STUDY

Requested by the ECON committee

Monetary Dialogue, June 2021

European Parliament

US Macroeconomic Policy Response to COVID-19: Spillovers to the Euro Area

Compilation of papers

Policy Department for Economic, Scientific and Quality of Life Policies
Directorate-General for Internal Policies
PE 662.923 - June 2021

EN

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This document was requested by the European Parliament's committee on Economic and Monetary Affairs.

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Manuscript completed: June 2021
Date of publication: June 2021

This document is available on the internet at:
http://www.europarl.europa.eu/supporting-analyses

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For citation purposes, the study should be referenced as: European Parliament, 2021, *US Macroeconomic Policy Response to COVID-19: Spillovers to the Euro Area*, Study for the Committee on Economic and Monetary Affairs, Policy Department for Economic, Scientific and Quality of Life Policies, European Parliament, Luxembourg.

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Looking Through and Past COVID-19: Do Spillovers Matter?

Pierre L. SIKLOS

Abstract

The main thrust of fiscal and monetary responses to the pandemic in the EU and the US are contrasted. Estimates of the spillovers from US fiscal policy to Europe are estimated. They are found to be significant but economically modest. Consequences for debt and debt sustainability in the long-run are also examined. Concerns over debt sustainability in the EU and the US are warranted. Observers advocating much higher debt levels need to consider lessons from history.

This paper was provided by the Policy Department for Economic, Scientific and Quality of Life Policies at the request of the committee on Economic and Monetary Affairs (ECON) ahead of the Monetary Dialogue with the ECB President on 21 June 2021.

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LIST OF ABBREVIATIONS

AIT	Average inflation targeting
ARP	American Rescue Plan
CBO	Congressional Budget Office
DPA	Defense Production Act
ECB	European Central Bank
EP	European Parliament
EU	European Union
FANG	Finland, Austria, Netherlands, Germany
FOMC	Federal Open Market Committee
GDP	Gross domestic product
GIIPS	Greece, Ireland, Italy, Portugal, Spain
HICP	Harmonised index of consumer prices
IMF	International Monetary Fund
NGEU	NextGenerationEU
OECD	Organization for Economic Cooperation and Development
PCE	Personal consumption expenditures
SGP	Stability and Growth Pact
SURE	Support to Mitigate Unemployment Risks in an Emergency
TFEU	Treaty on the Functioning of the European Union
US Fed	US Federal Reserve
US	United States
USD	United States dollar
WEO	World Economic Outlook

EXECUTIVE SUMMARY

- **US pandemic related fiscal stimulus has been massive**. Some estimates are in the order of 25% of US GDP.
- **Forecasts have the US output gap being closed by 2023.** The combined impact of US fiscal interventions play a significant role in this outcome.
- **The speed of the fiscal response in the US has been notable.** In particular, the one-time cash transfers in 2020 and 2021 in the US were large and differentiated from the EU-wide fiscal response.
- **In monetary policy, the US introduced a new strategy.** However, the new strategy raises important unanswered questions about accountability and transparency.
- **The EU-wide fiscal response differs from the US one by being smaller and favouring loans and guarantees over direct payments to citizens.** However, the starting point of fiscal policy in Europe is more generous than in the US at the outset of the pandemic.
- **NGEU and SURE are innovative joint responses of a fiscal nature in the EU.** Unfortunately, as this is written, uncertainty remains about its eventual economic effects.
- **The ECB is also undertaking a review of its policy strategy, but it remains unclear how it will square its Treaty-mandated price stability obligations alongside other demands that may come to be seen as central bank activism.**
- **The international transmission mechanism remains poorly understood.** Myriad fiscal type interventions complicate an understanding of the domestic and international impact of fiscal shocks.
- **Spillover effects of US fiscal shocks are significant and economically positive.** However, estimates are highly uncertain.
- **In the absence of international spillovers, the impact of fiscal shocks in the EU differ from those in the US.** Fiscal shocks are inflationary in the US but not the EU; they are, however, expansionary for both economies.
- **US fiscal shocks are inflationary for the euro area and they help narrow the differential in monetary policy stances between the two economies**. However, the beneficial impact on the output gap in the euro area is modest.
- **Estimates of the long-run impact** of fiscal interventions are model-dependent. To illustrate, long-run OECD and CBO estimates are contrasted.
- **Concerns over debt sustainability are warranted**. Those who advocate that much larger debt loads are sustainable ignore history.

1. INTRODUCTION

As the COVID-19 pandemic raged, fiscal policy quickly emasculated monetary policy in part because interest rates were ultra-low and central banks could only re-activate or enhance existing interventions to cushion the financial sector blow stemming from various lockdowns in economic activity. The ECB's response amounted to widening the scope of its interventions first introduced in response to the euro area sovereign debt crisis. On the fiscal side, and beyond the individual country responses to the economic impact from the spread of the virus, the EU eventually agreed to a novel common response which, if fully implemented, may well be transformative though, as this is written, the promise also risks falling short of expectations.

Arguably, it is developments in the US that have elicited most interest not only because of the size of the fiscal response but also due to ongoing attempts to consider new proposals for additional future fiscal interventions. Currently, much of the advanced world stands at the point where fiscal policy dominance has created some unease about whether the resulting debt surge is sustainable.

Immediate economic concerns have been set aside because of the overarching need to maintain public health while putting in place policies that ensure economic recovery from a drop in global real GDP in 2020 that far exceeded a similar global real drop in the aftermath of the global financial crisis in 2009.[1] However, another issue has been revived, namely the economic impact of spillover effects. Instead of cross-country spillovers from conventional and unconventional monetary policies, the focus has shifted to fiscal policy spillovers, notably from the US.

Economic models that began to more explicitly incorporate financial frictions as a result of the financial sector shock that began in 2008 are now having to incorporate more explicitly fiscal shocks. The role of fiscal policy was not entirely ignored by the economics profession, but models used by central banks and academics were primarily interested in the impact of monetary policy treated fiscal policy as largely passive. There was comparatively less interest in the international transmission of fiscal shocks. As with monetary policy, the type of fiscal stimulus (e.g. maintenance of consumption, infrastructure, productivity improvements) will dictate its economic impact. Arguably, unlike monetary policy, the political dimension of fiscal stimulus measures will also play a significant role.

The rest of the paper is organised as follows. The next section provides an overview of the main thrust of fiscal and monetary actions taken since the pandemic erupted in early 2020. The US and EU experiences are examined separately, but are contrasted against each other. Next, the issue of spillover effects from various US fiscal stimulus measures is considered. Some tentative estimates are also provided while stressing that the noise factor in these estimates may well be large. Long-term consequences are also examined. The paper concludes by arguing that, while there are reasons to be optimistic, the thread that divides better news beyond the end of the COVID-19 pandemic and the next economic crisis is a thin one.

[1] According to the IMF, global real GDP fell by 3.3% in 2020 but only by 0.1% in 2009. See https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/OEMDC/ADVEC/WEOWORLD.

2. WARP SPEED? FISCAL AND MONETARY POLICY DEVELOPMENTS IN THE TIME OF COVID-19: US VERSUS EURO AREA

It is reflection of the severity of the COVID-19 crisis that fiscal authorities in many countries reacted as swiftly as they did, at least in the fiscal realm, once delays in recognising that a pandemic was underway eventually forced authorities to respond. After China, arguably the US was the country worse hit during the early months of the unfolding pandemic that would spread very quickly around the world. Europe would eventually catch-up and even overtake the US in the severity of the health crisis. Initial downplaying of the negative consequences of the health crisis by many governments only exacerbated the size and scope of what would become a once in a century economic shock.

2.1. US developments

2.1.1. Fiscal policy

Table 1 provides an overview of the response of the US federal government since early 2020. At the outset, it is important to recognise that many of the fiscal measures passed in 2020 and 2021 were not intended as stimulus as the expression is commonly understood. Instead, the aim was to preserve income and provide support for vast swaths of the economy left inactive or unable to produce or deliver goods and services.

The Table makes the distinction between what is budgeted versus outlays associated with each piece of legislation aimed at responding to the pandemic. Budgeted amounts represent approved spending once the legislation is signed by the President while outlays are outturns applicable in the relevant budget year. Since not all funds may be disbursed in the budget year the legislation is signed into law there may be some amounts that can be deferred to future budget years. This is not unusual. Nevertheless, other than the CARES Act, the vast majority of spending took place in the budget year the legislation was enacted. This has implications for the impact of the fiscal measure. Perhaps the most widely publicised examples of the rapid fiscal response are the one-time cash payments that US taxpayers received in early 2020 and again in 2021. Direct payments to the vast majority of the population are an element of the US fiscal response that sets it apart from the strategy adopted elsewhere in the world.[2]

The initial fiscal measures enacted in early 2020 were, in relation to what was to come, quite modest in USD terms. Nevertheless, less than a month after lockdowns and other economic restrictions on economic activity were put into place the CARES Act passed into law. At almost USD 1.5 trillion dollars, the fiscal measure covered the gamut of economic costs brought about by a rapid slowing down of economic activity.[3] Despite the size of the intervention, the CARES Act proved to be politically and economically insufficient. Two more fiscal interventions, namely the Paycheck Protection Plan, and a further general program, were enacted before a new President took office in January 2021. Based on the amounts shown in Table 1, the total spending amounts to approximately 18% of 2019 GDP. By any

[2] There was means testing to qualify for some of the payments, but the income thresholds were very high. Canada is another country that also introduced direct transfers in the early phase of the pandemic. As a result, for a time, personal disposable income in both countries exceeded pre-COVID-19 levels. For the US case see, for example, Kaplan (2020).

[3] One need not go too far to see vivid evidence of the slowdown in economic activity in the early months of the pandemic. Apple's Mobility Trends Reports (https://covid19.apple.com/mobility), Google's Community Mobility Reports (https://www.google.com/covid19/mobility/), and the Federal Reserve Bank of Dallas's Mobility and Engagement Index (https://www.dallasfed.org/research/mei), all point to a precipitous drop in mobility beginning early March. As this is written none of these indicators have recovered to pre-pandemic levels though they are approaching February 2020 levels.

measure, the accumulated size of the fiscal intervention was very large. Nevertheless, calculations such as these are only approximations of the size of government support as we shall shortly see.

As Table 1 also indicates, more fiscal spending is being proposed with the planned American Rescue Plan (ARP). Ostensibly, the latest stimulus plan is intended to be spent over several years as it is aimed less at preserving short-run economic activity while dealing with long neglected structural issues (e.g. infrastructure). Unlike earlier proposals that were enacted with lightning speed, there is far greater uncertainty both about the eventual budgetary authority of any approved legislation or the timing of its passage. It should be emphasised that estimates of any budgeted amount, if a law is eventually passed, are subject to considerable uncertainty as this is written. Instead, only estimated outlays are shown in the Table.[4]

There are two under-appreciated elements of the US fiscal response that do not easily fit into Table 1. First, is the resort to the Defense Production Act (DPA). This legislation allows the federal government to mandate that firms redirect the production of goods considered essential to deal with national emergencies. The Act was used in 2020 to increase the production of equipment needed by the health sector during the early months of the pandemic, and again 2021 to further increase supplies needed to continue the fight against the ongoing pandemic. While the outlays associated with the DPA are considered to be modest, amounting to hundreds of millions of USD, the consequences of its application may be more significant than acknowledged (see Bell et. al., 2020). Second, an additional difficulty in assessing the potential fiscal spillovers from US fiscal policy stems from the application of "Buy American" provisions which define and limit the procurement to US sources of purchases made by the US government. While the associated legislation sets limits on the types of purchases subject to this requirement, the current US Administration has used an executive order under existing legislation to broaden the restrictions.[5]

Table 1: Coronavirus fiscal measures in the US

Major		
Legislation	Estimated Budget Authority (USD millions)	Estimated Outlays (USD millions)
P.L. 116-123; Enacted 3/6/2020; H.R. 6074 Coronavirus Preparedness and Response Supplemental	490	490
P.L. 116-127; Enacted 3/18/2020; H.R. 6201 Families First Coronavirus Response Act [1]	93,919	95,264
P.L. 116-136; Enacted 3/27/2020; H.R. 748 CARES Act [2]	1,486,617	987,600

[4] Melgar and Rivas (2021) provide a nice visualisation of the various elements of the ARP.

[5] The executive order can be found at https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/25/executive-order-on-ensuring-the-future-is-made-in-all-of-america-by-all-of-americas-workers/. "Buy America" policies have a long history. See, for example, in the Canadian case https://www.tradecommissioner.gc.ca/sell2usgov-vendreaugouvusa/procurement-marches/buyamerica.aspx?lang=eng.

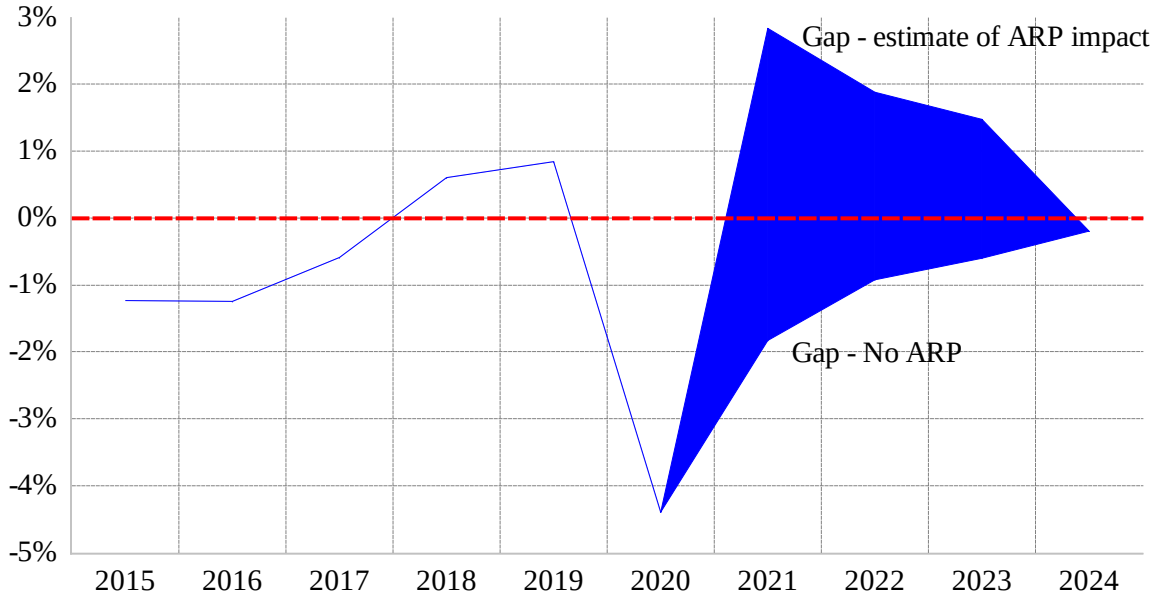
P.L. 116-139; Enacted 4/24/2020; H.R. 266 Paycheck Protection Program and Health Care Enhancement Act [3]	321,335	321,335
P.L. 116-260; Enacted 12/27/2020; H.R. 133 Consolidated Appropriations Act, 2021	701,279	676,974
American Rescue Plan Act of 2021 (H.R. 1319) [4]	1,822,736	1,797,918
Not Yet Passed into law		
American Jobs Plan[5]	NA	*2,650,000*

Note: Dates shown are mm/day/year. Not included are Student Veteran Coronavirus Response Act (USD 12), Emergency Aid for Returning Americans Affected by Coronavirus (USD 2). Estimates are for the 3 January 2020-2021 period and are also in millions of USD. [1] Not included are USD 94,268 million reduction in revenues; [2] Not included USD 408,243 million reduction in revenues; [3] Not included USD 528 million reduction in revenues due to Paycheck Protection Program Flexibility Act of 2020 enacted 13 July 2020; [4] as passed by the Senate 6 March 2021; [5] Legislative proposal to be (partially) financed over a 10 year period via higher taxes. See https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/31/fact-sheet-the-american-jobs-plan/.

Sources: CBO April 2021 report *Legislation Enacted in the Second Session of the 116th Congress That Affects Mandatory Spending or Revenue*, www.cbo.gov/publication/57084; https://www.cbo.gov/publication/57056.

Given the speed, size, and scope of US fiscal actions since early 2020 it is a hazardous exercise to estimate its impact, especially as the pandemic crisis has not fully passed. Nevertheless, some preliminary estimates have been generated. Combining data from the Congressional Budget Office (CBO) (2021), and Edelberg and Sheiner (2021), Figure 1 shows the impact of the most recent and largest fiscal measure, namely the ARP. The vertical axis measures the output gap, that is, the difference between observed and potential output, as a percent of US GDP, as estimated by the CBO. An economy at potential would be expected to generate an output gap of 0%. The thin solid line shows estimated output gaps since 2015. The immediate impact of the pandemic is clearly observed by the large negative output gap for 2020. The highlighted area indicates by how much the estimated impact of the ARP is expected to close the output gap. Indeed, if the estimates prove to be correct, the output gap will become positive in 2021 and remain so until sometime in 2024, when the impact of ARP is projected to have dissipated.

Figure 1: The estimated impact of the US ARP on the output gap



Note: the area depicts the output gap in the absence of the fiscal stimulus (bottom) and the estimated effect of the ARP on the output gap (top). Before 2020 the estimated output gap is displayed.

Sources: CBO (2021), Edelberg and Sheiner (2021), and author's calculations.

As is true with most fiscal actions, the response is assumed to be temporary. What remains unclear, especially with the possibility of passage of the American Jobs Plan (AJP) in some form, is whether and when potential output will be impacted. If, for example, potential output rises but the effects of stimulus packages passed in 2020 and 2021 dissipate, then it is conceivable the output gap will shrink faster than anticipated. Moreover, all estimates of the kind shown in Figure 1 are based on several assumptions about the extent to which transfers from government are spent or not by the public.

2.1.2. Monetary policy

In January 2012, the US Federal Reserve announced that it "judges that inflation at the rate of 2 percent, as measured by the annual change in the price index for personal consumption expenditures, is the most consistent over the longer run with the Federal Reserve's statutory mandate." (Board of Governors, 2012). While this announcement does not place the US Fed alongside the more traditional inflation targeting central banks (e.g. see Siklos, 2017), it is an explicit acknowledgement that 2% continues to be viewed as a desirable inflation rate to aim for.

Even before the COVID-19 crisis, the US Fed initiated a review its policy strategy. Following a delay, a new strategy, deemed evolutionary not revolutionary (Clarida, 2020) was announced by Federal Open Market Committee (FOMC) Chair Powell in August 2020 (Powell, 2020; Board of Governors, 2020). This was the culmination of research and public outreach by the Fed over more than a year.

Vice-Chair Clarida (2020) argues that the changes implemented late last year consist of six elements. Arguably, the most important element was to reinforce the aim to attain 2% inflation in the personal consumption expenditures (PCE) "but not below". Of course, this statement draws attention to differences vis-à-vis the ECB's current inflation objective I consider below. Next, the FOMC agreed to allow PCE inflation to drift "for some time" above the 2% inflation goal to make up for a decade or so of inflation failing to consistently reach the 2% target. Moreover, since the Fed has a dual mandate, the FOMC provides a definition of its concept of maximum employment to mean employment levels such

that there is no "sustained pressure" that threatens the inflation objective. The remaining elements of the new policy strategy aim to clarify how policy will be conducted during the transitional state until the COVID-19 and other impediments to policy normalisation are relaxed. In policy circles, the Fed's strategy is called average inflation targeting (AIT). Vice-Chair Clarida (2020) refers to the strategy as akin to temporary price level targeting that reverts to flexible inflation targeting once the FOMC deems conditions for normalisation of monetary policy to have been met.

It is, of course, far too early to evaluate the success or failure of the Fed's new policy strategy. However, there are at least two salient characteristics of the policy strategy that may well lay the groundwork for future policy challenges. In no particular order of importance, they are: (1) the lack of clarity about what is meant by a policy that is accommodative "for some time" and the associated desire to let inflation rise about the 2% long-run objective, again "for some time"; (2) the committee's unwillingness to be more precise about the constellation of inflation and employment levels that could trigger sustained inflationary pressures. The first consideration reflects worries over the power of monetary policy over time when it is in the vicinity of the zero lower bound. The FOMC's stand also captures the unwillingness of the Board either to define a range of acceptable inflation rates, implicit in the inflation target ranges that many other central banks must meet, or the horizon over which inflation is permitted to exceed the target before the Fed is set to act. The second consideration reflects some unease with the Phillips curve as a useful device that links real economic developments to inflation.

Challenges such as the ones just described may well make it much more difficult for central banks to fulfil their pledge to remain accountable for their actions as these become akin to shifting the goal posts as conditions change. In the case of the Phillips curve, the challenge is that the profession is nowhere near a consensus on its current status or validity, except for agreement that its slope has changed over time. However, neither development is new as there is a long-standing debate over the relevance of the Phillips curve that predates the pandemic. Hooper et al. (2019) claim, relying on US data, that the Phillips curve is hibernating. Others (e.g. Mankiw, 2019; Cochrane, 2019) claim the relationship is either alive and well or just plain dead.

Moreover, the new policy regime is asymmetric from above the longer-run inflation objective. This is unlike what holds in other inflation targeting central banks where there is a marked preference for symmetric targets. There is no indication whether the Fed will entertain the possibility that the regime may turn into one that is asymmetric from below if the Fed is faced with an inflation rate that persistently exceeds the 2% goal, on average, "for some time". Finally, there is no formal timetable for an eventual future review of the new strategy.

2.2. Euro area/EU developments

As noted above, other countries also responded with fiscal measures of their own. For convenience, some of the discussion below focuses on euro area developments since this seems more germane to an understanding of the role and impact of the fiscal-monetary policy mix that might influence economic outcomes in the coming years.

2.2.1. Fiscal policy

Table 2 provides a snapshot of fiscal interventions in the US, the European Union (EU) and euro area countries. Using estimates from the IMF (2021), the size of the US interventions stands out. It is noticeable that whereas US policy makers chose to resort to traditional forms of fiscal policy, referred to as "above the line" in Table 2, there has been a greater preference shown to using guarantees and other so-called "below the line" fiscal interventions in the EU and the euro area.

Another salient result from the "above" and "below" the line data is the sheer variance in the size of fiscal responses. It is also noteworthy how many countries in the EU or euro area have debt to GDP ratios that are deemed excessive either by the conditions set out in the Maastricht Treaty or other recommended thresholds beyond which debts are considered unsustainable (e.g. Romer, 2021 and references therein). These are highlighted in the Table below with reference either to the Maastricht Treaty or the Romer (2021) threshold. I return to this issue in section 3.2 below. Finally, except for Ireland, the share of government spending is higher in all euro area countries than in the US. This gap is particularly notable when the EU and the US are compared. This suggests that the EU, the euro area, and the US faced different starting points when dealing with the fiscal consequences of the pandemic.

A natural question to ask is whether there are any preliminary links between the stimuli implemented by different governments and a few critical macroeconomic fundamentals or data related to the pandemic. Overall, unconditional correlations suggest no obvious statistical links between spending as a percent of GDP, the size of the economy in question (2019 share), the size of government (Govt. Cons.), government debt to GDP ratio (Debt), the number of COVID-19 cases, the vaccination rate, or the severity of restrictions on individual economies.[6] Of course, any such links are only based on a single snapshot taken at a single moment in time as well as on indicators that are difficult to quantify .

Table 2: Coronavirus fiscal measures and related data for Europe and the US since 2020

Jurisdiction	"Above the line"[1]	"Below the line"[1]	2019 share[2]	Govt Cons.[3]	Debt[4]	COVID-19 cases[5]	Vaccine[6]	Restrict[7]
United States	*25.5*	*2.4*	NA	*14*	***135***	*97,724*	*43.3*	*+1*
European Union	3.8	6.8	NA	20.7	NA	69,161	24.3	NA
European Union[8]	*EUR 806.9 billion* *EUR 75.5 billion*							
France	7.6	15.6	12.2	23.1	**124**	83,317	23.2	+2
Germany	11.0	27.8	17.4	20.4	**68.2**	40,645	27.6	+2
Italy	8.5	35.3	8.9	18.7	**154.5**	66,532	23.4	+2
Spain	7.6	14.4	6.3	18.7	**117.3**	75,373	ND	+2
Austria	11.7	2.4	2.0	19.4	**88.9**	68,714	25.6	+2
Belgium	8.0	11.8	2.3	23	**143**	85,441	26.4	+2
Cyprus	7.0	4.4	0.1	16.6	**95.5**	74,475	ND	+2
Estonia	3.6	5.0	0.1	19.9	13.4	91,983	25.4	+2
Finland	2.5	7.5	1.2	23	**69.8**	15,667	30.1	+1
Greece	13.7	3.9	0.96	19.5	**200.2**	33,103	20.7	+2
Ireland	9.0	1.9	1.7	12	**68.8**	50,401	22.9	+2

[6] The only statistically significant correlations found are positive ones between the size of an economy and the choice of 'below the line' interventions (correlation = 0.82), and the level of debt to GDP ratio and 'above the line' spending correlation = -0.49). Without conditioning on other factors or a well-developed theory, it is difficult to draw firm conclusions from these correlations.

Latvia	8.7	3.0	0.2	19.1	47.2	62,855	13.9	+0
Lithuania	6.5	2.8	0.2	16.8	44.5	90,831	25.2	+0
Luxembourg	4.2	5.9	0.3	17.1	30	107,360	ND	+2
Malta	7.1	6.1	0.1	17.2	43.1	68,605	51.8	+0
Netherlands	4.5	8.2	4.1	24.5	**62.5**	88,881	ND	+1
Portugal	5.4	5.7	1.1	16.9	**136**	82,036	23.6	+2
Slovak Rep.	4.4	4.4	0.5	19.7	**63.1**	70,007	19.9	+2
Slovenia	7.2	6.6	0.2	19.7	**80.9**	115,584	20.6	+1

Notes: All figures are rounded. (1) "Above the line" refers to changes in government spending and/or tax revenue reductions; "Below the line" signifies loans and guarantees not all of which may be taken up and amounts governments are exposed to linked to uncertain future events (i.e., contingent liabilities). (2) Relative size of each euro area economy in the common currency area in 2019. In percent. Based on October 2019 data from World Economic Outlook, International Monetary Fund (3) All government expenditures for goods and services for 2019; (4) Debt to GDP ratio for 2019. In red boldface values that exceed threshold estimated by Romer (2021); in black boldface values exceed Maastricht Treaty condition; (5) Cumulative number of confirmed cases per million people as of 30 April 2021; (6) share of the population received at least one dose as of 30 April 2021; (7) Absolute change in stay-at-home requirements over the period 1 January 2020 and 30 April 2021. +0 means no measure, +1 means recommended, +2 means required (except for essentials). NA means not applicable; ND means no data available; (8) NGEU funding at current prices. The second line refers to European Commission borrowing via social bonds (SURE). Estimates are as of 24 March 2021. See https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/financial-assistance-eu/funding-mechanisms-and-facilities/sure_en.

Sources: https://www.imf.org/en/Topics/imf-and-covid19/Fiscal-Policies-Database-in-Response-to-COVID-19, as updated for April 2021 World Economic Outlook. Our World in Data, https://ourworldindata.org/covid-cases, and World Bank World Development Indicators, https://databank.worldbank.org/source/world-development-indicators.
OECD, https://data.oecd.org/gga/general-government-debt.htm, and Eurostat, https://ec.europa.eu/eurostat, and European Commission (2021).

Finally, unlike the response to the euro area's sovereign debt crisis which amounted to various liquidity and other guarantees and funding backstops (e.g. see Siklos, 2020b), EU governments provided an explicit joint response which is roughly equivalent to 6% of EU 2019 GDP. Perhaps just as important, the NextGenerationEU (NGEU) and Support to Mitigate Unemployment Risks in an Emergency (SURE) funding resulted in a first-time joint form of debt issuance. As the ratification process for NGEU funding is being finalised, some countries have begun to publish spending plans (e.g. see Darvas and Tagliapietra, 2021). Although some will contrast the speed of the US Federal response with the slow and deliberate strategy adopted by the EU, the EU's emphasis on accountability and spending that is expected to contribute to future increases in productivity may prove relatively more beneficial in the medium-term than one time spending of the more traditional variety.

Beyond the push factor that might generate positive effects from US fiscal packages to the EU, and the euro area in particular, the space for US spillovers to Europe will also be influenced by the size of the existing trade relationship between major trading blocks.[7] Table 3 provides summary information about the relative importance of exports and imports between the US and the four largest trading blocks. Individually, euro area economies have a much smaller trading relationship with the US than either Canada, Mexico or China.[8] Interestingly, at least since 1991, the import and export shares

[7] Although the focus below is primarily on the euro area, results for the EU would not change the inferences drawn below.

[8] Germany is the US's largest EU trading partner but, at an average 5% import share and 3.8% export share since 1991, ranks far lower than Canada, Mexico, and China.

between the euro area and the US have remained stable while the same is not true for the other countries listed in Table 3.

Table 3: Import shares: US and major trading partners

Partner	% Import share	Trend	% Export share	Trend
Canada	15.5 (2.2)	Falling	15.5 (2.2)	Falling
China	16.5 (4.6)	Rising	5.7 (2.1)	Rising
Mexico	11.5 (1.1)	Rising	14.6 (1.2)	Rising
Euro area	14.0 (0.7)	Stable	13.8 (1.3)	Stable
Totals	57.5	-	49.6	-

Note: Data are annual. Mean and standard deviations are shown in parentheses. Shares are total imports or exports between the US and the partners listed. Euro area includes 19 countries members in 2021. Trend refers to the general direction of movement in shares since 1991.

Source: WITS, World Integrated Trade Solutions, World Bank, https://wits.worldbank.org/Default.aspx?lang=en.

Canada and Mexico, of course, have a free trade agreement with the US. China, in spite of trade restrictions and tariffs imposed by the previous Administration, which continue to be maintained as this is written, continues to grow in importance and its relative importance is especially noticeable in the import shares.[9] In any case, Table 3 reinforces the role EU-wide policies and strategies can play, acting as a single trading block, in benefiting from US trade. In contrast, individual EU member countries might see modest trade benefits from any US fiscal stimulus.

2.2.2. Monetary policy

Like the US Fed until 2020, the ECB's current policy strategy is under review. However, unlike the Fed, the ECB decided to delay announcing the results of its strategic review until later in 2021. The Fed's new monetary policy strategy is asymmetric as previously noted. Similarly, the ECB's current policy strategy is asymmetric but from below and not from above as it aims to keep harmonised index of consumer prices (HICP) inflation "at below, but close to, 2%".[10] The combination of research and public outreach is being used by the ECB in advance of a decision to be made. As is the case with the Fed and many other central banks in advanced economies, HICP inflation since the euro area sovereign debt crisis has more often than not been well below and not "close" to the 2% objective.[11] It is, of course, too early to speculate on the likely modifications that will be made to the existing monetary policy strategy of the ECB. There is no shortage of recommendations that have already been made (e.g. see Lengwiler and Orphanides, 2021). However, it would not be surprising if a US spillover of the intellectual variety emanates from the just completed US monetary policy strategy review. It will be interesting to see whether the AIT strategy adopted by the US Fed finds its way in a new ECB monetary policy strategy.

[9] As this is written, negotiations for a US-EU free trade style agreement remain in hold. See https://ec.europa.eu/trade/policy/countries-and-regions/negotiations-and-agreements/#_on-hold.

[10] See ECB, https://www.ecb.europa.eu/mopo/html/index.en.html.

[11] Examination of the ECB's inflation dashboard makes this visually clear. See https://www.ecb.europa.eu/stats/macroeconomic_and_sectoral/hicp/html/index.en.html.

Overall, both fiscal and monetary policies in the US and the euro area are experiencing significant shifts whose consequences are uncertain at best. Indeed, the sheer speed with which policies are undergoing changes is both a blessing, as is true of the science that has produced new vaccines, and a curse if economic performance disappoints and central banks are unable to contain an inflationary surge. An ingredient that will tell the tale is the role played by economic spillovers from the US to which I turn next.

3. SPILLOVERS: CONCEPTS AND AN EVALUATION

As with many economic concepts, once analysts and policy makers seize on them there is the risk that its initial technical meaning can become distorted. This is also true for the concept of spillovers. For example, for a time, the International Monetary Fund published Spillover Reports.[12] At first, attention centred on the transmission of shocks from the world's most systemically important economies (China, the euro area, Japan, the United Kingdom and the United States). The implicit assumption was that policy decisions taken in the world's largest economies would generate shocks whose destination was the rest of the world. It became apparent, however, that shocks with international consequences can, at least in theory, originate from any country. Moreover, globalisation also implies the possibility that the original spillovers can spillback to systemically large and other economies.[13] In what follows, the distinction between spillovers and spillbacks is ignored but may someday once again become a policy relevant issue.[14]

3.1. Shock spillovers: multiplicity of theories and channels and some evidence

To fix ideas, Table 4 provides a highly stylised sketch that, it is hoped, is useful in framing some of the issues surrounding the transmission of shocks and the sources of spillover type effects.[15] First, one's views and estimates of spillovers will likely be influenced by the theories used in explaining their relevance and importance. For example, while there exist varieties of so-called Keynesian macroeconomic theories (viz., simple Keynesian, neo-Keynesian, New Keynesian) they all have in common that fiscal policies can have a significant economic impact. In open economies, the type of exchange rate regime can matter. In the present context, since the US and the euro area are viewed as operating under a flexible exchange rate regime this allows various channels of transmission to operate. Similarly, various representations of quantity theoretic approaches associate money growth with the eventual emergence of inflation. Recent increases in money growth in several advanced economies, together with emerging evidence of rising inflation, has reignited interest in this interpretation of current macroeconomic conditions. Moreover, since inflation has consequences for interest rates and exchange rates this also opens up international transmission channels that can potentially impact both trade, asset price developments and, consequently, the likely spillovers from US fiscal and monetary policies.

Turning to theories that jointly model monetary and fiscal policy, the treatment of government debt and deficits via the device of an intertemporal budget constraint implies that if these deficits are not financed by future spending cuts or tax increases then the resulting money-financed deficits will be

[12] IMF, https://www.imf.org/en/Publications/SPROLLs/Spillover-Reports#sort=%40imfdate%20descending. These are no longer published.

[13] See, for example, the Bank for International Settlements 86th Annual Report, Chapter III, https://www.bis.org/publ/arpdf/ar2016e.htm.

[14] While the existence of spillbacks are not denied by policy makers, they are proving exceedingly difficult to estimate. Breitenlechner et al. (2021) is one recent attempt but the authors are forced to admit that a multiplicity of assumptions are required to obtain estimates relying on counterfactuals. Perhaps unsurprisingly then, it did not take long before the IMF spillovers reports were reframed to deal with the distinction between any policy change, whether the economy is systemically important nor not, to identifying the origins and types of spillovers. Eventually, these reports ceased to be published perhaps because spillovers of all kinds were recognised as forming a natural component of the institution's economic surveillance function.

[15] The aim is not to present a comprehensive treatment of all the relevant theories and their variants. Space constraints prevent this. Instead, the objective is to highlight that one's interpretation about the importance of spillovers will be influenced by priors about the relative strength of fiscal and monetary tools in influencing business cycle activity. For example, Bordo and Levy (2020) rely on a similar device to assess, from a historical perspective, the connection between deficits and inflation. The authors also provide key references to works that set out the details of each of the main theories listed in Table 4. Readers are referred to their paper for more details.

inflationary. This gives rise to the possibility that fiscal policy dominates monetary policy.[16] Finally, the fiscal theory of the price level expresses more formally the connection between fiscal and monetary policy from a more dynamic perspective and provides an explicit role for changes in government debt to influence perceptions of real wealth and, as a consequence, provides an avenue for fiscal policy to have real economic effects. Inflation is viewed as a by-product of the impact of fiscal policy and not the sole domain of monetary policy decisions. Hence, the name given to this theory. Clearly, these effects will also have international consequences although the theories are primarily focused on domestic economic effects of fiscal policy.[17]

Table 4: Fixing ideas: transmission channels of monetary and fiscal policy

Selected Theories	Selected Channels
Keynesian Quantity Theory Fiscal Versus Monetary Dominance Fiscal Theory of the Price Level	*Monetary Policy* • Signalling • Portfolio rebalancing
	Fiscal Policy • Deficits (G vs T) • Debt sustainability
	Global channels • China • Other large systemically important economies • Commodity prices • Global supply chains
	Political • Geopolitical risks

Source: Author's concept.

Turning to spillover effects proper, the foregoing theories can be used as benchmarks through which shocks originating from one or more countries or economic blocks can be understood. It needs to be underscored that these channels can and likely operate simultaneously even though they are shown separately in Table 4. Indeed, as a result, a significant challenge is for economists to "identify" which one of these channels operate. This, in turn, will depend on the model specified which will be informed by the theories used to make the case for or against a set of spillovers over others.

[16] These concepts are, of course, related to the so-called Ricardian Equivalence hypothesis wherein fiscal policy has neutral economic effects under specific circumstances (e.g. as when the impact of a current fiscal stimulus is fully offset by future tax rises thereby entirely short-circuiting the potential macroeconomic effects of fiscal policy).

[17] There are three other economic concepts that I will avoid discussing to conserve space. Nevertheless, each have implications for the success or failure of shocks and spillovers to have meaningful economic consequences depending on their treatment but independently of the particular theory favoured. They are: expectations, credibility, and uncertainty. How firms and households interpret the likely effects of shifts in policy stances dictates any changes in their expectations of future inflation and real economic activity. Changes in expectations will also impact the credibility of policy announcements while the clarity of communication by policy makers, together with assessments of policy actions, will influence how much uncertainty the public will attach to a successful outcome of fiscal and monetary policy interventions.

For convenience, Table 4 lists four sets of spillovers. One source is due to monetary policy actions, such as a change in a central bank policy rate or changes in the central bank's balance sheet (e.g. see Siklos, 2020b, and sources therein). Either the signal sent by such policies moves economic activity or the private sector responds by reallocating its portfolios. Although there is no consensus to date the bulk of the empirical evidence appears to favour signalling effects (e.g. Filardo and Siklos, 2020). Indeed, signals from central banks actions, notably ones from the ECB, in the form of forward guidance, have also been shown to spillover to neighbouring EU and non-EU economies and to spillback to other economies including the US (e.g. see Feldkircher et al., 2021).

A separate literature focuses on the spillovers created via fiscal policy. As suggested by some of theories listed in Table 4, these can originate from persistent deficits and, simultaneously, from debt management. Divergent views about the empirical significance of fiscal effects abound (e.g. see Ramey, 2016). Nevertheless, as techniques have improved over time, there is a growing consensus that fiscal shocks are economically meaningful but that the current state of low inflation, ultra-low interest rates, coupled with nominal GDP growth in excess of borrowing rates have implications for debt sustainability that call into question or contradict elements of the fiscal dominance and fiscal theories of the price level. An important complication stems from the fact that not all fiscal stimuli have *a priori* the same impact. For example, there is a difference between the effects of large transfers, of the kind that took place during the pandemic in the US (see section 2.1) and infrastructure spending or tax decreases.[18] The bottom line is that estimates of the economic impact of fiscal policy when monetary policy implications must also be considered, not to mention financial sector effects, is very challenging (e.g. see Reichlin et al., 2021).

The 2000s and the economic rise of China raised the profile of spillovers that are country-specific in origin, whose sources are multi-dimensional, but their impact is global. This category of shocks is often referred to as global shocks to make clear that any shocks from abroad can impact domestic economic activity. Needless to say, global shocks can originate from a variety of sources including fiscal and monetary policy decisions as well as commodity prices (e.g. see Siklos, 2021) or the state of global supply chains. As a result, a separate literature has emerged focusing on the importance of global shocks, for example, in explaining the evolution of inflation around the world (e.g. see Forbes, 2019; Siklos, 2020a).

Finally, and arguably least studied of all, are shocks that are more political in nature. Table 4 mentions geopolitical risks (see Caldara and Iacovillo, 2019; Ademuyiwa and Siklos, 2019) and these clearly can spillover internationally either via trading relationships or via other macroeconomic and financial fundamentals (e.g. asset prices).

To illustrate the potential for fiscal shocks originating from the US to influence the euro area, I next provide some illustrative evidence focusing first on spillover effects followed by the implications for debt sustainability. As with monetary policy studies, there exist a wide variety of specifications used to examine the economic impact of fiscal policy. Therefore, what follows serves only as an illustration of the potential spillover effects. It also needs repeating that much of the extant literature is focused on the domestic economic consequences arising out of fiscal shocks. That said, a few studies have recently broadened the scope of the analyses of fiscal policy changes to include the potential for international spillover effects (inter alia, Auerbach and Gorodnichenko, 2013, 2018; Blagrave et. al., 2017; Cavallari and Romano, 2017; Alloza et. al., 2019; Choi et. al., 2019).

[18] See, for example, Hausman (2016) for an interesting historical account of the economic impact of transfers during the 1930s in the US. Ramey (2016), and Blanchard and Perotti (2012) are two good examples highlighting the challenges in modelling different kinds of fiscal interventions.

I use annual data[19] from the April 2021 International Monetary Fund's World Economic Outlook data base for a period since euro notes and coins were introduced.[20] To facilitate comparisons with the US case the same annual sample is used for US data.

A typical model incorporating fiscal policy effects would include government spending (GEXP) and debt (DEBT). Both are defined as a percent of GDP. The output gap (YGAP) is used to capture the potential real economic effects of fiscal shocks. Monetary policy influences are incorporated by the addition of an estimate of the neutral real interest rate (R^*) and the term spread (SPREAD). The former, like the output gap, is unobserved and must be estimated. We use Holston et al.'s (2017) updated estimates. When the output gap is zero and the gap between observed and targeted inflation rates is also zero, then the observed policy rate should equal the neutral real interest rate plus expected inflation. Hence, other things equal, a rise in the neutral real interest rate translates into a higher policy rate.[21] Stated differently, R^* is the interest rate consistent with an economy at potential, or full employment, and stable inflation. Therefore, a lower R^* can be a justification for a reduction in the central bank's policy rate. The spread is the difference between the yield on long-term government bond yields and the yield on a three-month government bond and is often used as a proxy for the direction of change in the stance of monetary policy either because of expectations of inflation or anticipations of changes in future economic activity. Finally, inflation (INF) completes the model specification.[22]

It needs to be stressed that, as noted previously, many other kinds of specifications exist in the literature. The aim here is to provide only one set of estimates of the potential for fiscal and monetary policy to influence economic activity and inflation. All variables are treated as endogenous. A critical area of debate that continues to be unresolved is the identification of shocks. A straightforward solution often used as a benchmark when all variables are endogenous is to rank them in order of prior belief about the degree to which each variable is, informed by theory, affected by the others in the model. Therefore, the least endogenous or, if one prefers, the relatively most exogenous variable is last. For the results presented below the variables enter in the following order, namely [GEXP, DEBT, YGAP, R^*, INF SPREAD]. Thus, identification is achieved by assuming that SPREAD is solely determined by its own past history while GEXP is determined not only by its own past history but the history of all remaining variables in the model.

Table 5 considers the direction of the impact, when considered statistically significant, of individual shocks from any of the variables in the first column to the output gap and inflation.[23] To conserve space only a small selection of the most relevant results is shown.[24] In particular, I wish to highlight the potential economic impact of fiscal and monetary policies. At this stage, no spillover effects are

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19 In principle data at the quarterly and even monthly frequencies are available in some cases. However, unlike monetary policy, where regularly scheduled meetings are announced in advance, government spending and revenue patterns are more irregular throughout the year. Hence, for simplicity, I use annual data.

20 Available from https://www.imf.org/en/Publications/WEO/weo-database/2021/April. Data since at least 1980 are available (1990s for the euro area). However, given that euro notes and coins entered into circulation in 2002 while the euro was launched in 1999, samples ranging from 1995-2026 and 2002-2026 were used. All results shown below are for the 2002-2026 period both for the euro area and the US. Since data for the 2021-26 period represent forecasts a separate exogenous dummy variable was added to the model. The dummy proved statistically insignificant in almost all cases as well as economically small. Hence, this variable is not discussed further.

21 As an alternative, I also tried an estimate of the shadow (nominal) policy rates for the euro area and the US with no impact on the conclusions. The shadow rate incorporates the effects of unconventional monetary policies on central bank policy rates. See Siklos (2020b) for additional details.

22 Inflation is measured in terms of the HICP for the euro area and CPI for the US. Using PCE inflation for the US does not change the conclusions.

23 In more technical terms each shock is defined as a one standard deviation (i.e., 1%) shock, or 'surprise' change, in the variables listed as sources of shock. Statistical significance is determined according to whether, after 5 years, the accumulated impact on YGAP and INF are statistically significant at least at the 20% level. Otherwise, a 0 describes a statistically insignificant impact.

24 Others are available on request.

considered. Hence, the data treat the US and the euro area as if they are closed economies. The arrows dictate whether YGAP and INF rise (↑) or fall (↓).

Table 5: Impact of key macroeconomic aggregates on euro area and US output gap and inflation: summary of direction of change in the closed economy case

Source of Shock	Euro area		United States	
	Output Gap	Inflation	Output Gap	Inflation
Govt. Exp.	↓	↓	↓	↑
Debt to GDP	↓	↓	↑	**0**
Neutral Real Int. Rate	↓	0	**0**	↑

Note: A shock is defined as a 1 standard deviation *increase* in the variables in the source column. The arrows indicate whether, and in which direction (↑ indicating a rise; ↓ indicating a fall; 0 indicating no statistically significant response), there are statistically significant responses over a five-year period in response to the shocks considered. The model used is described in the main body of the text and includes, in addition to the variables shown in the Table, the term spread which is defined in the text. The sample is based on annual data for the 2002-2026 period with the data source provided in the text.

Source: Author's calculations.

When international spillovers are ignored, fiscal policy stimulates both economies as seen by the falling output gap. However, it is inflationary only in the US. Turing to the impact of a change in the debt to GDP ratio, we observe that it is stimulative for the euro area but contractionary for the US, while the same shock is only inflationary for the US but depresses inflation in the euro area. Changes in the stance of monetary policy via a shock stemming from the neutral real interest rate does not appear to have real economic effects for the US but reflects improved real economic conditions in the euro area. Instead, a positive neutral real interest rate shock is inflationary for the US and appears not to impact HICP inflation in the euro area. It may well be the case that monetary policy may have been too tight in the euro area relative to the US but less inflationary (see also Siklos, 2020b). Results, such as the ones shown in Table 5, have appeared in the literature though, for reasons also outlined above, comparisons are difficult in part because of the wide variety of methodologies, specifications, countries, and samples that have been used. More importantly, the findings in Table 5 ignore the potential for fiscal policy spillovers from the US to impact output gap and inflation outside its borders. However, they can serve as a benchmark against which to determine the potential significance of US fiscal spillover effects.

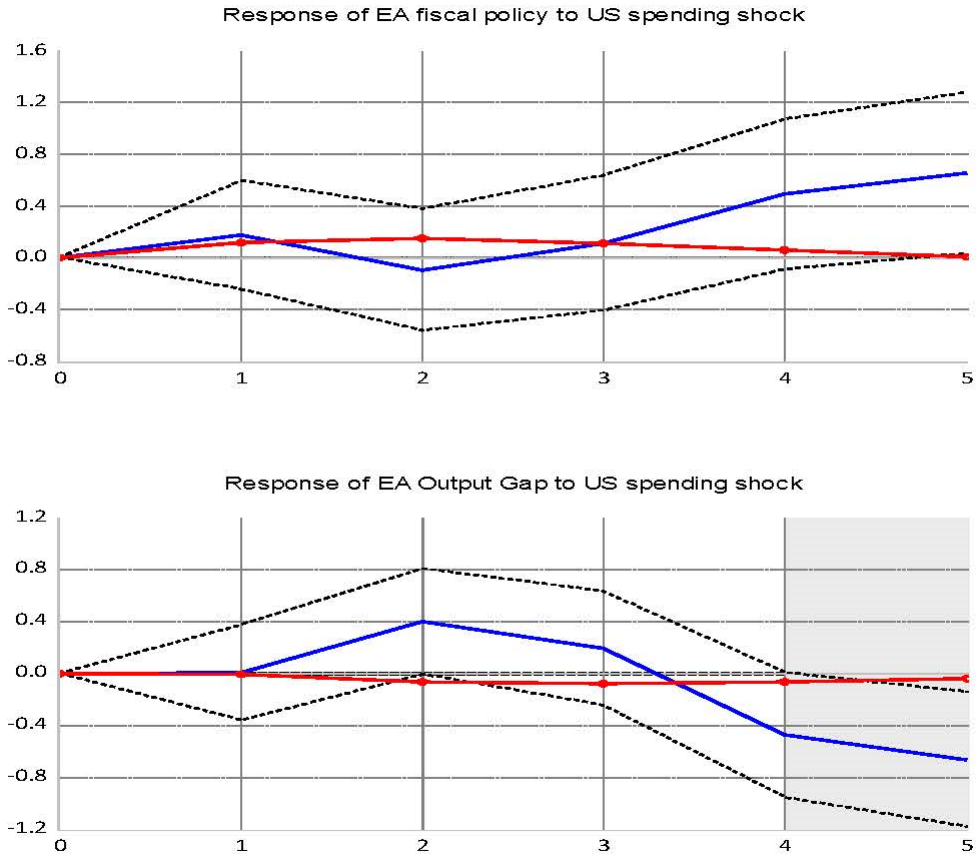
Hence, in Figure 2, I turn to more selected estimates. This time, and in line with the recent literature that explores the economic impact of fiscal shocks, I ask: what is the impact of US fiscal shocks on euro area fiscal policy, the output gap, the differential between euro area and US estimates of R^* and inflation? US fiscal shocks are estimated for the GEXP variable from the model shown in Table 5 and described above.[25] The figure plots the impulse responses to a spending shock from the US five years

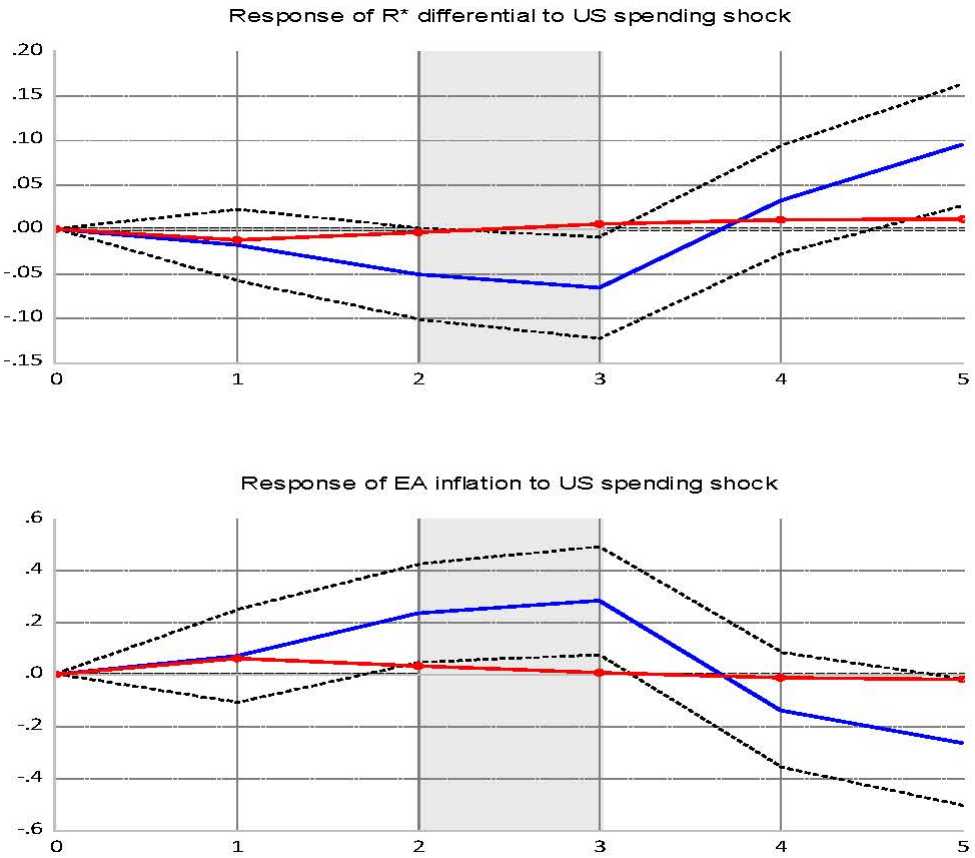
[25] This is an appropriate measure since it provides an indication of the unexpected effects of US fiscal policy once the impact of conditioning variables (i.e., past history of US GEXP, DEBT, YGAP, R^*, INF SPREAD) have been removed. The estimates provided in Figure 2 rely on the local projections technique which asks how the evolution of some variable of interest (e.g. inflation) evolves over different future horizons in response to a current shock (e.g. a US fiscal shock). Several recent papers dealing with the impact of fiscal shocks rely on this methodology (e.g. see Choi et al., 2019).

into the future. The confidence intervals shown permit the researcher to identify responses that are statistically significant.

There are no apparent spillover effects from US fiscal shocks to euro area fiscal shocks. However, a US spending shock does reduce the output gap in the euro area although it can take up to five years for the effect to become statistically significant. Recall that a reduction in the output gap implies that output is closer than before to an unchanged potential thereby signalling an improvement in economic activity. Needless to say, a complication is that changes in potential output are unobserved. Further, an unexpected US fiscal stimulus generates a small decline in the euro area neutral real interest rate in the third year following the shock while, at the same time, raising euro area inflation. The bottom line then is that there is some evidence of spillovers from US fiscal shocks on the euro area although it is debatable how economically large these are.

Figure 2: Impact of US spending shocks on select euro area macroeconomic aggregates: some estimates





Note: EA is euro area, US is United States. The blue line are estimates based on local projections; the red lines are estimates based on a conventional Vector Autoregression (1 lag) as described in the main text. The 80% confidence intervals (black dashed lines) apply to the local projection estimates. A US spending shock is estimated as described in the main text. R* differential is the difference between EA and US estimates of the neutral real interest rate. See the main text for an explanation. The shaded areas highlight estimates that are statistically significant.

3.2. An avalanche of deficits and debts? Short and long run horizons

Arguably, the greatest sea change in recent years in economic policy discussions is around the economic implications of large deficits and rising government debt. Unlike past episodes (see below) the combined impact of low inflation and ultra-low interest rates have led academics and other observers to suggest that the current environment offers an opportunity for governments to correct structural deficiencies, broadly speaking, without facing the perils of excessive inflation and the potential contractionary effects of future austerity and tax increases.

Europe's situation has attracted separate attention because of the fiscal constraints imposed by the Maastricht Treaty and the SGP. As a result, there have been calls for reform. For example, Bilbiie et. al. (2021, 2020), Blanchard et al. (2021), and Martin et al. (2021) are examples of studies that explore the relevant issues and put forward reform proposals.

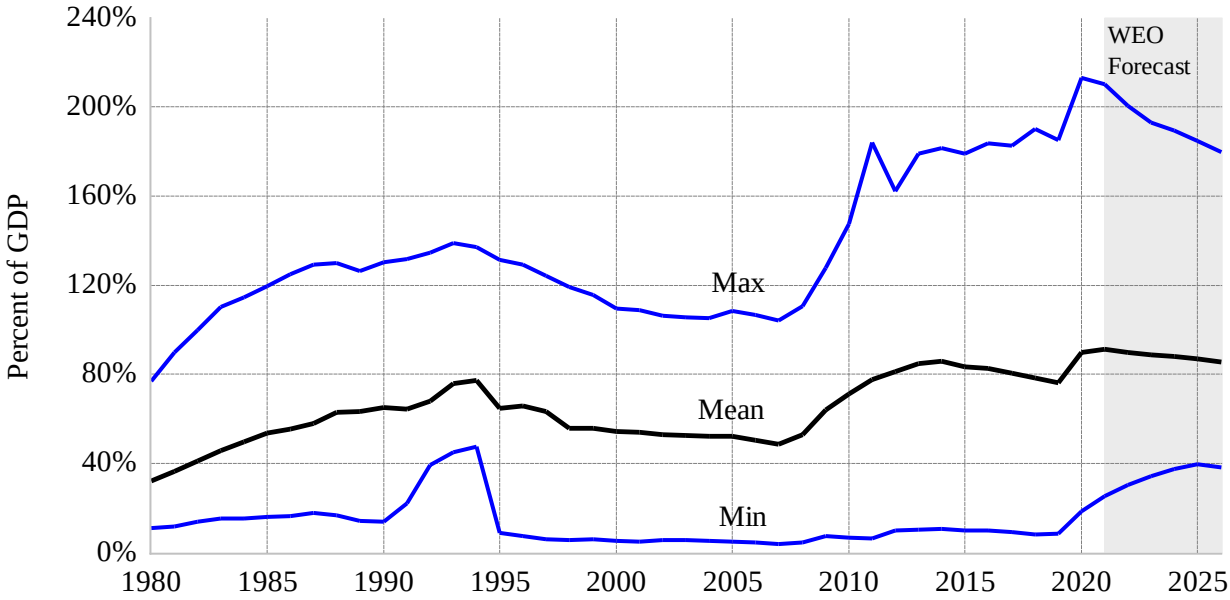
Figure 3 plots the evolution of the debt to GDP ratio in the euro area since 1980. Mean levels are bracketed by estimates of the highest and lowest debt to GDP ratios. Clearly, the same country need not always generate either the highest or lowest debt ratios over time. The first jump in the debt ratio is clearly observed a few years before the euro area sovereign debt crisis. Debt ratios continue to rise with the countries worse off in this respect experiencing an especially steep rise which continues until

the eve of the 2020 pandemic. Although the IMF expects debt ratios to moderate post-pandemic, they remain elevated relative to the 1980s and 1990s even in countries where debt levels are relatively low. What are some of the potential economic consequences of these developments?

Figure 4 shows some estimates and long-term forecasts for a set of key macroeconomic and financial variables generated by the OECD (2021). The first thing to notice is that, in common with all models used by international institutions and central banks, economies are expected to return to some equilibrium defined as a zero output gap as shown in the top left portion of the figure. As far as the OECD is concerned, this state of affairs is expected to be achieved slightly earlier in the US than in the euro area but no later than 2022 following a positive output gap, ostensibly assisted by loose fiscal and monetary policy in response to the pandemic. The top right portion of Figure 4 suggests that governments deficits are forecasted to persist past 2030. Nevertheless, fiscal policy, as summarised by these data, is expected to remain looser for longer in the US relative to the euro area. There is some expectation of convergence in deficits by the middle of the next decade.

Just as models generate output gaps that are eventually zero, these same models also tend to generate interest rates consistent with some equilibrium determined by the underlining inflation rate and some assumption of the equilibrium level of real interest rates. The OECD forecasts both nominal short-run and long-term interest rates to be consistent with a positive spread between the two which is the normal state of affairs. Moreover, in both jurisdictions, short and long rates are expected to be the same in the euro area and the US. As noted above, a critical ingredient in ensuring debt sustainability is the relationship between GDP growth and nominal interest rates. If short-term interest rates serve as the benchmark, the forecasts do not suggest any debt sustainability problems in either the euro area or the US. However, the same result does not hold if borrowing largely takes place at the longer end of the term structure. This is especially noticeable for the euro area beginning around 2026 while the same problem is less acute in the US case. Clearly, debt management, that is, the maturity structure of the debt, will play an important role. An additional difficulty, apparent from Figure 3, is that with the exception of NGEU finding, government borrowing is a sovereign matter though it is notionally constrained by the Maastricht Treaty and the current Stability and Growth Pact (SGP), though the latter is suspended for the time being. The US does not face the same constraints. Moreover, the USD is a more important reserve currency than the euro which also relaxes any borrowing constraints the US may face in financing its debt. More importantly, the forecasts do not suggest that the potential risks for debt to become unsustainable is far from zero. The reason is simple: policies are assumed to adjust to avoid any disastrous outcomes.

Figure 3: Evolution of (gross) government debt in the euro area since 1980

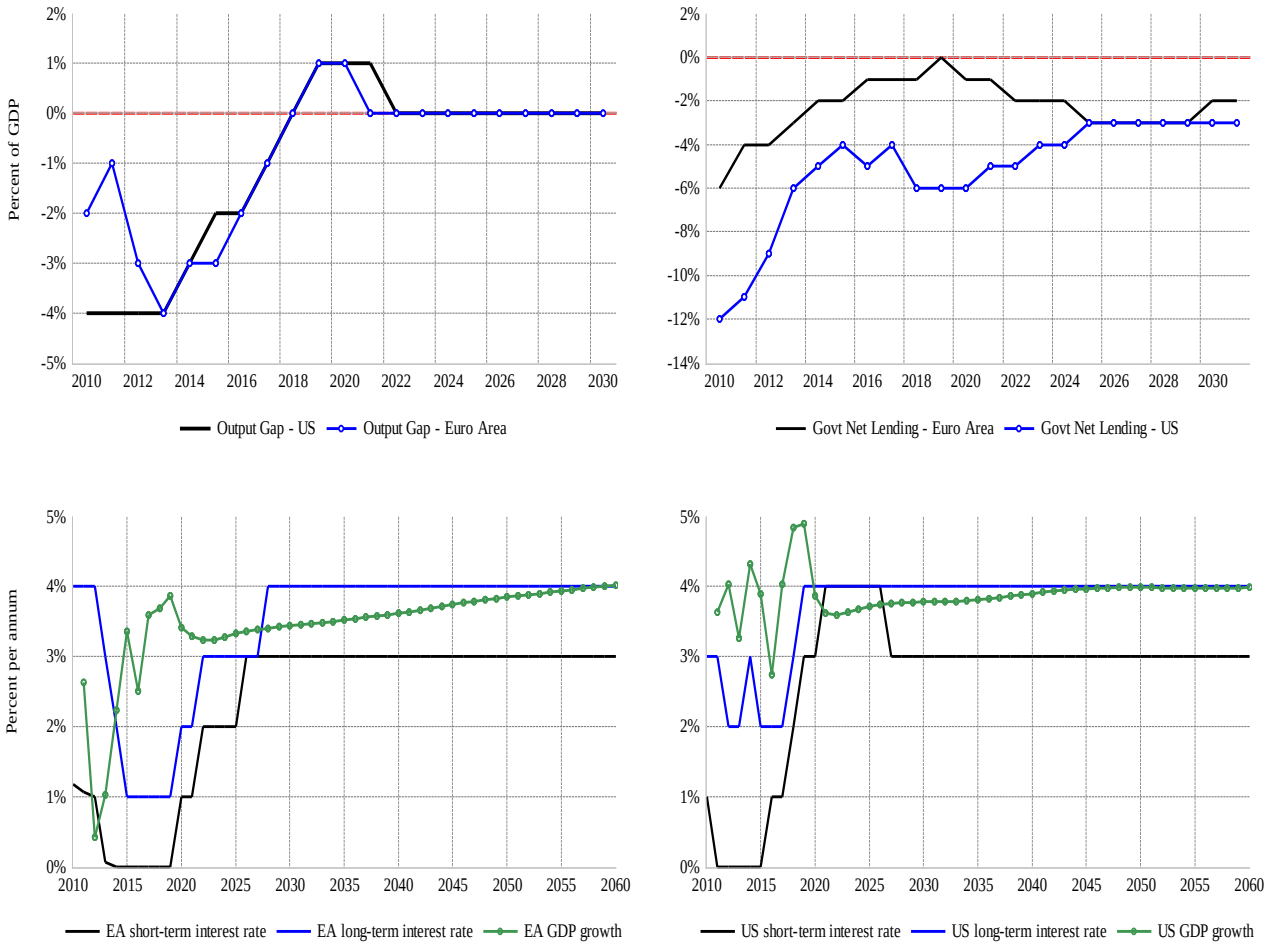


Note: Data are annual. Mean is the average of debt to GDP ratio levels for 14 euro area economies. Max is the highest ratio found, Min the smallest ratio found each year. The same country need not always be Max or Min.

Sources: Author's calculations based on World Economic Outlook data (April 2021 edition), International Monetary Fund, https://www.imf.org/en/Publications/WEO/weo-database/2021/April.

A complementary perspective is shown in Figure 4 where OECD forecasts for the US are augmented with long-term US projections from CBO (2021). Projections are based on policies currently in place and are not the same as forecasts. Indeed, the US Treasury's (2021) latest financial report projects a debt to GDP ratio of 623% in 75 years (op.cit., p. 10) if fiscal policy is unchanged. Consequently, current policies are not believed to be sustainable.

Figure 4: Selected inputs of fiscal sustainability: euro area versus US



Source: Constructed from data in OECD (2021).

The data are for the US and euro area are shown in part to highlight the fact that forecasts and projections can differ. Indeed, whereas the long-run output gap estimates are comparable, the short-term ones disagreement is notable. This is partially a reflection of data availability at the time the forecasts were prepared as well as model differences. Gaps between the OECD and CBO estimates are also wide for short and long-term interest rates. An important consequence is that if CBO estimates are used and are combined with nominal GDP growth forecasts (not shown) then debt sustainability is even more at risk than implied by the data shown in Figure 3. Ultimately then, forecasting accuracy will also have a role to play in future when debt sustainability assessments are made. Matters become more complicated still when it is recognised that forecast accuracy differs as between recessions and expansions. As far as the twenty years between 1989 and 2018, CBO forecasts tended to over-estimate deficits and under-estimate debt levels with short-term forecasts. However, the situation is reversed when forecasts during recessions are considered with deficits and debts usually under-estimated (CBO, 2019). Forecasts six years into the future tend to under-estimate deficit and debt outturns and the forecast errors are even larger when recession only periods are considered.

Given the obvious hazards surrounding the evaluation of debt sustainability based on forecasts, Table 6 provides long-run historical evidence focusing once again on the condition that debt sustainability is dependent on the relationship between nominal GDP growth and borrowing rates. Data for over a century of data are examined for ten countries. As Blanchard (2019) found for the US GDP growth, on

average, exceeds both short and long-term interest rates. Of course, given the standard deviations around the means it bears emphasising that there remains a considerable risk that debt ratios will not decline. Moreover, until recently, the question of which interest rate to use has been relegated into the background. However, as Mauro and Zhou (2021), Reis (2021), Cochrane (2021), Barro (2020), van Wijnbergen et al. (2020), Brunnermeier et al. (2020), Jordá et al. (2019), Debrun et al. (2019), to name a few, have pointed out, there is recognition that risk premia and the return on other types of assets, can play a critical role in the calculus of debt sustainability. Indeed, a critical element in the debate is whether it is appropriate to simply consider the interest rate on so-called safe assets, namely government debt, and the extent to which this safety is threatened by irresponsible fiscal policies. And while the ongoing discussion may be esoteric to some, even the tantalising possibility that higher debt is an escape from the current predicament governments find themselves in must be viewed with extreme caution. Even Blanchard's (2019) influential suggestion that more debt without a future increase in taxes is blunted by the warning that his "…lecture is most definitely not to argue for higher debt per se… (op. cit., p. 1227).

Indeed, it is not unusual for debt sustainability to be in question at least a third of the time in seven of the ten countries examined even when interest rates on the safest assets are used (see column (6)).[26] The last column in Table 6 suggests that the culprit is a combination of low economic growth and higher interest rates. Additional research would be needed to determine how much of this is due to higher inflation or real interest rates.

Table 6: Nominal GDP growth, interest rates, and debt sustainability in a selection of advanced economies: 1870-2015

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Country	GDP Growth[1]	Short-term int. rate[2]	Long-term int. rate[3]	Unsustainable periods[4]	No. of years[5]	(4)/(5)[6]	(1)-(2)-(3)[7]
Canada	5.94 (7.09)	4.73 (3.98)	5.89 (3.01)	26	143	.18	4.63/7.13/7.99
Switzerland	4.27 (5.89)	3.12 (1.80)	3.85 (1.33)	39	143	.27	-.51/3.39/4.24
Germany[8]	5.82 (7.11)	4.03 (1.92)	5.18 (1.95)	59	136	.43	2.47/4.21/5.00
France[9]	5.25 (7.93)	4.26 (2.91)	5.27 (2.82)	57	124	.46	.05/4.73/5.86
Great Britain	5.18 (6.06)	3.90 (3.06)	5.08 (3.04)	60	143	.42	1.21/4.82/5.05
Italy	8.84 (13.57)	6.25 (3.92)	6.64 (3.31)	63	143	.44	2.71/6.65/7.01
Japan	8.84 (8.27)	6.41 (3.40)	5.78 (5.20)	53	143	.37	.80/8.45/6.03

[26] After Table 6 was prepared, I became aware of Mauro and Zhou (2021) who prepare a similar table using a different measure of returns Columns (3) and (4) in Table 6). Some of their results showing the fraction of years where returns are less than GDP growth are similar but because of the general statement that data are for the 1800-2018 period it is difficult to establish why the results shown in Table 6 differ st times from the ones in their Figure 2. Nevertheless, both their study and the present one reaches the same conclusion regarding debt sustainability.

Norway[9]	5.94 (5.80)	5.77 (3.56)	5.20 (2.63)	38	136	.28	1.81/7.30/6.84
Sweden	5.80 (6.50)	5.01 (2.60)	5.23 (2.70)	59	143	.41	1.56/6.22/6.20
United States	5.36 (7.16)	3.70 (2.79)	4.74 (2.33)	48	143	.34	.17/4.70/5.52

Notes: (1) Nominal GDP, calculated as 100 times the difference in the logarithm of nominal GDP; (2) usually a 3 month to a year government debt instrument; (3) government bond yield for an instrument that matures in 10 years or more; (4) number of observations (years) when nominal GDP growth falls below the simple mean of the short-term and long-term interest rate; (5) number of observations (years) of available data for nominal GDP growth; (6) in percent based on the number of observation for the mean short-term and long-term interest rate; (7) mean values for nominal GDP growth – short-term – long-term interest rates when the condition in column (4) holds; (8) 1920-24 (hyperinflation) and 1945-46 excluded; (9) for France, Italy and Norway World War I and/or II years are excluded because data are unavailable. For Canada, interest rate data begin in 1934; for Switzerland long-term interest rates begin in 1907; for Italy, Japan, Norway and the US, short-term interest rates begin, respectively, in 1885, 1879, 1894, and 1880. Otherwise, all data are 1870-2015.

Source: Author's calculations based on data in Bordo and Siklos (2018).

The data in Table 6 are illustrative but cannot pinpoint sources of changes in debt sustainability over time nor whether spillovers are at play. Therefore, Table 7 presents estimates of a version of debt sustainability models frequently seen in the literature.[27] The primary balance, that is, government deficits excluding interest payments, as a percent of GDP is regressed on a set of determinants for the euro area. The same data set used to generate the results in Table 5 and Figure 2 are also used here in a cross-section format.

Debt, inflation, and the output gap are the variables highlighted in Figures 3 and 4, as well as in Table 6. The critical variable is debt. If the estimated coefficient is positive and significant then current debt levels are sustainable.[28] Next, I add some institutional determinants including economic policy uncertainty (EPU), geopolitical risk (GPR), and trust in government, as these may well impact the risk premia investors may demand when holding government debt. When either form of uncertainty rises or trust in government declines there is the risk that government borrowing rates will rise. In recognition that debt management practices may differ over time between countries that attach relatively more emphasis on keeping a lid on debt, namely the so-called FANG countries (Finland, Austria, Netherlands, Germany), versus others that ended at the centre of the euro area sovereign debt crisis, the so-called GIIPS countries (Greece, Ireland, Italy, Portugal, Spain), dummy variables were added. The final set of determinants attempt to control for the possibility that US primary balance, debt, inflation and the output gap may have generated spillover effects throughout the 14 euro area countries in the sample.[29]

Among the core determinants, only the lagged primary balance and output gap are statistically significant. The coefficient on the lagged primary balance highlights the persistence of government primary balance and is suggestive of that (weak) debt sustainability condition has been met. A higher

[27] Much of the literature relies on Bohn (1998) as a starting point. The basic idea links a change in government debt outstanding as a percent of GDP to the relationship between nominal GDP growth and the interest rate on the debt on the one hand and the primary budget balance. Since the primary budget balance excludes interest costs the ability to finance debts in the future it is the natural candidate as the dependent variable as a function of debt and other economic fundamentals.

[28] Ghosh et al. (2013) refer to this as a weak condition of debt sustainability. They argue that, in addition to a positive coefficient, the primary balance must exceed the differential between the interest rate on the debt and growth.

[29] It comes a no surprise, other than for the core variables (i.e., past levels of debt outstanding, inflation, GDP growth), that authors have considered a variety of political and economic variables as well as different methodologies to address the debt sustainability question. A recent addition that provides a useful overview of the extant literature is Berger et. al. (2021).

output gap, however, reduces the primary balance presumably through reduced spending, reduced tax revenues, or a combination of both. Among both of these institutional variables are statistically significant they are economically small and are easily dwarfed in size by many of the others shown in the Table. The controls for groups of countries with apparently distinct views about debt management suggest that the primary balance is significantly lower, by almost 1.5% of GDP on average, among the GIIPS countries while there is no significant impact on the primary balance to GDP ratio from membership in FANG countries. The relatively lower primary balance for the GIIPS simply confirms the relatively higher fragility of these economies to a negative shock that reduces the sustainability of their debt.

Table 7: Debt sustainability and spillovers from the US: some tentative estimates, 2006-2020

	Dependent Variable: Primary Balance (% GDP)			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Primary Balance (-1)	0.63	0.16	3.89	0.00
Debt (-1)	-0.001	0.01	-0.12	0.91
Inflation (-1)	-0.01	0.34	-0.04	0.97
Output Gap (-1)	-0.19	0.08	-2.40	0.03
Econ. Policy Uncert.	0.03	0.01	2.72	0.02
Geopolitical Risk	0.08	0.02	3.52	0.00
Trust in Govt.	-0.001	0.02	-0.08	0.94
"FANG" countries	0.35	0.37	0.94	0.37
"GIIPS" countries	-1.37	0.71	-1.93	0.07
US Prim. Balance (-1)	0.004	0.00	2.90	0.01
US Debt (-1)	-0.001	0.00	-3.41	0.00
US Inflation (-1)	-0.01	0.41	-0.02	0.98
US Output Gap (-1)	-0.70	0.23	-3.00	0.01
Summary Statistics	Adj. $R^2 = 0.59$, No. Observations = 193			

Note: Least squares estimates. Primary balance and debt are percent of GDP. Output gap is percent of potential output. FANG refers to Finland, Austria, Netherlands, and Germany; GIIPS refers to Greece, Ireland, Italy, Portugal and Spain. Data are annual for 14 euro area countries (LUX, LVA, LTU, are excluded because of data limitations).

Sources: Author's calculations based on data from World Economic Outlook (April 2021 edition, International Monetary Fund), https://www.imf.org/en/Publications/WEO/weo-database/2021/April. Trust in Govt. is from OECD (2021), Econ. Policy Uncert. is from https://www.policyuncertainty.com/ and Geopolitical Risk is from https://www.matteoiacoviello.com/gpr.htm.

Turning to spillover effects from the US to the euro area, all of the variables except for US inflation are statistically significant. However, other than the US output gap, neither the lagged primary balance nor lagged US debt are economically significant. In the case of the US output gap, a deterioration of US economic activity (i.e., a higher US output gap) has negative fiscal effects on euro area primary balances which corroborates some of the earlier findings reported above using different methodologies. What these estimates cannot tell us is the extent to which this result is due to trade or inflation-related effects though the evidence reported above suggests both have a role to play. The euro area-wide average estimate of 0.7% of GDP is a sizable one indicating that, historically at least, US fiscal spillovers should not be neglected.

4. CONCLUSION: OPTIMISM ON A KNIFE'S EDGE?

It was not so long ago that textbooks emphasised how monetary policy has a distinct advantage over fiscal policy because it can respond more quickly by getting into "all of the cracks" (Stein, 2013, p. 17) of credit markets and generate an immediate economic response. In contrast, fiscal measures require deliberation and lead to bureaucratic delays in interpretation and implementation. Digitalisation and the sheer scale of the latest economic crisis in the aftermath of the COVID-19 pandemic has turned the tables on the purported advantages of monetary policy. Fiscal policy can potentially also act quickly and get into all of the cracks. The response to the pandemic, especially but not limited to the US, has surprised in size and duration. The decision-making delays that made fiscal policy a relatively less attractive stabilisation option has also become a potentially smaller problem as central banks have adopted increasingly cautious positions and are content to wait for much longer before they shift their current position in favour of maintaining ultra-loose monetary policies.

That said, central banks have still not fully come to terms with the build-up of the distortions they felt necessary to create in repeated attempts to cushion the blows from successive economic shocks. It is no longer the case that a return to normal is the simple unwinding of interventions in government bond markets, credit and equity markets. After more than ten years of unconventional monetary policies that have spread beyond advanced economies, there are spillovers to come from any normalisation of monetary policies. In the midst of this, the ECB is preparing to revise its monetary policy strategy though it cannot escape the Article 127 of the Treaty on the Functioning of the European Union (TFEU) that requires the maintenance of price stability. However, the ongoing review offers the ECB an opportunity to redefine it. Since the shocks occasioned by the ongoing pandemic have not yet abated, the central bank must also worry about the possibility that its focus on anchoring inflation expectations, which has been unrelenting, may fail if fiscal policies, loose monetary policies, and a surge in demand as economies recover, combine to undo the promise of price stability. Indeed, if the past is any indication, compared to the US, the euro area has also experienced inflation that has been volatile, an element of the performance of HICP inflation that has been under-recognised (not shown). Since volatility is associated with uncertainty, recent experience suggests that the ECB's task of keeping inflation under control will be difficult.

Beyond volatility, the ECB must also contend with the challenge that, while it is accountable for an inflation objection for the euro area as a whole, it must contend with sovereign countries whose inflation can differ widely. No doubt this can be a source of disagreement inside the decision-making bodies of the central bank.[30]

For the time being, central banks must not only concern themselves with spillovers from domestic fiscal policy to monetary policy, led by the blurring of the autonomy of the latter from the former, but spillovers from the same pressures applied to central banks elsewhere in the world including the US. Together with uncertainty over the precise nature, size and duration of future fiscal interventions and, therefore, the nature of spillovers that arise thereof, Europe faces the same risk that led the US to adopt a monetary policy strategy that many deem too flexible to prevent a de-anchoring of expectations and the return of considerably higher inflation than has been the case for the past three decades. The intense discussion over the sustainability of rising government debt and the misleading belief that current economic conditions offer the opportunity for governments to shoulder much higher debt loads also contributes to generating complacency in an era when fiscal policy risks dominating

[30] Gaps between highest and lowest inflation rates can be very large (not shown). Moreover, these tend to rise during crisis times such as during the 2008-9 financial crisis, the euro area sovereign debt crisis and, more recently, as a result of the pandemic. The good news is that rising gaps also tend to be temporary.

monetary policy for some time to come. To be sure, there is too much noise at present to determine the prospects for aggregate demand factors once fiscal policy begins to retreat while private demand is restored as well as the response of aggregate supply as it readjusts to a new normal.

If current fiscal policies are unsustainable, then it stands to reason that these same policies will have to change in future. What will the likely fiscal retreat look like? Will it be global just as the relaxation of fiscal policy due to COVID-19 also has a global element? If so, then the next set of spillovers will turn to negative. And when the time comes to close the gap between revenues and expenditures will the policy be called austerity, expansionary consolidation, or some new terminology that will make it clear that, as Herbert Stein put it a long time ago, "…if something cannot go on forever, it will stop"? (Stein, 1986, p. 262)

Three crises with global dimensions in the space of a little over a decade suggest that spillovers are no longer easily waived away by invoking the rule that countries simply need to "keep their house in order". Moreover, the usual argument that policy makers should seek resilience when introducing new policies is beginning to wear thin in the face of repeated crises that contain significant idiosyncratic elements. Instead, focus should centre on being able to get ahead of a looming crisis and, since global repercussions cannot easily be avoided, a premium should be placed on cooperation across different jurisdictions. For the EU and the euro area this provides an opportunity since, in principle, the mechanisms that ensure cooperation are already in place. It is delivering the full benefits of the notion that the whole is greater than the sum of its parts and convincing a diverse public that this is the preferable path to follow that is lacking. Only by adopting this strategy can the EU deliver on its promise. To be sure, there are reasons to be hopeful, but they rest on a thin line between optimism and failure. It would be nice for a change if, in future, the catalysts for designing policy strategies consisted in avoiding future crises instead of waiting for some economic disaster to trigger the appropriate response.

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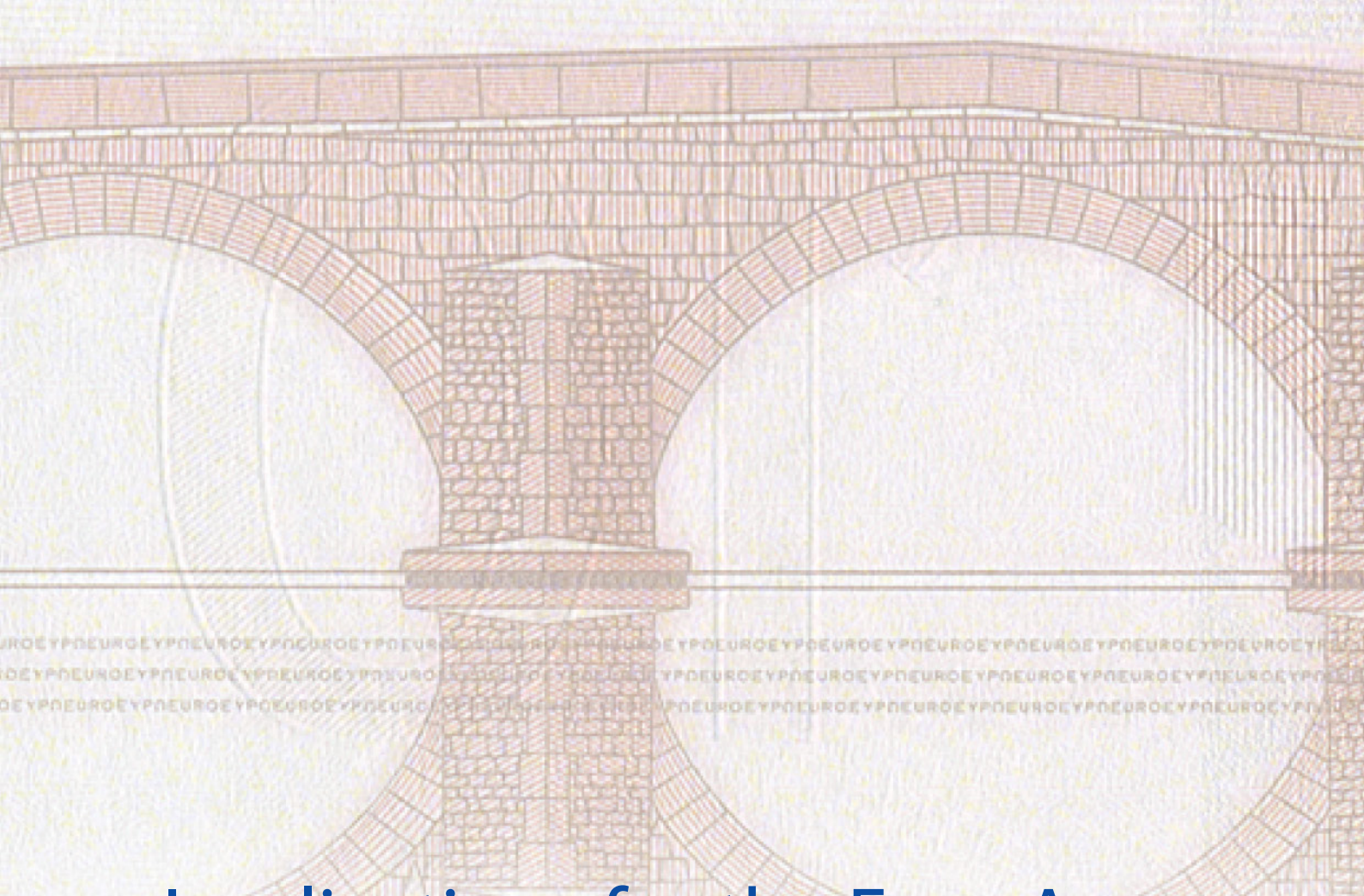

Implications for the Euro Area of US Macroeconomic Policies

Karl WHELAN

Abstract

The US has undertaken much larger discretionary fiscal packages than euro area governments, particularly in 2021. The large 2021 US fiscal package is likely to provide a welcome boost to the euro area economy. There is a risk, however, that US fiscal policy could lead to overheating of the US economy and a possible monetary tightening from the Fed which could trigger a recession. This paper argues this scenario is unlikely to occur but discusses the implications for the ECB if it did.

This paper was provided by the Policy Department for Economic, Scientific and Quality of Life Policies at the request of the committee on Economic and Monetary Affairs (ECON) ahead of the Monetary Dialogue with the ECB President on 21 June 2021.

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LIST OF ABBREVIATIONS

APP	Asset purchase programme
ARP	American Rescue Plan
CAA	Consolidated Appropriations Act
CARES	Coronavirus Aid, Relief, and Economic Security
CBO	Congressional Budget Office
ECB	European Central Bank
GDP	Gross domestic product
PEPP	Pandemic emergency purchase programme
TIPS	Treasury Inflation-Protected Securities
TLTRO	Targeted longer-term refinancing operations

EXECUTIVE SUMMARY

- **In response to the global pandemic, the US has undertaken much larger discretionary fiscal packages than euro area governments, particularly for 2021.**
- **The composition of the US fiscal plans are quite different from those in the euro area with a greater reliance on direct payments to households.** This is partly due to the weakness of the US social welfare system but it is also related to the political difficulties in passing spending bills in a gridlocked political system.
- **The US government's approach to supporting employment has focused mainly on small businesses and seems to have been less efficient than the supports for businesses put in place in Europe.**
- **However, the smaller fiscal response in the euro area also likely reflects the inability to trigger a joint common fiscal package that can be put in place quickly.** The NextGenEU plan represents progress on the EU's ability to plan joint spending programmes but the "Own Resources" procedure is not one that can allow the EU to respond quickly to a crisis.
- **The large 2021 US fiscal package is likely to provide a welcome boost to the euro area economy.** Estimates from the OECD and the European Commission suggest it might boost euro area GDP growth by between 0.3% and 0.5%. This paper presents some arguments in favour of the likely effect being larger.
- **There is a risk that US fiscal policy could lead to overheating and a possible monetary tightening from the Fed which could trigger a recession**. This paper argues this scenario is unlikely to occur.
- **Arguments that US fiscal programmes will trigger inflation because they are much larger than the estimated "output gap" do not take into account the ongoing negative impact of the pandemic-related effects on the economy.**
- **It is also likely that the fiscal multiplier for this year's US fiscal programme will be relatiely low**. This paper presents a set of calculations that indicate how fiscal policy and the easing of pandemic-related effects could combine to deliver a strong recovery but no overheating.
- **There is evidence of a return of inflation in the recent US and euro area data.** However, it seems likely to reflect temporary factors. Neither investors nor economic forecasters are expecting a bout of high inflation in the coming years.
- **If the Federal Reserve raises interest rates, it could potentially trigger a rise in long-term interest rates around the world.** This could raise borrowing costs for firms, household and governments in the euro area.
- **The ECB could, however, counteract this impact.** This could be achieved with a combination of forward guidance, asset purchases or perhaps an explicit policy of "yield curve control" in which long-term interest rates are deliberately controlled at rates below what the market would set. That said, higher levels of asset purchases or yield curve control could both raise legal issues relating to monetary financing.
- **If the US economy did tip into recession next year due to a monetary tightening, it would be difficult for the ECB or euro area governments to prevent a substantial economic slowdown from occurring.**

1. INTRODUCTION

The global pandemic has triggered economic events that are without precedent in modern times. The pandemic required severe restrictions on economic activity which effectively shut down large parts of the global economy. Governments have responded with enormous fiscal supports and central banks have stepped up their unconventional monetary policies. The nature of the policy responses has differed across countries, however, reflecting differences in political preferences, differences in the severity of the pandemic's impact and also institutional differences in pre-COVID welfare systems.

This paper will discuss the response of the US authorities to the global pandemic. Its response will be compared with the approach taken in the euro area and the potential impact of US macroeconomic policies on the euro area will be addressed. The discretionary US fiscal response in 2020 was much larger than the direct response in the euro area: Total discretionary fiscal actions in the US equalled about 11% of GDP compared with 4% in the euro area. However, some of this difference reflects the weak nature of the US social safety net, with existing automatic stabilisers playing a greater role in Europe while the US federal government ended up spending a lot of money in 2020 supplementing weak state-level welfare systems.

There is an even greater difference for planned fiscal policy in 2021, with euro area direct fiscal action falling to 2.4% of GDP while the passing of the President Biden's stimulus plan, the American Rescue Plan (ARP), will see discretionary US fiscal response again being about 11% of GDP. In the short-run, this additional US fiscal impetus is likely to have a modest and welcome positive impact on the euro area economy via trade channels and more indirect finance and sentiment-related channels.

Over the medium term, however, there are concerns that the ARP—and the potential increase in infrastructure spending under the proposed American Jobs plan—could see the US economy over-heating, thus leading to a rise in inflation and a tightening of monetary policy from the Fed. Such an outcome could cause problems for the ECB if it led to higher inflation through higher import prices or the depreciation of the euro. It could also place upward pressure on longer-term funding costs of European governments and businesses and there is the possibility of financial stability problems if a sharp and unexpected increase in short-term interest rates catches out businesses, household and financial institutions that had made plans based on global interest rates being low for a long time. A more serious concern would be that a Fed tightening to get inflation under control triggers a US recession which could then spill over to the rest of the world.

Concerns about potential US overheating have been raised not only from the "usual sources" who tend to oppose all fiscal stimulus proposals but also from high-profile Keynesian macroeconomists such as Olivier Blanchard (2021) and Larry Summers (2021). My judgement is that risks of an outbreak of high inflation or a Fed-induced recession remain relatively low. Much of the ARP's stimulus will not be spent. And as of April, employment in the US economy was still 5% below its pre-pandemic level, meaning factors inhibiting the economy remain in place and high levels of supports are still warranted. In relation to the Fed, their new monetary framework makes it less likely they will induce a recession if inflation rises above 2% and more likely they would see tolerate a temporary increase in inflation while waiting for the fiscal impacts of the ARP to ease in 2022.

2. COMPARING THE US AND EURO AREA POLICY RESPONSE

This section compares the response of US and euro area authorities to the pandemic, starting with fiscal policy and then discussing monetary policy.

2.1. US fiscal policy response

The US fiscal response has largely been accounted for by three pieces of legislation. The USD 2.2 trillion Coronavirus Aid, Relief, and Economic Security Act (CARES act) signed in March 2020 was followed in December 2020 by a USD 868 billion package as part of the year-end Consolidated Appropriations Act (CAA). This was followed by the passing in March 2021 of the USD 1.855 trillion ARP programme. Taken together, these measures dwarf previous modern US fiscal packages. For example, the Obama stimulus programme of 2009/10 had an estimated cost of USD 831 billion.

Consistent with the unprecedented nature of the pandemic shock, the fiscal packages have included a wide range of items with the major elements being as follows.

Direct support: The CARES act saw USD 1,200 payments to individuals and USD 500 to dependents. The CAA provided further USD 600 payments to individuals including dependents and the ARP has provided USD 1,400 payments for those with incomes up to USD 75,000.

Small business supports: US policy has focused on maintaining employment at small businesses, typically defined as those with fewer than 500 employees. These supports have largely worked through the Payment Protection Programme (PPP) which has provided business with forgivable loans that they obtain via commercial banks.

Unemployment supports: Existing US unemployment schemes are state funded, pay low benefit rates and generally limit the length of time people can collect them to 26 weeks. The federal government has provided funding to supplement these state schemes, increase the weekly compensation level, widen eligibility criteria and extend the term of benefits to 52 weeks.

State and local governments: Funding has been provided to state and local governments to allow them to maintain staffing and service levels and prevent them having to raise state and local taxes.

Miscellaneous: The bills have spent money on vaccine development and distribution, schools, childcare, supplementary nutrition programmes, supporting the airline industry and the post office and other areas.

Table 1 shows a summary from the Congressional Budget Office (CBO) of the estimated effects of pandemic-related legislation on the budget deficit for 2020. Table 2 provides a summary of the measures taken in the CAA and the ARP.

In terms of their impact on the economy, the vast majority of measures passed in 2020 had an immediate impact, with a budgetary effect in 2020 of USD 2.3 billion, equivalent to 11% of GDP. Calculating the full size of fiscal measures for 2021 is trickier because spending is occurring under all three of the bills that have been passed. Based on various CBO publications, I believe the fiscal impact in 2021 will be about USD 2.5 trillion, combining USD 576 billion from measures passed prior to December 2020, USD 737 billion from the CAA and USD 1.16 trillion from the ARP. Thus, the size of direct fiscal measures taken during 2021 will be about the same as during 2021, again being about 11% of GDP. [1]

[1] This is based on an estimate of nominal US GDP in 2021 of USD 22.74 billion. I have used the European Commission's forecast of an 8.5% increase in nominal GDP this year.

Table 1: Congressional Budget Office estimates of the effect of pandemic-related fiscal measures passed in 2020

The Effects of Pandemic-Related Legislation on the Deficit

Billions of Dollars

	2020	2021	2022	2023	Total 2020–2023	Total 2024–2030
Paycheck Protection Program and Related Provisions[a]	616	13	0	0	628	0
Enhanced Unemployment Compensation	370	71	0	0	442	0
Recovery Rebates for Individuals[b]	272	20	0	0	292	0
Direct Assistance for State and Local Governments	150	*	0	0	150	0
Other Spending Provisions[c]	359	218	101	21	700	13
Other Revenue Provisions[d]	539	253	-186	-182	425	-50
Federal Reserve's Emergency Lending Facilities	11	0	0	0	11	0
Total	**2,317**	**576**	**-85**	**-160**	**2,648**	**-37**

Sources: Congressional Budget Office; staff of the Joint Committee on Taxation.

The years shown are federal fiscal years.

Positive numbers indicate an increase in the deficit.

Source: Congressional Budget Office (2020a).

Table 2: Combined fiscal measures in the Consolidated Appropriations Act (CAA) and American Rescue Plan (ARP)

	CAA	ARP	Combined
Direct payments to households	USD 166 billion	USD 402 billion	USD 568 billion
Unemployment compensation	USD 120 billion	USD 206 billion	USD 326 billion
Small business assistance	USD 325 billion	USD 54 billion	USD 379 billion
State and local government	USD 12 billion	USD 362 billion	USD 374 billion
Vaccination	USD 69 billion	USD 93 billion	USD 162 billion
Schools	USD 82 billion	USD 176 billion	USD 258 billion
Other	USD 94 billion	USD 562 billion	USD 656 billion
TOTAL	**USD 868 billion**	**USD 1,855 billion**	**USD 2,723 billion**

Sources: Author's calculations based on Congressional Budget Office (2020b, 2021), Probasco (2021) and Haagensen (2021).

One area of the US fiscal response that has generated some controversy has been the important role played by direct payments to households. Table 1 lists USD 272 billion in direct rebates but there were additional discretionary payments such as aid for student loans and direct payments to airline workers. The US National Income and Product Accounts personal income tables record an increase in "Other Transfers" (transfers not related to unemployment insurance or other federal programmes such Social Security, Medicaid or Medicare) of USD 461 billion in 2020, so these payments amounted to about 2% of US GDP in 2020.

With the passing of the ARP, there will be a similar amount of direct payments this year, with most of the payments having been made in March. These direct payments are universal and so they were not targeted at those in need. In contrast, euro area governments were able to support those in need in a more efficient and cheaper way using their better-developed social welfare systems.

Questions can be asked about whether the direct payment approach is the most efficient way to respond to an economic downturn. Many of the payments have gone to relatively well-off households who do not need them. However, in the US context, three arguments can be made for this approach.

The first is that the US has a far weaker system of "automatic stabilisers" than Europe so it is more reliant on direct fiscal actions to respond to severe recessions. The US government has responded to its last three recessions by augmenting the existing tax and welfare system with direct payments to households. Indeed, prior to the pandemic there had been an active debate about automating payments of this sort when the economy went into recession, inspired by Claudia Sahm's (2019) proposal to trigger direct payments when the three-month average unemployment rate rose by at least 0.5 percentage points above its low point of the previous year.

The second reason is that weak social welfare systems mean targeted or means-tested interventions aimed at helping only those with low incomes or low holdings of liquid assets are likely to leave a lot of people "falling through the cracks", particularly in an environment where state-level unemployment schemes are weak.

The third reason is political. "Money for everyone" is politically popular and thus easier to get passed. In an environment where big spending proposals often get blocked because of political gridlock, sometimes it is best to not let the perfect become the enemy of the good and to focus on what can pass rather than what is the best-designed response to a crisis.

2.2. Comparison with the euro area

Table 3 provides a comparison of the fiscal policy responses to the pandemic in the US and the euro area. The US had a much larger deterioration in its budget balance than Europe (a 9.5% deterioration compared with a 6.6% deterioration for the euro area) and a smaller reduction in real GDP. US GDP fell by 3.5% compared with 6.6% for the euro area. A common element, not shown in the table, is that the deterioration in the budget balance in both the US and euro area was solely driven by increased expenditure. The discretionary fiscal packages were dominated by spending increases and tax revenues as a share of GDP held up well in both areas, partly because many of the higher income workers who pay most income tax continued working from home during the crisis while much the feared loss in sales taxes was replaced by taxes on online shopping.

The other notable element of this comparison is that direct fiscal action in 2020 corresponded to 11% of GDP in the US (more than accounting for the change in the budget deficit) but only 4.2% of GDP in the euro area. An even greater difference emerges in 2021, with US fiscal action remaining at about 11% while the euro area equivalent falls to 2.4%.

I can suggest three contributors to the large difference between the size of the US and euro area fiscal responses.

The first is the US reliance on direct payments to households was not replicated in the euro area because its members have larger and better-organised welfare states. The operation of these traditional automatic stabilisers explained the additional 2.4% decline in the euro area's budget balance in 2020 above the effect of the discretionary fiscal actions.

The second possible contributor is the US approach to employees of firms affected by the pandemic has perhaps been less efficient than the approach taken in Europe. Autor et al. (2020) argued the Paycheck Protection Programme did not save many jobs. And for larger firms, the US policy was effectively to allow firms let workers go and have them claim unemployment benefits. In contrast, the European approach focused on maintaining the links between firms and their employees via funded furloughs or part-time working schemes. As Figure 1 below shows, these schemes constituted more than half of the cost of fiscal measures undertaken in the euro area and less than 20% of the euro area action was focused on household supports, tax cuts or capital spending. It may be that this was a less costly way to react to the pandemic than the US approach.

The third possible contributor is the absence of a centralised fiscal policy in the euro area. In open economies, many of the benefits of fiscal policy spill over to other countries. The result may be that the euro area as a whole adopted a fiscal response that was smaller than if they had been setting a common single fiscal policy. This interpretation would imply one of the reasons the euro area had a weaker outcome for GDP in 2020 was its smaller fiscal response.

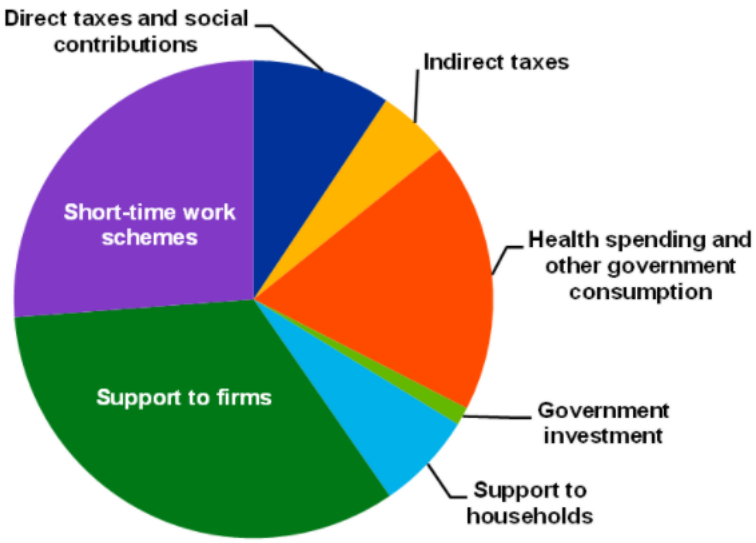
Of course, the EU has agreed its NextGenerationEU plan, announced with a face value of EUR 750 billion (about 6% of 2019 GDP) but there is less to this plan than meets the eye. While it can be considered a historical agreement to use joint fiscal capacity to respond to a crisis, EUR 360 billion of the total is in the form of loans. This does little to help most euro area countries since they can now borrow on their own at very low interest rates. Of the remaining EUR 390 billion in grants, more than two-thirds of these payments will not occur until 2023 and 2024. So, while European leaders are to be commended for showing they can take joint action—and the "Own Resources" procedure may well be the model for future joint action on climate change or other major issues of common interest—this approach is not a strategy capable of delivering quick joint action in response to a short-term crisis or recession.

Table 3: Comparison between the US and the euro area (budget balances and discretionary fiscal action both measured as a share of GDP)

		2019	2020	2021 Forecasts
Euro Area	Budget Balance	-0.6	-7.2	-8.0
	Discretionary Fiscal Actions		4.2	2.4
	GDP Growth Rate	1.3	-6.6	4.3
United States	Budget Balance	-6.6	-16.1	-16.0
	Discretionary Fiscal Actions		11.1	10.9
	GDP Growth Rate	2.2	-3.5	6.3

Sources: Data and forecasts on deficits are from European Commission (2021) and ECB (2021). Estimates of discretionary actions for the euro area as a percentage of GDP come from European Commission (2020). For the US, I used estimates of the size of discretionary fiscal actions in dollars from Congressional Budget Office (2020a, 2020b, 2021). Estimates of US GDP for 2020 come from the US Commerce Department's National Income and Product Accounts and the forecast for 2021 US GDP comes from using the European Commission's Spring forecasts.

Figure 1: Estimated composition of euro area fiscal measures related to COVID-19 in 2020



Source: ECB (2021).

2.3. Monetary policy

While the fiscal responses to the pandemic in the US and the euro area have been quite different, the monetary policy responses have been relatively similar. Both the Federal Reserve and the Eurosystem have responded with large-scale asset purchases aimed at easing financing conditions. The Fed's total assets have increased from about USD 4 trillion prior to the pandemic to about USD 8 trillion now, while the ECB's assets have risen from EUR 4.7 trillion to about EUR 7.6 trillion now, due to the introduction of its pandemic emergency purchase programme (PEPP) and the latest targeted long-term refinancing operation (TLTRO3).

In both the US and the euro area, the role of monetary policy in keeping government bond yields low has played an important role in allowing a large fiscal expansion to take place without concerns about fiscal sustainability arising. As discussed in Whelan (2020), the fiscal response to the pandemic has taken debt-GDP levels to unprecedented highs but the low cost of financing has meant that the burden imposed in financing this debt is relatively low by historical standards.

One difference in the responses is that the ECB's response was largely confined to using tools that were already in place (asset purchases and TLTROs). In contrast, the Fed launched a number of new facilities and reactivated some programmes that had not been in use since the global financial crisis. So, for example, the Main Street Lending Programme and Paycheck Protection Program Liquidity Facility were launched to provide liquidity to banks providing loans to small and medium-sized businesses. Other programmes were launched to purchase corporate bonds and state and local government bonds to maintain the supply of credit in these markets and loans were provided to money market mutual funds to maintain stability in this sector.

While this battery of new programme announcements made the Fed look more active than the ECB, these new programmes effectively replicated the ECB's ability to provide credit for a wide range of activities via its extensive list of eligible collateral for monetary policy operations and its wide mandate

for asset purchases. For example, loans to small businesses could already be used by European banks as collateral for obtaining credit from the Eurosystem. Moreover, the ECB has a wider remit to support lending. Most of the Fed's new programmes were funded via money provided to it by the US Treasury under the CARES act. With the Treasury having ordered most of the Fed's new programmes to be wound up at the end of 2020, the ECB's independent ability to provide credit to the financial system could again be considered superior to the Fed.

The other major monetary policy event of 2020 was the announcement in August of the Fed's new "Statement on Longer-Run Goals and Monetary Policy Strategy".[2] This statement de-emphasised the importance of reacting to low rates of unemployment by raising interest rates, effectively signalling the Fed's loss of faith in the Phillips curve relationship. It also announced a move to an average inflation targeting regime. Specifically, the Federal Open Market Committee announced that "*In order to anchor longer-term inflation expectations at this level, the Committee seeks to achieve inflation that averages 2 percent over time, and therefore judges that, following periods when inflation has been running persistently below 2 percent, appropriate monetary policy will likely aim to achieve inflation moderately above 2 percent for some time*."

This announcement may have some impact on the conduct of US monetary policy over the next few years. If inflationary pressures emerge and push inflation over 2%, this new formulation of policy means the Fed will be willing to allow this to occur without any reaction at first unless it views the inflation rate as likely to move above 2% for an extended period.

The ECB is still conducting its own strategic review of its monetary policy. A move to greater clarity on its definition of price stability would be welcome as would be a similar statement on the importance of meeting an average inflation target over a period of time.

[2] The statement is available at https://www.federalreserve.gov/monetarypolicy/guide-to-changes-in-statement-on-longer-run-goals-monetary-policy-strategy.htm.

3. RISK OF US OVERHEATING

The immediate impact of the passing of the ARP will be to support the US economy and help get it back to its pre-pandemic path as the vaccination programme is completed. The Biden administration's budget plans are based on the assumption that the US economy will grow strongly over the next 18 months but inflation will remain contained and next year's unemployment rate will average 4.1%, just above the pre-pandemic level.[3] If this is the outcome, then the impact on the euro area will be a small but welcome boost to GDP. I discuss the potential magnitudes of this boost and the channels through which it will operate, in the next section.

Here, however, I discuss the possibility of a more negative scenario. According to this scenario, as discussed for example by Blanchard (2021) and Summers (2021), the USD 2.8 trillion in fiscal action passed in the CAA and ARP will over-stimulate the economy this year and cause a significant increase in inflation. This would then force the Fed to tighten monetary policy and potentially trigger a recession.

I think the risks of overheating from these fiscal packages are low for a number of reasons.

3.1. Current economic weakness

The US economy is currently still well short of its pre-pandemic course. Figure 2 shows that total non-farm employment in April was 5.4% below its pre-pandemic peak while Figure 3 shows GDP in the first quarter of this year as being 3.5% below the pre-recession trend. These are figures that would normally be associated with a very deep recession. The most recent employment report showed 266,000 jobs were added in April. It would take 31 months of job growth at that pace to recover the 8 million jobs that have been lost since February 2020. Figure 4 also shows that while spending on goods is back on track, spending on some of the major categories of services such as transportation, restaurants and hotels and other recreational services are well below their pre-crisis levels.

These figures suggest that despite the success of the US's vaccination strategy, the mix of formal restrictions on activity and public reluctance to engage in potentially risky activities are still restraining the economy. I would note that the public concern about the risk of COVID infection is still well-grounded. While many people in the US are vaccinated, infection rates among the non-vaccinated remain high.[4]

3.2. Flaws in traditional fiscal stimulus analogies

I am not sure that the traditional multiplier analysis carried out, for example, by Blanchard (2021), is useful when describing the current situation. This analysis can be summarised briefly as follows: Prior to the pandemic, the US economy seemed close to full employment. If output in 2020:Q1 is about 3.5% below its pre-crisis trend, then even with a small fiscal multiplier, a fiscal package worth 11% of GDP is bound to more than close this output gap, pushing output above its long-run non-inflationary level and triggering an increase in inflation.

The problem with this analysis is that it does not fully factor in the impact the pandemic is still having on the economy. The pandemic has induced a wide range of negative effects on the economy, some of which (such as business closures and explicit social distancing restrictions) can be viewed as restrictions on aggregate supply and others (reduced demand for certain kinds of services) can be

[3] These economic forecasts are available at https://www.whitehouse.gov/wp-content/uploads/2021/05/spec_fy22.pdf.

[4] See this story in the Washington Post for details. https://www.washingtonpost.com/health/interactive/2021/covid-rates-unvaccinated-people/.

viewed as restrictions on aggregate demand. This means we cannot assess any fiscal package without factoring in the ongoing restrictions on GDP caused by the pandemic.

We know that these pandemic-related negative effects were very large in 2020. Despite a fiscal package worth 11% of GDP, the US economy declined by 3.5% in 2020. If the public health situation in 2021 was to be similar to that in 2020, then enormous fiscal supports would have been required just to keep the economy in the same place it was at the end of 2020.

Thankfully, due to progress with vaccinations, COVID-related restrictions and COVID-related reductions in demand are easing and a similar level of fiscal action to last year can be consistent with a big turnaround in economic growth. The European Commission (2021) forecasts a 10 percentage point change in US economic growth, from -3.5% in 2020 to +6.6% this year. As I discuss below, I believe this kind of outcome is consistent with both a significant easing of the impact of pandemic-related restrictions and with a positive impact of fiscal policy.

3.3. Low fiscal multipliers

Another reason to be less concerned about overheating is the likelihood that the overall fiscal multiplier from the packages passed is likely to be low. The single largest item in the 2021 fiscal year is the direct payments to households. As can be seen from Figure 5, the three rounds of direct payments have produced large increases in disposable income that have not been matched by corresponding large movements in personal spending. Figure 6 illustrates how the three rounds of payments have generated sharp upward spikes in the personal savings rate.

There is, of course, the possibility that once the pandemic is over, households sitting on a "wall of cash" will go on a spending splurge, leading to a demand-led overheating. The total amount of excess savings over the last year (relative to the scenario where the savings rate had remained at its 2019 level) is about USD 2 trillion. This is almost 10% of 2020's level of GDP, so for sure if a large fraction of these savings were mobilised quickly this year, there could be overheating. It is certainly likely that demand for some of the products people had been missing the most—such as bars, restaurants and tourism—could well end up outstripping supply and raising prices.

That said, it is worth putting this "wall of cash" in context. The savings of the last year and the rebound in equity prices have pushed the ratio of net worth to disposable income of US households up to about 7.5 at the end of 2020 (see Figure 7). However, increases of similar magnitudes have taken place in recent years prior to the pandemic, mainly triggered by rising financial asset values (see Figure 8) and these have not triggered inflationary consumer spending. Even accepting that the psychological approach of households to stimulus payments may be different to those of other financial asset gains, it is fair to ask whether the ratio of net worth to disposable income being 7.5 rather than 7.4 is going to have a major impact on spending plans.

Some of the other areas of major spending also seem likely to have small multipliers. Critics have argued that the level of support provided to state and local governments is excessive relative to their current needs but, if so, it seems unlikely state and local governments are going to go on spending sprees or implement large tax cuts based on a once-off windfall, so the impact on the economy is likely to be modest.

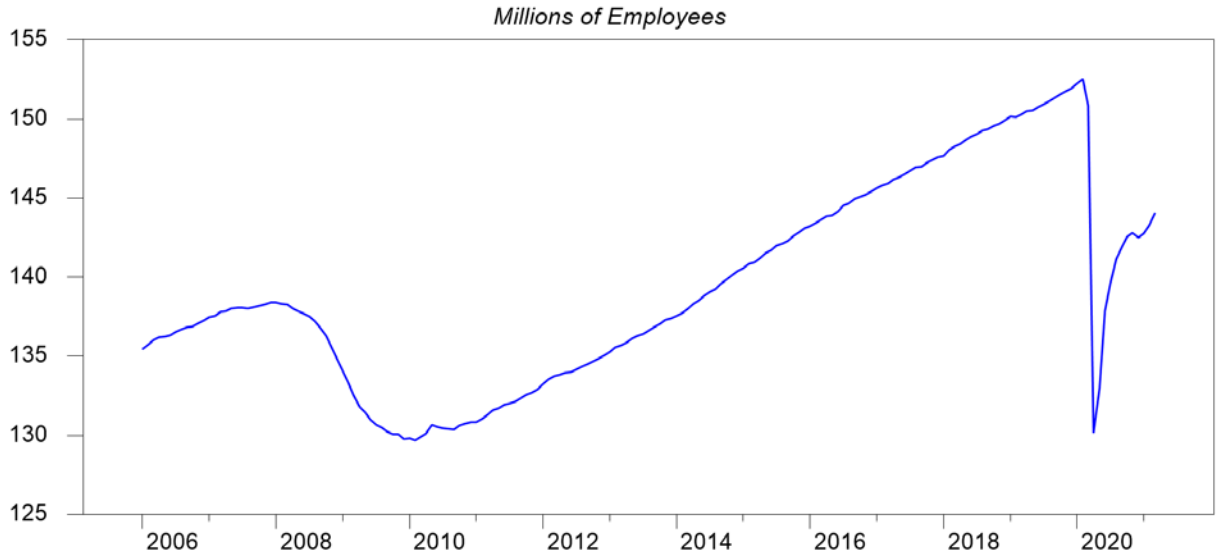
The unemployment insurance provisions of the ARP may also be larger than is needed but if the economy does better than expected and unemployment falls faster, then the amount of this money that is actually spent will be lower than planned. Some have flagged the concern that the additional USD 300 a week in unemployment insurance payments being provided by the federal government is holding back the economy because some people are better off claiming these benefits than working.

However, these supplementary benefits expire in September and if states decide they are hindering the re-opening of the economy, they can opt out of the programme. Already, 24 states with Republican-controlled legislatures have already opted out of the programme.[5] This is largely a political rather than an economic decision—pandemic-related problems are still causing high unemployment rates in many of these states—but it is an option that all states could take if the programme is seen as causing overheating problems.

Finally, programmes to assist small businesses are more akin to "disaster relief" than to traditional stimulus. These funds are being spent to maintain the existing wage levels of employees at firms affected by the pandemic and thus are directly countering the negative impact of the pandemic rather than providing additional stimulus which could boost output above pre-crisis levels. These programmes are also likely to cost less if the economic recovery is indeed faster than currently anticipated by the Biden administration.

These four items—direct payments to households, state and local government supports, unemployment insurance and small business supports—account for the vast majority of the fiscal impetus in 2021 from the three packages that have been passed. Together, I would be surprised if they were associated with a large multiplier or generated economic overheating.

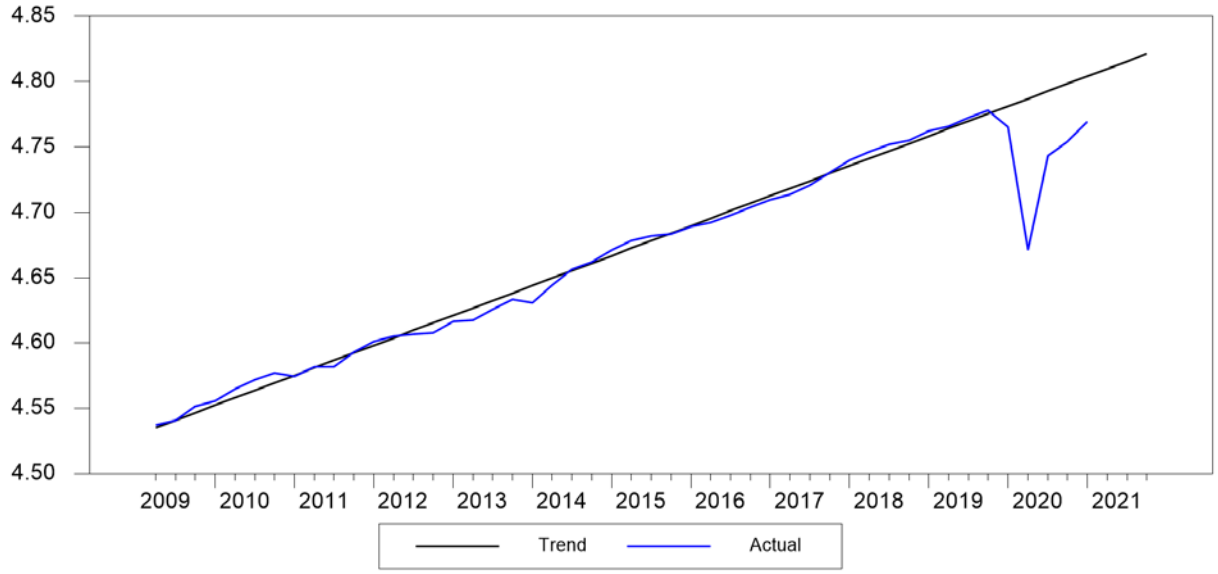
Figure 2: Total non-farm employment in the United States



Source: Author's calculations based on data from the Bureau of Labour Statistics Employment Situation release.

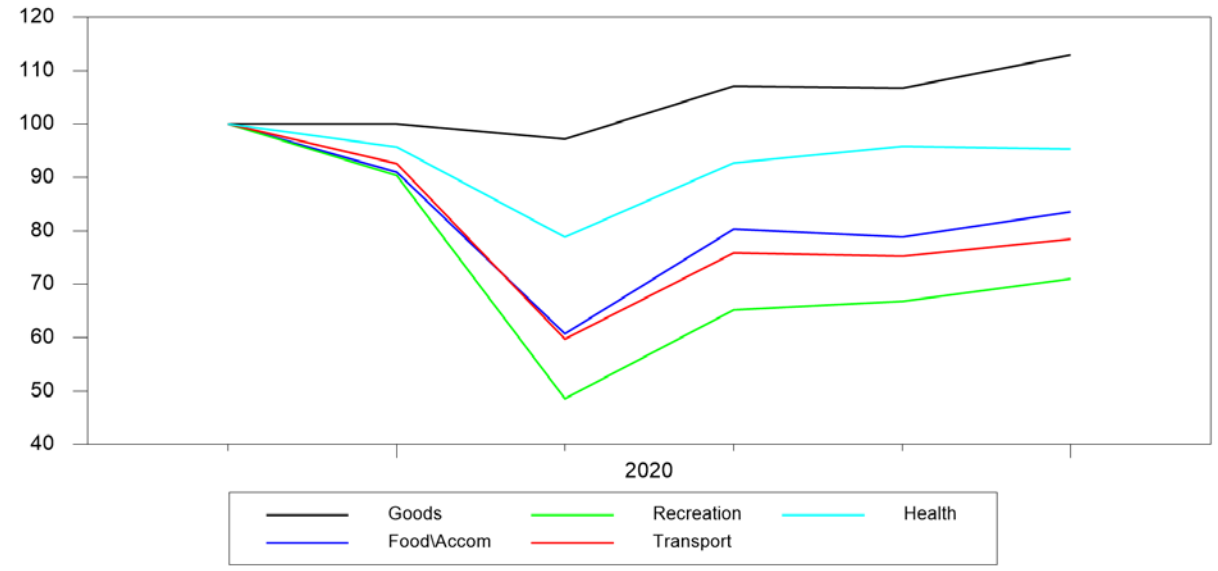
[5] See details here https://tcf.org/content/commentary/fact-sheet-whats-stake-states-cancel-federal-unemployment-benefits/.

Figure 3: Log of US real GDP and its pre-crisis trend



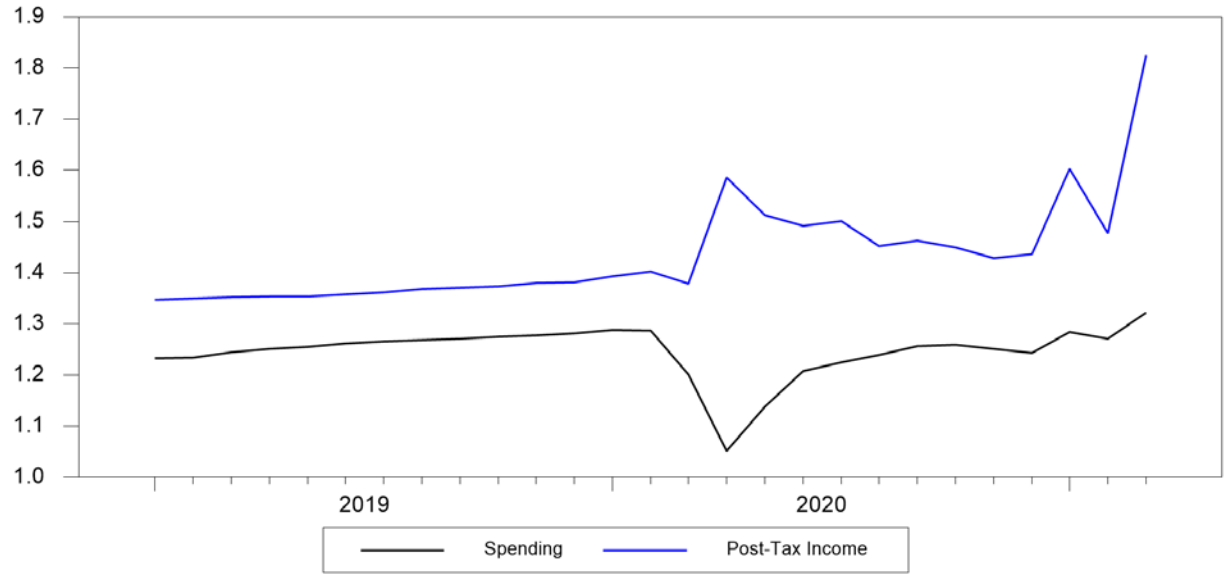
Source: Author's calculations based on data from the US National Income and Product Accounts published by the Bureau of Economic Analysis, US Department of Commerce.

Figure 4: Real personal consumption expenditures for selected components, 2019:Q4 to 2021:Q1



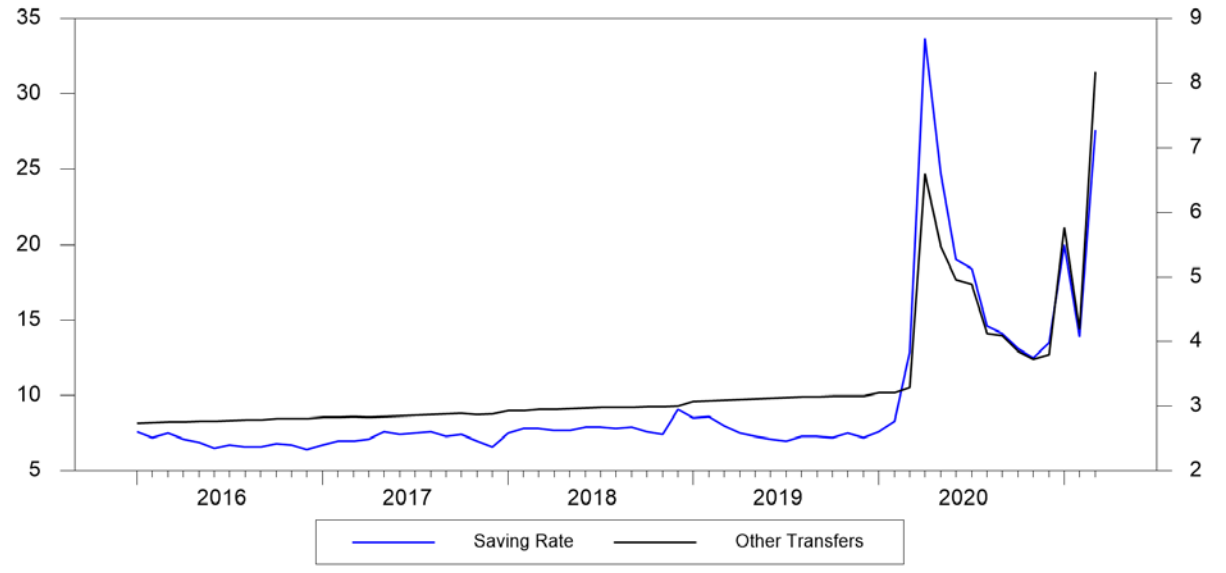
Source: Author's calculations based on data from the US National Income and Product Accounts published by the Bureau of Economic Analysis, US Department of Commerce

Figure 5: Personal spending and post-tax income (in USD trillions)



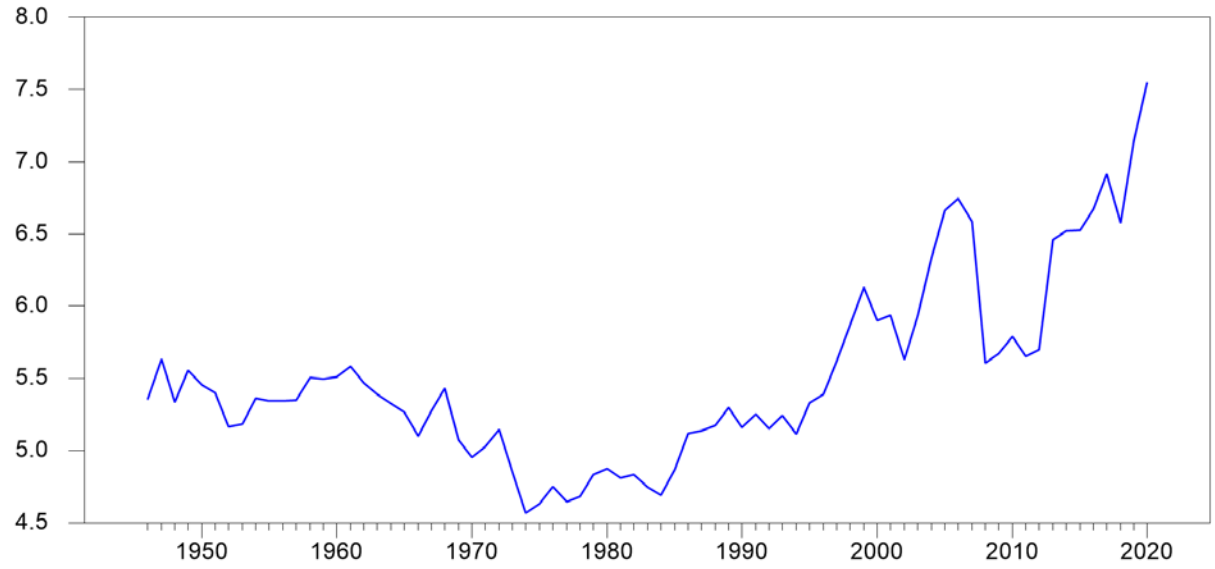
Source: Author's calculations based on data from the US National Income and Product Accounts published by the Bureau of Economic Analysis, US Department of Commerce.

Figure 6: Personal savings rate (left scale) and "Other Transfers" (in USD billons, right scale)



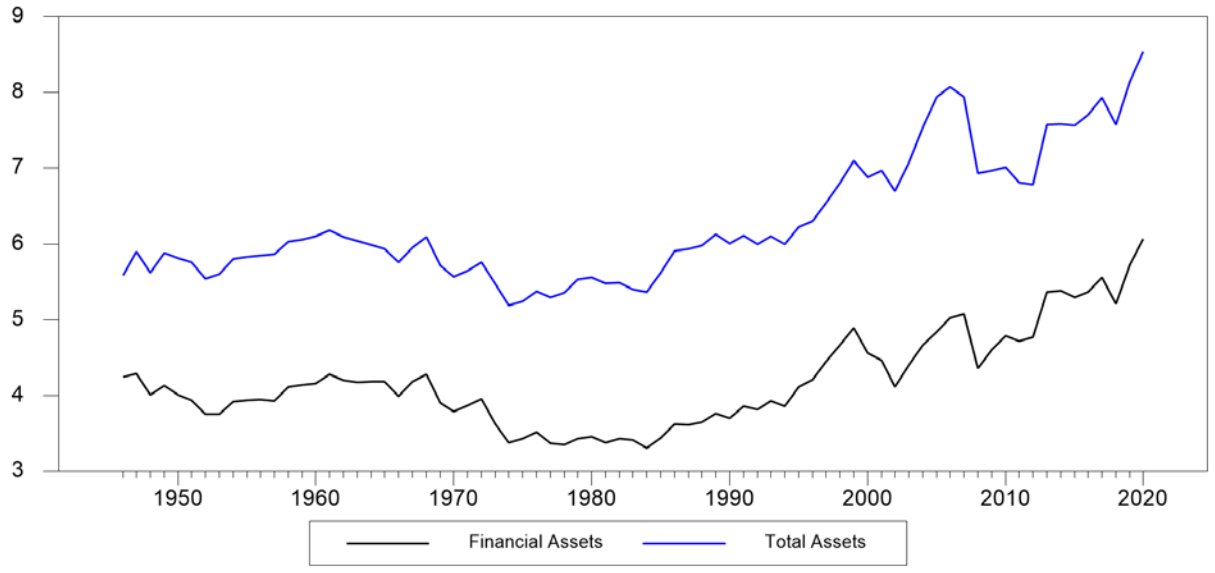
Source: Author's calculations based on data from the US National Income and Product Accounts published by the Bureau of Economic Analysis, US Department of Commerce.

Figure 7: Ratio of net worth to disposable income for US households



Source: Author's calculations based on Z1 Statistical Release from the Federal Reserve Board.

Figure 8: Ratio of total assets and nonfinancial assets to disposable income for US households



Source: Author's calculations based on Z1 Statistical Release from the Federal Reserve Board.

3.4. An illustrative scenario

Here, I provide a simple summary to illustrate how COVID-related effects and fiscal packages may have combined to influence the US economy in 2020 and how they will do so in 2021.

Based on the reasoning above, I expect the "multiplier" effect of the fiscal packages in 2020 and 2021 to be relatively low. Here, I will use the figure of 0.8, which means the positive impact of the fiscal packages on GDP will have been 8.8% in both 2020 and 2021, but the general point being made here isn't dependent on this specific figure. For this multiplier estimate of 0.8, given the actual GDP growth rate of minus 3.5%, you can "back out" that without fiscal intervention, US GDP would have declined by about 12% in 2020. Given the scale of the shutdown inflicted on whole swathes of the economy, this seems a reasonable magnitude.

Similarly, assuming a similar calculation for the fiscal impact this year, the Commission's forecasted growth rate of 6.6%—which means the economy is back on its pre-crisis trend but not overheating—is consistent with a negative impact of COVID-19 on the economy in 2021 of about 6%, just under half the negative effect in 2021. This seems consistent with the data showing an increase in economic activity but with employment still a long way below its previous peaks.

I conclude that fiscal packages have played and continue to play an important role in combatting the negative economic effects of the pandemic and getting the economy back on track and they can do this without triggering a significant over-heating of the economy. While the US fiscal programmes have perhaps been inefficiently designed, they are likely to see the US economy in much better shape by later this year than the euro area, which has seen a far smaller level of fiscal action.

Table 4: An illustrative scenario for COVID-19 restrictions and fiscal policy effects on GDP

	2019	2020	2021
COVID-19 impact on GDP	0	-12.3%	-5.9%
GDP with no fiscal action (index)	100	87.7	94.1
Growth with no fiscal action		-12.3%	7.2%
Fiscal impact		8.8%	8.8%
GDP with fiscal action (index)	100	96.5	102.9
Growth with fiscal action		-3.5%	6.6%

Sources: Author's calculations of potential negative effects of pandemic restrictions and positive effects of fiscal policy.

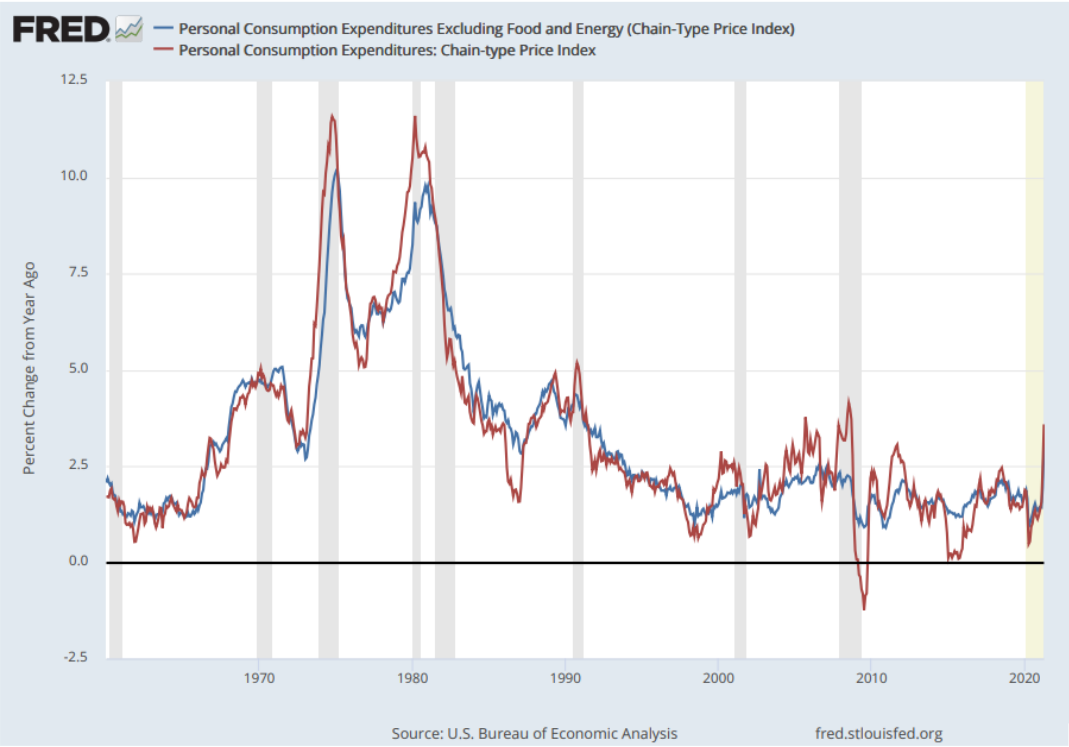
3.5. Short-run inflation developments and longer-run expectations

In recent weeks, the concern about US economic recovery generating inflation has not been purely theoretical. US consumer price inflation, as measured by the personal consumption expenditure (PCE) deflator jumped to 3.6% in April.

A closer examination of the data, however, suggests this is likely to be a temporary development. There have been a number of volatile price movements for some items. In some cases, this has stemmed from shortages due to the unusual patterns in global trade over the past year, which has led to a shortage of containers in some locations. Another example has been used cars, which have seen a surge in demand as people return to work but are still wary of using public transport. The Dallas Fed's "trimmed mean" measure of core inflation, which removes the most volatile price changes from each month, remained almost unchanged at 1.8% in April.[6]

On balance, then, it seems likely the current upward jump in inflation will be a temporary one. For what it's worth, both investors and economic forecasters tend to agree with this assessment. Looking at those who have money at stake, the inflation rate implied by yields on Treasury Inflation-Protected Securities (TIPS) plunged in the early days of the pandemic but has recovered over the past year. The estimated 10-year rate is now above 2%, though no higher than it has been on multiple occasions over the past decade (see Figure 10). The Philadelphia Fed's Survey of Professional Forecasters show forecasting economists have a long-run inflation forecast similar to the TIPS market forecast.

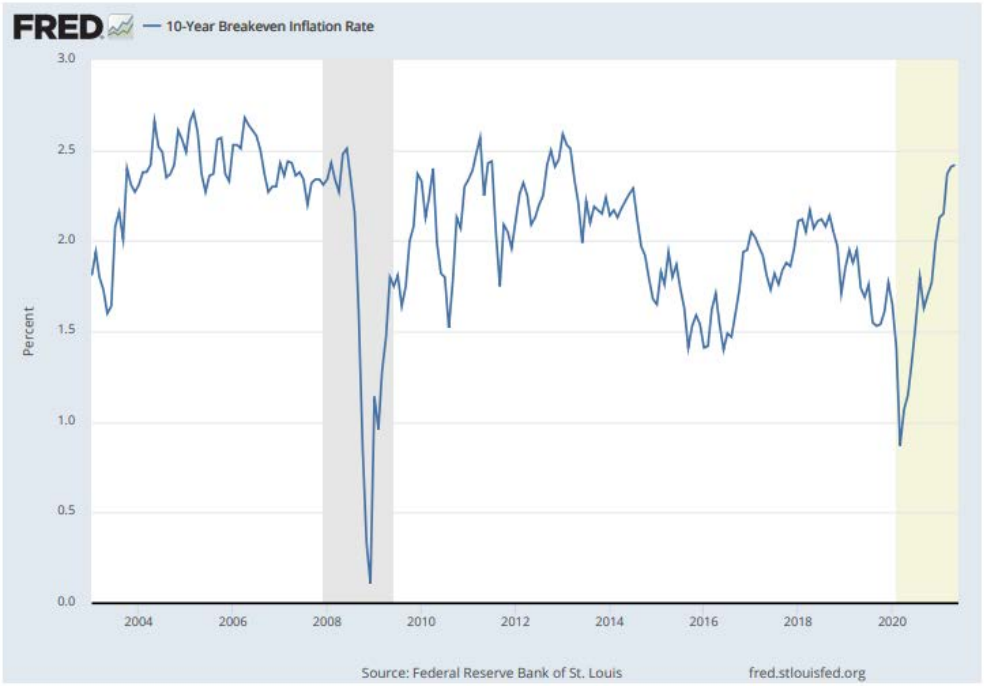
Figure 9: Personal consumption expenditure inflation for all expenditures (red) and for expenditures excluding food and energy



Source: Federal Reserve Bank of Saint Louis.

[6] This measure can be found at https://www.dallasfed.org/research/pce/.

Figure 10: 10-year "breakeven" inflation rate implied by Treasury Inflation-Protected Securities



Source: Federal Reserve Bank of Saint Louis.

4. THE IMPACT ON THE EURO AREA

Here, I will briefly discuss the impact on the euro area this year of US macroeconomic policies under the baseline scenario described above. I will also discuss some implications for Europe should the less benign scenario of US overheating and potential monetary tightening occur.

4.1. The baseline scenario

Exports to the US have only accounted for about 4% of EU GDP in recent years there is relatively little room for expansionary policy to have an impact on the euro area economy through direct trade linkages. However, the US fiscal packages are large enough to provide a decent boost to global GDP and thus increase export demand for European products throughout the world.

The OECD (2021) have estimated that in 2021 the ARP will boost US GDP by 3.8%, world GDP by 1.2% and euro area GDP by 0.5%. The European Commission (2021) project a smaller increase in US GDP of 3% as a result of fiscal policy and thus a correspondingly smaller impact on euro area GDP of 0.3%.

These figures can largely be explained via direct trade effects. With non-EU exports being about 30% of EU GDP, a pro-rata increase in these exports in line with an increase in world GDP of 1.2% would point to the ARP boosting EU GDP by about 0.36%. In addition, the OECD and European Commission expect some boost to exports from the impact the fiscal stimulus will have in strengthening the dollar relative to the euro.

I think these figures could be underestimates of the total impact of US fiscal measures on Europe in 2021 for three reasons.

First, by focusing only on the USD 1.9 trillion in the ARP, the OECD calculations understate the full amount of discretionary fiscal action being taken in the US in 2021 due to the CARES act, the CAA and the ARP. The calculations above suggest the combined amount of fiscal action this year is about USD 2.5 trillion.

Second, the fiscal multipliers used by the OECD and European Commission seem on the low side. For example, the OECD estimates that a fiscal package of 8.5% of US GDP will raise output by 3.8%, implying an average multiplier of 0.45. In his discussion of possible multiplier values for the ARP, Blanchard (2021) reports a multiplier of 0.4 as the lowest value among the range of options he considers possible. While there are good reasons to believe, as argued above, that the multiplier for current fiscal packages are low, they are probably higher than 0.45.

Third, looking at trade and exchange rate linkages misses out on the potential role that sentiment plays in generating businesses cycles. International economies tend to display more co-movement than can be explained purely by trade or financial linkages. This suggests an important role for sentiment. In this case, the fact that the US is pursuing an aggressive fiscal policy may make firms and households in the rest of the world more optimistic. In particular, if firms feel the global economy is recovering, they may be more welling to move ahead with investment plans that had been deferred during the pandemic.

4.2. The US overheating scenario

In the scenario in which US fiscal policy leads to an overheating economy, there are a number of possible consequences for the euro area, ranging from mild to highly unwelcome.

First, there could be a direct effect on inflation if a US boom triggers higher prices of globally-traded products. A certain amount of upward pricing pressure might actually be welcomed by the ECB, which has failed to reach its 2% inflation target over the past few years. The May reading for HICP inflation

saw a jump up to exactly 2% but core inflation remains below 1% and the jump in the overall inflation rate seems likely to be temporary (see Figure 11). However, should the US expansion trigger a sustained global increase in traded goods prices, it may force the ECB to tighten monetary policy sooner than it is currently intending.

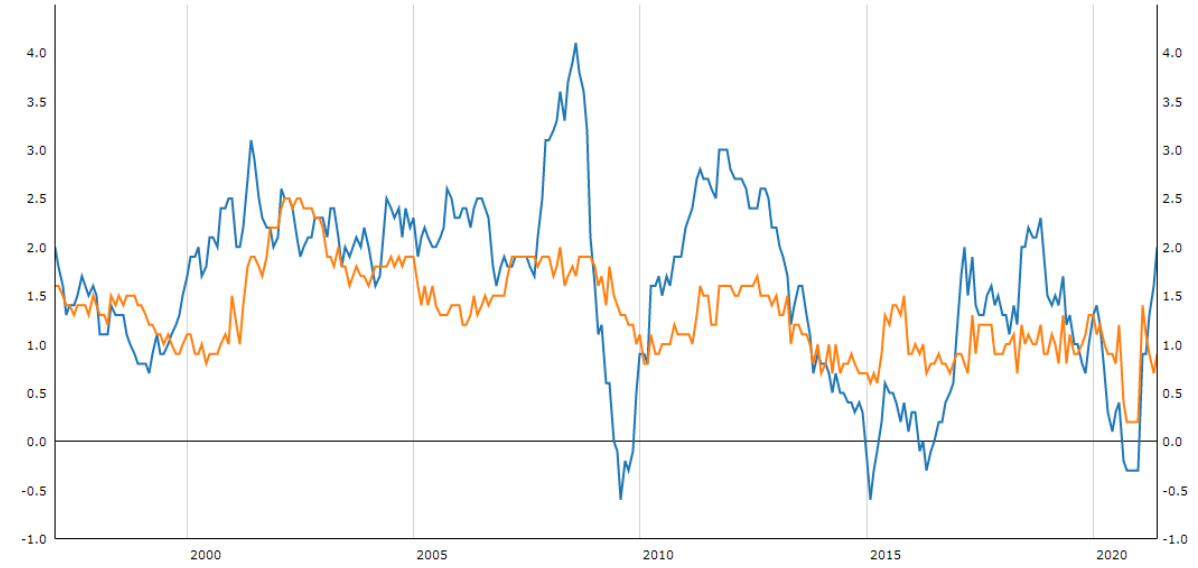
Second, a big rise in US long-term interest rates triggered by a sharp and unexpected tightening of monetary policy could place upward pressure on long-term rates in the euro area leading to a potentially unwelcome increase in financing costs for households, business and governments.

As shown in Figure 12, long-term interest rates in the US and the euro area have often moved together, partly driven by arbitrage trading by international investors looking for the highest rate of return. However, Figure 12 also shows that the looser monetary policy run by the ECB in recent years has allowed them to get euro area long-term yields well below the corresponding long-term yields in the US. So, if the ECB is not concerned about inflation, it could offset upward international pressure on long-term yields with a combination of forward guidance and asset purchases. Indeed, the ECB could choose to copy the Bank of Japan and engage in "yield curve control" by explicitly pegging long-term yields to specific low values. One potential future problem, however, is that as ECB holdings of sovereign bonds grow to reach ever-higher shares of the total amount of debt outstanding, it increases the possibility that the European Court of Justice could view its policy mix as violating the monetary financing clause (see Whelan [2020] for a discussion of these issues).

Third, a Fed-induced recession in the US would be the most unwelcome of the possible scenarios. In theory, the ECB could attempt to ease monetary policy further but there are limits to what it can do within the toolkit of policies that it is willing to consider. In terms of fiscal policy, the NextGenEU grants will also help to provide some fiscal stimulus in the coming years but the reactivation of the EU's fiscal rules could see this counteracted.

Realistically, there are no modern examples of the US going into recession without there being a substantial negative knock-on effect on other leading economies. In most cases, these economies have also gone into recession. Given the potential global implications, there is a lot at stake in the US authorities hitting the right "landing point" for their economy over the next few years.

Figure 11: Total euro area HICP year-over-year inflation (blue line) and HICP inflation excluding food and energy (orange)



Source: ECB Statistical Warehouse.

Figure 12: 10-year US Treasury yield and 10-year euro area AAA yield

Source: Federal Reserve Bank of Saint Louis and ECB Statistical Warehouse.

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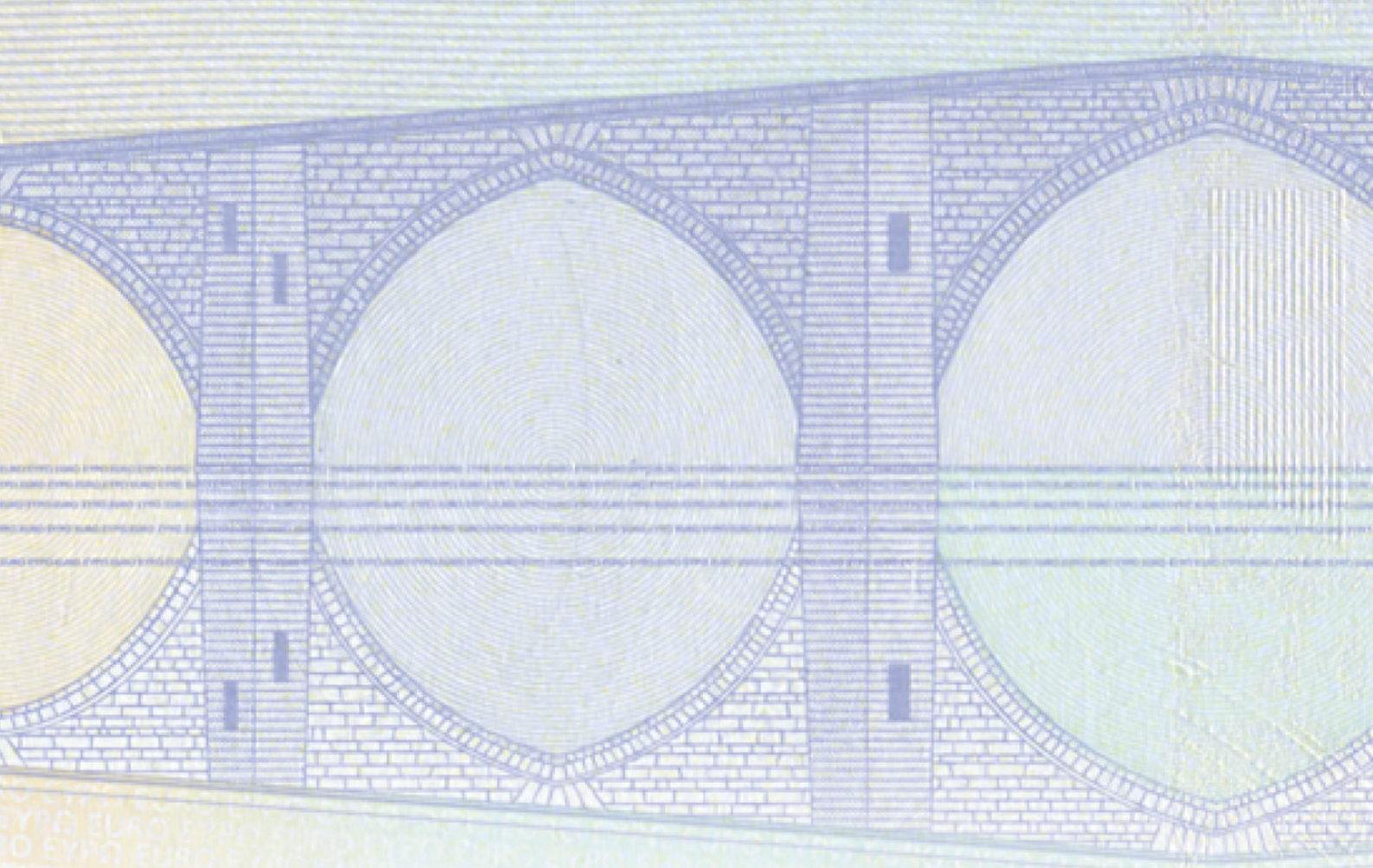

Monetary and Fiscal Spillovers Across the Atlantic: The Role of Financial Markets

Luigi BONATTI, Andrea FRACASSO and Roberto TAMBORINI

Abstract

We present a review of the channels through which the US fiscal and monetary post-pandemic policies may affect the euro area. US spillovers will likely be relevant and worth considering while setting the policy stance in the euro area, at a crossroad between economic global recovery and global overheating. A key role is going to be played by global financial markets, their appetite for open-ended stimulative policies and fears of hard disinflation scenarios affecting central banks' ability to keep the economies on the recovery path and inflation expectations anchored.

This paper was provided by the Policy Department for Economic, Scientific and Quality of Life Policies at the request of the committee on Economic and Monetary Affairs (ECON) ahead of the Monetary Dialogue with the ECB President on 21 June 2021.

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LIST OF ABBREVIATIONS

AIT	Average inflation targetting
BTP	Buoni Poliennali del Tesoro (Italian Government Bonds)
CPI	Consumer price index
ECB	European Central Bank
EONIA	Euro OverNight Index Average
GDP	Gross domestic product
GFC	Global financial crisis
GFCy	Global financial cycle
HICP	Harmonised index of consumer prices
IMF	International Monetary Fund
OECD	Organization for Economic Development and Cooperation
US	United States

EXECUTIVE SUMMARY

- **The US Administration has launched an unprecedented post-pandemic rescue plan** of some USD 6 trillion (28% of GDP), on top of already large fiscal and monetary packages adopted by the previous Administration. Since the euro area is also engaged in fiscal and monetary support for recovery, this state of affairs raises interest but also concerns about the transatlantic spillovers that might occur and with what effects.
- **A lively debate is ongoing in the US concerning whether the plan is appropriate** to boost the economy out of the pandemic recession or it will overheat the economy. As other times in history, it all depends on people's expectations. After a prolonged period of time when inflation expectations have been sticky, expectations could eventually "de-anchor" giving rise to a cost-wage-price spiral.
- **At crossroad between economic global recovery and global overheating,** the euro area policy makers cannot ignore what their counterparties are doing, even though they are not constrained in their choices by external conditions as it would be the case in presence of a fixed exchange rate regime.
- **For both monetary and fiscal policies, cross-country spillovers go through two main channels of transmission**, a **real** one and a **financial** one. The real channel is activated by **bilateral trade**, i.e. the demand effects of domestic policy through exports. The financial channel is activated by **capital movements**, and it is mediated by the impact of domestic policy on the domestic interest rates *vis-à-vis* the foreign ones. Real, monetary and financial channels are all at work and contribute to determine the intensity and sign of the spillovers.
- **Spillovers are time- and state-contingent: this increases uncertainty** regarding their actual magnitude and it also leads to fairly differentiated effects across countries within the euro area.
- **The financial channel stands out among the various mechanisms** as it connects, through changes in financial prices and capital flows, fundamentals and expectations across the Atlantic. At the present juncture, a key role is going to be played by global financial markets' appetite for open-ended stimulative policies, and fears of hard disinflation scenarios, affecting central banks' ability to keep the economies on the recovery path and inflation expectations anchored.
- **Spillovers may be challenging for the ECB. Should US interest rates grow,** either because the authorities will increase the policy interest rates to contain inflation or because financial markets expect inflation to raise in the medium term, the ECB will be forced to choose between choking the recovery, and jeopardising financial stability especially in the sovereign debt segment, or preserving/increasing its accommodative stance.
- **These considerations suggest that too a rigid and binding inflation target should be avoided** in the forthcoming review of monetary policy strategy.

1. INTRODUCTION

As of spring 2020, the pandemic outlook is improving in large parts of the Western world mostly thanks to successful vaccination campaigns (less so in other areas). The United States (US) are leading the rush towards normality in social and economic life. Concomitantly, the new Biden Administration has launched an unprecedented rescue plan of some USD 6 trillion (28% of GDP), on top of already large fiscal and monetary packages adopted by the previous Administration. Since the euro area is also engaged in fiscal and monetary support for recovery, this state of affairs raises interest but also concerns, about whether international transatlantic spillovers might occur and with what effects.

In the conventional setup of open macroeconomics, the US and the euro area are two large economies with reciprocal spillovers. Hence, in principle, spillovers from the US to the euro area are as important as those from the latter to the former and cannot be fully understood separately. As a matter of fact, available empirical evidence shows that this bilateral relationship is more asymmetric, due to the fact that the US currency and the US financial system play a pivotal role in the world economy. Another key ingredient in the scenario is the exchange rate regime. The free float regime between euro and dollar may imply the substantial independence of policy choices on the two sides of the Atlantic, unless some implicit target is assigned to the exchange rate (which, at the moment, seems a remote case), but again financial markets tend to align expectations and incorporate possible spillover effects, thereby strengthening the co-dependency of the two areas. This implies that the euro area policy makers cannot ignore what their counterparties are doing (and *vice versa*), even though they are not constrained in their choices by external conditions as it would be the case in presence of a fixed exchange rate regime.

In this paper we, first of all, report on the recovery strategy undertaken by the US Biden Administration in Section 2. Then in Section 3 we review the lively debated in the US about the risks of overheating of the economy and upsurge of inflation that could be "exported" to the rest of the world. In this perspective, in Section 4 we present the most important transmission channels and provide a concise discussion of the main results in the literature. In sum, real, monetary and financial channels are all at work and contribute to determine the intensity and sign of the spillovers. Yet, these channels appear also to be state- and time-contingent, thereby opening doubts on the possibility of predicting with accuracy their relevance in specific conditions. Particularly important is the financial channel and the expectations of financial operators across the continents: these are hard to predict, but of fundamental importance, as we shall try to explain.

We also consider important to stress at outset that in the present Transatlantic scenario most of the available studies about international linkages and spillovers of macroeconomic policies are of limited use, and should be handled with care. Apart from the high degree of uncertainty still surrounding the future developments of the pandemic and of the social and economic life, the main reason for caution is that international spillovers, especially the empirical ones, are normally studied considering one shock (in one country) and one response (in one country) at a time. By contrast, both the US and the euro area have been hit by the same shock at the same time, and both are reacting by means of strongly supportive monetary and fiscal policies at the same time.

A final note of caution is associated with two peculiar characteristics of this period. The first one is the sectoral nature of the crisis and of the policy measures adopted to kick start the recovery. This is unprecedented and likely to cause heterogeneous results across activities and regions. Both in the US and in the euro area, the actual effects of the policies may differ a lot because of the idiosyncratic characteristics of the local economies and of the transmission channels. The second issue has to do with the presence of a one-in-a-life-time event: the world economy frozen for half a year and in need

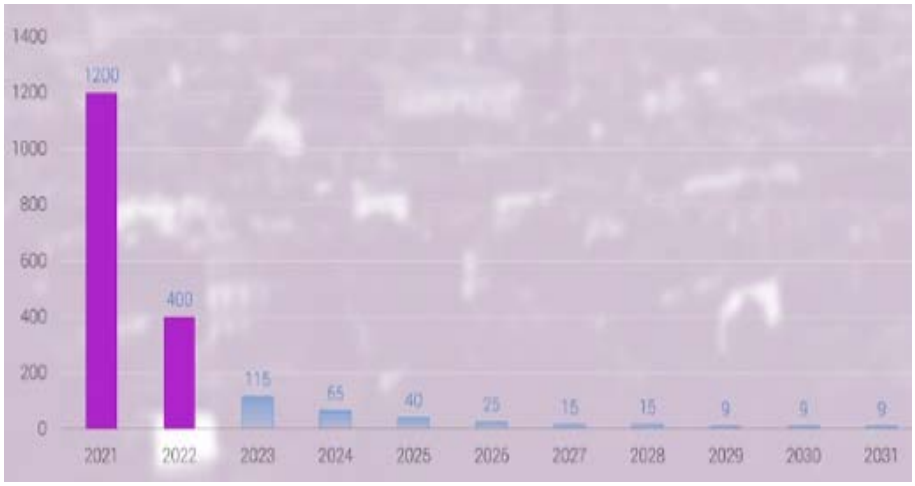
to be re-started. Against such a drawback, it is genuinely hard to distinguish temporary and permanent phenomena, cyclical and structural factors. Judgement, more than rules, will drive the authorities' responses; instinct and animal spirits will lead financial actors to take their stance in the markets.

2. THE US STIMULUS PACKAGES AND THEIR MACROECONOMIC IMPLICATIONS

In the US, the first relief package in response to the COVID-19 pandemic was the USD 2.2 trillion Cares Act that the Congress approved in March 2020. It has been noticed that, as an effect of this plan, Americans' personal disposable income rose by 3% over the year 2020, in spite of a 2.4% fall in GDP. This led to a dramatic rise of the households' saving rate, which in 2020 soared to 16.3% from a much lower 7.5% before the pandemic, with a USD 1.4 trillion increase (6.7% of GDP) in personal savings. The fall in consumer spending was anything but evenly distributed across different categories of goods and services: stimulated by the drop in interest rates brought about by the ultra-expansionary Federal Reserve's (Fed's) policy, spending in consumer durables such as motor vehicles and houses went up 6.3% and 14.3%, respectively, during 2020.

In December 2020, when former President Trump was still in office, a bipartisan majority passed another relief package, this time amounting to USD 900 billion. In March 2021, the newly elected President, Joe Biden, secured the passage of a new USD 1.9 trillion rescue plan (8.9% of GDP projected for 2021), of which USD 1.2 trillion will be spent within 2021 (see Figure 1).

Figure 1: Spending timetable of the USD 1.9 trillion American Rescue Plan



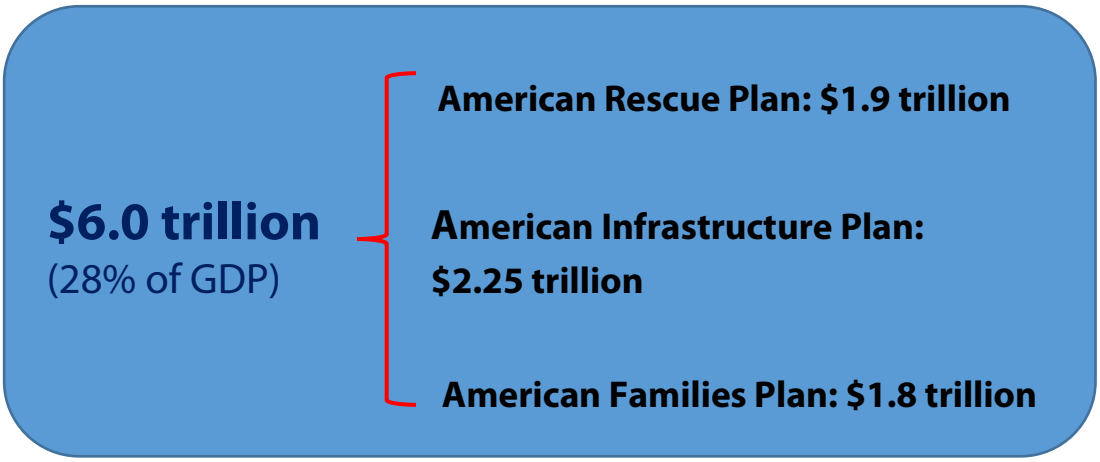
Source: Xerfi Canal, available at https://www.xerficanal.com/economie/emission/Olivier-Passet-Les-deficits-americains-vont-ils-nous-mener-dans-le-mur-_3749664.html.

This plan is financed entirely with borrowed money and aims at mitigating the effects of the pandemic for poorer households. With these families typically being liquidity and/or income constrained, one could think that they will spend a large fraction of the money transfers they are will receive thanks to the plan. However, many of these families are supposed to allocate a substantial share of these transfers to debt repayments, since as a consequence of the lockdowns they are in arrears on rent and utilities payments, or in moratoria on their mortgages and other loans (Roubini, 2021a). In addition to his USD 1.9 trillion rescue plan, President Biden proposed to spend another roughly USD 4.1 trillion on infrastructures and social programs (mostly education and child care) over the next decade, some of which will be financed by tax hikes (Figure 2).

Adding the Biden's USD 1.9 trillion rescue plan to the USD 900 billion approved in December, but leaving apart any possible increase in spending linked to the proposed infrastructure and social plans that has been announced in late March 2021 by the US President, one arrives to a total stimulus of USD

2.8 trillion. Assessing the possible macroeconomic impact of this fiscal stimulus on the US economy requires some estimates of the current output gap and of the multipliers associated with the different components of the various relief plans (e.g., direct federal spending to fight the pandemic, subsidies, transfers to state and local governments, jobless benefits, tax cuts …). Larry Summers (2021), who had a role in designing President Obama's stimulus plan in 2009, claims that Biden's stimulus is roughly three times the output gap (and accordingly, excessive), thus igniting a lively debate on the pros and cons of the plan.[1] Relying on the Congressional Budget Office's estimate of potential real growth for the years before the pandemic, and making the reasonable assumption that when the pandemic erupted at the beginning of 2020—with unemployment at a record-low rate of 3.5%—output was close to its potential, Blanchard's (2021) best guess is that at the end of 2020 the output gap was 4.2% (about USD 900 billion). This guess might overestimate the output gap, since the economy's growth potential could be damaged by the supply disruptions caused by the pandemic; moreover, part of the abnormally high savings accumulated by US consumers in 2020 will be probably spent when the pandemic is over, reducing further the expected gap at unchanged policies. These being additional factors as they may, an output gap of USD 900 billion implies that only a maximum of 30 cents of every dollar of the USD 2.8 trillion government aid should be spent in order to prevent an overheating of the economy. The question is then: how realistic is an overall multiplier of 0.3? Put it in other words: how likely is it that the US plan will turn out to be so ineffective that the economy will not overheat?

Figure 2: Biden's stimulus packages



Source: Own calculations.

Using the 2014 report of the Council of Economic Advisers to estimate the multipliers associated with the various components of the Biden's USD 1.9 trillion plan, Blanchard (2021) finds that the mean overall multiplier is 1.2. Thus, even admitting that the uncertainty about the true value of the overall multiplier is high (under the low multiplier estimates, the overall multiplier is 0.4, while under the high multiplier estimates it is nearly 2), Blanchard concludes that it is very unlikely that the overall average multiplier can be close to 0.3.

The implications of this conclusion for the inflation rate are not necessarily dramatic. Indeed, Blanchard (2021) argues that a positive output gap (an excess of actual output over potential output) of 5% could

[1] Among others, Krugman (2021) defended the Biden's plan and argued that the package would not lead to the overheating of the economy, causing inflation, because a large fraction of the money transfers received by the US families will be saved, rather than spent.

bring the unemployment rate to 1.5%, namely 2.5 percentage points below the natural rate, which—**if the current relation between unemployment and inflation would hold**—is likely to raise the inflation rate by 0.5 percentage point, a quite modest increase. Obviously, one should expect a larger increase of the inflation rate as a result of a positive output gap if one takes larger estimates of the slope coefficients of the Phillips curve (the inverse systematic relation linking the inflation rate to unemployment), but—according to Blanchard—it would not be a catastrophic increase, and above it would be only temporary.[2]

In fact, Blanchard himself emphasises how this relatively optimistic conclusion about the inflationary risks that the US economy is running because of the probable overheating caused by the Biden's stimulus plans can be maintained **only if the relation between unemployment and inflation that has emerged in recent years would hold, which is far from certain.** Indeed, as other times in history, it all depends on people's expectations. After a prolonged period of time when inflation expectations have been sticky (i.e., not reacting to movements in observed inflation), which in turn supported a relatively stable and low trade-off between inflation and unemployment, expectations could eventually "de-anchor". This would shift the Phillips curve and bring about a persistently higher inflation.[3] Are there the conditions in the current situation for this de-anchoring of long-term inflation expectations, namely for convincing most economic agents that future policies will be more complacent than in the recent past towards inflation?

This question is of fundamental importance given that, as we shall discuss in what follows, expectations play a central role both in the transmission of the transatlantic spillovers and in the internal dynamics in each of the two areas. Accordingly, before turning to these aspects, we shall tackle such questions in the following Section.

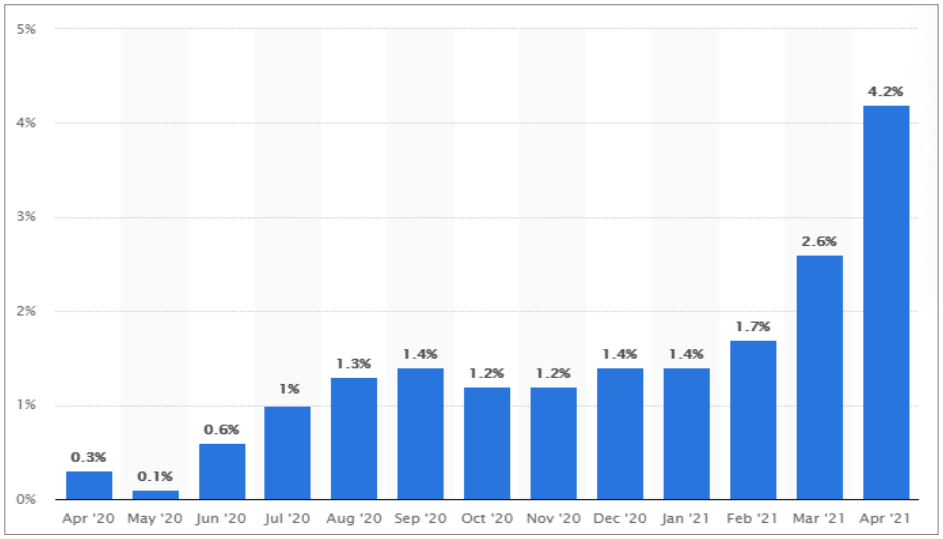
[2] Based on their own Phillips curve estimates, Ball et al. (2021) predict that, if the ongoing fiscal expansion reduces unemployment to 1.5% (as argued by Blanchard), median CPI inflation would rise to 2.9% by 2023. Considering a steeper Phillips curve, median CPI inflation would reach 3.1%. According to Ball et al. (2021), "*if the fiscal expansion is temporary and monetary policy remains clearly communicated and decisive, there is little risk of a 1960s-type inflationary spiral.*"

[3] In the past, such shift worked in the opposite direction, towards lower inflation, in the aftermath of the Volcker's monetarist "u-turn".

3. IS INFLATION POISED FOR A COMEBACK?

The spike in consumer prices that is currently going on in the US (see Figure 3) is being fuelled by supply chain bottlenecks and the rapid economic reopening. As a matter of fact, with the end of the pervasive lockdowns and the recovery of consumer demand after months of "involuntary" savings, producers of final goods and services have rapidly increased and temporally concentrated their demand for raw materials, energy, intermediate products and transport services.[4] Many firms had and still have to cope with a sudden increase in orders (which is also driven by public measures to revive the economy), while at the same time trying to re-build inventories, which were reduced during the lockdown. This pace of expansion in demand cannot be matched in some sectors by the rise of supply, especially the supply of raw materials and intermediate products, and particularly in those service sectors where limitations and slowdowns due to COVID-19 containment measures still persist.

Figure 3: Monthly 12-month inflation rate in the US (April 2020-April 2021)



Source: Statista, available at https://www.statista.com/statistics/273418/unadjusted-monthly-inflation-rate-in-the-us/.

If there is agreement about the origins of the inflationary flare-up (albeit with differences on the role played by the shortening of global value chains, the abundance of credit and liquidity in the economy, and the government aid), there is disagreement about the duration of the phenomenon.

One may think that the increase in consumer prices remains circumstantial and temporally limited:[5] once the reopening of economic activities, the accumulation of inventories and the reduction of the stock of forced savings will be completed, inflation will fall toward the Fed's target of near 2% as soon as the current increase in production costs has entirely translated into an increase in consumer prices.

An important part of this narrative is that the persistence of labour market slacks, namely of a non-negligible number of workers out of job because of the pandemic (and because of the consequent restructuring and sectorial reshuffling), will prevent large "second round effects", that is, generalised

[4] Consider that over the past year commodity prices have surged, with oil prices that are now back to their pre-crisis levels, and metal prices and food prices that are almost, respectively, 50% and 30% higher than their pre-crisis levels.

[5] Ball et al. (2021) remark that the record one-off price drops that occurred in the second quarter of 2020 in airline fares, lodging, apparel, and motor vehicle insurance prices, which to a large extent rebounded in the following quarter, can determine a base effect pushing up year-over-year measures of CPI (excluding food and energy) inflation in the second quarter of 2021. If this is the case, starting from the third quarter of 2021, year-over-year measures of CPI inflation should reflect more accurately the "true" underlying core inflation.

and substantial wage increases. Consistently with this view, monetary policy should remain accommodative and tolerate a temporary inflation spike beyond the 2% target, in accordance with the new policy framework unveiled in July 2020, the so-called average inflation targeting (AIT) (see Svensson, 2020), whereby the Fed "seeks to achieve inflation that averages 2% over time" by allowing rates higher than 2% to offset periods when inflation is below the target.[6]

Although central banks and other institutions, such as the International Monetary Fund (IMF), suggest that the current rise of inflation worldwide—and in the US in particular—is largely due to transitory factors and that high inflation will not be a problem for the advanced economies in the foreseeable future[7], some observers believe that the COVID-19 pandemic has favoured the emergence of structural forces and policy constraints that will make inflation stably higher. In a nutshell, one may summarise this viewpoint by arguing that the reversal of globalisation, accelerated by the governments' growing reluctance to depend on other countries for strategic goods (masks, medicines, vaccines, semi-conductors…) and the disruptions along the global supply chains, might favour reshoring (with a shift of production back into high-cost economies) and strengthen labour bargaining power in the US and other advanced economies (see, e.g., Goodhart, 2020).

This trend is further strengthened by a political climate that more than in the past has induced governments to intervene so as to limit income inequalities and protect domestic workers, in the attempt to prevent a political backlash against the authorities in power and further social separatism. In the US—for instance—this can be done by imposing a higher minimum wage or by giving priority to the achievement of maximum employment also among the minorities.[8] This would also match the sovereigntist rhetoric that presents a greater self-reliance as a mechanism to ensure greater resilience.[9] Furthermore, the argument goes, it will be hard for the policy makers to reverse the ultra-expansionary fiscal and monetary policies underway, as it would be necessary for preventing the current inflationary impulses from being embedded in people's expectations. With respect to monetary policy, the unprecedented growth of money supply and of the Fed's balance sheet that has taken place since the beginning of the pandemic[10] could be stopped by rapidly allowing its short-term policy rates to start rising and some of its holdings of government debt to run off.

Obviously, this would create serious difficulties for the government in the financing of its huge recovery plans. But, above all, such a policy reversal could trigger abrupt price drops in the asset markets, where bonds and stocks are currently priced on the basis of the expectation that interest rates will still remain ultra-low for a long period of time. This could be highly destabilising at a time when public and private

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6 Commentators noticed that this new policy framework creates uncertainty over how the Fed intends to make up for the past shortfalls (Wolf, 2021). For instance, US inflation has fallen short of the 2% target by a cumulative total of 5 percentage points since 2007, which applying AIT could justify, say, 3% inflation for 5 years, or say 4% inflation for 2 years and 3% inflation for 1 year, before a return to 2%.

7 Fed's Chair Jerome Powell appears very confident that the current inflation surge is a one-time price increase that is not likely to lead to persistent inflation: "*During this time of reopening, we are likely to see some upward pressure on prices, and I'll discuss why. But those pressures are likely to be temporary as they are associated with the reopening process. In an episode of one-time price increases as the economy reopens is not the same thing as, and is not likely to lead to, persistently higher year-over-year inflation into the future— inflation at levels that are not consistent with our goal of 2 percent inflation over time. Indeed, it is the Fed's job to make sure that that does not happen. If, if, contrary to expectations, inflation were to move persistently and materially above 2 percent in a manner that threatened to move longer-term inflation expectations materially above 2 percent, we would use our tools to bring inflation and expectations down to mandate-consistent levels*" (Powell, 2021: pp. 13-14).

8 This is the opinion, for example, of Ellen Zentner, chief US economist at Morgan Stanley, who said: *"The focus on inequality drives the maximum-employment mandate, and it really takes precedence over the inflation mandate."* Along these lines, Roubini (2021b) writes: *"…rising income and wealth inequalities mean that the threat of a populist backlash will remain in play. On one hand, this could take the form of fiscal and regulatory policies to support workers and unions – a further source of pressure on labor costs. On the other hand, the concentration of oligopolistic power in the corporate sector also could prove inflationary, because it boosts producers' pricing power."*

9 This position could be rightfully questioned, as done by Miroudot (2020), but it appeals part of the public opinion.

10 Greenwood and Hanke (2021) calculate that, in the 12 months that followed the beginning of the pandemic in the United States (February 2020), M2 increased by an astonishing 26% (USD 4 trillion), many times more than its annual growth from 2010-19, that averaged 5.8%, while the Fed's holdings of Treasuries and mortgage-backed securities increased by almost USD 3 trillion.

debt ratios are at historically high levels worldwide, and are on the rise. Hikes in US interest rates that happen sooner and that are more abrupt than expected would represent a serious shock for the world financial markets and it could cause a generalised "flight to quality". Although emerging markets would be especially vulnerable to sudden stops and reversals of capital flows, the euro area would also be impacted heavily.

It derives from what is outlined above that, if the current inflation surge had to continue, the Fed would face a dilemma. By promptly using its tools "*to bring inflation and expectations down to mandate-consistent levels"*, as Chair Powell has recently declared, it will risk halting the post-pandemic recovery prematurely, making it difficult to finance President Biden's fiscal packages and setting the conditions for another financial crisis. With regard to the latter, it seems plausible—especially in the light of how the Fed behaved in the last four decades—that the US monetary authority will be more concerned about the effects that rising policy rates and tapering on bond purchases might have on financial markets, than about their effects on public finance. As we argued elsewhere (Bonatti et al., 2020), it makes sense to speak, for the Fed, of some sort of "financial dominance", rather than of fiscal dominance.

In any case, to avoid the above-mentioned risks, the Fed may prefer to stick to its current policy stance even if the inflation flare-up will not appear to be transient, thus being in tune with the currently prevailing political climate. By doing so, however, the Fed risks the de-anchoring of inflation expectations that "*years of ultra-low inflation are firmly embedded in the public psyche*" (Rogoff, 2021). According to Barro (2021), this can jeopardise the anti-inflationary "*reputational capital that Volcker bequeathed*" and that "*is now being threatened by reckless monetary and fiscal policies*". For these critics, the problem is that rebuilding such reputation—once undermined—might take time and involve a high cost in terms of foregone output and high unemployment. Moreover, it is argued that the short-term benefits of such tolerance for inflation would be reduced by the fact that—once high long-term expected inflation has taken root—low policy rates can hardly prevent longer-term market interest rates from rising anyway. As far as the long-term consequences of a possible return of inflation are concerned, it is emphasised that, by bringing about higher nominal and real interest rates, such a return would make today's debt unsustainable and lead to equity market crashes, possibly triggering persistent stagflationary pressure (Roubini, 2021b).

To conclude, we would like to share Martin Wolf (2021)'s claim who, in contrast with Milton Friedman's famous quote, argued that ultimately "*inflation is always and everywhere a political phenomenon. The question is whether societies want low inflation. It is reasonable to doubt this today. It is also reasonable to doubt whether the disinflationary forces of the past three decades are now at work so strongly*."

4. CHANNELS OF INTERNATIONAL SPILLOVERS

Having set the background against which the Federal Reserve and the US administration are likely to move, in this Section we shall review the main channels of international spillovers. As argued in the introduction, these channels are of extreme importance for the ECB and the fiscal authorities in the euro area as they should be considered while setting their stance. Yet, as mentioned in the Introduction and we shall explain in what follows, the current circumstances are peculiar: monetary, fiscal and financial shocks will occur simultaneously at both sides of the Atlantic.

In the basic conceptual framework of open macroeconomics,[11] monetary and fiscal policy are mostly instruments to boost or restrain aggregate demand with a view to smoothing the business cycle and keeping inflation aligned with a target. For both instruments, cross-country spillovers go through two main channels of transmission, a **real** one and a **financial** one. The real channel is activated by **bilateral trade**, i.e. the demand effects of domestic policy through exports. The financial channel is activated by **capital movements**, and it is mediated by the impact of domestic policy on the domestic interest rates *vis-à-vis* the foreign ones. Therefore, substantial analogies and overlaps are present when examining the international spillovers of monetary and fiscal policies. Nonetheless, each policy instrument retains some specificities that we shall point out in what follows.

4.1. Monetary spillovers

The literature on the effects of US monetary policy shocks on foreign economies is abundant. Most has focused on emerging markets, due to their historically high exposure to the dollar and to the US economy. US monetary shocks may affect foreign countries via three channels: the aggregate demand channel, the expenditure-switching channel associated with exchange rate variations, and the financial channel. Focusing on the euro area, Ca' Zorzi et al. (2020) assess as limited the impact of US monetary measures on trade balances and inflation, whereas a Federal Reserve monetary policy tightening does exert strong pressure on the euro area real effective exchange rate, on unemployment and on industrial production, and the effects on these latter do not appear to die out quickly.

More precisely, they find that a tightening in the US monetary policy has a large negative impact on US exports (due to expenditure-switching effects) but also on US imports (contracting because import prices are sticky and set in US dollars, and the aggregate demand effect thus dominates). Hence, although a Federal Reserve tightening leads to a persistent real depreciation of the euro with respect to the currencies of EU trade partners, and to a more limited and less persistent depreciation against the US dollar, the impact of US monetary policy shock on the overall trade balance of the EU is limited. Similarly, the evidence in Ca' Zorzi et al. (2020) shows that US and euro area monetary policy spillovers to consumer prices in the other area are relatively small, but a statistically significant increase in euro area prices for about one quarter follows in response to a tighter Federal Reserve monetary policy. This is due to the depreciation of the euro, given that the domestic component of inflation in the euro area is unaffected. Yet, again, these effects are limited to the short term.

It is worth noticing that most of these spillovers seem to be due to the financial channel, given the limited impact on US monetary shocks on US and euro area trade balances. This is not to say that the aggregate demand and the expenditure-switching channels are absent or irrelevant: they do find strong support in the empirical literature. For instance, Adler and Buitron (2016) show that the loosening of the US monetary policy affects foreign exchange rates and trade balances, and Dedola et al. (2021) conclude that also quantitative easing (QE) measures in the US led to a non-negligible and

[11] Reference is to the so-called Mundell-Fleming-Dornbusch approach (Dornbusch, 1980).

persistent exchange rate depreciation of the dollar (in line with previous findings in Dedola et al., 2017). Yet, as the US tend to price exports in dollars (adopting a producer currency pricing strategy) and to price imports in local currency (i.e., local currency pricing), this peculiar combination prevents large changes in import prices in dollars and thus large fluctuations in the US terms-of-trade.

It is interesting to note that the literature has consistently shown that the international transmission of monetary shocks is affected by country-specific characteristics (Dedola et al., 2017; Georgiadis, 2016; Hanisch, 2019; Iacovello and Navarro, 2019)[12] and exchange rate regimes.[13] Those interested in the effects on specific countries and groups of countries, thus, have to resort to *ad hoc* models able to capture relevant specific conditions. The ECB global macroeconomic model (ECB-Global) developed by Dieppe et al. (2018), for instance, features various channels of international shock propagation and it envisages large spillovers from US monetary policy. Hanisch (2019) finds that contractionary US monetary policy has asymmetric spillover effects on economic activity, as well as in financial markets, of the individual countries of the euro area.

As mentioned above, the financial channel remains one of the most effective mechanisms through which monetary policy shocks in large advanced countries reach other economies. Monetary policies in large advanced economies and global risk aversion are two important global drivers of capital flows (e.g. Forbes and Warnock, 2012; Schularick and Taylor, 2012; Miranda-Agrippino and Rey, 2020; Cerutti et al., 2017b; Ha et al., 2017; Davis and van Wincoop, 2021; Gerko and Rey, 2017). Even when monetary spillovers do not directly affect trade with other large foreign countries, as shown by Ca' Zorzi et al. (2020) in the case of the euro area, they do affect international capital flows and also local financing conditions.

Although the importance of the global financial cycle (GFCy) has been questioned (see Cerruti et al. 2019; Georgiadis and Jančoková, 2020), the transmission of the GFCy to foreign markets may either go through international capital flows (loans, bonds and stocks) or through its impact on domestic banks' credit creation (Miranda-Agrippino and Rey, 2020).

Ca' Zorzi et al. (2020) find that, for stock prices, bilateral spillovers from both ECB and Fed monetary policy shocks are negligible. Bauer and Neely (2014) and Rogers et al. (2014) analyse the impact of US unconventional monetary policy measures on global asset prices, capital flows and exchange rates, and Rogers et al. (2014) find that US unconventional monetary policy causes a depreciation of the US dollar and reduces foreign longer-term interest rates. Neely (2015) concludes that unconventional policy measures in the US were able to reduce international long-term yields and to depreciate the US dollar, even when the short-term rate hit the zero bound. Albagli et al. (2019) show the existence of significant US monetary policy spillovers to international bond markets (and their increase after the 2007–2009 global financial crisis [GFC]); these spillovers work through different channels, concentrated in risk-neutral rates for developed countries and on term premia in emerging markets. Advanced countries respond by partially adjusting risk-neutral rates and partially through currency adjustments, whereas emerging countries cushion exchange rate variations through movements in term premia. Ca' Zorzi et al. (2020) reveal that, after a Fed tightening, a significant and persistent increase in the spread of speculative-grade corporate bonds in the euro area occurs due to the reduction in the Bund yields, possibly because of "*some (systematic) offsetting response by the ECB to mitigate the effects of Fed*

[12] Georgiadis (2016) shows that the magnitude of the US monetary spillovers depends on various features of the receiving country's trade and financial integration, de jure financial openness, exchange rate regime, financial market development, labour market rigidities, industry structure, and participation in global value chains

[13] The role of the exchange rate is complex. On the one hand, countries managing a currency peg are more sensitive to changes in foreign monetary policy as their monetary policy is tied to that of the peg; on the other hand, it is more difficult to measure external pressures due to the nature of the regime (Goldberg and Krogstrup, 2018).

monetary policy shocks" (p. 34). Besides this direct impact on the euro area, as US financial conditions affect those in the rest of the world, the intensity of the financial spillover channel from Fed monetary policy cannot be underestimated: for instance, as shown in Ca' Zorzi (2020), international portfolio investment drops after a tightening in the US: this is indeed the essence of the global financial cycle driven by the Fed and explains the unidirectional spillovers from the United States to the euro area.

As mentioned, domestic credit may be affected by foreign monetary conditions because of many channels, such as the balance sheet channel (Correa et al., 2021) and the bank lending channel (Cetorelli and Goldberg, 2012a,b). Albrizio et al. (2020) find that an increase in funding costs after an exogenous monetary tightening in systemic countries leads to a decline in cross-border bank lending. Under the international bank lending channel (see Cetorelli and Goldberg, 2012a,b; Miranda-Agrippino and Rey, 2020), changes in the short-term funding costs of banks and banks' liquidity constraints determine the ability of local banks to extend credit to the domestic private sector. The portfolio (or balance sheet) channel stems instead from the imperfect substitutability of asset classes and limits to arbitrage (Haldane et al., 2016): under this channel, foreign monetary policy shocks affect the risk structure of banks' assets and create incentives to substitute domestic and foreign credit. Miranda-Agrippino and Rey (2020) find that US tightening leads to a decline in asset prices that reduce EU banks' balance sheets and their leverage.

What is worth noticing is that such international spillovers into domestic lending to the private sector depends on the existence and relevance of various frictions. As these vary across intermediaries and countries, the international transmission of monetary policy shocks through the financial channel is affected by country-specific (Georgiadis, 2016) and bank-specific heterogeneity (Baskaya et al., 2017; Bruno and Shin, 2015; Buch et al., 2019; Cetorelli and Goldberg, 2012a,b; Gambacorta and Shin, 2018; Schmidt et al., 2018). Miranda-Agrippino and Rey (2020) show that the international transmission of US monetary policy operates through global financial actors, as these intermediaries adjust their operations across countries and currencies, as also noted by Brauning and Ivashina (2020); similarly, Morais et al. (2019) identify an international credit channel whereby a softening (tightening) of foreign monetary policy expands (contracts) credit supply of foreign banks in Mexico, generating also real effects. In addition to the features and behaviour of the domestic banking system, other financial country-specific factors, such as house prices and exchange rates, can amplify the expansionary effect of capital inflows induced by a loosening of foreign monetary policy (Cesa-Bianchi et al., 2018).

Other spillovers that should be considered as distinct from those associated with the transmission of pure monetary shocks regard the information channel. As shown by Cieslak and Schrimpf (2019), non-monetary news are an influential part of central bank communication. This implies that central bank information shocks, as shown Jarociński and Karadi (2020), can add to the impact of the monetary decisions, and reach other countries through different channels. Armelius et al. (2020) study the co-movement in sentiment across central banks and show the presence of cross-country spillovers, with the Fed being an influential generator of such spillovers.

Only recently, researchers paid attention to the variation over time of how capital flows react to such global drivers, and they showed that the sensitivity of the international capital flows is time- and state-contingent (Avdjiev and Hale, 2019; Buono et al., 2020), for instance varying considerably during the GFC period and in the tapering period (Avdjiev et al., 2021). Buono et al. (2020) show that the taper tantrum marked the beginning of a new phase with greater sensitivity of capital flows to global factors and domestic vulnerabilities. This suggests that the estimates of international spillovers may suffer of imprecise measures of the shocks, particularly when unconventional policies are considered, as discussed by Buch et al. (2019), or when the decisions contain also central bank information shocks, as shown by Jarociński and Karadi (2020), and of state-contingent multipliers. An increased post-GFC

sensitivity to US monetary policy began to unwind when the Fed started tapering. The decline in the sensitivity to global risk occurred due to the post-crisis shift in the composition of global lenders, with stronger and less sensitive banks getting larger shares (Avdjiev et al., 2020).

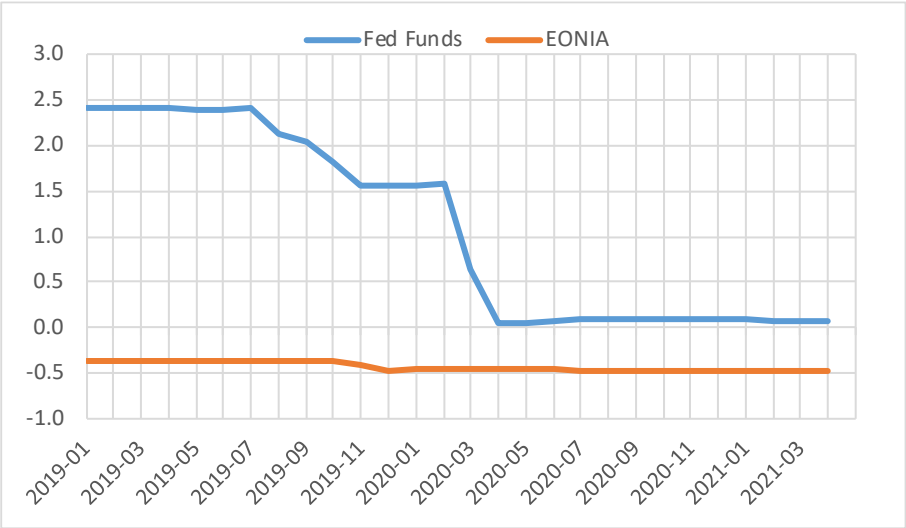
Finally, it is worth noticing that monetary spillovers may occur without international capital flows and trade imbalances, but through the global production networks. Recently, di Giovanni and Hale (2020) have focused on the interconnection and interdependence associated with global production networks to determine how US monetary policy may affect world stock markets. Changes in demand created by variations in monetary policy propagate upstream from customers to suppliers, and this finding is robust to controlling for other variables that may drive a common financial cycle across markets.

4.2. Fiscal spillovers

As far as fiscal policy is concerned, the real and financial channels of external spillovers do not work separately. The basic mechanisms are such that, to the extent that the US fiscal expansion raises the US interest rates, domestic demand is partially crowded out, while capital is attracted with a consequent appreciation of the dollar against the euro. Thus, the joint effect on demand and GDP of higher interest rates and exchange rate appreciation plays a critical role. Traditional wisdom holds that this joint effect sets a substantial limit to the effectiveness of fiscal expansion in the originating country while its exchange rate appreciation creates a positive spillover in partner countries through exports.

Recent empirical studies broadly support the prediction that, on balance, US fiscal expansions have **sizeable stimulative effects** on demand and GDP abroad, and in the US itself. More controversial is the evidence about which channel is more relevant. For instance, Metelli and Natoli (2018) find that trade effects are more prominent while financial effects are more limited, but they also underline that effects differ whether fiscal expansion is implemented by means of tax cuts or larger expenditures. As to the exchange rate, its specific contribution is unclear.[14]

Figure 4: Effective federal funds rate and euro area's EONIA rate 2019-2021:03 (monthly observations)



Source: FRED online database, ECB *Interest Rate Statistics.*

[14] As we explain in the subsection devoted to the monetary spillovers, the exchange rate channel works in a peculiar way in the US due to the dollar's central position in the world economy.

As a matter of fact, throughout 2020 the dollar has been **constantly depreciating** by some 10%, with a slight correction in the early months of 2021, in spite of large fiscal packages being already activated by the Trump Administration and a nontrivial positive differential on short-term rates (see Figure 4).

By contrast, Faccini et al. (2016) show that the main driver of positive US fiscal spillovers is the financial channel, of a particular nature though. In the basic setup recalled above, the rise of interest rates in the US is followed by higher interest rates also abroad (one reason being that the US absorption of financial resources heavily impinges on the global pool: e.g. Kose et al., 2017). Faccini et al. (2016) instead find a **fall of real interest rates** abroad associated with US fiscal stimuli. This evidence has been explained by Corsetti et al. (2010, 2012) to be a result of expectations of spending reversal, i.e. expectations that (in the originating country) the debt-financed fiscal stimulus is temporary and will be reversed in the future. According to these authors, this positive effect via lower interest rates is indeed a major booster of the effectiveness of the fiscal stimulus both at home and abroad.[15]

The financial channel, however, should be enlarged beyond sovereign debt markets to stock markets (Ehrmann and Fratzscher, 2009; Ehrmann et al., 2011; Kose et al., 2017; De Santis and Zimic, 2019). On the one hand, stock markets themselves react to developments in the sovereign debt segment, on the other hand, their own developments have an impact on economic activity. As a matter of fact, stock markets are highly integrated globally, their co-movements are strong and fast, and the US stock market plays a pivotal role. In particular De Santis and Zimic (2019) report that the US rates are the main source of spillovers globally and are less exposed to foreign shocks. After identifying distinct shocks to the US medium term money market rates, they find that about one-fifth of the shock has been transmitted to the euro area rates in short time.

The evidence during the pandemic suggests that the US stock market is highly sensitive to prospects of recovery, and hence it shows **appetite for supportive policies** as large as necessary and for as long as necessary. If stock markets place more emphasis on support to short-/medium-term growth than to medium-/long-term debt sustainability, the US fiscal stimulus may more easily be transmitted to the euro area economies.[16] On the other hand, reversal of the supportive regime may trigger a sudden downturn of stock markets which may quickly spread across the Atlantic.

Further complexity has been added to the basic setup by recent research stressing the dependence of domestic as well as cross-border fiscal multipliers on the cyclical position of the economy (-ies) and the concomitant monetary policy stance(s). It is now widely agreed that fiscal multipliers are larger when the economy is in recession and accommodative monetary policy keeps interest rates low all along the yield curve (Auerbach and Gorodnichenko, 2012, 2013; IMF, 2017). These seem to be the prevailing conditions both in the US and in the euro area. The accommodative stance of monetary policy on both sides, enhanced by "forward guidance" techniques (Lane, 2020), inhibits the negative components of the financial channel of the international spillovers due to higher interest rates. The direct multiplicative impact of the fiscal stimulus is maximised both in the originating country (the US) and in the recipient country (euro area), though the intermediate effect of the dollar appreciation is dampened. At the same time, the positive component of the financial channel operates due to the global stock market reaction.

It is a well-established principle that in the presence of reciprocal spillovers, **policy coordination** is recommended (Auerbach and Gorodnichenko, 2013). However, historically, this principle has remained

[15] It may be noted that this conclusion contrasts with the so-called "Ricardian equivalence" (Barro 1974), which predicts that the expectation of future debt consolidation nullifies the effect of the fiscal stimulus on GDP and on the real interest rate.

[16] The ambivalent role of these two components of investors' behaviour was emphasised in connection with the sovereign debt crisis in the euro area by Berti et al. (2013).

on paper (Bayoumi, 2014; Frankel, 2015), and we do not see conditions for explicit policy coordination between the US and the euro area at this moment. Moreover, as said above, the euro-dollar free float regime reduces incentives for policy coordination. As shown by Figure 4, the comparison between the US federal funds rate and the euro area EONIA interbank rate, which is closely linked to ECB main refinancing rate, signals substantial independence, in particular during the Fed's attempt at tapering during 2019. Nonetheless, euro area policymakers may well take into account the spillovers coming from the US fiscal packages. If most of the positive spillovers will materialise as a boost to exports, these will mostly be felt at the level of single countries. With the usual asymmetric effects that characterise the euro area, Germany, the Netherlands and to some extent Italy and France will probably benefit more than others (see also Section 5). As far as the euro area's overall macroeconomic outlook is concerned, positive US demand spillovers will have to be taken into account in order to calibrate the monetary-fiscal policy mix created by the ECB accommodative measures, the fiscal impulse coming from centralised programmes such as NextGenerationEU, and the supportive fiscal measures carried on by national governments.

How does inflation enter the picture? According to today's mainstream macroeconomics, the necessity and effectiveness of fiscal stimuli is predicated on the assumption of sticky wage-price responses, large and persistent output gaps and slack in the labour marker, strongly accommodative monetary policy with interest rates close to zero or negative. These conditions, also known as "divine coincidence" after Blanchard and Galì (2007), have been prevailing over the last decade in advanced economies (Lane, 2020; Schnabel, 2020). They imply that inflation is either **unproblematic** or is a problem for **being too low** (below the central bank's target and expected to remain low or to be falling in the future). It is worth recalling that in this picture the problem of too low inflation is that the real interest rate relevant for private expenditure is too high, keeping the economy in its depressed state. With the policy rate at the zero lower bound, conventional monetary policy becomes impotent. Then the central bank can move to unconventional monetary policies, among which "forward guidance" is meant to predetermine a future path of **rising inflation** and **low real interest rate** to stimulate private expenditure. At the same time, the fiscal stimulus is necessary as an additional boost to aggregate demand, and if expectations of future inflation rise, this is a welcome additional means to lowering the real interest rate.[17]

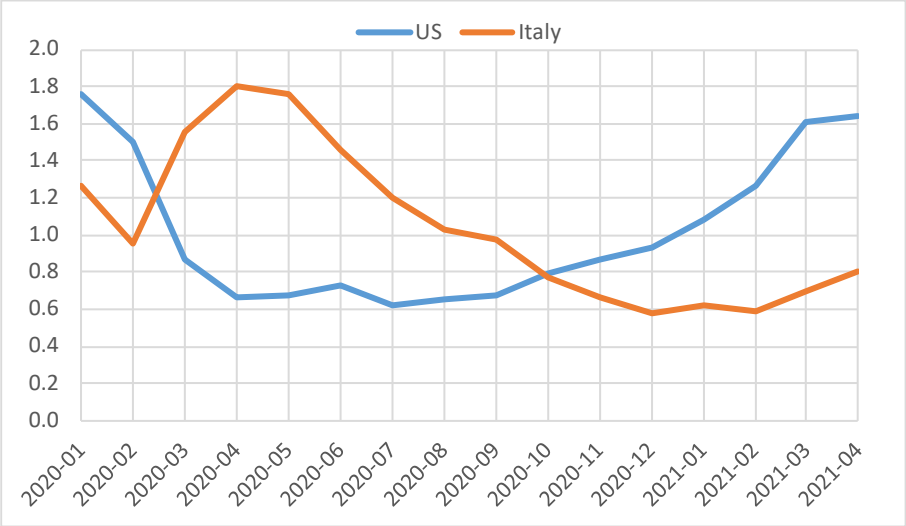
Recent events warn that **inflation expectations**, more than actual or "fundamental inflation", i.e. due to structural factors, may challenge this view and create unwanted effects. As discussed in Sections 3 and 5, some recovery scenarios anticipate an acceleration of inflation due to the interaction between boosts to aggregate demand, abundant liquidity, and bottlenecks on the supply side. On the one hand, acceleration of inflation precisely fits the policy strategy designed above – to the extent that it is conducive to closing depressive output gaps, **not to stagnation**. On the other hand, the recent spike in the yields of US Treasury bonds (see Figure 5) warns that an unexpected conflict may arise between that policy strategy and the reaction of financial markets. A possible explanation is that financial markets anticipate, and hedge against, a **"Volcker disinflation" scenario**, that is to say a reaction of the central bank to the inflation acceleration with a spike in interest rates (see also Bonatti et al. 2020).[18]

[17] Though quite different in nature, this mechanism is akin to that found by Faccini et al. (2016) associated with the spending reversal hypothesis.

[18] The "Volcker disinflation" owes its name to the anti-inflationary shock therapy that the newly appointed Chair of the Federal Reserve Paul Volcker enacted from the fourth quarter of 1979. The Federal funds rate was brought from 10% to 17.5% by April 1980. After some softening in the third quarter of the year, the Fed rate was progressively raised again to remain at an average level of 17% throughout 1981. By the end of year, the quarterly rate of inflation had fallen to 0.2% from the peak of 1.2% in the Summer of 1979. Over the same time span, however, the economy recorded two recessions (in the first semester of 1980, and from the second quarter of 1981 to the second quarter of 1982), unemployment rose from 6% to 11%, and the Standard & Poor's stock market index lost some 20%. As is often

This hypothesis is not in contrast, actually it is consistent, with the evidence of the appetite of financial markets for open-ended supportive policies, and it is also consistent with the advent of "financial dominance", as mentioned above. There are two consequences of this scenario. The first is that real interest rates increase, which may hinder the recovery. The second is that financial debtors, sovereigns in the first place, start suffering. Hence the US may turn from being a pole of global recovery to being a pole of global instability.

Figure 5: Yields on ten-year US Treasury bonds and Italian BTP 2020-2021:04 (monthly observations)



Source: FRED online database, ECB *Interest Rate Statistics.*

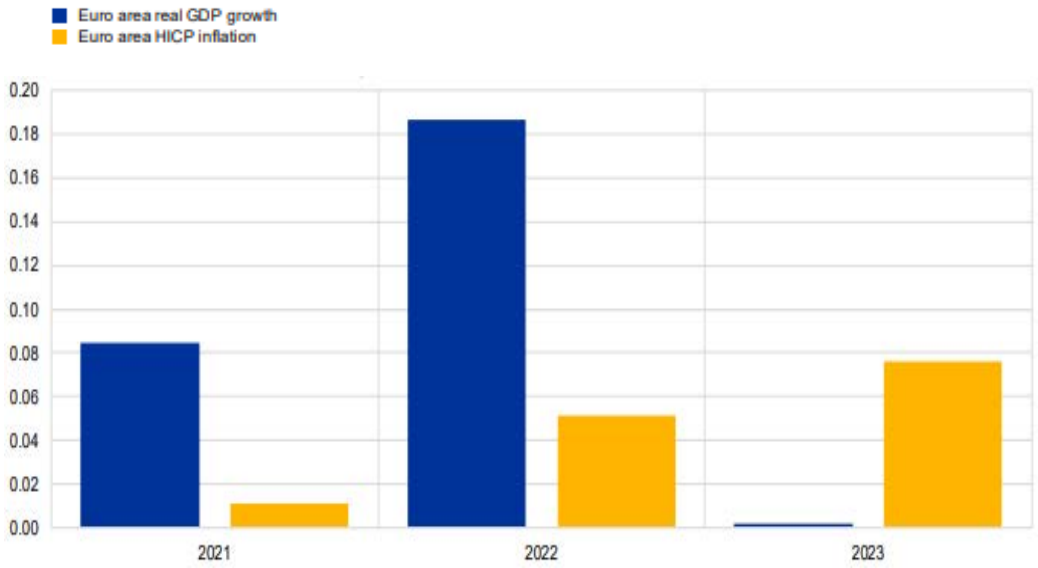
The comparison in Figure 5 between the yields on ten-year US Treasuries and on the Italian BTP, representative of high-debt vulnerable countries in the euro area, presents no evidence of contagion so far. Quite the contrary, while in 2020 the yield on US Treasuries begun to rise, the Italian BTP enjoyed the effects of the pandemic emergency packages of the ECB. Nonetheless, the chances of an inflation acceleration triggering a Volcker disinflation scenario – whether enacted by the central banks or precipitated by the financial markets – remain particularly worrisome for the euro area owing to the high level of some sovereign debts and the ensuing conflicting objectives with the ECB and among governments.

the case with financial market sentiments, it is unclear whether they anticipate what would happen anyway or they materialise what they fear.

5. TRANSATLANTIC SPILLOVERS AND THE ECB

According to the ECB staff macroeconomic projections for the euro area (ECB, 2021), the spillovers to the euro area of the USD 1.9 trillion American Rescue Plan can be "notable" (see Figure 6): the increase in euro area GDP relative to the baseline scenario (which—to a certain extent—already incorporate the improvement of the global growth outlook due to this package) is estimated to be about 0.3% over the period 2021-2023 (with a peak of nearly 0.2% in 2022), while the cumulative impact on Harmonised Index of Consumer Prices (HICP) inflation is estimated to be 0.15% over the same period.

Figure 6: Estimated impact of the USD 1.9 trillion American Rescue Plan on euro area real GDP growth and inflation (in percentage points)



Notes: Euro area simulations conducted with intra-euro area trade spillovers evaluate the impact of the changes to euro area foreign demand, competitors' prices in domestic currencies, stock prices and a risk premium entering the credit spreads. Fiscal and monetary policies in the euro area are kept exogenous. US monetary policy in 2021 and 2022, nominal short and long-term interest rates, nominal exchange rates and oil prices are assumed to remain unchanged. euro area effects are computed using the ECB's New Multi-Country Model, in which expectation formation is backward-looking with learning.

Source: ECB.

One should expect that the positive effect of the increase in US imports brought about by the Biden fiscal stimulus on the GDP of each euro area country is greater for the countries with a larger exposure to US demand. As a matter of fact, trade figures show that the US market is relatively more important for countries such as Ireland, Belgium, Germany and the Netherlands than for Spain, Greece, Cyprus or Malta, with France and Italy in the middle (see Figure 7).[19]

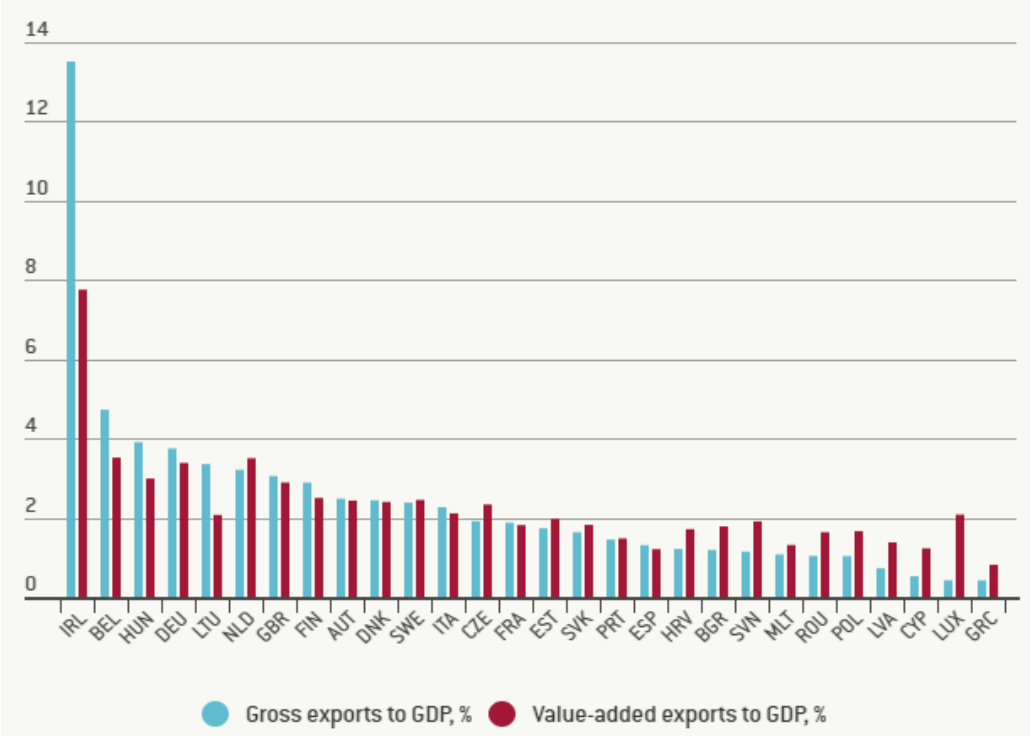
Although the American Rescue Plan is likely to give a small but positive boost to the GDP of the euro area in the current year, it widens the growth differential expected for 2021 between the latter and the US. The OECD, for instance, predicts that this year annual GDP growth will be 6.5% in the US, compared to a mere 3.9% for the euro area,[20] in spite of the fact that in 2020 GDP fell by 6.6% in the euro area and

[19] This is consistent with the findings of Hanisch (2019), who shows that the effects of a shock coming from the US that operates via the trade channel are distributed unevenly within the euro area, with Germany that is affected the most.

[20] The IMF reckons that in 2021 GDP growth in the US will be 6.4%, compared to 4.4% in the euro area.

by 3.5% in the US. In contrast, projected GDP growth rates for 2022 are approximately the same in the euro area and in the US. Given these figures, one may wonder to what extent the slower rebound that seems to characterise the European economies is attributable to structural factors rather than to macroeconomic policies. Notice that the same question arose when Europe emerged much more slowly than the US from the 2008-09 GFC. Even if this time an additional factor is at play, namely the delays with vaccine rollouts across continental Europe that are making the reopening of the economy slower in the EU than in the US, some have argued that the relative lack of dynamism and dampened reactivity that Europe typically displays in the aftermath of a crisis is the manifestation of a social contract that implicitly gives priority to secure existing jobs and businesses rather than allowing new ones to emerge.

Figure 7: Countries' exposure to US demand (gross bilateral exports to GDP and value-added exports to GDP in percentage points)



Source: Chiacchio and Efstathiou (2018).

If the recovery in the euro area is lagging behind that of the US, also the inflation rate has not increased in the euro area as fast as in the US (in April 2021, euro area annual inflation was at 1.6% against 4.2% in the US). In March 2021, ECB staff macroeconomic projections for the euro area foresee annual inflation at 1.5% in 2021, 1.2% in 2022 and 1.4% in 2023. ECB's chief economist Philip Lane said recently that "*to generate persistent inflation you need a strong labour market*" (Lane, 2021). Actually, the euro area unemployment rate rose to 8.1% in March 2021, but with millions of people who have dropped out of the workforce, and millions more who are on state-subsidised furlough schemes.

However, one should not underestimate two important phenomena that can be particularly relevant for Europe. The first concerns the duration of public support for workers and businesses. The severity of the crisis has prompted national governments to adopt and preserve wide-ranging support policies that can only be removed very slowly and gradually. This is possible because of the willingness of the central bank to sustain the credit market, the banking system and to provide abundant liquidity,

making public debt less expensive. The second issue concerns the sectoral and regional nature of the crisis and the recovery. Indeed, the mismatches of skills required from and possessed by workers employed in different sectors, the wide regional disparities in income and employment opportunities, the low territorial mobility of people in Europe can make the labour market at the same time depressed and overheated: depressed due to low labour market participation and "subsidised" underemployment, overheated due to the increase in the demand for skilled labour in the sectors and in the areas that are rapidly recovering. Added to this, it is the expanding public sector that is benefiting from the measures contained in the various recovery programmes.

In this context, it cannot be ruled out that once the COVID-19 emergency is over, with prices of many goods and services pushed upwards by higher logistics costs, health safety measures, and increases in the prices of energy, raw materials and semi-finished products, a second round may follow. Substantial wage increases might be obtained by those groups of workers (such as public employees) that enjoy bargaining power and political protection. And this while at the same time other sectors and workers are suffering, with governments that will try to subsidise them indefinitely, whether or not they have some real chance of recovery. If this scenario were to materialise in some euro area countries, the inflationary flare-up that will accompany the post-COVID recovery could turn into stagflation in such countries. This is a situation in which a stagnant or anaemic economy coexists with an inflation rate persistently and not marginally higher than the one we have become accustomed to in recent years.

In this scenario, which is exactly what the Recovery and Resilience Facility is supposed to avert, it would be increasingly difficult for the ECB to reconcile the different interests and preferences of the euro area Member States with regard to its policy. In such a scenario, indeed, a financial shock such as an inflationary surprise in the US inducing the Fed to rapidly raise its policy rates (which is not at all—as we have seen—a zero-probability event) would be highly asymmetric for the euro area, with the high public debt/low growth countries that would be very exposed to the risk of a sharp increase in interest rates and some other countries that would strongly prefer to not import inflation from the United States. Even if the inflation surprise had not its origin in the US, but in Europe, the risk of a sovereign debt crisis in some euro area countries and the presence of entrenched differences in the national attitudes towards inflation would probably make the choices of the ECB more problematic than those faced by the Fed should the inflation rate exceed its target level.

These considerations may suggest to the ECB, at minimum, to re-interpret its mandate in the forthcoming strategy review, so as to loosen the self-imposed constraint that obliges it to stick the inflation rate (over the medium term) to be below, but close to, 2% target.

6. CONCLUSION

In this paper we offered a review of the current debate on the consequences of US fiscal and monetary policies on the euro area. To start, we have addressed the implications of the gigantic stimuli promoted by the US Administration and their implications on the US and the world economy. Afterwards, we discussed to what extent these may make of the US a pole of global recovery, or else they might ignite permanently higher inflation exported from the US to the rest of the world.

Moving from these scenarios, we have illustrated what the literature has revealed as to the channels through which fiscal and monetary shocks in the US may impact on the euro area. There are three main observations to take away. First, at the crossroad between global economic recovery and global overheating, euro area policymakers cannot ignore what their counterparties are doing, even though they are not constrained in their choices by external conditions as it would be the case in presence of a fixed exchange rate regime. Second, real, monetary and financial channels are all at work and contribute to determine the intensity and sign of the spillovers. Yet spillovers are time- and state-contingent: this increases uncertainty regarding their actual magnitude and it also leads to fairly differentiated effects across countries within the euro area. Third, the financial channel stands out among the various mechanism as it connects, through changes in financial prices and capital flows, fundamentals and expectations across the Atlantic. We highlighted that at the present juncture a key role is going to be played by global financial markets' appetite for open-ended stimulative policies, and fears of hard disinflation scenarios, affecting central banks' ability to keep economies on the recovery path and inflation expectations anchored.

Transatlantic spillovers will be challenging for the ECB. Due to the delayed and more moderate rate at which the euro area is bouncing back from the crisis, the ECB will find itself to follow the US lead. Should US interest rates grow, either because the authorities will increase the policy interest rates to contain inflation or because financial markets expect inflation to raise in the medium term, the ECB will be forced to choose between choking the recovery or preserving/increasing its accommodative stance. Quantitative easing, in particular, may turn out to be necessary again. Not to redress deflationary pressures (as it did in the early 2010s), nor to address non-fundamental problems in the transmission of the monetary stimuli across jurisdictions and markets (as it did during the pandemic period), but rather to prevent that excessive inflationary expectations may slow down the recovery and jeopardise debt sustainability. Such an accommodative stance cannot be open-ended, and will be politically and economically sustainable only to the extent that inflation will not exceed the acceptable target for too long. As usual, the highly asymmetric and heterogeneous developments and conditions within the euro area will play a decisive role. These considerations led us to conclude that a too rigid and binding inflation target should be avoided in the forthcoming review of monetary policy strategy.

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Could the Euro Area Benefit From the US Stimulus Packages?

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Abstract

The recent US fiscal packages have raised some concerns on their magnitude, but also their spillovers to the euro area economy. After discussing US fiscal measures and reviewing the literature on international spillovers, we show that the US policy mix may have rather positive macroeconomic effects on the euro area. We conclude though that these effects need to be balanced against growing financial risks.

This paper was provided by the Policy Department for Economic, Scientific and Quality of Life Policies at the request of the committee on Economic and Monetary Affairs (ECON) ahead of the Monetary Dialogue with the ECB President on 21 June 2021.

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LIST OF ABBREVIATIONS

ARPA	American Rescue Plan Act
BLS	Bureau of Labor Statistics
CARES	Coronavirus Aid, Relief, and Economic Security Act
DSGE	Dynamic stochastic general equilibrium
ECB	European Central Bank
EP	European Parliament
EU	European Union
FOMC	Federal Open Market Committee
GDP	Gross domestic product
MBS	Mortgage-backed securities
NAWN	New Area-Wide Model
OECD	Organisation for Economic Co-operation and Development
PCE	Personnal consumption expenditures
QE	Quantitative easing
SME	Small and medium-sized enterprise
US	United States
VAR	Vector autoregression
ZLB	Zero lower bound

EXECUTIVE SUMMARY

- **The pandemic has led governments and central banks to implement expansionary fiscal and monetary policies all over the world and quite substantially so in the United States (US).** One would expect some international spillover effects from the US policies in the euro area.
- **Expansionary monetary policy is generally viewed as a beggar-thy-neighbour policy since a cut in the US interest rate is expected to lead to a depreciation of the US dollar**. However, the literature shows that the exchange rate channel may be dominated by a financial channel and by the increase of demand stemming from the US economy, both generating positive spillovers.
- **International spillovers from fiscal policy are expected to be positive as well**. However, their magnitude will depend on the exchange rate reaction.
- **In this paper, simulations from a large-scale macroeconomic model and the empirical analysis confirm the positive effects of an expansionary monetary policy in the US on the euro area GDP.** However, there is uncertainty concerning the timing and the length of these positive spillovers.
- **As for fiscal policy, empirical evidence suggests positive spillovers from the US measures implemented since the outbreak of the COVID-19 crisis**, at least in the short term (over the first two years). Considering the size of the fiscal impulse, these spillovers are not negligible.
- **The global spillover effects of US macroeconomic policies are consequently expected to be positive**. There is more uncertainty beyond 2022.
- **However, one should keep in mind that the euro area will first benefit from its own policy mix.** Consequently, it should not only rely on US policies to consolidate and accelerate the recovery. The contrasted fiscal impulses in 2020 and 2021 between the US and the euro already point to a **risk of growing divergence between the two regions**.
- **We also discuss briefly that the main spillover effects from the US may not stem from macroeconomic policies but from financial risks**. Asset prices have sharply increased in 2020 raising concerns about a risk of a financial bubble, at least in the US. This risk may have a profound impact on the euro area at the mid- to long-term horizon.

1. INTRODUCTION

The pandemic has led governments and central banks all over the world to implement expansionary fiscal and monetary policies. This unprecedented shock called for strong policy responses whatever their cost. This has been the case, quite substantially, in the United States (US). The fiscal response to the crisis has been further strengthened soon after Joe Biden was appointed President. There was consensus on the need for a new package of measures, but its magnitude has sparked a debate and renewed the fear of a return of inflation. Beyond the effect of these policy decisions on the US economy, one may also expect some international spillover effects on the euro area, not only because of the size of the US economy but also because of the sizable cumulative fiscal impulse, which amounts to almost 10 percentage points of the potential GDP.

Expansionary monetary policy is generally viewed as a beggar-thy-neighbour policy since a cut in the US interest rate is expected to lead to a depreciation of the US dollar, i.e. an appreciation of local currencies, e.g. the euro. However, when the shock stems from a large country like the US, there is more uncertainty since the exchange rate channel may be dominated by a financial channel – positive capital flows towards the US reduce financing conditions elsewhere – and by the increase of demand stemming from the US economy. Turning to fiscal policy, international spillovers are expected to be positive according to a standard textbook model. However, their magnitude will depend on the exchange rate regime and on the exchange rate reaction. A few puzzles have emerged from the empirical literature where fiscal stimuli have been shown to produce a currency depreciation, and not an appreciation.

In this paper, simulations from a large-scale macroeconomic model and the empirical analysis confirm the positive effects of an expansionary monetary policy in the US on the euro area GDP. There is, however, uncertainty concerning the timing and the length of these positive spillovers. They would last almost 4 years according to model's simulations while empirical evidence suggests a short-term positive effect or a delayed positive effect. Regarding fiscal policy, while the effects are ambiguous according to the theoretical literature and model's simulations, empirical evidence suggests positive spillovers from the US measures implemented since the outbreak of the COVID-19 crisis, at least in the short term (over the first two years). Considering the size of the fiscal impulse, these spillovers are not negligible.

The global spillover effects of US macroeconomic policies are consequently expected to be positive. There is more uncertainty beyond 2022. Besides, we should keep in mind that the euro area will first benefit from its own policy mix. Consequently, it should not rely on US policies and should consider additional stimulus, notably fiscal, to consolidate and accelerate the recovery and avoid a risk of growing divergence with the US.

However, we also discuss briefly that the main spillover effects from the US may not stem from macroeconomic policies but from financial risks. Asset prices have sharply increased in 2020 pointing to the risk of financial bubbles at least in the US. It is therefore key to the optimal policy management of the euro area to keep in mind that the positive macroeconomic spillovers are also potentially accompanied by higher financial risks. While we focus more on the former in this document, the latter may have a profound impact on the euro area at the mid- to long-term horizon.

2. THE US MACROECONOMIC POLICY RESPONSE TO THE COVID-19

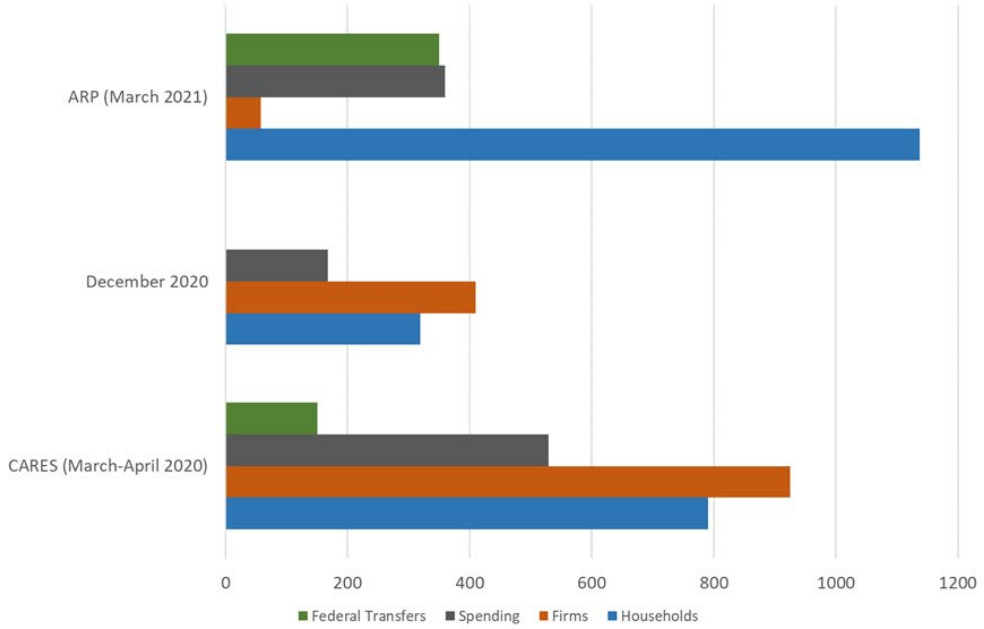
From the very beginning of the pandemic, the Trump Administration took various emergency measures. The bulk of those measures were enacted in the Coronavirus Aid, Relief, and Economic Security (CARES) Act voted and signed into law on 27 March 2020 and completed with additional measures in April.[1] The total amount of those measures reached USD 2.4 trillion, or 11% of GDP, and aimed to provide a rapid economic stimulus to help firms, households and communities to deal with the pandemic and related economic shock. A significant share of those measures benefited US firms (Figure 1) notably through the Paycheck Protection Program, which consisted in USD 700 billion loans to small and medium-sized enterprises (SMEs) to be used to cover production costs for a period of 8 weeks. Subject to the maintenance of the wage bill, these loans can turn into subsidies. Other tax credit and loan deferral measures complement this measure for total aid to businesses reaching USD 925 billion. Measures for households amounted to nearly USD 800 billion, including a direct transfer of USD 1,200 per adult, and USD 500 per child under 17, for anyone with an annual income below USD 75,000. The amount of the tax credit then decreases and becomes zero for an individual income of USD 99,000. The federal government also paid an additional flat-rate allowance of USD 600 per week to anyone eligible for unemployment over the period from 27 March to 26 July 2020. Public spending and transfers to states have also increased. In a federal state, part of the effects of the crisis actually weigh on the state budget since tax revenues are reduced and expenditure requirements are increased. To the extent that states' debt capacity is limited by their own fiscal rules, federal transfers play an essential stabilising role.

As the pandemic situation had not come to an end, there was a need to implement additional support measures. It was done in December 2020, after long weeks of negotiations between Republicans and Democrats. The Congress struck a deal on a USD 900 billion plan, which was viewed as a provision on measures to be taken after Joe Biden would take his position. Soon after, he proposed a new plan (the American Rescue Plan Act, ARPA) to the Congress, which then was passed in March 2021. Contrary to the CARES Act, this time it was households that benefited from the bulk of measures. They notably received a new check of USD 2,000 per adult plus USD 2,000 per dependent child, with conditions related to the level of income.[2] Unemployment benefit of USD 300 per week was also being extended and is expected to support the income of people losing their jobs until the summer. Accounting for other measures - sick leave, food and housing assistance, other tax cuts - households would receive USD 1,375 billion (6.4% of GDP) in 2021. The Biden plan also includes increasing federal transfers (USD 350 billion) and funding new health care - screening and vaccination campaign - and education. The cumulative amount of the new measures voted in December 2020 and March 2021 then amounts to USD 2.8 billion (10.3% of GDP).

[1] Actually, the first measures were passed on 5 March and 18 March with the Families First Coronavirus Response Act. These measures amounted to USD 27 billion - far less than the USD 2.2 trillion passed with the CARES Act.

[2] This amount includes the USD 600 checks voted by the Congress in December 2020 (Tax Relief Act of 2020).

Figure 1: Allocation of fiscal measures, USD billion



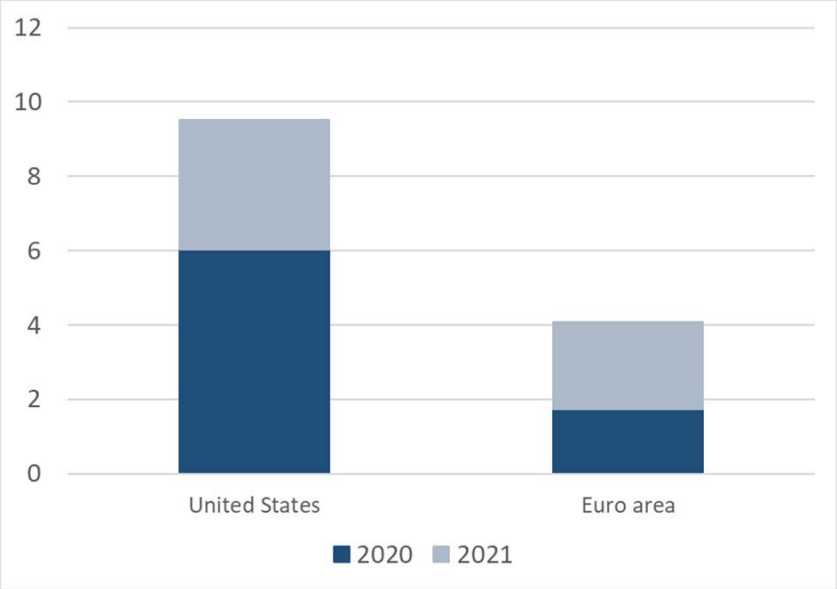
Sources: Congressional Budget Office, White House and authors' calculations.

If we account for all the measures that have been voted for since March 2020, the cumulative fiscal impulse in the US amounts to almost 10% of the potential GDP according to the Organisation for Economic Co-operation and Development (OECD), much more than the cumulated fiscal measures implemented in the euro area (Figure 2)[3]. Beyond the magnitude of the fiscal impulse, its decomposition may also matter for assessing the effect on the US economy as well as the spillover effects to the euro area. The effect of these measures on the US activity will depend on the size of the multipliers and the current output gap. Empirical literature generally suggests that fiscal multipliers are different according to the instrument of fiscal policy (public spending, transfers, taxes or public investment). The reduction of mobility and the measures taken to foster social distancing have constrained spending and certainly disrupted the effectiveness of measures that have already been taken. It is likely that some of the measures taken under the Donald Trump Administration have already benefited the economy, but the main impact would materialise in 2021. In that context, even if there was consensus on the need for a new stimulus, its magnitude has opened a new wave of debates because the stimulus occurs during the recovery process and while the economy is still benefiting from the support measures voted in 2020. Some economists like Olivier Blanchard and Lawrence Summers have indeed expressed their concerns: is Biden's stimulus package likely to overheat and fuel the return of inflation?[4] The issue of inflation is surely important for the US. It may also influence the spillover effect to the euro area.

[3] The fiscal impulse is different from the sum of the measures voted in the stimulus packages. It corresponds to new spending, tax or transfer measures for a given year. Thus, a measure voted in one year (t) and carried out identically in the next (t + 1) only creates an additional budgetary stimulus in the year (t) and is therefore not counted as an impulse in (t + 1). The yearly fiscal impulse may be calculated by taking the change in the cyclically-adjusted primary balance.

[4] See Summers, L. H. (2021). "The Biden stimulus is admirably ambitious. But it brings some big risks, too", Opinion, The Washington Post, 4 February and Blanchard, O. (2021). "In defense of concerns over the $1.9 trillion relief plan". Peterson Institute for International Economics Realtime Economic Issues Watch, 18.

Figure 2: Fiscal impulse in the United States and the euro area, in % of potential GDP



Source: OECD Economic Outlook n°199.

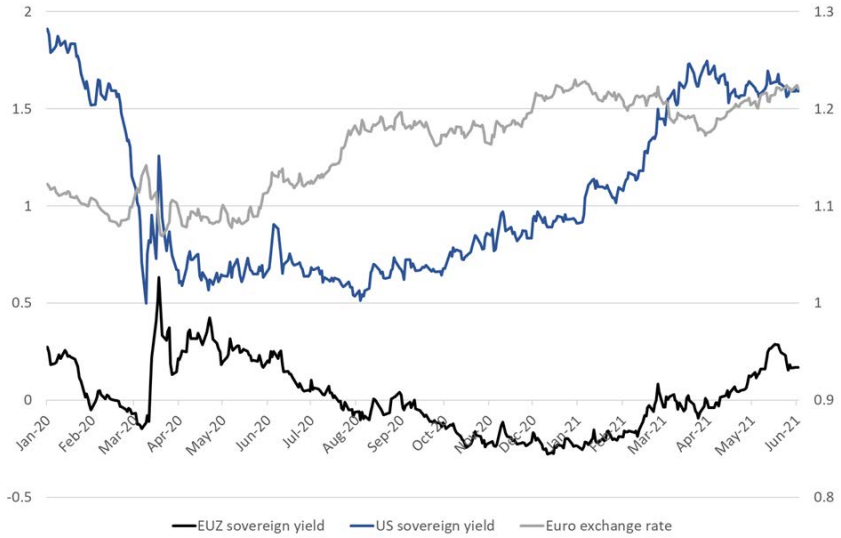
Besides, soon after the ARPA was enacted, Joe Biden has made two fiscal proposals that may also induce additional fiscal impulse to the US. He notably aims to stimulate public investment through a USD 2.7 trillion plan (American Jobs Plan) over 8 years, which would represent 1.6% of GDP per year. The precise stimulus that would be triggered by this package would not be that high as the investment plan would be partly offset by a rise in the corporate tax rate and by raising the tax rate on foreign profits. In addition to the American Jobs Plan, Joe Biden also proposed the American Families Plan which would increase spending for paid parental, family and personal illness leaves, invest to create free preschool for all three-and four-year-olds, provide tax credits to lower insurance premiums and promote a childcare reform. Here again, spending would be partly offset by an increase in the income tax rate for high incomes. Besides, it may be noted that those proposals will be discussed by the Congress, which may bring some changes in the size of the plans and their funding. Yet, all those plans, voted or expected to be voted, signal that fiscal policy will be strongly expansionary in 2021. For 2022 and after, there is more uncertainty depending on the future debates in the Congress but also on the end of measures enacted in the CARES Act or ARPA.

Regarding monetary policy, central banks have rapidly reacted by loosening the stance of monetary policy since the outbreak of the crisis. The Federal Reserve has lowered the federal funds rate target range to 0-0.25%. Then, it has reactivated unconventional measures, and notably quantitative easing (QE). The Federal Reserve resumed asset purchases of Treasuries and mortgage-backed securities (MBS). This has resulted in a significant rise of the Federal Reserve's balance sheet. The ECB has also resorted to a package of unconventional measures to amplify the loosening of monetary stance in the euro area.[5] It has also resulted in an increase of the Eurosystem's balance sheet, which is comparable to the one observed for the Federal Reserve. It may therefore be argued that, compared to fiscal policy, there is no strong difference in the monetary policy stance in the euro area and in the US even if the long-term sovereign yields remain lower in the euro area (Figure 3). The difference in the level of

[5] The policy rate was already at the effective lower bound.

sovereign yields may not only reflect the transmission of monetary policy but also inflation and growth expectations. Besides, the euro has appreciated against the dollar after June 2020.

Figure 3: Sovereign yields and exchange rate, in %, EUR 1=USD...



Source: Datastream Eikon.

The potential surge of inflation in the US caused by fiscal policy would surely be a concern for the Federal Reserve. We would consequently expect an increase in the interest rate and the exit from unconventional measures if those inflation pressures materialised. According to the minutes of the April 2021 meeting, Federal Open Market Committee (FOMC) members considered that this risk was limited. This is also consistent with the forecasts of the FOMC members released in March. The median inflation forecast stood indeed at 2.4% for 2021, but would return to 2% in 2022. The next meeting, scheduled for 16 June, will show whether FOMC members have changed their view after the publication of the inflation figure for April, which indicates a rapid increase of inflation over a couple of months.[6] Based on recent estimates, Ball et al. (2021) expect inflation to remain close to 3% by 2023 even if the unemployment rate hit an all-time low of 1.5%. Their calculations therefore plea for not overestimating the inflationary risk even if the Biden plan is successful. In such a scenario, the Federal Reserve might not tighten monetary policy. According to its latest review of monetary policy strategy, the FOMC would now tolerate inflation moderately above 2% for some time as long as inflation has been running persistently below 2% in previous years, which is actually the case.[7] Despite uncertainty, risk of inflation is higher in the US than in the euro area and consequently, there is a higher probability that monetary policy stance would be less expansionary in 2021-2022 in the US than in the euro area.

[6] According to the Bureau of Labor Statistics, inflation, measured by the yearly change of the personal consumption expenditures (PCE) index, jumped to 3.6% whereas it was 1.2% in December 2020.

[7] This strategy is called average inflation targeting. The objective is now clearly to reach a 2% inflation rate on average over time. Consequently, if the inflation average is 1.3% for 2 years, as was the case in 2019-2020, the Federal Reserve would theoretically tolerate a 2.7% inflation in average in 2021 and 2022.

3. MACROECONOMIC SPILLOVERS TO THE EURO AREA

3.1. A literature review on the transmission channels of policy spillovers

3.1.1. Monetary spillovers

In standard international economics textbooks, an expansionary monetary policy in the US reduces the US interest rate and, with flexible exchange rates, leads to a depreciation of the US dollar. It is the so-called beggar-thy-neighbour effect of expansionary policy according to which a monetary policy in one country is detrimental to the other countries. However, when the shock stems from a large country like the US, the negative effect through a loss of competitiveness can be offset by the positive demand shock and by a reduction in the world interest rate as highlighted by Kim (2001).

In a recent contribution, Degasperi et al. (2020) have shown that US monetary policy has important spillover effects to a group of 30 countries. A restrictive monetary policy produces a decline in foreign output despite the appreciation of the US dollar[8]. Degasperi et al. (2020) report a stronger financial channel, via higher yields and funding costs of banks in the foreign economies, than the real (via industrial output) and nominal (via the exchange rate) channels that may have mitigated each other. They also highlight an oil price channel that emerges from the lower international demand for oil after the US monetary shock that transmits to lower headline inflation. They finally show that the choice of a flexible exchange rate regime does not help isolate the foreign economies from US monetary shocks. Their results are pretty much consistent with the international dilemma put forth by Rey (2013) according to whom monetary policy can be autonomous if and only if there are some controls or regulations on financial flows. Under Robert Mundell's former trilemma, monetary autonomy and full capital mobility were possible under a flexible exchange rate regime.

These findings are consistent with Dedola et al. (2017) who shed light on local vs international currency pricing and their impact on the sign of spillover effects. If exporters set their price in US dollars, they do not benefit from the exchange rate depreciation while higher import prices increase inflation and bring the central bank to tighten monetary policy. In this case, the spillover of the foreign monetary policy on the local economy is negative.

Ca' Zorzi et al. (2020) report monetary spillovers between the US and the euro area that would also work mainly via a financial channel. They also show an asymmetry between the two regions/countries: while Fed policies impact significantly on the euro area, ECB policies do not affect the US economy or to a much lower extent. They conclude that there is limited scope for monetary coordination between US and euro area economies, except after large shocks that require substantial monetary reactions.

In the literature on spillovers, there is growing importance attributed to global value chains in spreading the international spillovers of either monetary policy (see Di Giovanni and Hale, 2021) or fiscal policy (see Devereux et al., 2020). In both cases, it appears that spillovers are amplified by the introduction of these global value chains in the modelling methodology. According to Di Giovanni and Hale (2021), 70% of the total impact of US monetary policy shocks on foreign stock returns are due to the network effect of global production linkages.

[8] The impact of a monetary policy shock on the exchange rate remains a widely debated issue where predictions from models are not easy to reconcile with event studies (see Gürkaynak et al., 2021).

3.1.2. Fiscal spillovers

The impact of fiscal policy in the open economy can be related to the canonical Mundell-Fleming-Dornbusch macroeconomic framework. According to this framework, the size of international fiscal spillovers depends on the exchange rate regime between the country that implements a fiscal stimulus and the rest of the world. In both cases though, the spillovers are expected to be positive. Under a fixed regime, the fiscal stimulus would spark an accommodative monetary policy that would raise the domestic fiscal multiplier (the impact of a change in public spending on the change of output) while inducing a rise in domestic demand for foreign goods. Under a flexible regime, a fiscal stimulus would produce a currency appreciation (absent from the former case) that would ultimately crowd out net exports. Whether the spillovers are larger in one of the two regimes depend on the price and volume effects of fiscal policy. In the first regime, there is no price effect and the volume effect is quite large (large multiplier effect) whereas in the second regime, the price effect works in addition to the volume effect but there, the multiplier effect is expected to be smaller than under the first regime. To validate these arguments, one can refer to Ilzetzki et al. (2013) who show that domestic fiscal multipliers were larger under fixed exchange rates than under flexible exchange rates and were larger the less open the economy was (hence lower the foreign leakage of the domestic stimulus). They also report (real) appreciation on impact after a fiscal shock under a flexible exchange rate regime. All in all, one should therefore expect positive spillovers from expansionary fiscal policy implemented in a large country like the US.

Quite recently though, a few puzzles have emerged from the literature about fiscal spillovers. First, the trade linkages that are at the heart of fiscal spillovers are more complex than initially envisioned in the canonical open economy model and may be either positive or negative. Second, fiscal stimuli have been shown to produce a currency depreciation, and not an appreciation. Third, and in accordance with the previous point and with the recent literature on monetary spillovers discussed above, the trade linkage has been shown to be of second-order to explain fiscal spillovers. For the sake of comprehensiveness, we report and discuss these arguments in the following. Then we turn to recent empirical investigations to help disentangle the different and opposing arguments on the theoretical size of fiscal spillovers. We conclude with a few simulations to disentangle the effects in the recent context.

Cacciatore and Traum (2021) show that "following an increase in government spending that raises world demand for domestic goods, trade linkages increase domestic multipliers provided that the positive wealth effect stemming from the favourable relative price movement more than offsets its negative substitution effect." They add that "larger domestic multipliers can coexist with a trade deficit". Their line of reasoning is the following: if prices of domestic goods increase relatively to imported goods, households are wealthier as they "give up fewer imports to consume one unit of the domestic good" and they may tend to consume more overall rather than simply substituting domestic for "cheaper" imported products. While the trade balance may well decline, the multiplier effect of the domestic policy would tend to increase. Differently stated, the exchange rate appreciation and the rise of the trade deficit are not the enemy of fiscal effectiveness. Cacciatore and Traum therefore show, in contrast with previous analyses, that policy effectiveness (the fiscal multiplier) rises with trade openness. What does it mean in terms of fiscal spillovers? Cacciatore and Traum argue that the trade linkages that will generate the spillovers will be larger the higher the relative import shares in the private sector vis-à-vis the public sector, for it is only in the private sector that the wealth effect may arise. Whatever may raise the price of domestic goods relatively to imported goods (e.g., a tax rise to fund higher public spending or when export invoicing is made in the currency where the fiscal stimulus occurs [international currency pricing]), it will produce positive fiscal spillovers. Then, fiscal policy effectiveness (the fiscal multiplier) and trade deficit (fiscal spillovers) go hand in hand.

The expected impact of a fiscal stimulus on the nominal and real exchange rate has been highly debated though. While the canonical modelling approach predicted an appreciation, some empirical results emerge that showed that fiscal expansions were followed by a depreciation (see Monacelli and Perotti, 2010; Ravn et al., 2012), therefore inducing smaller, if not negative, fiscal spillovers. However, and according to Auerbach and Gorodnichenko (2016), the former result disappears when one evaluates the impact of fiscal announcements on the economy. Auerbach and Gorodnichenko claim that ex post data on fiscal policy may not identify the precise timing of decisions. Drawing on ex ante fiscal data (fiscal announcements), they show that US fiscal policy is followed on impact by a dollar appreciation. Ferrara et al. (2020) use military narrative series constructed by Ramey (2011) to identify fiscal shocks in the US. They conclude in the same direction as Auerbach and Gordonichenko (2016): US fiscal policy produces a real exchange rate appreciation, hence positive fiscal spillovers.

Finally, Corsetti et al. (2010) and Corsetti and Müller (2013) show that fiscal spillovers emerge only after they introduce a reversal spending rule in their estimations. Without such a rule, they find negligible fiscal spillovers with only small changes in the trade balance. But once they introduce the expectation of spending cuts after a positive spending shock (their reversal spending rule), they find consistent results with the literature: fiscal policy is expansionary in the originating country and its spillovers are positive. They conclude that the financial channel of a fiscal shock, via a decline in long-term interest rates, is more important than the trade linkage to highlight fiscal spillovers (see also Faccini et al., 2016, and the literature on monetary spillovers).

3.2. Lessons from the empirical literature and from a macroeconomic model

In light of the various effects that fiscal policy may have abroad – trade linkages, terms of trade effects, real exchange rate effects, financial channels -, the existence of fiscal spillovers is most and foremost a matter of empirical evidence. Auerbach and Gorodnichenko (2013) draw empirically on trade linkages and show that fiscal spillovers are positive and significant across OECD countries when fiscal policy is most effective, hence during recessions, whereas fiscal spillovers tend to be negative or non-significant in upturns. Popescu and Shibata (2017) concentrate exclusively on US fiscal policies and show that pre-announced public spending shocks produce substantial fiscal spillovers *via* the US dollar appreciation and the trade balance deterioration. In a similar exercize, Blagrave et al. (2017) study the fiscal spillovers of fiscal policy in five countries (France, Germany, Japan, UK, US) on 55 advanced and emerging economies. They show that spillovers are substantial during recessions and when monetary policy is accommodative (see also Auerbach and Gorodnichenko, 2016). They also report higher spillovers between countries under a fixed exchange rate regime that they attribute to the higher trade integration that may accelerate the cross-effects. Finally, Cacciatore and Traum (2021) find positive spillovers between the US and Canada, and between the US and the euro area.

Regarding monetary spillovers, it is straightforward that in the current context both central banks implement an expansionary monetary policy. It is therefore difficult to disentangle the direct effects from a local monetary policy from the spillover effects from a foreign policy. Actually, during the pandemic, the policy rates have been set or remained at the zero lower bound (ZLB). The ECB and the Federal Reserve have resorted to large assets purchase programmes triggering a similar increase in the size of their balance sheets that makes the investigation of US monetary policy effect on the euro area economy certainly less sensitive than US fiscal policies.

Besides the empirical literature, we shed light on the impact of the US policy response to the COVID-19 pandemic in a comprehensive macroeconomic framework that will therefore include most of the transmission channels that we discussed earlier.

To conduct this analysis, we use the New Area Wide Model (NAWM) available on the Macromodel database, which is a dynamic stochastic general equilibrium (DSGE) model of euro area and US whose structure and calibration are based on Coenen et al. (2008). This model has been largely used to conduct forecasting and policy analysis and this justifies exploiting it to evaluate spillovers of a large fiscal stimulus in US on the euro area[9]. Given the calibration described in Coenen et al. (2008), we proceed to illustrate the dynamic response of main economic variables through a US monetary policy shock and two types of fiscal shocks (government spending and transfer shock) that embed the different features of the recent plans of the Biden Administration (see Section 2).

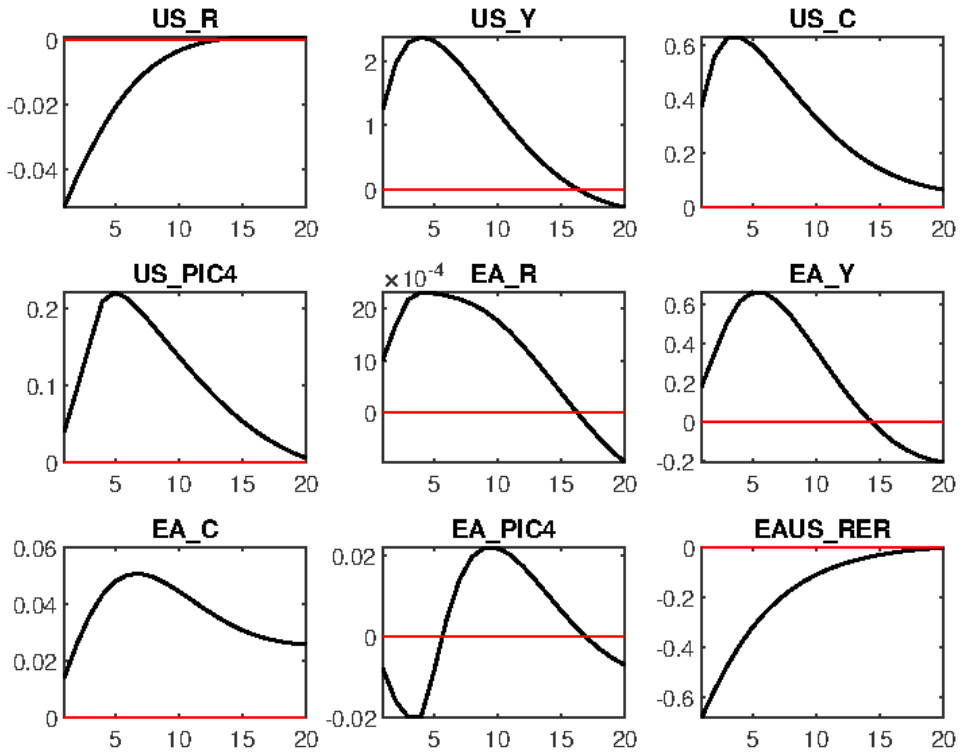
The monetary policy shock is an expansion and is interpreted as a 100-basis point *decrease* in the annualised nominal interest rate. The government spending and the transfer shocks are worth a 1% *increase* in steady state output respectively. All dynamic responses are reported in percentage deviation from the steady state, except for the interest rate and inflation which are reported in percentage point deviation.

3.2.1. Dynamic responses to a monetary policy shock in the US

Figure 4 below shows the quarterly response of the US and euro area economies to a monetary expansion in the US. Results for the US are as expected: there is a boost to demand, a depreciation of the US dollar (that produces an improvement in the US trade balance), and a rise in consumption inflation. All these dynamics give rise to positive spillovers to the euro area economy, despite the trade balance effect and the (small) rise in the interest rate to dampen inflation in the euro area. As a matter of fact, the euro area benefits from the sharp increase in US demand (volume effects) that leads to a positive effect on euro area GDP. These positive effects last almost 4 years.

[9] The model consists of two "countries": the euro area and the US. Each country contains four types of agents: households, firms, a fiscal authority, and a monetary authority. Two sets of households are differentiated, some liquidity-constrained and some with an ability to access financial markets and smooth their consumption on their entire life horizon. There are also two types of firms, some producing the tradable intermediate goods and some producing the non-tradable final goods. NAWM includes several nominal and real frictions such as sticky prices and wages, habit persistence in consumption and adjustment costs on investment. In the model, the fiscal authority stimulus works through public consumption or transfers and the monetary policy shock works on a standard Taylor-type interest rate rule.

Figure 4: Monetary policy expansion in the US: effects on the US and euro area



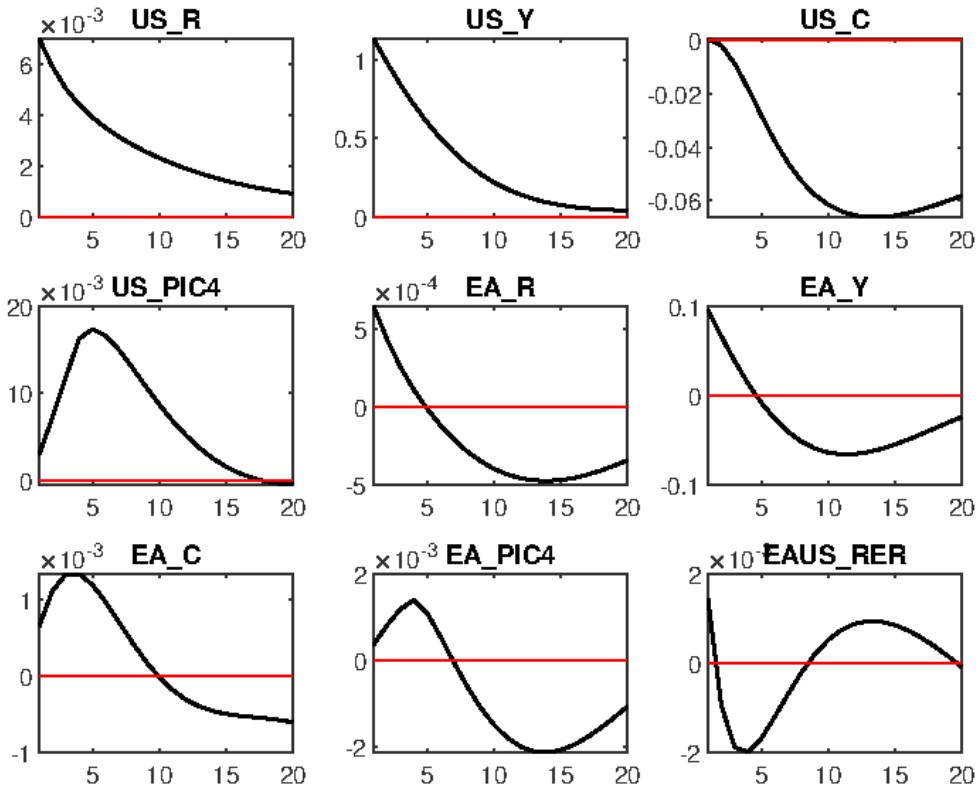
Notes: R: interest rate, Y: output; C: consumption; PIC4: consumer inflation; RER: real exchange rate. Vertical axis: responses reported in percentage (output, consumption, real exchange rate) or percentage point (interest rate, inflation) deviation from the steady state. Horizontal axis: number of quarters.

Source: Authors' simulations based on the New Area Wide Model (NAWM).

3.2.2. Dynamic responses to a government spending shock in the US

The same exercise is then conducted for a US public spending and fiscal transfer shock. NAWM model implies a weak crowding out effect following a government spending shock thanks notably to the presence of frictions and liquidity-constrained households (Figure 5). Beyond that, the open economy setting prevents private consumption from falling more sharply, because it allows households to borrow from abroad and therefore to smooth consumption more effectively. There is therefore a high multiplier of government spending which implies a high US GDP response. The increase in output leads to higher inflation and the monetary policy is tightening due to inflationary pressures. On the side of the trade balance, imports increase. This increase is accompanied by a drop in the terms of trade which induces a prolonged shift in expenditure from national goods to foreign goods. Thus, the negative effect generated by the government spending shock is offset by the positive wealth effect due to the improvement in the terms of trade.

Figure 5: Increase of public spending in the US: effects on US and euro area



Notes: R: interest rate, Y: output; C: consumption; PIC4: consumer inflation; RER: real exchange rate. Vertical axis: responses reported in percentage (output, consumption, real exchange rate) or percentage point (interest rate, inflation) deviation from the steady state. Horizontal axis: number of quarters.

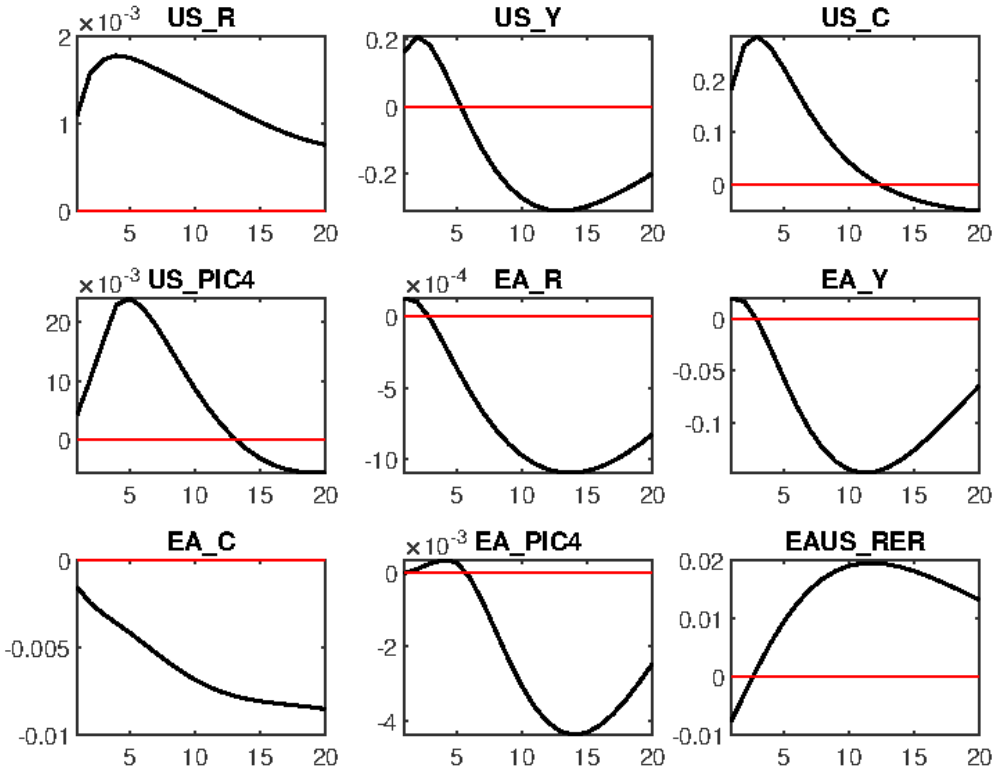
Source: Authors' simulations based on the New Area Wide Model (NAWM).

As for the euro area, it would immediately benefit (and up to a year) from the rise in US GDP through an increase in net exports. Prices adjust in response to increased aggregate demand, and monetary authorities in the euro area respond to inflationary pressures. Two effects can then occur to explain the drop in GDP in the euro zone after one year. First, the price effect makes exports less attractive and worsens the trade balance. Second, the rise in the interest rate in response to inflationary pressure reduces private investment. A longer lasting positive spillover from the US government spending shock on the euro area economy would require a more accommodative monetary policy by the ECB.

3.2.3. Dynamic responses to a transfer shock in the US

The model permits to separate public spending from transfers and to highlight the differentiated expected impacts on the euro area economy of the US fiscal stimuli. While we have just shown that a US boost to public spending in a general equilibrium framework would have positive (but short-lived) spillover effects to the euro area economy, a shock on US transfers would have almost none (Figure 6). This is simply the consequence from a small and very short-lived positive real effect of the fiscal shock on the US economy that would only mildly transmit to the euro area economy. This simulation recalls that all fiscal packages are not alike.

Figure 6: Increase of public transfers in the US: effects on the US and euro area



Notes: R: interest rate, Y: output; C: consumption; PIC4: consumer inflation; RER: real exchange rate. Vertical axis: responses reported in percentage (output, consumption, real exchange rate) or percentage point (interest rate, inflation) deviation from the steady state. Horizontal axis: number of quarters.

Source: Authors' simulations based on the New Area Wide Model (NAWM).

One should keep bearing in mind that these simulations are only illustrative of the general equilibrium dynamics of policy shocks. After the COVID-19 crisis and during the recovery period, the lower output gap than at the so-called "steady state of the economy" that NAWM does embed may generate different sizes of the fiscal multipliers. Empirical literature since the global financial crisis has indeed suggested that fiscal multipliers would be higher during recessions or at the zero lower bound. This line of research is challenged by Ramey (2019) and has not been extended to fiscal spillovers. It would suggest that if fiscal expansion in the US triggers a higher effect on the US GDP since the output gap is negative and monetary policy rate is at the ZLB, then the demand effect would be magnified suggesting more positive spillovers in the euro area.

4. MACROECONOMIC AND FINANCIAL EFFECTS OF US POLICIES

4.1. Are US fiscal and monetary spillovers to the euro area significant?

To assess the potential effects of US policy decisions taken in 2020 and 2021, we turn to a more direct empirical analysis. Since the global financial crisis, there has been a renewed interest in the literature devoted to the fiscal multiplier questioning notably whether the fiscal multiplier is higher during recessions, at the zero lower bound or during financial crises. The aim here is not to review this literature but to give insight on the potential effect of US policies on the euro area. To that end, we use a simple vector autoregressive (VAR) model common in the assessment of the effect of US fiscal policy on the US GDP and we extend it to account for the response of the euro area GDP. Ramey (2019) discusses the value of fiscal multipliers in the US with a standard VAR including general government consumption and investment expenditures per capita, federal government receipts per capita, US GDP per capita, inflation measured by the GDP deflator and the interest rate on the 3-month Treasury Bill.[10] Even if monetary policy is not discussed by Ramey (2019), the inclusion of the 3-month Treasury Bill may be used to estimate a response to a monetary policy shock if we assume that the 3-month rate can proxy the monetary policy instrument .[11]

The dataset is extended until 2019 Q4 and completed to account for euro area data: GDP per capita, inflation and the 3-month interbank interest rate.[12] All euro area variables enter after the US variables, which implies that US variables and notably US monetary policy does not react contemporaneously to unexpected shocks to euro area variables. The US variables are therefore "more exogenous" than the euro area variables.[13]

With this model, we can compute the reaction function of the euro area GDP per capita to US policy shocks (Figure 7). The estimations indicate that fiscal spillovers depend not only on the nature of shock but may also change over time. After an increase in public spending – consumption or investment – the response of GDP in the euro area is significantly positive during the first year. It may suggest that the increase in demand resulting for the rise of US GDP would dominate initially. After two years, the effect becomes negative, which may stem either from an exchange rate effect or from an increase in the world interest rate. The response to a tax shock is less ambiguous since an increase in US taxes – here a restrictive policy – reduces GDP in the euro area.

Regarding the composition of the US fiscal impulse in 2020 and 2021, we may expect positive spillovers as there is indeed a large share of tax cuts and transfers increase in the fiscal packages voted up to now. In 2021, spillovers would be magnified since spending has also increased.

Turning to monetary policy, the dynamic response of GDP per capita in the euro area exhibits a significant positive effect the second year after a *restrictive* shock. However, this effect is short-lived and becomes negative after 15 quarters. The initial effect may reflect the exchange rate depreciation of the euro, which is expected after a restrictive monetary policy in the US. Considering that monetary policy also takes time to be fully transmitted to the US GDP, the decline in the GDP in the euro area may be

[10] Data and codes are available on Valerie Ramey's website: https://econweb.ucsd.edu/~vramey/research.html#govt. Estimations are realised over a long sample starting in 1939. All variables except the interest rate and the inflation rate are expressed in logarithm. Nominal variables are deflated by the GDP deflator.

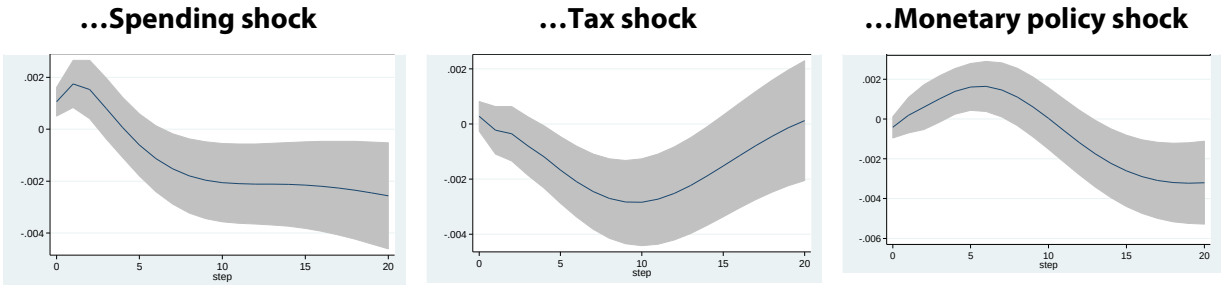
[11] VAR models may suffer from critical identification issues and may not provide the best quantification of the effects of fiscal policy and monetary policy. We have considered here that this approach may be suitable as we do not aim to precisely quantify the effect of US policies but rather to provide some insights on the *sign* of spillovers.

[12] Due to the lack of data for the euro area over a long period, we estimate the full (US-euro area) model from 1995. Transformations applied to the euro area data are the same as those used by Ramey (2019) for the US.

[13] The impulse reaction functions are not sensitive to the order of euro area variables in the VAR.

related to the decline in demand in the US. Besides, we show in Table 1 that those shocks account for a non-negligible share of the variance of GDP in the euro area.

Figure 7: The response of euro area GDP to a US…



Sources: Authors' estimation, Ramey (2019).

Table 1: Variance decomposition: share of euro area GDP explained by US shocks, in %

After … quarters	Spending	Taxes	GDP	Monetary policy	Inflation
4	9.9	1.2	2.1	2.2	2.1
8	7.7	10.7	2.0	7.6	1.3
12	11.8	20.2	2.0	5.7	1.3
16	15.2	21.4	1.7	9.8	1.2
20	17.1	16.9	1.5	17.4	2.4

Source: Authors' estimation, Ramey (2019).

This empirical exercise highlights potential significant effects of US policies on the GDP in the euro area. However, the total effect depends on the nature of the policy mix. If the Federal Reserve decides to tighten monetary policy in 2021, we expect more positive spillovers in the euro area in 2021-2022 after the European countries will have also benefited from the effect of US fiscal policies. There is more uncertainty beyond 2022. These results should not be misinterpreted as giving a blessing to euro area countries for not implementing expansionary policies to accelerate the recovery. Spillovers from US policies may be positive, but they are uncertain and they may be short-lived. Besides, the effect of US policies will first provide stimulus in the US, which may amplify differences between the US and the euro area. All economic forecasts for 2021 entail diverging recovery since, according to the IMF World Economic Outlook, the US GDP would grow at 6.4 % against 4.4 % in the euro area, whereas the 2020 euro area recession has been stronger.

4.2. Did financial variables in the euro area react to US fiscal news?

We extend the analysis of the spillovers of recent US policies on financial variables. As Section 3 pointed out, the literature on fiscal and monetary spillovers highlights the role of the exchange rate. As illustrated in Figure 3, the euro has appreciated against the dollar after June 2020. It is, however, not clear whether this change is related to news on fiscal and monetary policies. Considering the forward-looking behaviour of exchange rates, Auerbach and Gorodnichenko (2016) show that the euro-dollar rate should react to new information related to fiscal policy.

Since the beginning of the pandemic, there have been several announcements reflecting the measures taken by governments to deal with the crisis. We therefore analyse the reaction of the euro-dollar exchange rate and of other financial variables in the euro area around US fiscal policy announcements. According to the event-study methodology, changes in forward-looking financial variables reflect the flow of new information. On a short window around the policy announcement, the changes of the variable may be attributed to the new information assuming that there is no other economic information inside the window. However, it may be objected that contrary to monetary policy, fiscal policy decisions are not taken in one-day meetings, that are generally scheduled and followed by a statement. US fiscal policy is first discussed by the Congress, based on a proposal made by the President. Then, plans are voted by the Senate and the House of Representatives before being signed by the President. In order to assess for the reaction of financial variables, we account for this timing of information. To that end, we consider whether key financial variables in the euro area – exchange rate, stock prices, sovereign yield – have been affected by this flow of information in 2020. We consider five announcements and disentangle each of them between the date when the plan was voted by the Congress and the date when it was signed by the US President (Table 2).

Table 2: Timing of fiscal policy announcement during the COVID-19 crisis

	Voted by the Congress	Signed by the President
Families First Coronavirus Response Act	14 March 2020*	18 March 2020
Coronavirus Aid, Relief, and Economic Security Act	25 March 2020	27 March 2020
Paycheck Protection Program and Health Care Enhancement Act	21 April 2020	24 April 2020
Consolidated Appropriations Act	21 December 2020	28 December 2020
American Rescue Plan Act	6 March 2021*	11 March 2021

Notes: The Families First Coronavirus Response Act was voted by the House of Representatives on 14 March 2020. As it was on Saturday, the dummy variable (see equation below) takes the value 1 on 16 March 2020. It may be noted the last vote occurred in the Senate on 18 March, the same day that it was signed by the US President. The American Rescue Plan Act was voted by the Senate on 6 March 2021. As it was a Saturday, the dummy variable takes the value 1 on 8 March 2020.

Source: Ballotpedia.org.

We estimate alternatively and separately the following equation for four dependent variables: the euro-dollar exchange rate, the 3-month forward euro-dollar exchange rate, the euro area stock price index (Euro Stoxx 50) and the euro area average sovereign yield:

$$y_t = \alpha + \beta_1 . Congress_t + \beta_2 . President_t + \gamma . Z_t + \mu_t$$

Where y_t is either the change of the logarithm of the respective dependent variable except for the sovereign yield. *Congress* and *President* are dummy variables taking a value of 1 when the policy was either voted or signed, 0 otherwise. $Z_t$is a vector of control variables including 3-month interest rates in the euro area and in the US, and the Chicago Board Options Exchange Volatility Index (VIX) index capturing financial volatility. We consider a one-day window. The results are displayed in Table 3 and show that exchange rates, spot or forward rates, have not reacted after policy announcements. However, the responses of stock prices and the euro area sovereign rates are significant and positive. The reaction occurred after the vote in the Congress. The President signature does not bring additional information to investors. The fiscal packages adopted in 2020-2021 were perceived as good news in the euro area since policy announcements have triggered a positive reaction of stock prices. Interest rates have also increased which may capture a rise in global interest rates following US expansionary fiscal policies.

Table 3: Financial effects of US fiscal news

	Δ.leuro	Δ.leuro	Δ.leuro-forward3m	Δ.leurofor ward3m	Δ.leurostoxx	Δ.leurostoxx	euz_sov	euz_sov
Congress (t)	0		-0.002		-0.006		**0.045****	
	[0.89]		[0.39]		[0.64]		[0.01]	
Congress (t-1)	0.001		-0.001		**0.017***		0.042	
	[0.84]		[0.69]		[0.03]		[0.11]	
President (t)		0		0		-0.012		-0.035
		[0.95]		[0.93]		[0.16]		[0.39]
President (t-1)		-0.002		-0.001		0.015		-0.02
		[0.30]		[0.78]		[0.07]		[0.46]
US 3-month rate	-0.001	-0.001	0.037**	0.037**	-0.007**	-0.007**	-0.003	0.031
	[0.21]	[0.21]	[0.00]	[0.00]	[0.01]	[0.01]	[0.97]	[0.78]
EUZ 3-month rate	0.005	0.005	0.018**	0.018**	0.037*	0.036*		
	[0.13]	[0.14]	[0.01]	[0.01]	[0.02]	[0.02]	-0.013	-0.022
VIX	0	0	0	0	0	0	[0.87]	[0.80]
	[0.13]	[0.19]	[0.73]	[0.53]	[0.06]	[0.08]	0	0.001
euz_sov (t-1)							[0.30]	[0.07]
							0.972***	0.984***
							[0.00]	[0.00]
Constant	0.005	0.004	-0.034**	-0.033**	0.031*	0.031*	-0.015	-0.065
	[0.08]	[0.09]	[0.00]	[0.00]	[0.02]	[0.02]	[0.88]	[0.50]
N	356	356	356	356	356	356	356	356
r2	0.024	0.027	0.038	0.036	0.1	0.099	0.962	0.961

Source: Authors' estimations. Estimations are based on daily data (5 days per week) over the period from 1 January 2020 to 14 May 2021. The p-values are in square brackets. Estimations account for potential heteroscedasticity.

High-frequency reactions to large and mediatised events like a major US fiscal stimulus require much caution in the interpretation[14]. The lack of significant effects on the exchange rates may hide the possibility that the effects were already integrated by market participants. The vote by the Congress was therefore not considered as a *surprise* to them. If this is true, it would imply that the reaction of stock prices and sovereign yields on the day when the Congress adopted the measures do not grasp the full effect of the policy: at least part of the spillovers might have been embedded in prices some days *before* the vote. It remains that, on the voting days, financial prices in the euro area did react.

[14] Debates and discussions in Congress are often largely accounted for by the media.

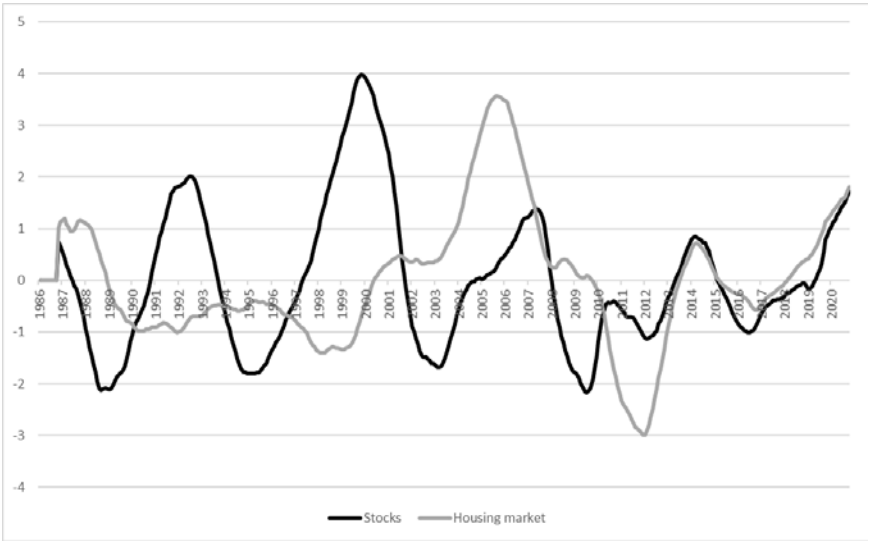
5. CONCLUDING REMARKS: SMALL GAINS BUT HIGHER FINANCIAL RISKS?

The empirical evidence suggests that macroeconomic effects of US macroeconomic policies may be significant and positive in 2021. Beyond 2021, there is more uncertainty. On the one hand, higher demand may stem from the rapid growth expected in the US. The euro area may also benefit from an improvement of competitiveness if US inflation increases. If this risk materialises, the Federal Reserve might consider a policy tightening that would reduce demand after a lag but could reinforce euro area competitiveness if the dollar appreciates. Up to now, such a scenario has not materialised: the euro has appreciated against the dollar in 2020. The outcomes from the event-study do not suggest that this appreciation results from US fiscal policies.

Current estimations do not really point to a significant risk of a surge of inflation in the US. The main risk may stem from financial markets as the combination of a very expansionary fiscal policy and a loose monetary policy may fuel a boom of asset prices. The updated estimations of stocks and housing bubbles based on Blot, Hubert and Labondance (2020) suggest that the size of the bubble components has grown in 2020 (Figure 9).

The main and yet-to-come spillover effect from the US policies may consequently not stem from macroeconomic policies but from financial risks since financial markets are strongly internationalised. The breaking of those bubbles may hurt the euro area financial system and trigger renewed tensions on sovereign yields in fragile countries. The expected, though uncertain, positive macroeconomic spillovers from US policies should not blur the necessity for the euro area to accompany the recovery with an adequate policy mix and to continue preventing the rise of a new wave of financial turmoil.

Figure 8: Asset price bubbles in the US, standardised deviations for the fundamental



Source: Authors' estimations based on Blot, Hubert and Labondance (2020).

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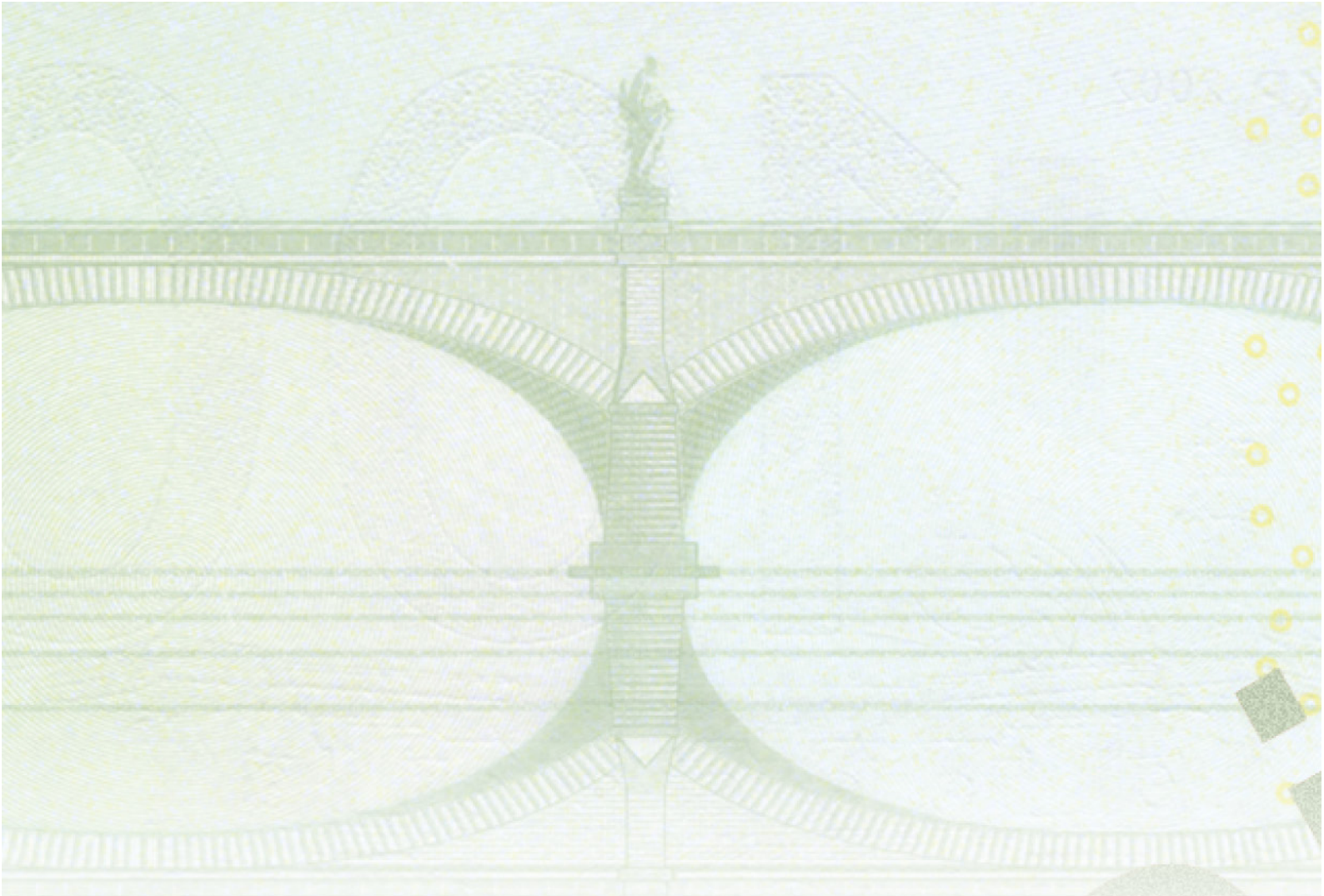

Once More, the US Leads Europe

Charles WYPLOSZ

Abstract

The US and European economic approaches to the COVID-19 pandemic have differed in many ways. It is most likely that the US recovery will come sooner and will be stronger than in Europe, pretty much as has been the case with the global financial crisis a decade ago. In order to achieve a solid and lasting recovery, Europe needs to learn from the previous crisis and to prepare for the effects of the coming rapid US expansion.

This paper was provided by the Policy Department for Economic, Scientific and Quality of Life Policies at the request of the committee on Economic and Monetary Affairs (ECON) ahead of the Monetary Dialogue with the ECB President on 21 June 2021.

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LIST OF ABBREVIATIONS

APP	Asset purchase programme
AIT	Average inflation targeting
ARPA	American Rescue Plan Act
ECB	European Central Bank
EP	European Parliament
EU	European Union
GDP	Gross domestic product
PEPP	Pandemic emergency purchase programme
QE	Quantitative easing
US	United States

EXECUTIVE SUMMARY

- **During the last two crises, financial and health, initially the US has taken a worse blow but recovery has come faster and is likely to be dynamic.** This can be seen from the evolution of income and employment.
- **Europe is lagging because of its economic policies.** The broad reason is that it uses its instruments sparingly when the crisis hits and tends to reverse too early.
- **Two main types of fiscal policy measures have been adopted.** The first type involves new spending, the second type consists in various loans and/or borrowing guarantees to bank loans to households and firms. The balance of these two types of measures differs drastically across the Atlantic.
- **Monetary policy has differed between the US and the euro area.** The Fed had some room to cut its interest rate while the rate was still close to zero in the euro area, depriving the European Central Bank (ECB) from its main and most efficient instrument. Both central banks have restarted quantitative easing (QE), which has made it possible to avoid a financial crisis but has limited macroeconomic effects.
- **The era of stubbornly low inflation may be coming to its end.** The huge fiscal policy boost in the US is bound to raise inflation and the Fed may deliberately delay its reaction to escape the effective lower bound of the interest rate.
- **Given its economic and financial size, the US powerfully affects the rest of the world, especially Europe given the intensity of existing links.** The rapid growth US recovery will feed Europe's weaker autonomous recovery through trade and asset price strengthening.
- **The exchange rate is another channel of transmission.** The dollar should appreciate as the result of expansionary fiscal policy and tightening monetary policy. A weaker euro will help with exports and possibly widen the inflationary impact of global recovery.
- **The ECB must decide how it will deal with inflationary pressure.** It should avoid a repeat of the mid-2010s when it failed to escape the zero lower bound. Its ongoing strategy review is an opportunity to get ready. The Fed's average inflation targeting (AIT) strategy is far from perfect but it is well adapted to current and upcoming conditions.
- **As the recovery takes hold, both fiscal and monetary policies will have to shift from expansionary to neutral and eventually restrictive, but in which order?** Faced with much increased public debts, governments will want to go first. An alternative is for central banks to raise interest rates to escape the effective lower bound, as the US did on the mid-2010s, in contrast with what happened in the euro area.
- **In the longer-run, Europe may face the downside of it very effective policies designed to protect people and firms through the pandemic crisis.** These measures have resulted in less employment losses and a reduced number of bankruptcies, which greatly helped during a catastrophic period. These scarring effects will not just weaken the recovery but also slow down longer-term growth.

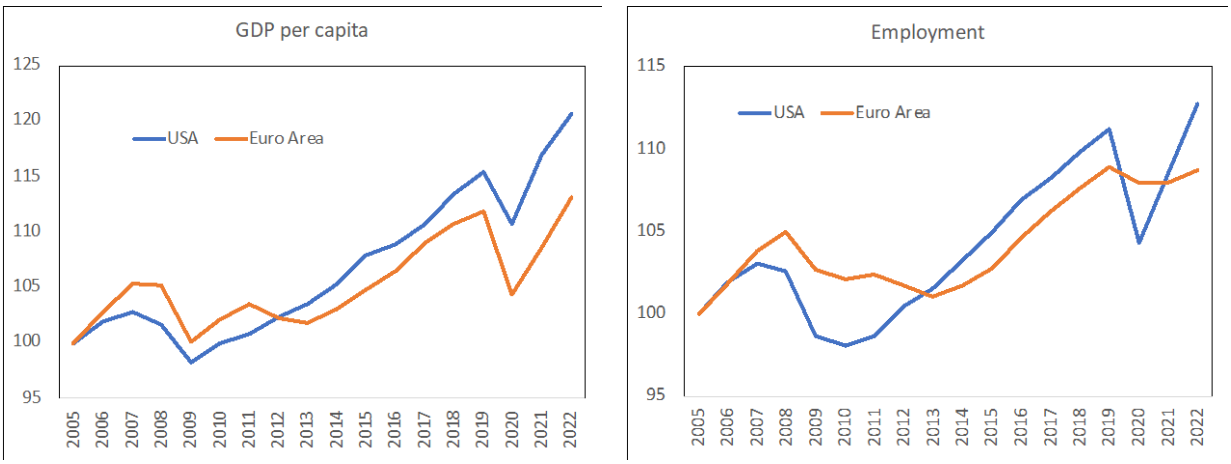
1. INTRODUCTION: A TALE OF TWO CRISES

The COVID-19 crisis is the second massive crisis that we face in a bit more than a decade. These two crises are fundamentally different. Financial crises are the results of excesses that could have been spotted ahead of time and they are known to exert durable effects. Pandemics are bad luck, their economic effects are driven by the need to significantly reduce economic activity and little is known about longer-run impact once the crisis is over. Comparisons can therefore be easily misleading. Yet, in both cases, policy responses are essential and make a difference on the outcome. Strikingly, during both crises, Europe and the US have reacted with different measures and the outcomes, both in the short and in the long run, are likely to differ. Sadly, once again with the pandemic, Europe will probably be found as the less good performer, for broadly similar reasons.

The two charts in Figure 1 compare two measures of economic activity since 2005, before the global financial crisis of 2008. Both GDP per capita and employment are set to be equal to 100 in 2005 in order to facilitate comparisons across crises and countries. The numbers for 2021-22 are forecasts, which do not take full account of the latest fiscal policy measures adopted by the Biden administration. These measures will undoubtedly deepen the difference between the US and Europe.

The two charts show that, in both crises, in impact the recession was deeper in the US than in the euro area. However, in the 2010s the US recovery came faster and was generally stronger. The forecasts suggest that this pattern is about to be repeated this time around. It looks like if, when faced with a powerful adverse shock, the US is inclined to "bite the bullet" in order to recover faster and more forcefully. One interpretation is that the US authorities choose effectiveness over protection while the Europeans opt for the opposite strategy. This is not new, of course, and it reflects deep societal preferences. But there could be more to it than deliberate and carefully thought-through choices. In particular, we need to ask whether policy mistakes may play an additional role.

Figure 1: GDP per capita and employment (2005 =100)



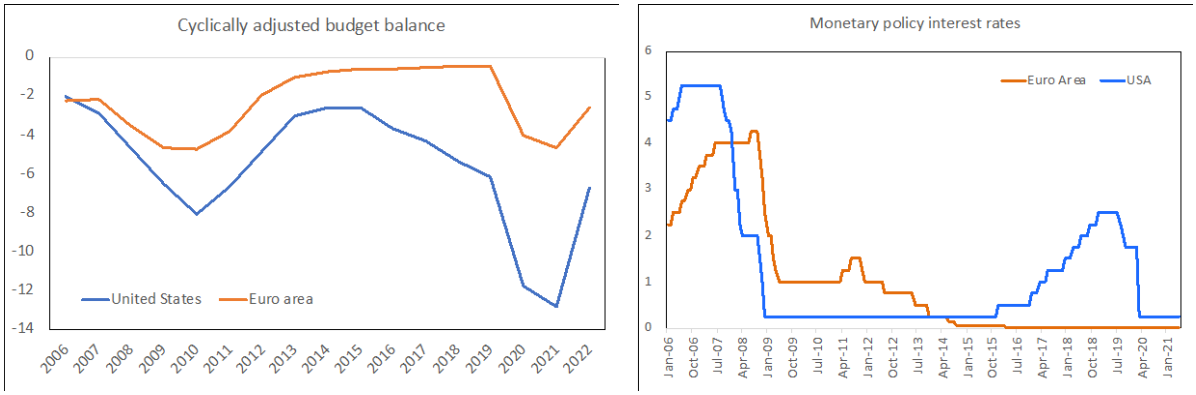
Sources: GDP per capita: *AMECO on-line*, European Commission. Employment: *World Economic Outlook*, IMF, April 2021.

The deeper US recession in the wake of the financial crisis reflects the fact that this is where the crisis originated. It started in the mortgage markets (the infamous subprimes) and had a deep impact on the housing markets, first and foremost affecting modest homeowners. It also affected banks, which were a transmission channel to Europe. The faster US recovery is largely explained by policy actions. It is now generally admitted that Europe lagged in cleaning out its banks, over many years. Beyond this aspect specific to the financial crisis, macroeconomic policies also played an important role, broadly repeating

the same pattern during the pandemic. As can be seen from the left-hand side chart in Figure 2, in both crises the cyclically adjusted budget deficit was massively deepened in the US with more modest measures in the euro area. During the years that followed the financial crisis, fiscal policy remained more supportive of growth and employment in the US while, in the euro area as a whole, budget balance was nearly restored by 2013. It is not known yet whether the pattern will be similar following the COVID-19 crisis. The forecasts for the US are misleading since they do not yet take into account the very substantial fiscal measures already decided by the Biden administration and those under discussion. In Europe too, additional measures are envisaged in many countries but they will likely be considerably smaller than in the US. History repeats itself.

A similar observation can be made regarding monetary policy. The right-hand side chart in Figure 2 shows that the US policy interest rate was promptly reduced after the financial crisis and kept near zero for six years. In contrast, the ECB moved more slowly. In fact, it twice reversed its course of action, including during the subsequent debt crisis, before finally bringing its rates to zero (and beyond). Then, in contrast with the Federal Reserve, the ECB failed to "normalise" its interest rate away from near-zero. When the pandemic hit, the Fed had some room to reduce its interest rate while the ECB had lost the interest rate instrument.

Figure 2: Monetary and fiscal policies in the euro area and the US



Notes: Budget balance in % of GDP. President Biden's American Rescue Plan Act (ARPA) is not yet accounted for.

Source: Budgets: *World Economic Outlook*, IMF, April 2021. Interest rates: ECB and Federal Reserve.

This contrast extends to the health crisis. As is well known, the health management of the pandemic has been of poor quality in the US, although a number of states and cities adopted policies that reduced the health impact, still not quite to the same extent as in Europe. Accordingly, the health crisis has been much more severe in the US than in Europe. However, as early as May 2020, the US government worked on securing vaccines. Operation Warp Speed included large cash support to a number of pharmaceutical research laboratories, a few of which succeed in developing new vaccines. Europe did little of that and, it seems negotiated hard on prices once the vaccines were ready for production. Much as was the case with macroeconomic policies, the health shock has hit harder but recovery is coming faster. The similarity across all policy levers is striking.

In Europe, fiscal policies aimed at protecting jobs and preventing widespread bankruptcies. Households and firms were offered large subsidies and guaranteed loans to make up for reduced activity, sometimes no activity at all. In the US, the protection aimed primarily at people who received cash payments and more generous unemployment benefits instead of keeping people on the job. This explains that, while the US has spent more money than Europe, unemployment declined much more

there. On the other hand, once the recovery has started in the US, employment promptly bounced back. Once it finally brought its interest rate down to zero and then negative territory, the ECB has kept it there so there was no room to significantly reduce it once the pandemic hit. In contrast, the Federal Reserve could exploit the room for manoeuvre that it had created in 2016-19.

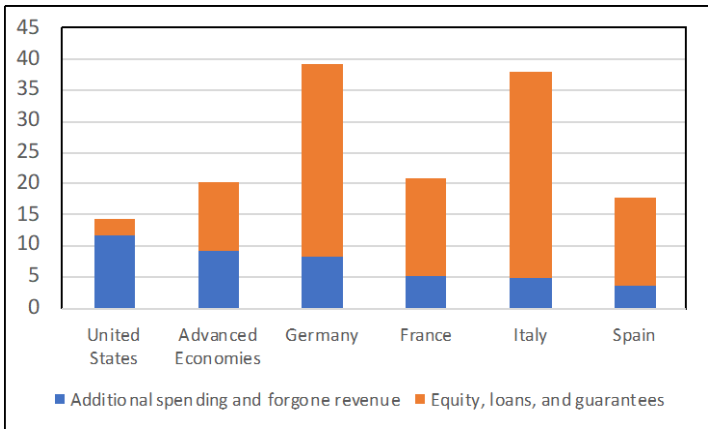
2. MORE DETAILS ON POLICY ACTIONS

2.1. Fiscal policies

Two main types of fiscal policy measures have been adopted promptly in 2020 and the speed must be noted. The first type involves new spending, including cash transfers and support programs, or tax reductions. These measures directly increase the budget deficit. The second type consists in various loans and/or borrowing guarantees to bank loans to households and firms. They do not affect the recorded budget because they are matched by assets (the loans). However, inasmuch as some recipients fail to reimburse their borrowings, the governments will have to pay out the guarantees, which will then be recorded in budget figure. Similarly, NextGenerationEU does not count as national debts but, sooner or later, member governments will have to pay for the associated debt.

The balance of these two types of measures differ drastically across the Atlantic. Figure 3 shows what happened in the US and the four largest European economies, alongside the average of advanced economies, in 2020 (therefore excluding the 2021 American Rescue Plan Act, APRA, and NextGenerationEU). Regarding direct spending, the US leads with some 12% of GDP while all four European countries raised their direct fiscal efforts by less than the average of all advanced countries. In contrast, the European countries made a very substantial use of the second type of measures, raising their total commitments to multiples of those in the US. As noted before, the priority in Europe was to limit the immediate damage of the pandemic, which made public loans and guaranteed very attractive.

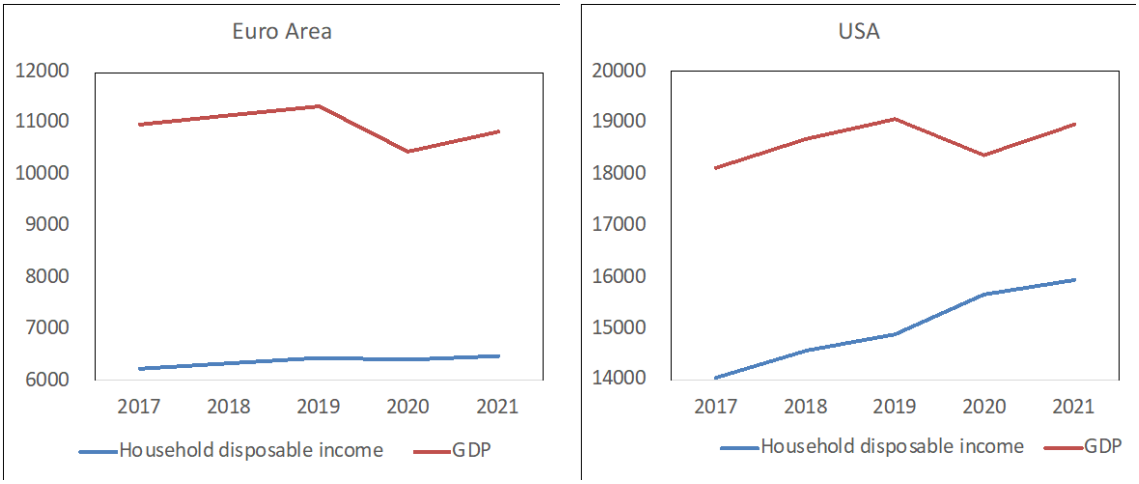
Figure 3: Types of fiscal policy measures in the euro area and the US (% of GDP)



Source: Fiscal Monitor Update, IMF, January 2021.

These measures, alongside strict distancing measures and lockdowns, made it possible to shield personal incomes from the deep decline in economic activity. In the US, the focus was on limiting the fall in overall economic activity, in Europe it was on limiting the impact on peoples and firms. As Figure 4 shows, the impacts on household incomes significantly differed. The euro area succeeded in keeping household incomes unchanged from 2019 even though GDP declined sharply. In the US, household incomes actually rose in 2020, in part because each one received a check from the government (which happened again in early 2021 but is not measured in the figure that predates this distribution), in part because unemployment benefits were raised at the state level.

Figure 4: Household disposable income vs. GDP (billions of local currency)

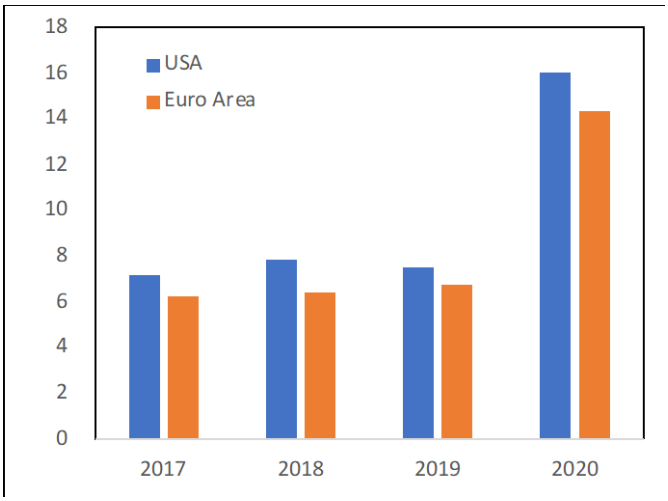


Notes: Both measures are in volumes and national currencies. Data for 2020 and 2021 are forecasts.

Source: Economic Outlook database, OECD, December 2020.

As household incomes were maintained, lockdowns restricted spending. Unsurprisingly, households increased their savings, and more so in the US than in Europe, as Figure 5 shows. This will matter as life returns to some form of normality when it is widely expected that pent-up spending, financed by accumulated excess savings will surge. If these expectations are verified, the boost to economic growth should be more powerful in the US. Along faster vaccinations, which allows an earlier return to normality, the US recovery should therefore lead the European recovery and be stronger *ceteris paribus*.

Figure 5: Household net savings (% of disposable income)



Source: Economic Outlook database, OECD, December 2020.

The different sizes and nature of fiscal policy measures taken in 2020 and those predicted for 2021 suggesting the following:

Larger deficits explain a less deep recession in the US, in spite of inefficient health policies.[1]

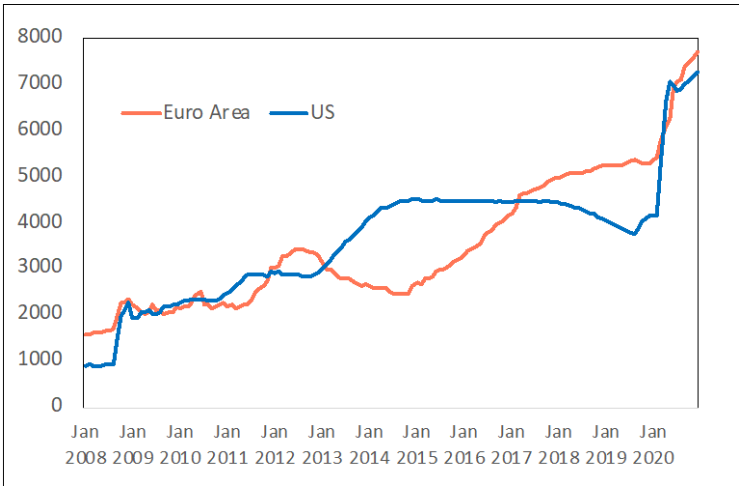
Strong continuing fiscal support predicts a vigorous recovery in the US while more modest steps in Europe raise the spectre of a moderate recovery in Europe once the early dissaving comes to an end.

The emphasis on protecting people rather jobs and firms in the US stands in contrast with the focus on protecting jobs and firms in Europe. In the short term, this has led to large differences in (un)employment and bankruptcies. In the medium run, it could be an advantage for the US as it could be easier for growing firms to hire employees and for new firms to fill the void created by firms that ceased to operate.

2.2. Monetary policies

As Figure 2 shows, the ECB had no room left to cut its interest rates when the pandemic hit while the Federal Reserve promptly cut its own rates. With interest rates close to zero, both central banks had to rely on quantitative easing (QE) to deliver more impetus. More importantly, by swamping the financial markets with abundant liquidity, QE also aimed – and still does – at preventing a simultaneous financial crisis. Here again, the Fed's action was more forceful than that of the ECB: the size of its balance sheet expanded by 75% against 43%, see Figure 6.

Figure 6: Central bank balance sheet size (billions of local currency)



Source: International Financial Statistics, IMF.

2.2.1. Monetary financing of budget deficits and inflation

Since both central banks expanded their balance sheets by amounts comparable to public borrowing, the public debts held by private investors did not increase. Indirectly, therefore, central banks have financed the budget deficits in 2020, which they had to do if they wanted to keep interest rates as low as possible.

Monetary financing of budget deficits is often considered as a cardinal sin because, historically, it has been the cause of all inflationary episodes. This is why the ECB is strictly forbidden from *directly* financing member governments but it can do so *indirectly* by purchasing public debts on the financial

[1] Delayed and limited lockdowns are known to be economically inefficient for two main reasons: 1) Many people self-isolate anyway; 2) weak distancing measures allow the pandemic to spread. See, e.g., Hargreaves Heap et al. (2020).

markets, which is a common procedure. Already, in the aftermath of the debt crisis, the ECB conducted large-scale QE – through its various asset purchase programs – which generated some concern about inflation, even leading to formal complaints to the German Constitutional Court and to the European Court of Justice. A decade later, in the run up to the pandemic, the ECB was battling against too low inflation. In fact, inflation has remained below target throughout the advanced economies. As is generally well understood, there is a good reason for this failure of a time-honoured principle.

Inflation occurs when the newly created money ends up circulating in the economy through loans to households and firms, fuelling spending. This has not happened to any significant degree, in part because credit to households and firms has not risen much, for both lack of demand from households and firms and supply by banks that were still recovering from the financial crisis. The intended result has been a massive expansion of liquidity, which has partly been directed to financial investments that lifted asset prices. Of course, a delayed boom in credit can happen eventually, which central banks closely monitor. No doubt, when and if it happens, central banks will proceed to absorb the liquidity, as the Fed started to do after 2014 (Figure 6).

Another reason for the lack of inflation response to QE has been the fact that fiscal policy in the euro area has been restrictive, in contrast with the situation in the US (Figure 2), where inflation actually started to rise before the pandemic. The abrupt change in fiscal policies in 2020 feeds the current debate about a possible resurgence of inflation.

2.2.2. Inflation in the US and the new monetary policy framework

The debate focuses on the situation in the US because the exceptional vigour of the fiscal expansion makes it likely that this is where, among the advanced economies, inflation stands to rise fast, and it has done so recently (Figure 7). Two issues dominate the debate.[2]

First is the extent to which the early price increases are temporary. These increases reflect the restart of the economy as rapid large-scale vaccinations in the advanced economies signal the end of social distancing measures. In recent weeks, prices of primary commodities and global transport costs have risen quite dramatically from previously depressed levels. Similarly, retail prices have increased as stores reopen. The question is whether these are one-off phenomena or whether they will trigger increases in labour costs, which will then lead to generalised increases in retail prices. Part of the answer depends on the labour markets. If they tighten fast, wage increases could trigger the familiar wage-price spiral, which would imply a lasting increase in inflation. Uncertainty is high because of the unusual effects of the pandemic and of the support measures on the labour markets.

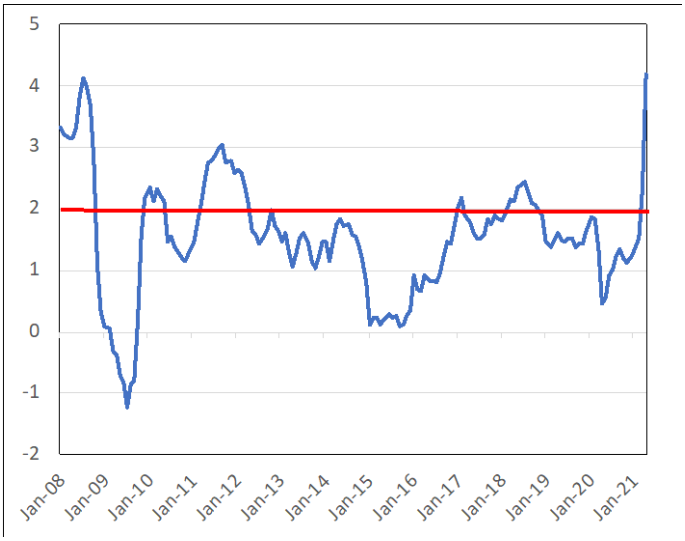
Second is the reaction of the Federal Reserve. At the time of writing, the Fed insists that the inflation uptick is temporary. Given the depressed employment rate, it does not expect wages to take off. However, the forecasts shown in Figure 1 suggest that the situation could rapidly change, which could provide the basis for a rapid resurgence of inflationary pressure.

The Fed's reaction is uncertain given its new monetary policy strategy. It has adopted the principle of average inflation targeting (AIT) according to which it aims at achieving an inflation rate of 2% over time. AIT implies that periods of inflation below target must be followed by periods of inflation above target, and conversely. As Figure 7 shows, this strategy now calls for inflation to be above 2% for a significant period of time. The AIT strategy is not precise, however. It does not say over which horizon averaging is done nor how high inflation will be allowed to go. Another aspect of the new strategy is that the Fed has committed to not just look at "maximum employment", as mandated by Congress, but

[2] A good recent survey is Ball et al. (2021).

also to take into consideration the situation of traditionally under-privileged minorities. This too is imprecise.

Figure 7: Inflation in the US (% over same month in previous year)



Source: FRED, Federal Reserve Bank of Saint Louis.

Note: Personal Consumption Expenditures (PCE).

As a result, the Fed announcements are ambiguous and therefore controversial. At the moment, the Fed is obviously mindful to support the recovery. Following the taper tantrum of 2013,[3] it is carefully refraining from any suggestion that it is concerned with inflation. A number of observers reckon that the Fed will not fight inflation promptly when it materialises. Seeing this possibility as a case of fiscal dominance, whereby the central bank feels obliged to finance budget deficits, they conclude that AIT and employment considerations will provide ample room not to act. An alternative interpretation is that the Fed is attached to keeping inflation hinged and will raise its interest rates when and if signals emerge that inflation is rising significantly above target. However, at this stage, it wants to support the recovery and does not want the financial markets to ride ahead of it and make medium- and long-term interest rates creep upward. The creeping has already started, however, suggesting that the financial markets see through the veil set up by the Fed. As explained below, the creeping is likely to affect the euro area.

[3] In 2013, Ben Bernanke, then-President of the Federal Reserve Board, observed that QE would not last forever. This casual observation was mistakenly interpreted as signaling that the Fed was preparing to taper its asset purchases and it created a financial tremor that undermined growth.

3. CHANNELS OF TRANSMISSION FROM THE US TO EUROPE

3.1. Transmission of growth and inflation

Economic fluctuations in the US economy affect the whole world. Even though the size of the US economy relative to the global economy has declined over the last decades, its GDP still amounts to 25% of the world total (down from 35% in 1985), well above China and the euro area, both at about 18%.

The first channel of transmission is trade. The US imports goods and services worth about 15% of its GDP or about 3.75% of world GDP. More spending in the US leads to more imports from other countries, which in turn spend and import more, etc. This is a multiplier effect.

The second channel runs through the financial markets, where the US dominates by far in most dimensions (capitalisation, turnover, etc.). *Ceteris paribus*, a strong US recovery is likely to lift asset prices and returns. Such movements are typically transmitted to other financial centres around the world. Higher asset prices, in turn, encourage investment spending and therefore growth.

The third channel is the exchange rate, although the effect can be ambiguous. The direct effect of attractive financial conditions in the US is an appreciation of the dollar. As the other currencies depreciate vis à vis the dollar, their exports become more competitive, which reinforces the first channel. In addition, the deepening budget deficit implies more borrowing, which further reinforces the dollar appreciation. However, this means that the US current balance worsens even more, which could lead to a weaker appreciation, possible even a depreciation of the dollar.

Summarising so far, trade flows are unambiguously transmitting faster growth while the financial channels may have ambiguous effects. The standard presumption is that all channels work in the same direction.

3.2. Transmission of monetary policy tightening

Much depends also on monetary policy. If the Fed continues to largely finance the budget deficit, the need for borrowing lessens and capital flows to the US are reduced, with less appreciation of the dollar. If, instead, the Fed is led to raise its interest rates (Section 2.2.2), financial returns in the US rise, which reinforces capital flows to the US and the dollar appreciation.

However, as long as the interest rates remain close to zero, monetary policy is conducted through QE. A monetary policy tightening in the US would therefore include the end, and possibly the reversal of QE. The experience with QE, as surveyed by Dedola at al. (2020), suggests that if the Fed stops and then reverses QE before the ECB, the dollar will appreciate. This should improve European exports and growth and therefore provide an invitation for the ECB to follow the lead of the Fed.

4. SHORT TERM IMPACT AND INFLATION

All in all, the combination of a more powerful fiscal expansion and an earlier tightening in the US should provide a boost to growth in Europe, both directly through trade and indirectly through the financial markets and a depreciating exchange rate of the euro relative to the dollar.

While this would be a positive development, there is a downside and an important policy issue. The likely depreciation of the euro will make imported foreign goods and services more expensive. This stands to make Europe import from the US not just growth but also inflation.

If this is how things will develop, the question of how policymakers respond will arise. It will be possible to start withdrawing supporting fiscal and monetary policies, but in which order? The large public debt increases will encourage governments to start reducing their deficits, relying on monetary policy to keep the economy going. The risk is that the recovery remains weak and that the ECB keeps its interest rates at the lower bound for quite a while. This is what happened after the debt crisis when fiscal austerity was combined with monetary loosening, see Figure 2, and this is why the ECB was unable to react adequately to the pandemic, while the Fed could.

In order to avoid a repeat of this mistake, we need to ponder in which order fiscal and monetary policies should normalise away from the current expansionary stance. Obviously, after sharp increases in public indebtedness, the governments will be eager to close or reduce their budget deficits. Depending on what emerges from discussions about the future of the Stability and Growth Pact, they could actually be required to do so once the escape clause comes to an end. This would be a repeat of the mid-2010s, leaving the ECB alone to deal with macroeconomic stabilisation.

The other option is to first normalise monetary policy, raising the interest rate as needed and then reversing QE, while fiscal policy remains supportive. To that effect, the ECB could use its ongoing strategy review to move to AIT, like the Fed. An important advantage of this approach is that fiscal policy will be available to deal with possible scarring effects of the pandemic as well as other major objectives, like the struggle against climate change. These objectives require detailed interventions that are out of the purview of monetary policy and of the mandate of the ECB. Another advantage is that raising interest rates more or less in tandem with the Fed will prevent a depreciation of the euro and lessen the transmission of inflation from the US. Of course, it would also reduce the boost to exports and demand provided by a depreciation, which is a good reason to use fiscal policy to support activity.

5. LONG TERM IMPACT OF THE US POLICIES ON EUROPE

5.1. Growth

As noted in Section 2.1, in the US, fiscal policy has aimed at protecting people rather than jobs and firms while Europe has generally made the opposite choice. In normal recessions, it is usually thought that the US strategy is better because it allows what is sometime called the cleansing effects of recessions. But the COVID-19 recession was special. It was largely the consequence of mandatory lockdowns and other social distancing measures needed to prevent a clogging of hospitals. As governments lifted basic freedoms, it was entirely logical to compensate people and firms. However, the decline in the number of bankruptcies is a tell-tale signal that the normal evolution process – creative destruction – has been suspended.

The downside of the European strategy will surface over time. Protected people and firms will argue for a slow withdrawal of support. Mindful of the fact that much of that support has taken the form of guaranteed loans that could turn into large expenditures in case of widespread defaults, governments might calculate that extending support is less costly. In contrast, the US will be in a better position to reallocate its human and financial resources toward sectors with high growth potential. When this happens, the tendency will be for governments to step in and support the sectors that they deem high potential. This would signal of a return of industrial policies, already shaping the NextGenerationEU programme. Unfortunately, the record of industrial policy is not encouraging. Long-term growth could be stunted in Europe.

5.2. Public indebtedness

Both the US and many euro area member countries will emerge from the pandemic crisis with large public debts. The US is not at risk of facing a debt crisis for one simple reason: the financial markets know full well that the Federal Reserve will not hesitate to act as lender of resort if any pressure arises. The situation in the euro area is much more ambiguous and leaves it open to debt crises. The ECB intervention in 2012, known as "whatever it takes", represents a step in the direction of lending in last resort. However, it has come two years too late, after several countries had been hit, and it has been highly controversial, divisive even. The pandemic emergency purchase programme (PEPP) has taken a further step in providing selected support to the more exposed countries, however it was put in place in an exceptional period.

As it reviews its strategy, the ECB needs to consider its options should pressure emerge again in the aftermath of the pandemic crisis. We know from the "whatever it takes" episode that a strong statement by the ECB is enough to quiet financial markets down. Of course, a mere statement that is unlikely to be followed by action will not impress the financial markets. What is needed, therefore is that all member countries commit to support the ECB as it makes its statement, which is what happened in 2012, and the ECB never needed to commit any resource.

Some countries may have reservations about moral hazard. Would not such a commitment discourage fiscal policy discipline in countries with a poor track record? It could, but consider the following. First, the 2012 episode showed that all member countries concluded that the risk of a breakup of the euro was far too damaging to be seriously contemplated. They are quite likely to reach the same conclusion again if a debt crisis threatens to occur. Second, the responsibility for achieving fiscal discipline lies with the Stability and Growth Pact, which has been notoriously ineffective. It is incumbent on member governments to agree on a more effective arrangement, which should limit cases of potential debt crises to truly exceptional events and therefore eliminate moral hazard.

6. CONCLUSION

The comparison between the US and Europe before, during and after the pandemic is disquieting. The US seriously mismanaged the health crisis but its macroeconomic record is in many ways superior. Helped by a rapid deployment of vaccines, it is recovering earlier, and the recovery is helped by a massive fiscal expansion. Its approach to support people, not jobs, and to let firms deal with the recession has imposed considerable suffering and an increase in inequalities, but it will help to make recovery faster and more durable.

These differences mostly reflect traditional preferences over classic trade-offs. The more protective approach in Europe meets its long-held preferences but some of them are not growth-friendly. The challenge will be to ensure a sustained recovery and to avoid long-lasting scars. It should be clear that fiscal support should not end with the final reopening but shifts from individual support to broad and rapidly implemented measures. At the moment, the ECB is rightly pursuing an expansionary stance but it should not let years pass by without normalising its policy. It should be prepared to deal with normalising by the Fed, which will come before it is needed in Europe. We need a compact between the ECB and member countries to carefully combine their instruments as recently suggested by Bartsch et al. (2021).

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PE 662.923
IP/A/ECON/2021-25

Print ISBN 978-92-846-8218-8 | doi:10.2861/910707 | QA-05-21-176-EN-C
PDF ISBN 978-92-846-8219-5 | doi:10.2861/068139 | QA-05-21-176-EN-N