or of certain economic areas, where such aid does not adversely affect trading conditions to an extent contrary to the common interest"²⁴ are both types of aid which *may* be considered to be compatible with the Internal Market²⁵.

²¹ Consolidated version of the Treaty on the Functioning of the European Union, Art. 107(1), available at: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A12008E260>.

²² *Ibid*, Art. 107(2)(b).

²³ *Ibid*, Art. 107(3)(b).

²⁴ *Ibid*, Art. 107(3)(c).

²⁵ *Ibid*, Art. 107(3).

It is therefore interesting to examine whether the support measures announced by many Member States for citizens or companies entail State aid within the meaning of Article 107(1), and are therefore incompatible with the Internal Market, or whether they fall within measures that are permitted or may be considered compatible under Articles 107(2)(b), 107(3)(b) and 107(3)(c).

As of 8 January 2021, 43 State aid measures have been adopted under Article 107(2)(b) TFEU, 18 under Article 107(3)(b) and 3 under Article 107(3)(c)²⁶. While it may at first hand appear that the majority of measures permitted fall under the exemption in Article 107(2)(b) TFEU, this is misleading in that more than 330 additional measures have been adopted under the Temporary Framework (as discussed in part b of this section), itself based on Article 107(3)(b) – aid to remedy a serious disturbance in the economy of a Member State.

The reason for relatively few measures having been adopted under Article 107(3)(c) is that decisions relating to measures facilitating the development of economic activities (for example investments in medical equipment or aid in supporting industry to gear up to adjust to new working arrangements) are not currently sought after as intently as the short term, more recovery-orientated measures that fall under Article 107(3)(c).

The first State aid measure approved by the Commission under the TFEU concerned the €12 million Danish scheme to compensate damages caused by cancellations of large public events due to the COVID-19 outbreak (see European Commission (2020d)). The Commission approved the scheme under EU State aid rules within 24 hours of receiving the notification from Denmark, considering that it would contribute to addressing the economic damage caused by the COVID-19 virus in Denmark²⁷, therefore falling within Article 107(2)(b) TFEU. It also found that the measure was proportionate, as the foreseen compensation did not exceed what is necessary to make good the damage. In fact, this requirement of Article 107(2)(b) to avoid over-compensation (thus requiring the Commission to differentiate between immediate effects of the pandemic and more general effects brought about by the economic downturn) is one of the reasons why it has not been used more regularly²⁸.

b. Temporary framework

In recognition of the fact that the entire EU economy is experiencing a serious disturbance, on 19 March 2020 the European Commission adopted a new State aid Temporary Framework, based on Article 107(3)(b) TFEU. The Framework enables Member States to use the full flexibility foreseen under State aid rules to support the economy, while limiting negative consequences to the level playing field in the EU Internal Market²⁹.

The Framework adopted on 19 March 2020 was inspired by the former Temporary Framework adopted during the banking crisis to alleviate the consequences to the real economy. This former framework was re-examined to see what worked well and what should be amended, with solvency support being provided for as well as immediate liquidity issues³⁰. The last amendment to the Temporary Framework (adopted on 13 October 2020) provides the additional targeted State aid measure of support for

²⁶ European Commission, Coronavirus Outbreak - List of Member State Measures approved under Articles 107(2)(b), 107(3)(b) and 107(3)(c) TFEU and under the State Aid Temporary Framework (information correct as of 08/01/2020), available at: https://ec.europa.eu/competition/state_aid/what_is_new/State_aid_decisions_TF_and_107_2b_107_3b_107_3c.pdf.

²⁷ *Ibid.*

²⁸ Interview conducted on 04/01/2021 with an official from DG COMP.

²⁹ European Commission, Press Release 'State aid: Commission expands Temporary Framework to recapitalisation and subordinated debt measures to further support the economy in the context of the coronavirus outbreak', 8 May 2020, available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_20_838.

³⁰ Interview conducted on 04/01/2021 with an official from DG COMP.

uncovered fixed costs³¹ (for example for restaurants which are forced to close down but which still must pay rent). It also prolonged the measures set out in the Temporary Framework until 30 June 2021, except for recapitalisation measures, for which the extension runs until the end of September 2021³².

One of the major benefits of the Temporary Framework is that, due to its "menu card" of available measures under Section 3.1, COVID-19-related support measures can be dealt with in a much faster time frame than is normally possible. Whereas the usual timeframe for a non-COVID-19 measure is around four to five months, depending on how the procedure progresses, the average approval time for a COVID-19 decision has been 31 days, with the median number of days being 16³³. Where the measure concerns recapitalisation, approval will take longer given that the impacts on competition in the Internal Market are much more serious, and the amounts at stake can run into billions of euros. This was the case with the €6 billion German measure to recapitalise Lufthansa (see European Commission (2020e)), with the European Commission concluding that the proposed measure would contribute to managing the economic impact of the COVID-19 outbreak in Germany, restoring the balance sheet position and liquidity of Deutsche Lufthansa AG (DLH) while maintaining the necessary safeguards to limit competition distortions³⁴.

In December 2020, the European Commission launched a survey in the Member States to look at immediate needs under the Temporary Framework, as well as its interaction with other EU policies (for example the Green Deal). This is important in order to ensure a smooth transition when the Framework comes to an end. The survey also collects data on Member States' expenditure under the Temporary Framework. Based in part on initial feedback in response to the survey, the has sent to Member States for consultation a draft proposal that extends the Temporary Framework to the end of 2021 and increases the ceilings for limited amounts of aid granted under the Temporary Framework³⁵.

³¹ European Commission, Communication from the Commission 4th Amendment to the Temporary Framework for State aid measures to support the economy in the current COVID-19 outbreak and amendment to the Annex to the Communication from the Commission to the Member States on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to short-term export-credit insurance 2020/C 340 I/01, available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.CI.2020.340.01.0001.01.ENG&toC=OJ:C:2020:340:TOC>.

³² *Ibid.*, para. 2.

³³ Interview conducted on 04/01/2021 with an official from DG COMP.

³⁴ *Ibid.*

³⁵ European Commission, Statement dated 19 January 2021, "Coronavirus: Commission Statement on consulting Member States on proposal to further prolong and adjust State aid Temporary Framework", available at: https://ec.europa.eu/commission/presscorner/detail/en/STATEMENT_21_157.

4. RESTRICTIONS SELF-IMPOSED BY INDIVIDUALS AND THEIR EFFECTS

KEY FINDINGS

- Once people realise that they are at serious risk of a life-threatening infection, many will voluntarily begin to practice various forms of social distancing.
- It appears that individuals act on the basis of their beliefs about how contagious a disease is and about how severe its effects are.
- Research suggests that more than 90% of the distancing that the US experienced in the first wave of the pandemic resulted from self-imposed restrictions.
- In Europe, however, restrictions on public events, schools, non-essential shops, and non-essential movement were associated with sharp declines in observed mobility.

Up to this point, our focus has been on restrictions imposed by governments. It is important to bear in mind that government-imposed restrictions are not solely responsible for a reduction in mobility during a pandemic. Several studies have found that once people realise that they are at serious risk of a life-threatening infection, many will voluntarily begin to practice various forms of social distancing.

Toxvaerd (2020) argued that classic epidemiological models tend to glibly assume that social distancing measures imposed by governments are perfectly effective and are the only means of achieving social distancing. His epidemiological models attempt to consider the drivers of human behaviour during a pandemic. He quite plausibly found that "equilibrium social distancing arises endogenously around the peak of the pandemic, when disease prevalence reaches a critical threshold determined by preferences. Spontaneous, uncoordinated social distancing thus acts to flatten the curve of the pandemic by reducing peak prevalence." This analysis suggests individuals act on the basis of their beliefs about how contagious a disease is and about how severe its effects are.

There is much support for this view. Midoes (2020) analysed Google Trends data for several European Member States to identify trends in searches for the topic "restaurant", because visiting a restaurant reflects a choice to leave the house rather than an obligatory activity. Her findings are in line with the observations of Toxvaerd (2020). Comparing 2020 patterns (after COVID-19 was identified as a threat) to those of 2019, these searches in Denmark, France, Spain, Italy, Portugal and Germany declined before restrictions were imposed. Searches for "restaurant" declined in Sweden even though no restrictions were imposed other than on large gatherings.

In the same vein, Kahanec et al. (2020) used Google Mobility data (see Aktay, et al. (2020)) (the same Android smart phone data that is used to enable Google maps to show busy hours for shops and restaurants) from 16 February to 11 April 2020 to assess how restrictions imposed by European governments related to actual patterns of visits. We discuss these results at greater length in Section 6.1. For the moment, we merely note that the mobility patterns observed suggest that people responded to the health risks of COVID-19 above and beyond what was required by the formal distancing policy measures.

Recent work by Goolsbee & Syverson (2020) derives striking results that are, however, specific to the United States. "While overall consumer traffic fell by 60 percentage points, legal restrictions explain only 7 percentage points of this. Individual choices were far more important and seem tied to fears of infection. Traffic started dropping before the legal orders were in place; was highly influenced by the number of COVID-19 deaths reported in the county; and showed a clear shift by consumers away from busier, more crowded stores toward smaller, less busy stores in the same industry. States that repealed

their shutdown orders saw symmetric, modest recoveries in activity, further supporting the small estimated effect of the policy. Although the shutdown orders had little aggregate impact, they did have a significant effect in reallocating consumer activity away from "nonessential" to "essential" businesses and from restaurants and bars toward groceries and other food sellers."

The analysis in Goolsbee & Syverson (2020) appears to be well done, but we caution that it may be largely irrelevant to Europe. The lack of response to public policy measures in the United States quite likely had more to do with sloppy implementation, weak enforcement, and inconsistent and self-contradictory messaging on the part of the U.S. government, all of which tended to undermine compliance with the limited measures that were adopted.

As we explain in Section 6.1, Kahanec et al. (2020) make abundantly clear that each of the four distancing policy measures assessed (public events, schools, non-essential shops, non-essential movement) was associated with a sharp decline in observed mobility patterns in Europe. This is visible in Figure 12, Figure 13, and to a lesser degree in Figure 14 in Section 6.1. Voluntary social distancing surely played a role in Europe as well, but apparently not nearly as great as in the United States.

5. MEASURES IMPOSED OR RECOMMENDED AT EU LEVEL

KEY FINDINGS

- The Member States agreed to follow Commission guidance on restrictions on travel from third countries.
- The Commission provided useful guidance regarding cross-border travel of individuals within the EU, recognising however that the epidemiological situation varied greatly among the Member States.
- In light of the severity of the crisis, Member States quickly recognised the need for coordination and solidarity in the procurement of medical equipment and PPE. This Europeanisation took several forms.
 - The EU started spending on various medical products and vaccines for the Member States at an unprecedented rate. First, based on the Joint Procurement Agreement, up to €7 billion was spent for vital medical products, including PPE. Second, EU medical stockpiling and other useful activities were promptly put in place. Third, joint Commission-led purchasing of vaccines of probably over €2 billion, and another €500 million for COVAX (for poor countries) was undertaken, a novel engagement which was accomplished in the late summer.
 - Since the summer of 2020, up to €47 billion of EU Cohesion Fund money has been made available to combat COVID-19 and its consequences with almost no conditionality. These money flows benefit the relatively less affluent EU Member States most.
- The decision to centralise the purchase of vaccines at EU level was good, and initial planning was fully in order; however, the vaccination programme in the EU is regrettably off to a very sluggish start relative to natural comparison countries such as the United States and the UK. The failure of the Commission to place timely orders for the first vaccines to be authorised is the primary cause. Problems that the firms faced in ramping up production has compounded the problem. There is sufficient supply for the year, but shortfalls will persist for many months.
- Artificial Intelligence and big data have been used to tackle some aspects of the crisis, including being used as tools to help epidemiologists understand the operational situation. The Commission provided guidance for the use of exposure notification apps (sometimes referred to misleadingly as contact tracing apps). The decision to avoid automated contact tracing is in line with EU privacy protection goals, but the EU has paid a price to the extent that manual contact tracing has often been unable to keep up with the case load.
- The Commission sought to make consumer protection more comprehensive and uniform in the event of cancelled travel arrangements. This included standards for voucher programmes to take the place of refunds for consumers who accept them.
- Customs issues turned out to be numerous due to lockdowns and shortages of staff in many countries. The EU provided flexibility so as to expedite customs formalities. Customs duties on various COVID-19-related medical goods have been waived. VAT was also waived on PPE, testing kits related to COVID-19, and ventilators.

Measures imposed or recommended at European level can be assigned to one of three major categories: (1) measures which imposed restrictions, which was largely limited to unified restrictions to travel from third countries into the Union; (2) measures which sought to reduce the cross-border impact of restrictions imposed by Member States individually; and (3) measures that had little to do with restrictions or cross-border flows, but were nonetheless important from an EU Internal Market perspective. We discuss these in Sections 5.1, 5.2, and 5.3, respectively.

5.1. Measures at EU level that imposed restrictions

The EU Member States coordinated their approach towards travel from third countries into the Union with an agreement on 17 March. They were thereby following a Recommendation issued by the European Commission (2020g) on 16 March 2020. The travel restrictions were subject to significant exemptions. First, restrictions did not apply to Union citizens and their family members, nor to persons enjoying equivalent rights of free movement. Second, the restrictions did apply to long-term residents or holders of long-term national visas and their family members. Third, the restrictions did not apply to workers in specific essential sectors, such as healthcare, elderly care, transport, diplomats, seasonal workers in agriculture or seafarers. Persons travelling for the purpose of study were likewise exempted from restrictions, as were passengers in transit or travelling for imperative family reasons. Persons in need of international protection were not subject to restrictions. Finally, highly qualified personnel who were needed on economic grounds for tasks that could not be delayed or performed elsewhere were exempted as well.

With a Communication adopted by the European Commission on 11 June 2020 and a subsequent draft proposal for a Council Recommendation 25 June, adopted by the Council on 30 June, these restrictions were set to be gradually lifted on a country-by-country basis, which was being updated fortnightly. The coordination of restrictions at the external borders was an important element towards lifting restrictions at internal borders.

With the vaccination drive that started across the Union at the end of December 2020, many calls emerged for limiting travel to individuals who have a vaccine passport attesting to their vaccination against COVID-19. As of the end of January 2021, however, no agreement for such a measure has been reached. Southern Member States that rely heavily on tourism for their respective domestic economies are desperate to find a way to reopen travel, but no consensus on how to do this has yet emerged.

5.2. Measures at EU level that sought to reduce the cross-border impact of restrictions

Faced with the prospect that individual measures put in place by Member States had a high potential to disrupt the functioning of the EU Internal Market, the European Commission has sought to counteract these effects. On 15 April 2020, the President of the European Commission and the President of the European Council published a Joint European Roadmap towards lifting containment measures (see European Commission (2020v)). The Joint European Roadmap defined three sets of criteria for the assessment of the lifting of restrictions. The first were epidemiological criteria, such as the state of the pandemic having reached sustainable levels in terms of spread, new infections, hospitalisations, and so on. The second set of criteria sought to ensure that sufficient capacity was available in healthcare systems. The third set of criteria revolved around monitoring capabilities, which involved testing capacity and contact tracing capabilities.

The Joint European Roadmap is thereby following three key principles: (1) Any action is to be based on science and has to have public health as its primary focus; (2) Member States are to coordinate their actions; and (3) respect and solidarity between Member States is essential. The principles aim to

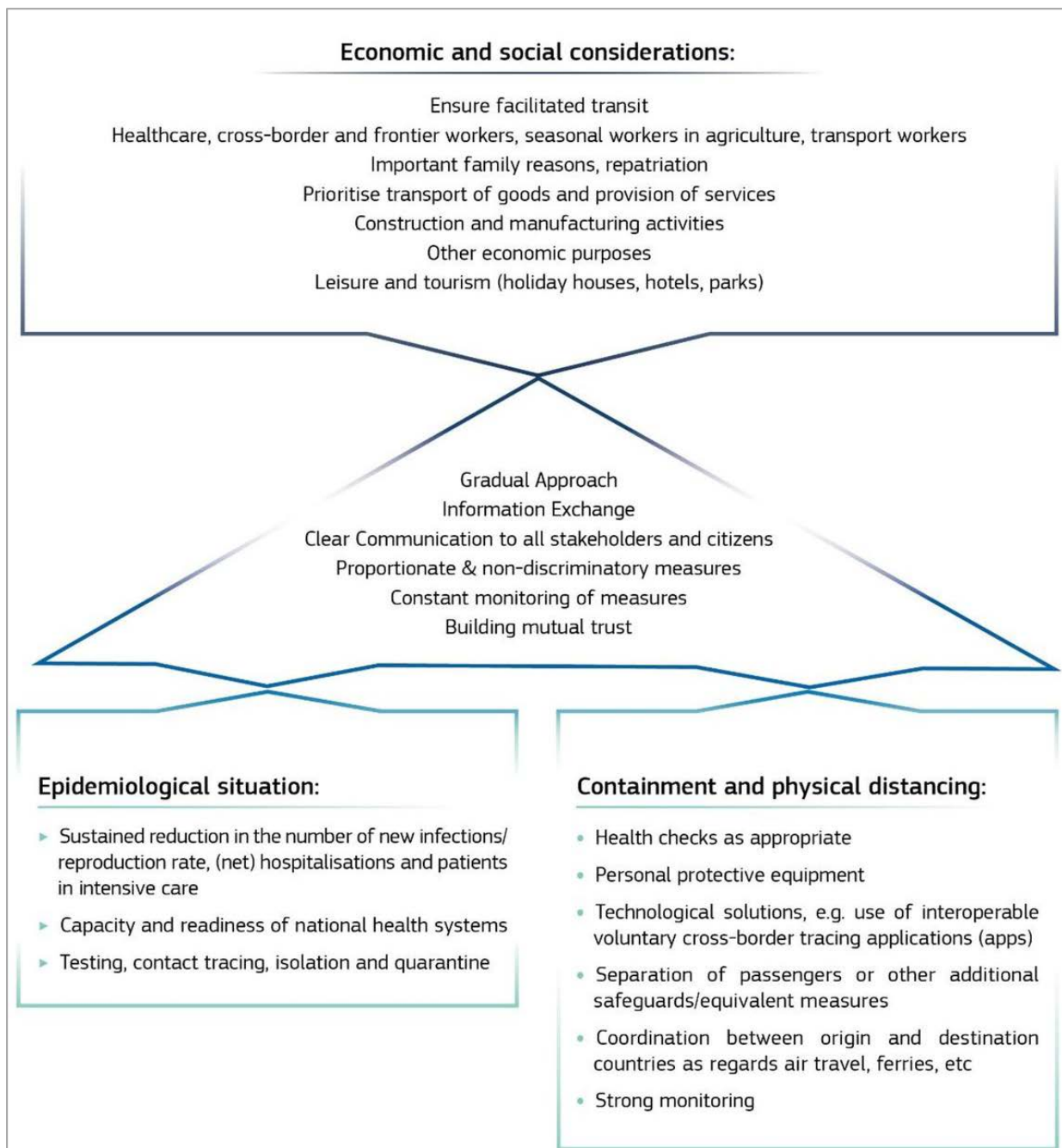
establish a common decision base and to discourage Member States from taking unilateral actions that risk harming the EU Internal Market.

Going further, the Joint European Roadmap commits the EU to support the Member States by gathering data, by creating frameworks for contact tracing, and by increasing healthcare and testing capacities.

Importantly, the Joint European Roadmap also contains a set of Commission recommendations to the Member States. These take the form of general principles for the lifting of restrictive measures, including approaches for the progressive easing of restrictions, limiting restrictions in terms of geographic scope, targeting restrictions more narrowly, and continuous monitoring of the effects of the actions taken. There are more concrete recommendations as well, including a phased approach to opening internal and external borders, and a progressive expansion of the number of people allowed at large gatherings.

On 13 May 2020, the Commission published the Communication "Towards a phased and coordinated approach for restoring freedom of movement and lifting internal border controls" in which the Commission highlighted criteria and principles, and renewed recommendations given in the Joint European Roadmap, but with a focus on restrictions to free movement and internal border controls. Figure 9 summarises these principles and criteria. The process is structured in a three-phase approach, beginning with phase 0, or the situation as it was at publication of the Communication in May. Phase 1 is the transition from the then-current state of play towards Phase 2. Phase 2 represents the general lifting of all restriction and controls at the internal borders, thus restoring the provisions both of the Schengen area and of the free flow of goods and services that is a hallmark of the EU's Single Market.

Figure 9: Criteria and principles of a coordinated approach for removing restrictions on free movement and lifting internal border controls



Source: European Commission (2020q).

Finally, on 15 June 2020 the European Commission launched a website with the aim to facilitate a safe resumption of travelling and tourism in the European Union. The platform, called "Re-open EU", collects real-time information on borders and on which means of transport and tourism services are available. It also provides information on further travel restrictions, as well as public health and safety measures in place in each Member State (see European Commission (2020j)).

5.3. Other measures at EU level

In this section, we consider several specialised topics at length. We discuss public procurement in Section 5.3.1, with a special focus on medical equipment, PPE and vaccines. In 5.3.2, we discuss

initiatives regarding the use of Artificial Intelligence and big data, especially in the context of exposure notification and contact tracing. In section 5.3.3, we cover consumer protection, especially as it relates to travel arrangements that were disrupted. We close by covering customers, trade policy, and Value-Added Tax (VAT) in Section 5.3.4.

5.3.1. Public procurement

COVID-19 has transformed and stimulated EU-level activities in public procurement which were (initially) either insignificant or only partially supported by Member States or geared to other purposes. In addition, new forms of common support related to or substituting for public procurement have been set up swiftly. The following will touch upon (a) European Commission "guidance" for national public procurement under the urgency and stress of the COVID-19 crisis; (b) the JPA and its use, together with proposals to strengthen the JPA; (c) EU organised medical stockpiling capacity under the rescEU programme; (d) Advance Purchase Agreements of vaccines against COVID-19 with frontrunning pharma companies in the development of vaccines against COVID-19, and other spending on COVID-19-related urgent needs under the ESI; (e) COVAX and the COVID-19 global response initiative; and (f) other EU-origin expenditures now geared to fighting or mitigating negative repercussions of COVID-19 (not including the EU Recovery Plan or ECB strategies) including the EU Solidarity Fund and the temporary transformation of Cohesion Fund expenditures for COVID-19 related needs³⁶.

a. Guidance for national procurement:

On 1 April 2020, the Commission published guidance (see European Commission (2020k)) for public procurement aiming to secure urgent medical supplies by Member States given the emergency situation related to the COVID-19 crisis. The public procurement directives³⁷ in force are not changed but flexibilities can be relied upon in these special circumstances. There are three options. First, directly engaging with the market (potential contractors, agents with market knowledge, or representatives sent off to other Member States to ensure [extra] delivery). In the chaotic market situation of the early spring of 2020, this avoidance of the normal transparency and procedures was risky as prices were often increased on a daily basis in the scramble. Second, relying on the "urgent" procedure (with or without restrictions, e.g. submitting tenders in 10 or 15 days) is possible as well. Third, in case of "extreme urgency" "a faster awarding of contracts to provide for COVID-19 pandemic related needs" is possible too without prior publication. This is subject to six conditions, and the contracting authority is responsible for meeting them. The sub-markets where "extreme urgency" or "urgency" may apply include PPE (personal protective equipment, such as masks, gloves, goggles, face-shields, coveralls) and specific medical equipment such as medical ventilators and testing kits. Liquid soaps have also been added to the list.

The contract award notice must be sent to the Commission in all cases and within 30 days; it ought to contain a justification of the procedure used. In preliminary research, Beuter (2020) found that between 1 February and 20 May 2020 (when shortages were most severe), Member States and the UK published 1,126 contract award notices in the 15 subcategories of medical equipment, of which 838 were open. In 253 cases (representing 23% of the 1,126 contracts), the third and least restrictive procurement

³⁶ Important measures implemented included the procurement of medical goods, the creation of a European stockpile of medical and personal protective equipment, and enhancements to the role of public procurement law during the COVID-19, as noted in the remarks of Prof. Baratta (Department of Law, University Roma Tre). See Milieu Consulting SRL, 2020, *The impact of COVID-19 on the Internal Market and consumer protection - IMCO Webinar Proceedings*, Publication for the committee on Internal Market and Consumer Protection, Policy Department for Economic, Scientific and Quality of Life Policies, European Parliament, Luxembourg. Available at: [https://www.europarl.europa.eu/RegData/etudes/IDAN/2020/658212/IPOL_IDA\(2020\)658212_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/IDAN/2020/658212/IPOL_IDA(2020)658212_EN.pdf).

³⁷ Principally, Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC, available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014L0024>.

option was used, without prior publication. Given that the guidance states that this must be truly exceptional, this 23% is much too high and clearly reflects the acute shortages. The Commission guidance must have been helpful for this reason alone, but legal challenges are still possible.

b. The Joint Procurement Agreement instrument and its utilisation in 2020

The voluntary Joint Procurement Agreement (JPA) was a new initiative following the near-failure of competitive purchasing of vaccines and medications by Member States during the H1N1 influenza pandemic in 2009. The JPA was signed on 20 June 2014. It is about "joint pandemic vaccines and other medical countermeasures"³⁸. This Luxembourg ceremony drew many national health ministers and some Commissioners, so clearly its significance was anticipated. The life of this JPA is telling: at first 15 signatories, with other Member States gradually joining, such that another ten had signed by June 2019. Once the COVID-19 pandemic began, other ones swiftly joined – by 9 April 2020, the remaining three Member States plus the three EEA member countries had joined. The EU then decided to open the JPA up to the EU candidate accession countries (Albania, North Macedonia, Montenegro, Serbia and Turkey) plus Kosovo and Bosnia-Herzegovina.

It goes without saying that, in many cases, the JPA should have advantages, whether in networking and global reach, or in market power (hence, discounts), or simply in becoming a great force in world markets that all actual and potential suppliers would keep in mind. What is perhaps even more important is that with a well-utilised JPA, the access to medical equipment will be equitable between small versus big Member States, and between richer versus less affluent Member States and their respective citizens. How could competition (between Member States or any public procurement authorities) be superior in times of extreme scarcity? So, coordination (the term in the Treaty and in Decision 2013/1082, reflecting the fear of EU Member States that the national competence might be partially undermined) or simply "bundling of demand" or centralisation of the pure purchasing itself must be the key. This intergovernmental approach is known to be inefficient – it is only attractive because superior alternatives imply (slightly) more centralisation and were therefore shunned by Member States. However, if a crisis is severe, these convictions are likely to soften. It is for this reason that the Emergency Support Instrument (ESI) was put in place (see Sub-section d later in Section 5.3.1).

Table 3 provides data on the working of the JPA for vital medical supplies and equipment until December 2020. The total budget ceiling for these Member States' purchases amounts to €7,032 million, a very considerable sum for a rather limited set of products, which can however be justified as it includes the purchase of 500 million doses of antiviral medication treatments which constitute 50% of the overall sum.

³⁸ There is a direct link with Decision 2013/1082 on serious cross-border threats to health. Here and in the JPA, Member States try to play a complex game of keeping the full 'public health' competence and only voluntarily and wisely cooperate. But at least, since the 2013 Decision, there is now a Health Security committee on a permanent basis, and it plays a significant role in dealing with the COVID-19 pandemic.

Table 3: Joint purchases of medical supplies and equipment (2020)

Products	Month	Volumes	Value
gloves, coveralls	April	several million	€97 million
eye and respiratory protection	April	20 million goggles; 12 million face shields; 37 million FFP2 masks; 26 million FFP3 masks; 301 million surgical masks	€1,400 million
ventilators	April	110.000 units	€1,400 million
laboratory equipment	May	30 different lots	€192 million
medicines used in intensive care units	October	21 medicines in 45 presentations, over 103 million vials	€543 million
remdesivir (Veklury)	October	Over 500 million treatment courses	€3,400 million

Source: European Commission Public Health website.

In order to gradually relieve the pressure on the JPA and to help increase supply, two important flanking measures were agreed. On 20 March 2020, the European Standard Organisations (ESOs) agreed to offer technical standards in the relevant medical supplies and equipment products for free and promised that in some instances, standards would be urgently revised³⁹. On 25 June 2020, CEN (one of the ESOs) had developed seven new standards for respiratory equipment and patient critical care ventilators, made temporarily available for free. The Commission and some Member States also decided to be in touch with various sections of industry to stimulate companies to ramp up the production of PPE (personal protection equipment) in a very short time span. In this respect, the Commission has published guidance in four areas to assist manufacturers in increasing output: PPE such as masks, leave-on hand cleaners and hand disinfectants, 3D printing, and medical devices.

Although Table 3 shows that EU Member States have changed attitude and switched from nationalistic reflexes to a combination of economic opportunities and solidarity, it is nevertheless hard to offer a rigorous assessment of the JPA operation under COVID-19 without analytical reporting. Some considerations can be offered, helped by a recent survey by McEvoy & Ferri (2020). First, the JPA is neither an international treaty (see European Parliament; Council (2015b)) nor a pure EU legal act, but a budgetary implementing measure of Decision 1082/2013/EU. It is seen as executive and administrative. It also complements other financial mechanisms such as the EU4Health initiative aiming to boost the EU's preparedness for major cross-border health threats. As noted, no EU funds are used. Second, it helps to reduce or pre-empt damaging pricing practices arising from the market situation in pharmaceuticals. On the supply side these have become easier as a result of a series of major mergers in the sector and, ironically, the widespread tariff removals on trade in pharma products, which have facilitated (private and restrictive) so-called "managed entry agreements"⁴⁰. During the Ebola crisis, such damaging pricing practices have been observed. Hence individual Member States, and certainly

³⁹ See the press releases on the CEN and CENELEC responses to COVID-19 [accessed on 5 Jan 2021] available at: <https://www.cenelec.eu/covid19/Pages/default.aspx>. Note that the CEN notice also comprises a FAQ list including a careful comparison, with explanation, of Chinese face masks according to Chinese standards with EU and US (various types of) masks.

⁴⁰ See McEvoy & Ferri, op. cit., p. 856 and the literature quoted there.

smaller ones, are likely to incur significant costs. The JPA generates benefits from greater countervailing purchasing power, and from risk-sharing and economies of scale on the demand side. Moreover, the JPA comprises a range of precautions against distortions of competition: notably, there can be no restriction of any kind on trade, no barriers or exclusivity agreements, and no discrimination. Still, as McEvoy & Ferri (2020) note, the sheer scale of centralised contracting entails a risk of "single supplier contracts", possibly locking out small and/or innovative suppliers, and this should be prevented. Third, there are other advantages such as lower administrative costs of tendering and tendencies of price convergence. Fourth, a non-pecuniary benefit is deriving from sharing experiences, expertise and skills, which is likely to (as the WHO calls it) embed mutual trust.

It is worth quoting McEvoy & Ferri (2020): "... procedures set out in the JPA have facilitated a balance between promoting competition in the marketplace and securing reasonable-cost and high-quality medical supplies and services. All of the recent COVID-19 response contracts were awarded to more than one supplier and the contract for laboratory equipment was divided into twenty-nine separate lots". And "...early research indicates that public bodies that procured medical supplies at a local or national level were at greater risk of price gouging and not securing access to crucial medical goods". Moreover, the US example of blatantly misusing its market and financial power to secure the entire output for July 2020 of remdesivir from the company Gilead, as well as 90% of the output of August and September, has caused unnecessary shortages, an example that shows how a government should not act⁴¹.

c. Medical stockpiling under the rescEU programme

Under the new EU rescEU initiative run by the Commission's DG ECHO, stockpiling of medical countermeasures aimed at combatting serious cross-border threats to health has been set up⁴². It includes vaccines and therapeutics; intensive care medical equipment; PPE and laboratory supplies. This is entirely paid for by the EU but the actual hosting of the stockpile(s) is done by one or more Member States. The budget ceiling is €370 million. Although the purpose is to support the fight against COVID-19, it is also meant for future disease outbreaks. This initiative has 34 participating countries: the EU-27 and the UK, plus Iceland, Norway, Serbia, North Macedonia, Montenegro and Turkey.

The stockpiling was initially hosted by Germany and Romania, but they were joined as hosts by Denmark, Greece, Hungary and Sweden in September. In early 2021 more Member States are expected to offer hosting. By the end of 2020, more than one million FFP2 and FFP3 protective facemasks have been delivered via the rescEU programme to Italy, Spain, Croatia, Lithuania as well as North Macedonia, Montenegro and Serbia.

On 11 November 2020, the Commission proposed a Regulation on serious cross-border threats to health and repealing Decision 2013/1082 (which dealt with many of the same issues) (European Commission, 2020). Article 12 of the proposed Regulation is about joint procurement of medical countermeasures. Many of the provisions in Article 12 are the same as the corresponding provisions in the 2013 Decision. The new Regulation would formally include the European Free Trade Association (EFTA) countries (Norway, Iceland, Liechtenstein and Switzerland) as well as candidate accession countries. A meaningful change compared to the JPA based on the Decision is that, although participation remains voluntary, once a Member State or other country participates, it can no longer

⁴¹ Under the previous administration the US also did not participate in COVAX, the initiative supported by the WHO and others to ensure a minimum supply of vaccines to poor countries. The Biden administration has now committed to join COVAX.

⁴² See for details, EC (2020), Q&A on the activation of the Emergency Support Instrument in the context of COVID-19 Pandemic – DG ECHO December 2020, available at: www.ec.europa.eu/echo/sites/echo-site/files/updated_qa_dg_echo_esi_mobility_package_funds.docx.pdf.

procure the same goods "through other channels" and cannot run parallel negotiations. This discipline is useful (in light of the experience of the current COVID-19 crisis, when four EU Member States formed an early alliance to purchase vaccines) and can maintain the equitable distribution between larger or perhaps more prosperous participating countries and smaller participating countries. Another improvement is the obligation to coordinate and exchange information on joint procurement, stockpiling and donation of medical countermeasures.

d. Advance Purchase Agreements of vaccines under the EU Emergency Support Instrument and other ESI initiatives

In April 2020, the ESI (Emergency Support Instrument) was activated to help EU Member States address the COVID-19 pandemic. It is complementary to other EU programmes and is active in a range of areas, with a budget of €2.7 billion⁴³, with another €220 million for the transport of medical supplies, health workers and patients across the EU. The ESI, the JPA and rescEU have to be considered together in context. The financing of ESI is in principle by the Commission, with the option of supplementary contributions by Member States. The activities of the ESI have been put in place until January 2022. The crucial difference with the JPA is that Member States do not pay, or at most in a supplementary way. The Commission is in charge of implementation, in continuous dialogue with the Member States.

ESI has multiple avenues for helping Member States but the biggest one is about the advanced purchase of vaccines. Since the summer of 2020, the Commission (with and on behalf of the Member States) has been concluding Advance Purchasing Agreements for vaccines with a number pharmaceutical companies. Table 4 provides the situation in late December 2020.

Table 4: EU Advance Purchasing Agreements with pharmaceutical companies (as of late December 2020)

Companies	Number of doses committed	Options
AstraZeneca	300 million	
Sanofi-GSK	300 million	
Johnson & J. / Jansen Ph.	200 million	200 million
CureVac	225 million	
Moderna	160 million	
Pfizer/BioNTech	200 million	100 million ⁴⁴
Novavax	100 million	100 million

Source: Commission Public Health website (accessed 6 Jan 2021).

The total number of orders for doses committed as of late December was thus 1,485 million, plus options for at least another 500 million doses. Assuming that all are delivered in 2021, the EU should have more than enough vaccine supply for the year as a whole. Until the summer of 2021, however, it has become obvious that a major shortfall can be expected.

The sequence of which vaccines would come through the European Medicines Agency (EMA) authorisation procedure first was initially difficult to predict; consequently, the EU strategy was to

⁴³ For logistics, medical supplies, testing, vaccines, treatment, emergency aid, healthcare facilities and staff.

⁴⁴ On 8 January 2021, the Commission announced its intention to acquire an additional 300 million doses of the Pfizer/BioNTech vaccine.

purchase or claim multiple vaccines in advance, a portfolio, so as to spread the risk. This is widely supported for good reason. The Commission performed well in the early phases of the pandemic.

Nonetheless, the vaccination programme in the EU is regrettably off to a very sluggish start relative to natural comparison countries such as the United States and the UK. The vaccine that achieved EU authorisation first (Pfizer/BioNTech) was not even in the initial list and was not given high priority. As of early February, three vaccines have been authorised pursuant to EMA recommendations: Pfizer/BioNTech, Moderna, and AstraZeneca. The first two are believed to have high efficacy against the common variants of COVID-19 (95% each), while the AstraZeneca vaccine has lower but still quite acceptable efficacy (60%)⁴⁵. *For whatever reason, orders for all three were placed much later than in the US or the UK; consequently, production has ramped up much later, and the EU may have a less favourable position in the queue for delivery of scarce stocks*⁴⁶. Challenges that all three companies face in ramping up production have further compounded this problem.

The total cost of this vaccine purchase programme is not public, but it is safe to assume that most of the €2.7 billion will be spent on funding start-up costs for vaccines that are in the programme. Based on the AstraZeneca contract, which is now public, it seems likely that the Member States pay most of the costs for the vaccine doses that have been ordered.

Other vaccines are likely to become available soon. Notably, the application from Johnson & Johnson (with 200 million doses on order) is eagerly awaited because this vaccine is far cheaper (no profit taking, some assert a price per dose of only €2) and a single shot is sufficient⁴⁷.

The ESI has also conducted other procurements to help the Member States fight the crisis. Four examples illustrate this. The Commission purchased and distributed doses of remdesivir up to a value of €70 million through the ESI. Some €12 million was spent on purchasing 200 disinfection robots for hospitals working with ultraviolet light. Another €40 million was committed to national blood collection services obtaining convalescent plasma – transfusions can then generate immunoglobulin as a short-term alternative to vaccines. Some 20 million rapid antigen tests were purchased from Abbott & Roche under a budget ceiling of €100 million.

e. COVAX and the Coronavirus Global Response

On 24 April 2020, the WHO and its partners launched a global call for urgent action against COVID-19. This is especially geared towards developing countries with less capacity, limited funds to purchase vaccines and great socio-economic vulnerability. In response, the Commission launched the Coronavirus Global Response initiative on 4 May leading to pledges by EU Member States, the EIB and others totalling €15.9 billion by 27 June 2020. One offshoot of all this is the COVAX facility for equitable access to affordable COVID-19 vaccines worldwide. Team Europe (the EU-27 Member States and the European Commission) contributes an initial €230 million⁴⁸ for some 88 million doses, with another €170 million still available.

The aim of COVAX is to supply two billion doses worldwide, in particular to poor countries. The EU

⁴⁵ The emergence of new, highly contagious variants of the COVID-19 virus is of great concern. The vaccines are somewhat effective against all of the new variants, but may be less effective against the South African and Brazilian variants than against the more familiar forms.

⁴⁶ See J. S. Marcus (2021), "Has the European Union squandered its coronavirus vaccination opportunity? The European Union's purchases of frontrunner coronavirus vaccines are insufficient for the population's near-term needs. The shortfall could have healthcare consequences and might delay economic reopening. Lessons should be learned for future pandemics." Available at: <https://www.bruegel.org/2021/01/has-the-european-union-squandered-its-coronavirus-vaccination-opportunity/>.

⁴⁷ Efficacy is believed to be 66%.

⁴⁸ Via a loan with the EIB, backed up by the EU budget; Coronavirus Global Response: the Commission's contribution to the COVID-19 Vaccine Global Access Facility (COVAX), available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1694. One of President Biden's first official acts was to announce the intent of the US to also participate in COVAX.

participation in COVAX is complementary to the Advance Purchasing Agreements the EU concluded with pharmaceutical companies (cf. Table 4). The arrangement is really a risk sharing arrangement because pharmaceutical companies can distribute vaccines to poor countries knowing that effective demand is guaranteed and can be paid for.

Box 1: COVAX: Do vaccines promptly reach poor countries?

Driving the COVAX initiative are leading donor countries and GAVI, a long-standing initiative that works closely with the WHO and seeks to get vaccines distributed equitably throughout the world when needed. 92 poor and low-middle income countries have been selected to be eligible for free or very low-cost deliveries of COVID-19 vaccines (expected costs, if not free, are between €1.30 and €1.63 per dose using the 31 December 2020 USD-EUR exchange rate).

By the end of 2020, some €2.0 billion was raised as seed funding. This includes over €400 million from the EU and the Member States. It is estimated that another €5.5 billion will be needed: some €650 million for R&D, another €3.7 billion for additional advance purchase agreements, and €1.1 billion for delivery support within these 92 countries (all converted using 31 December 2020 rates). There will be country readiness tests on regulatory preparedness, infrastructure, legal frameworks, training and capacity. The initial allocation (in line with WHO standards) will be for frontline health and social care workers, people over 65 years of age, and people under 65 with underlying health conditions.

COVAX works similarly to the now familiar AMCs concluded by the European Commission: Advance Purchase Commitments are concluded with frontrunning pharmaceutical companies, which adapt their delivery practices to make them suitable for poor and low-middle income countries. In November 2020, it was expected that, during the first half of 2021, some 3% of the population of the 92 countries could be vaccinated, which would be sufficient to cover all healthcare and social care workers, and a bit more. During the second half of 2021, another set of supplies could cover up to 20% of the population. Frequently heard complaints that poor countries are forgotten notwithstanding, they are not forgotten, and rich countries largely pay, but they find themselves further down in the queue.

Unfortunately, towards the end of 2020, there were rumours that the legal firm financing COVAX was running into trouble. Either due to the strong pressures at home in OECD countries to give priority of the domestic population, or due to the failure to turn solemn pledges in the early summer into hard commitments, significant delays in vaccine deliveries for poor countries and rumours about grossly insufficient finance for COVAX for hard commitments of obtaining flows of vaccine deliveries. Apparently, none of the first vaccines in the EU (Pfizer/BioNTech; Moderna) will be available for the poor in these 92 countries until the autumn if indeed sufficient finance is not secured (see Cheng & Ghosal (2020)).

Source: Authors' own elaboration.

On 12 November 2020, the Commission announced having added another €100 million for vaccines under COVAX destined for low- and middle-income countries.

f. Other EU-origin procurement or spending on COVID-19-related initiatives

The well-known saying that in a crisis everything becomes fluid might well apply to the EU during COVID-19. Apart from emphasising the flexibilities in what otherwise is a strict EU regime for national procurement and from the spending categories discussed throughout this Section 5.3.1, several additional initiatives have been undertaken. Three of these will be discussed for the purpose of this study: the COVID-19 Clearing House, the EU Solidarity for EU Health initiative, and the liberal conversion of Cohesion Funds in order to fight the COVID-19 crisis. In all three instances, public health related initiatives that (prior to the COVID-19 pandemic) tended to be wholly or partly national procurement expenditures have now been transformed into EU spending activities. In principle, this is likely to be more efficient, but it seems justified to consider these as (imperfect) substitutes of what otherwise might have been public procurement by Member States.

The COVID-19 Clearing House for medical equipment (see European Commission (2021a)) is not strictly about procurement, but complementary to it. It serves as a platform for dialogues, and for sharing of technical information in particular with respect to market needs, shortages and capacity. It monitors imports, export restrictions put in place by third countries, and production capacity and supply chains, including transport and logistics bottlenecks. In the period from 15 March to 25 May 2020, when export authorisation for PPE leaving the EU applied, the Clearing House was closely monitoring shipments. It is organised in five clusters: PPE, ventilators, other medical and hospital supplies, test materials, and ICU therapeutics and vaccines. It operates a matchmakers' platform for needs and potential supply. The Clearing House has meanwhile organised a series of meetings with various experts, Member States, scientists, and industry (the latter especially with respect of ramping up production of equipment).

The EU Solidarity for Health Initiative (see European Commission (2021b)) has not been well publicised so far, and little detail about what exactly has been paid to which Member States for what type of needs seems to be available. The amendment of Regulation 2012/2002 in 2020 enables the Commission to gear some of the funds to corona-related issues; that is, the EU Solidarity Fund has been turned into the EU Solidarity for Health Initiative for an amount of €800 million (see European Commission (2021b)). The overall envelope is €6 billion, but some €3 billion has been committed to the ESI (see Section d above). The Commission has set up an internal Task Force to cope with requests and new ideas. In any event, the basic idea is to directly support the healthcare systems of the Member States, but the information available is a little confusing, to say the least.

The notion of sudden fluidity in a crisis is most clear for the Cohesion Funds. The Cohesion Funds have suddenly been turned into massive funding sources for fighting the crisis and its consequences. Strictly spoken, this is EU aid and not procurement, but the dividing line is anything but clear. During this crisis, few probably care. However, the moves and amounts of EU money potentially involved are staggering. Existing funds have been re-oriented and new funds are available. On 27 May 2020, the CRII and the CRII-Plus⁴⁹ were complemented with the REACT-EU package, funded by left-over funding from the 2014-2020 cohesion programmes and sources additional to the allocations over the years from 2021 through 2017. This purportedly entirely new funding⁵⁰ amounts to no less than €47 billion! By 16 December, 25 EU countries and the UK had requested 239 amendments to their cohesion programmes

⁴⁹ The Coronavirus Response Investment Initiative and the Coronavirus Response Investment Initiative-plus.

⁵⁰ See Cohesion policy action against coronavirus (December 2020), available at: https://ec.europa.eu/regional_policy/en/newsroom/coronavirus-response, and REACT-EU, available at: https://ec.europa.eu/regional_policy/en/newsroom/coronavirus-response/react-eu (both accessed 7 Jan 2021).

using the flexibility offered by CRII and CRII-plus. The flexible terms are truly unique: no national co-financing required, a high level of pre-financing is proposed for liquidity purposes, very flexible spending guidelines and no ex-ante conditionality. The requisite additional funding is sourced from the European Regional Development Fund (ERDF), the European Social Fund (ESF), the Fund for European Aid to the Most Deprived (FEAD) and the Youth Employment Initiative (YEI).

5.3.2. Artificial Intelligence and big data

Artificial Intelligence (AI) and big data have been a strong interest of both the Commission and the Parliament in recent years. The Commission released strategy papers on both on 19 February 2020 (thus before the COVID-19 lockdowns began) (see European Commission (2020r)). The Artificial Intelligence Strategy begins by noting: "Artificial Intelligence is developing fast. It will change our lives by improving healthcare (e.g. making diagnosis more precise, enabling better prevention of diseases) ..." The Commission continues to move forward in this area with an expert group, a consultation and more. Support for big data is likewise highly visible, including with Commission support for the French-German Gaia-X EU cloud initiative. Most recently, the Commission proposed a Data Governance Act in November of 2020. These efforts reflect an important coordination and policy role; however, they are not necessarily a response to COVID-19, but rather a continuation of steps already taken. As already noted, the main strategy papers were already issued before the threat of COVID-19 was fully appreciated.

More directly relevant are Commission efforts to avoid lack of coordination in measures that directly employ AI and big data to combat COVID-19. Initiatives that have been taken in the EU and elsewhere have tended to involve (1) the use of big data to provide strategic data to health policy planners, (2) the use of big data for contact tracing, and (3) the use of AI for individual diagnosis. Commission actions have been highly visible in terms of contact tracing (see Marcus (2020)).

When the crisis first emerged, many felt that an intensive approach similar to those employed in Asian countries (China, Korea, Taiwan, and to some extent Singapore) would be needed. Those countries often combined geolocation data from the smart phone with other data (health, immigration, even credit card data) in order to enforce quarantines and aggressively isolate individuals known to be infected. Manual contact tracing was closely integrated with automated contact tracing, often based on tools that were invasive of privacy to a significant degree. The European Data Protection Supervisor (EDPS) initially spoke of a willingness to do whatever is needed, somewhat reminiscent of the Draghi "bazooka approach" to the finance crisis of 2008. The European Data Protection Board (EDPB) comprised of data protection authorities from the Member States pushed instead for continued enforcement of GDPR, even in times of crisis. This implies a very different, and much more limited, approach to digital contact tracing than that which was taken in the previously mentioned Asian countries (see Marcus (2020)).

The Commission subsequently issued guidance as to how contact tracing apps should, and should not, work in order to reduce fragmentation among the Member States. In doing so, they called for a fully GDPR-compliant approach. In the early days, they did little to ensure the emergence of a single app, not to ensure that contact tracing apps are compatible or interoperable. This is presumably because responsibility for public health rests with the Member States. The resultant proliferation of apps risked a lack of interoperability to the point where, if the person sitting next to you in a restaurant subsequently were to report himself or herself as infected, you would never know it unless that person is running the same contact tracing app from the same Member State as you (see Marcus & Poitiers (2020)).

Subsequent developments led the majority of the Member States to choose instead to deploy exposure notification apps based on Apple-Google Bluetooth technology. These apps are highly respectful of privacy but are completely useless for contact tracing. The Commission subsequently funded interoperability software which several of the Member States have implemented. Whether these apps have real value in fighting the pandemic is unclear. Their effectiveness is highly dependent on the take-up rate within each Member State, the willingness of individuals who test positive to report themselves, and the degree of international interoperability of the implementations. The use of Bluetooth technology is probably a good choice under the circumstances, but false positives and false negatives are unavoidable.

5.3.3. Consumer protection

In the area of travel and tourism, a huge number of flights, hotel stays, and package tours have been cancelled due to the pandemic. The Commission has sought to provide clarity as to the rights of passengers in the event of cancelled travel arrangements.

Under EU Passenger Rights Regulations⁵¹, in the event of a trip cancellation by a carrier, travellers are entitled to choose between a refund and re-routing. However, re-routing is not a realistic possibility while the pandemic rages. Under the Package Travel Directive (PTD) (European Parliament; Council (2015b)), in the event of a travel package cancellation by an organiser due to "unavoidable and extraordinary circumstances", travellers are entitled to a refund. In both instances, passengers have the possibility of accepting a travel voucher in lieu of a cash refund, but in neither case is the passenger obliged to do so.

The travel sector (which includes not only airlines, ships and rail, but also hotels, restaurants and more) is incurring huge losses due to the pandemic. It was quickly recognised that an obligation to make large numbers of cash refunds to travellers was likely to lead to insolvencies, which would benefit neither the sector nor the impacted travellers.

In an effort to ensure consumer protection while mitigating needless harm to the sector, the Commission published a Recommendation encouraging a consistent approach to making travel vouchers available to consumers who are willing to accept them as compensation for travel that is no longer possible, feasible, or desirable⁵². It was felt that, by making travel vouchers more flexible and reliable, more passengers would accept them. The use of vouchers would substantially ease the cash flow burden on carriers and package tour organisers. Passengers who prefer a cash refund, however, are still entitled to it.

The enactment of this Recommendation was in large part motivated by concerns that significant numbers of firms in the sector might become insolvent, in which case passengers would have little or no prospect of obtaining the refunds for cancelled trips to which they might otherwise be entitled. Previous legislation did not protect EU consumers against insolvency of airlines or other providers of tourist services. With that in mind, the Recommendation sought to ensure that vouchers (that are in line with the provisions of the Recommendation) "be protected against insolvency of the carrier or of

⁵¹ Regulations (EC) 261/2004(6), (EC) 1371/2007(7), (EU) 1177/2010(8) and (EU) 181/2011(9).

⁵² European Commission, 2020, *Tourism and transport in 2020 and beyond*, COM(2020) 550 final; European Commission, 2020, *Recommendation (EU) 2020/648 on vouchers offered to passengers and travellers as an alternative to reimbursement for cancelled package travel and transport services in the context of the COVID-19 pandemic*.

the organiser. Such protection could be set up by the private or the public sector, and should be sufficiently effective and robust"⁵³.

The Recommendation goes on to note that, if the Member State provides the guarantee, then the measure may constitute State aid, and may thus need to be notified to the Commission. However, it then says that the Commission is prepared in general to accept a State guarantee that "[...] covers 100% of the value of vouchers to ensure full protection of all passengers and travellers [...]"⁵⁴.

The provisions of the Recommendation appear to have played a useful and important role at a time when consumer travel-related complaints were rampant. At a 9 November 2020 IMCO webinar on the impact of the pandemic on the EU Internal Market, Karen Ghysels, the Director of the European Consumer Centre Network, noted that the number of pandemic-related consumer protection matters referred to her organisation and its affiliates in 2020 was twice as great as the *total* number of cases dealt with in 2019. Of the COVID-19 related matters, 51% were concerned with air passenger rights, 20% with accommodation, and 15% with package travel. Ms Ghysels went on to note that, prior to the enactment of the Recommendation, there had been enormous confusion over consumer rights for tourist services for which no general protection exists in EU law, such as car rental services and rental of accommodation. The Recommendation helpfully addressed a great many issues, but there continue to be gaps, for instance as regards online booking intermediaries. Also, problems with actually receiving reimbursement persist – even today, after many months, numerous consumers have not received refunds or vouchers to which they are entitled.

5.3.4. Customs, trade policy, and Value Added Tax

It is widely understood that any policy discussion on COVID-19 and the Single Market must include EU trade policy, customs, and VAT issues.

These policy elements have been especially relevant to medical equipment. Dependent on the type of medical equipment, including PPE, supplies may well come from large global value chains or from one or two dominant production countries outside the EU. Medicines relevant for COVID-19 mostly originate from EU Member States but there are exceptions (paracetamol, for instance). Early in the crisis, a European company (Philips) was keen to rapidly boost its output of ventilators, but they would need to be produced in the US, and for a period of four weeks there was great uncertainty whether enough ventilators would be available for export to the EU given problematic tweets from the US President at the time.

There is a further public policy imperative that these supplies not be unnecessarily expensive, hence a strong interest in VAT exemption and in temporary suspension of customs duties.

In order to protect the integrity of the EU Internal Market, these decisions had to be taken at EU level. Since disruptions of supply might occur due to trade policy restrictions (such as export restrictions) by WTO partners all over the world, these issues also have to be addressed in world fora and in the WTO. The following sections summarily address these issues.

a. COVID-19 and the customs arrangements of EU Member States

Disruptions, delays and temporary stops in the functioning of customs in some countries outside Europe (the latter due to short-run lack of personnel or lockdowns) have caused many interruptions

⁵³ Ibid, Recital 16 and Article 2.

⁵⁴ Ibid, Article 16.

and other problems (for example, for verifying the origin of goods) for international suppliers and EU importers. In turn, this prompted customs authorities in EU Member States to consider whether exemptions, exceptions and special clauses in the EU Customs Code (UCC) could be applied and under what conditions⁵⁵. On 24 June 2020, the so-called DAC6 Deferral Directive⁵⁶ was adopted allowing a delay of six months in reporting obligations. Regular guidance since April 2020 has been provided by the Commission for a range of administrative and other problems showing up at borders or before dispatching goods. The latest guidance when drafting this study came out on 28 October 2020 (see European Commission (2020w)). It deals with many practical problems (proving for instance that a representative is empowered; applying only for "essential customs decisions"; about notification of customs debt and issues about guarantees; release of partial shipments, in particular for PPE; proof of preferential origin; and transit questions). Despite the strictness of the UCC on specific issues, the Commission has gone quite far in attempting to stretch the interpretation in the light of the many, often unexpected problems. One problem (amongst many) seems to be that there is no provision for force majeure in EU customs regulations, but of course in times of COVID-19 this is frequently precisely the issue.

b. Waiving of Value-Added Tax and customs duties on vital medical equipment

In April 2020, the Commission decided to temporarily suspend customs duties and VAT on importation of PPE, testing kits (related to COVID-19) and medical devices such as ventilators (see European Commission (2020x)). On 28 October 2020, this Decision was amended⁵⁷ and extended to 30 April 2021. Under Notification C (2020) 2146, an indicative list of products to be imported "duty – VAT free" was made available. The list comprises 45 categories of products defined at the 8 digit level of CN codes (of traded goods). Roughly half of these categories are already duty-free (but of course not normally VAT free). The Commission estimates that protective face masks make up around 50% of the value of the relevant goods imports. It is also important to note that the Commission proposed that hospitals and medical practitioners should not have to pay VAT on vaccines and testing kits, whether imported from outside the EU or not (mostly not, so far). The Commission also urged Member States' customs authorities to conduct quality control on PPE, possibly with the help of the EU customs laboratories network. The idea behind all of these measures is to make critical supplies cheaper, and to make the purchasing process easier, faster and more reliable. Finally, on 28 October 2020, the Commission proposed to amend Council Directive 2006/112/EC (the VAT Directive) in order to align different exemptions for vaccines and in-vitro diagnostic medical devices so as to simplify and facilitate partial or full temporary exemptions from VAT (European Commission, 2020).

c. EU trade policy related to COVID-19 issues in the EU Internal Market

EU trade policy might be a separate competence from the shared power of the Internal Market, but that legal view misses the critical point: the Single Market and EU trade policy are, in many respects, twins (see Pelkmans (no date)). This is perhaps even more pertinent during the COVID-19 crisis, if only because PPE and some medical equipment as well as some medicines arrive in Europe from the world market. The relatively simple PPEs are delivered from a dominant supplier like China in enormous

⁵⁵ The Union Customs Code is huge, highly technical and administrative, hence far too complicated for a study like this. The basic Code is in force since 1st May 2016 as Council Regulation (EU) 952/2013, with several (technical) amendments since. The Commission Delegated Regulation 2015/2446 and a sequence of others since is also relevant. Moreover, the Commission Implementing Regulation 2015/2447 (amended four times since) and technical regulation relating to the 10 years transition to a fully electronic UCC (by 2025) matter too.

⁵⁶ DAC stands for Directive on Administrative Cooperation. The deferral is found in Council Directive (EU) 2020/876 of 24 June 2020.

⁵⁷ With Commission Decision (EU) 2020/1573 of 28 October 2020 amending Decision (EU) 2020/491 on relief from import duties and VAT exemption on importation granted for goods needed to combat the effects of the COVID-19 outbreak during 2020 (notified under document C(2020) 7511), available at: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32020D1573>.

volumes, while many other medical goods have more diversified supply structures but non-European producers and/or traders enjoy considerable shares. A quite refined division of labour across the world can lead to high efficiency and a combination of the right quality (given European standards, in turn linked to EU regulation) and low price, with very low EU stocks as a result. Also, retaining production capacity in the EU for many of these products was long regarded as too costly. As long as there are no disruptions and at least several non-EU suppliers for each product, this has been shown to work well. But, unfortunately, it has not worked well in a crisis of the global scale and with the severity of the COVID-19 pandemic. The EU has been taken by surprise, and this is also true for other OECD countries, let alone for developing ones.

When the crisis hit, the initial reaction of each country tended to be to ensure and safeguard supplies to its own people and medical infrastructure. In a public health crisis of these proportions, one cannot blame governments for such a preoccupation. However, in the context of a world division of labour and relatively free trade in the broad categories of medical goods, what matters is (1) what other trade partners do or indeed can possibly do, in other words, whether their policy responses may negatively affect trade partners, including the EU, curtailing or halting supplies or increasing prices, possibly worsening the crisis for patients and hospitals in importing countries; and (2) whether each country's (or the EU's) policy reaction remains neutral and avoids harmful or distortive conduct or measures for trading partners. What happened in the initial phase of the COVID-19 crisis was a desperate scramble for essential (medical) goods in the midst of a sudden worldwide shortage. Unsurprisingly, suppliers could not cope with such an explosion of global demand for highly specific products at the same time that they also needed to supply unusually large quantities at home. The low stocks in Europe were quickly depleted. The upshot was that medical staff easily contracted COVID-19, with many deaths and many more ill for shorter or longer periods, while treatment of patients was less than adequate for a few months – a costly toll. Market prices increased exponentially for a while, and low quality as well as fake products caused frustration and distress.

This study is not the place to analyse these deficiencies and international policy failures in detail. Neither shall we analyse international supply channels nor, for that matter, global value chains (GVCs) in medical goods. However, restrictive or distortive world-trade-related measures do matter for the effective supply of essential (medical) goods in the Internal Market. Therefore, some summary statistics will be provided in order to demonstrate the seriousness of the issues, followed by proposed attempts to address the gaps in crisis-related international trade cooperation, including by the EU.

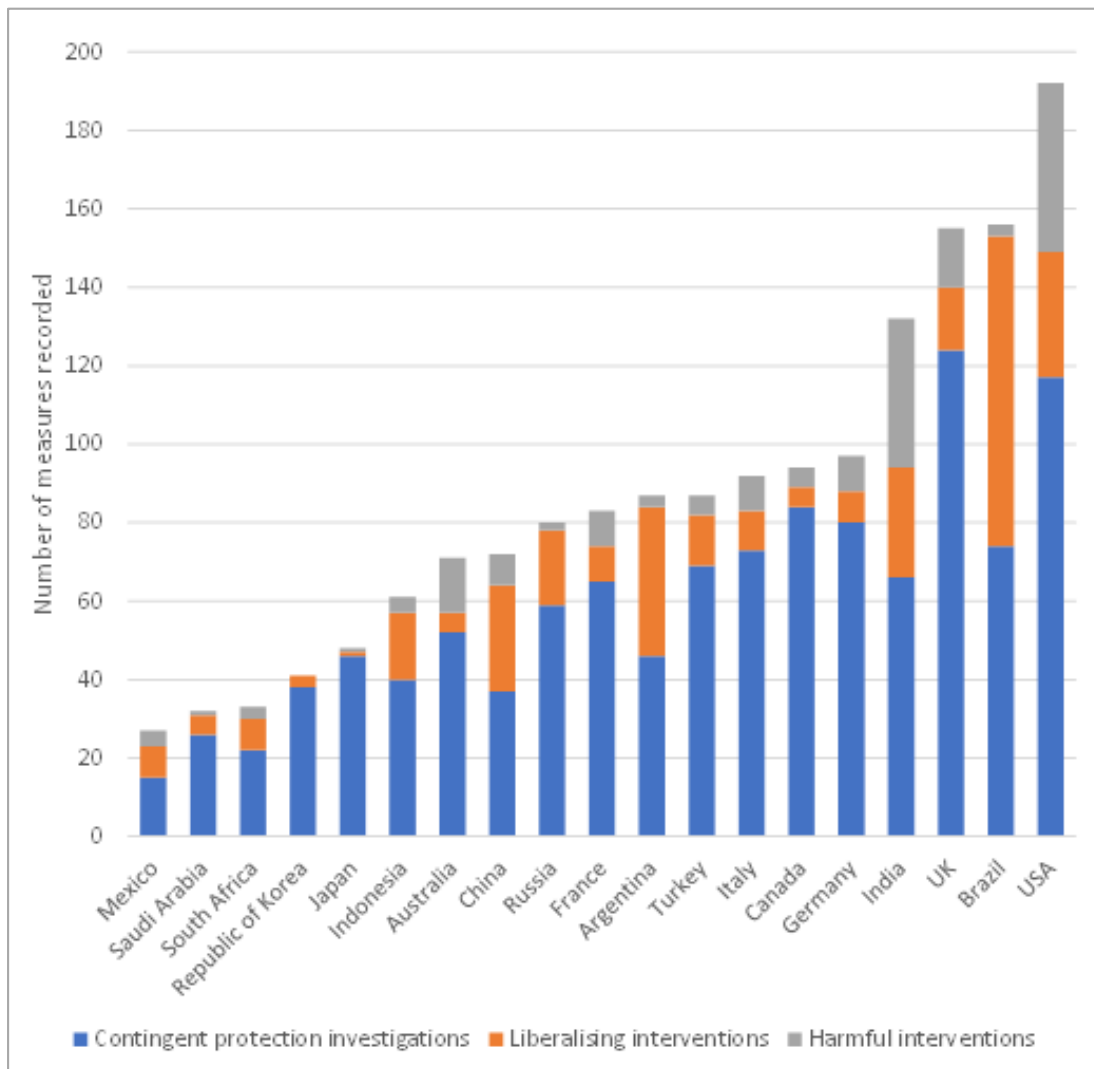
A good impression of what happened in trade policies over the year 2020 is provided in Figure 10⁵⁸. It provides a broader picture than strictly the urgent problems in essential medical goods, but, more often than not, the harmful interventions (shown in blue) are due to sudden trade restrictions to fight COVID-19 at home. Figure 10 depicts trade policies only in the G20 countries. The WTO publishes the full list of all notifications of trade-restrictive or distortive measures for all WTO trading partners. This is informative because every measure is listed separately and could in principle be followed up. Thus, the representativeness of this list is of course better than merely covering the G20 countries and relying on a private task force searching information, but one has to consider that many countries fail to notify all measures, or they report with long delays. Moreover, the user-friendliness of the information is low⁵⁹.

⁵⁸ Figure 10 and Figure 11 have been taken from the Global Trade Alert, a private initiative led by Simon Evenett since 2009 and meanwhile published twice a year by the CEPR in London (see Evenett & Fritz (2020)).

⁵⁹ The WTO presents four lists:
one on goods restrictions/distortions: www.wto.org/english/tratop_e/covid19_e/trade_related_goods_measure_e.htm of 18 Nov 2020;
one on services: www.wto.org/english/tratop_e/covid19_e/trade_related_services_measure_e.htm of 18 Nov 2020;
one on IPRs: www.wto.org/english/tratop_e/covid19_e/trade_related_ip_measure_e.htm of 1 Dec 2020; and
one on support measures (subsidies): www.wto.org/english/tratop_e/covid19_e/trade_related_support_measures_e.htm of 30 Oct 2020.

Figure 11 (covering close to 100 countries) shows that national interventions which were or still are harmful for other trade partners increased sharply. Since these countries are all of considerable importance for international trade and investment, this must have caused appreciable damage to many other countries, rich or poor, big or small. By 31 October 2020, Evenett & Fritz (2020) report an increase of 74% over the same period in 2019 and no less than 147% higher than the average of 2015-2017. Some of these measures were phased out later, but for the world as a whole no less than 110 export curbs on medical goods and medicines remained in force on that day, with 68 of them having no phase-out date. Due to the crisis, 106 countries including the EU implemented a total of 240 reforms in order to ease the imports of medical goods and medicines.

Figure 10: G20 trade-related policy response varies markedly this year

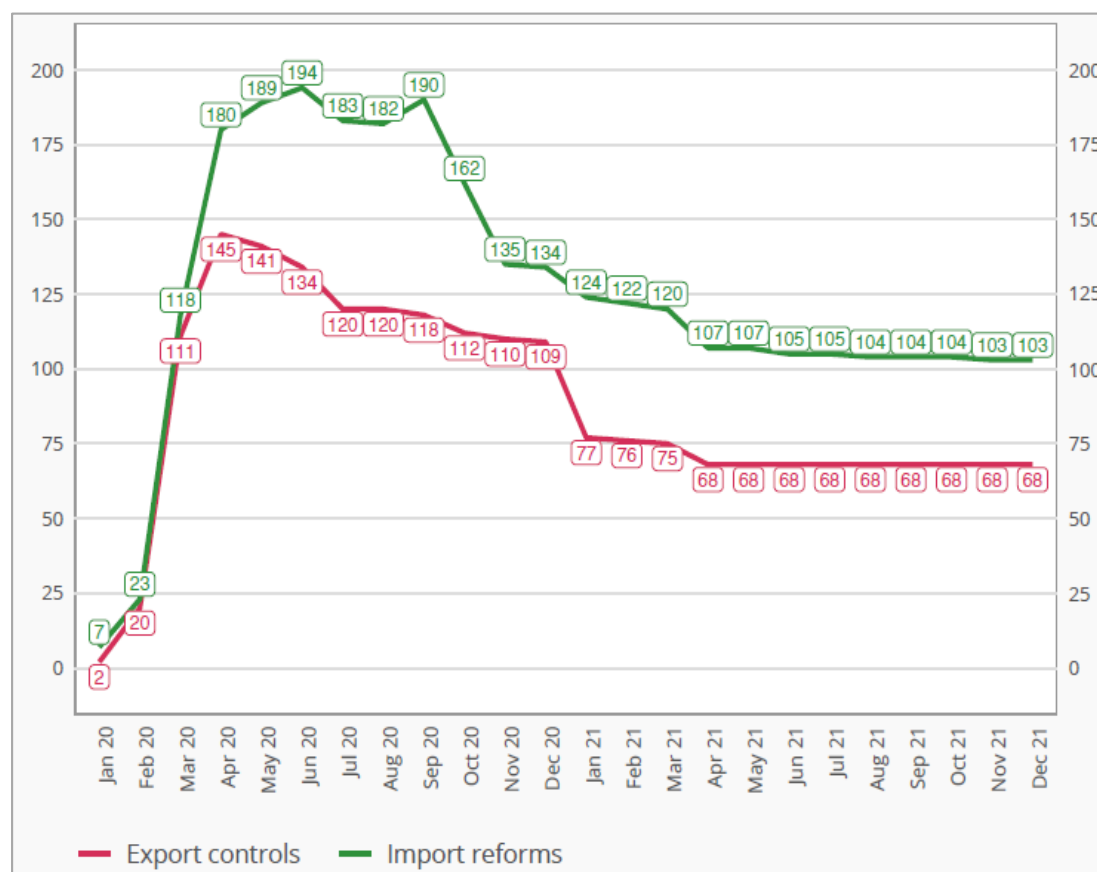


Source: Evenett & Fritz (2020).

Apart from subsidies of a distorting nature to trade, the crux is found in export curbs and import reforms. Figure 11 shows the very sharp spike in export controls (red line) with respect to medical goods and medicines over February and March 2020, followed by a gradual decline until early 2021 after which a plateau of unmovable restrictions is expected to remain. At the same time, reforms liberalising the imports of essential medical goods also plateaued but at a higher level. Although WTO partners are free to determine what such "essential goods" are as long as they are related to COVID-19, they are

expected to be guided by a list to be set up by the WHO in cooperation with the World Customs Organisation⁶⁰.

Figure 11: Cumulative global total number of measures introduced in 2020 that were still in force in the medical goods and medicines sectors



Source: Evenett & Fritz (2020).

The EU, other OECD countries (but not the US) and Singapore proposed a new Trade and Health initiative in the WTO⁶¹ in late November 2020, pleading strongly for a coordinated response. "Public health emergencies will not be effectively addressed without resilient, robust and well-diversified supply chains that operate in a predictable trading environment. If we are to meet the unprecedented challenge of ensuring availability of essential medical goods, including vaccines, in these turbulent times, we must enhance our cooperation." WTO partners are called to ensure that any measures are necessary, targeted, transparent, proportionate and temporary, that the interests of least developed and developing countries are taken into account, and that export restrictions do not disrupt the provision of humanitarian shipments of essential goods, nor the work of the COVAX facility in distributing vaccines. The proper justification of any such measures is equally emphasised. In addition, the proponents call for enhanced regulatory alignment, the removal or reduction of tariffs on medical goods, and closer cooperation with the WHO, WCO, WIPO (on IPRs), the OECD and the G20.

⁶⁰ World Customs Organisation, article dated 6 April 2020, entitled "WCO and WTO join forces to minimise disruptions to cross-border trade in goods" and available at: <http://www.wcoomd.org/en/media/newsroom/2020/april/wco-wto-joint-statement-on-covid-19-related-trade-measures.aspx> [accessed 14 February 2021].

⁶¹ Dated 24 Nov 2020, under WT/GC/223 in the WTO, see https://www.wto.org/english/tratop_e/covid19_e/covid19_e.htm and go to 'COVID-19 and beyond, Trade and Health'.

6. IMPACT OF THE MEASURES IMPOSED ON MOBILITY IN THE EU

KEY FINDINGS

- Restrictions had a dramatic impact on individual mobility in the EU.
 - Time spent in retail and recreation in France, for example, declined more than 80% in March as the grip of the pandemic worsened. It returned to levels close to normal over the summer as the pandemic appeared to be under control, and then declined more than 50% in November as the second wave of the pandemic hit. Indeed, time spent in retail and recreation began to fall even before restrictions were formally introduced.
 - Time spent in French transit stations shows roughly the same trend.
 - Time spent at groceries and pharmacies in France shows a gentler version of the same trend, which is to be expected given that groceries and pharmacies have remained open even in periods when the lockdown has been intense.
 - Likewise, time spent at work in France shows trends that are parallel to those of retail and recreation, but less intense.
 - Time spent in French residences shows an opposite trend – it increases as the lockdown becomes more intense, and returns to normal as restrictions are loosened.
 - Trends in most EU Member States are broadly similar to those in France, except that some Member States, especially those in the east, experienced only a mild first wave.
- Similarly, there was a dramatic but unsurprising drop in international tourism in the EU. Overnight stays of all sorts dropped precipitously in March and were practically non-existent in April. Overnight stays within one's own Member State recovered to near-normal levels in July, August and September. Overnight stays in a different Member State, however, remained very substantially depressed during those months, and overnight stays from non-EU countries showed only a weak recovery.
- After an initial decline by a third in April and May, intra-EU trade recovered by summer. Extra-EU trade followed a similar pattern, though it hasn't fully recovered.
- The first lockdown led to a collapse in non-online retail sales by 80%. During the lockdown, trade in semi-durable and durable consumer goods both declined strongly, while trade in food and non-durable goods was mostly sustained. Both retail activity and trade in consumer goods recovered after May.
- Despite the avoidance of export restrictions within the EU, the intra-EU trade of PPE and oxygen therapy equipment declined during the first wave.
- The restrictions on the physical movement of individuals also affected the physical delivery of services.
- Video conferencing has replaced business travel for many services.
- The shift towards digital delivery in many services led to a surge in usage of video conferencing tools.
- Telecommunication networks managed to sustain the increased usage, leading to no additional barriers to digital delivery of services.
- The pandemic led to an appreciation of the trade-weighted Euro as well as an appreciation of the Euro vis-à-vis national currencies in the EU.
- No additional barriers to cross-border capital flows have been erected.

In this Chapter, we address the combined impacts on the EU Internal Market of the various restrictions that were imposed at EU and Member State levels, and the various measures mainly at EU level to mitigate those impacts. We address the impacts of restrictions on individuals within individual Member States, and the impacts on individuals travelling between Member States, in Sections 6.1 and 6.2, respectively. The material presented in Section 6.1 is backed up with a full set of graphs showing the impact of restrictions on mobility in the Annex to this study. We cover the impact on mobility of goods between the Member States in Section 6.3, impacts on services in Sections 6.4 and 6.5, and impact on mobility of capital in Section 6.6.

6.1. Impact on mobility of individuals within the Member States

Each of the EU Member States has imposed restrictions on the mobility of individuals at various points in time. In western and southern Europe, these typically came in two waves – a first intense wave when the pandemic first hit in March-April, and a second as the pandemic re-emerged in September and thereafter. In between, most of the Member States loosened restrictions, and permitted or even encouraged vacation travel between the Member States.

Most of the eastern Member States never experienced the first wave, but all are experiencing the second wave.

We use data from France here to illustrate the overall western European trend (in Figure 12), but the results for Italy and Spain are broadly similar. The data represent the sequence of events from the emergence of the pandemic (March 2020) to the present (December 2020). The severity of the pandemic is visible in the number of new cases per day, which is effectively a leading indicator on restrictions in mobility, and in the number of deaths per day, which trails the number of cases by some three or four weeks in most Member States⁶². The peaks in new cases per day in March and in November are readily visible in Figure 12⁶³.

In France, as in each of the Member States where high numbers of cases were observed, restrictions were introduced to slow the rate of new infections in order to prevent the pandemic from spiralling out of control. Each vertical red line represents a point in time at which significant new restrictions were introduced; each green line represents a point in time at which restrictions were loosened. For data on restrictions, we rely on a widely used Oxford University database as described in Hale et al. (2020)⁶⁴.

In order to assess the resultant change in individual mobility, we rely on Google mobility data. As a public service, Google has made mobility data publicly available, based on the same location data they use to indicate busy hours for restaurants and museums (see Aktay et al. (2020)). Since data is captured only from users who have explicitly consented, the data collection raises no new privacy concerns. The data is aggregated and anonymised (and a bit of random noise is introduced into the data) in order to maintain the privacy of the individuals whose data is reflected.

⁶² The data on new cases per day and on deaths per day are derived from Our World in Data [accessed on 31 January 2021] available at: <https://ourworldindata.org/coronavirus>. There are many anomalies in the ways in which each country reports new cases per day and deaths per day that are attributable to COVID-19, but the available data are more than adequate to demonstrate trends as we are doing here. They are shown using an exponential scale in order to make it possible to clearly see trends of both on a single graph.

⁶³ The approach taken in this section builds on our earlier work. See Kahanec et al. (2020).

⁶⁴ The red lines represent an increase in restrictions on movement from the home, encoded as follows: 0 - no measures; 1 - recommend not leaving house; 2 - require not leaving house with exceptions for daily exercise, grocery shopping, and essential trips; 3 - require not leaving house with minimal exceptions (e.g. allowed to leave once a week, or only one person can leave at a time). The green lines represent a decrease in restrictions on the same basis.

The Google mobility data indicates the degree to which visits to an institution or venue enumerated below increased or decreased in comparison with January 2020, which is taken as a measure of the historic baseline⁶⁵:

- retail and recreation (including restaurants, cafes, shopping centres, theme parks, museums, libraries, and movie theatres);
- grocery and pharmacy (including grocery markets, food warehouses, farmers' markets, specialty food shops, drugstores, and pharmacies);
- parks (including national parks, public beaches, marinas, dog parks, plazas, and public gardens);
- transit stations (public transport hubs such as subway, bus, and train stations);
- workplaces; and
- residential ("an average amount of time spent at places of residence ... in hours" for all users in the sample; thus, it represents time spent in all residences, not necessarily in the individual's own residence).

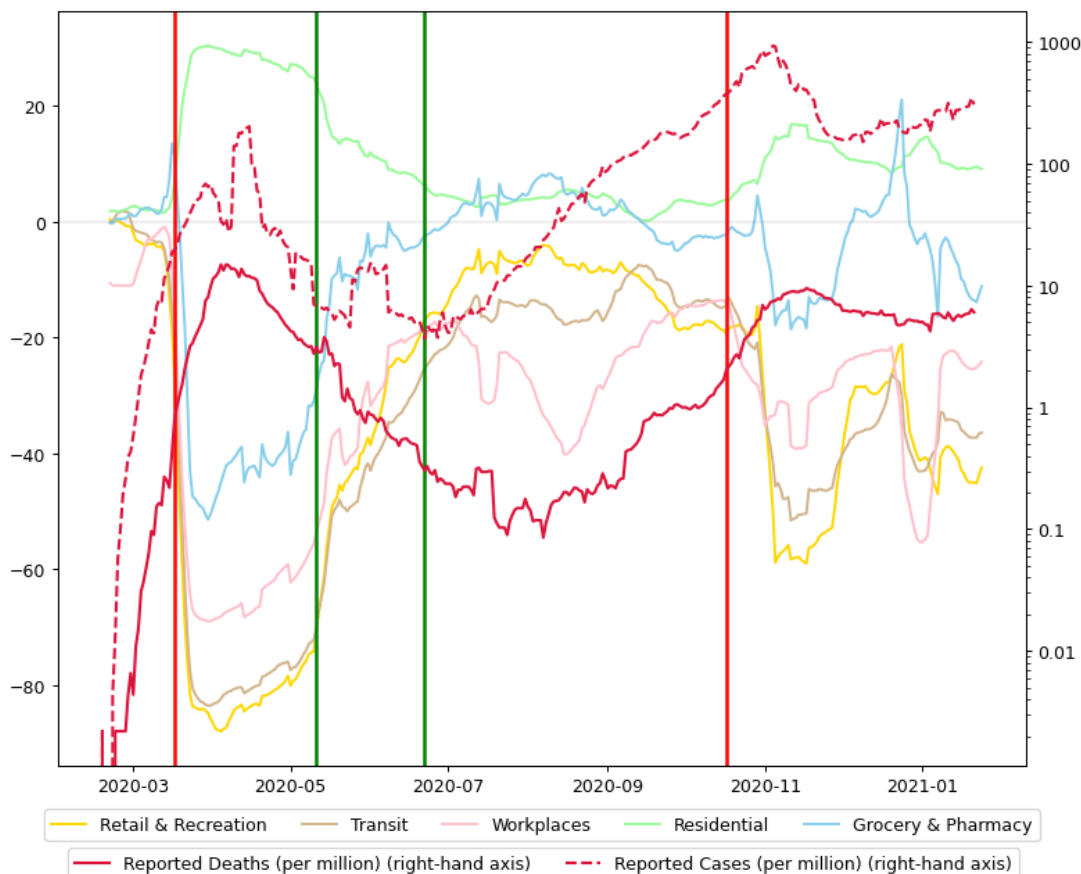
It is readily visible in Figure 12 that time spent in retail and recreation in France declined more than 80% in March, as the grip of the pandemic worsened, returned to levels close to normal over the summer as the pandemic appeared to be under control, and then decline more than 50% in November as the second wave of the pandemic hit. Indeed, time spent in retail and recreation began to fall even before restrictions were formally introduced (which is in line with the tendency of individuals to voluntarily distance, as explained in Section 4).

Time spent in transit stations shows roughly the same trend. Time spent at groceries and pharmacies shows a gentler version of the same trend, which is to be expected given that groceries and pharmacies have remained open even in periods when the lockdown has been intense. Time spent at work likewise shows trends that are parallel to those of retail and recreation, but less intense.

Time spent in residences shows an opposite trend - it increases as the lockdown becomes more intense, and returns to normal as restrictions are loosened.

⁶⁵ The data are normalised to reflect the day of the week; however, no adjustment is made to reflect the month of the year, i.e. seasonal variation. As the Google website explains: "The data shows how visitors to (or time spent in) categorised places change compared to our baseline days. A baseline day represents a normal value for that day of the week. The baseline day is the median value from the 5-week period Jan 3 – Feb 6, 2020." This suggests that the sharp drop that is visible in December is largely attributable to the holiday season, not only to COVID-19.

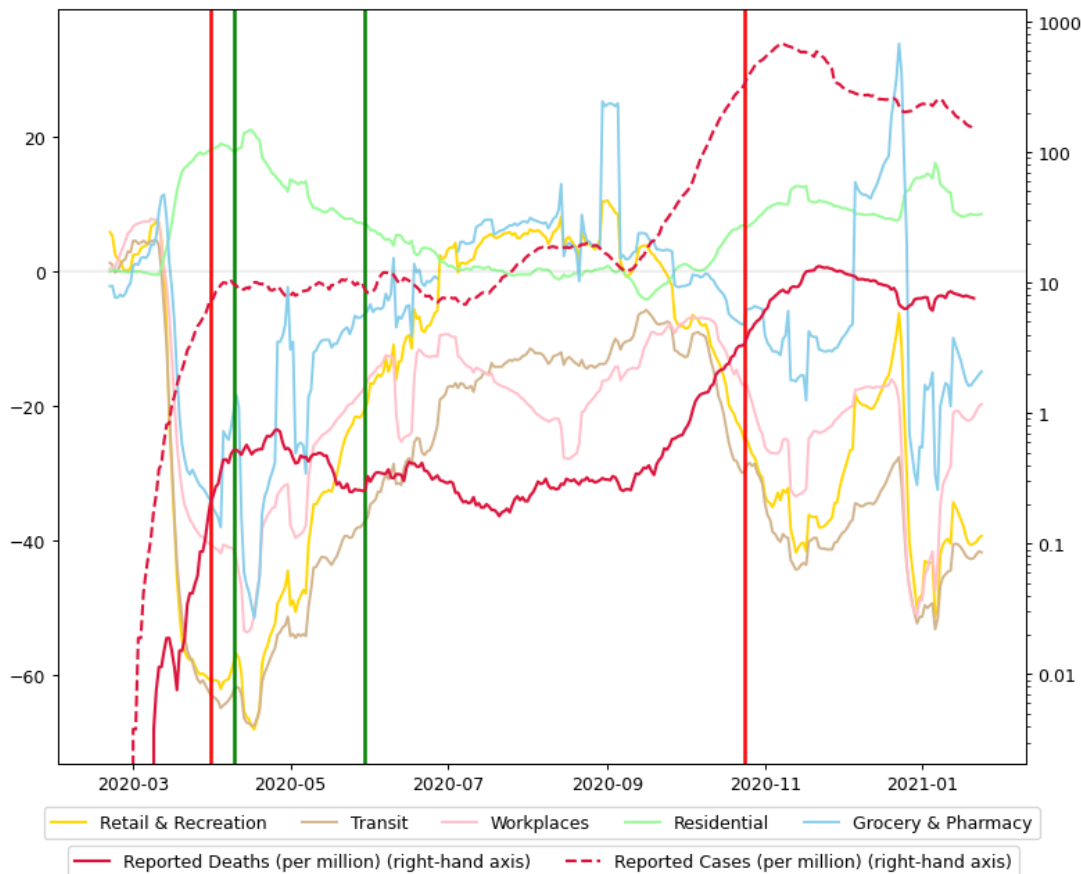
Figure 12: New cases per day, deaths per day, and relative personal mobility to retail & recreation, transit, workplaces, residential, and grocery & pharmacy (France, March 2020 - January 2021)



Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

The equivalent pattern for Poland is visible in Figure 13. The first wave of the pandemic is barely visible, as is the case for many of the newer Member States in the East; nonetheless, the time that individuals spent in retail and recreation declined by more than 60% in April, nearly as much as in France. Voluntary reductions in mobility clearly played a strong role in Poland in March. In most other respects, however, the pattern for Poland is not very different than that of France.

Figure 13: New cases per day, deaths per day, and relative personal mobility to retail & recreation, transit, workplaces, residential, and grocery & pharmacy (Poland, March 2020 - January 2021)

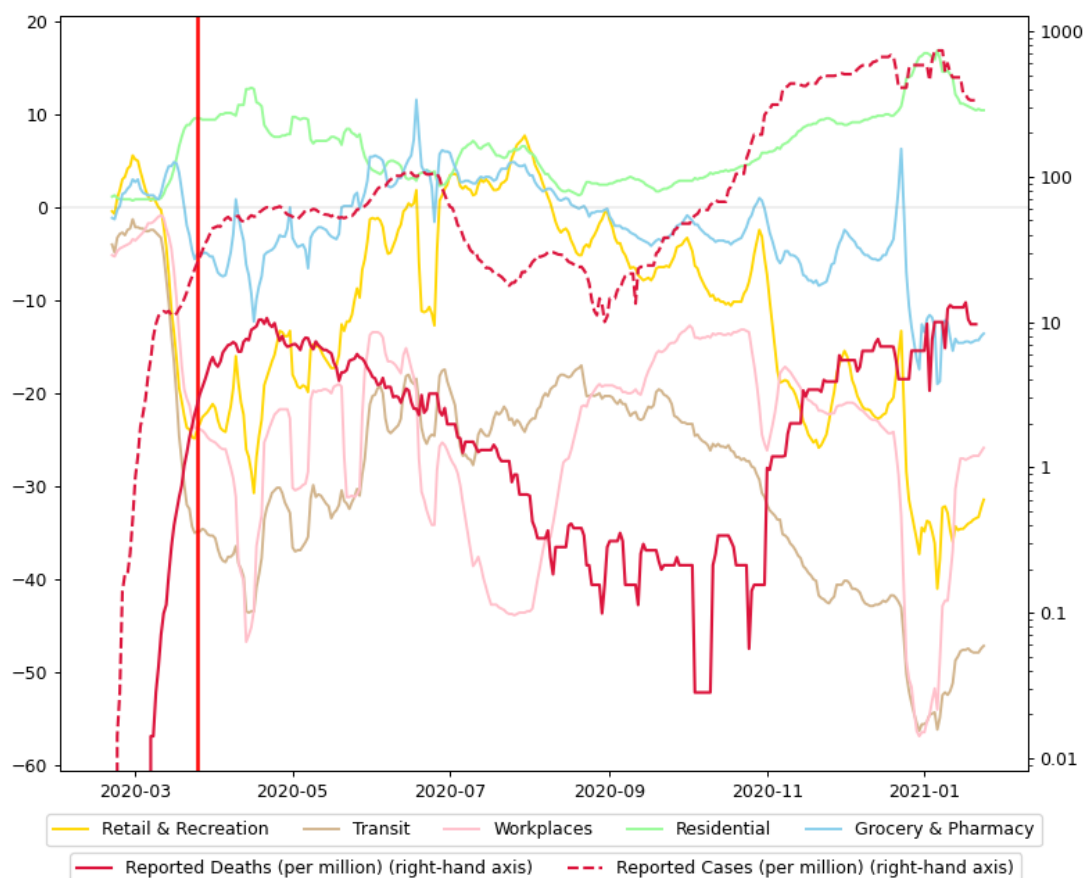


Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Sweden represents a different kind of example. Sweden chose to refrain from imposing "hard" restrictions backed by sanctions, choosing instead to rely on the sense of responsibility and civic duty of the Swedes. Initially, Sweden had a relatively low number of cases (in common with its Scandinavian neighbours), and some claimed that the Swedish approach represented a more enlightened approach to the pandemic. Subsequently, it became clear that Sweden was experiencing a higher number of deaths than its similarly situated neighbours, and most recently both the King and the Prime Minister have characterised the approach as a failure (as reported in the BBC (2020)). In any case, however one assesses its effectiveness, the pattern of restrictions in Sweden represents an instructive counterpoint to the approaches taken in other EU Member States.

Time spent at retail and recreation in Sweden never declined more than 30%. This is far less than in most EU Member States. On the other hand, time spent at the workplace actually dropped 10% to 20% more than time spent in retail, presumably reflecting a substantial shift to remotework. Time spent at groceries and pharmacies showed surprisingly little change, while time spent at transit stations showed a large drop in both waves and recovered to only a limited extent over the summer.

Figure 14: New cases per day, deaths per day, and relative personal mobility to retail & recreation, transit, workplaces, residential, and grocery & pharmacy (Sweden, March 2020 - January 2021)



Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

The data for each Member State has its own story to tell. In the Annex to this study, we have provided similar graphs for most of the EU Member States, as well as similar graphs for the United States and for the United Kingdom for purposes of comparison.

6.2. Impact on mobility of individuals between Member States

The measures of mobility referred to in Section 6.1 generally measure mobility impacts within a Member State – they do not measure the decline in mobility between or among the Member States. Only limited data is available on mobility among the Member States.

Cross-border mobility serves many purposes, with different economic implications:

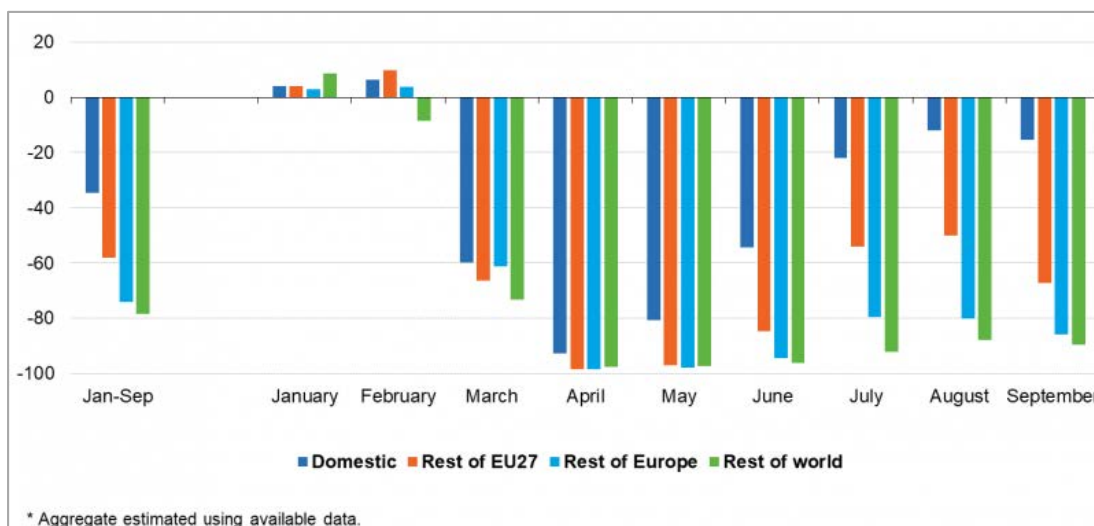
- short business trips for a few hours or a few days;
- commuting back and forth to one's place of business;
- shopping excursions, which in border regions could be same-day events; and
- longer duration tourism.

These have very different implications for where money is earned (and how much), where money is spent (and how much), and where taxes are paid (and how much). And they have played out quite differently during the pandemic – short business trips were largely replaced by teleconferencing,

same-day shopping excursions probably ground to a halt at the height of the lockdown, but commuting across borders to go to work continued in many regions (for instance, across the French-German and Belgian-German borders).

Eurostat data provide a useful insight into overnight stays of residents of one Member State in another. These Eurostat data demonstrate a dramatic but unsurprising drop in international tourism among European Member States from the time that the pandemic hit in March (see Figure 15). Each number displayed is the ratio of nights spent by non-residents in tourist accommodations (hotels; holiday and other short-stay accommodation; camping grounds, recreational vehicle parks and trailer parks) in 2020 as a ratio in comparison with the number for the corresponding Member State and month for 2019, which can be assumed to represent a baseline for comparison. In January 2020, both domestic and international overnight stays were slightly above average 2019 levels. Overnight stays of all sorts dropped precipitously in March and were practically non-existent in April. Overnight stays within one's own Member State recovered to near-normal levels in July, August and September; indeed, thirteen of the Member States reported more overnight stays from their residents during these months than in 2019⁶⁶. Overnight stays in a different Member State, however, remained very substantially depressed during those months, and overnight stays from non-EU countries showed only a weak recovery. Very little data is available after September 2020, but it is safe to assume that the number of overnight stays has once again plummeted in November and December.

Figure 15: Nights spent at EU-27* tourist accommodation establishments compared to the same month in 2019 by origin of guest (January to September 2020)



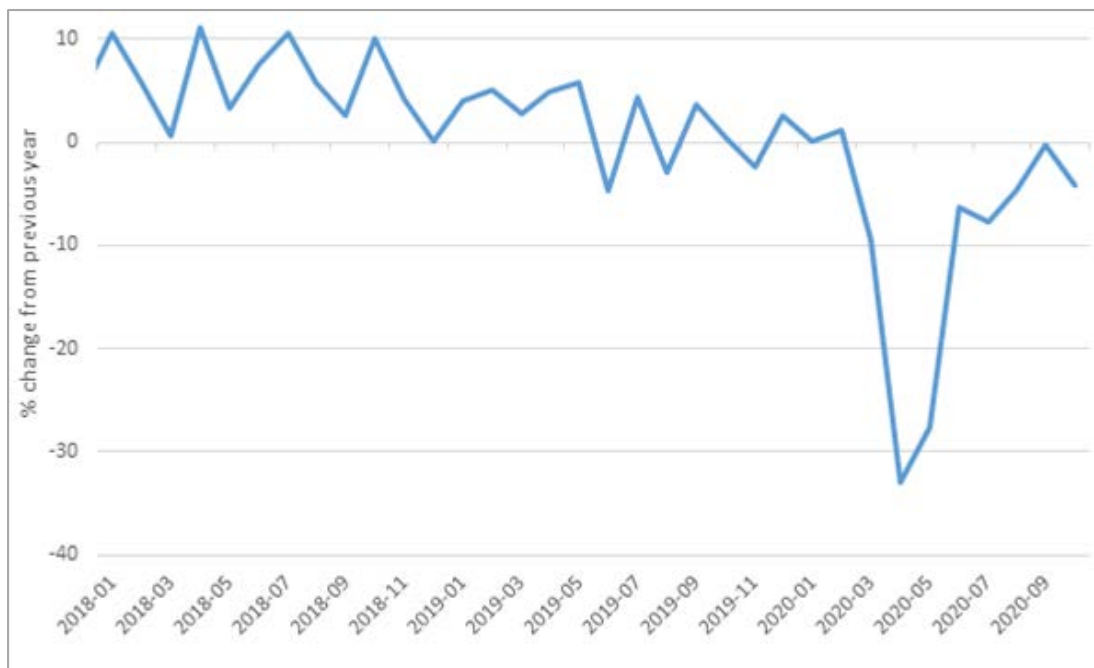
Source: Eurostat (2020).

6.3. Impact on mobility of goods between Member States

During the first wave of the pandemic, border and factory closures led to a collapse of international as well as intra-EU trade. Figure 16 shows the monthly trade volumes relative to their level a year earlier. At its lowest point in April, the volume of intra-EU goods trade was more than 30% below its 2019 level. However, after the end of the first wave, trade volumes recovered and in September intra-EU trade was back at its 2019 level.

⁶⁶ Aktay et al. (2020) Note, however, that not all Member States provided data.

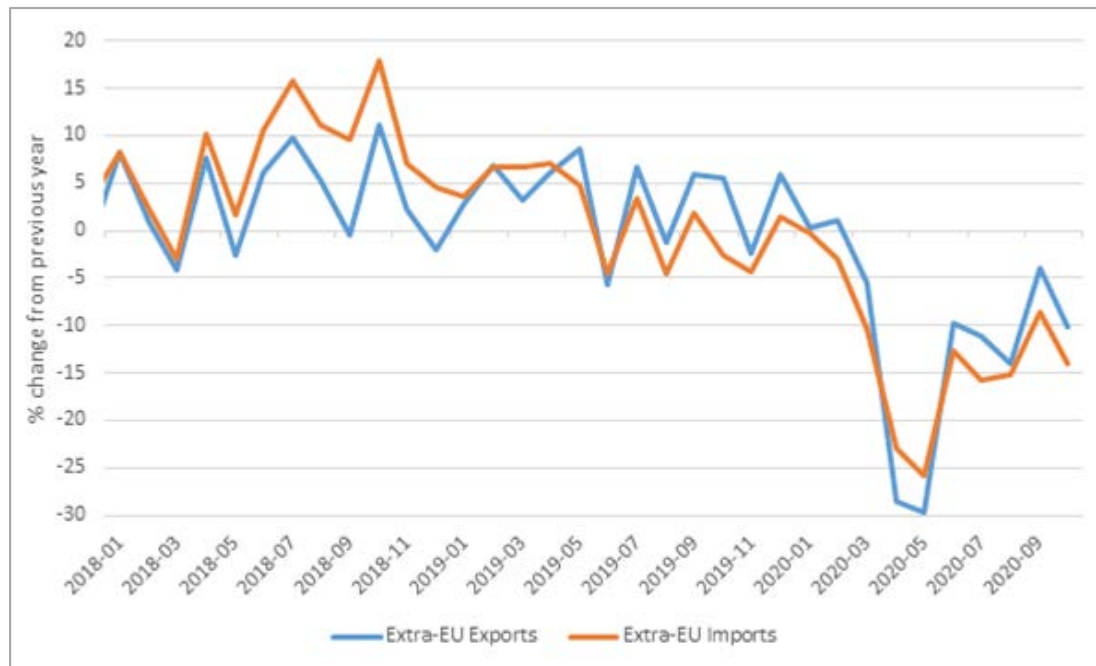
Figure 16: Goods trade within the EU, percentage change from previous year (January 2018 – October 2020)



Source: Eurostat, "EU trade since 1988 by BEC" (DS-032655). Monthly Data. Intra-EU trade is computed based on Exports between the different Member States of the European Union. Bruegel computations.

Extra-EU trade was affected in a similar magnitude and followed a similar pattern. Figure 17 shows extra-EU imports and exports relative to their values a year earlier. In May, EU imports and EU exports had declined by 26 and 30% relative to their 2019 values, respectively. By September they had recovered to some extent; however, unlike intra-EU trade, neither imports from nor exports to outside the EU fully recovered. This extra-EU trade is closely related to trade within the EU Internal Market, as foreign inputs are used in European value chains, and many intermediate inputs traded within the Internal Market are parts of final products destined for export outside the EU.

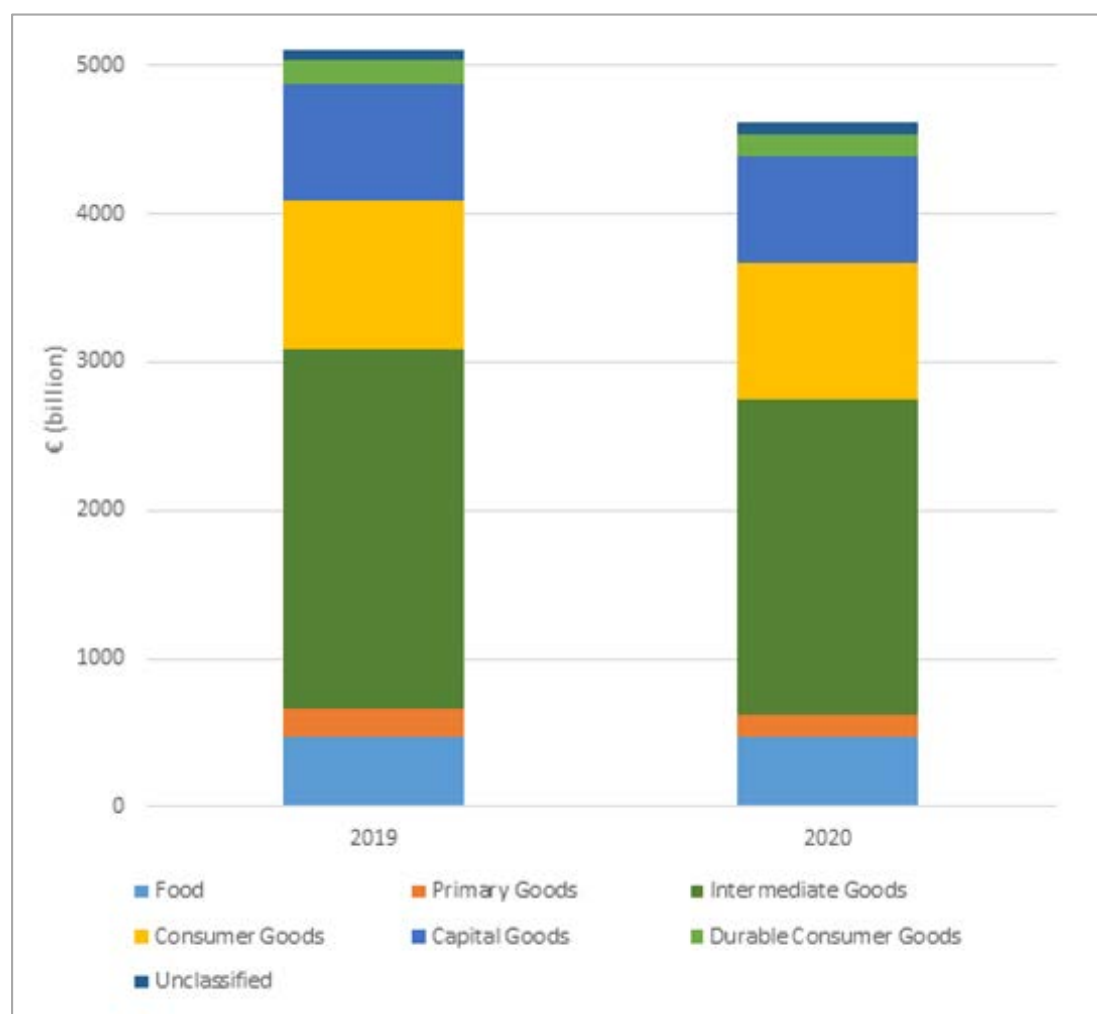
Figure 17: Imports and exports to and from the EU, percentage change from previous year (January 2018 – October 2020)



Source: Eurostat, "EU trade since 1988 by BEC" (DS-032655). Monthly Data. Intra-EU trade is computed based on Exports between the different Member States of the European Union. Bruegel computations.

The decline in trade in goods within the EU is likely a result of both the border closures during the first lockdown and uncertainty about demand. Figure 18 shows a decomposition of the trade within the EU into goods categories. Intermediate goods account for roughly half of all intra-EU trade in goods. Consumer goods and food account for about 20% and 10% of trade, respectively. Finally, capital and durable consumer goods account for a bit less than 20% of the trade within the EU. This large role of intermediate goods trade highlights the importance of ensuring the continued functioning of the Single Market during the pandemic for European value chains.

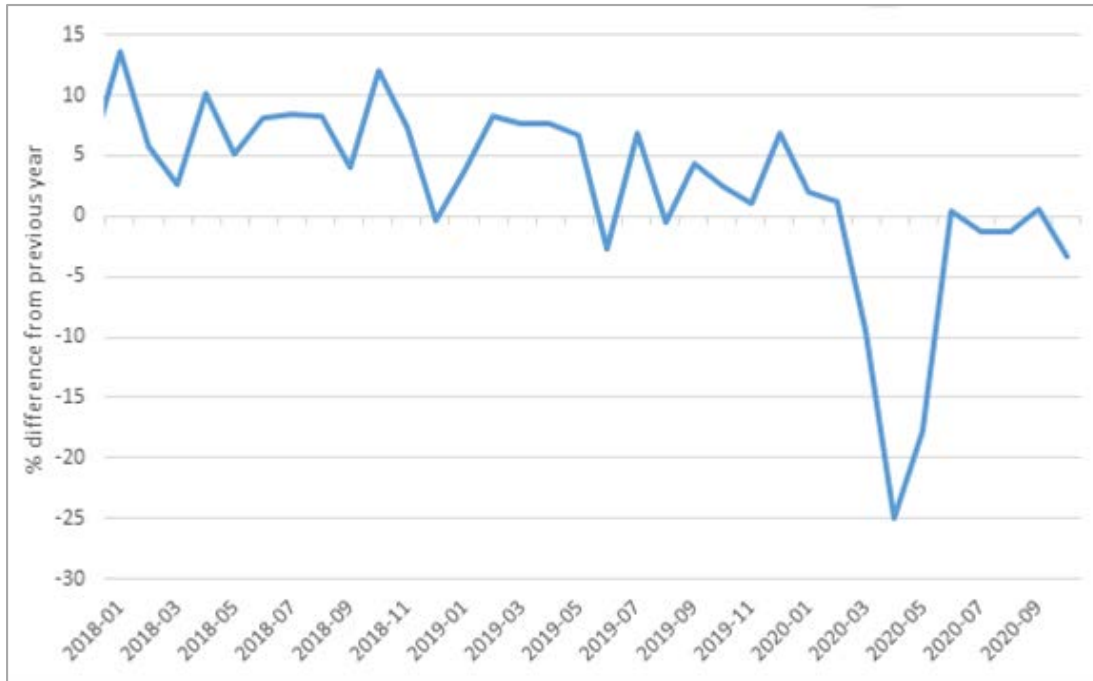
Figure 18: Decomposition of intra-EU trade by goods category (January 2019 – October 2020)



Source: Eurostat, "EU trade since 1988 by BEC" (DS-032655). Monthly Data. Numbers based on Exports between the different Member States of the European Union. Bruegel computations.

As discussed in Chapter 2 and as shown in Figure 1, the increase in household savings led to an initial delay of purchases of durable consumer goods. The trade in durable goods used in production processes, capital goods, are shown in Figure 19. Capital goods include machinery and other durable means of production. The intra-EU trade of such capital goods saw a sharp decline of around 25% in April and May before returning quickly to their pre-pandemic levels. While investment is likely to be well below its normal level in 2020, the delivery of such goods is often the result of (past) forward-looking investment decisions, and thus it is unsurprising that it was not directly affected after the initial disruptions.

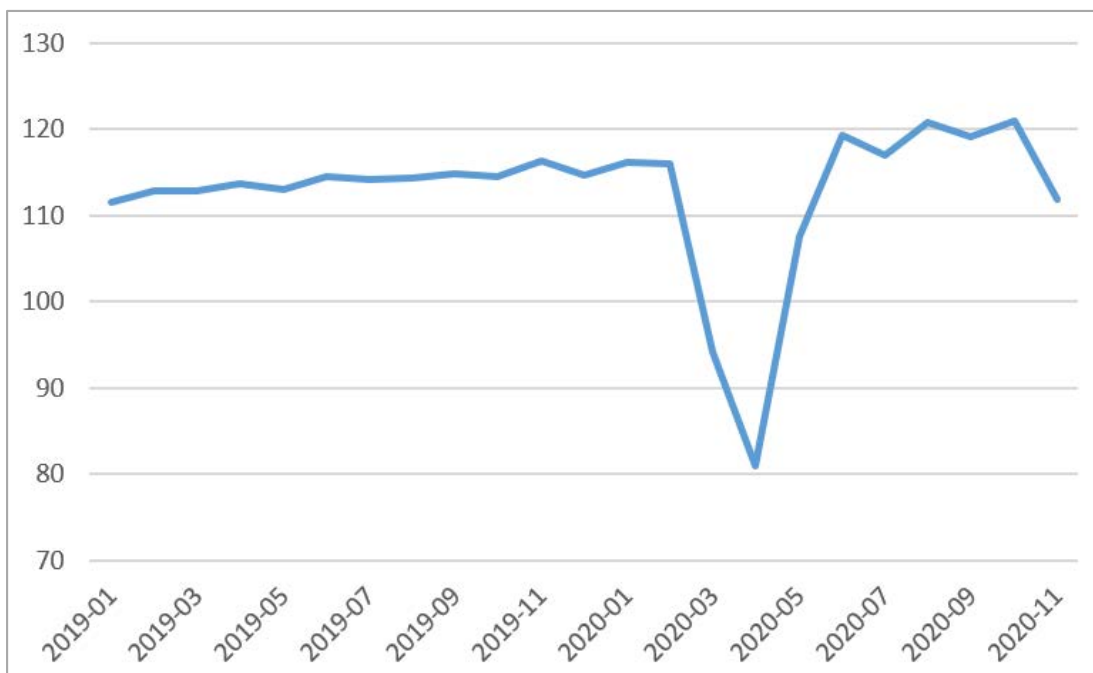
Figure 19: Intra-EU trade in capital goods (except for transport equipment), percentage change from previous year (January 2019 – October 2020)



Source: Eurostat, "EU trade since 1988 by BEC" (DS-032655). Monthly Data. Numbers based on Exports between the different Member States of the European Union. Bruegel computations.

Figure 20 shows the turnover of retail consumer goods other than food. Retail sales of such goods collapsed during the first lockdowns in spring and were down 80% in April. However, they recovered quickly and returned to their pre-pandemic trend in June. Data from November indicate that with the beginning of the second wave, retail turnover is in decline again.

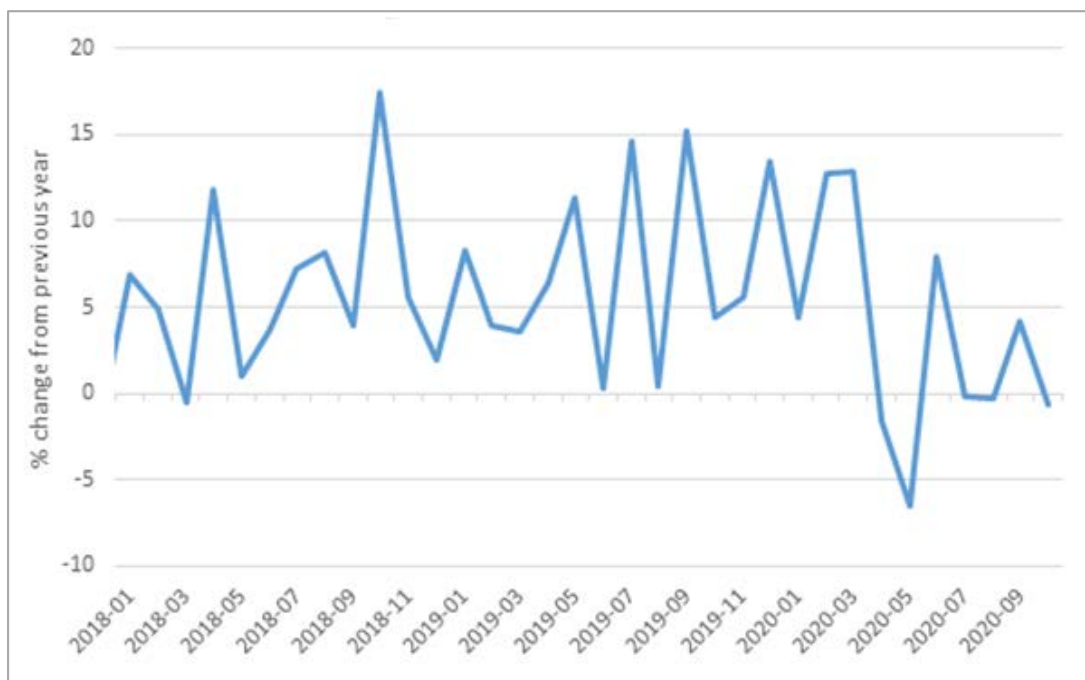
Figure 20: Retail turnover of non-food products (except fuel) in the EU-27



Source: Eurostat, online data code: STS_TRTU_M. Index 2015=100, seasonally adjusted monthly data.

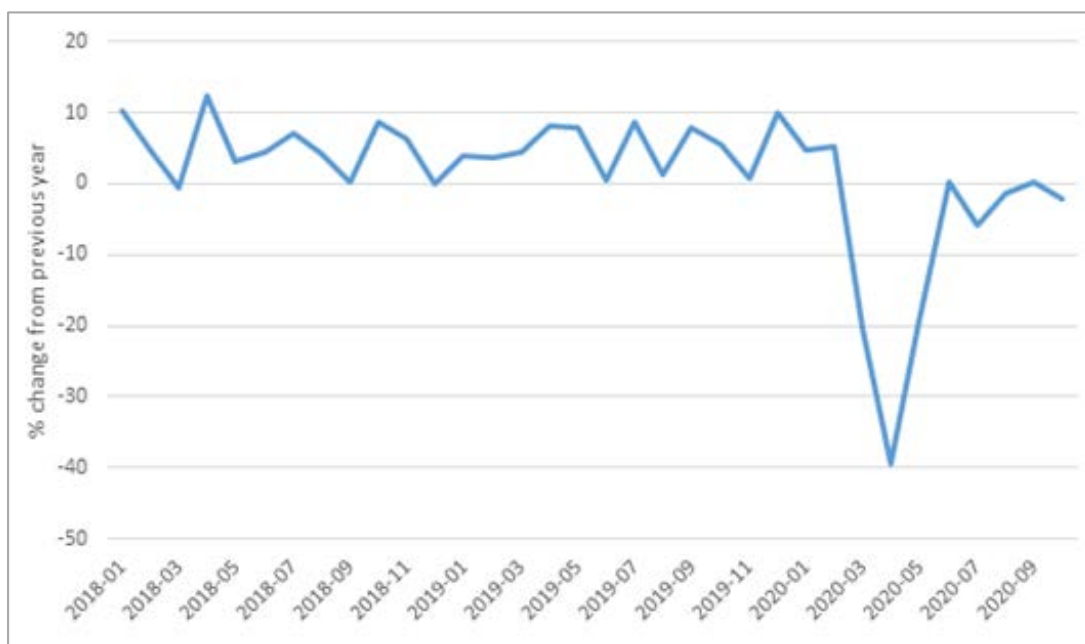
The trade of non-durable consumer goods is shown in Figure 21. Despite the slump in retail sales in the spring, the intra-EU trade of non-durable consumer goods was not strongly affected. Semi-durable consumer goods saw a strong decline during April, but also recovered very quickly following the recovery of retail sales.

Figure 21: Intra-EU trade in non-durable consumer goods, percentage change from previous year (January 2018 – October 2020)



Source: Eurostat, "EU trade since 1988 by BEC" (DS-032655). Monthly Data. Numbers based on Exports between the different Member States of the European Union. Bruegel computations.

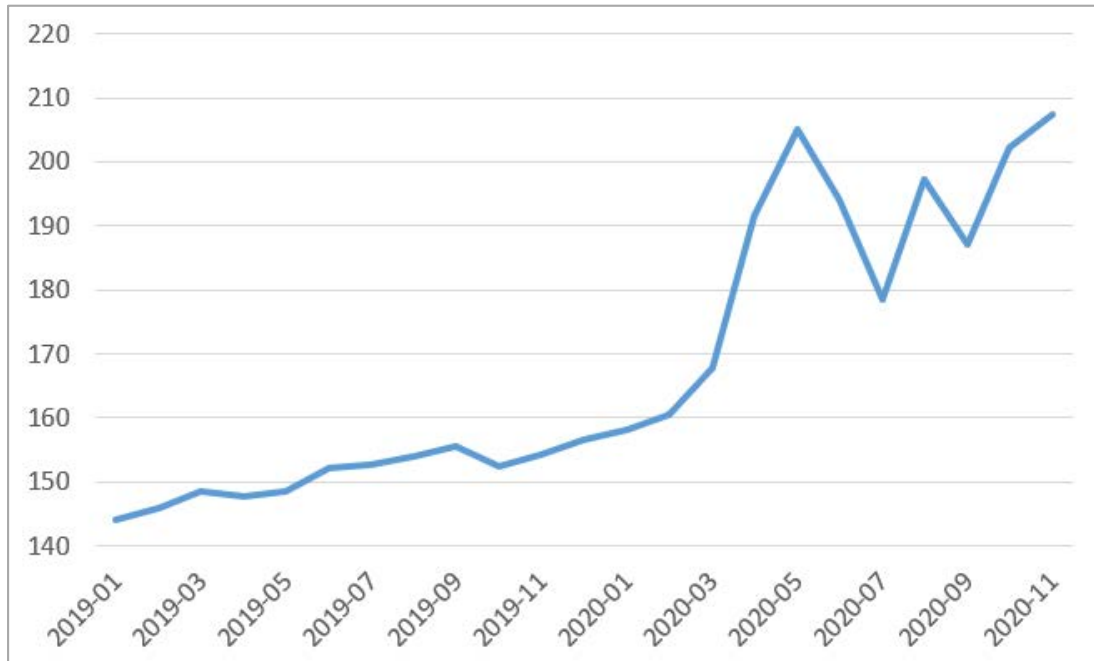
Figure 22: Intra-EU trade in semi-durable consumer goods, percentage change from previous year (January 2019 – October 2020)



Source: Eurostat, "EU trade since 1988 by BEC" (DS-032655). Monthly Data. Numbers based on Exports between the different Member States of the European Union. Bruegel computations.

While the lockdowns discussed in Chapter 3 led to the closure of "brick-and-mortar" stores and a significant decline in retail turnover in physical stores, the lack of physical retail activity was compensated for by an increase in e-commerce. Figure 23 shows online retail turnover (plus retail via mail order), which increased by 23% between February and November 2020.

Figure 23: Retail sale via mail order houses or via Internet (January 2019 – November 2020)



Source: Eurostat, online data code: STS_TRTU_M. Index 2015=100, seasonally adjusted monthly data.

As discussed in Chapter 2, the first wave of the pandemic saw a strong decline in industrial activity. This decrease in manufacturing activity contributed to the decline in overall trade, as the EU's manufacturing sector is not only responsible for the production of many of the final goods traded in the EU Internal Market, but is also the purchaser of many intermediate goods. Due to the high level of integration of value-chains in the Internal Market, the inputs to final goods cross intra-EU borders many times. As a result, intermediate goods account for half of intra-EU trade (see Figure 18). Figure 24 shows intra-EU trade in intermediate goods. Like trade in goods in general, the trade in intermediate goods declined by 25% in April, but they recovered after the first wave of the pandemic subsided in summer. In September, it had reached its pre-pandemic level again.

Figure 24: Intra-EU trade in intermediate goods, percentage change from previous year (January 2019 – October 2020)

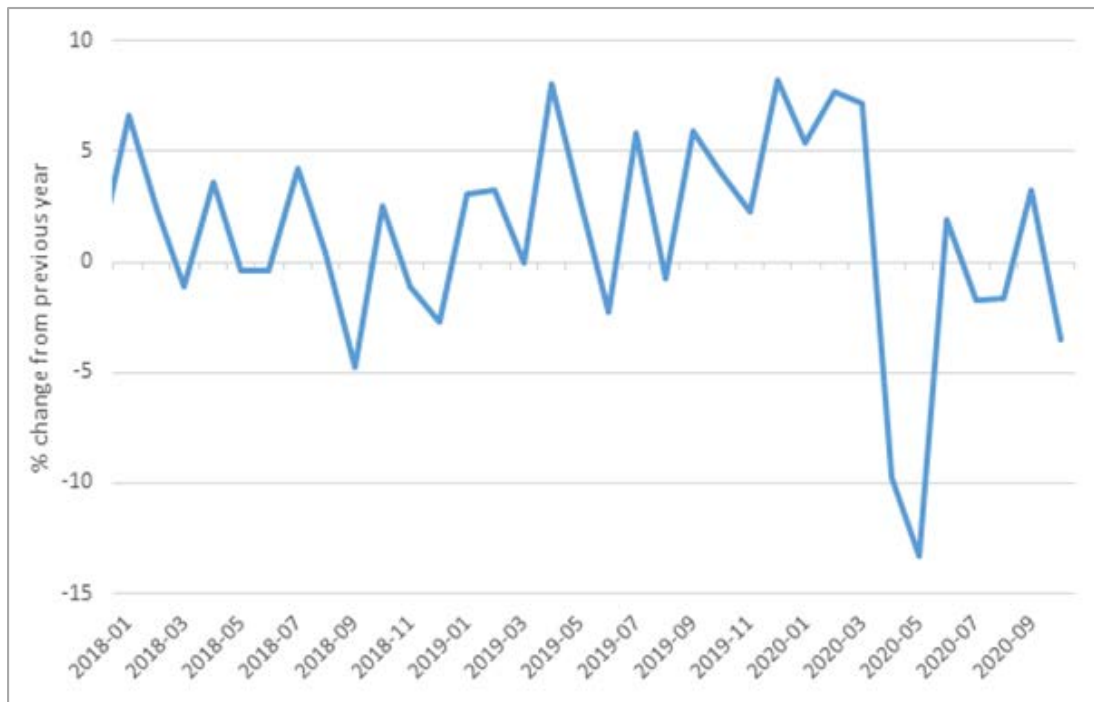


Source: Eurostat, "EU trade since 1988 by BEC" (DS-032655), "Industrial supplies/processed". Monthly Data. Numbers based on exports between the different Member States of the European Union. Bruegel computations.

Overall, the measures taken by the EU appear to have effectively managed to reduce the impact of the pandemic on the intra-EU trade in goods. As many goods are traded via trucks, the challenge was significantly different from extra-EU trade, which is mostly traded via maritime and coastal shipping and which involves virtually no personal travel. But the "green lanes" policy managed to ensure the effective cross-border shipment of goods and thus ensured the sustained functioning of the Single Market for goods.

The frictionless trade of goods is particularly important for food supplies. Reports of hoarding are indicative of consumers' concerns over the resilience of food supply networks. However, these supply networks have proven to be remarkably stable during the pandemic. Figure 25 shows intra-EU trade in food products relative to previous year. It declined by 14% in May, but it recovered very quickly and was already at its 2019 level in June.

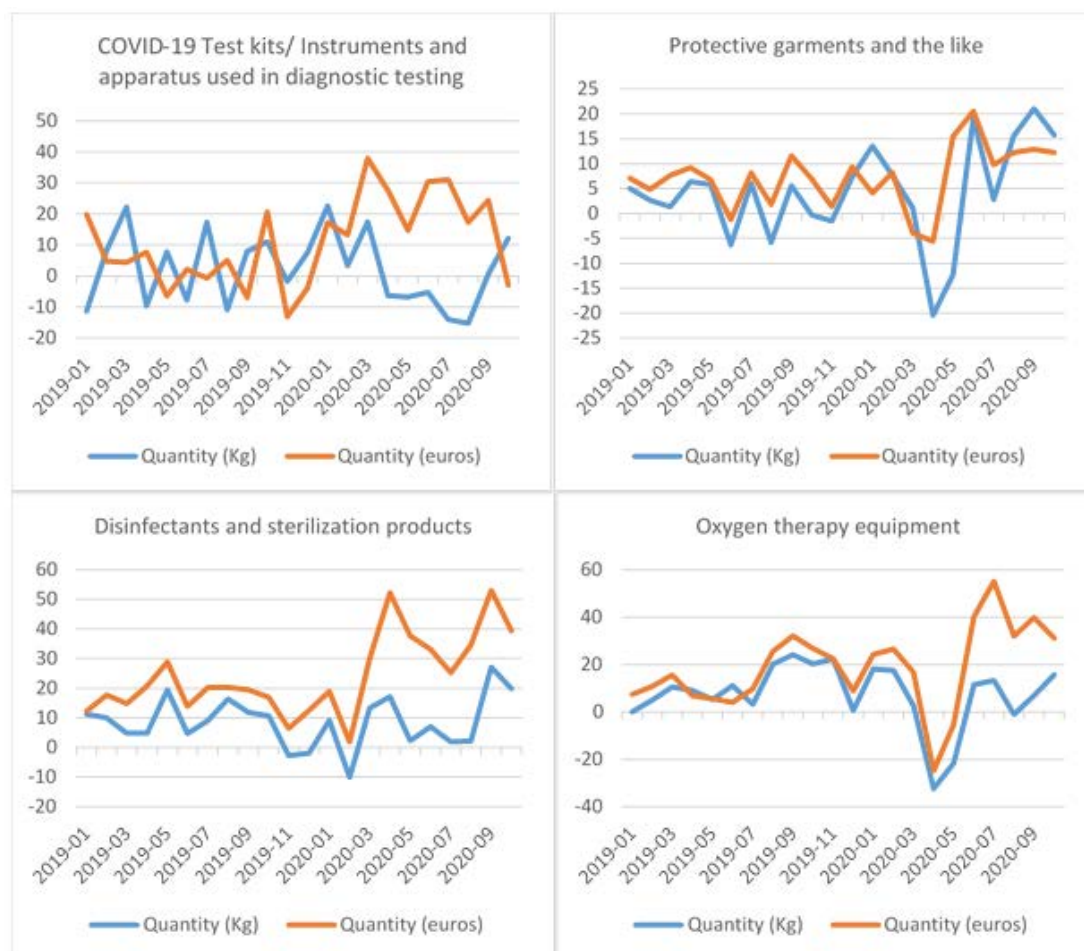
Figure 25: Intra-EU trade in food products, percentage change from previous year (January 2019 – October 2020)



Source: Eurostat, "EU trade since 1988 by BEC" (DS-032655). Monthly Data. Numbers based on Exports between the different Member States of the European Union. Bruegel computations.

During the pandemic, medical goods were of exceptional importance, in particular personal protective equipment (PPE). There was a severe shortage of PPE during the first wave of the pandemic in March. Export restrictions within the EU by Germany and France have been avoided by imposing EU wide export controls, as noted in Brekelmans & Poitiers (2020). The intra-EU trade in COVID-19 related medical goods is displayed in Figure 26. Despite the avoidance of intra-EU export restrictions, there was a 20% drop in intra-EU trade of protective garments (measured by weight), and a 30% drop in the intra-EU trade of oxygen therapy equipment (a category that includes respirators). Other goods like disinfectants saw a surge in price, but no lasting decline in trade volume as measured by weight.

Figure 26: Intra-EU trade in COVID-19 related medical goods, percentage change relative to the previous year (January 2019 – October 2020)



Source: Eurostat, "EU trade since 2015 of COVID-19 medical supplies" (DS-1180622). Monthly Data. Numbers based on Exports between the different Member States of the European Union. Bruegel computations.

6.4. Impact on mobility of physically delivered services between Member States

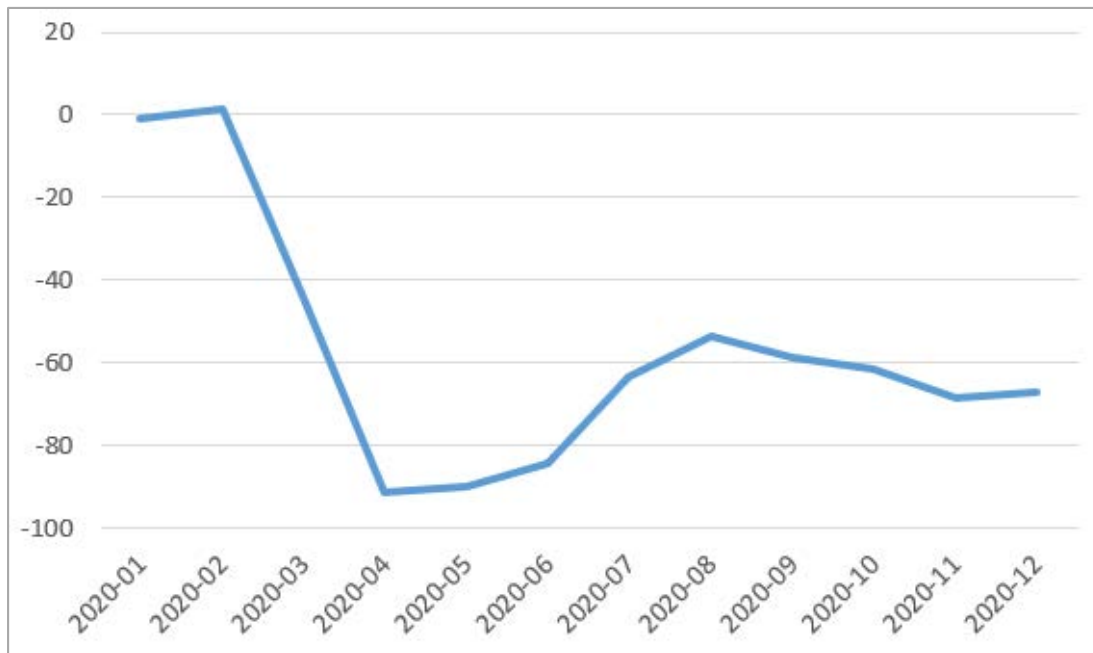
Physically delivered services where the service provider crosses borders (mode 4 of the GATS taxonomy of trade in services) faced similar hurdles to those of trade in services where the consumer travels (mode 2 of the GATS taxonomy, tourism in particular). Professional services that are traded via mode 4 notably include advertising, architecture and engineering, business and management consulting, computer services, educational services, and research and development. Additionally, mode 3 trade in services – trade through the establishment of a commercial presence – also involves the physical travel of employees (within a firm) across borders.

The initial border closures brought the cross-border travel that was integral to these services to a halt. As shown in Figure 15, during the first wave of the pandemic, overnight stays in touristic accommodations had all but completely collapsed, with only 5% of normal activity. While the number of overnight stays recovered to some extent, the number of intra-EU guests in September was still more than 80% below its 2019 level. These numbers include both tourism and business travel, and indicate the degree to which the cross-border delivery of physical services has been affected by the pandemic.

Looking at the number of flights within the EU in Figure 27 tells a similar story. In November 2020, the

number of flights within the EU was down by 68%, and at its lowest in April, the number of flights was less than 10% of its 2019 level. The decrease in the number of passengers is likely even lower, as many flights departed with passenger numbers well below capacity.

Figure 27: Commercial flights in the EU, percentage change from previous year



Source: Eurostat based on Eurocontrol, online data code: AVIA_TF_CM.

As discussed in Chapter 3, the travel restrictions in many Member States included some exemptions for business travel. Nevertheless, the statistics indicate that most businesses (and consumers) followed governmental guidelines and restricted their travel activities to essential trips.

As the physical delivery of services was severely impeded by the travel restrictions and border closures, many businesses have switched to online delivery of services where possible. The pandemic has proven to be a catalyst for the shift of services to digital delivery. Many physical meetings and conferences through which professional services in particular would have been delivered under normal circumstances have been delivered using digital tools instead. As we show in Figure 28, this has led to a surge in the usage of videoconferencing tools. Data on trade in services for 2020 are not yet available, but this growth in the use of digital tools suggests that the pandemic, while causing large impediments for the physical delivery of services, might not have significantly impeded the delivery of professional services.

This option was not open to the cross-border physical delivery of services where the consumer travels across borders, in particular tourism and related accommodation and food and beverage services. We will discuss this economic sector, which is among the hardest hit, in more detail in Chapter 7.

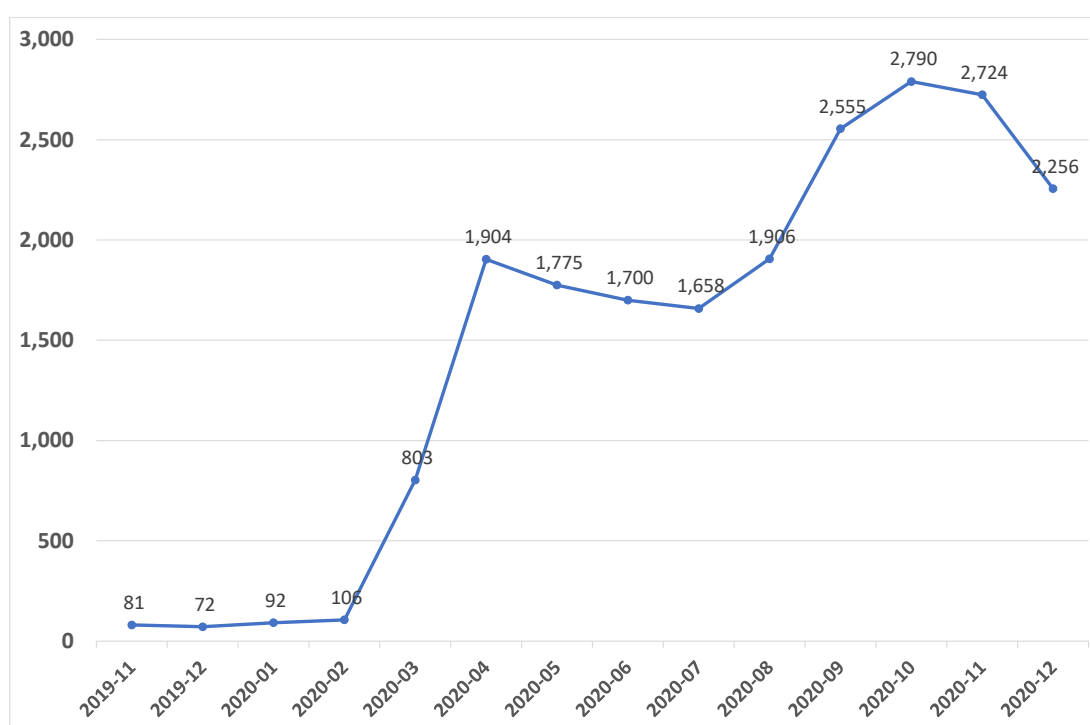
6.5. Impact on mobility of online services between Member States

The impediments to physical mobility through the measures taken at both the EU and the Member State level, as well as voluntary restrictions of movement, have proven to be a catalyst for digitalisation. In many sectors, telework has become the norm. There has been a substantial shift from the physical to the digital in many sectors of the economy: from physical meetings to online virtual meetings and public events, including concerts; from physical visits to the cinema to online viewing via Netflix, Amazon Prime, and Mubi for example; from shopping in stores to purchasing via e-commerce.

UNCTAD (2015) identifies the following services as potentially digitally deliverable: insurance and pension services; financial services; charges for the use of intellectual property; telecommunications, computer and information services; business services; and audio-visual and related services. Before the pandemic, many of these services, while potentially digitally deliverable, were typically delivered through physical travel and via commercial presence. The pandemic has led to a substitution of business travel by digital delivery through videoconferencing, leading to some services now being delivered directly. The shift to videoconferencing has also changed the way in which companies trade services via subsidiaries (mode 3 of the GATS taxonomy). The travel of employees between branches has largely been substituted by digital means.

This use of online videoconferencing tools such as Zoom, Microsoft Teams and Cisco Webex has grown dramatically. Use of Zoom by Apple users worldwide, as estimated by SimilarWeb, increased by a factor of roughly 20 from February to April of 2020, moderated slightly as the lockdown eased in July and August, but then increased again in September through November as a result of the second wave lockdown (see Figure 28).

Figure 28: Monthly number of visits from SimilarWeb users to the Zoom website



Source: SimilarWeb⁶⁷, Bruegel calculations.

In audio-visual services, the trend to digital consumption has been accelerated, and the closure of physical venues such as cinemas and concert halls has led to the development of new formats. Digital concerts and artistic performances as well as "digital first" releases of blockbuster movies through streaming platforms have been new ways for consumers to enjoy the arts during lockdowns.

Despite the surge in usage of digital platforms in general, and video conferencing in particular, telecommunication networks have proven to be remarkably resilient (see OECD (2020b)). Hence there have been no major new hurdles in the delivery of online services. Instead, the digitalisation and

⁶⁷ SimilarWeb, zoom.us: December 2020 Overview, available at: <https://www.similarweb.com/website/zoom.us#overview>.

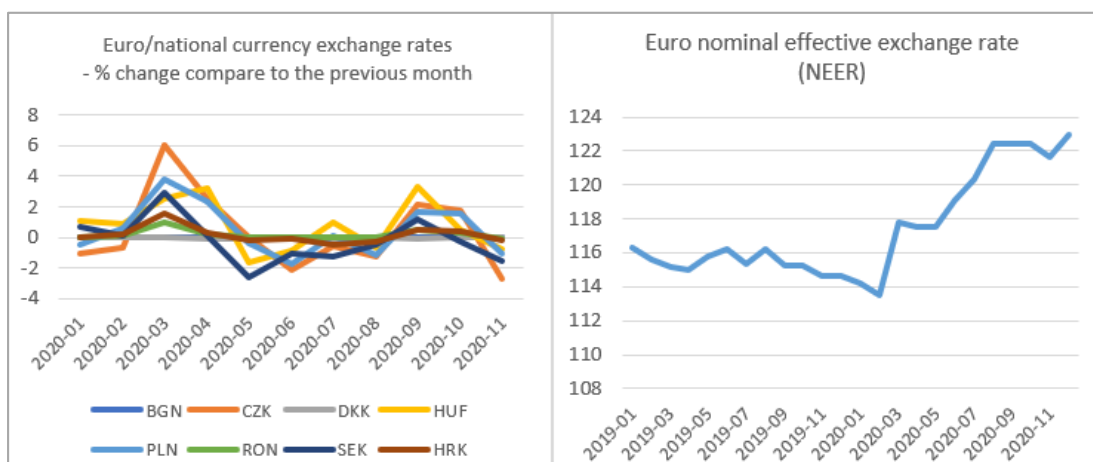
teleworking that have now become the norm might continue to be the norm, and might well allow many more services to be traded digitally than before the pandemic.

6.6. Impact on mobility of capital between Member States

There have been no capital restrictions within the EU Internal Market due to the pandemic; however, the pandemic has had a profound effect on European capital markets. As shown in Figure 1, household savings rates have increased considerably, and the ECB has intervened massively on the markets for sovereign bonds with the PEPP programme purchasing assets worth €1.85 trillion in order to counteract deflationary pressures (according to European Central Bank (2020a)).

The economic uncertainty caused by the pandemic led to an appreciation of the Euro as investors sought safe haven currencies and international capital flows collapsed (UNCTAD (2020) predicts that they will decline by 40%). Figure 29 shows changes in the exchange rates between the Euro and EU national currencies as well as the Euro nominal effective exchange rate. According to this benchmark exchange rate, the Euro appreciated around 7% between February and December 2020 against the currencies of its trading partners. There has also been some volatility in the exchange rates between the Euro and other EU currencies. As the outbreak of the pandemic caused massive uncertainty in March, there has been a depreciation of most national currencies in the EU against the Euro.

Figure 29: Euro exchange rates



Source: National currencies: authors' calculation based on Eurostat, online data code: TEIMF200; NEER: ECB, index 1999 Q1 = 100.

As response to the crisis, the ECB has reactivated existing and set up new currency swap lines. These swap lines to non-euro EU central banks ensure access to Euro liquidity and are an important tool to avoid financial stability risks in the EU. The ECB reactivated such a swap line with the central bank of Denmark and set up new ones with the central banks of Croatia and Bulgaria. Additionally, the ECB established repo facility (currency swap with collaterals) as an additional safety net with Romania's central bank and with the Hungarian central bank (see European Central Bank (2020a)).

7. ECONOMIC IMPACT ON SPECIFIC SECTORS AND POPULATIONS

KEY FINDINGS

- The first lockdown led to an initial supply shock through factory and border closures. The lockdowns and sanitary requirements are a burden to the provision of services, in particular in retail sales and hospitality.
- In business services, teleworking seems to have been an effective tool so far, thereby more or less upholding the level of short-term productivity.
- Industrial activity has largely recovered from the initial shock, and industry seems to be among the less affected sectors.
- The decrease in demand due to economic uncertainty and physical distancing strongly affected the retail and hospitality sector. Many of the restrictions, including the closing of non-essential shops, had a dramatic negative impact. Countries with a large tourism sector are among the worst affected.
- Women, who are more likely to work in the strongly affected services sector and more likely to bear the burden of childcare, are particularly affected by the pandemic recession.
- There is a strong increase in youth unemployment in the EU, as the young are likely to work in the most affected sectors and are more vulnerable.

The European Union was hit by the COVID-19 pandemic in a number of ways, causing shocks to both supply and demand in the economy. The decline in productivity due to border closures and the necessity to restrict physical contacts negatively affected the supply and the physical distancing of consumers, while an increase in precautionary savings depressed demand. Additionally, economic uncertainty has led to a decline in private investment, impacting demand for investment goods and lowering the medium-term growth outlook. In this chapter, we will look at how the measures discussed in Sections 7.1, 7.2, and 7.3 have affected different sectors and populations.

7.1. The disruption of European businesses and supply chains

Initially, much of the economic discussion focused on the resilience of value chains as the pandemic spread in China before coming to the EU. While there has been a substantial shock to global merchandise trade in spring of 2020, supply chains quickly adapted, and trade flows are expected to decline much less than initially feared (see the discussion in Chapter 2).

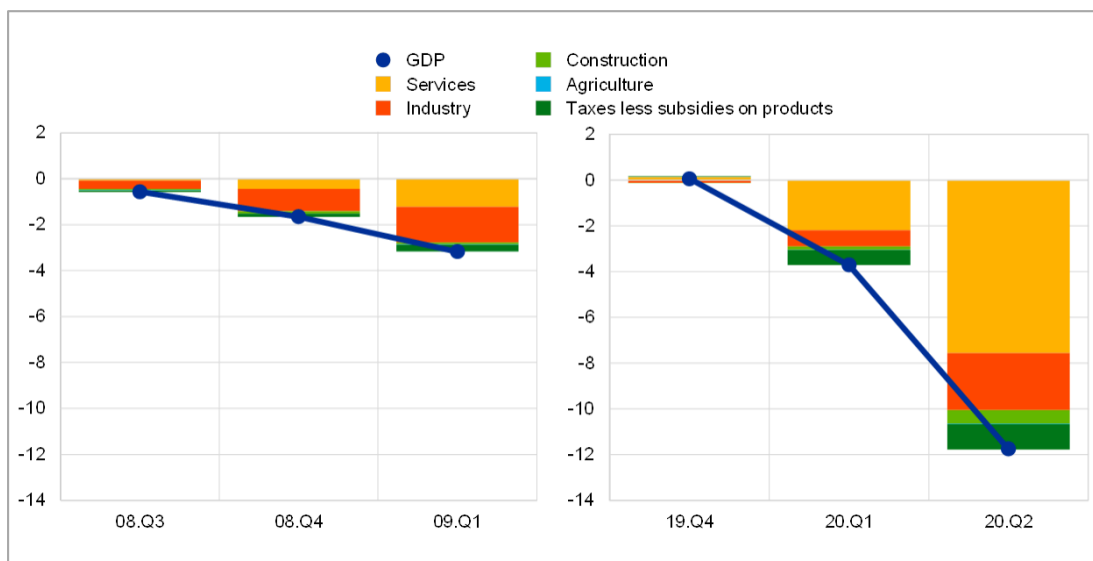
The story for the trade of goods within the European Single Market has been similar to the international one. The supply chains of European businesses had been initially disrupted, due to border closures and factory shutdowns. However, the measures discussed in Chapter 5.2, and in particular the reopening of borders for goods trade, allowed the resumption of production relatively quickly. Industrial production managed to recover after its drop of 80% in the second quarter, and the manufacturing sector will likely be much less affected by the recession than the services sector.

The provision of consumer goods was also affected by the pandemic, primarily in the early stages (for instance toilet paper, bicycles, and webcams, often caused by changed consumer behaviour); however, the early shortages have for the most part been addressed, and overall there have been very few

shortages. As discussed in Section 6.3, while there was a large decline in trade in consumer goods in spring 2020 due to the disruptions of supply, nonetheless trade and revenue recovered by the summer. This trend might have reversed again in recent months due to the second wave of the pandemic.

The service sector was most strongly affected by the pandemic. As Figure 30 shows, it contributed to the majority of the decline in economic output during the first wave. Mandatory teleworking and border closures for business travellers have significantly altered the way in which many professional services operate. Short term measures of productivity in the services sector are difficult to come by, but reports of large enterprises planning a continuation of telework after the end of the pandemic and seeking a permanent reduction in office space suggest that that a significant short term negative effect on productivity is not likely. There is the possibility that the pandemic will lead to positive effects on productivity in professional and business services, as the adoption of videoconferencing could outlast travel restrictions and telework mandates. If telework and the uptake in digital tools persist after the pandemic, the depression of business travel and in the office rental market could remain after the economy returns to (a new) normal.

Figure 30: Quarterly change in gross value added, comparison between the Global Financial Crisis and the COVID-19 pandemic



Source: Speech by Philip R. Lane, Haver and ECB staff calculation based on data for Germany, Spain, France, Italy and the Netherlands⁶⁸.

Physical distancing requirements have negatively affected the potential productivity of many physical delivered services in the hospitality and retail sector. Restaurants, hotels and other services were mandated to reduce their capacities and to introduce new sanitary measures. Physical retail stores were severely restricted by the closure of their shops during lockdowns. However, it seems likely that the lack of consumer demand for the services meant that the potential reduction in supply was outweighed by the collapse of demand that we will discuss in the next section. While border closures and sanitary requirements are a burden for the personal transport sectors (and airlines in particular), the depression of demand due to the health risks associated with travel and the burden of quarantine

⁶⁸ Speech by Philip R. Lane, Member of the Executive Board of the ECB, at the 62nd NABE Annual Meeting "Global Reset? Economics, Business, and Policy in the Pandemic" on 6 October 2020, entitled "The ECB's monetary policy in the pandemic: meeting the challenge", available at: <https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp201006~e1d38a1ccc.en.html> [accessed 14 February 2021].

requirements are likely the dominant factors behind the depression of air travel caused by the pandemic.

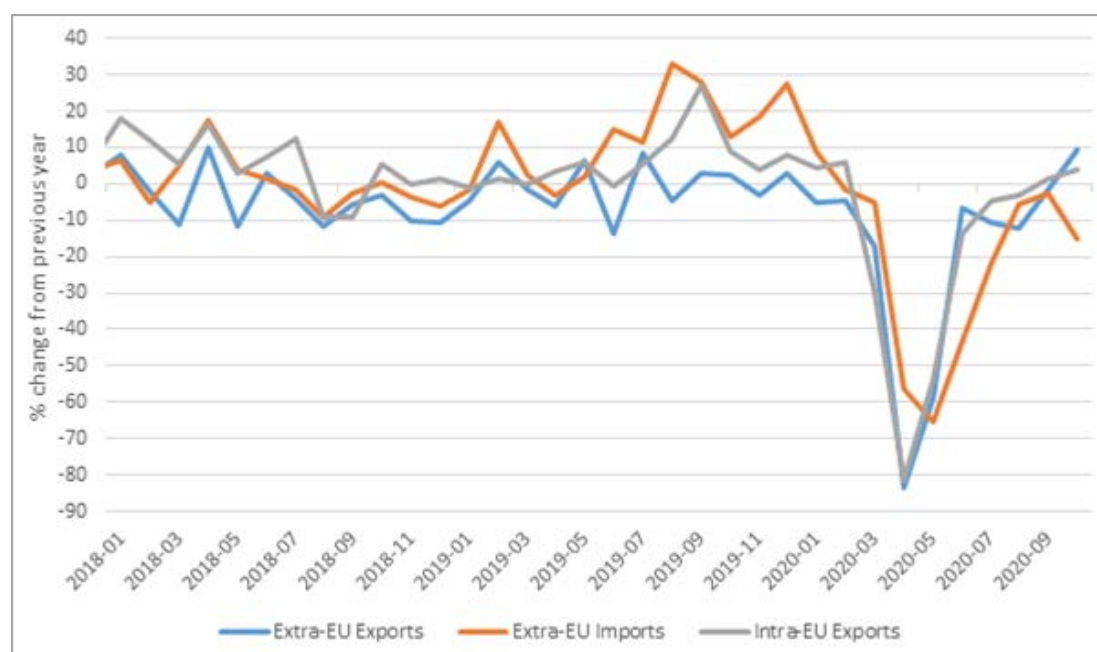
The arts and other recreational services have also been severely restricted in their activities. Concert halls, theatres and other artistic venues have been closed because of the risk of "super spreading" events when a large number of people gather. While new digital formats have been invented and digital performances have become more important, they are not a sufficient source of employment and revenue for most artists. The loss in cultural value, while hard to measure, is certainly a significant loss during the pandemic.

7.2. The effect of the decline in consumer demand

The second major shock to the European economy was to consumer demand. The negative effect of the pandemic on consumer demand, in particular on the demand for retail in physical stores and for physically delivered services, was arguably more important than the decline in production capacities and the disruption in transport networks. It can also explain part of the differences in economic impact of the pandemic between EU Member States.

As shown in Figure 1 and Figure 2, consumers increased their precautionary savings and delayed the purchase of durable consumer goods. However, the turnover in the market for durable consumer goods has recovered, and so did the trade in such goods. The trade in cars is shown in Figure 31, which is a particularly important industry in the EU. In Germany, it accounts for 10% of exports and an important share of intermediate goods trade (see Observatory of Economic Complexity (2020)). The industry sector as a whole accounts for around 16% of employment in the EU, making it the second largest after retail trade and hospitality (see Eurostat (2021a)). As with other durable goods, trade in cars had returned to pre-pandemic levels by September.

Figure 31: Trade in Transport Equipment, Parts and Accessories thereof / Passenger Motor Cars (January 2018 – October 2020)



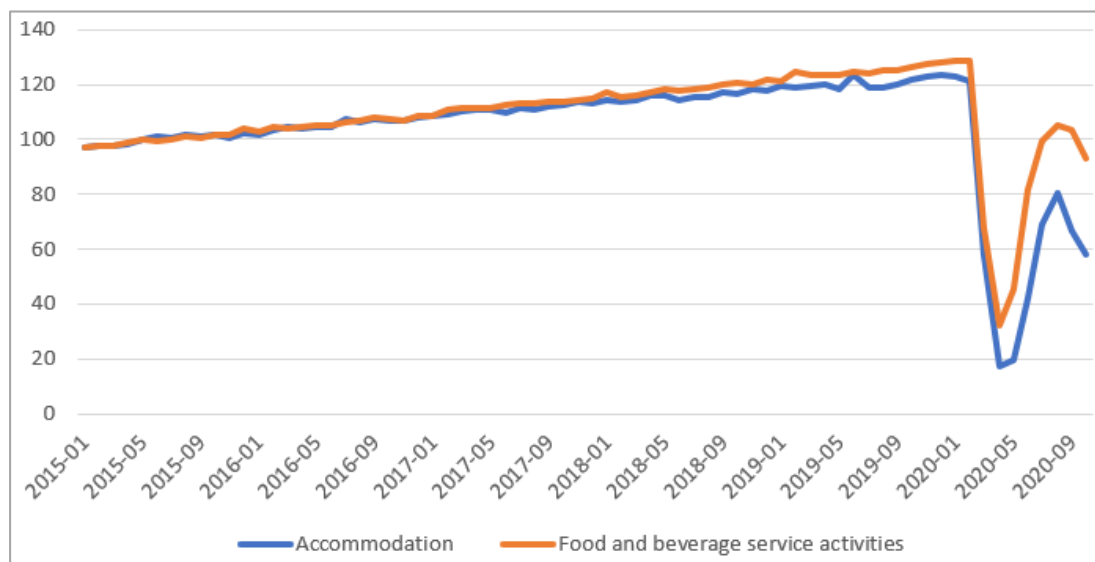
Source: Eurostat, "EU trade since 1988 by BEC" (DS-032655). Monthly Data. Intra-EU trade is computed based on Exports between the different Member States of the European Union. Bruegel computations.

While the recovery of trade in capital goods, industrial activity and revenue in durable goods point to a relatively low impact of the pandemic on industry, there are medium-term risks for the sector. Capital goods and durable consumer goods are important EU exports, and the decline in investment as well as the global recession will likely depress the demand for such goods in the coming years.

In terms of employment, retail trade and hospitality are together the largest sector of the European economy. They account for around a quarter of employment in the EU and is the most affected by the economic downturn (see Eurostat (2021a)). The revenue in retail trade recovered relatively quickly after the first wave. However, online retail substituted for a part of the demand for consumer goods, and the labour-intensive retail in physical stores experienced a strong decline in demand as consumers avoided the health risks associated with retail activity. As Section 6.1 reports, consumers are spending much less time in retail activities during the first and second waves of the pandemic. The physical retail sector also faces long term risks to its demand if the increase in e-commerce activity persists after the pandemic.

The hospitality and tourism sectors are similarly hit by the decline in consumer demand. While restaurants were forced to limit their supply and to close during lockdowns, outside of lockdowns the decline in demand dominated the reduction in supply caused by physical distancing requirements. Figure 32 shows the turnover in accommodation as well as food and beverage services. The two are strongly linked in regions with much tourism where a large share of demand for food and beverage services come from visitors staying in hotels. They saw a decline in their turnover in the second quarter of 2020 by 80%, mimicking the decline in overnight stays documented in Section 6.2.

Figure 32: Turnover in accommodation and food services



Source: Eurostat, online data code: STS_SETU_M. Index 2015=100, monthly data, seasonally adjusted.

Together with the severity of the first wave and physical distancing discussed in Section 6.1, this can explain an important part of the differences between EU Member States in the effect of the pandemic. Southern European economies that are more dependent on tourism services experience much more severe economic downturns than northern and eastern European ones. In Spain and Italy, which are among the EU Member States experiencing the largest decrease in GDP, 1 in 10 people are directly employed by the tourism sector (see Eurostat (2018)). Greece, Malta, Cyprus and Portugal also felt the impact of the pandemic. As tourism is highly regionally concentrated, some regions experienced a strong decline in employment and economic activities due to the collapse of tourism. The hospitality sector has also been negatively affected by the decline in business travel discussed in Section 6.2. While

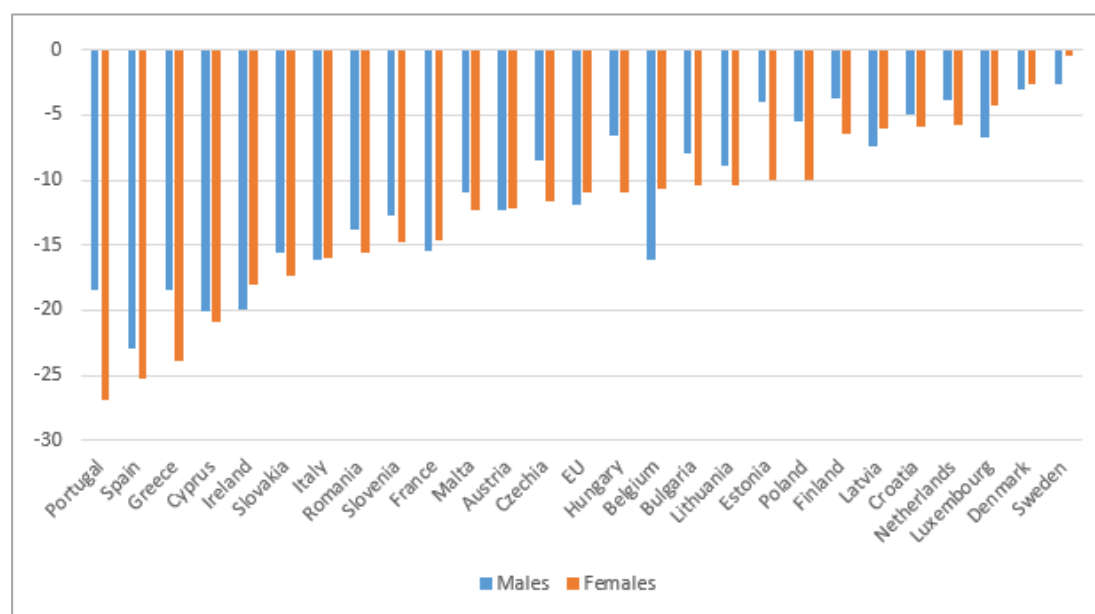
business travel is less geographical concentrated, it also accounts for an important share of revenue in the hospitality sector.

7.3. Effects on different sections of the population

Different populations within the EU experienced the economic fallout of the pandemic very differently. In the following, we will use employment data to obtain an overview.

Industry as well as professional and business services could largely sustain their economic activity through telework, and through social distancing in factories. This opportunity was not open to the retail and hospitality sector, nor to the arts and entertainment sector. Regional concentration of the most affected sectors created negative spill-over effects to overall economic activity. Together with the difference in stringency and length of lockdowns discussed in Chapter 3, this can explain why Southern European populations were much more strongly affected by the increase in unemployment caused by the pandemic. Figure 33 shows the decline in hours worked during the first wave of the pandemic for men and women. Southern European Member States are generally those that experienced the largest loss of employment, with Spain, Portugal and Greece losing about a fifth to a quarter of total hours worked.

Figure 33: Percentage change in total actual hours worked in the main job between Q1 and Q2 of 2020 in the EU Member States



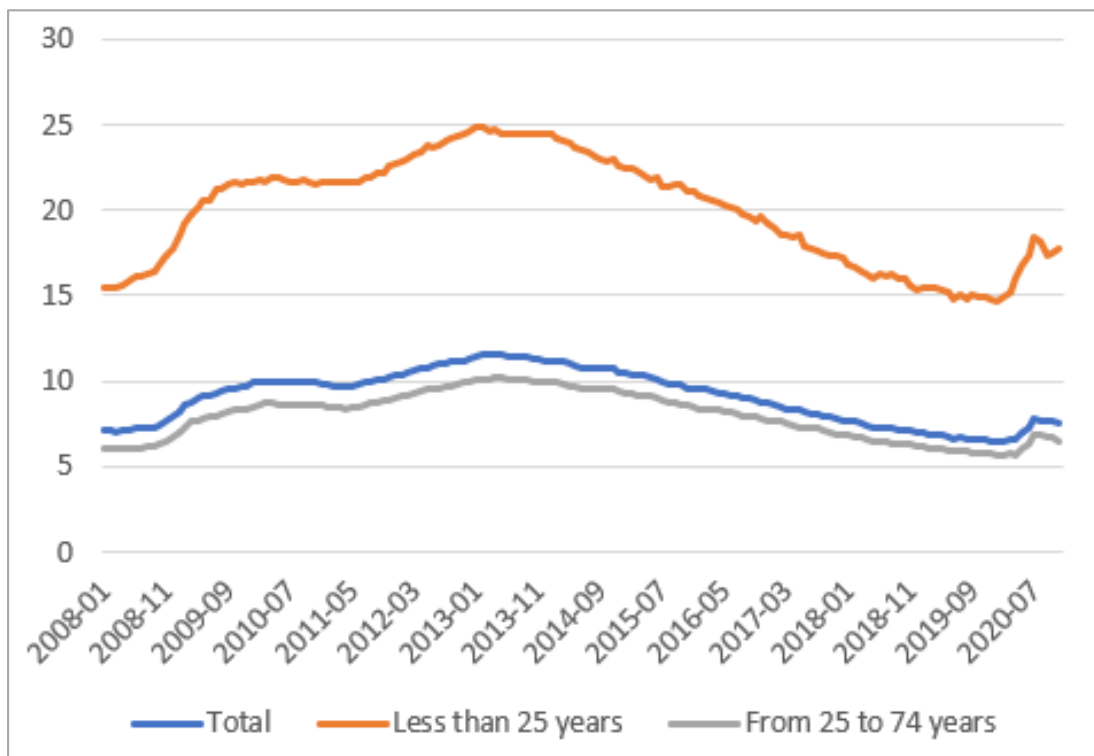
Source: Authors' own calculations based on Eurostat, online data code: LFSI_AHW_Q. Quarterly data, seasonally adjusted.

There are also large differences in the effects on different demographic groups, though the picture is not homogenous among the Member States. In the EU as a whole, the percentage change in hours worked is very similar for men and women. However, in some southern and central European Member States, the hours worked by women decreased much more than the hours worked by men. Historically, recessions often had a larger effect on male than on female employment, but this recession is different. This is likely due to the peculiar nature of the pandemic recession, which "spares" industry jobs which are more likely occupied by men, while it affects strongly services sector jobs more often occupied by

women (see Alon et al. (2020)). Additionally, the closure of schools led to the need for home schooling of children, which was often taken up by women⁶⁹.

Finally, the young are much more affected by the economic downturn than older cohorts. Figure 34 shows the unemployment rate of those below and above the age of 25. After the youth unemployment rate had recovered from its peak in 2012 and 2013, it increased strongly again after the outbreak of the recession. While overall unemployment increased by one percentage point, youth unemployment surged by almost 4 percentage points to a level of around 18%. This is the result of the young struggling to enter a labour market in deep recession, being more likely to hold temporary jobs and being more likely to work in the strongly affected services sector. There is the risk of long term "scarring" effects for the young who are struggling in the current economy, creating another "lost generation" in Europe (see Grzegorzczak & Wolff (2020)).

Figure 34: Unemployment rate by age in the EU-27



Source: Eurostat, online data code: UNE_RT_M. Monthly data, seasonally adjusted.

⁶⁹ For a survey on the distribution of childcare responsibilities in England see Andrew, A., S. Cattan, M. Costa Dias, C. Farquharson, L. Kraftman, S. Krutikova, A. Phimister and A. Seville, 2020, "The gendered division of paid and domestic work under lockdown", COVID ECONOMICS, Centre for Economic Policy Research (CEPR), Issue 39, 23 July 2020, available at: <https://cepr.org/content/covid-economics-vetted-and-real-time-papers-0>.

8. RECOMMENDATIONS

The pandemic was not anticipated. It was not the first pandemic of this century, and it might not be the last, but it was the first in one hundred years to have a dramatic impact on Europe. Most aspects of the European response were reasonably good (with the noteworthy exception of late placement of orders for authorised vaccines). Our recommendations focus on those aspects where more thought or more work are called for.

At times of crisis, Member States can be tempted to take strong, urgent actions to protect life or property, as they should; however, consideration of the EU consequences needs to be better incorporated into Member State planning, and not just as an afterthought.

Ex post studies: Studies are needed to provide a solid foundation for new policy initiatives to strengthen preparedness for future pandemics; however, it is too early to make a full and detailed assessment of the effectiveness of measures undertaken. Given the political sensitivity of these issues, it will be essential to ensure the independence and objectivity of such studies.

A long term focus on investing in pandemic preparedness must be part of this assessment. Cutler & Summers (2020) argue that the cost of the pandemic to the US is on the order of €14 trillion (at the May 2020 USD-EUR exchange rate), and that in light of this immense cost, longer term investments in public health services and infrastructure (including testing, contact tracing, and isolation) must be maintained even after concerns about the COVID-19 pandemic recede.

Border openings and closings: The European and Member State response has been good in most cases, but not in all. The abrupt closing of borders in Poland, for instance, caused long queues of trucks until the EU intervened with a plea to establish "green lanes". The Commission has provided guidance acknowledging that Member States are entitled to close their borders to persons for various reasons, and that the different epidemiological situation among the Member States can constitute a valid justification. Nonetheless, it may be appropriate to establish a higher threshold and stronger requirements for prompt notification of any measures limiting the flow of goods (even though trucks and trains are driven by people).

Travel and tourism: Uniform, standardised EU vaccination passports and testing forms have obvious merit. These vaccination passports and testing forms, possibly in combination with other measures, might provide a valid basis for re-opening travel among the Member States. Member States that depend on tourism are understandably anxious to re-open their borders, but there are many uncertainties as to the degree to which doing so might accelerate the spread of COVID-19. Policymakers should therefore seek to identify broad risk-based decision principles that could be applied as appropriate for future pandemics.

There is also a need for uniform EU rules for safe conduct (including the use of PPE) in airplanes and airports operating within Europe. A uniform legally enforceable health regime for air travel would benefit consumers, the air travel sector, and all of the sectors that benefit from travel.

Notifications: Restrictive measures implemented by the Member States must be notified promptly to the Commission. It is doubtful that this was done in all cases. Some strengthening of laws in place for notifying restrictions on cross-border delivery of services may be needed.

Consumer protection: The Commission put useful measures in place to protect consumers whose travel was cancelled, and to foster trust in vouchers, but many consumers are still waiting for refunds to which they are entitled. Current Commission rules make it possible for Member States to compensate consumers for losses incurred due to cancelled trips booked with companies that

subsequently became insolvent, but do not require it. A policy intervention where for instance firms in the sector would be obliged to fund some form of insurance against possible insolvency should be considered.

Automated contact tracing: In the interest of preserving privacy, nearly all Member States have decided to refrain from implementing the kind of automated contact tracing tools that have enjoyed good success in a number of Asian countries, opting instead for more limited exposure notification applications that play no role in contact tracing. The European public appears to be satisfied with these decisions, but a price has been paid. As the incidence of cases grew during the second wave, manual contact tracing has been abandoned in many Member States and regions because manual contact tracing staff were overwhelmed. A future pandemic might be even worse than the current one. With that in mind, a sober reflection is needed on the broad decision principles that should guide future decisions on the trade-offs between public health benefits and consumer privacy. This reflection should not wait until we are once again in crisis.

Centralised procurement of vaccines, medication, and PPE: The shift from national to European level for procurement of PPE, medical equipment and vaccines (under rescEU, the Joint Procurement Agreement (JPA), and the EU Emergency Support Initiative (ESI)) has been hugely positive and surprisingly effective. This important step would have been unthinkable in the absence of the COVID-19 health crisis. It avoided competition among the EU Member States for purchasing scarce equipment and vaccines. This has been of great benefit to the public, especially in smaller or poorer Member States that might otherwise have been shut out.

The ESI has had a mixed record in procuring vaccines. For future pandemics, the requisite contingent funding for vaccine purchase, not just for research and development, should be legally committed in advance so that funds can be tapped on very short notice (but used only if and as needed). For the early phases of a pandemic, it is appropriate to promote the development of multiple medications or vaccines; once the front-runners have begun to emerge, however, it is essential to quickly acquire a sufficient supply of the medications or vaccines that are actually authorised for use in Europe, before other countries or regions lock up all available supplies. Timely placement of orders is called for in order to enable firms in the sector to ramp up production, and to put the necessary supply chains and cooperative arrangements in place. Purchasing priorities need to reflect the fact that the value of stopping a pandemic as quickly as possible will often be vastly greater than the cost of vaccines⁷⁰. Responsible EU agencies must therefore be empowered to place well-reasoned bets, not all of which will pay off in the end.

Supply chains need proactive management. Fuest and Gros (2021) recommend, for instance, that future contracts include payment of a premium for timely delivery.

Continued attention to the international dimension: For the EU, ensuring availability of key life-saving vaccines and medications for all is not only a matter of humanity and charity, but also of enlightened self-interest. Controlling the COVID-19 pandemic worldwide (1) is essential for public health at home, in order to reduce the risk of constant re-introduction of infection; (2) reduces the risk of the Darwinian evolution of new and even more dangerous variants of a virus in non-EU populations that are still at risk; and (3) bolsters our own economy to the extent that it means that foreign trading partners are able to continue to buy the goods and services that we produce, and to produce the goods and services that we desire. COVAX is a positive initiative that should continue to be supported, but it is small in comparison to what is needed to control the COVID-19 pandemic and future pandemics

⁷⁰ Cutler and Summers (2020) estimated the cost of the COVID-19 pandemic in the US to be some €18,000 (May 2020 USD-EUR exchange rate) per person per year. The three vaccines currently authorised in the EU are estimated to cost between €4 and €28 per dose.

worldwide. International diplomacy and political will are required going forward (possibly including the Trade and Health initiative in the WTO) to ensure an effective collective response going forward.

REFERENCES

- Aktay, A. et al., 2020. *Google COVID-19 Community Mobility Reports: Anonymisation Process Description (version 1.1)*. Available at: <https://arxiv.org/abs/2004.04145>.
- Alon, T., Doepke, M., Olmstead-Rumsey, J. & Tertilt, M., 2020. *The shecession (she-recession) of 2020: Causes and consequences*. Available at: <https://voxeu.org/article/shecession-she-recession-2020-causes-and-consequences>.
- Anderson, J. et al., 2020. *The fiscal response to the economic fallout from the coronavirus*. Available at: <https://www.bruegel.org/publications/datasets/covid-national-dataset/>.
- Andrew, A. et al., 2020. *The gendered division of paid and domestic work under lockdown*. COVID ECONOMICS, Centre for Economic Policy Research (CEPR), Issue 39, 23 July 2020, pp. 109-138.
- BBC, 2020. *Coronavirus: Swedish King Carl XVI Gustaf says coronavirus approach 'has failed'*. Available at: <https://www.bbc.com/news/world-europe-55347021> [Accessed 12 1 2021].
- Beuter, R., 2020. EU public procurement policy in the context of COVID-19. In: *EIPA Briefing*. s.l.:s.n.
- Brekelmans, S. & Poitiers, N., 2020. *EU trade in medical goods: why self-sufficiency is the wrong approach*. Available at: <https://www.bruegel.org/2020/04/eu-trade-in-medical-goods-why-self-sufficiency-is-the-wrong-approach/>.
- Bruegel, 2020. *Loan guarantees and other national credit-support programmes in the wake of COVID-19*. Available at: <https://www.bruegel.org/publications/datasets/loan-guarantees-and-other-national-credit-support-programmes-in-the-wake-of-covid-19/>.
- CENELEC & CEN, 2020. Press Releases. *CEN and CENELEC responses to COVID-19*. Available at: <https://www.cencenelec.eu/covid19/Pages/default.aspx> [Accessed 12 1 2021].
- Cheng, M. & A. Ghopal, 2020. *Poor countries face long wait for vaccines despite promises*. Available at: <https://apnews.com/article/poorer-countries-coronavirus-vaccine-0980fa905b6e1ce2f14a149cd2c438cd>.
- Claeys, G., 2020. *The European Union's SURE plan to safeguard employment: a small step forward*. Available at: <https://www.bruegel.org/2020/05/the-european-unions-sure-plan-to-safeguard-employment-a-small-step-forward/>.
- Cutler, D. and L. Summers, 2020, *The COVID-19 Pandemic and the \$16 Trillion Virus*, *Journal of the American Medical Association*. Available at: <https://jamanetwork.com/journals/jama/fullarticle/2771764> [Accessed 4 2 2021].
- European Central Bank, 2020a. *The provision of euro liquidity through the ECB's swap and repo operations*. Available at: <https://www.ecb.europa.eu/press/blog/date/2020/html/ecb.blog200819~0d1d04504a.en.html#addsearch=pepp>.
- European Central Bank, 2020b. *The ECB's monetary policy in the pandemic: meeting the challenge*. Available at: <https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp201006~e1d38a1ccc.en.html>.
- European Commission, 2004. *Regulation (EC) No 261/2004 of the European Parliament and of the Council of 11 February 2004 establishing common rules on compensation and assistance to passengers in the event of denied boarding and of cancellation or long delay of flights, and repealing*. Available at: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32004R0261>.

- European Commission, 2008. *Consolidated version of the Treaty on the Functioning of the European Union*. Available at: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A12008E260>.
- European Commission, 2015a. *Commission Delegated Regulation (EU) 2015/2446 of 28 July 2015 supplementing Regulation (EU) No 952/2013 of the European Parliament and of the Council as regards detailed rules concerning certain provisions of the Union Customs Code*. Available at: <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX:32015R2446>.
- European Commission, 2015b. *Explanatory Note on the Joint Procurement Mechanism*. Available at: https://ec.europa.eu/health/sites/health/files/preparedness_response/docs/jpa_explanatory_en.pdf.
- European Commission, 2015c. *Commission Implementing Regulation (EU) 2015/2447 of 24 November 2015 laying down detailed rules for implementing certain provisions of Regulation (EU) No 952/2013 of the European Parliament and of the Council laying down the Union Customs Code*. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32015R2447>.
- European Commission, 2020a. *European Economic Forecast, Summer 2020 (Interim), European Economy, Institutional Paper 132*. Available at: https://ec.europa.eu/info/sites/info/files/economy-finance/ip132_en.pdf.
- European Commission, 2020b. *Commission Staff Working Document. Identifying Europe's recovery needs*. Available at: <https://eur-lex.europa.eu/legal-content/FR/TXT/?uri=CELEX%3A52020SC0098%2801%29&qid=1612955159151>.
- European Commission, 2020c. DG COMP. *State aid rules and coronavirus*. Available at: https://ec.europa.eu/competition/state_aid/what_is_new/covid_19.html [Accessed 12 1 2021].
- European Commission, 2020d. *State aid: Commission approves €12 million Danish scheme to compensate damages caused by cancellations of large public events due to COVID-19 outbreak*. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_20_454 [Accessed 12 1 2021].
- European Commission, 2020e. *State aid: Commission approves €6 billion German measure to recapitalise Lufthansa*. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1179 [Accessed 12 1 2021].
- European Commission, 2020f. *State aid: Commission expands Temporary Framework to recapitalisation and subordinated debt measures to further support the economy in the context of the coronavirus outbreak (updated on updated on 8/05/2020)*. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_20_838 [Accessed 12 1 2021].
- European Commission, 2020g. *Travel during the coronavirus pandemic*. Available at: https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/travel-during-coronavirus-pandemic_en#:~:text=Further%20information-.Travel%20restrictions,times%20until%2030%20June%202020 [Accessed 12 1 2021].
- European Commission, 2020h. *Order on the preparation of hydro-alcoholic solutions intended for human hygiene in the context of the fight against the spread of the COVID-19 virus, TRIS Notification Number: 2020/107/F*. Available at: <https://ec.europa.eu/growth/tools-databases/tris/en/search/?trisaction=search.detail&year=2020&num=107> [Accessed 12 1 2021].

- European Commission, 2020i. *Government Decree No 587/2020 of 16 December 2020 on end-of-year restrictions concerning the distribution and use of pyrotechnic products, TRIS Notification Number 2020/817/HU*. Available at: <https://ec.europa.eu/growth/tools-databases/tris/en/search/?trisaction=search.detail&year=2020&num=817> [Accessed 12 1 2021].
- European Commission, 2020j. *Re-open EU: Commission launches a website to safely resume travelling and tourism in the EU*. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1045 [Accessed 12 1 2021].
- European Commission, 2020k. *Communication from the Commission. Guidance from the European Commission on using the public procurement framework in the emergency situation related to the COVID-19 crisis*. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020XC0401%2805%29>.
- European Commission, 2020l. *DG ECHO. Q&A on the activation of the Emergency Support Instrument in the context of COVID-19 Pandemic – December 2020*. Available at: www.ec.europa.eu/echo/sites/echo-site/files/updated_qa_dg_echo_esi_mobility_package_funds.docx.pdf.
- European Commission, 2020m. *Coronavirus Global Response: the Commission's contribution to the COVID-19 Vaccine Global Access Facility (COVAX)*. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1694 [Accessed 12 1 2021].
- European Commission, 2020n. *DG GROW. The notification procedure in brief*. Available at: <https://ec.europa.eu/growth/tools-databases/tris/en/about-the-20151535/the-notification-procedure-in-brief1/> [Accessed 17 2 2021].
- European Commission, 2020o. *TRIS database*. Available at: <https://ec.europa.eu/growth/tools-databases/tris/en/search/> [Accessed 12 1 2021].
- European Commission, 2020p. *Cohesion policy action against coronavirus*. Available at: https://ec.europa.eu/regional_policy/en/newsroom/coronavirus-response [Accessed 12 1 2021].
- European Commission, 2020q. *Communication from the Commission. Towards a phased and coordinated approach for restoring freedom of movement and lifting internal border controls*. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020XC0515%2805%29>.
- European Commission, 2020r. *White Paper on Artificial Intelligence: a European approach to excellence and trust*. Available at: https://ec.europa.eu/info/publications/white-paper-artificial-intelligence-european-approach-excellence-and-trust_en [Accessed 12 1 2021].
- European Commission, 2020s. *European data strategy - Making the EU a role model for a society empowered by data*. Available at: https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/european-data-strategy_en [Accessed 12 1 2021].
- European Commission, 2020t. *Commission Recommendation (EU) 2020/648 of 13 May 2020 on vouchers offered to passengers and travellers as an alternative to reimbursement for cancelled package travel and transport services in the context of the COVID-19 pandemic*. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32020H0648>.

- European Commission, 2020u. *Communication from the Commission. Tourism and transport in 2020 and beyond*. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0550>.
- European Commission, 2020v. *Joint European Roadmap towards lifting containment measures*. Available at: https://ec.europa.eu/info/sites/info/files/communication_-_a_european_roadmap_to_lifting_coronavirus_containment_measures_0.pdf.
- European Commission, 2020w. *Guidance on Customs issues related to the COVID-19 emergency*. Available at: https://ec.europa.eu/taxation_customs/covid-19-taxud-response/guidance-customs-issues-related-covid-19-emergency_en [Accessed 12 1 2021].
- European Commission, 2020x. *Commission Decision (EU) 2020/491 of 3 April 2020 on relief from import duties and VAT exemption on importation granted for goods needed to combat the effects of the COVID-19 outbreak during 2020 (notified under document C(2020) 2146)*. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32020D0491>.
- European Commission, 2020y. *Commission Decision (EU) 2020/1573 of 28 October 2020 amending Decision (EU) 2020/491 on relief from import duties and VAT exemption on importation granted for goods needed to combat the effects of the COVID-19 outbreak during 2020*. Available at: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32020D1573>.
- European Commission, 2020z. *COVID-19: Waiving VAT and customs duties on vital medical equipment*. Available at: https://ec.europa.eu/taxation_customs/covid-19-taxud-response/covid-19-waiving-vat-and-customs-duties-vital-medical-equipment_en [Accessed 12 1 2021].
- European Commission, 2020aa. *Guidance on Customs issues related to the COVID-19 emergency*. Available at: https://ec.europa.eu/taxation_customs/covid-19-taxud-response/guidance-customs-issues-related-covid-19-emergency_en#heading_0 [Accessed 12 1 2021].
- European Commission, 2021a. *COVID-19 Clearing House for medical equipment*. Available at: https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/emergency-support-instrument/covid-19-clearing-house-medical-equipment_en.
- European Commission, 2021b. *EU Solidarity Fund: supporting disaster recovery 2002-2020*. Available at: <https://cohesiondata.ec.europa.eu/stories/s/An-overview-of-the-EU-Solidarity-Fund-2002-2019/qpif-qzyn>.
- European Commission, 2021c. *Coronavirus Outbreak - List of Member State Measures approved under Articles 107(2)b, 107(3)b and 107(3)c TFEU and under the State Aid Temporary Framework*. Available at: https://ec.europa.eu/competition/state_aid/what_is_new/State_aid_decisions_TF_and_107_2b_107_3b_107_3c.pdf [Accessed 17 2 2021].
- European Council, 2020. *Council Directive (EU) 2020/876 of 24 June 2020 amending Directive 2011/16/EU to address the urgent need to defer certain time limits for the filing and exchange of information in the field of taxation because of the COVID-19 pandemic*. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32020L0876>.

- European Parliament; Council, 2006. *Directive 2006/123/EC of the European Parliament and of the Council of 12 December 2006 on services in the Internal Market*. Available at: <https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX%3A32006L0123>.
- European Parliament; Council, 2010. *Regulation (EU) No 1177/2010 of the European Parliament and of the Council of 24 November 2010 concerning the rights of passengers when travelling by sea and inland waterway and amending Regulation (EC) No 2006/2004*. Available at: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32010R1177>.
- European Parliament; Council, 2011. *Regulation (EU) No 181/2011 of the European Parliament and of the Council of 16 February 2011 concerning the rights of passengers in bus and coach transport and amending Regulation (EC) No 2006/2004*. Available at: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A32011R0181>.
- European Parliament; Council, 2013. *Regulation (EU) No 952/2013 of the European Parliament and of the Council of 9 October 2013 laying down the Union Customs Code*. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32013R0952>.
- European Parliament; Council, 2014. *Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC*. Available at: <https://eur-lex.europa.eu/eli/dir/2014/24/oj?locale=en>.
- European Parliament; Council, 2015a. *Directive (EU) 2015/1535 of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services*. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32015L1535>.
- European Parliament; Council, 2015b. *Directive (EU) 2015/2302 of the European Parliament and of the Council of 25 November 2015 on package travel and linked travel arrangements, amending Regulation (EC) No 2006/2004 and Directive 2011/83/EU of the European Parliament and of the Council*. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32015L2302>.
- European Union, 2020. *Coronavirus Global Response, Unite for Our Future | The Concert*. Available at: https://global-response.europa.eu/index_en.
- Eurostat, 2018. *Tourism industries - employment*. Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Tourism_industries_-_employment&oldid=445425 [Accessed 26 1 2021].
- Eurostat, 2020. *Tourism statistics - nights spent at tourist accommodation establishments*. Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php/Tourism_statistics_-_nights_spent_at_tourist_accommodation_establishments#January_to_September_2020:_Night_s_spent_in_EU27_tourist_accommodation_down_by_49.25_compared_with_the_same_period_in_201 [Accessed 12 1 2021].
- Eurostat, 2021a. *Employment by A*10 industry breakdowns, online data code: NAMA_10_A10_E*. Available at: https://ec.europa.eu/eurostat/databrowser/view/nama_10_a10_e/default/table?lang=en [Accessed 12 1 2021].
- Eurostat, 2021b. *Harmonised unemployment rate by sex, online data code: teilm020*. Available at: <http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=teilm020&lang=en> [Accessed 12 1 2021].

- Evenett, S. & Fritz, J., 2020. *Collateral Damage: Cross-Border Fallout from Pandemic Policy Overdrive, 26th Global Trade Alert report*, CEPR, London, Dec. 2020. Available at: <https://www.globaltradealert.org/reports/60> [Accessed 12 1 2021].
- Fuest, C. and D. Gros, 2021, Vaccines: How to use market-based incentives to ramp up production. Available at: https://www.ceps.eu/vaccines/?mc_cid=d05f070d4e&mc_eid=35076e6c7e [Accessed 4 2 2021].
- Goolsbee, A. & Syverson, C., 2020. *Fear, Lockdown, and Diversion: Comparing Drivers of Pandemic Economic Decline 2020*. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3631180 [Accessed 12 1 2021].
- Government of Romania, 2020. *Military Order Nr 3 of 24.03.2020 on measures to prevent the spread of COVID-19*. Available at: <https://www.mai.gov.ro/ordonanta-militara-nr-3-din-24-03-2020-privind-masuri-de-prevenire-a-raspandirii-covid-19/> [Accessed 12 1 2021].
- Grzegorzczak, M. & Wolff, G. B., 2020. *The scarring effect of COVID-19: youth unemployment in Europe*. Available at: <https://www.bruegel.org/2020/11/the-scarring-effect-of-covid-19-youth-unemployment-in-europe/> [Accessed 12 1 2021].
- Hale, T. et al., 2020. *Oxford COVID-19 Government Response Tracker*, s.l.: Blavatnik School of Government.
- IMF, 2020a. *World Economic Outlook, October 2020: A Long and Difficult Ascent*. Available at: <https://www.imf.org/en/Publications/WEO/Issues/2020/09/30/world-economic-outlook-october-2020> [Accessed 12 1 2021].
- IMF, 2020b. *Fiscal Monitor: Policies for the Recovery*. Available at: <https://www.imf.org/en/Publications/FM/Issues/2020/09/30/october-2020-fiscal-monitor> [Accessed 12 1 2021].
- IMF, 2020c. *World Economic Outlook, June 2020: A Crisis Like No Other, An Uncertain Recovery*. Available at: <https://www.imf.org/en/Publications/WEO/Issues/2020/06/24/WEOUpdateJune2020> [Accessed 12 1 2021].
- IMF, 2021. *World Economic Outlook Update January 2021*. Available at: <https://www.imf.org/en/Publications/WEO/Issues/2021/01/26/2021-world-economic-outlook-update> [Accessed 16 2 2021].
- Kahanec, M., Lafférs, L. & Marcus, J. S., 2020. *The impact of COVID-19 restrictions on individual mobility*. Available at: <https://www.bruegel.org/2020/05/the-impact-of-covid-19-restrictions-on-individual-mobility/> [Accessed 12 1 2021].
- Marcus, J. S. & Poitiers, N., 2020. *Apps without borders? How COVID-19 apps show the limits of the EU digital single market*. Available at: <https://www.bruegel.org/2020/07/apps-without-borders-how-covid-19-apps-show-the-limits-of-the-eu-digital-single-market/> [Accessed 12 1 2021].
- Marcus, J. S., 2020. *Big data versus COVID-19: opportunities and privacy challenges*. Available at: <https://www.bruegel.org/2020/03/big-data-versus-covid-19-opportunities-and-privacy-challenges> [Accessed 12 1 2021].

- Maurin, L., Pál, R. & Revoltella, D., 2020. *EU firms in the post-COVID-19 environment: Investment-debt trade-offs and the optimal sequencing of policy responses*. Available at: <https://voxeu.org/article/eu-firms-post-covid-19-environment> [Accessed 12 01 2021].
- McEvoy, E. & Ferri, D., 2020. *The Role of the Joint Procurement Agreement during the COVID-19 Pandemic: Assessing Its Usefulness and Discussing Its Potential to Support a European Health Union*. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3724639 [Accessed 12 1 2021].
- McWilliams, B. & Zachmann, G., 2020. *Bruegel electricity tracker of COVID-19 lockdown effects, Bruegel Datasets*. Available at: <https://www.bruegel.org/publications/datasets/bruegel-electricity-tracker-of-covid-19-lockdown-effects/> [Accessed 12 1 2021].
- Midoes, C., 2020. *Social distancing: did individuals act before governments?*. Available at: <https://www.bruegel.org/2020/04/social-distancing-did-individuals-act-before-governments/> [Accessed 12 1 2021].
- Milieu Consulting SRL, 2020, *The impact of COVID-19 on the Internal Market and consumer protection - IMCO Webinar Proceedings*, Publication for the committee on Internal Market and Consumer Protection, Policy Department for Economic, Scientific and Quality of Life Policies, European Parliament, Luxembourg. Available at: [https://www.europarl.europa.eu/RegData/etudes/IDAN/2020/658212/IPOL_IDA\(2020\)658212_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/IDAN/2020/658212/IPOL_IDA(2020)658212_EN.pdf).
- Observatory of Economic Complexity, 2020. *Country profile - Germany*. Available at: <https://oec.world/en/profile/country/deu#yearly-exports> [Accessed 12 1 2021].
- OECD, 2020b. *Keeping the Internet up and running in times of crisis*, s.l.: s.n.
- OECD, 2020. *Job retention schemes during the COVID-19 lockdown and beyond*. Available at: <http://www.oecd.org/coronavirus/policy-responses/job-retention-schemes-during-the-covid-19-lockdown-and-beyond-0853ba1d/> [Accessed 12 1 2021].
- Pelkmans, J., 2019. *The Single Market Remains the Decisive Power of the EU*. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3477869 [Accessed 12 1 2021].
- Tagliapietra, S., 2020. *COVID-19 is causing the collapse of oil markets: when will they recover?*. Available at: <https://www.bruegel.org/2020/04/covid-19-is-causing-the-collapse-of-oil-markets-when-will-they-recover/> [Accessed 12 1 2021].
- Toxvaerd, F., 2020. *Equilibrium Social Distancing, Cambridge Working Papers in Economics: 2021*. Available at: <https://www.inet.econ.cam.ac.uk/working-paper-pdfs/wp2008.pdf>.
- UNCTAD, 2015. *International Trade in ICT Services and ICT-enabled Services. Proposed Indicators from the Partnership on Measuring ICT for Development. Technical Note, No.3, October 2015.*, s.l.: s.n.
- UNCTAD, 2020. *World Investment Report 2020: International Production Beyond the Pandemic*, Geneva: United Nations Publication.
- WTO, 2020a. *COVID-19: Measures affecting trade in goods*. Available at: https://www.wto.org/english/tratop_e/covid19_e/trade_related_goods_measure_e.htm [Accessed 12 1 2021].
- WTO, 2020b. *COVID-19: Measures affecting trade in services*. Available at: https://www.wto.org/english/tratop_e/covid19_e/trade_related_services_measure_e.htm [Accessed 12 1 2021].

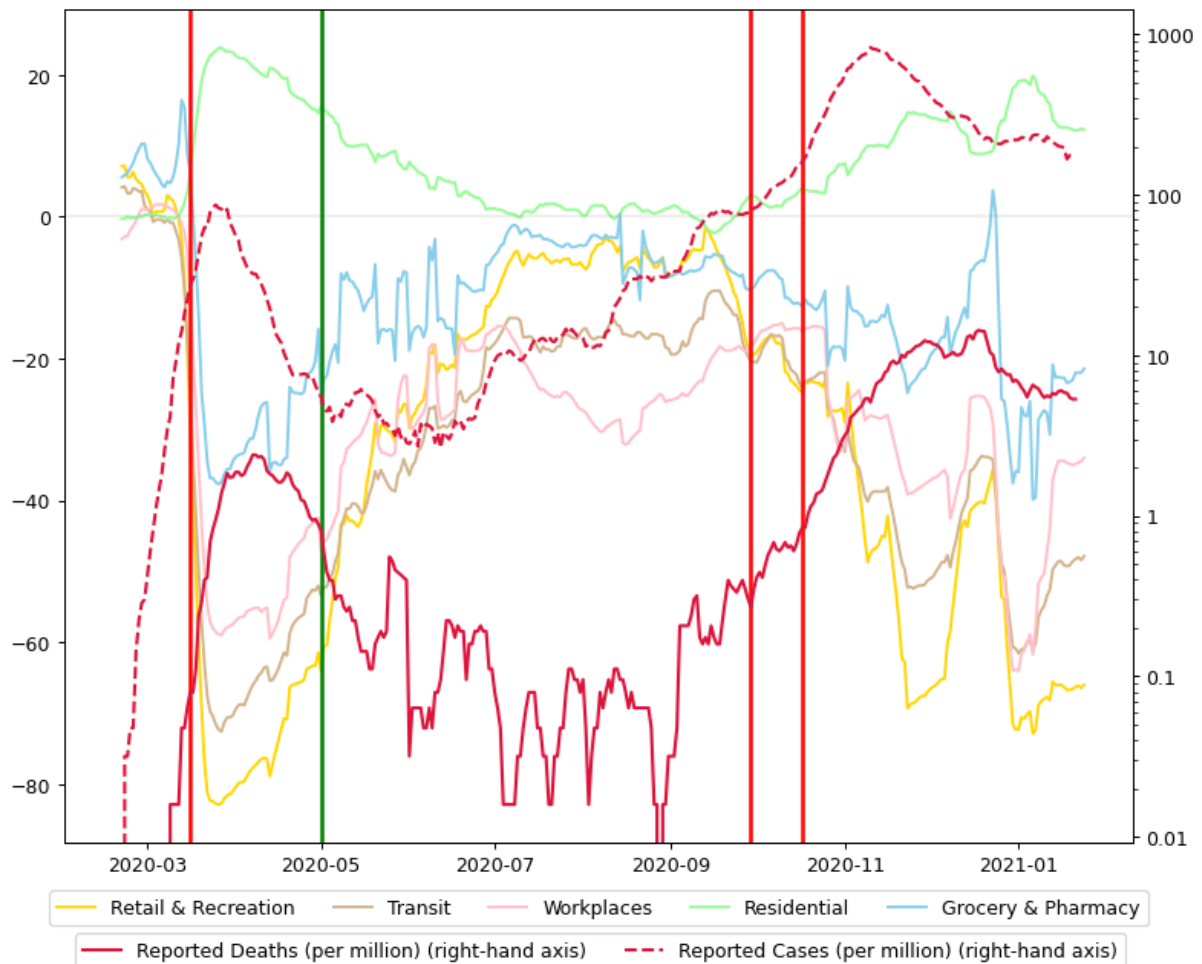
- WTO, 2020c. *COVID-19: Measures regarding trade-related intellectual property rights*. Available at: https://www.wto.org/english/tratop_e/covid19_e/trade_related_ip_measure_e.htm [Accessed 12 1 2021].
- WTO, 2020d. *COVID-19: Support measures*. Available at: https://www.wto.org/english/tratop_e/covid19_e/trade_related_support_measures_e.htm [Accessed 12 1 2021].
- WTO, 2020e. Press release. *Trade falls steeply in first half of 2020*. Available at: https://www.wto.org/english/news_e/pr858_e.htm [Accessed 12 1 2021].

ANNEX

In this annex, we provide graphs similar to those of Figure 12, Figure 13, and Figure 14 in the main text for most of the EU Member States. For comparison, we also provide equivalent data for the United Kingdom and for the United States.

For a detailed explanation of where the data comes from, and how to interpret it, see Section 6.1.

Figure 35: Mobility, COVID-19 incidence and government restrictions in Austria



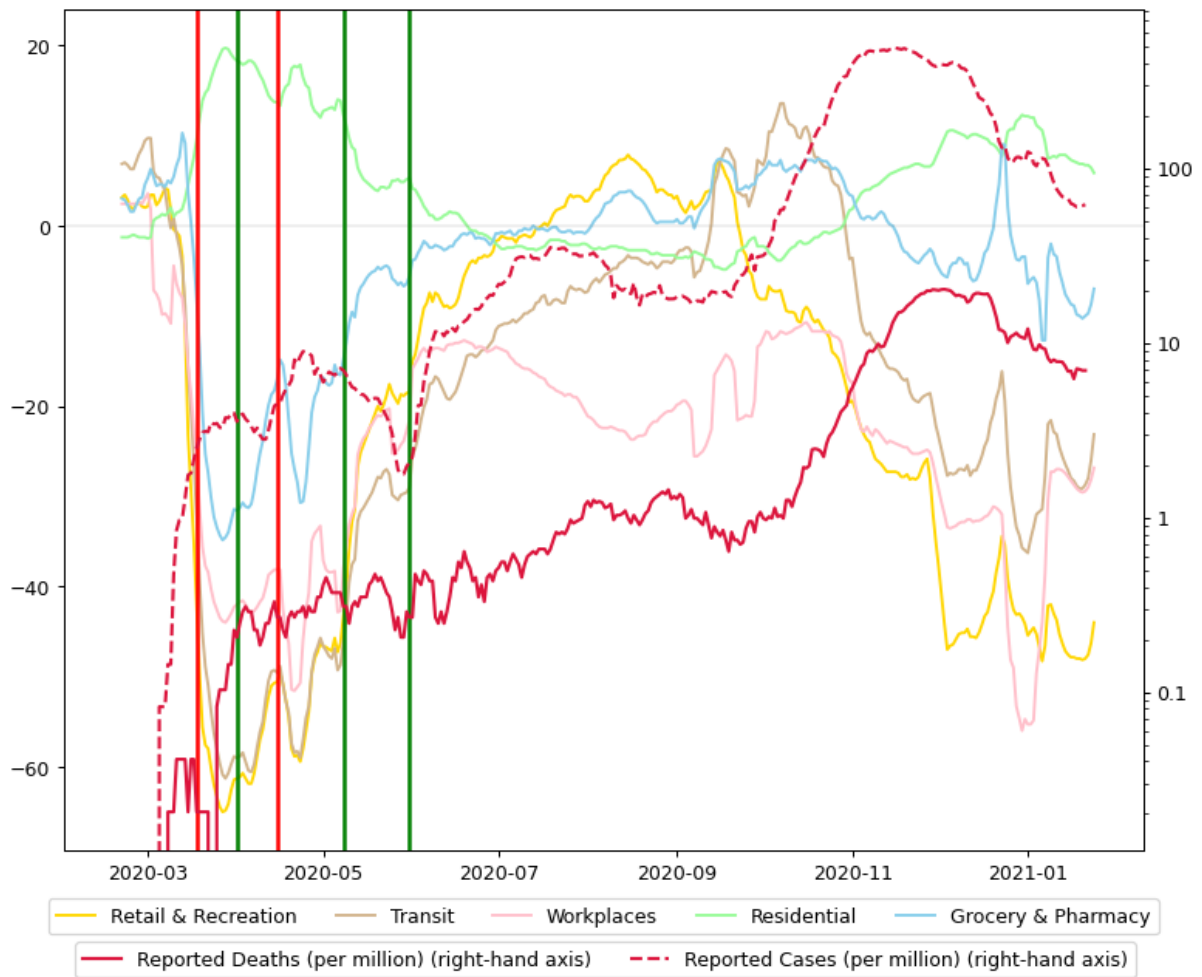
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 36: Mobility, COVID-19 incidence and government restrictions in Belgium



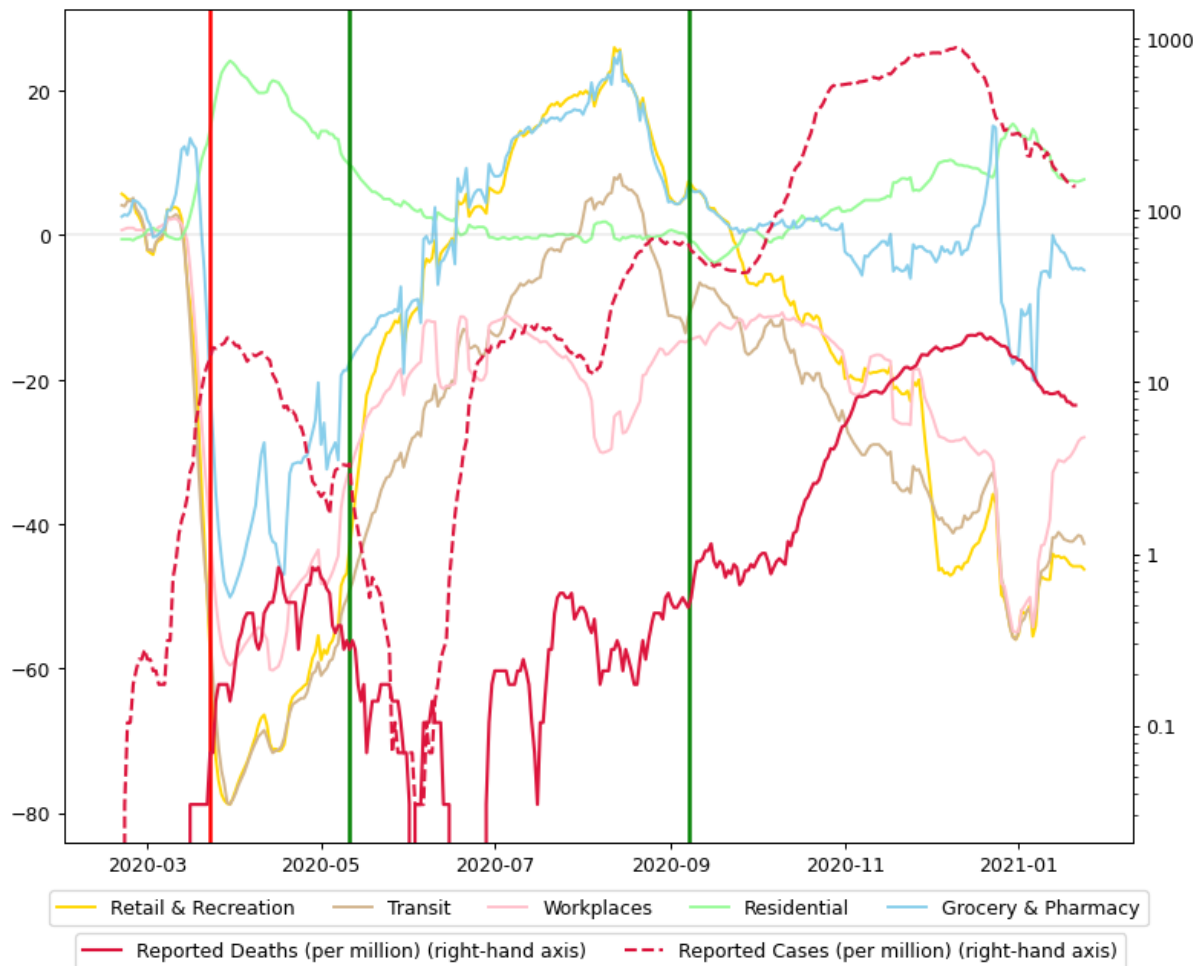
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 37: Mobility, COVID-19 incidence and government restrictions in Bulgaria



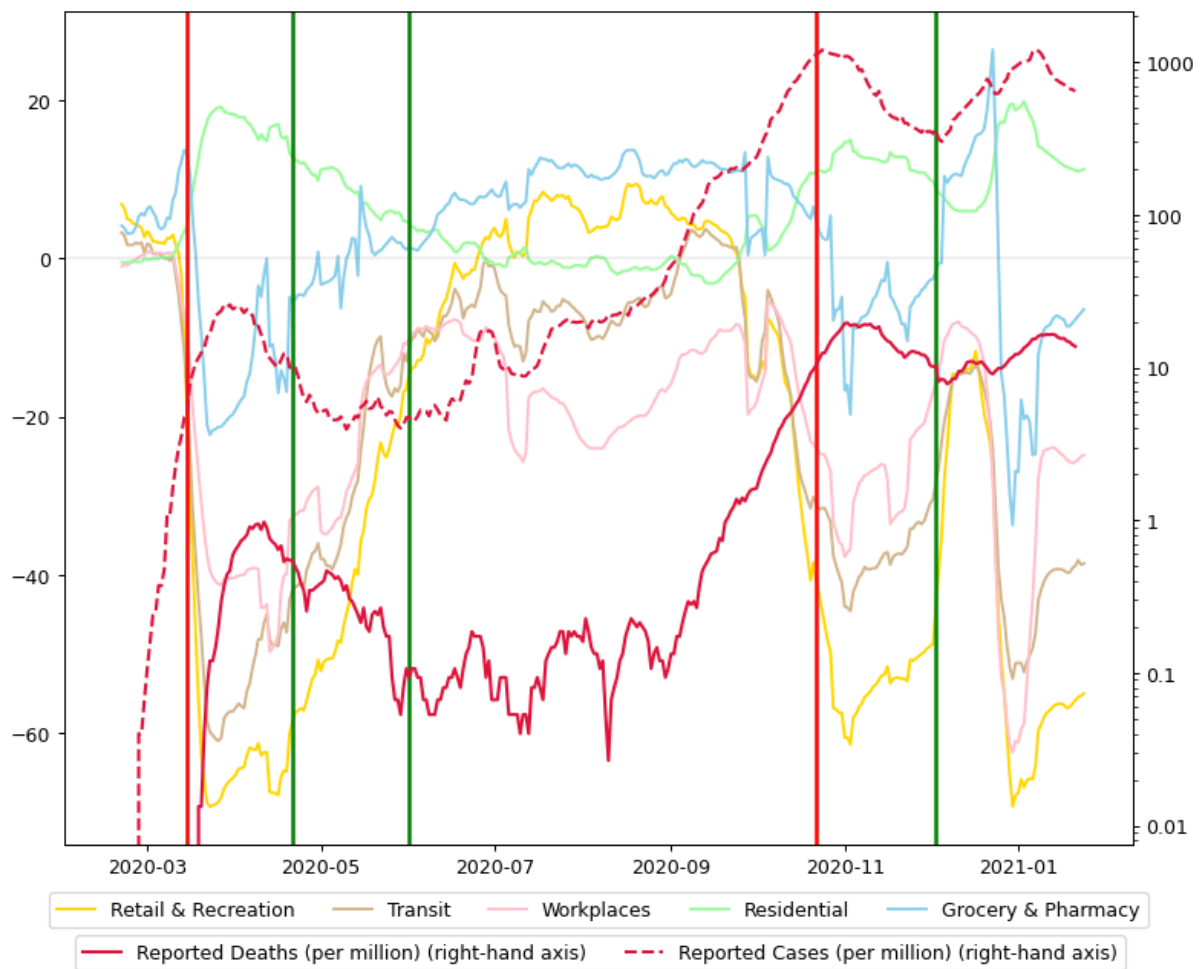
Source: [Our World in Data](https://data.worldbank.org/) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 38: Mobility, COVID-19 incidence and government restrictions in Croatia



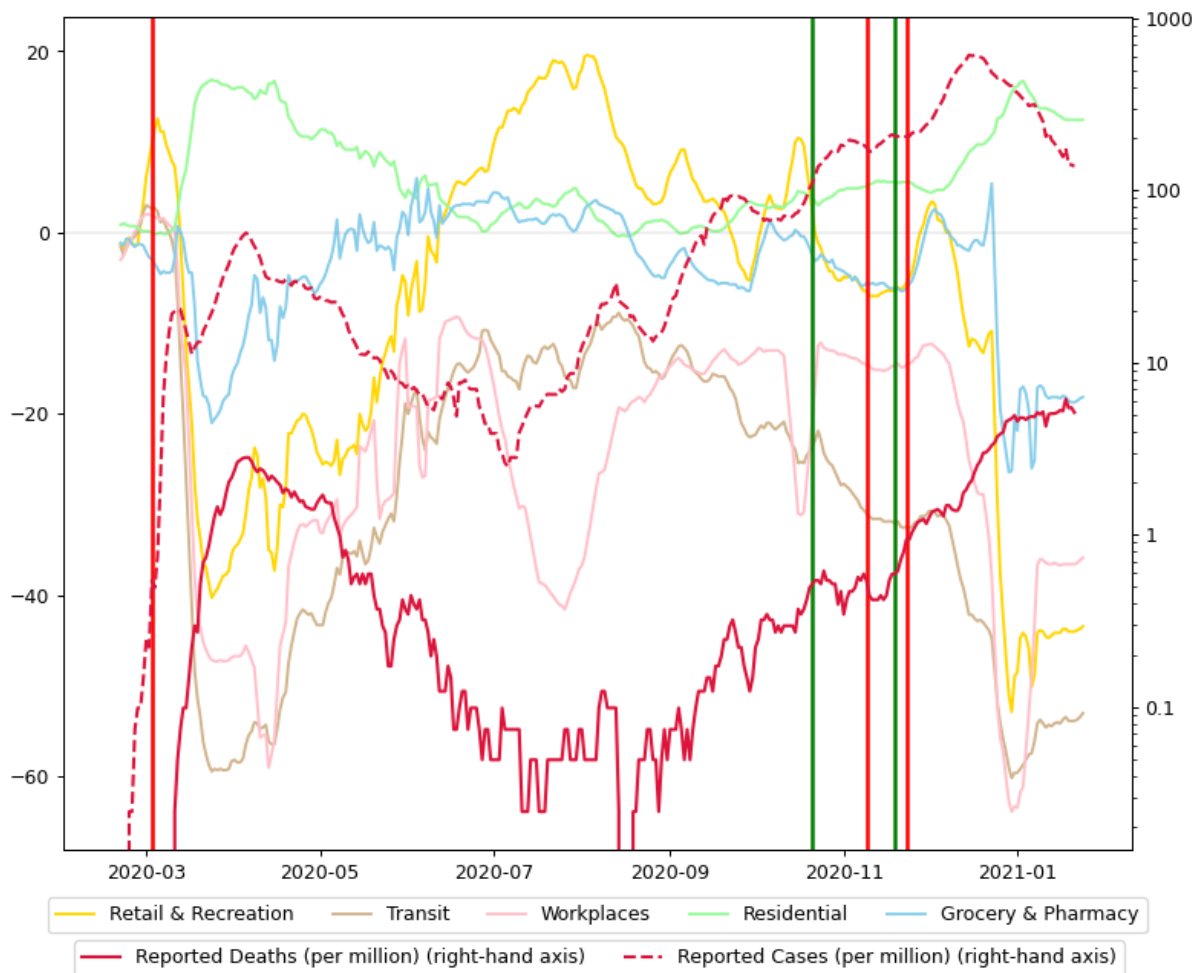
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 39: Mobility, COVID-19 incidence and government restrictions in Czechia



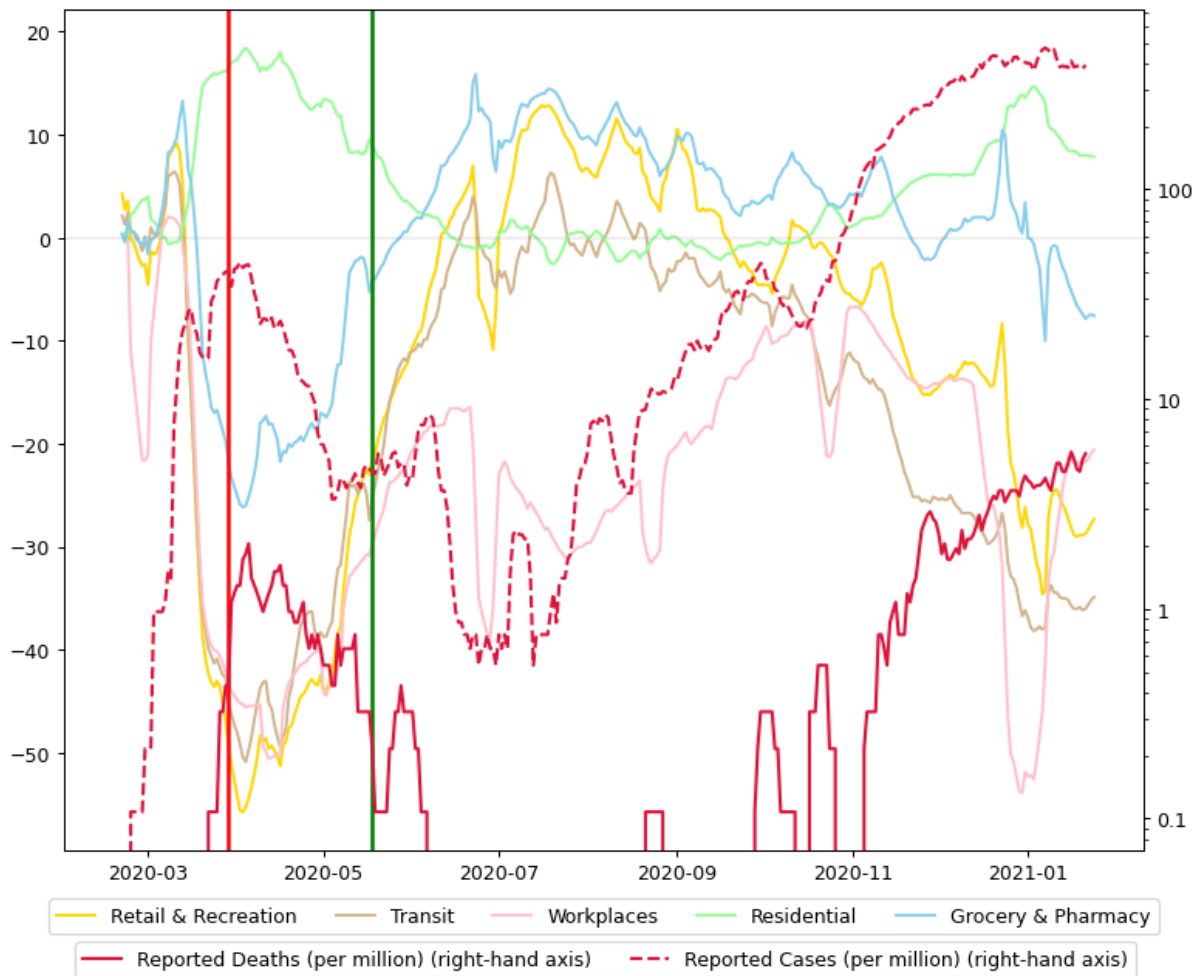
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 40: Mobility, COVID-19 incidence and government restrictions in Denmark



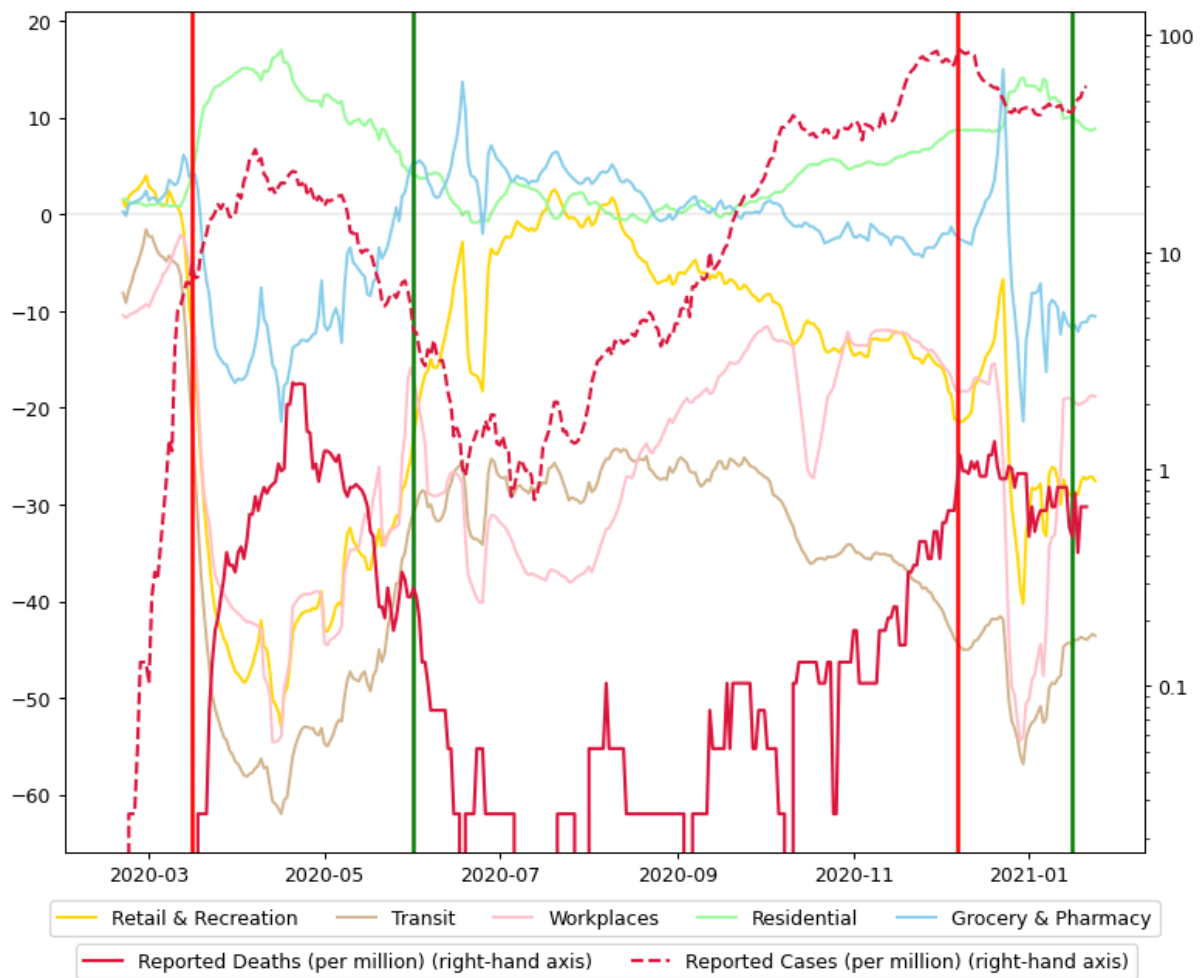
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 41: Mobility, COVID-19 incidence and government restrictions in Estonia



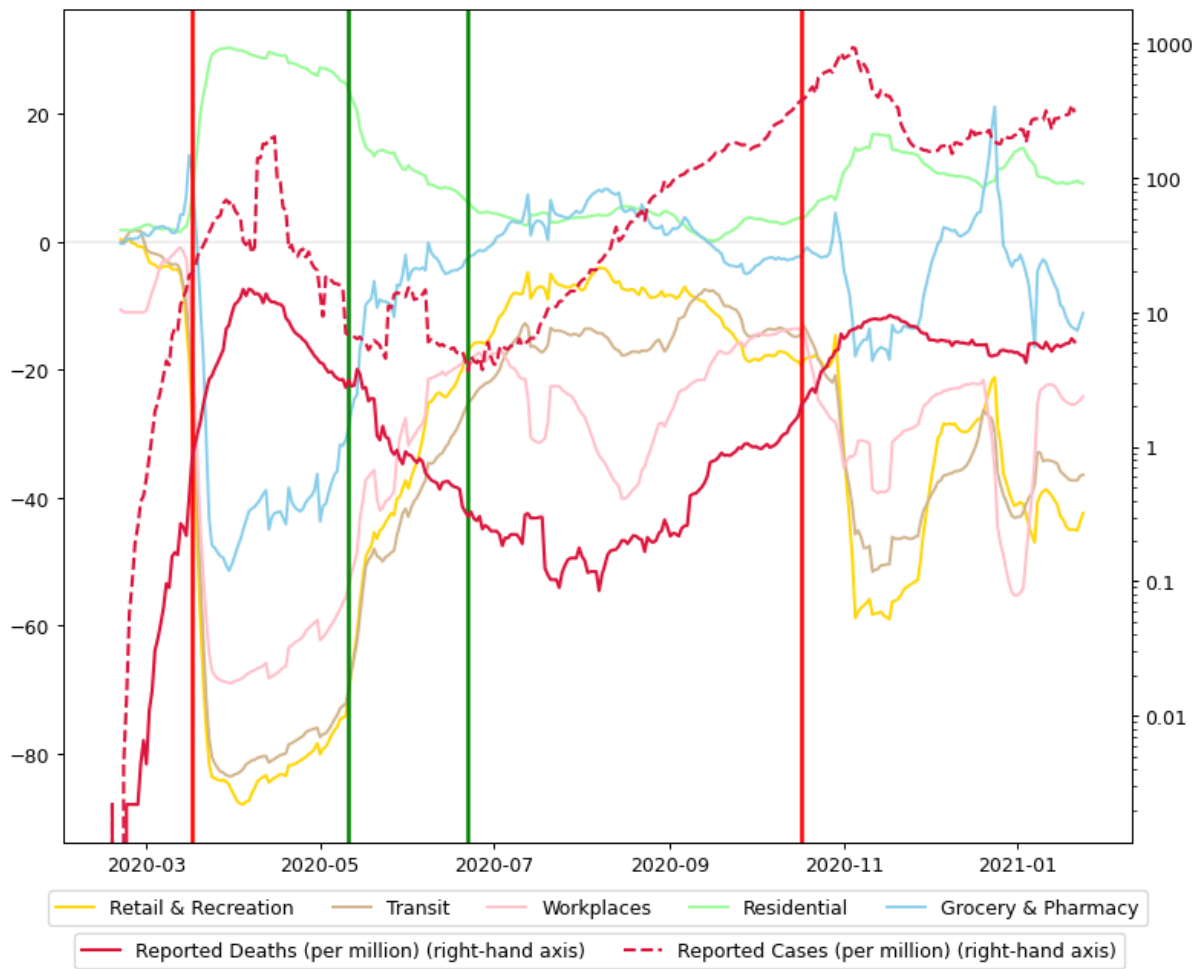
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 42: Mobility, COVID-19 incidence and government restrictions in Finland



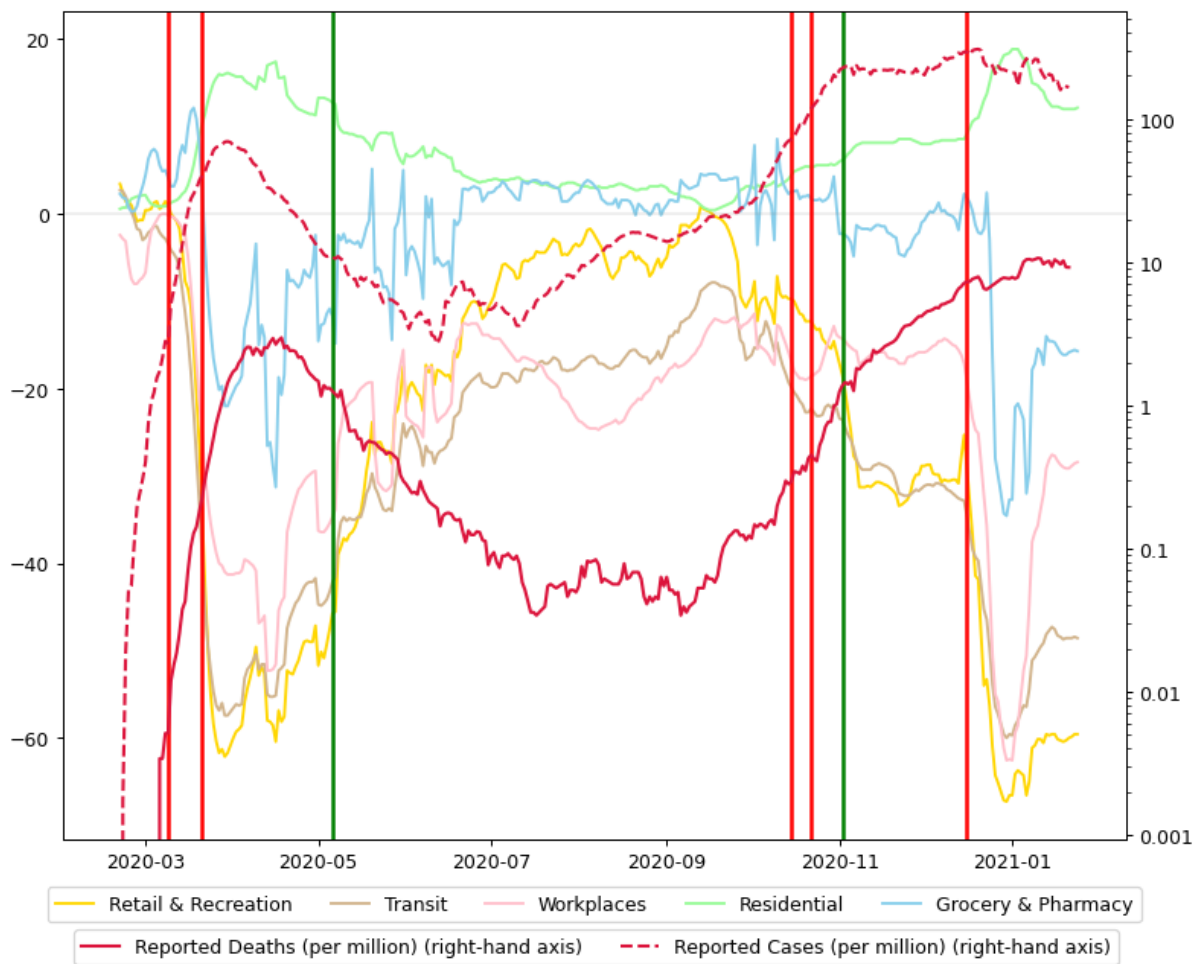
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 43: Mobility, COVID-19 incidence and government restrictions in France



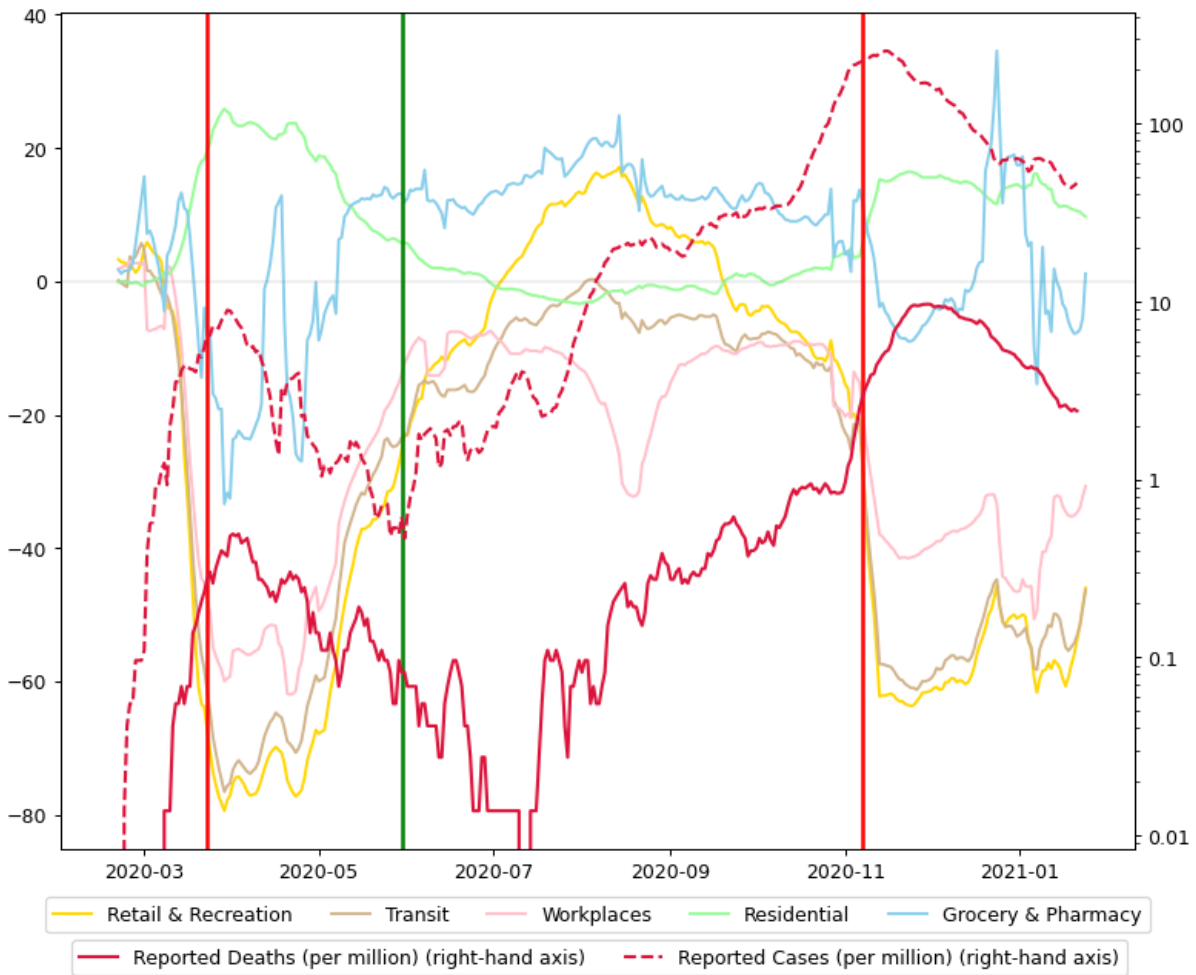
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 44: Mobility, COVID-19 incidence and government restrictions in Germany



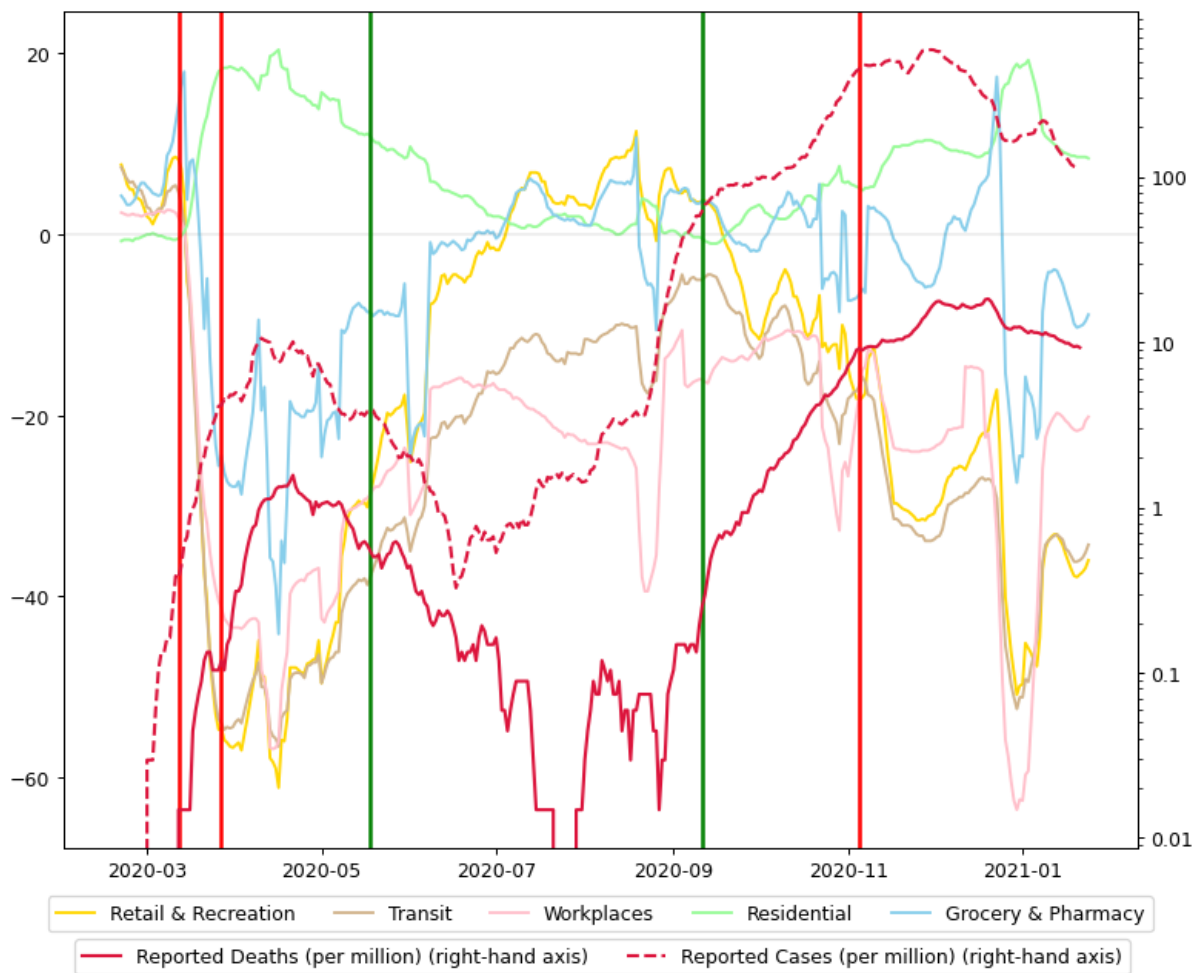
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 45: Mobility, COVID-19 incidence and government restrictions in Greece



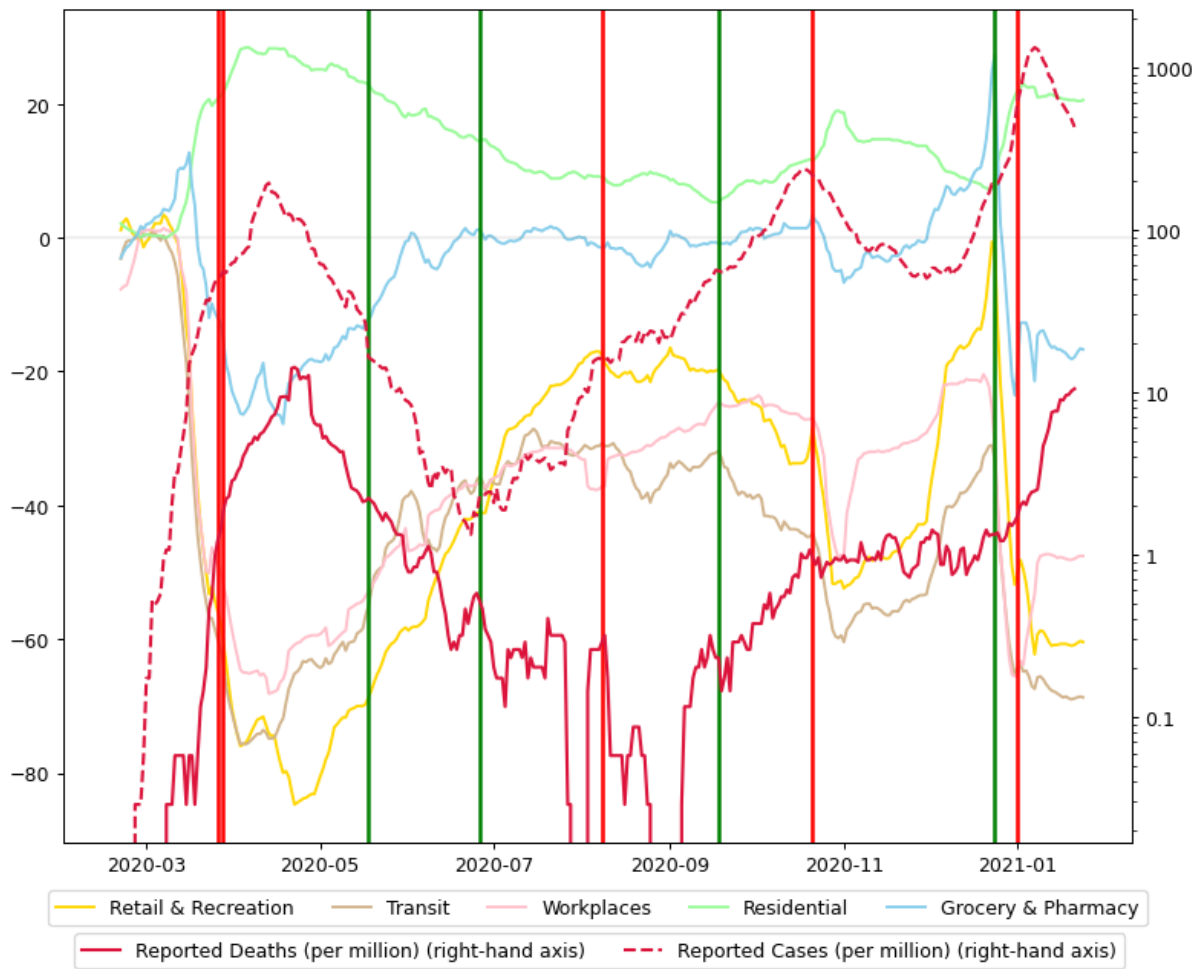
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 46: Mobility, COVID-19 incidence and government restrictions in Hungary



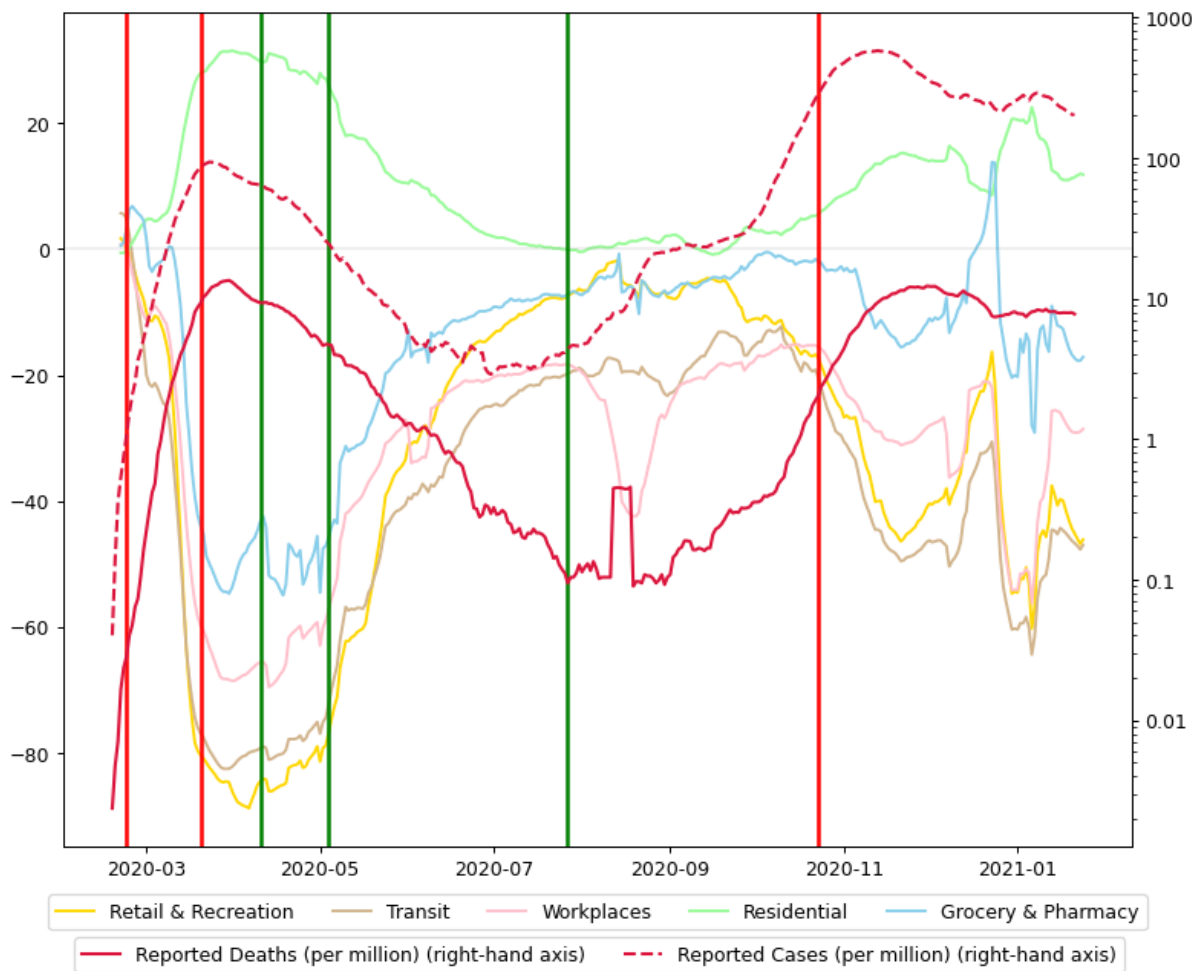
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 47: Mobility, COVID-19 incidence and government restrictions in Ireland



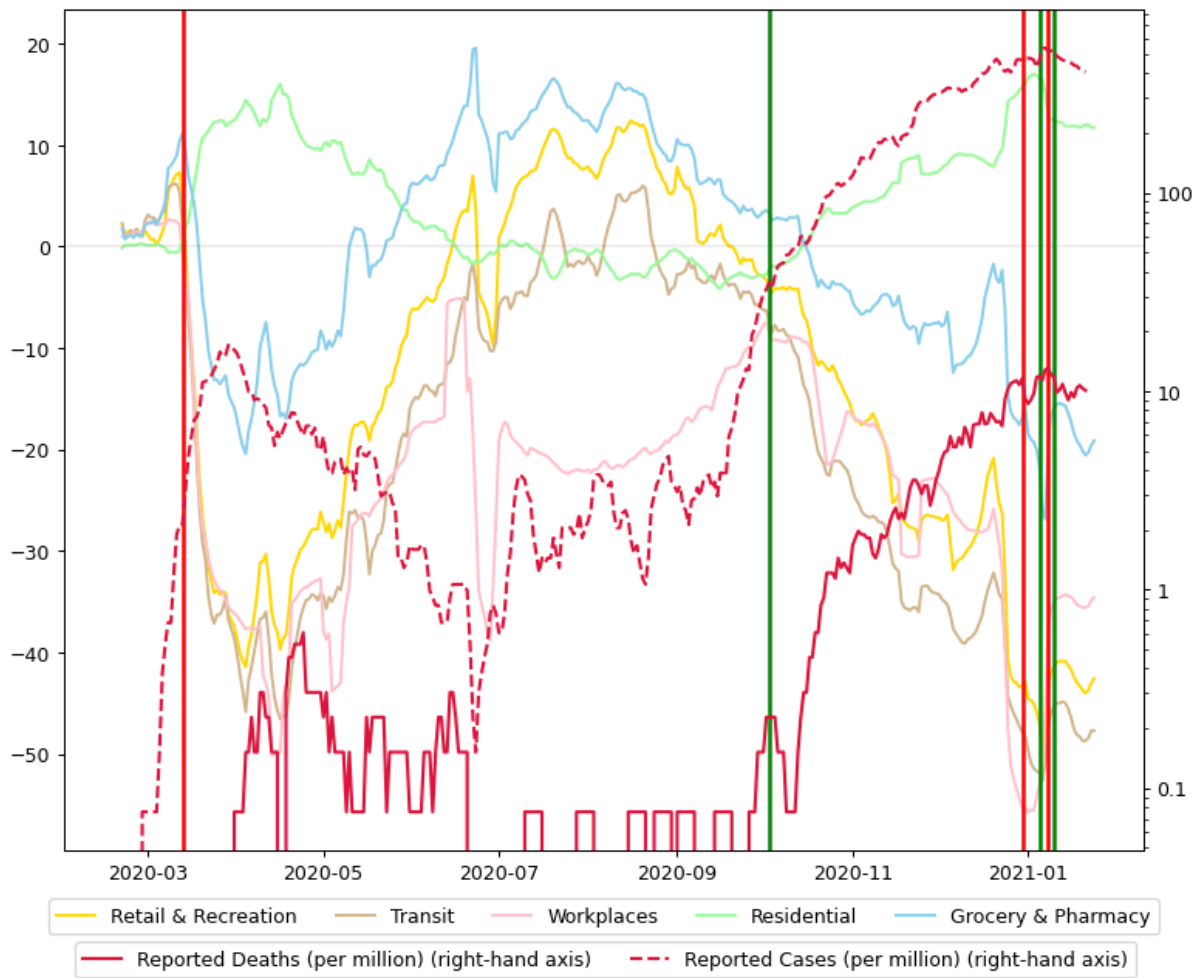
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 48: Mobility, COVID-19 incidence and government restrictions in Italy



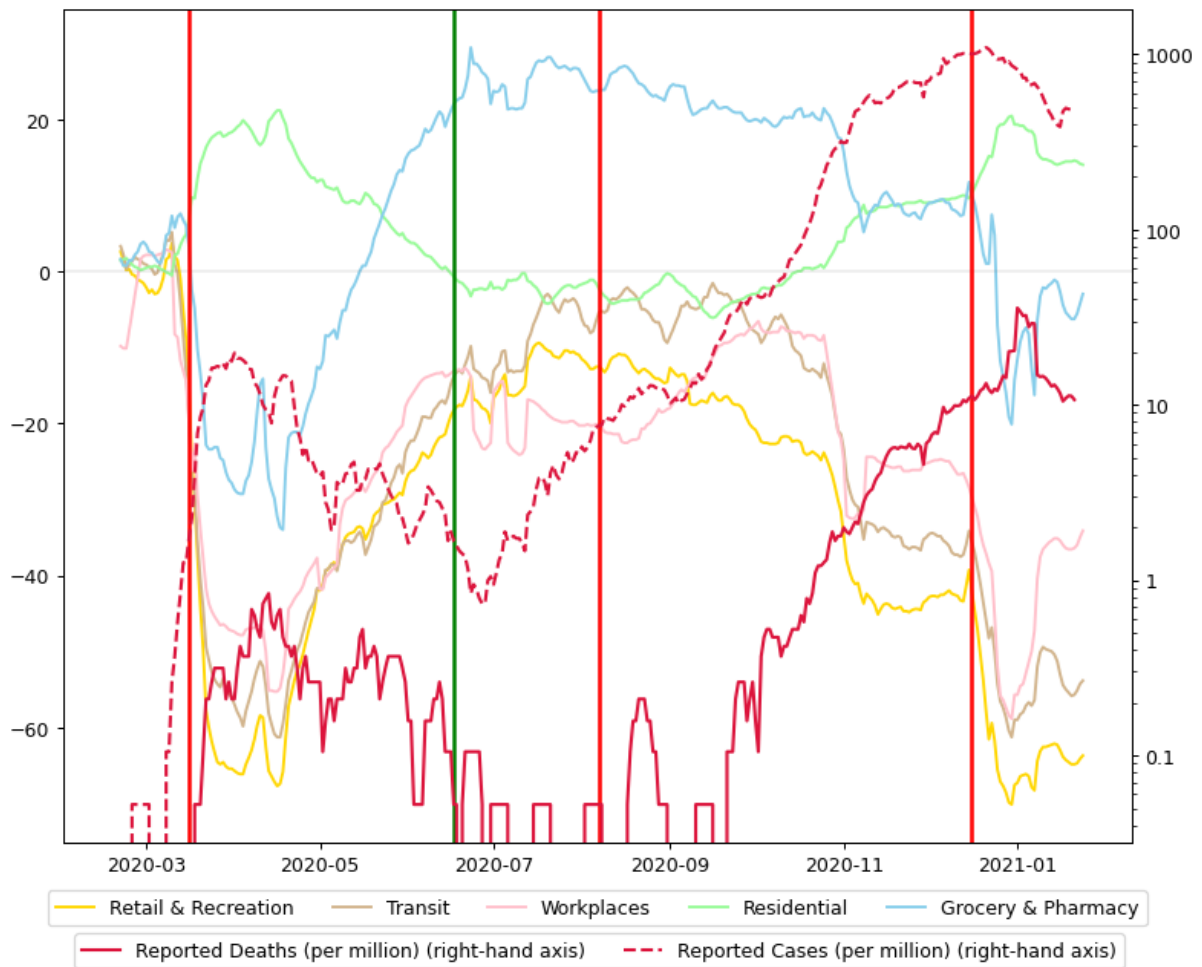
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 49: Mobility, COVID-19 incidence and government restrictions in Latvia



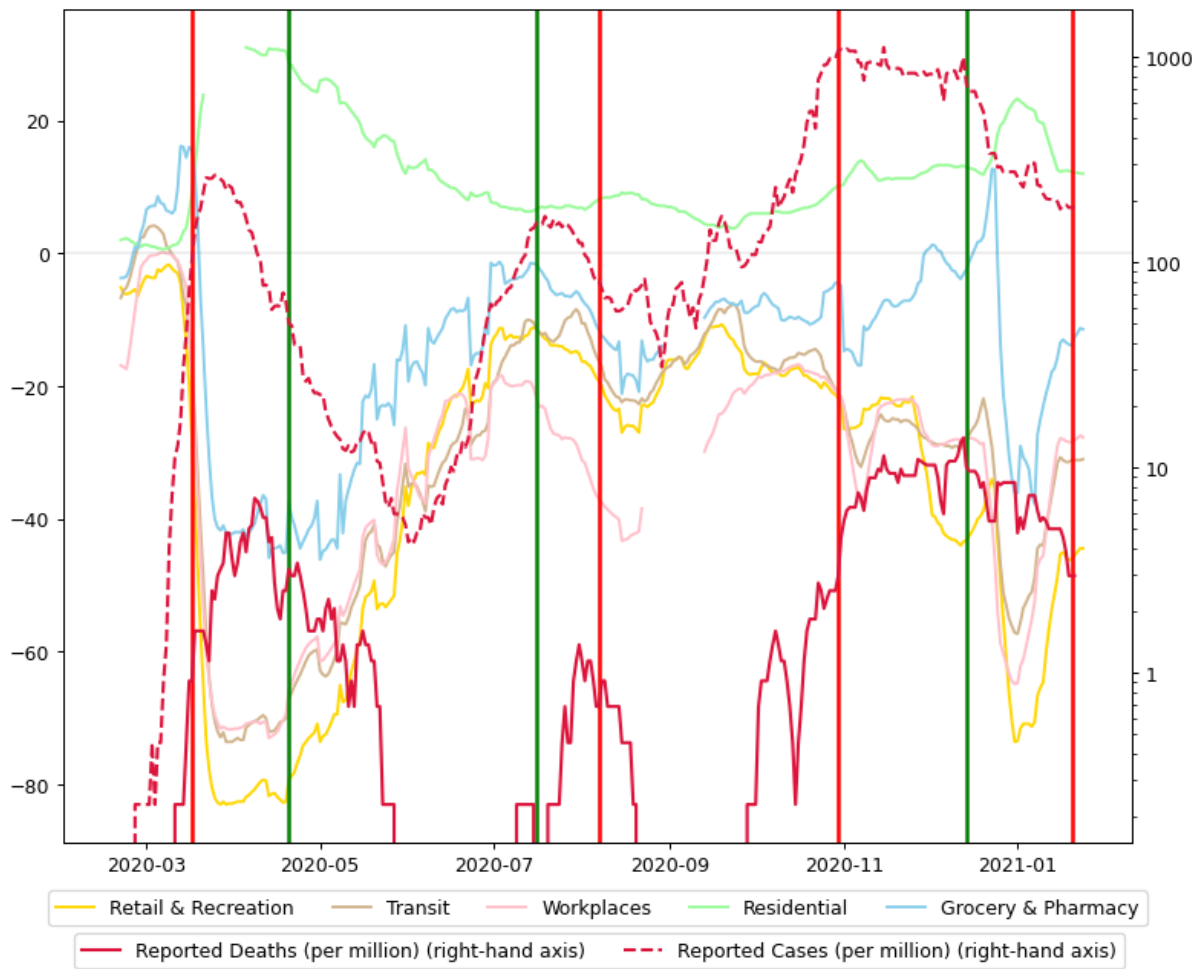
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 50: Mobility, COVID-19 incidence and government restrictions in Lithuania



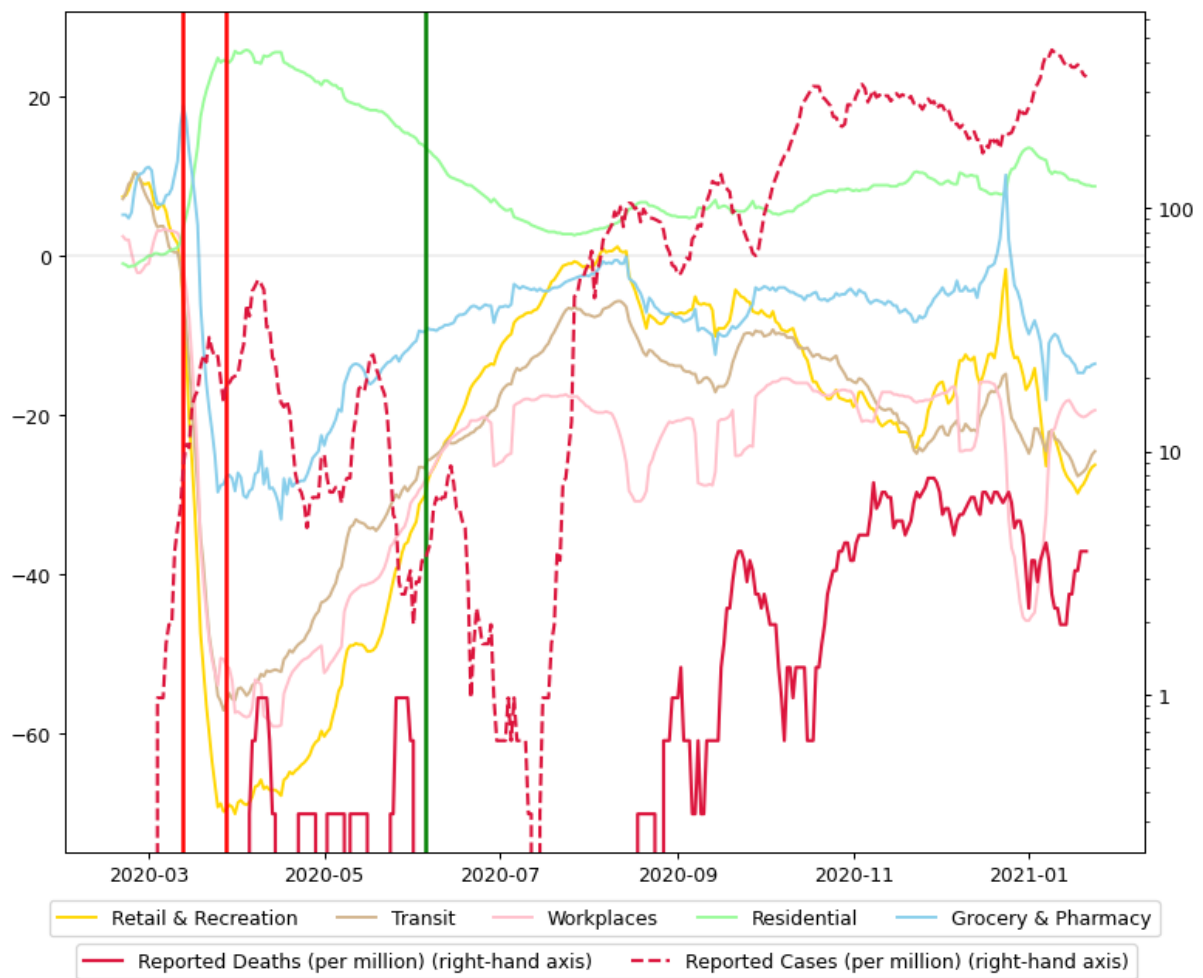
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 51: Mobility, COVID-19 incidence and government restrictions in Luxembourg



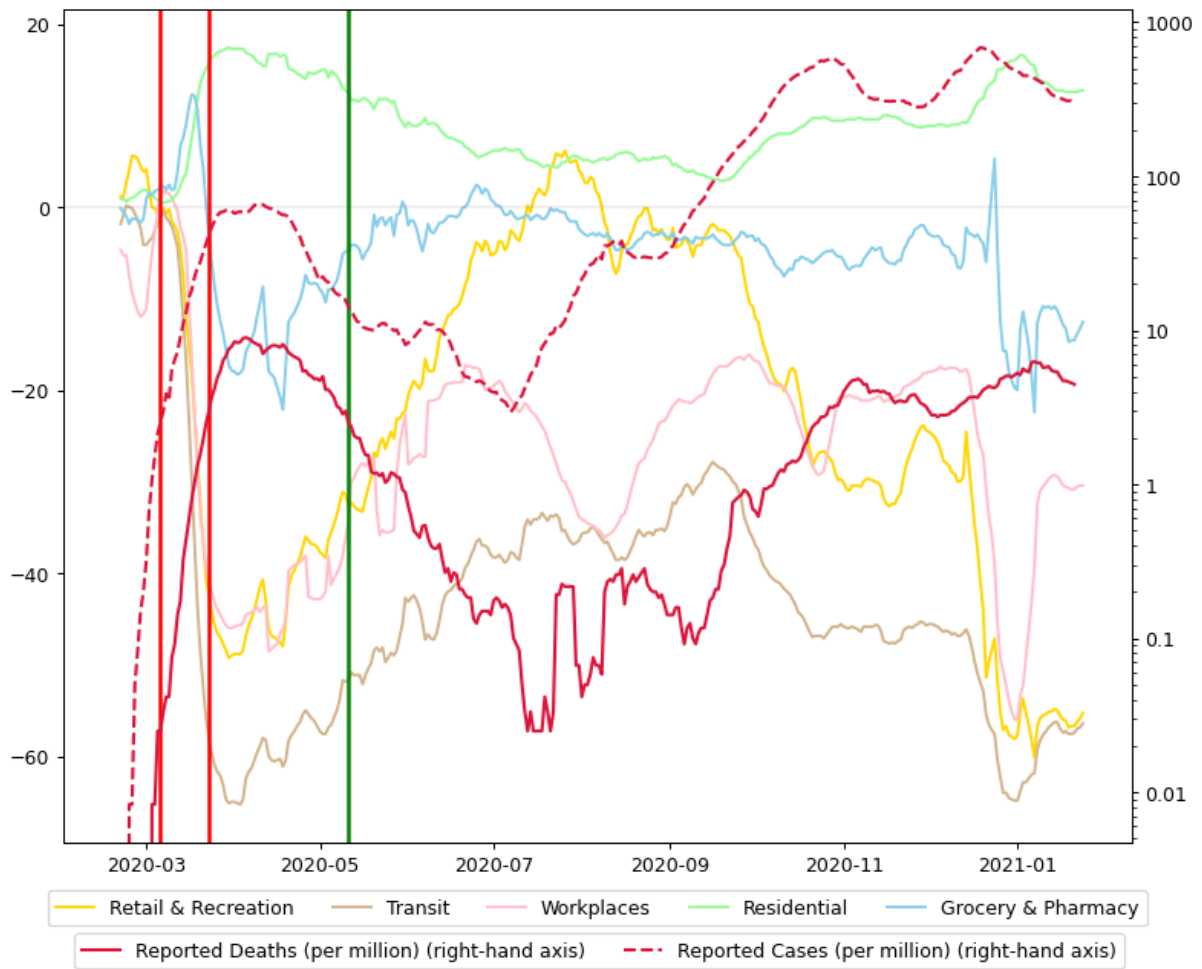
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 52: Mobility, COVID-19 incidence and government restrictions in Malta



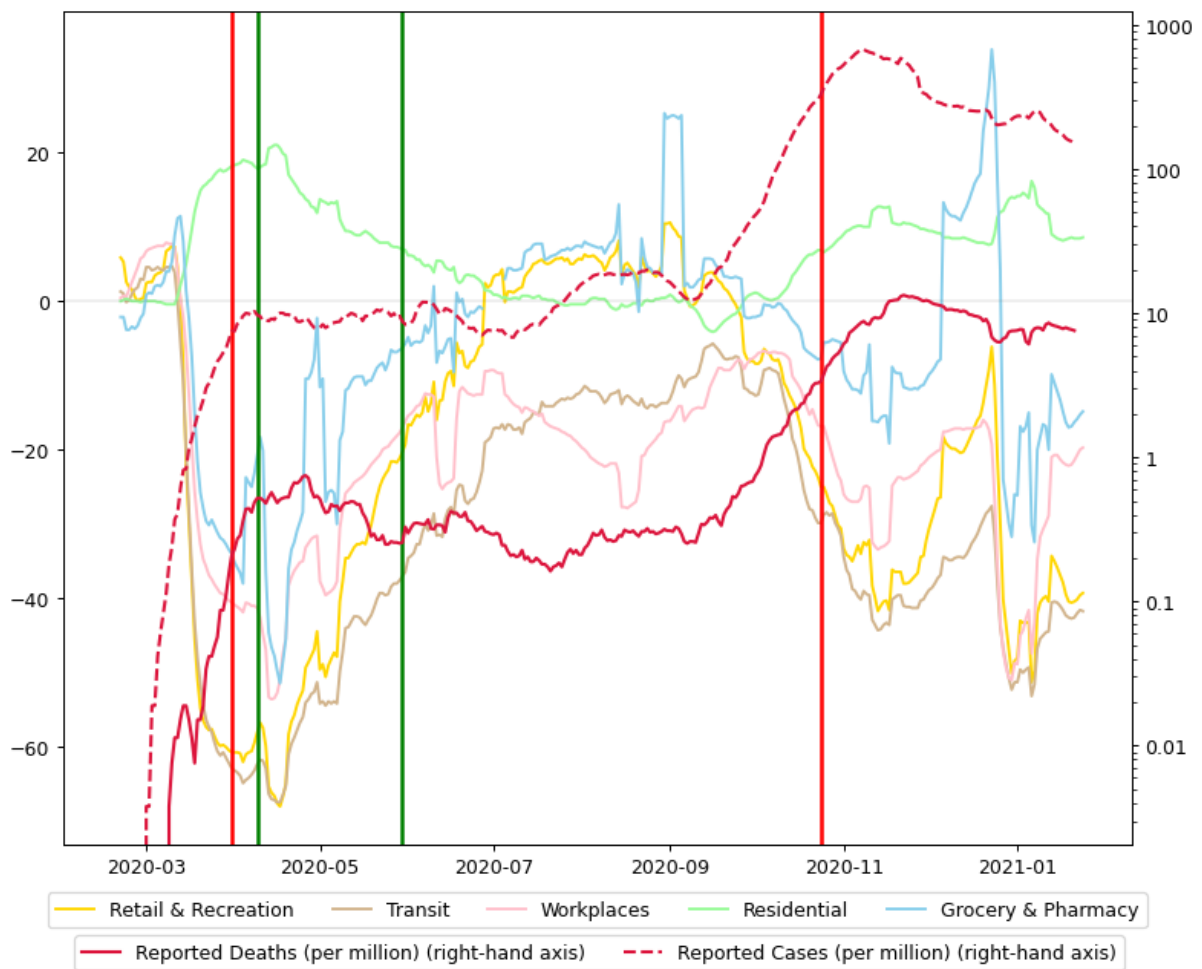
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 53: Mobility, COVID-19 incidence and government restrictions in the Netherlands



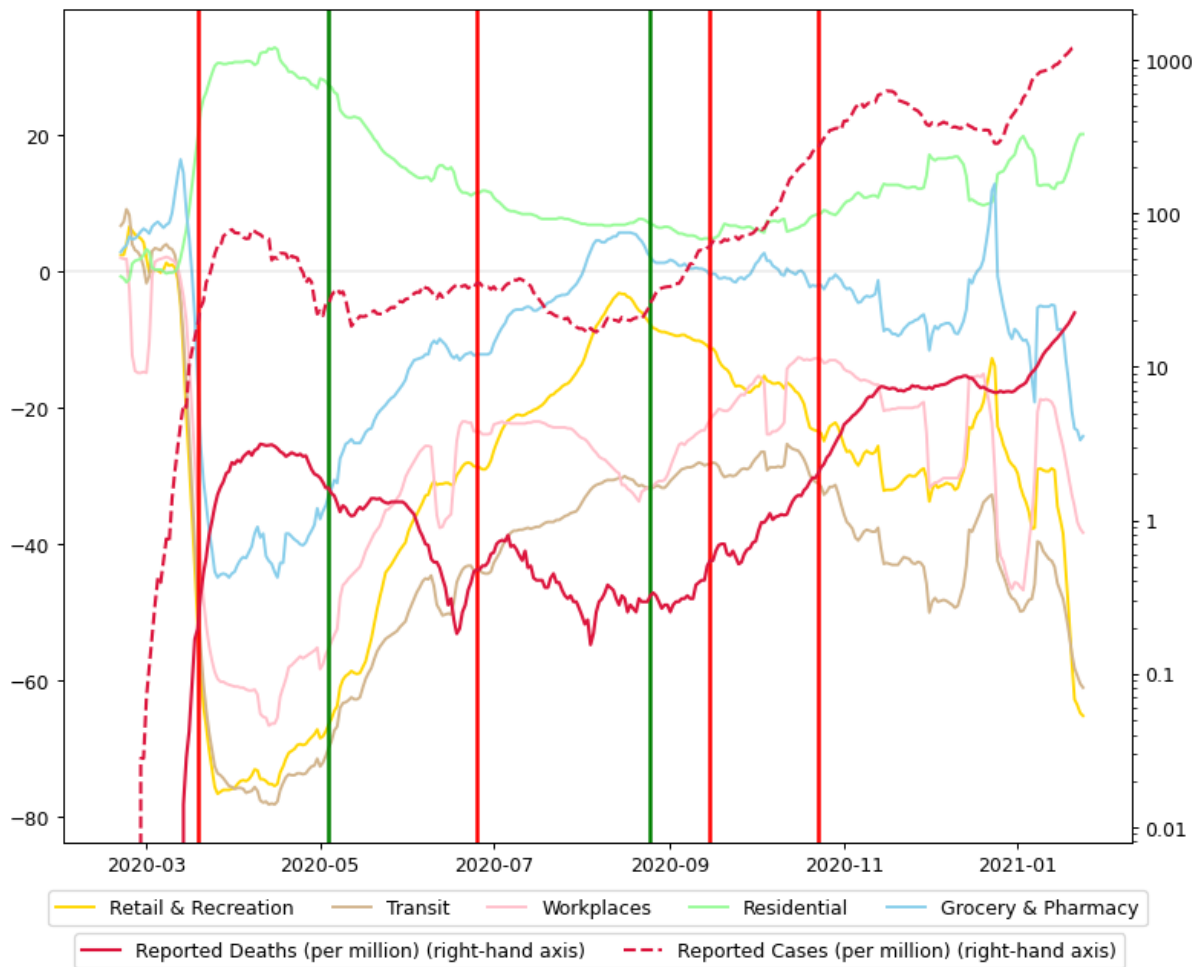
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 54: Mobility, COVID-19 incidence and government restrictions in Poland



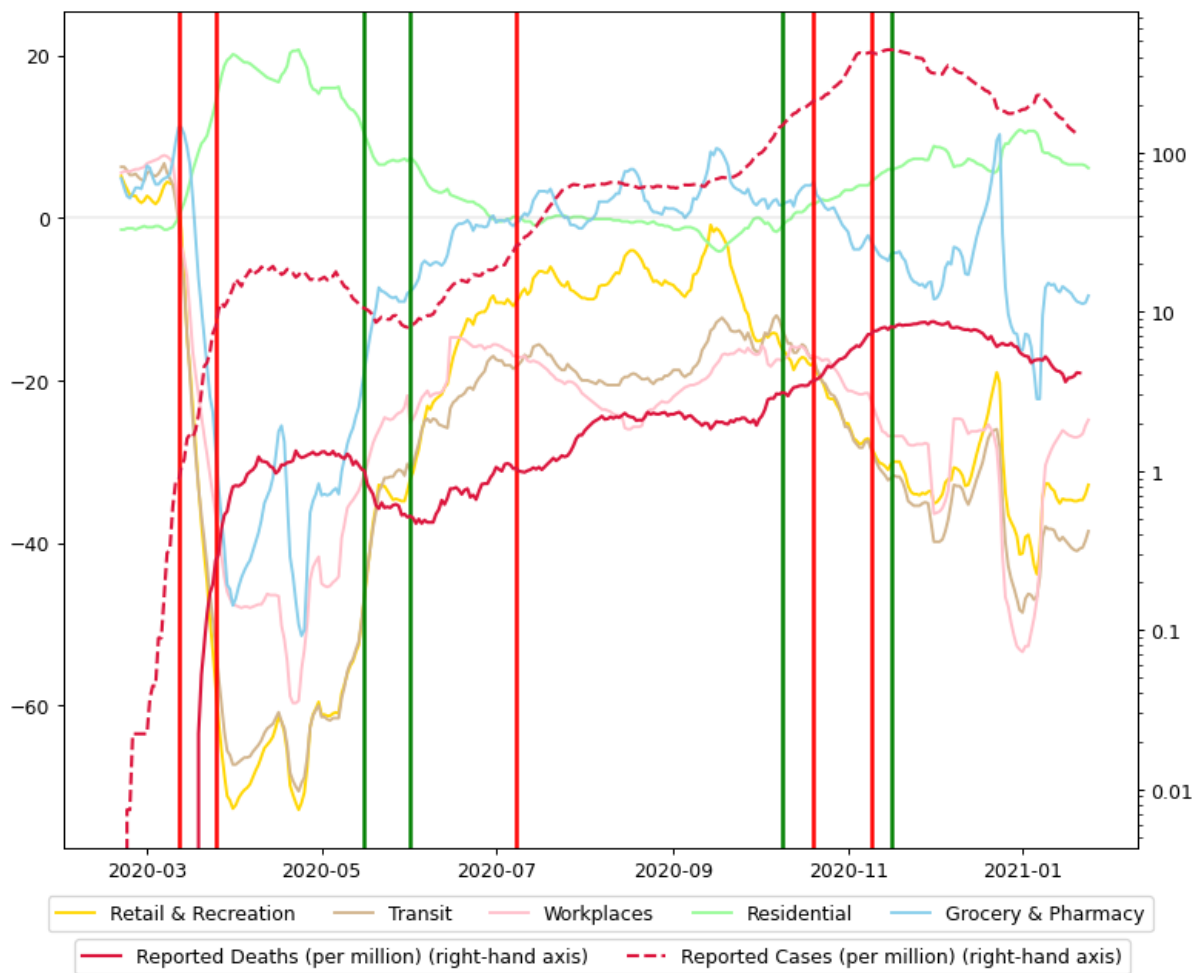
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 55: Mobility, COVID-19 incidence and government restrictions in Portugal



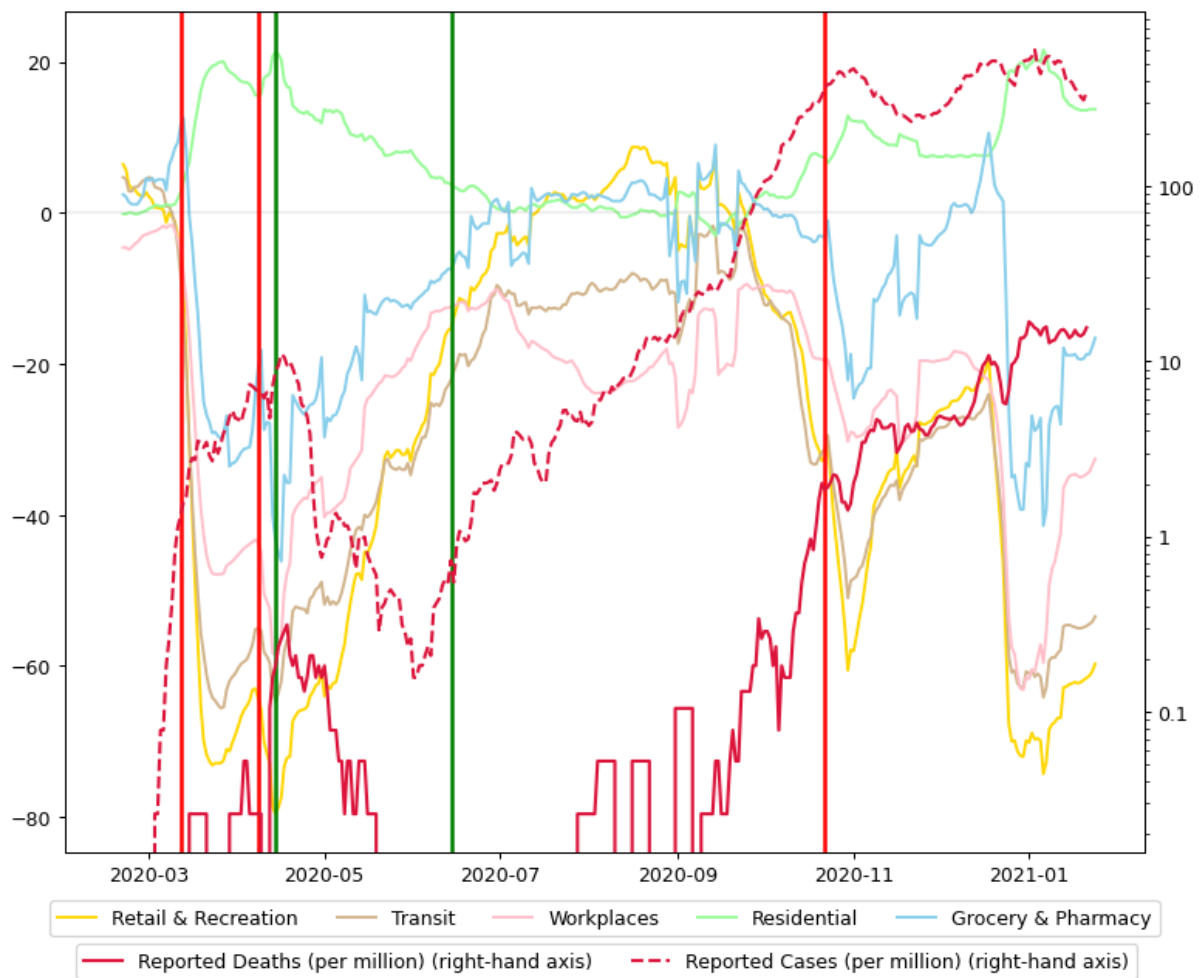
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 56: Mobility, COVID-19 incidence and government restrictions in Romania



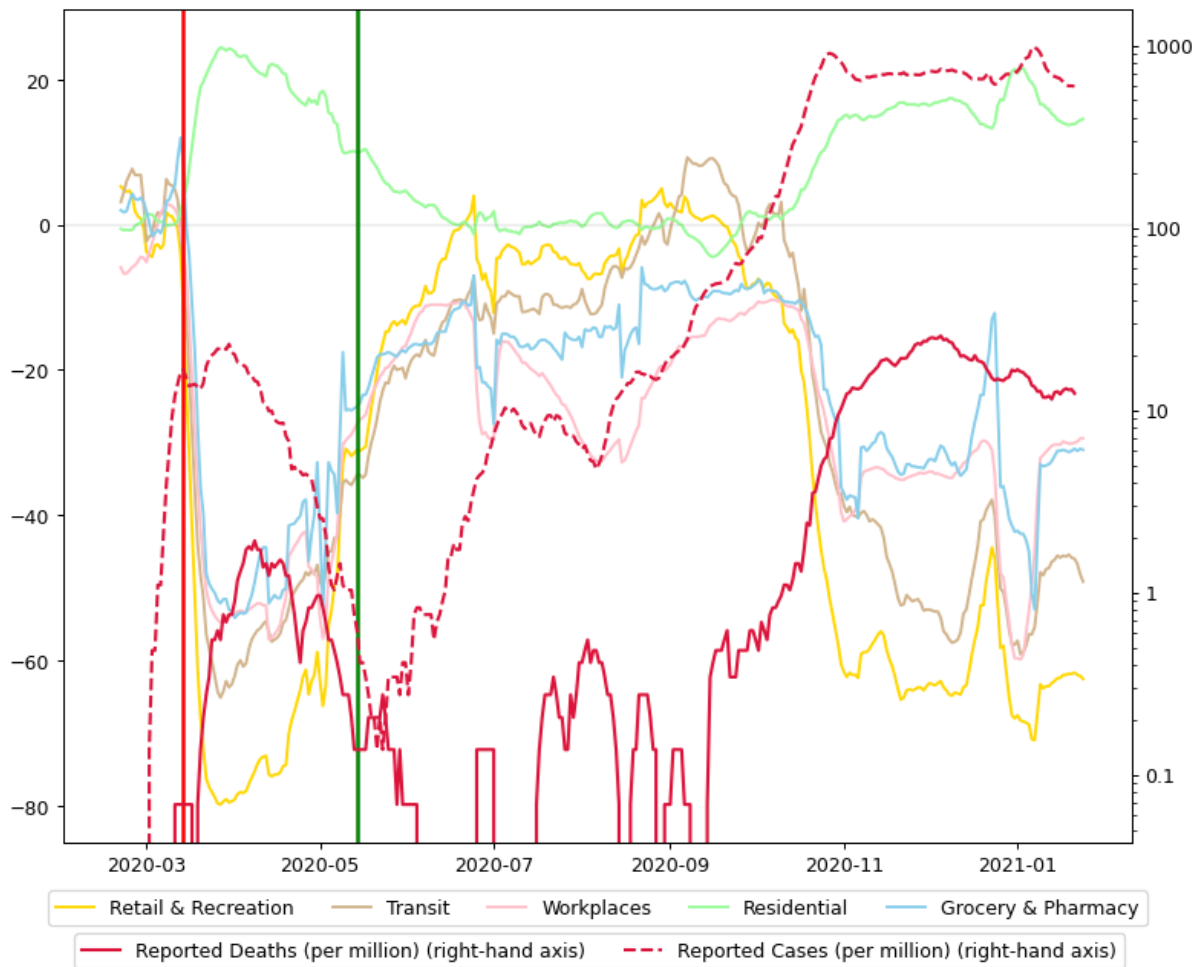
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 57: Mobility, COVID-19 incidence and government restrictions in Slovakia



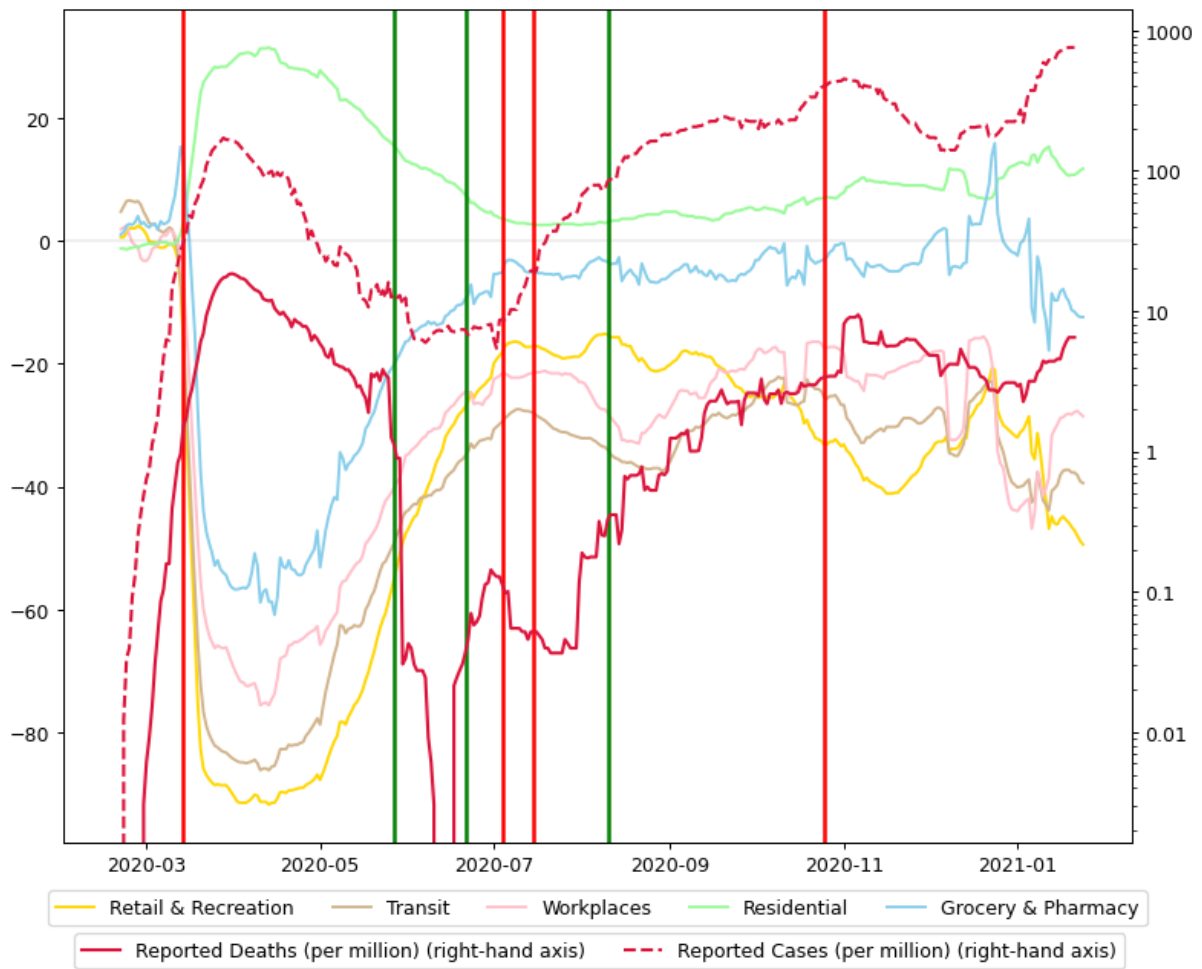
Source: [Our World in Data](https://ourworldindata.org/) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 58: Mobility, COVID-19 incidence and government restrictions in Slovenia



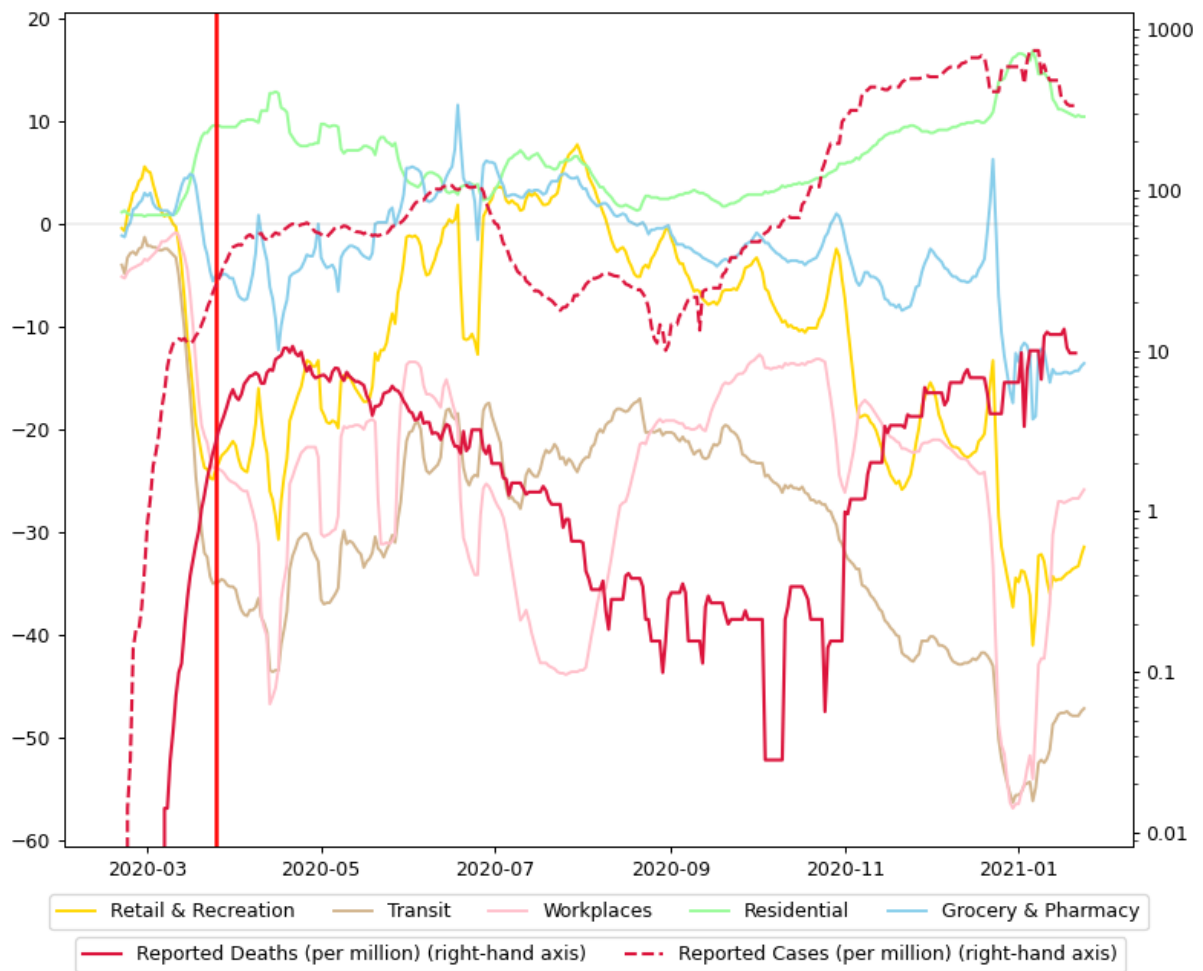
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 59: Mobility, COVID-19 incidence and government restrictions in Spain



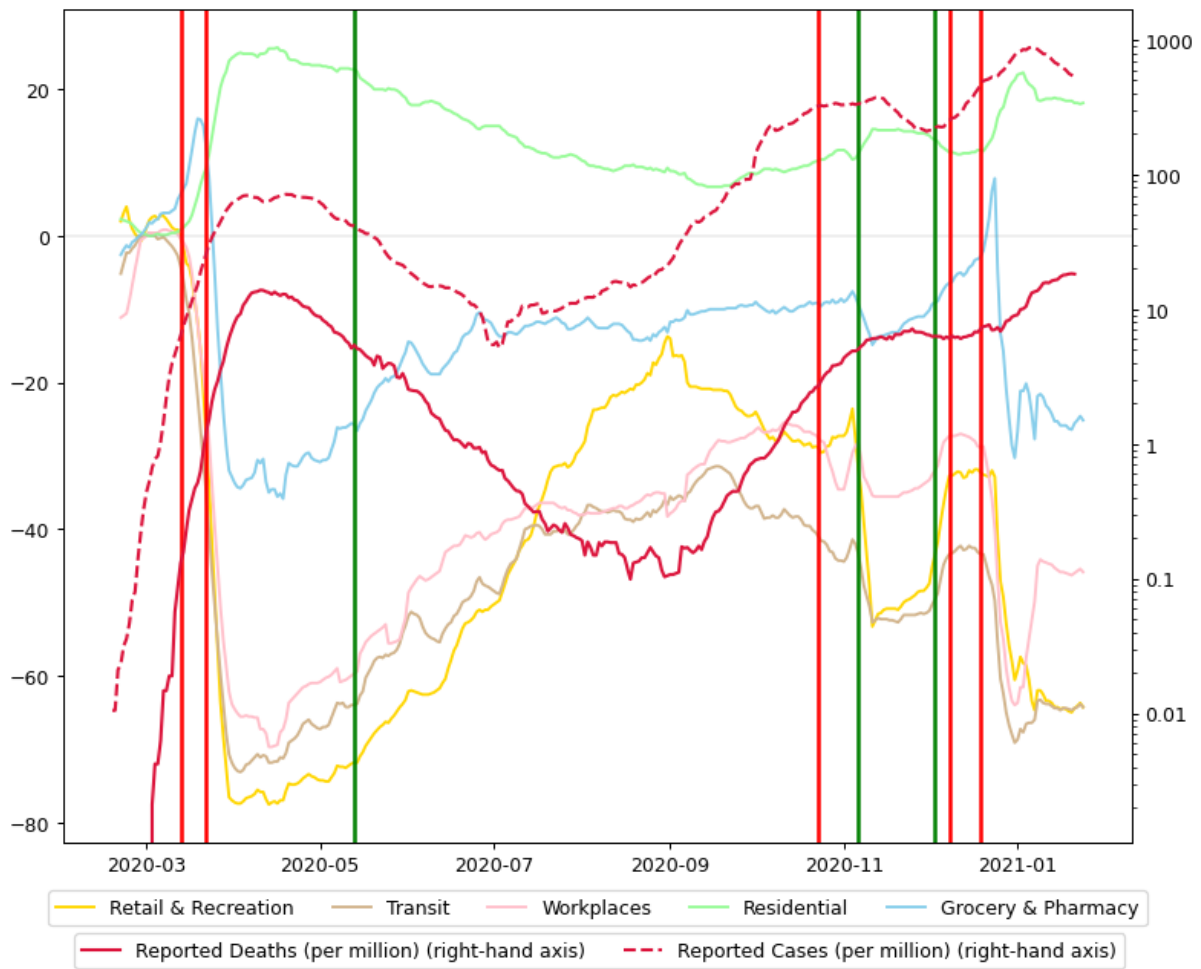
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 60: Mobility, COVID-19 incidence and government restrictions in Sweden



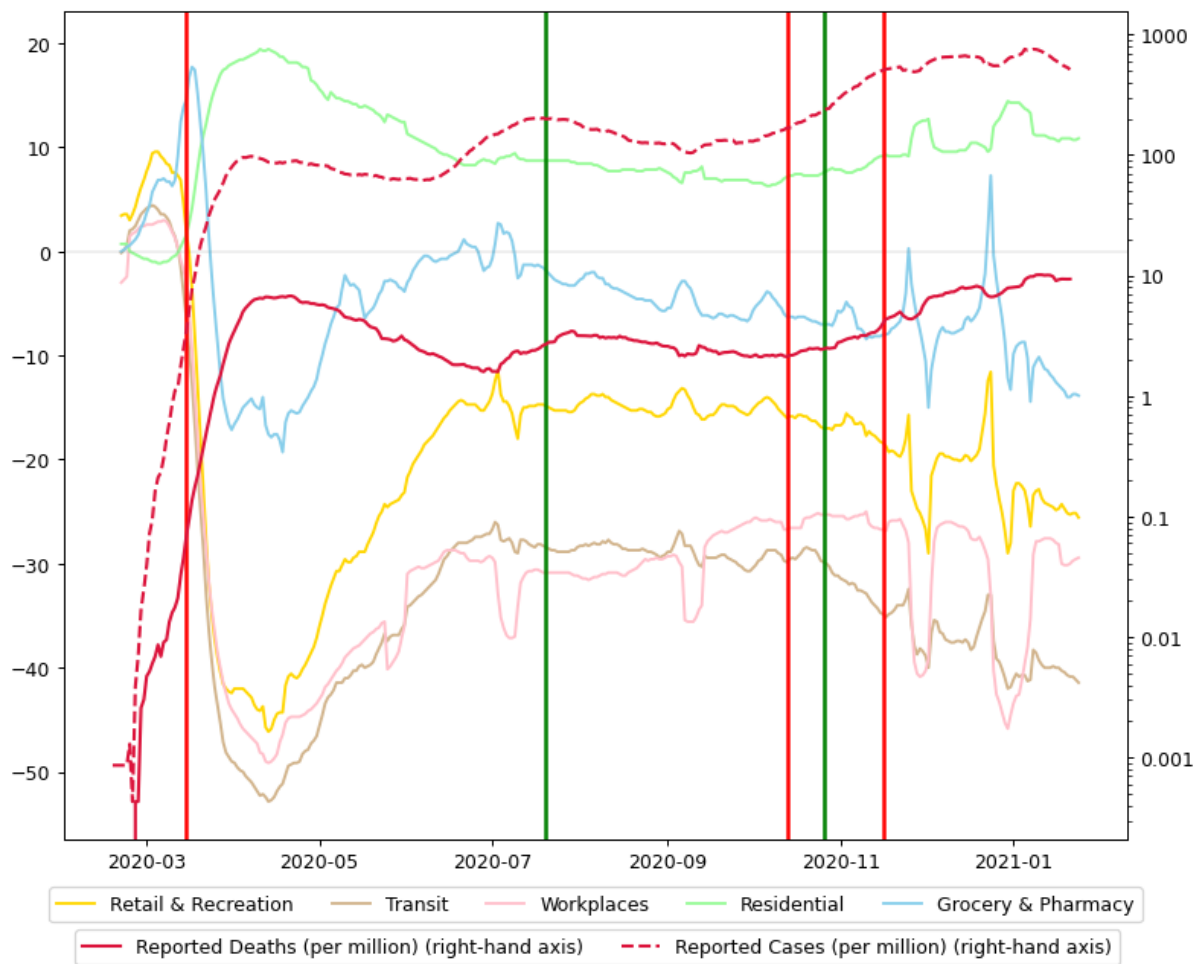
Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 61: Mobility, COVID-19 incidence and government restrictions in the United Kingdom



Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

Figure 62: Mobility, COVID-19 incidence and government restrictions in the United States



Source: [Our World in Data](#) for cases and death, Oxford database (see Hale et al. (2020)) for restrictions, Google mobility data (see Aktay et al. (2020)) for changes in various forms of mobility, Bruegel calculations.

This study assesses the impact of the COVID-19 crisis on the Internal Market and consumer protection, including the impact of measures introduced at national and EU level to mitigate the consequences of the pandemic. What further measures should be considered in order to reinforce the resilience of the EU's Internal Market in the face of future crises?

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