

STUDY

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# How have major economies responded to the COVID-19 pandemic?

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Consequences for growth trajectories and debt sustainability



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Economic Governance Support Unit (EGOV)  
Directorate-General for Internal Policies  
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# How have major economies responded to the COVID-19 pandemic?

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## Consequences for growth trajectories and debt sustainability

### **Abstract**

This paper provides an overview of the policy measures applied in the EU to address the COVID-19 crisis and their macroeconomic consequences. It focuses on the macroeconomic impact on labour markets, external balances, financial markets and the corporate sector. The paper also examines the impact on longer-term growth and productivity. Impacts on public finances and debt sustainability are analysed independently, with considerations regarding prospective growth, interest rate and inflation developments.

As the policy focus transitions from crisis management to a longer-term policy for sustainable growth and well-being, the paper provides policy recommendations. It presents the impact of the crisis on the link between national and EU-level policies, and the universe of feasible options for the architecture and governance of EMU, as well as the future of the fiscal framework going forward.

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## LIST OF ABBREVIATIONS

<b>APP</b>	Asset Purchase Program
<b>BLS</b>	Bureau of Labour Statistics
<b>CDS</b>	Credit Default Swaps
<b>CPI</b>	Consumer Price Index
<b>ECB</b>	European Central Bank
<b>EFB</b>	European Fiscal Board
<b>EIB</b>	European Investment Bank
<b>GDP</b>	Gross Domestic Product
<b>GFC</b>	Global Financial Crisis (2008)
<b>GOS</b>	Gross Operating Surplus
<b>IFI</b>	Independent Fiscal Institutions
<b>ILO</b>	International Labour Organization
<b>IMF</b>	International Monetary Fund
<b>INSEE</b>	Institut National de la Statistique et des Etudes Economiques
<b>KfW</b>	Kreditanstalt für Wiederaufbau
<b>NFC</b>	Non-Financial Corporations
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>ONS</b>	Office for National Statistics
<b>PEPP</b>	Pandemic Emergency Purchase Programme
<b>PPI</b>	Producer Price Index
<b>RRF</b>	Recovery and Resilience Facility
<b>SME</b>	Small and Medium Enterprises
<b>SURE</b>	Support to mitigate Unemployment Risks in an Emergency
<b>TSCG</b>	Treaty on Stability, Coordination and Governance
<b>VAT</b>	Value Added Tax

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## EXECUTIVE SUMMARY

### Background

An unprecedented amount of resources has been mobilised worldwide as a response to the COVID-19 crisis. Europe was no exception, with an enormous financial and monetary response at both the national and EU levels. As recovery from the pandemic seems today ongoing, this paper provides a cross-country analysis of the macroeconomic impact of policy measures taken to address the COVID-19 crisis in Europe. It analyses their consequences on the economy, including labour markets, external balances, financial markets and the corporate sector. It also looks at the impact of the crisis and related policy measures on both the dynamics of public finances and on debt sustainability. Finally, it spells out policy recommendations in those areas.

Policy intervention materialized as a coordinated fiscal and monetary policy expansion. On the fiscal policy side, intervention in Europe turned out to be much more targeted than in the United States, where money spent by the government took the form of classic fiscal stimulus packages to support aggregate demand. In contrast, EU Member States predominantly opted for direct and indirect support. Direct—or “above-the-line”—support often amounted to 10-15% of a country’s GDP, targeting primarily the healthcare sector, households and corporations. Wage subsidies and part-time work schemes, one of the novelties introduced by COVID-19 fiscal packages, were the largest initiatives by size. States took responsibility for part, if not all, of the wage bill of the private sector. Despite proving to be very costly, this novel policy instrument was also very powerful in weathering European labour markets from the impact of the COVID shock. Indirect—or “below-the-line”—support weighted more on spending, often in the range of 15-30% of a country’s GDP. The aim of these measures was to bring liquidity in the corporate sector, as well as to restore confidence through equity injections, asset purchases and direct loans. These tools implied an asset swap on the state balance sheet (private company equity or liability against liquidity), and therefore expose the governments to potentially very large losses in the case of asset depreciation or default. Third, contingent liabilities such as loan guarantees were also employed as an additional measure. On the monetary side, intervention was also massive: the ECB engaged into a massive QE program via the €1,850 billion Pandemic Emergency Purchase Programme (PEPP). The size of its balance sheet grew by 103% between 2020 and 2022, injecting vast amounts of liquidity in the financial and corporate sectors.

### Key findings

We evaluate the COVID-19 support measures on the macroeconomy. The profile of real GDP since 2021 reveals the strength of the post-COVID 19 recovery. The fall in activity was the most marked in private consumption and international trade, as opposed to investment and public consumption.

We performed counterfactual analysis to study the effectiveness of fiscal support in each country. The quantitative evaluation of the losses of activity relative to pre-crisis trends and of the impact of crisis measures reveal that countries where crisis mitigation measures had the biggest GDP impact are the United States, the UK and Italy. Measures contributed to a “rescue” of 10 to 15% of GDP at the trough across all countries. They also anticipated the turning point in economic activity, mostly in Germany, Italy, the UK and the United States.

The analysis then dives into the dynamics of labour markets. Our simulations suggest that part-time schemes and wage subsidies in the EU have been highly effective, with unemployment rates and labour force participation levels in line with pre-crisis levels at the end of 2021 for most economies where these were applied. Labour markets reacted not only through the shock to firms’ demand for labour, but also on the supply side through the transformative impact of the COVID crisis on labour

force participation. Generally, the European approach of favouring a fall in the average hours worked per employee instead of letting unemployment rates adjust to the shock (as in the United States and Canada), turned out successful for labour market outcomes.

Regarding the corporate sector, we argue that the latent fragility of indebted firms remains a risk factor for the economic recovery. Default rates remain—so far—contained, and margins have been preserved. But imbalances in the financial markets and corporate debt have inevitably accumulated during the pandemic, and this, together with asset price misalignments, is certainly the biggest risk weighing on the corporate sector.

The analysis then turns to the consequences of fiscal deficits for public debt sustainability analysis. To this scope, we propose a modern framework weighing the various - and uncertain - trajectories of the key components of the cost of debt servicing in the short to medium run. As outstanding public debt stocks are very high, we document that their funding and sustainability is subject to three major risks. First, a short- or medium-term rise in interest rates and spreads between EU member countries, partly related to inflation. Second, the stability of the euro area through diverging fiscal trajectories across Member States. Third, the lack of room for manoeuvre to meet the challenges of tomorrow (this could particularly become tangible given geopolitical tensions that arose in early 2022). A key finding of our paper relates to the differentiated role of the “ $r-g$ ” - the differential between the real interest rate and the rate of economic growth, which is the primary condition for debt stability - across European countries, and across the Atlantic.

Regarding inflation dynamics, the implications of “higher for longer” inflation rates for the financing costs of EU Member States are tangible: either through direct effects on sovereign market financing conditions or through the pressure they could impose for the timing of monetary policy normalisation. We analyse in-depth the challenges related to recent surges in inflation globally. We conclude that the transitory component related the recent rise in energy prices seems dominant in the euro area, and that demand-driven medium-term inflation expectations are still very moderate compared to the United States.

### **Policy recommendations**

First, we argue that the transition from countercyclical fiscal policies to structural policies should be gradual but decisive, with a continuous phasing out of full-strength monetary support while fiscal support adapts to the consequences of the war in Ukraine. Risks arising from inflation, financial imbalances and public debt accumulation should be recognized.

Second, the metamorphosis of fiscal support to sustain long-term growth should be consistent. Labour market support should progressively evolve from a “protection at all costs” of labour relationships; retraining and reskilling programs should be emphasized to reduce supply-side bottlenecks in the economy related to labour shortages. For corporate support, the allocation of state aid should be better targeted; governments should transition from using debt instruments—via the broad emergency loan-financing to companies—to equity or quasi- equity financing as part of their recovery and stimulus packages.

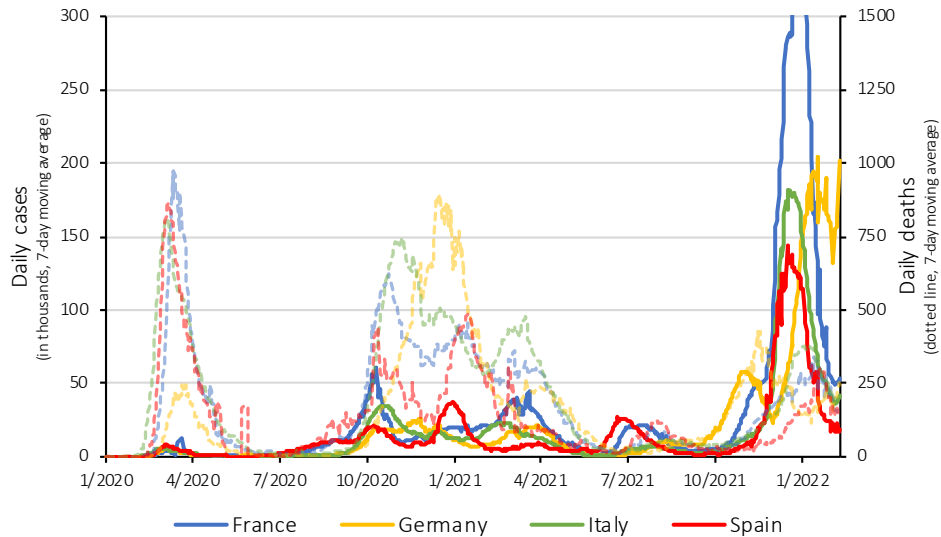
Third, we emphasise the need for tools to ensure that public and private investments are made for the common good and for long-term, sustainable improvements in well-being. This relies on a three-pronged strategy: the development of impact measurement metrics for public expenditure; the acceleration of the agenda on extra-financial information, reporting and accounting; and the development of innovative asset classes that would allow to swap “debt-for-impact”.

Regarding the debate on EU fiscal rules post-COVID, we suggest shifting away from current metrics and opt for a new generation of expenditure-based rules. At the Member State level, a multiannual governance of public finances should prevail, with the development of independent evaluation bodies, possibly in the hands of parliaments.

## 1. INTRODUCTION

After the initial outbreak of COVID-19 cases in China in November and December 2019, a wave of infections swept across the globe. Within Europe, the first cases were diagnosed in northern Italy in late January 2020 and shortly thereafter across all EU countries (Figure 1). The first wave of public policy responses - ranging from travel restrictions to strict quarantines - brought the economy to an unprecedented standstill. Within the EU, real GDP fell by 6.1% in 2020, a higher drop than during the global financial crisis.

Figure 1: COVID-19 cases by country



Source: John Hopkins University (March 2022)

The precipitous economic downturn led to a prompt and colossal response of an unprecedented scale by the governments. While today there is little uncertainty around the fact that this policy support was needed in order to shield European countries from the economic impact of the pandemic, this experience has nonetheless raised several important policy questions:

- How effective was the economic stimulus in insulating EU economies from the COVID-19 shock?
- What are the long-term impacts of the pandemic on growth and productivity?
- Can we assess the proper calibration and targeting of the policy instruments mobilized?
- What are the learnings and best practices emerging from this experience, especially at the level of EU institutions?

This research report aims first to answer these questions by examining the macroeconomic impact of the stimulus policies on labour markets - in particular via the part-time schemes or wage bill subsidies that had never been used before -, external balances, financial markets, and the corporate sector. We attempt to assess the proper calibration and effectiveness of fiscal packages set by major European government, building on cross-country comparison inside and outside of the EU. The paper then assesses the implications of the policies on longer-term growth factors, including public finances and debt sustainability. We put a particular emphasis on analysing EU countries' common policy response

via the Next Generation EU (NGEU) temporary recovery instrument that saw the first issuance of EU debt (up to €750 billion) by the European Commission and backed by all EU Member States. NGEU provides useful lessons for the economic governance framework and potentially opens the path for a permanent fiscal capacity at the EU or euro area level, as advocated by many economists in face of the recent Sovereign Debt Crisis.

This research report is structured as follows. First, we review the fiscal, monetary and regulatory responses of major European governments and the EU to the economic downturn that resulted from the COVID-19 pandemic. Particular attention is paid to the financial structuring and accounting of these policy instruments. In the next section, we assess the effectiveness of these policy tools on economic activity, labour markets and financial markets by analysing recent empirical evidence and by performing counterfactual exercises. The following section focuses on the consequences of fiscal stimuli and public deficits for the trajectory of public finances, by proposing a novel debt sustainability assessment. The last section provides policy recommendations based on the evaluation of best practices and of the effectiveness of specific policy tools, with a particular emphasis on how they can be integrated into the EU framework in the long-term.

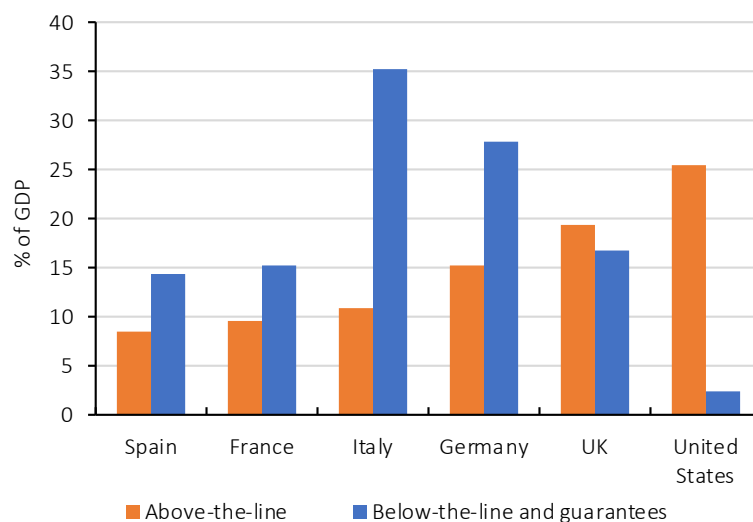
## 2. A MAP OF THE RESPONSES TO THE COVID-PANDEMIC IN THE MAIN ECONOMIES

Massive and broad fiscal and monetary policy initiatives were quickly put in place to support economic and financial systems (Figure 2). Instruments of an unprecedented scale and type were deployed in order to fight the economic effects of the COVID-19 pandemic, a crisis that does not fit any typical classification of a textbook economic shock, as it contains elements of both a demand and a supply shocks.

European countries have been very concerned with the preservation of labour relationships that were under threat of being destroyed by closures and drops in activity. Governments also focused efforts into avoiding a liquidity crisis in the corporate sector. In this respect, the fiscal response by EU countries has been much more targeted, in contrast to the US, which implemented policies similar to classic fiscal stimulus package to support aggregate demand via the several rounds of direct stimulus checks sent to eligible individuals.

In 2021, both the budget support and accommodative monetary policy initiated in 2020 continued in Europe, as uncertainties lingered regarding both the persistence of the virus as well as the damaging effects of the economic crisis. Maintaining the safeguards was vital, especially in sectors most exposed to epidemic restrictions. By early 2022, the initial pandemic risk had subsided, and the economic activities of advanced economies stabilized, yet the risk of economic disruption from COVID is not behind us. As a result, while many safety nets are still in place, the question of transitioning back to the normalisation of fiscal and monetary measures is central to the current policy debate.

Figure 2: Size of fiscal packages by country



Source: IMF COVID Fiscal Monitor (October 2021)

We decompose the instruments levied by governments in terms of how they are accounted for in national accounts<sup>1</sup> to understand their implication for fiscal deficits and debt trajectories. On the one hand, direct financial support (“above-the-line”) via transfers or tax rebates directly weigh on the fiscal deficit. On the other hand, support via measures such as equity injections, direct loans or loan

<sup>1</sup> We follow the decomposition of policy instruments by the IMF.

guarantees (“below-the-line”), are not accounted for in public deficit calculations but enable large liquidity injections into the private sector. However, these indirect policy measures are important liabilities in case of a fall in asset prices or waves of default.

## 2.1. Above-the-line fiscal support

The set of “above the line” policy measures can be broken down into several blocks, both at the Member State and EU level. This includes:

- support to the healthcare sector and financing of sick-leave;
- support to households and the labour market; and
- support to entrepreneurs and the corporate sector.

The most salient fiscal expenses are, by far, the wage subsidies and part-time workschemes, one of the novelties introduced by COVID-19 fiscal packages that proved to be very costly. Governments agreed to pay part or all of the wage bill of companies having to furlough their employees, in exchange for a guarantee that firms would keep their employees until the quarantine restrictions were eased and normal economic activity resumed. The goal of this instrument was to safeguard existing labour relationships, which are known to take a long time to rebuild after a crisis, in particular in EU labour markets.

The list of above-the-line measures is summarized in Table 1 below.

## 2.2. Below-the-line measures and contingent liabilities

Member States and the EU also massively mobilized instruments that did not directly cost tax-payer money, but were designed to bring liquidity in the corporate sector and restore confidence. Such instruments were greater in size than above-the-line measures and can be broadly broken down into three categories:

- Equity injections, via the acquisitions of shares in public or private companies;
- Debt financing, via the purchase of securities (bonds) from corporations or via direct loans; and
- Loan guarantees (or contingent liabilities), via the explicit insurance by the state against the default from a private borrower.

Equity financing and debt financing imply an asset swap on government balance sheets (private company equity or liability against cash), and therefore is netted out in the budget balance of the government. However, it exposes governments to potentially very large losses in the case of an asset depreciation or default.

On the other hand, contingent liabilities such as loan guarantees impact neither the balance sheet nor the budget balance of the government. They constitute an off-balance sheet item (or a promise to repay) in case of default of the debtor. Member States’ interest to provide contingent liabilities to support national economic priorities and industries has a long history within the single market, mainly via their national development banks<sup>2</sup>; however, the COVID-19 crisis has dramatically increased both their size and scope.

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<sup>2</sup> See for instance the rise of KfW as a vector for Germany’s extensive support to both SMEs and large domestic corporations (see Volberding (2021a) for a detailed account).



The list of below-the-line measures and contingent liabilities is summarized in Table 2 below.

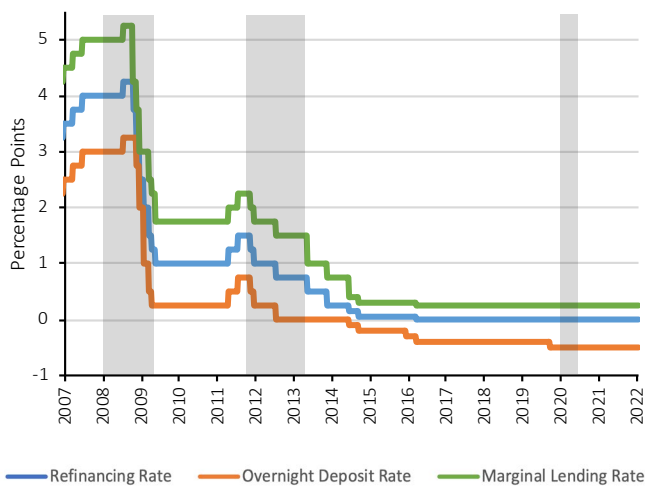
### 2.3. Monetary policy and other measures

The European Central Bank took important steps to mitigate the negative consequences of the COVID-19 pandemic on the euro area economy<sup>3</sup>. At the onset of the crisis, the ECB had already exhausted conventional monetary policy instruments, as its policy rates were already in negative territory and constrained by the Effective Lower Bound on interest rates (Figure 3: ECB policy rates).

The ECB used its entire toolbox to support the EU economy. First, the ECB used forward guidance to target longer-maturity rates by conditioning a policy rate increase to the return of the inflation at its 2% target and a positive outlook on financial stability, which is a known pre-condition of price stability. The ECB also revised its inflation target<sup>4</sup>, announcing that it would now accept fluctuations both below and above the 2% target as a way of anchoring that the next rate increase may not be triggered by a transitory surge in inflation. Instead, an increase would be triggered by a clear stabilization of inflation above its target.

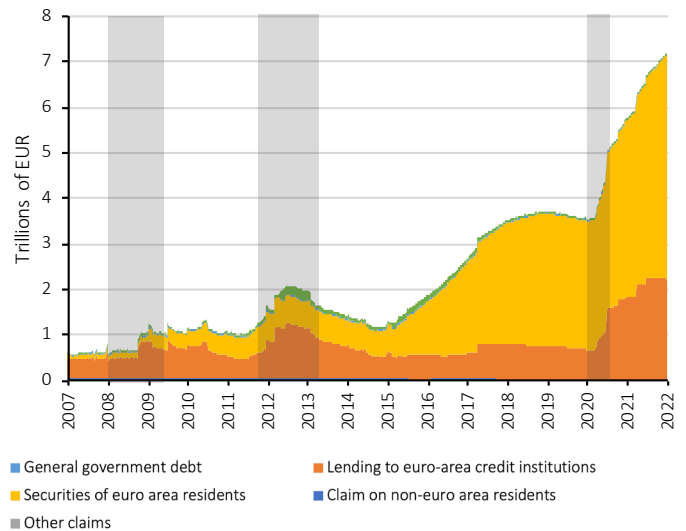
Second, the ECB implemented a massive QE program via the €1,850 billion Pandemic Emergency Purchase Programme (PEPP). The size of its balance sheet grew by 103% between January 1<sup>st</sup>, 2020 and January 1<sup>st</sup>, 2022 (Figure 4: Size of the ECB balance sheet). The type of assets concerned was broad, extending to all asset classes of the Asset Purchase Programme (APP) initiated in 2014, with an additional waiver allowing the purchase of Greek public debt<sup>5</sup>. Consequently, the PEPP massively expanded the purchase operations on the secondary sovereign and corporate bond markets that had been initiated following the sovereign debt crisis in Europe.

Figure 3: ECB policy rates



Source: ECB (January 2022).

Figure 4: Size of the ECB balance sheet



Source: ECB (January 2022).

<sup>3</sup> For the full detail of monetary policy measures taken by the ECB to fight COVID, see ECB (2021a) and referenced speeches.

<sup>4</sup> This specific policy change was part of the ECB strategic review (ECB, 2021) initiated in January 2020 and announced in September 2021. Previously, the inflation target of the ECB was “close to but below 2%”.

<sup>5</sup> Until then, Greek sovereign bonds had been singled out from the APP due to a below investment grade sovereign rating.

Finally, the ECB refined and deepened its provision of liquidity to the banking system by expanding the family of its longer-term refinancing operations and adjusting the terms under which they were conducted.

The cheap financing and massive injection of liquidity into the financial system was justified with regards to its price stability objective, by targeting multiple intermediary objectives:

- Provide cheap liquidity to the financial sector and non-financial corporations in order to avoid a liquidity crisis, which could have later transformed into financial panic or a wave of insolvencies; and
- Reduce the borrowing constraint for Governments who had to finance massive fiscal stimulus programs to support their economies and bring back output levels to their potential level.

Next to the pure monetary and liquidity measures by the ECB, macroprudential and capital-based measures were also taken by regulators, for example through the reduction of countercyclical buffers, or through broader regulatory measures in the financial sector. For instance, the European Commission eased rules on State Aid unfair competition as regards to the financing of national companies via national development banks, a substantial shift from the previous trend of strengthening EU market integration<sup>6</sup>.

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<sup>6</sup> See (Volberding 2021b) and ESRB (2021).

Table 1: Above-the-line measures by countries

	Support to healthcare systems	Support to households and labour markets	Support to the corporate sector and entrepreneurs	Total	% of GDP
France	<ul style="list-style-type: none"> <li>Support for state health insurance and paid-sick leaves – <b>€ 25 bn</b></li> <li>Higher spending on health supplies; procurement of face masks; bonuses for health workers &amp; additional investment and equipment in the health sector announced (Ségur) – <b>€ 8 bn</b></li> </ul>	<ul style="list-style-type: none"> <li>Support for wages of workers under the short-time work scheme, including workers in the tourism and aviation industry – <b>up to € 39 bn</b></li> <li>Direct financial support for low-income and most-fragile households – <b>€ 1 bn</b></li> <li>Extension of expiring unemployment and other benefits – <b>€ 1.6 bn</b></li> <li>Additional spending in social programs</li> </ul>	<ul style="list-style-type: none"> <li>Accelerated refund of tax credits (e.g. CIT and VAT) – <b>€ 17.5 bn</b></li> <li>Direct financial support for affected microenterprises, liberal professions, and independent workers – <b>€ 8.5 bn</b></li> <li>Exemption from social security contributions for SMEs, and independent workers operating in the worst hit sectors; Carry back for corporate income taxes – <b>up to € 30 bn</b></li> <li>Postponement of social security contributions and tax payment – <b>€ 66 bn</b></li> <li>Permanent reduction of production taxes a year in 2021 – <b>€ 10 bn</b></li> <li>Support measures for the hardest-hit sectors (including cultural sector) – <b>up to € 10 bn</b></li> <li>Subsidies to green investment (electric cars, hydrogen) – <b>up to € 10 bn</b></li> </ul>	<b>€ 222 bn</b>	<b>9.6 %</b>
Germany	<ul style="list-style-type: none"> <li>Investment in vaccines, medical equipment, research, information campaigns; Improve the capacity of hospitals – <b>€ 61 bn</b></li> </ul>	<ul style="list-style-type: none"> <li>Expansion of the “Kurzarbeit” program to support firms and households – <b>up to € 25 bn</b></li> <li>Personal income tax reliefs, and social security contribution reduction, expansion of basic income criteria – <b>&gt; € 10 bn</b></li> <li>Increased access to childcare and direct income support to parents and families. Temporary relief to affected tenants – <b>up to € 25 bn</b></li> </ul>	<ul style="list-style-type: none"> <li>Grants to hard-hit small businesses and self-employed – <b>up to € 50 bn</b></li> <li>Temporary VAT reduction in 2020, and special VAT cuts for restaurants and food services – <b>€ 33.5 bn</b></li> <li>Tax deferrals for companies – <b>€ 250 bn</b></li> <li>Incentivizing green and digital investment (electric cars, renewable energy, AI, hydrogen etc.) – <b>up to € 50 bn</b></li> </ul>	<b>€ 516 bn</b>	<b>15.3 %</b>
Italy	<ul style="list-style-type: none"> <li>Strengthening of the sector: additional spending in medical equipment, staff, and vaccines. Zero VAT – <b>€ 20 bn</b></li> </ul>	<ul style="list-style-type: none"> <li>Broad expansion of the wage supplementation fund to provide income support to laid-off workers and the self-employed; subsidy for childcare – <b>€ 80 bn</b></li> </ul>	<ul style="list-style-type: none"> <li>Social security contribution reduction – <b>€ 6 bn</b></li> <li>Postponement of VAT, CIT, property taxes, and social security contributions – <b>€ 10 bn</b></li> <li>Grants for SME, Education, and other hard-hit sectors – <b>€ 75 bn</b></li> <li>Corporate income tax credits – <b>€ 4 bn</b></li> </ul>	<b>€ 180 bn</b>	<b>10.9 %</b>
European Union	<ul style="list-style-type: none"> <li>Funding of COVID-19 vaccine R&amp;D, treatment, and diagnostics – <b>€ 8.1 bn</b></li> </ul>	<ul style="list-style-type: none"> <li>Funding towards active labour market policies and short-time work schemes (EC Corona Response and ReactEU) – <b>€ 78 bn</b></li> </ul>	<ul style="list-style-type: none"> <li>Recovery package (Next Generation EU): grants towards investment by member states (Recovery and Resilience Facility) – <b>€ 320 bn</b></li> <li>Grants to private sector investment, in particular for green and digital investment – <b>€ 21 bn</b></li> </ul>	<b>€ 428 bn</b>	<b>2.9 %*</b>

\*on top of country-level measures.

Source: IMF Fiscal Monitor, Bruegel, EC Fiscal Monitor, ESRB.

Table 2: Below-the-line measures and contingent liabilities by countries

	Equity injections and direct loan financing	Credit Guarantees / Contingent Liabilities	Total	% of GDP
France	<ul style="list-style-type: none"> <li>• Direct equity investment or nationalization of strategic companies and companies in difficulty (Air France-KLM) – <b>€ 16 bn</b></li> </ul>	<ul style="list-style-type: none"> <li>• State guarantees for bank loans to companies, credit reinsurance schemes, and others – <b>€ 327.5 bn</b></li> <li>• Public guarantees to a leveraged 20bn fund for the financing of the quasi-equity support or equity loans to firms – <b>€ 7 bn</b></li> </ul>	<b>€ 350 bn</b>	<b>15.2 %</b>
Germany	<ul style="list-style-type: none"> <li>• Equity investments in significantly affected companies – <b>€ 100 bn</b></li> <li>• Loan financing for firms that do not have access to KfW's existing programs – <b>€ 100 bn</b></li> </ul>	<ul style="list-style-type: none"> <li>• Increase in state guarantee to private sector loans – <b>€ 470 bn</b></li> <li>• Expansion of KfW programs via increased state participation – <b>€ 357 bn</b></li> </ul>	<b>€ 1,027 bn</b>	<b>30.7 %</b>
Italy	<ul style="list-style-type: none"> <li>• Equity injection to Alitalia – <b>€ 3.3 bn</b></li> </ul>	<ul style="list-style-type: none"> <li>• Guarantees for loans to business and households – <b>up to € 579 bn</b></li> </ul>	<b>€ 582 bn</b>	<b>35.3 %</b>
European Union	<ul style="list-style-type: none"> <li>• Unemployment reinsurance fund (SURE) to provide favourable loans to governments in support of national unemployment, short-time work schemes, and health-related measures – <b>€100 bn</b></li> <li>• Possible ESM loans to EA Member States to finance crisis-related health spending – <b>up to 2% of each state's GDP, or € 240 bn total</b></li> <li>• Recovery package (Next Generation EU): loans towards investment in recovery and resilience plans by member states (Recovery and Resilience Facility) – <b>€ 360 bn</b></li> </ul>	<ul style="list-style-type: none"> <li>• Guarantees towards loan-financing of hard-hit SMEs via the EIB and national development banks – <b>€ 65 bn</b></li> </ul>	<b>€ 765 bn</b>	<b>5.2 %*</b>

\*on top of country-level measures.

Source: IMF Fiscal Monitor, Bruegel, EC Fiscal Monitor, ESRB.

### 3. MACROECONOMIC CONSEQUENCES OF THE RESPONSES TO THE COVID-19 CRISIS

This chapter compares the macroeconomic situation of the biggest EU economies to that of the United Kingdom and the United States, based on economic data available at the beginning of 2022. This analysis allows, in the context of the recovery, to highlight the points in common across advanced economies and the specificity of the European model as regards to, primarily, its labour market institutions. We also attempt, qualitatively, to ascribe such dynamics either to the crisis, or to the measures taken thereafter (wage subsidies, tax deferrals, credit provision, etc.).

#### 3.1. Impact on economic, real GDP growth

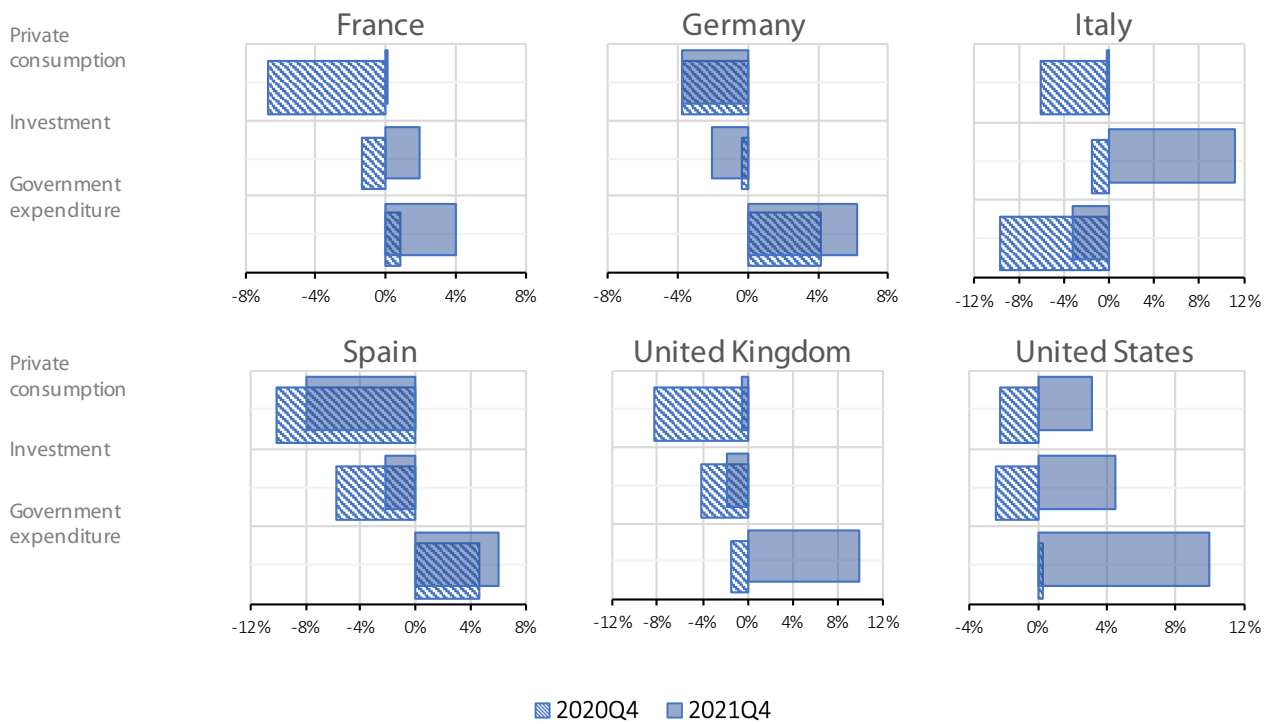
##### 3.1.1. The solid short-term growth performance can be attributed to strong policy measures...

The profile of real GDP since 2019 tells us how massive the “COVID sudden stop” turned out to be for global economic activity. But it also reveals the strength of the subsequent recovery. The United States is leading the pack; together with the Netherlands and Sweden, the US GDP exceeded its pre-crisis (2019Q4) level in 2021Q4 by 4.8 %. Among EU countries, France also ranks high, having completely returned to its pre-crisis GDP level in 2021Q4. German GDP followed a trajectory very close to that of the United States and Canada until the end of 2020, before weakening: it was in 2021Q4 at -1.1 % of its pre-crisis level. Italy showed a sharp rebound in activity in 2021 and at the beginning of 2022 is 7 % above its pre-crisis level. The UK and Spain experienced the biggest drop in activity in spring 2020, with GDP falling by more than 20 %. In 2021Q4, GDP gaps with respect to 2019Q4 were still around 0.3 % (UK) and 4.1 % (Spain).

**Growth by components of GDP.** The macroeconomic channels through which the fall in activity has affected the economy can be seen by analysing the breakdown of real GDP by component (Figure 5). Regardless of the country considered, private consumption was the main contributor to the fall in activity. In 2021Q4, the level of private consumption remained below its pre-crisis level in Europe—almost at its pre-crisis level in the French case—and continued to weigh on activity, despite the gradual lifting of health restrictions. The picture is sharply different in the US, with real private consumption 3.1 % above its pre-crisis level.

As far as investment is concerned, levels had already surpassed their pre-crisis levels and contributed very positively to the economic rebound in the United States, Canada, France, and Italy. For Germany, Spain and the UK, investment remained depressed compared to the pre-crisis level.

Figure 5: GDP growth by component, percentage change compared to 2019Q4

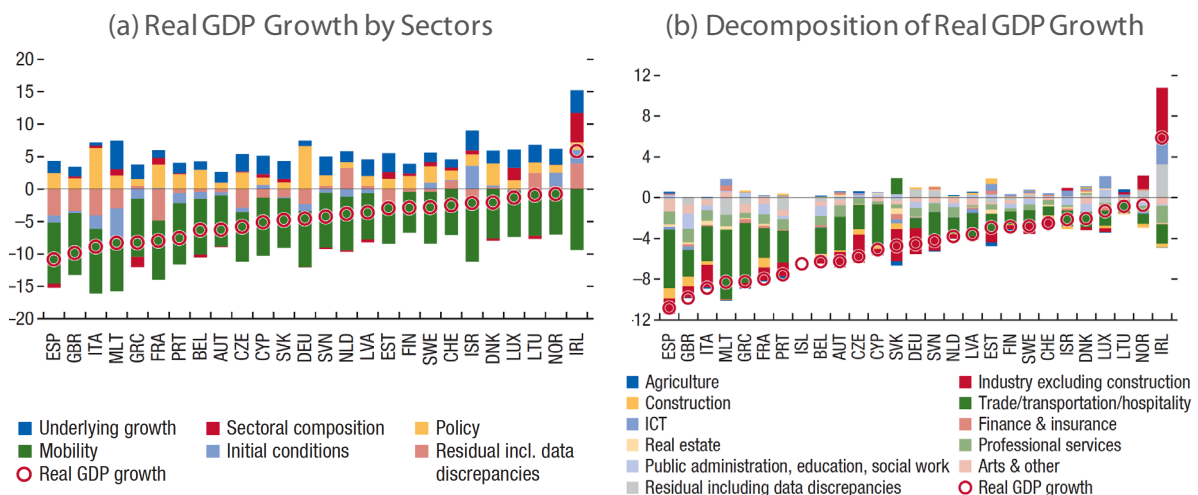


Source: Insee, ONE, BEA, DeStatis, IStat, INE.

**Sectoral heterogeneity in growth performances.** A natural question arising from the growth decomposition exercise is whether the nature of the pandemic meant that some sectors of activities were more impacted than some others, and whether that can ultimately explain the heterogeneity in growth performances across EU countries.

So-called “contact intensive sectors”, such as Hotels and Restaurants, Travel industry, as well as some professional and real estate activities, were subject to either administrative closures or were profoundly disrupted by the fact that work cannot be performed in a remote setting.

Figure 6: Sectoral decomposition of 2020 GDP growth



On the contrary, it is expected that some services, in particular in the technology sector, were simply better suited for weathering the impact of sanitary restrictions, as a lot of the work could be done from home.

The IMF Regional Economic Outlook for Europe (October 2021) shows that the performance across the EU was indeed heterogeneous, but to a much smaller extent than what would have happened with no special support to the hardest hit sectors (Figure 6, panel a). Also, the report finds that heterogeneity in the sectoral composition of EU economies explains very little of the differences in growth performances at the aggregate level (Figure 6, panel b).

**Counterfactual analysis.** Turning to a more dynamic approach to GDP, losses of activity compared to the pre-crisis trends (as opposed to levels) are still significant in Europe in early 2022. Most countries are gradually returning to their GDP levels of 2019Q4, but gaps remain to the lost economic growth that would have been observed in the absence of the crisis. Quantifying this loss implies estimating the evolution of the productive potential of the economy outside the cycle, known as "potential GDP", whose measurement is subject of debate.

We choose to make an alternative assessment of "foregone" versus "stimulus-based" economic growth by constructing counterfactuals of GDP dynamics. Figure 7 summarises our results for a panel of major economies, by representing three different scenarios using three different lines: the projections of real GDP that prevailed before the COVID-19 crisis (blue lines), GDP projections that prevailed after (green lines), and our assessment of the GDP profile that would have prevailed in the absence of support measures (red lines). This counterfactual scenario is obtained using the range of fiscal multipliers observed in the literature<sup>7</sup>.

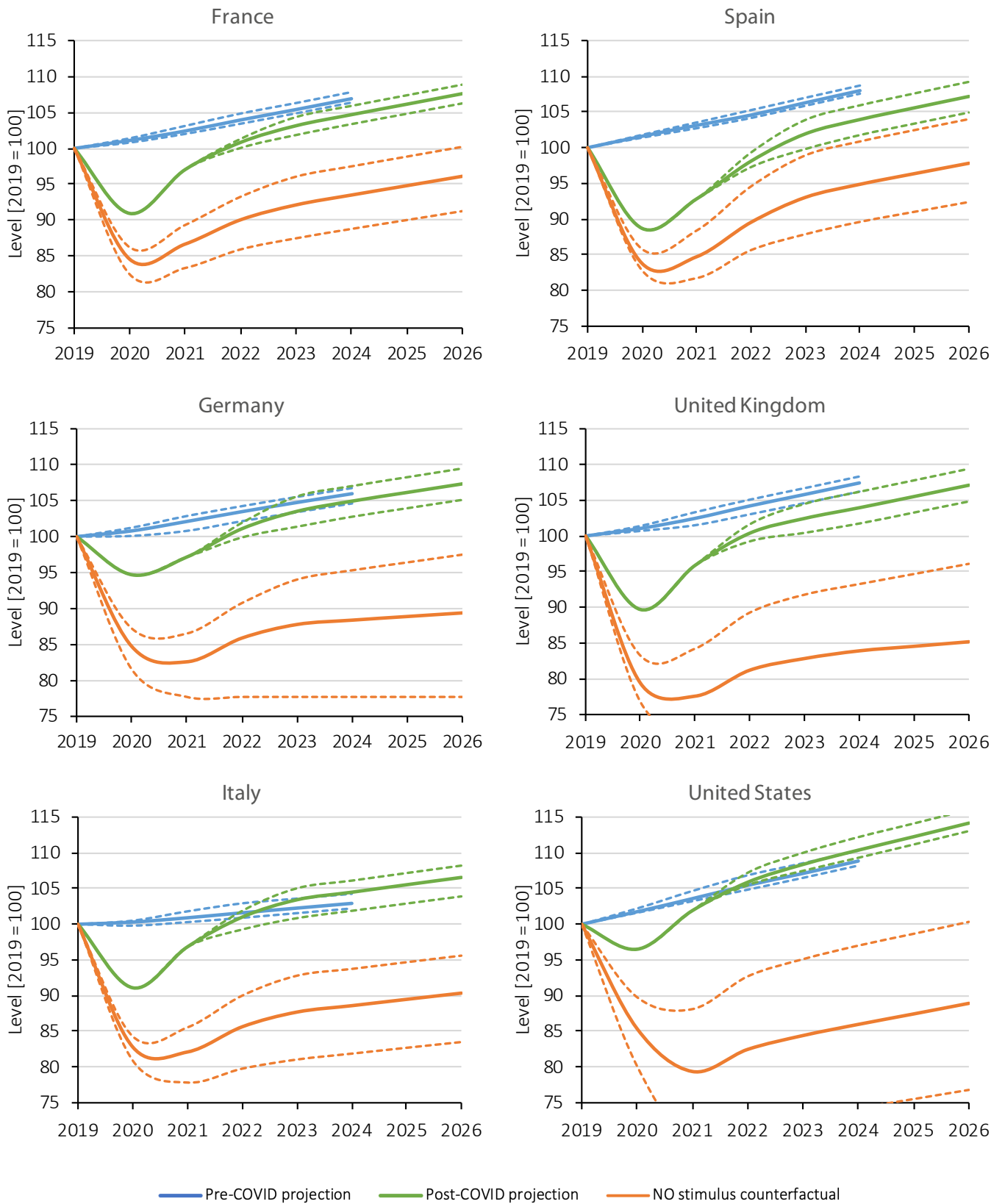
According to our analysis, crisis mitigation measures had the biggest impact in the United States, the UK and Italy. The efficacy of those measures is univocal: first, they contributed to "rescue" 10 to 15% of GDP at the trough (see the distance between the solid green and orange lines for each country in Figure 7); second, they anticipated the turning point in economic activity (see the time-lag between the orange and the green turning points, at worst concomitant as in France and Spain, otherwise positive in Germany, the UK and the US).

In our sample, only the US exceeded its pre-pandemic GDP level at the end of 2021. In addition, all other countries (except Spain) are on a solid trajectory to do the same at some point in 2022.

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<sup>7</sup> We follow an approach very similar to the IMF REO for Europe (October 2021).

Figure 7: Real GDP under different scenarios including no-stimulus counterfactuals



Source: Authors' calculations based on institutional forecasts (see Technical appendix for Figure 7: Real GDP under different scenarios including no-stimulus counterfactuals for calculation details and data sources).



### 3.1.2. ...with the unintended consequence of reaching supply-side constraints?

The strong resilience of advanced economies to the COVID-19 shock can be explained primarily by the fast and massive reaction of governments. Fiscal packages were quickly deployed and were, in the case of European countries, an order of magnitude bigger compared to the GFC fiscal response. This raises the question of whether too much has been done, and of whether some fiscal resources have been “wasted” in trying to push the economy above its potential.

Calibrating fiscal policies is a hard exercise and concluding with certainty that some fiscal packages were oversized requires having, in real time, a measure of the distance of economies from their potential level. We decided to look at alternative evidence rather than basing our judgement on existing but debated measures of potential GDP.

The counterfactual exercise shown in Figure 7 is informative about the calibration of COVID-19 packages. It appears, for instance, that Italy and US are on a trajectory that is above their pre-crisis trend, as shown by the green line having a higher level and higher slope than the blue line starting in 2022. The UK, which had one of the biggest fiscal packages (Figure 2), however, doesn't seem to be on a higher trend trajectory, which could be indicative of other structural challenges that the country is facing, such as latent effects from Brexit. France and Germany seem to be on par with their pre-crisis trend and show very strong resilience. Spain, however, seems to be in a “bad” spot, despite having a fiscal package comparable in size to that of France.

Later in this paper, we also look at other evidence indicative of the appropriateness of the calibration of fiscal packages by looking at:

- Tightness of the labour markets;
- Supply-side bottlenecks;
- Inflationary pressures; and
- Structural growth via creative destruction.

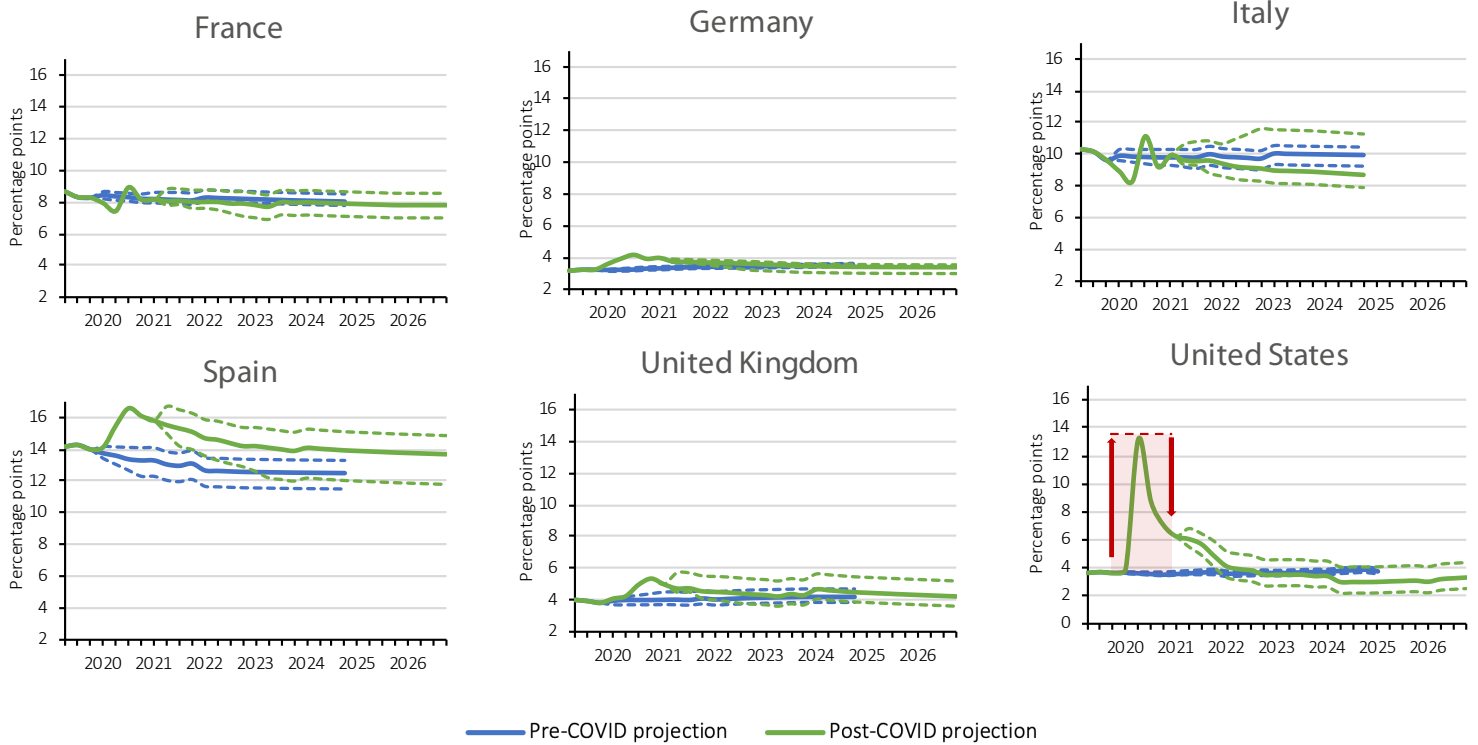
## 3.2. Impact on labour markets

### 3.2.1. Short-term unemployment dynamics are highly dependent on the type of instruments used to support labour markets

**Different models of adjustment in labour markets on both sides of the Atlantic.** Regarding labour market support measures, two distinct approaches were followed during the crisis. The adjustment in the United States and Canada took place through a fall in salaried employment and an increase in unemployment (Figure 8), while most European countries (and Japan) favoured a fall in the average working time per employee (Figure 9).

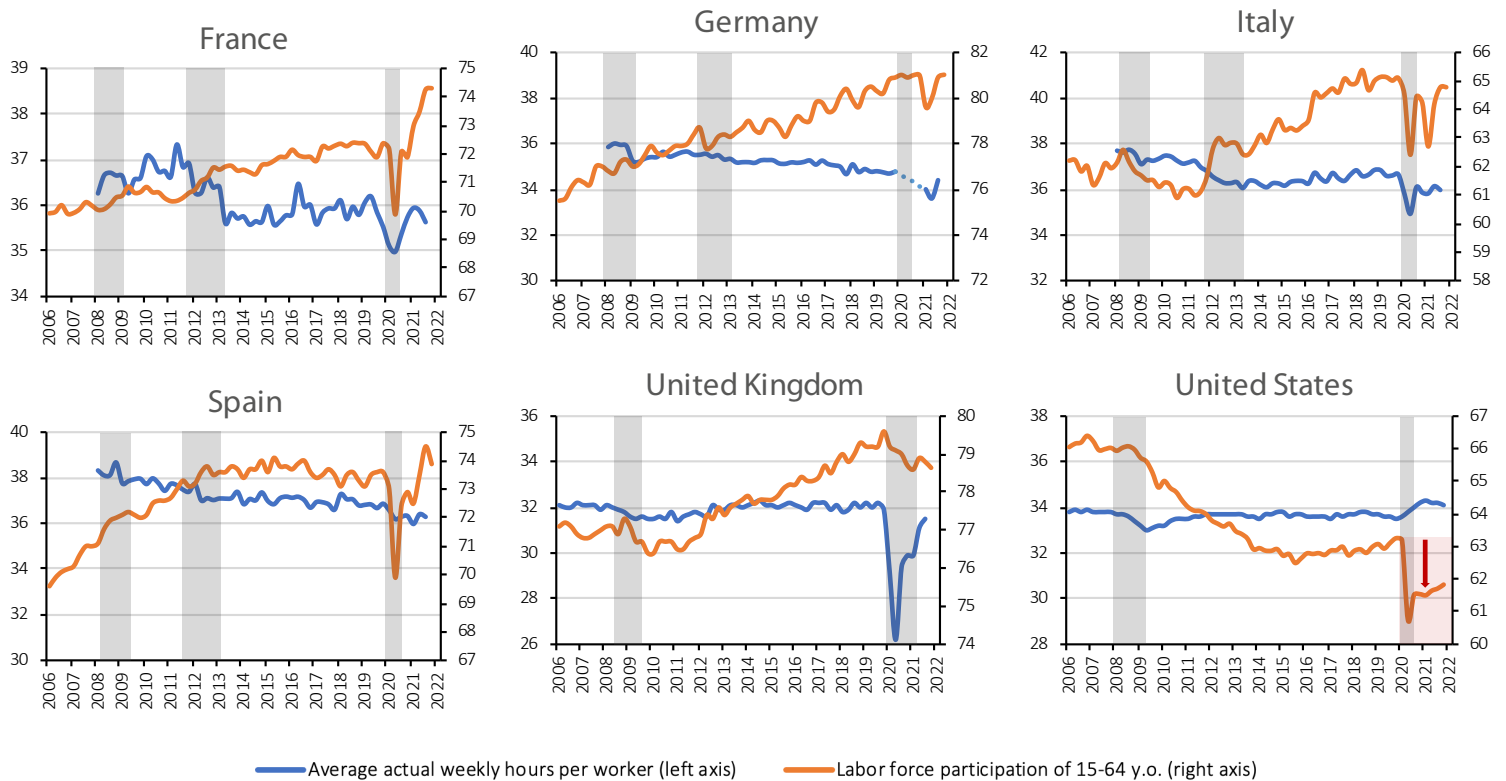
The challenge for European countries was to contain the rise in the unemployment rate by reducing working hours via partial activity schemes. They did so rather successfully: the unemployment rate in the United States increased by 9.3 pp between 2020Q1 and 2020Q2.

Figure 8: Simulations of unemployment trajectories pre- and post-COVID



Source: Authors' calculations based on institutional forecasts (see Technical appendix for Figure 8: Simulations of unemployment trajectories pre- and post-COVID for details on calculations and data sources).

Figure 9: Historical trajectories of Working Hours and Labour Participation



Note: Shaded gray areas correspond to recessions identified CEPR/ONE/NBER recessions.

Source: Eurostat, ILO, ONS, BLS, Insee.

(+6.7 pp for Canada), before showing a gradual decline. In the third quarter of 2021, unemployment in the US was still 1.5 pp higher than its level in the fourth quarter of 2019. In comparison, the unemployment rate remained stable in European countries, except in Spain and Sweden where it increased by +2.6 pp and +2 pp respectively in the third quarter of 2020 (compared to the last quarter of 2019, see Figure 8).

**Unemployment simulations.** Looking at unemployment projections post-2021, it seems that most countries will stay on par with their pre-crisis trajectories, suggesting that the COVID-19 crisis will only have a transitory impact on the labour markets. However, it is interesting to notice that in the case of both Italy and the United States, the unemployment rate in the post-crisis period is expected to stabilize at a lower level than was anticipated pre-crisis. This is most likely the result of upward revisions in growth expectations for these two countries (Figure 7), most probably driven by the sheer size of the fiscal package (bolstering labour demand). In contrast, Spain is likely on track to see a permanent 1 pp increase in its unemployment rate, despite the strong recovery since the second quarter of 2020. This goes in hand with the expected lower trajectory for economic growth in Spain post-COVID (Figure 7).

The bulk of the adjustment in total hours worked in Europe happened through a sharp reduction in the average hours worked (see Figure 9), due to the introduction of partial activity schemes, which keep employees temporarily inactive. It should be remembered, however, that the data on the number of hours worked are more fragile than the employment data and must be interpreted with caution. In France, the volume of hours worked per worker (employees and non-employees) fell by 16.7 % between the fourth quarter of 2019 and the second quarter of 2020, due to the strictness of health restrictions measures. This drop was similar in magnitude in other EU economies, but has been much more pronounced in the case of the UK, with a reduction of 25 pp in average hours worked.

### 3.2.2. Labour demand and supply might have structurally changed over the medium run

**Margins of adjustment in the labour force.** Labour markets reacted to the crisis not only through a shock to firms' demand for labour, but also on the supply side, through a permanent "COVID shock" that transformed labour relationships and ways of working. Behind this shift in labour supply lay some fundamental shifts in workers' preferences.

It is possible to decompose this structural shift along two dimensions:

- the **extensive margin**, meaning through the number of work contracts or, equivalently, through the number of people deciding to work. This margin is measured by changes in the **labour force participation** rate; and
- the **intensive margin**, meaning via the number of hours per work contract, or how intensively people want to work. This margin is measured by changes in the **average hours worked**.

The recovery in hours worked turned out to be fairly generalised in advanced economies. In all countries (except Japan), the volume of hours worked per worker has recovered to levels comparable to 2019Q4 or exceeded it (Canada), even in the case of the UK, which experienced the sharpest drop.

**Early assessment of the structural transformations in the labour markets.** What will be key to monitor—and seems quite premature to analyse—is the labour force participation, as well as mutations in the ways of working across countries. The US case is insightful, as the labour force

participation rate seems to have permanently dropped by 2 pp. This raises the question of where the workers went and why firms cannot find workers despite quickly rising wages. According to Quinby et al. (2021), the likelihood of leaving work over the course of a year has risen by 7.6 pp for the population aged 55 and above (a 50% increase over the pre-pandemic rate). This phenomenon is known as “the US Great Resignation” (see Figure A.1). The number of pensioners grew much faster than expected, compared to previous recessions (75% higher, or an extra loss of 1.5 million employees). Also, for lower age categories, the exit from the labour force seems primarily driven by women, those without a college degree, Asian-Americans, and those in occupations less amenable to remote work. The way in which labour is mutating may therefore have severe consequences for inequality.

The European labour markets seem to have weathered the COVID-19 shock rather swiftly, with little transformative impact on the labour force<sup>8</sup>. However, beyond the quantity of work supplied in the economy, analysing more deeply work quality and characteristics, such as new and more flexible work modes, will prove to be an important question going forward.

### 3.3. Short-term impact on external balances of member states

**Current account balances were heterogeneously impacted but recovered quickly.** In many EU countries, the current account balance took a serious hit during the crisis. At the onset, Germany, Spain, and France suffered a deterioration in their current account balance between 2019Q4 and 2020Q3 (Figure 10). Germany experienced a gradual recovery in its current account from the third quarter of 2020, as did Japan. Unlike France, Spain's current account balance did not recover until late 2021. The United States' current account balance has been slowly but steadily declining since 2020Q1<sup>9</sup>. Italy, for its part, only experienced a slight drop in its current account balance in 2020Q2 and in 2021 saw an overall improvement compared to its pre-crisis level.

**Slowdown in global trade affected both imports and exports.** In most countries, both import and export decreased, leaving the trade balance close to unaltered (Figure 11).

In the context of a general recovery in global demand, a rebound in the flow of goods and services started in the second half of 2020. But 2019 levels were generally not yet recovered in 2021Q4. Compared to the 2008 financial crisis, the decline in trade was initially stronger, but was followed by a marked rebound. Overall, between 2019Q4 and 2021Q4, the trade balance in goods and services deteriorated in France, Italy, Spain, the United Kingdom, Canada and the United States, but remained stable in Germany, Sweden and Japan. Here again, the dynamics differed from country to country.

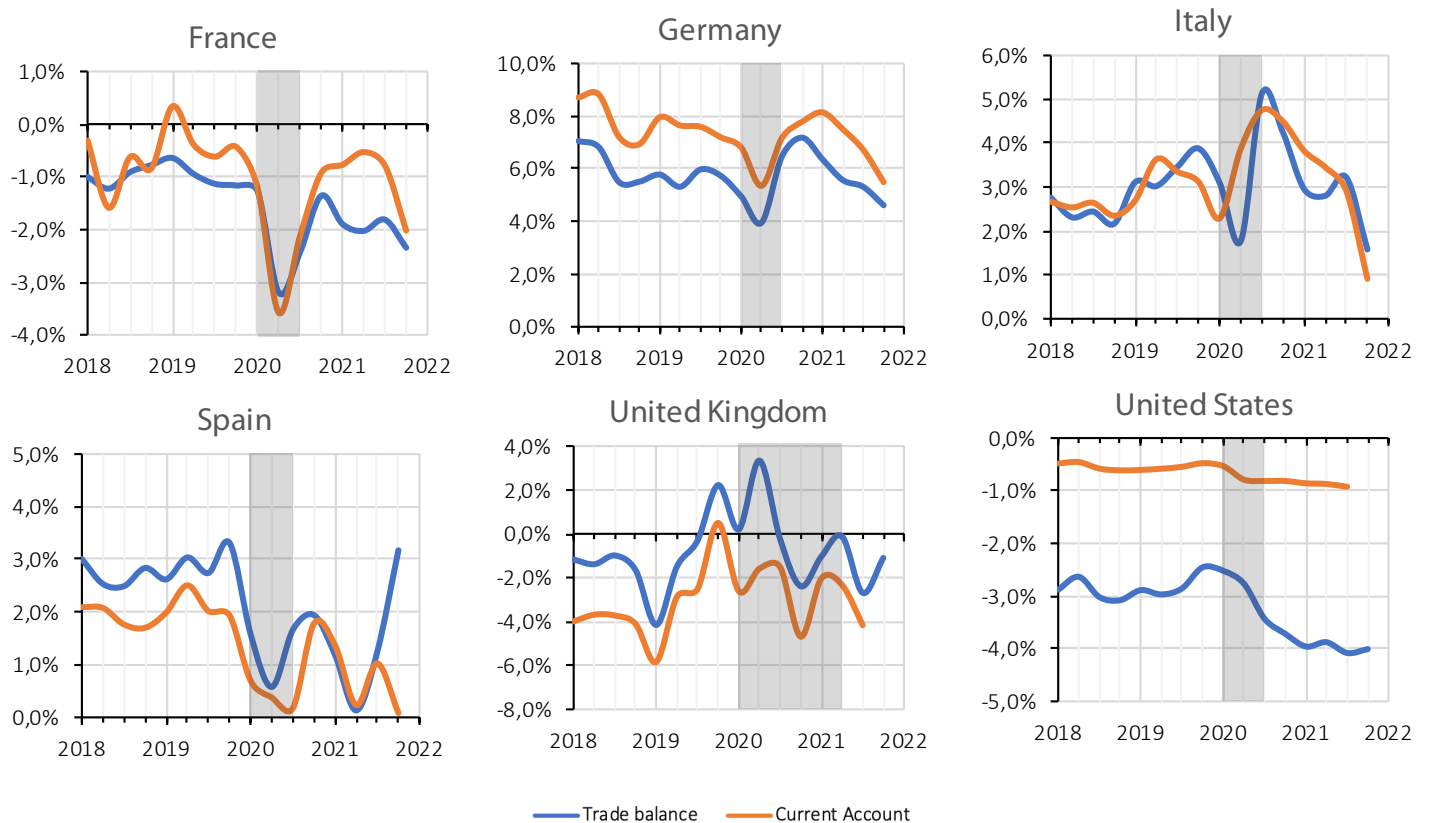
One of the drivers of this heterogeneity in trade dynamics across EU countries is the size of hard-hit sectors in each country (see Figure A.2). In countries which depend on travel and tourism (*i.e.* travel planning, transport, accommodation, food and shopping, local travel and tourist sites), the COVID-19 pandemic is having a severe and lasting impact on the trade balance. However, the sign of net balance matters for the exposure of economies to the COVID-19 shock. For instance, in the EU, the countries the most exposed to the impact of the pandemic in terms of net exports of travel and

<sup>8</sup> The lack of unified data for the share of retired people by age category prevent a replication of the analysis in Figure A.1 for EU countries. Labour force participation for people aged 55-64 is only a partial indicator of this phenomenon.

<sup>9</sup> Interestingly, the gap between the Current Account deficit and the Trade Balance deficit of the US widened during the crisis. This phenomenon is known as the “exorbitant privilege of the US” and can be (arguably) explained by the fact that residents of the US pay relatively low interest on their liabilities to foreigners, while earning relatively high returns on their foreign assets. This is true in particular in times of crisis when risk aversion of global investors heightens, feeding large inflows of money into the market for US Treasuries. See Gourinchas and Rey (2005) for a detailed treatment.

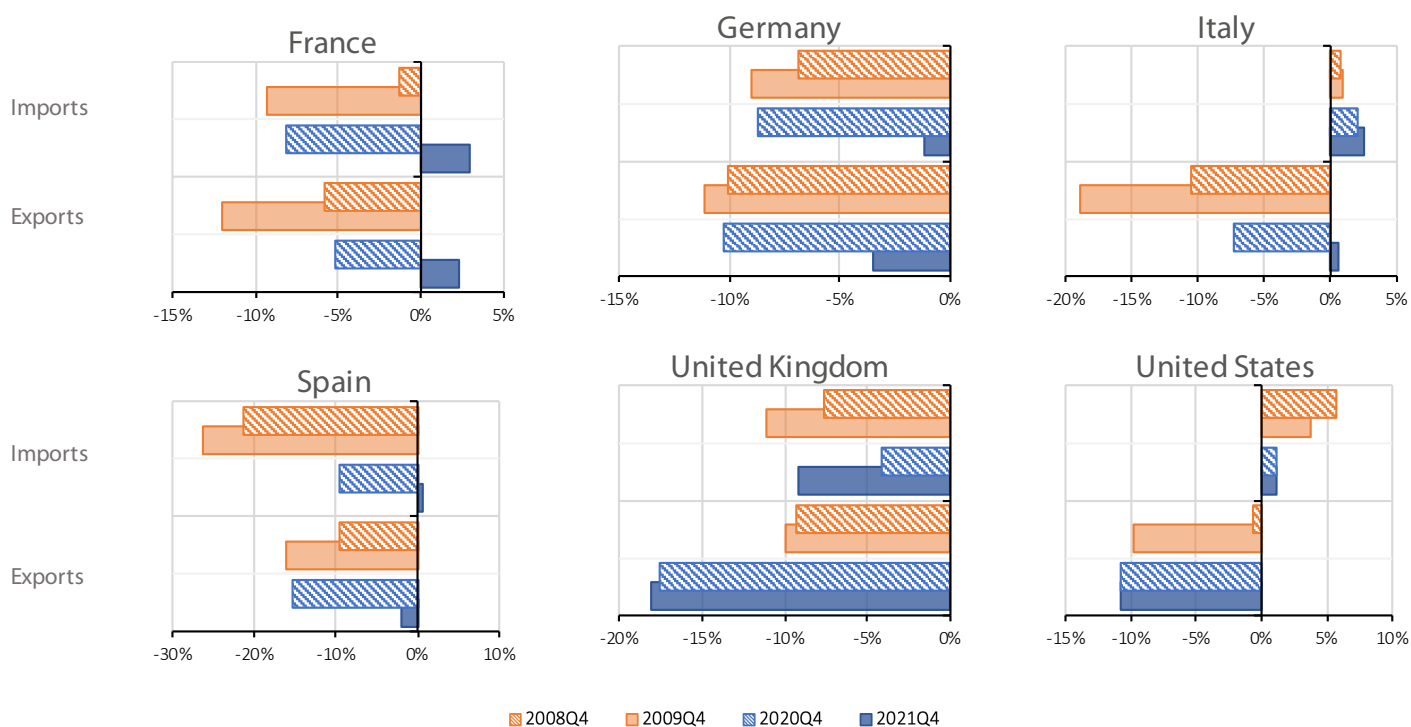
tourism services are Cyprus, Malta, Greece, Portugal Spain and Austria. By contrast, Germany and Belgium benefit slightly in terms of net exports, as they are major importers of travel services (ECB, 2020).

Figure 10: Current account and Trade balances (goods and services) as % of GDP



Note: Shaded gray areas correspond to recessions identified by CEPR/ONE/NBER recessions.  
Source: Eurostat, ILO, ONE, BEA, Insee, IStat.

Figure 11: Comparative evolution of exports and imports of goods and services



Note: Constant prices, Seasonally adjusted. Baseline is 2019Q4 for the Covid crisis and 2007Q4 for the GFC.  
 Source: Insee, ONE, BEA, DeStatis, IStat, INE.

### 3.4. Impact on financial markets and the corporate sector

Support to the corporate sector, in particular SMEs, was undoubtedly needed. Measures targeted to non-financial companies meant that despite tensions accumulating on their balance sheet, they could continue to operate and preserve employment. Yet, a risk factor for the economic recovery is their latent fragility, even if, prima facie, the crisis has on average not necessarily deteriorated their financial health.

#### 3.4.1. Financial market imbalances and corporate debt have inevitably accumulated during the pandemic...

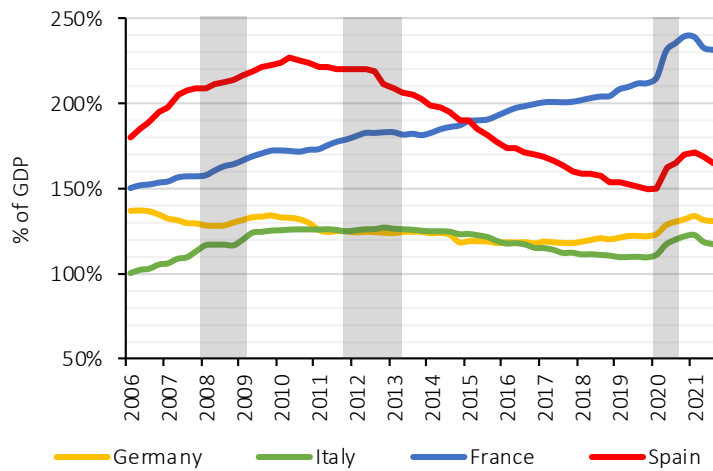
**Debt piled up.** A first metric to depict the state of the corporate sector is to look at the strength of its balance sheet, in particular its liabilities. Figure 12 shows the indebtedness of the corporate sector as a share of GDP. The pandemic unsurprisingly triggered a significant increase in non-financial corporate debt levels for all major economies.

**Default remained contained.** Although debt piled up during the crisis, corporate defaults have remained remarkably contained - in fact more contained than some counterfactuals may have been in absence of the crisis<sup>10</sup> (see Figure 13 and Figure 15 for suggestive evidence). Implicit and explicit measures of corporate default derived from financial markets also suggest that - so far - tensions cannot be detected. It is very likely that thanks to balance-sheet support measures, the EU collectively avoided the kind of liquidity crisis that would have wiped away a good chunk of firms, without discerning between the good and the bad.

<sup>10</sup> This may be also partly driven by moratoria on bankruptcies imposed by some countries during the COVID-19 period.

This being said, outstanding amounts of corporate balance-sheet support schemes, mostly in the form of loan guarantees as summarised in Table 2, suggest that further adjustments are yet to come, and corporate default rates that can be observed currently are no guide for the near future, when such measures are wound down.

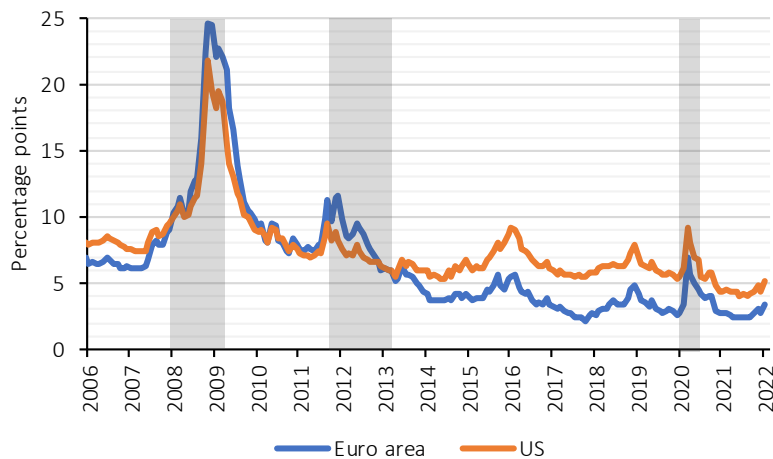
Figure 12: Total Credit to the Private Non-Financial Sector as a share of country GDP



Note: Shaded gray correspond to recessions identified by the CEPR.

Source: Bank for International Settlements

Figure 13: Average Effective Yield on Below-Investment grade Corporate Bonds



Note: Shaded gray correspond to recessions identified by the CEPR .

Source: Ice Data Indices, LLC

### Box 1: Liquidity and solvency risks counterfactuals as seen from the literature

In addition to our proposed counterfactual analysis for real GDP (Figure 7), we reviewed major studies analysing income losses, liquidity, and cash-flow issues, as well as solvency and default rates under a counterfactual with no policy support.

**Policy support drastically reduced liquidity risk.** Revoltella et al. (2020) argue that the cumulative net income losses induced by the COVID-19 crisis for EU companies (all sizes) would have been in the range of 5.4 % to 10 % of the total value of assets, i.e. between 13 % and 24 % of EU GDP, depending on the strength of public support and the length of the normalisation period. These income losses would have resulted in cash flow difficulties for 51 % to 58 % of companies after the first lockdown. Gourinchas et al. (2020) develop a different approach that leads them to slightly more modest results. By combining three forms of negative shocks (on supply, demand and productivity), they estimate that the crisis would have pushed the proportion of illiquid companies from 9.4 % (without COVID-19) to 18.2 %. When updating their work, Gourinchas et al. (2021) obtain substantially equivalent results, slightly lower than those of Demmou et al. (2021), with an increase in 2020 of 9.8 pp in the default rate of SMEs compared to a counterfactual scenario without a pandemic. More recently, using the Orbis balance sheet and income statement data for European companies (of the IMF Europe Region), Ebeké et al. (2021) estimate that the share of illiquid firms could have tripled from pre-crisis levels, while the share of insolvent firms would have increased from 11 % to 20 % in European advanced economies and from 14 % to 30 % in European emerging economies.

**Part-time work schemes were the most efficient policy tool in supporting the corporate sector.** For Demmou et al. (2021), wage bill relief measures such as short-time work schemes (modelled as a 80 % public subsidy to the wage bill of the firms) have had the most significant effect among available policy tools, reducing by about 13 pp the proportion of illiquid companies following the shock. By combining the different forms of measures (tax deferrals, private debt moratoria, guaranteed loans and wage bill relief via part-time work schemes) public support contributed to reducing the proportion of illiquid companies from 26% to 7% after the first two months of confinement. For Gourinchas et al. (2021), tax deferrals would only have had a very limited effect, equivalent to around 0.5 pp reduction in the proportion of illiquid companies. Partial-time work, on the contrary, had the most significant effect, reducing the share of illiquid companies by 3.6 pp to 7.4 %.

Source: Revoltella et al. (2020), Gourinchas et al. (2020, 2021), Demmou et al. (2021), Ebeke et al. (2021)

### 3.4.2. ...But safeguard measures in favour of non-financial corporations have cushioned the corporate sector...

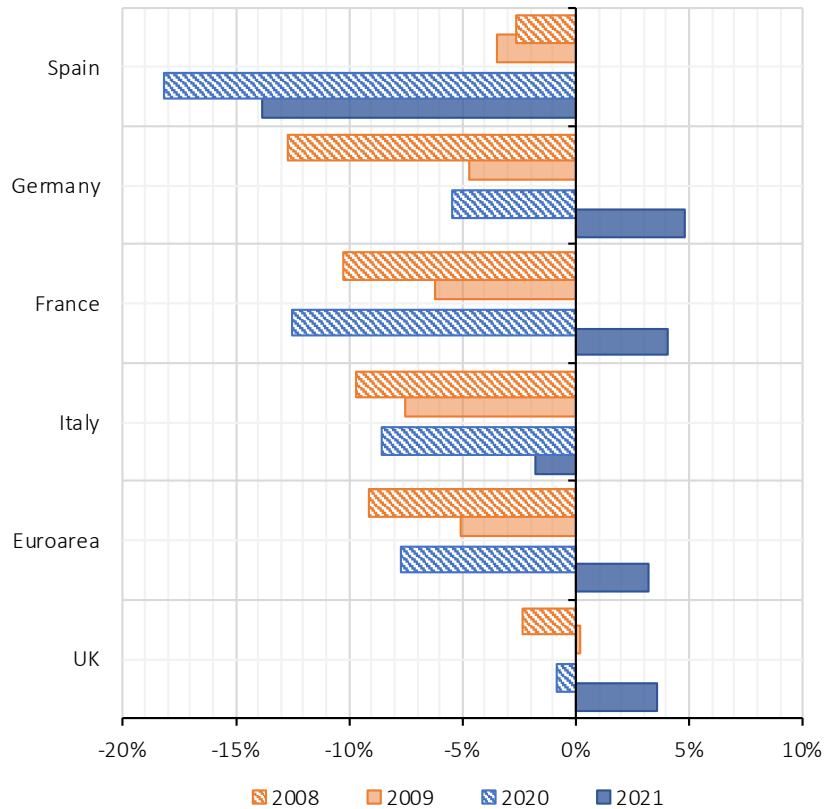
**Gross Operating Surpluses (GOS) have been preserved.** Safeguard measures in favour of non-financial corporations have cushioned the corporate sector. Their GOS initially fell - relatively significantly in some countries such as France or Spain - but tended to recover quickly in many places (Figure 14).

Again, different policy and pandemic dynamics implied that the lowest point was not reached simultaneously in all the countries: 2020Q1 in France and the United Kingdom, and 2020Q2 in Germany, Italy and Spain. Likewise, GOS caught up with their 2019 level again "already" in late 2020



in France and Germany, in early 2021 in Italy and the UK. However, GOS in Spain are still significantly below trend and have not recovered their 2019 level.

Figure 14: Comparative evolution of gross operating profits for NFC



Note: Constant prices, Seasonally adjusted, Baseline is 2019 for the Covid crisis and 2007 for the GFC  
Source: Eurostat, ONS

### 3.4.3. ... with a potential risk of "zombification"?

Although the literature emphasizes the importance of public intervention in explaining the low level of business failures compared to the 2008 crisis, several contributions point to the risk of keeping non-productive enterprises afloat via excessive policy support. These firms, using productive resources but generating a suboptimal amount of value, are often referred to as "zombies". The OECD defines zombie firms as companies at least ten years old and whose operating income is insufficient to cover their interest charges for three consecutive years. Another definition is that of a company that remains active and solvable because it is benefiting from a subsidized interest rate on its debt, but that would be pushed into bankruptcy if it had to borrow at market rates.

Accommodative measures—such as low interest rates or fiscal support—intended to support economic activity, if designed improperly, can have the detrimental effect of preventing the closure of these companies. According to Acharya et al. (2020), the support provided to "zombie" companies is likely to pose three types of difficulties:

- A **miscallocation of factors of production**, hindering growth from productive firms. Long-term, this would have the effect of **reducing productivity** and growth at the macro level;
- A **credit rationing** to productive companies, due to the fact that part of the limited supply of credit is directed towards "zombie" firms that are just trying to survive, rather than invest

and produce. This would ultimately **lower the overall level of private investment** because of distortions in the credit allocation mechanism; and

- **Excessive price competition, driving down margins** for all companies, due to zombie firms being able to produce with very inefficient cost structures. This would **hinder the process of creative destruction** and reallocation of factors of production, which greatly relies on innovative firms being rewarded for their productive gains by their ability to sustain higher profit margins.

The authors estimate that a 10 pp increase in the share of "zombie" companies is correlated with lower inflation by 0.3 pp and a reduction in the investment rate of 1.3 pp on average

However, most analysts agree that the risk of zombification is more of a medium-term risk, which should be treated after the end of a crisis. In a context of crisis, the danger to be addressed as a priority is the bankruptcy of productive and viable companies, for instance strategically important firms or firms providing a public good, that are strongly impacted by the negative demand shock. In addition, Schivardi et al. (2020) argue that supporting "zombie" companies in times of crisis avoids mass layoffs and therefore a subsequent negative impact on aggregate demand, as laid-off workers would struggle to maintain their income through a new job as the labour market is depressed.

Cros et al. (2021) point out that at this stage the predictors of business failures such as low productivity and indebtedness were still at work in France in 2020. They argue that the economy would face a phenomenon of "hibernation" rather than "zombification"<sup>11</sup>. For the case of the Netherlands, Groenewegen et al. (2021) show, based on survey data, that public aid did not target less productive companies.

Looking at evidence of firms' turnover for France and Germany (Figure 15), it seems that the COVID period has actually led to fewer bankruptcies than pre-crisis levels. This can be attributed in part to some countries introducing moratoria on bankruptcies; nonetheless, it could also be a sign of more "zombie" firms being kept afloat than normal<sup>12</sup>.

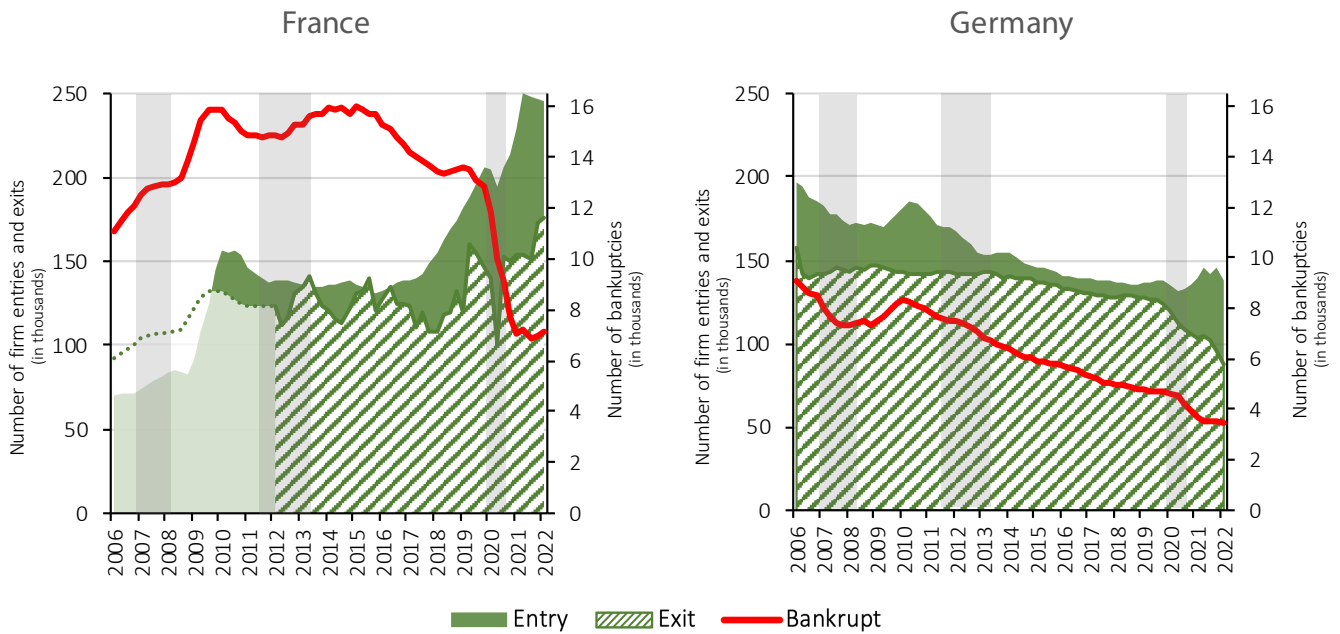
It is still too early to quantify the threat of "zombie" lending in Europe - for instance, Figure 16 doesn't show any uptick in the share of non-performing loans in the banking sector today. However, the normalization of policies needs to be associated with more optimal selection of firms between productive and unproductive ones, as well as policy instruments geared at stimulating business dynamism.

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<sup>11</sup> See Akcigit and Ates (2021) for more background on the definition and measurement of business dynamism.

<sup>12</sup> See also evidence from Agresti et al. (2022) and the OECD SDBS Business Demography Indicators.

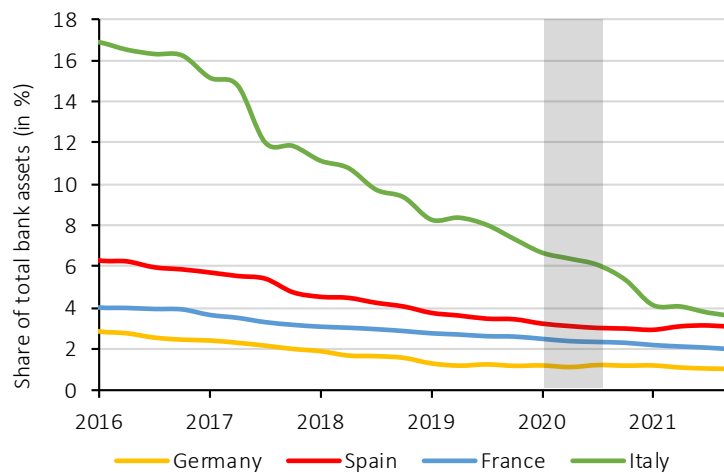
Figure 15: Evolution of firm turnover in France and Germany



Note: Values are annualized numbers. Business deregistrations is missing for France in before 2012. We estimate the value pre-2012 by backcasting using the number of bankruptcies. No available data for Italy and Spain. Shaded gray correspond to recessions identified by the CEPR.

Source: INSEE, DeStat, Infogreffe Data.

Figure 16: Non-Performing Loan ratios



Note: Shaded gray correspond to recessions identified by the CEPR.

Source: ECB.

## 4. CONSEQUENCES FOR DEBT SUSTAINABILITY

In the wake of the COVID-19 crisis, EU governments have mobilized exceptional resources of an unprecedented scale to prevent economic collapse. While these measures have widely been deemed necessary, a consequence of this intervention has been the sharp rise in debt. In turn, the rapid accumulation of national and EU-level debt has raised several questions relating to public policy.

A first question is the origin of public money. How is it that the governments managed to find the resources to deal with the crisis when, before the crisis, the issue of debt consolidation seemed so important for our public finances? The public money mobilized during the crisis has automatically translated into an increase in public debt all over the world.

A second question regards the ability of European governments to become further indebted. Over the past decades, several reports<sup>13</sup>—some of which are still controversial today—have denounced (or disputed<sup>14</sup>) the detrimental effects of high-debt levels for economic activity, anchoring in public opinion the idea of “debt ceilings” that should not be crossed. Today, debt sustainability analysis has evolved, and economists have departed from the idea of using the Debt-to-GDP ratio as the sole criterion for assessing the sustainability of public finances.

The third question is that of the sustainability of current situation. If debt is presumably not a problem today, why would it be tomorrow? Should we be concerned about changes in the economic and financial outlook? Modern public debt sustainability analysis relies on the study of how expensive it is for states to borrow. There is no doubt that recent years were characterized by historically low nominal rates, making it extremely cheap and easy for EU countries to issue bonds on financial markets. However, we may not be insulated against the risk of markets reacting strongly to a monetary policy normalisation, or to political events. It is very important to understand and analyse the key metrics determining the cost of borrowing for states, and consequently evaluate different scenarios for debt sustainability in the post-pandemic years.

### 4.1. The exceptional circumstances for debt issuance and main risks of debt accumulation today

**Exceptionally low nominal rates and monetary support.** If the salience of public debt concerns among policy and academic circles has somewhat waned, it is because we benefit from an extremely favourable environment in several ways.

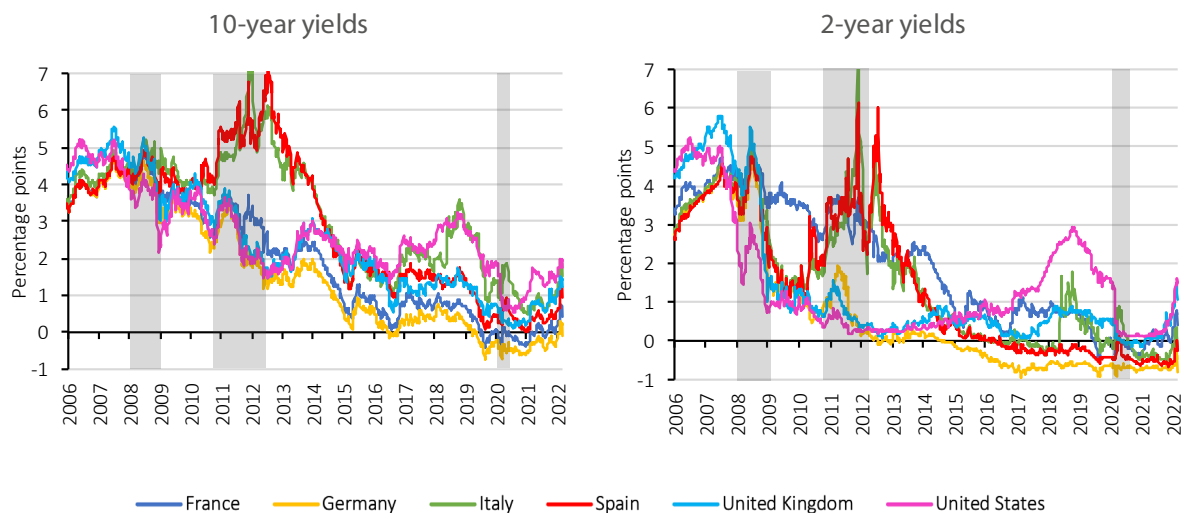
- First, interest rates have been very low or even negative for a number of years, due to excess global savings and insufficient investment (Figure 17). Going into debt may therefore seem painless, as the interest burden has been steadily dropping in various countries;
- In addition, EU governments have managed to take on exceptional debt, in particular through the massive action of the ECB which, in March 2020, launched its dedicated debt purchase program to counter the risk of deflation in the eurozone, like other central banks in the world. By way of illustration, around 30 % of the debt issued by Euro area countries in 2021 was bought by the ECB and other central banks (Micossi and Avgouleas, 2021).

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<sup>13</sup> See Reinhart and Rogoff (2011).

<sup>14</sup> See Chudik et al. (2017).

Figure 17: Yields on sovereign debt by country



Note: Shaded gray correspond to recessions identified by the CEPR.

Source: Thomson Reuters Refinitiv.

**Main risks of debt accumulation.** Commonly accepted debt ceilings have been largely crossed. A consensus is emerging around an approach centred on the risks associated with debt, its dynamics over time, and the quality of the expenditure it finances. Today, the dynamic debt situation in some European countries remains worrying because it exposes economies' four main risks.

- The **threat of an interest hike.** The first is that of the risk of a rise in short- or medium-term policy interest rates in EA member countries. Even though some economists point to the possibility that ECB rates will stay low for a long time, a rise cannot be ruled out, as the development of rates in the United States shows, following the announcement of President Biden's plan and the subsequent monetary policy adjustment—with prospective interest rate hikes—led by the Federal Reserve;
- **Euro area divergence and financial instability.** The second risk is that of the financial stability of the euro area. The trajectory of public finances diverges across countries. It has clearly done so between France and Germany: if both countries had the same level of debt in 2008 (60% of GDP), the French come close to reach 120%, where the Germans will be at 70% in 2026, because they will have succeeded in lowering their debt in good times. However, excessively divergent trajectories within the eurozone expose risks of tensions and a rise in bonds' interest rate differentials between member countries, as we experienced with Greece in 2011, but also more recently with Italy.
- **Financing of structural projects of tomorrow.** Finally, the third risk is that of not finding new resources or room for manoeuvre to meet the challenges of tomorrow, such as the need to finance the ecological transition to address climate change, or to handle the next crisis. One lesson the crisis taught is that it is essential to be able to have the capacity to respond, when the time comes and on a massive scale, by

mobilizing very significant resources. For this, it is important to have sustainable public finances in the long term.

While the crisis has highlighted the decisive role of public intervention, it should also be an opportunity to imagine and implement, when we are out of it, a sustainable strategy for public finances—including a debate and redesign of the economic governance framework within the EU framework.

## 4.2. Debt sustainability analysis

### 4.2.1. Literature and policy debate on public debt sustainability

**Existing theories of public debt.** The literature on public debt sustainability is plentiful, but we can identify a few broad alternative views<sup>15</sup>, which derive from some “old” but robust theories of public finance.

- The first view is that public debt will “**crowd out**” part of national savings, and therefore will **lower investment** which serves as the basis of capital accumulation in a closed economy;
- The second view comes from the “**Ricardian**” theory. Any debt-financed public spending has **no impact on private consumption** because households expect a future taxes increase to repay interests on public debt. Households expect this and adjust their savings by the very amount of the public spending, without any increase in their consumption and investment decisions. Public debt therefore has no significant effect on private investment and intergenerational transfers. Note that such view considers infinitely lived households; therefore, abnegating any question of intergenerational transfers and arbitrages. Also, public spending is considered as a pure consumption by the State, but ignores potential remedies of market failures externalities by fiscal instruments; and
- The third view is from the “**Keynesian**” theory. The State borrows to **stimulate activity** and investment. This in turn increases national income, pushes up savings and investment and thus future activity. Under this view, future generations can benefit from public debt.

**Towards a new consensus on the drivers of debt sustainability?** A more “modern” view, in contrast with the above ones, revisits the relationship between the real interest rate ( $r$ ) and the rate of growth of the economy ( $g$ ), and evaluates the dynamic “trade-offs” faced by the State wanting to finance some public investment at some market cost of debt. If real GDP growth is strong enough and real rates low enough, it is possible to sustain a permanent deficit without relying on future taxes or primary surpluses, because **growth in tax revenues will outpace the interest expense on the debt outstanding**.

If this is true, then the question arises as to whether there is a limit to the amount of debt that a State can reasonably issue<sup>16</sup>. Likewise, the reasons why the interest rate may remain sustainably below the rate of economic growth are subject to discussions, and factors such as demographics, technological transformation or incompleteness of financial markets have been shown to allow for permanent public deficits<sup>17</sup>.

<sup>15</sup> See Ragot (2021).

<sup>16</sup> Mian et al. (2022) investigate this question through the lens of a tractable model.

<sup>17</sup> Barro (2020), Mian et al. (2021), Reis (2021).

Post-COVID, this question has made its way to public debates<sup>18</sup>. Public discussions about " $r-g$ " are spreading, so does the belief that a world where " $r < g$ " is a natural economic outcome. Does that imply that risk of sovereign default has gone for good, at least in advanced economies?

The debate is open, but generally the answer is no<sup>19</sup>.

#### 4.2.2. Our debt projections highlight the differentiated role of " $r - g$ " and of policies across countries

Debt sustainability analysis is a very demanding exercise. In this section, we provide an intuitive, visually convenient way to assess the stability of public debt and beyond it, accumulated and prospective fiscal balances. Figure 18 shows the expectations of nominal interest rates, inflation and economic growth, by combining data from financial markets and institutional forecasts before and after the crisis (see Technical appendix for Figure 18: Debt sustainability projections by countries). We then project the behaviour of " $r-g$ " over the post-COVID years until 2030, and compare it to its pre-crisis trend (the dotted line). On that basis, we can assess whether the credit risk constraint is likely to tighten for each country - if so, a close control of current deficits, as well as fiscal plans expressed in multiannual budgets, should be closely scrutinised.

This is what we analyse in Figure 19, where we project the trajectory in " $r-g$ " against the expected trajectory of public deficits by the IMF. Based on this horserace between the two drivers of the trajectory of Debt-to-GDP (see equation [\*] in Box A.1), we can assess whether the multi-annual plan for States' fiscal spending is on par with the evolution of the constraint on their public debt.

**The first year of the pandemic tightened the credit constraint for States in an unprecedented manner.** For all countries, the relative cost of debt servicing (compared to GDP) exploded in 2020, due to the economic impact of the COVID-19 on GDP ( $g$ , see the green bar to the green square), as well as to a low inflation (compare the yellow bar to the yellow triangle).

However, it is clear that fiscal packages and monetary policy easing tremendously increased the fiscal space for major economies. The strong rebound of growth in 2021 and (expected in) 2022 —and to a lesser extent the rebound in inflation—massively lifted the borrowing constraint for States, sometimes with the help of falling nominal rates as well. Looking closely, " $r-g$ " in 2021 dropped by 6 pp in France and Italy, 3 pp in Germany, 7 pp in Spain and in the UK, and above 9 pp in the US. This means that, holding everything else constant, sovereign debt-to-GDP would decrease by 3 to 9% in 2021 because higher growth outweighs the real rate on their debt repayments<sup>20</sup>. Germany seems to be benefiting the least from a change in " $r-g$ ", because of relatively lower expected GDP growth. However, it is worth noting that pre-crisis, Germany was the country that had the widest fiscal space (" $r-g$ " averaging at 4 pp), contrary to Spain or Italy whose " $r-g$ " were slightly above 2 pp and below 2 pp respectively. The US, by far, received the biggest boost in fiscal space, driven by all three components (lower nominal rates, rising inflation, and higher growth).

Interestingly, beyond 2023, Germany, the UK and the US could see a worsening in their " $r-g$ " position due to rising interest rates. France seems to benefit from a safe and improved dynamic, thanks to a favourable growth-inflation mix. In Spain and Italy, the situation is overall likely to improve, but a lot of uncertainty remains around the comeback of medium-run growth.

<sup>18</sup> See, among others, the seminal paper by Blanchard (2019) and his 2019 American Economic Association presidential address.

<sup>19</sup> See Mauro and Zhou (2020).

<sup>20</sup> To get a full picture, one would also need to control for the amount of non-indexed debt reaching maturity, as the newly issued debt isn't deflated by the rise in prices. See Hall and Sargent (2011) and Jiang et al. (2021) for a detailed methodology.



All-in-all, this analysis points to the critical role of real GDP growth in lifting the debt burden for States. Efforts of recovery packages should therefore be targeted towards innovation-enhancing structural policies.

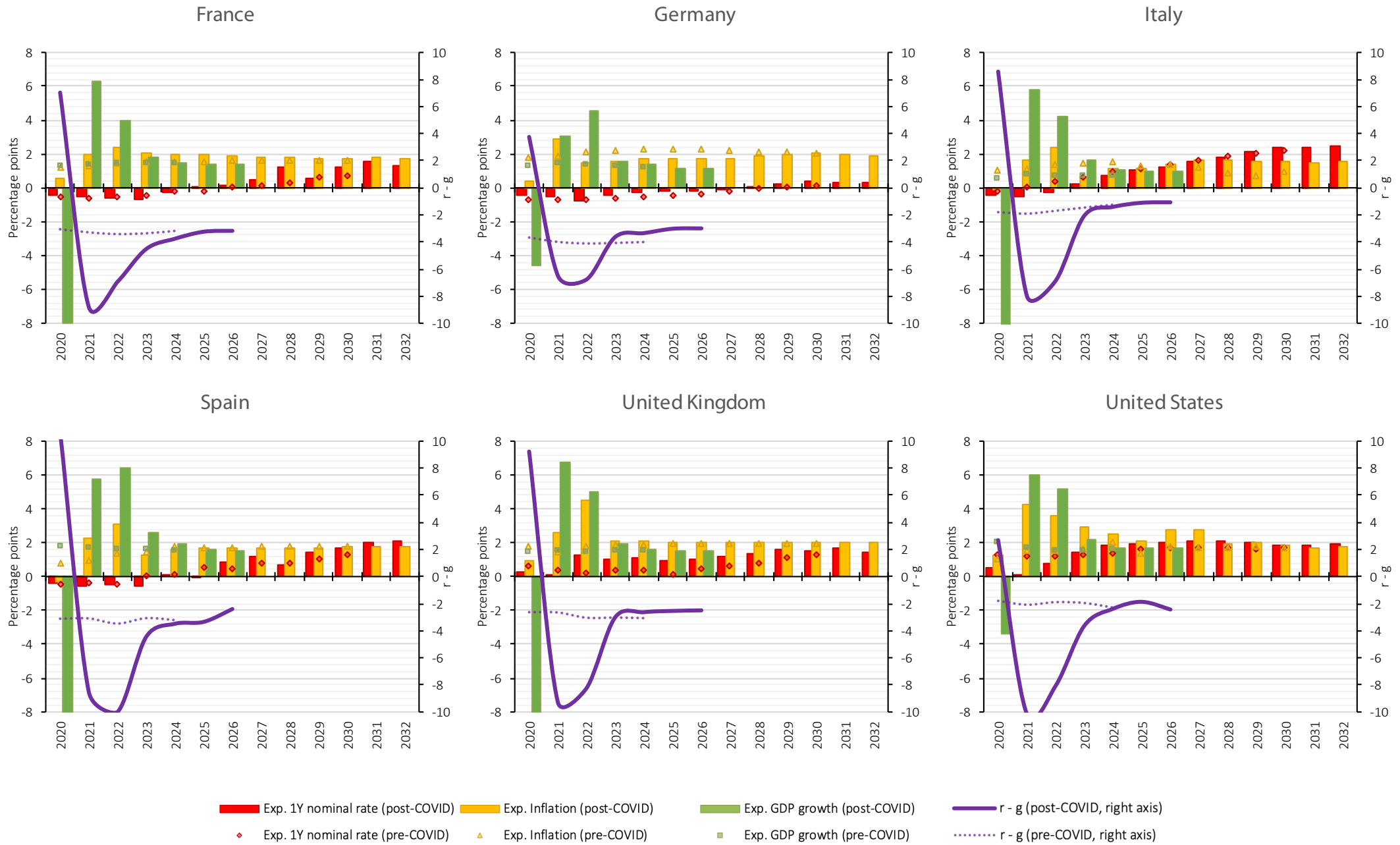
**The impact of “*r-g*” needs to be taken in conjunction with the trajectory for public deficits.** The above fiscal space analysis is agnostic about the size of fiscal deficits, and large negative primary balances by States can well outweigh the benefits of a lifting in the “*r-g*” constraint. Looking at the trajectory of primary balances in Figure 19, it is clear that the COVID-19 shock very negatively impacted the fiscal balance and that governments expect to run larger deficits in the post-crisis period (compare the orange bar to orange dot in each plot).

In 2020, the conjunction of large fiscal deficits and a very adverse “*r-g*” effect (as analysed above) meant that Debt-to-GDP ratios exploded for all States, by a magnitude of 7 pp for Germany, 16 pp for France and the US, 29 pp for Italy and 21 pp for the UK and Spain. However, it appears that the opening of “*r-g*” financing constraint outweighs the increase in deficits run by States in the post-COVID period. Hence, Debt-to-GDP ratio are expected to start shrinking from 2021 (2022 at the latest) for all States in our sample (as shown by the negative solid pink line).

Overall, most States are expected to converge to their pre-crisis trend in debt consolidation by 2024 (the solid pink line being on par with the dotted pink line), after even a short-time boost for Italy, Spain, the US and France (the solid pink line being lower than the dotted line). Germany is expected to suffer from a large public deficit in 2021 and to reduce its Debt-to-GDP ratio at a slightly slower pace than pre-COVID thereafter, but the outlook remains very positive for debt sustainability over the medium-run, with a decrease in Debt-to-GDP of approximately 2.5 pp per year. France and Italy seem to be very much on par with their pre-crisis debt dynamics, with positive but very slow decay in their debt ratios at around 1.5 to 2 pp per year. The situation is rather concerning for Spain and the UK, which saw some of the biggest increase in Debt-to-GDP in 2020 and are expected to reduce their debt levels at a somewhat slower rate than pre-crisis, due to a rise in their structural deficits. The US is expected to have a stable Debt-to-GDP ratio, as public deficit has significantly jumped despite the more favourable “*r-g*” position.



Figure 18: Debt sustainability projections by countries: drivers of "r-g"



Source: Authors' calculations based on financial markets data and institutional forecasts (see Technical appendix for Figure 18: Debt sustainability projections by countries for more details on calculations and data sources).

Figure 19: Debt sustainability projections by countries: drivers of Debt-to-GDP ratio



Source: Authors' calculations based on calculations performed for Figure 18 and expectations of primary deficits in the IMF World Economic Outlook.

### 4.3. Expected impact of the “COVID-debt” on Debt-to-GDP ratios

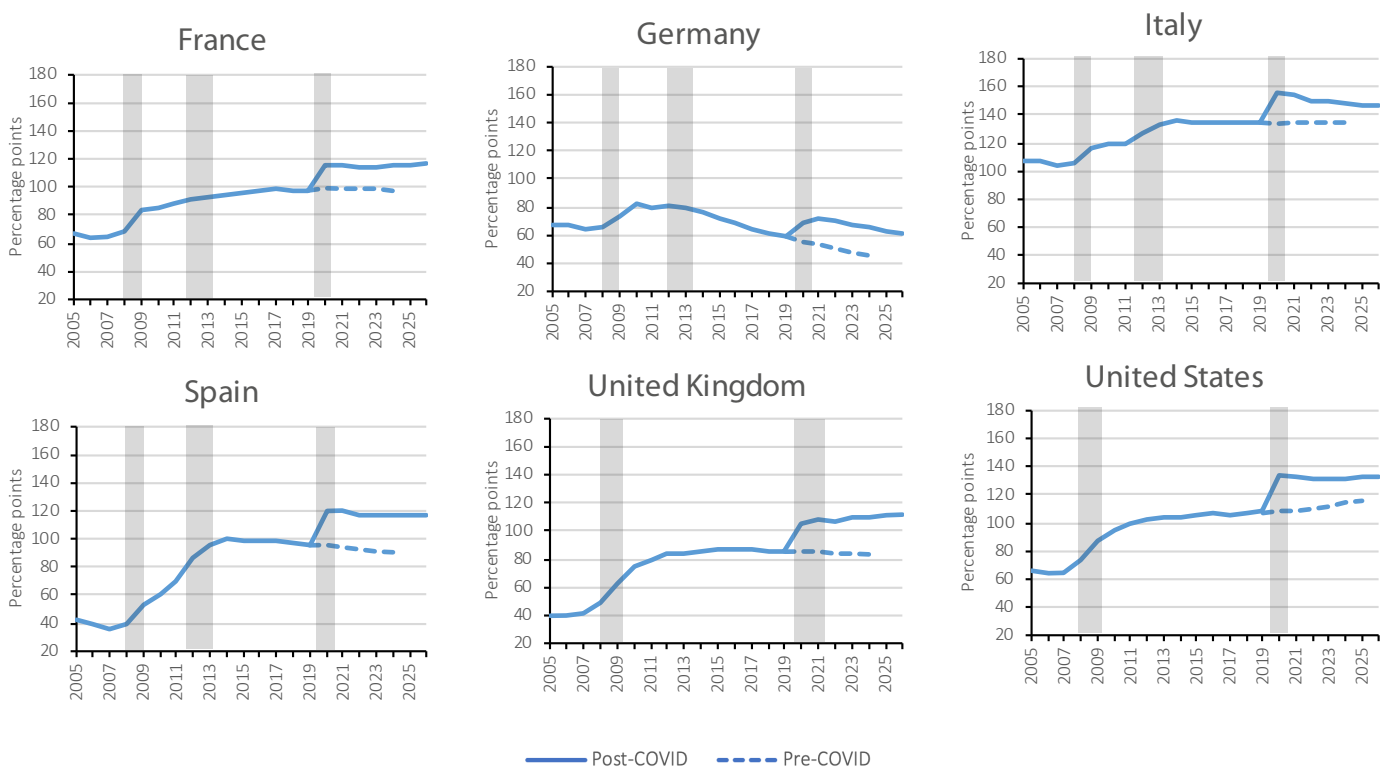
Public debt figures speak for themselves (Figure 20). Since the Great Financial Crisis, public debt-to-GDP ratios have at best plateaued, if not followed upwards trends—Germany being a notable exception.

It is expected that the reimbursement of the “COVID-19 debt” will take several decades for all countries and that in the medium-run, all countries will see a sharp increase—albeit maintaining a downward trajectory—in their Debt-to-GDP ratios of the order of +15 to +20 pp compared to pre-crisis numbers.

Figure 20 compares the projections of Debt-to-GDP ratios by the IMF pre- and post-crisis. The impact of 2020 deficits with adverse “*r-g*” had a clear and substantial impact on Debt-to-GDP positions. Post-COVID, countries are expected to lower their debt ratio at varying paces. As pointed out in the previous analysis, the situation is the most concerning for Spain and the UK, which are not expected to control their debt ratios in the medium-run, due primarily to the disconnect between the rise in structural deficits and low GDP growth expectations.

### 4.4. Inflation concerns and their implications for debt sustainability

Figure 20: Projections of public debt across countries (as a share of nominal GDP)



Notes: Pre-COVID projections is based on the October 2019 WEO issue. Post-COVID projections uses the October 2021 issue. Shaded gray areas correspond to recessions identified by CEPR/ONE/NBER.

Source: IMF World Economic Outlook.

Prices, in our modern economies, serves as a clearing mechanism between supply and demand in the vast majority of markets. However, price developments, and more generally inflation, are also highly endogenous to the stance of fiscal and monetary support and have a first-order impact on debt dynamics.

#### 4.4.1. The role of inflation in debt sustainability management is ambivalent

A rise in inflation and interest rates has ambivalent implications for public debt prospects.

- Inflation helps reduce the stock of nominal debt by **reducing the real cost of principal and interest payments**. Therefore, the longer the maturity of existing debt, the higher the benefits stemming from inflation. A strategy would be to lock low-interest rates by issuing bonds with longer maturity, although recent surges in inflation (Figure 21) and inflation expectations (Figure 23) have already translated into higher future expected rates (Figure 18).
- The beneficial aspect of inflation for debt servicing works only as a short-term boost, and **if inflation comes as a surprise**. As soon as inflation expectations start to incorporate fears of accelerating inflation, any expected future inflation would be priced in the cost of new debt at issuance via higher nominal rates. A rise in inflation can therefore further constrain the financing of governments by **inducing a rise of nominal interest rates** due to a stronger than expected adjustment of policy interest rates by the central bank. Ultimately, this could **tighten refinancing conditions** for countries whose weaker fiscal fundamentals usually induce a higher sensitivity of credit spreads to a policy rate increase.

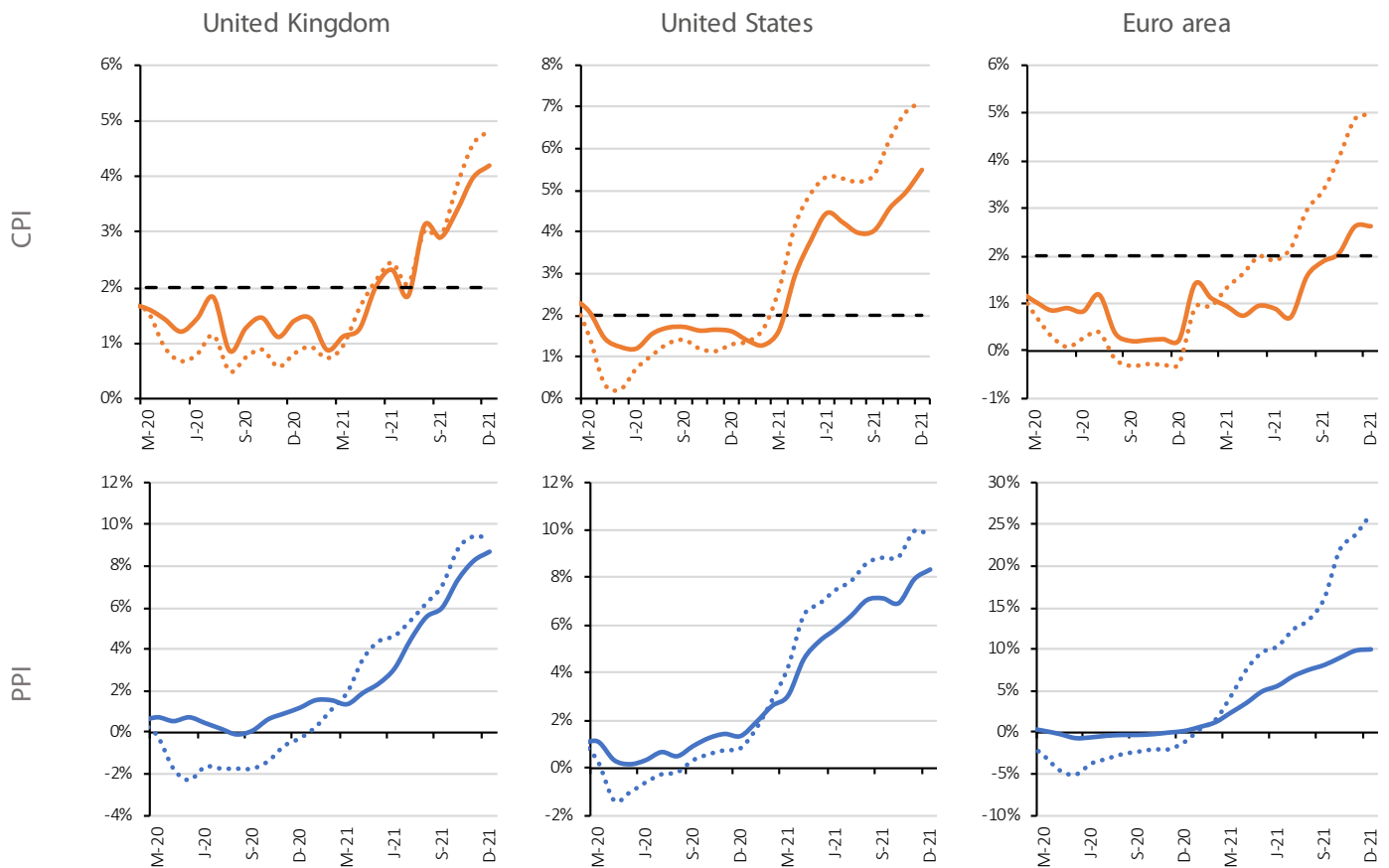
This ladder effect may dominate the favourable impact of inflation on the nominal value of non-indexed debt and is at the core of the current discussions regarding the pace of monetary policy normalisation. The ECB, as part of its mandate, needs to take appropriate actions to tame the surge in prices—conditional on the recent price developments being identified as medium-run structural inflation. However, a slowdown in the APP—as well as PEPP—or a policy rate hike will have the unintended consequence of widening the credit spreads across euro area economies, making it disproportionately costlier for some highly-indebted States to borrow—which was one of the leading factor to the 2014 European debt crisis.

Inflation will therefore be critical for debt dynamics and will guide the parametrisation of future fiscal spending. Indeed, the ECB looks at the dispersion in sovereign spreads because it exposes the eurozone to financial risks, which entail downward pressures on prices. However, financial fragilities of higher-yield euro area countries will need to be addressed via structural policies and consolidation in order to correct for macroeconomic imbalances in the euro area in the long-run.

#### 4.4.2. Inflation and shortages persist in Europe and the United States

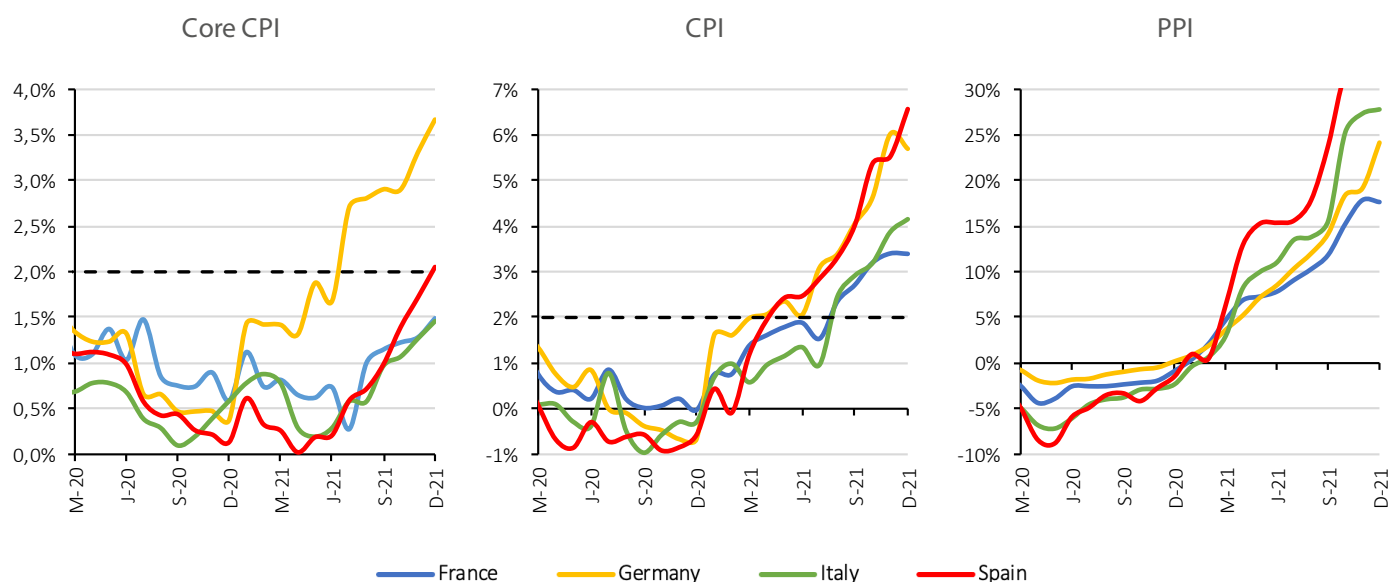
In the last quarter of 2021, despite important uncertainty remaining around the economic recovery, pandemic-induced disruptions to supply chains and labour markets had reduced the production capacity of most major economies, and meant that economic systems had become unable to meet the recovering demand for private consumption. This trait has been particularly salient in the US economy, where consumption is well above its pre-pandemic level (Figure 5) and capacity constraints exert upward pressures on prices for markets to clear.

Figure 21: Evolution of Consumers Price Index (CPI) and Producers Price Index (PPI) across regions



Note: The dotted line is the baseline price measure. The solid line excludes Energy and Food (core measure).  
 Source: Bank of England, BLS, Eurostat.

Figure 22: Evolution of CPI and PPI across some Euro area countries



Source: Insee, DeStat, INE, Istat.

After a period of price stagnation or even deflation, this upward trend has become common to most countries, for both consumer and producer prices (Figure 21 and Figure 22), in particular because of oil, energy, and raw materials price increases.

While those developments were, initially, generally thought to be temporary, it turns out that more persistence in inflation is anticipated in 2022 in the United States and, to a lesser extent, in the eurozone.

In this context, it is important to understand the current drivers of inflation in order to evaluate the risks of a lasting return of inflation.

**List of drivers for the rise in inflation.** Recent inflation dynamics are due to several factors:

- **Shortages of raw material or equipment** in certain industrial sectors at the global scale (for instance, in the semi-conductors sector);
- **Disruptions in global trade**, due to heterogeneous health and sanitary conditions across countries and asynchronous entry and exits from lockdowns;
- Delays in restock and **shortages in inventories for manufacturing and retail firms**, coming in part from low industrial production in emerging economies;
- **Misallocation of productive factors**, mainly due to the difficulty of employers to recruit in some sectors;
- Surge in **energy prices**, due in part to geopolitical factors; and
- Surge in **consumer demand**, driven by the gradual lifting of sanitary restrictions and by the policy support boosting private demand.

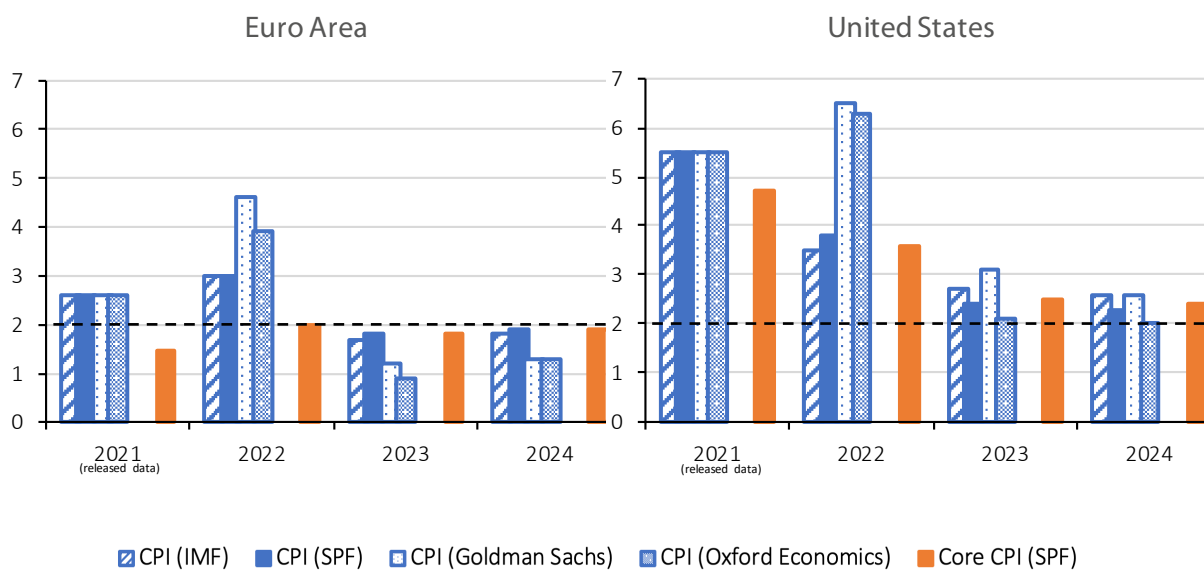
**Policy debate around the main drivers of inflation today.** The persistent nature of these factors is debated.

A first view is that disrupted global trade had a clear contribution in exerting inflationary pressures on the economy. In some early stage research work, Santacreu and LaBelle (2022) look at cross-

industry variation in sourcing patterns and find that exposure to international supply chain bottlenecks led to higher industry-level prices. If we believe this evidence, then inflation should be mostly transitory, as global trade will slowly recover from the COVID-19 disruptions. However, according to Furman (2022), the supply-chain issues were generally overstated as a cause of inflation and now are even less of a cause of inflation. Supply-chain disruption, where COVID or other factors make it impossible for factories or shipping or trucking to operate normally, has been contained to specific industries, such as in the car and electronics markets, at least in the US.

Furman believes that most of the recent inflation is attributable to “stretched supply chain”, where demand increased a lot, supply also increased but not enough to fully keep up, hence leading to an increase in both prices and quantities. Looking at evidence from American ports, they are in fact processing about 20 percent more than before the pandemic but still not enough to keep up with the massive increase in demand by consumers.

Figure 23: Inflation expectations in the US and in the Euro area



Note : Latest inflation forecast publications as of March 10<sup>th</sup>, 2022. Year-average CPI for the Euro area, Year-end CPI for the US.

Source: IMF, Philadelphia Fed (SPF), ECB (SPF), Bloomberg.

Therefore, some economists have argued that the current divergence between the US and euro area inflation rates may be the result of different policy choices on each side of the Atlantic. At first view, the amount of deficit spending in the US largely explains why inflation is higher, because the sheer size of the fiscal package pushed the economy above its potential that is still impaired by the effects of the COVID-19 crisis.

Another view is that labour has bounced back faster in Europe, thanks to the wage subsidies and the large-scale part-time work schemes. As a consequence, Europe is suffering from far fewer disruptions in its labour market (less tightness), while the US is experiencing the consequences of gone labour and tight supply chains. Cochrane (2021) argues that policymakers in the US should not have been caught off guard by surging prices and shortages of goods and labour, because most of the post-pandemic agenda has been built around policies stimulating demand while discouraging work, making supply-side constraints entirely predictable. Supply-side analysis and capacity constraints

need to be restored at the core of monetary policy making, as they had been overlooked for too long by policymakers due to many years of low growth and depressed demand.

In the case of Europe, it is possible to gauge the risk of a persistent return of inflation by looking at measures of labour market tightness. Shortage of workers has worsened in France, Germany and Italy since the start of 2021. In France, the share of companies declaring labour shortages has returned to its levels of 2019 in manufacturing and services. In Germany, the Netherlands and Sweden, the employment situation has become generally tight, compared to the pre-crisis period. In Italy, the levels of labour shortages are lower than in these countries, but also tend to increase in a generalized way. For Spain, the trend is relatively stable.

According to Issing (2021), the argument that today's inflation is only temporary assumes that global unemployment remains substantial, and that trade unions are weak. In that case, there would be no reason to expect that wages will increase significantly, which is the condition for a sustained rise in prices. Issing also argues, ultimately, that monetary policy is responsible for determining the course of inflation. In the short term, central banks may not be able to prevent a price surge caused by factors such as rising energy costs, and shouldn't risk raising rates too early for this matter (see Box 2 for more insights on the contribution of energy prices to recent inflation). However, it is crucial that consumers and financial markets do not lose confidence in central banks' determination to stabilize inflation at around 2% over the medium term. Other authors, such as Schnabl (2022), are advocating for a much starker and immediate response of the ECB to the recent surge in inflation, because by repeatedly pursuing objectives beyond the scope of its primary price stability mandate—such as promoting EMU integration—the ECB is ultimately putting its credibility to control inflation at risk.

We believe that today's surge in inflation in the euro area is still primarily caused by rising energy prices and raw materials, hence explaining why medium-run expectations are still very much anchored around the 2% target (see Figure 22 and Figure A.3). However, the ECB's approach to policy normalisation needs to be data driven and look for broad measures of labour market tightness and supply-side constraints.

### **Early responses by central banks.**

In response to inflation concerns, central banks have announced that they stand ready to normalise their policy stance faster. However, given the uncertainty around the drivers and persistence of current inflation, the Federal Reserve and the ECB have said they would base their decision according to medium-run inflation expectations, rather than risking raising interest rate too early in the recovery period. The Fed announced in November and then in December 2021 a slowdown in its asset purchases and has already started to increase rates in 2022, with the expectation to reach 2% policy rate by late 2022 and 3% in 2023.

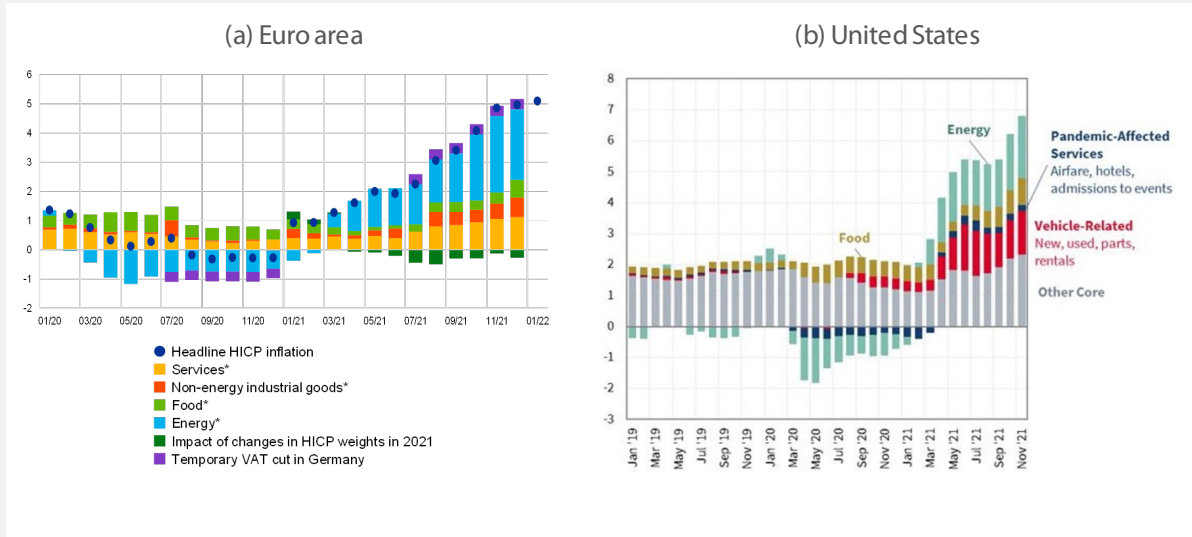
In early 2022, the ECB also adjusted its approach, but in a less radical way. The ECB has announced that it will gradually reduce its pace of asset purchases and discontinue the PEPP at the end of March 2022, as initially planned. Also, the calibration of net purchases for the third quarter will be data-dependent and might be readjusted downwards if medium-term inflation outlook is not weakening. Principals will keep being reinvested until at least 2024, so as to not interfere with a normalisation via the policy rate. Also, the ECB is not excluding a first interest rate hike in the fourth quarter if the net purchases under the APP have ended.



Box 2: Model-based decompositions of inflation in the US and in Europe.

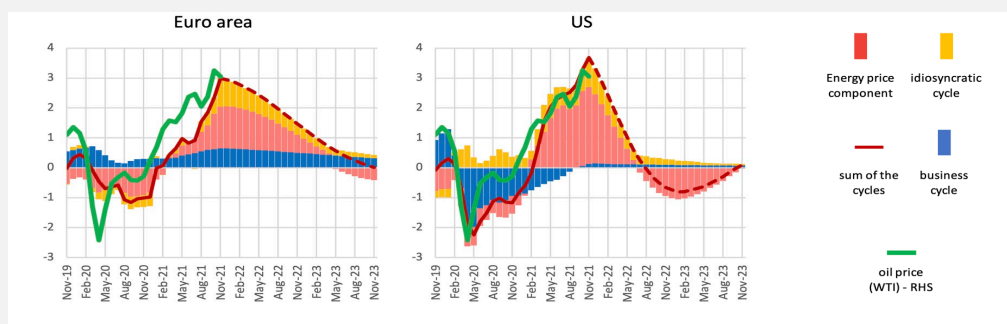
Model-based decompositions are informative about the drivers of inflation and are routinely used by central banks to assess whether price developments are transitory or persistent (Figure B3.1). It appears that energy prices represent a much larger share of the uptick in inflation within the euro area compared to the US.

Figure B3.1: Components of headline inflation



In a recent work, McMahon, Reichlin and Ricco (2020, 2021) find somewhat surprising effects by performing a decomposition of inflation across trend, cycle and energy prices (Figure B3.2). In the US, the energy price component dominates, while the surge in aggregate demand (the business cycle component) has little contribution. Inflation is consequently expected to be very high in the short-run but to quickly decline to its long-term target. By contrast, in the euro area, the recent rise in inflation is proportionally more sustained by the business cycle component (strong growth performances). Therefore, despite being much smaller in *level* than its US counterpart, the decline in inflation is expected to be slower more gradually. This seems inconsistent with the fact that growth has been more volatile in Europe while real GDP growth in the US has remained relatively strong since the post-pandemic rebound in the second half of 2020. However, what matters is growth relative to potential growth (the output gap) and the model estimates a negative, but closing, output gap for the US economy, while it estimates that the European economy has probably seen a reduction in its potential and hence may be operating above its (pre-pandemic) trend growth.

Figure B3.2: Cyclical and energy components of inflation in the US and in the euro area



Source: ECB Economic Bulletin (2022c), BLS, CEA Analysis, McMahon et al. (2021), Now-Casting Economics Ltd.

## 5. BEST PRACTICES AND RECOMMENDATIONS<sup>21</sup>

### 5.1. From countercyclical fiscal policies to structural policies

#### 5.1.1. Fine-tuning the phasing out of full-strength fiscal and monetary support

Policy support and catching-up effects have paved the way for a solid recovery in Europe that started in 2021. However, a number of associated risks have arisen, including inflation, financial imbalances and public debt accumulation.

Given persistent uncertainties, policy normalisation—through either adjustments in public finances or monetary policy—can and should not be conducted too quickly. The economic rebound needs to be sustained. However, in early 2022, the return of GDP to its pre-crisis level in 2019 was within reach for some EU countries, and some have already surpassed their previous levels. In this transitory period, it is essential to ensure that support measures remain temporary, so as not to erode public finances structurally and over the medium term. The mistake of consolidating public finances too rapidly, as was the case following the sovereign debt crisis of 2010, has been avoided, and it is time to embark on a gradual rationalisation and measured normalisation of public intervention.

Rationalisation and normalisation do not mean a blunt reduction in public expenditure, but rather a reorientation of public intervention to channel public means towards long-term, growth enhancing directions.

#### 5.1.2. Towards fiscal tools for long-term growth

**Labour markets.** As part of the normalisation of policies, labour market support should progressively evolve from a “protection at all costs” of labour relationships against the demand shock to a cushioning of the reallocation of labour towards productive firms and sectors. Wage subsidies and part-time work schemes contributed to the extraordinary public deficits during the COVID-19 crisis and have proven highly effective at protecting against a long hysteresis from job destruction in Europe. However, these instruments will only work if the COVID-19 shock is transitory, as employment cannot be permanently maintained artificially frozen.

Governments should also further develop retraining and reskilling programs for workers and adopt structural reforms aimed at lowering the search-and-matching frictions in labour markets, to ensure that factors of production can be reallocated smoothly to innovative sectors. These will reduce supply-side bottlenecks in the economy related to labour shortages.

**Corporate sector.** To deal with the proliferation risk of “zombie” companies, the allocation of state aid should be better targeted (Blanchard et al., 2020). In addition, governments should transition from using debt instruments - via the broad emergency loan-financing to companies - to equity or quasi-equity financing as part of their recovery and stimulus packages.

Such instruments would help solve the moral hazard problem of ever-greening private companies via subsidized lending compared to market rates<sup>22</sup>, as underperforming firms would eventually have to restructure themselves or exit. These equity instruments can be very strong if associated with managerial or strategic assistance via NDBs, in particular for small and young firms.

<sup>21</sup> Some of these recommendations are based on findings collected by the Commission Arthuis, to which N. Valla participated, in the context of the report prepared on the French public finances, any link is hereby duly acknowledged (Rapport Arthuis, 2021).

<sup>22</sup> See, for instance, Faria-e-Castro et al. (2021) and Acharya et al. (2021) for a detailed analysis of the ever-greening problem faced by lenders to less productive firms.

This would insure States against the losses from the risk of asset depreciation—due to non-performing loans or loan defaults—that is associated with any “below-the-line” support. Ultimately, this would also boost investment and economic activities.

Artus (2020) suggests to not save companies that are known zombie or close to becoming zombies—surviving solely via subsidized refinancing—and to focus on organizing the requalification of their employees over time.

**Innovation policy.** Policies must be geared towards productivity growth via vast investments in human capital as well as strong support to higher education and research. Innovation enhancing policies are key to stimulating the creative destruction process and to achieving medium-run growth.

### 5.1.3. Transitioning from recovery-expenditure to investment for the common good and future

**Impact measurement metrics for public expenditure are indispensable.** Debt management - COVID-19 or not, national or common must be treated quite separately from the question of the recovery plan (Perrisin Fabert and Valla, 2021). However, to ensure the long-term sustainability of public debt, the social, environmental and economic value of economic recovery must be maximized. For this, we need to apply the right metrics to measure the impacts and define the criteria for assessing the success of the recovery plan. It is also necessary to develop economic evaluation tools to select projects and assess their macroeconomic impacts. Finally, it is necessary to invest massively in the engineering of territorial projects, by relying on the network of European public development banks and on the commitment of the private sector. Voluntary commitments and conditions for public support will be essential elements in this approach.

This implies creating an innovative monitoring governance for the recovery plan, in particular by keeping a record of its impacts on the non-financial accounts of the governments and giving these impacts a market value, to supplement the national accounts.

This exercise, which may seem tedious and superfluous in the current emergency context, will in fact be a powerful tool to propose a new framework for measuring the wealth of EU countries when discussions on EU's budgetary rules resume.

**An opportunity to accelerate the agenda on extra-financial information.** This tracking exercise could also serve as a point of reference and leverage to accelerate the work around the European legal acts aiming to standardise non-financial information and to initiate the reform of corporate accounting standards beyond the IFRS initiative. Mastering the definition of these new extra-financial and accounting standards, which will assess the value of companies in the future, is a matter of economic sovereignty for Europe.

**Creating a new range of public assets of “debt-for-impact swaps”.** The execution and monitoring of the European recovery plan can also be an opportunity to lay the foundations for a new class of public assets, capable of making visible the dimensions of public action and heritage that today escape standard accounting and traditional valuation methods. Such assets, which would primarily take the form of traditional debt instruments with varying degrees of seniority, ultimately quite orthodox and yet so innovative, could become eligible for a “debt-for-impact swap” within the portfolios and in the monetary operations of the ECB, which would allow the latter, in a completely orthodox manner, to green its balance sheet in accordance with the spirit of the Treaty. A « debt-for-impact » swap would follow the example of debt-for-nature swaps that have often been

implemented in history and already described in the late 1980s (Hansen, 1989), whereby the purchase of a developing country's debt « comes at a discounted value in the secondary debt market »: the debt is cancelled in return for environment-related action.

**Prioritize growth-enhancing public expenditure.** Controlling spending must not come at the expense of growth-enhancing public expenditure. Spending on research, education, investment to support the energy and digital transitions, are bound to support long-term potential growth. It is therefore recommended that there be a preference for growth enhancing expenditure, which would benefit from being submitted to a multi-year floor transversal to sectors, administrations and geographic area. These future expenses would not necessarily correspond only to tangible capital investment and could cover certain green expenses, expenses embedded in the NGEU programme, as well as additional expenses increasing human capital. The long-standing reflection, at national level as well as at European level, on a definition of the *quality* of public expenditure, should be operationalised.

#### 5.1.4. Dismissing illusional solutions to handle the stock of public debt

At the height of the COVID-19 crisis, several proposals had emerged in the public debate of some EU countries on how to handle the massive outstanding stock of public debt.

**Forget debt cancellation.** The cancellation of the debt, first, would be a serious mistake: even if this cancellation were limited to only the securities held by the ECB, it would not have any impact on sustainability. Rather, the adjustment would be limited in practice to a simple accounting trick between the central bank and the governments' balance sheets. Debt cancellation would jeopardise credibility of issuers for investors who would either refrain from lending or continue to do so at much higher interest rates. In the euro area context, this would call into question the independence and the credibility of the ECB, a true pillar of the area, and would open a political crisis across Member States.

**The limits of perpetual debt.** Perpetual debt would involve issuing debt with no repayment horizon, or with a very long horizon, to protect against the risk of rising interest rates. However, while the idea is attractive, the fact remains that, in practice, investors' demand for very long-term debt might not be strong enough to absorb the mass of debt issues. On the other hand, now that interest rates are on the rise, the situation does not plea in favour of an extension of maturities.

**Containment is an optical trick.** The containment of the COVID-19 debt, on the other hand, would not be of real interest: this mechanism would consist in isolating the COVID-19 debt by directing a resource for its repayment. Moreover, this would not change the question of the level of the debt and its sustainability. The only interest in containment is the transparency entailed by such an exercise.

### Box 3: EU Debt in perspective

The European Commission agreed in 2021 to raise over €800 billion to repair the immediate economic and social damage brought about by the coronavirus pandemic. This program is to be financed primarily via the issuance of EU bonds, between 2021 and the end of 2026, by the European Commission itself, and backed by EU Member States. This "COVID-debt" is meant to be repaid over 37 years, with an average issue maturity of 12 years.

This novel instrument as part of the EU fiscal policy, despite being only of transitory nature, is a breakthrough compared to the post-2008 crisis, where several proposals of EU bonds were advocated for, but none ended up being implemented due to the strong polarization around the question of existing debt mutualisation - and, also, because the extent of monetary support by the ECB and the setup of the ESM provided an exit to the Sovereign Debt Crisis.

At the centrepiece of the recovery program is the Recovery and Resilience facility (RRF) amounting to € 750 billion (€ 390 billion in grants and € 360 billion in loans) to be used to co-finance national recovery plans.

In order to finance this debt, the EU will leverage two sources:

- New European tax revenues, e.g. Carbon Border Adjustment Mechanism (CBAM), Digital Tax on large digital corporations, carbon tax at borders or quota market, Financial Transaction Tax.
- "Classic" contributions by Member States to the budget of the European Union.

Interest rates on EU debt is very attractive (around -0.3% for instance for the 5-year maturity tranches) compared to the yields paid by the majority of EU Member States on their national sovereign debt. Therefore, a collective debt issuance at the EU level provides cheaper funding than the majority of States would if they were to independently finance themselves on financial markets. However, these rates are still slightly higher than those of Germany or France.

Source: Arthuis (2021)

## 5.2. At the EU level

### 5.2.1. Turning European debt instruments into permanent tools

The creation of a common capacity to issue debt at the EU level through the NGEU/Recovery Fund was certainly one of the major breakthroughs of European economic policy during the COVID-19 crisis. Turning this facility into a permanent one brings along political debates, but it would certainly be a step towards the consolidation of the European project, and a long-term fiscal solution to address the issue of macroeconomic imbalances within the EU.

### 5.2.2. Budget rules in Europe: reform is needed

The European Union has put in place a framework to avoid excessive divergences. Such instruments are currently at the centre of the attention. Suspended during the COVID-19 crisis, it is not clear yet whether and how they will be reinstated.

Taking a step back in the historical construction of "fiscal Europe", coordination was the initial keyword. The Stability and Growth Pact and the Treaty on Stability, Coordination and Governance (TSCG) have defined a set of budgetary and economic coordination rules in order to avoid excessive fiscal debt and deficits in Member States. However, for several years, difficulties have arisen in the

application of these rules. The crisis started in 2009 had already been a "test" for the solidity of the eurozone.

The recovery from the COVID-19 crisis will be a new challenge for the euro area. Indeed, the economic and budgetary trajectories after the crisis reveal risks of budgetary and economic divergences – some of which have already materialised at the beginning of 2022—in particular, but not only, on the interest rates between the various countries of the eurozone.

As such, the announcement in the Summer 2020 of a new debt instrument at the European Union level might have strengthened the stability of the area, but the risks of tension in the euro zone remain and, as such, the now marked divergence in France's debt trajectory compared to Germany is a new element.

Moreover, if the crisis has led to the suspension of EU fiscal rules (through the application of the general escape clause), the eurozone will have to find a new set of common rules and it is important to prepare for it.<sup>23</sup>

An adjustment of the previous provisions appears inevitable. In fact, the current rules, particularly regarding debt (60% of GDP) and debt reduction (need to reduce the gap between the debt level and the 60% target by 1 / 20th per year) now appear to be inadequate. As many studies have shown, they are also too complex and can be pro-cyclical in nature.

The European Fiscal Board (2020) proposed possible developments for the EU fiscal framework, with particular emphasis on fiscal rules based on growth of government expenditure and on debt targets tailored to each country. Other proposals have flourished since then, calling for an approach based not on strict rules but on an assessment of debt sustainability based on "fiscal standards", notably emphasizing methods of stochastic analysis of debt sustainability (Blanchard et al., 2021). The public debate on the EU economic governance framework has again intensified since autumn 2021.

### 5.2.3. From debt ratios to expenditure rules

**Controlling expenditure dynamics.** The priority should therefore be to control public expenditure to ensure that it is growth enhancing in the long term and that it grows less quickly than revenues. This control of spending should be sustainable, because it is unrealistic to imagine stabilizing and then reducing debt rapidly, except in exceptional macroeconomic circumstances during exceptional recovery phases. This is what will ultimately allow the EU to control debt, which would guarantee the credibility of sovereign signatures - including that of supranational - in the EU and in particular in the euro area and therefore the sustainability of aggregate - national and common - debt.

This proposal is consistent with the changes recommended by the European Fiscal Board (2020). The EFB recommends simplifying the current EU framework, by defining medium-term debt objectives specific to each country, as well as a rule for the growth rate of primary expenditure to achieve these objectives.

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<sup>23</sup> In a Communication dated March 3, 2021, the European Commission indicated that the general safeguard clause should be maintained until the end of 2022. Debates around the "Review of EU Economic Governance" have nonetheless been initiated by several institutions including the European Commission. See [https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/economic-governance-review\\_en](https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/economic-governance-review_en)



### 5.3. At the Member State level: Towards a multiannual governance of public finances

The imminent revision of the EU fiscal framework should not exempt each country from revisiting its own rules as soon as possible. The principle of spending control spelled out above is in fact valid at the Member State level.

**In favour of a “spending norm, spending rule”.** In countries where the level of taxes is already very high, basing the control of public finances on the prospect of increasing taxes cannot reasonably be envisaged. Likewise, any reduction in one tax should be strictly matched by increasing another.

**Improving the management of public finances through multi-year expenditure objectives.** Member States should have the incentive to focus on the medium and long term in the management of their public finances. Such a framework should be more conducive to structural reforms that require time and patience, and to avoiding decisions that sometimes harm spending that would have been growth-friendly.

Monitoring expenditure over, say, a 4-5 year horizon is simple, because its evolution can be fixed in nominal amounts. That is easy to understand by all stakeholders, unlike more indirect concepts such as structural balances. This expenditure target would be rolled out in all public administrations (government, social security, local authorities), in a specific and explicit manner.

This expenditure standard should ultimately allow expenditure growth to be lower than revenue growth and will require the search for medium and long term savings.

**Strengthening the role of Independent Fiscal Institutions (IFI).** As advocated by many economists such as Philip Lane (2021), the independent scrutiny of macroeconomic forecasts by IFIs is key to help improve the reliability of budgetary plans and reducing the scale of ex-post revisions. IFIs could also contribute by assessing the plausibility of budgetary plans. This would help to elongate the decision-making horizons of policymakers and force a stronger focus on the longer term, by identifying unfavourable budgetary trends and stabilising public capital programmes.

**Parliament and public debates.** Needless to say, the adoption of expenditure standards would be preceded by a broad public and parliamentary debate, so that this multi-year trajectory reflects the priorities of the national governments and their majority. The European Parliament could also be involved in national consultation processes, for example through hearings, so as to bring into national debates a pan-European democratic perspective, or to feed national debates with first hand accounting and “*retour d’expérience*” in other Member States.

**Ex ante and ex post assessment of compliance.** Compliance with the “expenditure standard” should also be assessed on a multi-year basis, through strong governance, e.g. with an independent budgetary institution at the EU level, accounting for gaps. Such “difference counter” system has been adopted in several countries, notably in Germany, Austria and Sweden. It makes it possible to achieve a balance between a medium-term objective (the increase in expenditure over the period) and the necessary annual flexibility. Finally, an exit clause, like the escape clause provided for in EU rules, would make it possible to modify the multiannual framework in the event of exceptional events (economic recession, pandemic, etc.).

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## APPENDIX

### Technical appendix for Figure 7: Real GDP under different scenarios including no-stimulus counterfactuals

In order to compute Pre-COVID and Post-COVID GDP projections, we use an array of economic forecasts for real GDP at annual frequency from Public Institutions and Private Financial Institutions. Whenever available, we take the forecast produced by each forecaster, as none provide a forecast for each country in our sample.

- **Public institutions:** OECD, IMF, European Commission, Banque de France, French Ministry of Finance, Insee, Bundesbank, Federal Ministry of Economic Affairs and Energy, DIW Institute, Kiel Institute, IWH-Halle, IFO Institute, RWI-Essen, Banco de Espana, Ministry of Economy and Competitiveness, Banco Italia, Italy Ministry of Economy and Finance, Istat, Bank of England, Office of Budget and Responsibility, Federal Reserve;
- **Private Financial Institutions:** Oxford Economics, Fitch Ratings, Goldman Sachs, JP Morgan, Bloomberg Economics, Bank of America, Barclays, Credit Agricole, BNP Paribas, Deutsche Bank, Citi Group, Credit Suisse, Caixa Bank, HSBC.

The Pre-COVID projection corresponds to the latest available forecast as of January 24<sup>th</sup>, 2020 (*i.e.* before the first COVID-19 case was discovered in Italy). The Post-COVID projection corresponds to the latest available forecast as of the time of this exercise (February 28<sup>th</sup>, 2022). The GDP level is normalized to 100 in 2019, and projections are obtained by chaining the GDP forecast year-by-year. The mid-solid line corresponds to the GDP level obtained by chaining the median forecast. The upper- and lower-dashed lines corresponds respectively to the 90<sup>th</sup> and 10<sup>th</sup> percentile in the distribution of economic forecast, and are shortcuts for the “uncertainty” around economic forecast that would prevail in a proper econometric model.

**NB:** when data is historical (e.g. 2020 from the perspective of February 2022), we use national statistics.

The no-stimulus projection corresponds to the counterfactual trajectory for real GDP in the event that no government support had been put in place. It is obtained using fiscal multipliers from the literature, as well as the size of the fiscal packages, in order to estimate what the GDP level would have been had no fiscal support be put in place. We follow the IMF Regional Economic Outlook for Europe (October 2021) to guide our choice of fiscal multipliers. In particular, we follow the literature<sup>24</sup> that use different fiscal multipliers for Above-the-Line policy support, Below-the-line policy support, and liquidity measures. The error bands are obtained by using the range of fiscal multipliers found in the literature.

### Technical appendix for Figure 8: Simulations of unemployment trajectories pre- and post-COVID

We follow an identical approach as the one follow for Figure 7, without the counterfactual experiment. The data sources are the same public and private institutional forecasters, but taking the forecast of unemployment rate instead of real GDP growth.

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<sup>24</sup> See Burriel and Galesi (2018), Faria-e-Castro (2021), Guerrieri et al. (2020), Jarociński (2010) among others.

## Technical appendix for Figure 18: Debt sustainability projections by countries

We compile data from financial markets as well as institutional forecasters in order to retrieve future expectations of the variables listed in Box A.1.

- **Expected nominal rates:** Expected one-year (short-term rates) are derived from the yield curve on the primary debt instrument of each countries
  - Download the (nominal) yield curve from Bloomberg.
  - Take a 3<sup>rd</sup> degree spline approximation to get the yield at every year horizon.
  - Convert long term yields to one-year horizon short term rates for a given year using the no-arbitrage formula:

$$\mathbb{E}_t(1 + r_{t,t+2})^2 = \mathbb{E}_t(1 + r_{t,t+1})(1 + r_{t+1,t+2})$$

- **Expected inflation:** Repeat the same procedure as above but looking at the real yield curve (derived from inflation-indexed bonds)
  - Get expected short-term real rates from the inflation-indexed yield curve available in Bloomberg
  - Subtract the nominal one-year nominal rate to the one-year real rate to get inflation expectations. By no-arbitrage:

$$\mathbb{E}_t(1 + r_{t,t+k}^n) \approx \mathbb{E}_t(1 + r_{t,t+k}^r)(1 + \pi_{t,t+k})$$

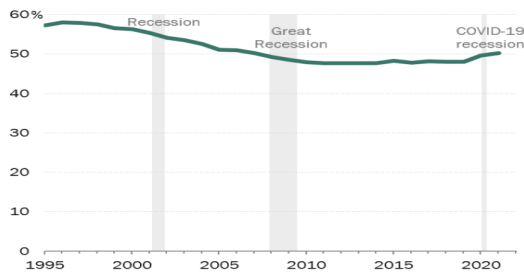
- Adjust inflation expectations by taking the arithmetic average with the median institutional forecast for inflation (inflation expectations from swaps and inflation-indexed bonds are known to be noisy).
- **Expected real GDP growth rate:** take the latest estimate from the IMF WEO.

## Additional figures

Figure A.1: Evolution of the share of retired people in the United States

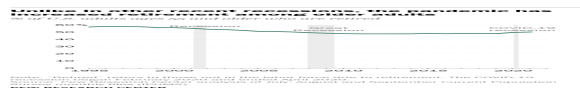
**Unlike in other recent recessions, the pandemic has increased retirement among older adults**

*% of U.S. adults ages 55 and older who are retired*



Note: "Retired" refers to those not in the labor force due to retirement. The COVID-19 recession began February 2020 and ended April 2020.  
Source: Pew Research Center analysis of July, August and September Current Population Survey monthly files (IPUMS).

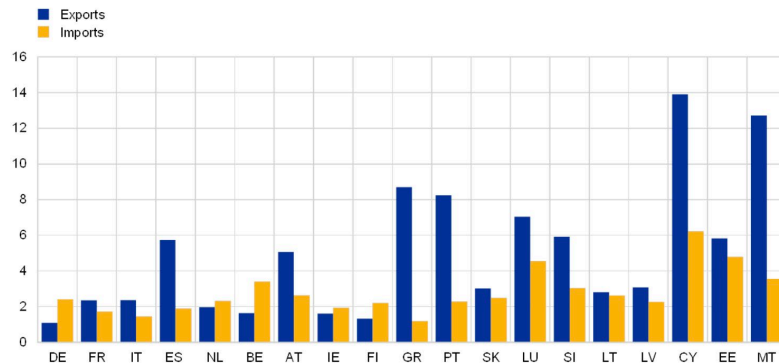
PEW RESEARCH CENTER



Source: PEW Research Center

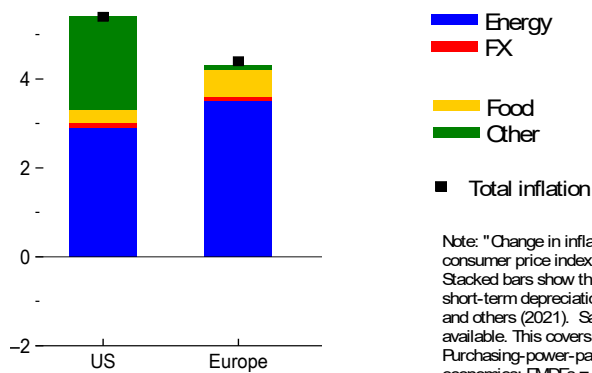
Figure A.2: Euro area countries' travel exports and imports as a share of GDP in 2018

(percentage of GDP)



Source: ECB Economic Bulletin (June 2020)

Figure A.3: Decomposition of 2021 CPI



Note: "Change in inflation" refers to the difference in year-over-year growth of the consumer price index between December 2020 and the latest available data. Stacked bars show the contribution of each component to that change. FX refers to short-term depreciation-induced inflation using estimates from Carrière-Swallow and others (2021). Sample includes countries for which all components are available. This covers 26 European countries, 2 other AEs, and 15 EMDEs. Purchasing-power-parity weights are used for aggregation. AEs = advanced economies; EMDEs = emerging market and developing economies; FX = import-weighted nominal effective exchange rate depreciation.

Source: IMF WEO update (January 2022)

## Additional boxes

### Box A.1: A simple framework for debt sustainability analysis

**Simple accounting.** Our debt sustainability framework relies on a simple accounting framework to track outstanding debt ratios. The evolution of nominal debt ( $D_t$ ) is given by the sum of the primary deficit and the interest repayment. In other words, the nominal stock of debt will grow if government revenues from taxes minus government spending doesn't cover the interest expense on previous debt:

$$D_t - D_{t-1} = \text{Primary deficit}_{t-1,t} + r_{t-1,t} D_{t-1}$$

Assuming no change in taxation and given that nominal GDP grows at a rate of  $\pi_{t-1,t} + g$  (the sum of the inflation rate and the real GDP growth), the evolution of the Debt-to-GDP ratio can be rewritten as:

$$\frac{D_t}{GDP_t} - \frac{D_{t-1}}{GDP_{t-1}} = \left( \underbrace{r_{t-1,t} - \pi_{t-1,t}}_{\text{real rate "r"}} - g \right) \frac{D_{t-1}}{GDP_{t-1}} + \text{deficit rate}_{t-1,t} \quad [*]$$

**Key variables.** Hence, in order to analyse trajectories of Debt-to-GDP ratios, the key parameters to consider are

- expected nominal rates:  $\mathbb{E}_t r_{t+k}$
- inflation expectations:  $\mathbb{E}_t \pi_{t+k}$
- medium-run GDP growth:  $\mathbb{E}_t g_{t+k}$
- future primary deficits:  $\mathbb{E}_t \text{deficit rate}_{t+k}$

Without an estimate of future deficits as a share of GDP ( $\mathbb{E}_t \text{deficit rate}_{t+k}$ ), one can still gauge the "fiscal space" available to countries by looking at the difference between real rates and GDP growth. Indeed, "r-g" measures the maximal sustainable deficit consistent with no-increase in Debt-to-GDP ratio.

**Size matters for accumulation and consolidation.** What is key to notice in the above evolution equation is that  $\frac{D_{t-1}}{GDP_{t-1}}$  interreacts with the "r-g" effect. Therefore, the higher the debt ratio, the faster the growth in the debt ratio when real interest rates are high. However, and this is an important counterpart, the faster the reduction in the debt ratio when growth is strong.

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This paper provides an overview of the policy measures applied in the EU to address the COVID-19 crisis and their macroeconomic consequences. It focuses on the macroeconomic impact on labour markets, external balances, financial markets and the corporate sector. The paper also examines the impact on longer-term growth and productivity. Impacts on public finances and debt sustainability are analysed independently, with considerations regarding prospective growth, interest rate and inflation developments.

As the policy focus transitions from crisis management to a longer-term policy for sustainable growth and well-being, the paper provides policy recommendations. It presents the impact of the crisis on the link between national and EU-level policies, and the universe of feasible options for the architecture and governance of EMU, as well as the future of the fiscal framework going forward.

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