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



Policy Department for Economic, Scientific and Quality of Life Policies
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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.

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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

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

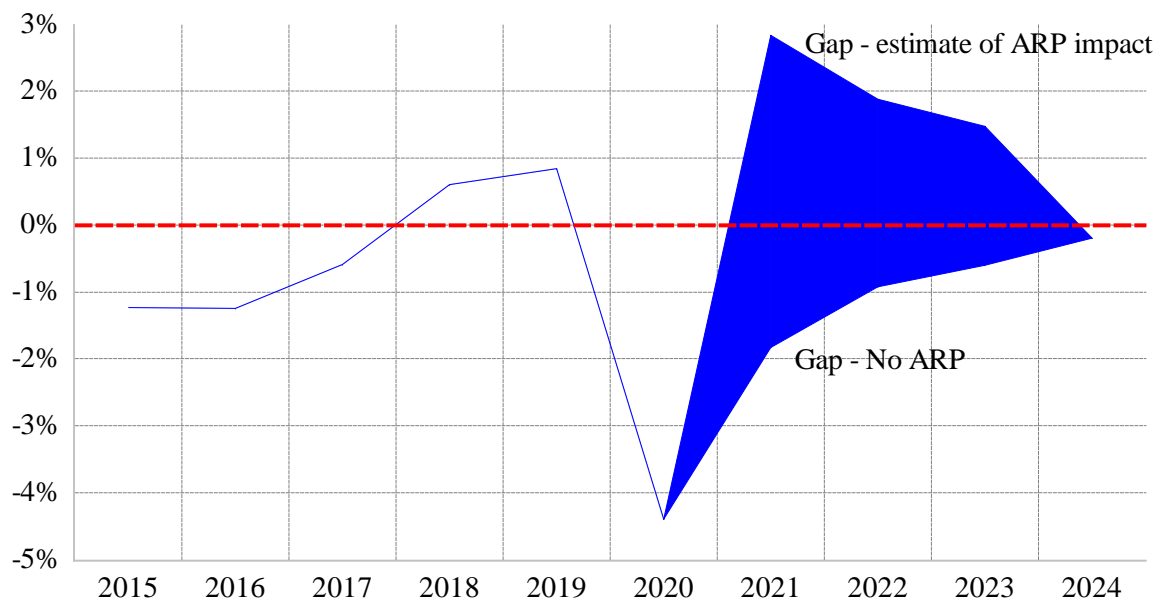
<u>P.L. 116-139; Enacted 4/24/2020; H.R. 266</u> Paycheck Protection Program and Health Care Enhancement Act ³	321,335	321,335
<u>P.L. 116-260; Enacted 12/27/2020; H.R. 133</u> Consolidated Appropriations Act, 2021	701,279	676,974
<u>American Rescue Plan Act of 2021 (H.R. 1319) ⁴</u>	1,822,736	1,797,918
<i>Not Yet Passed into law</i>		
<i>American Jobs Plan⁵</i>	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	<i>Monetary Policy</i> <ul style="list-style-type: none"> • Signalling • Portfolio rebalancing
	<i>Fiscal Policy</i> <ul style="list-style-type: none"> • Deficits (G vs T) • Debt sustainability
	<i>Global channels</i> <ul style="list-style-type: none"> • China • Other large systemically important economies • Commodity prices • Global supply chains
	<i>Political</i> <ul style="list-style-type: none"> • 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; Blagrove 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 data¹⁹ 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

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 (\uparrow) or fall (\downarrow).

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.	\downarrow	\downarrow	\downarrow	\uparrow
Debt to GDP	\downarrow	\downarrow	\uparrow	0
Neutral Real Int. Rate	\downarrow	0	0	\uparrow

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 (\uparrow indicating a rise; \downarrow 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. Turning 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.

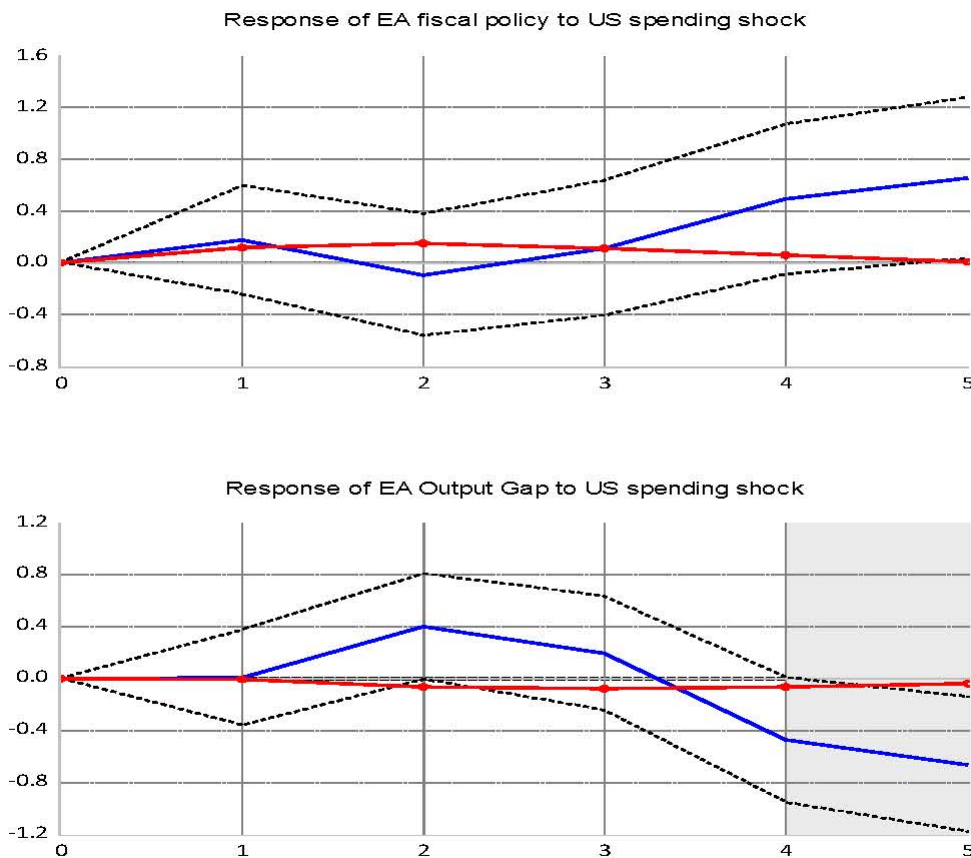
Hence, in Figure 2, I turn to more selected estimates. This time, and in line with the recent literature that explores the economic impact of fiscal shocks, I ask: what is the impact of US fiscal shocks on euro area fiscal policy, the output gap, the differential between euro area and US estimates of 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

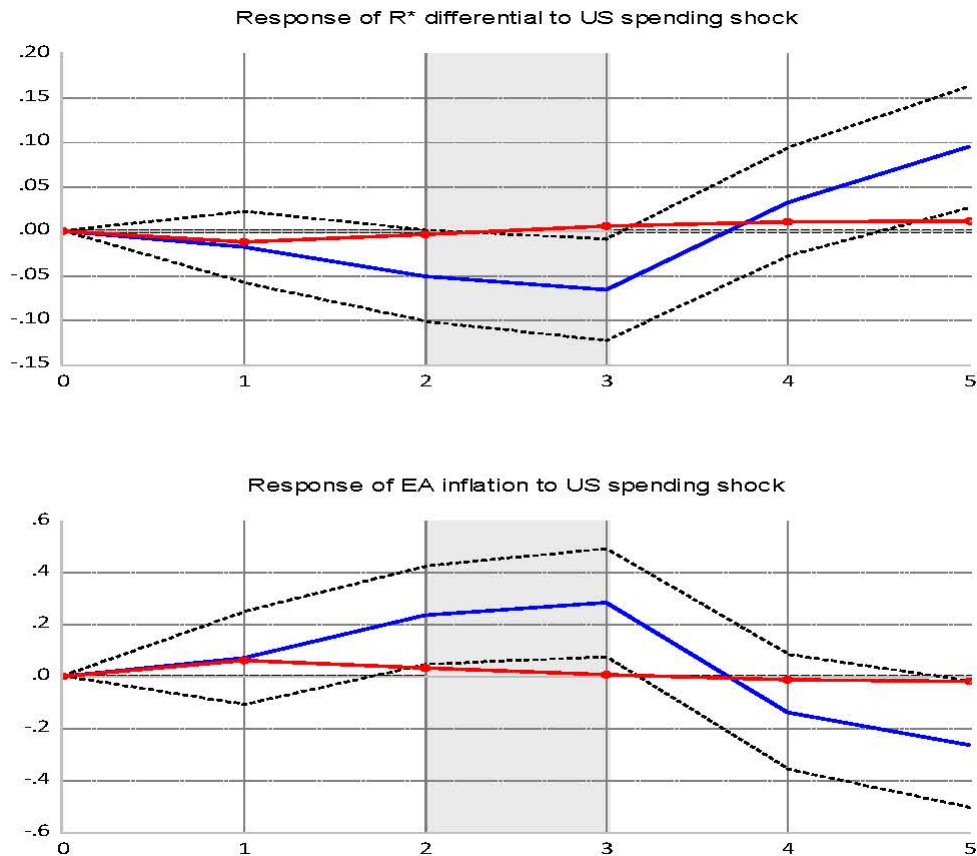
²⁵ This is an appropriate measure since it provides an indication of the unexpected effects of US fiscal policy once the impact of conditioning variables (i.e., past history of US GEXP, DEBT, YGAP, R^* , INF SPREAD) have been removed. The estimates provided in Figure 2 rely on the local projections technique 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.

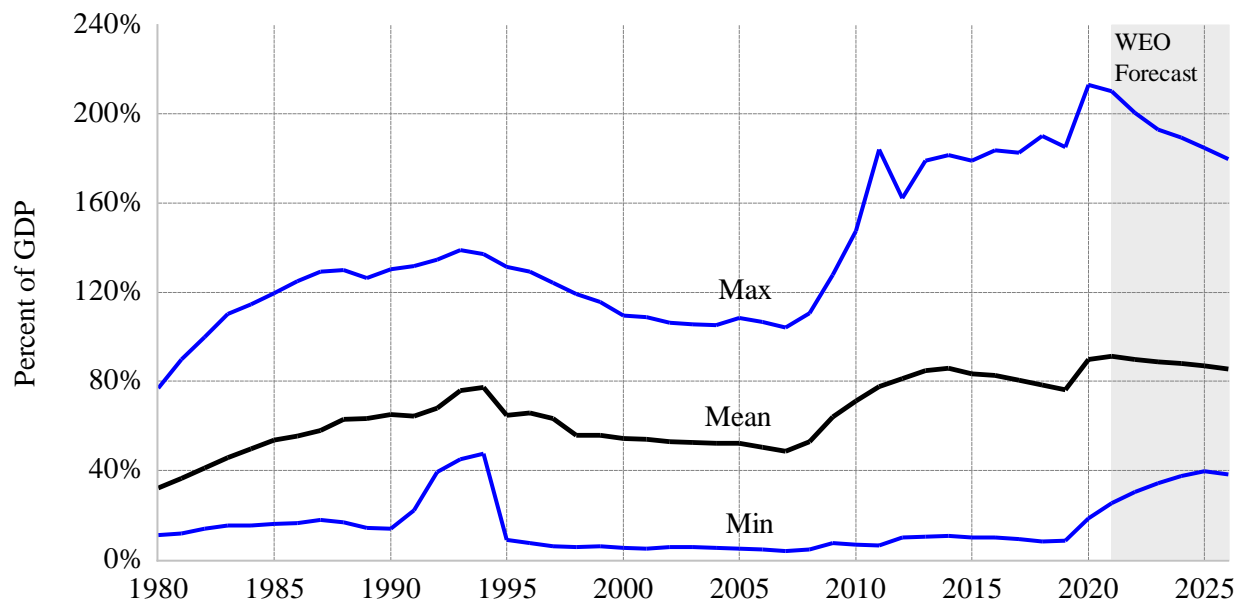
Figure 3 plots the evolution of the debt to GDP ratio in the euro area since 1980. Mean levels are bracketed by estimates of the highest and lowest debt to GDP ratios. Clearly, the same country need not always generate either the highest or lowest debt ratios over time. The first jump in the debt ratio 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

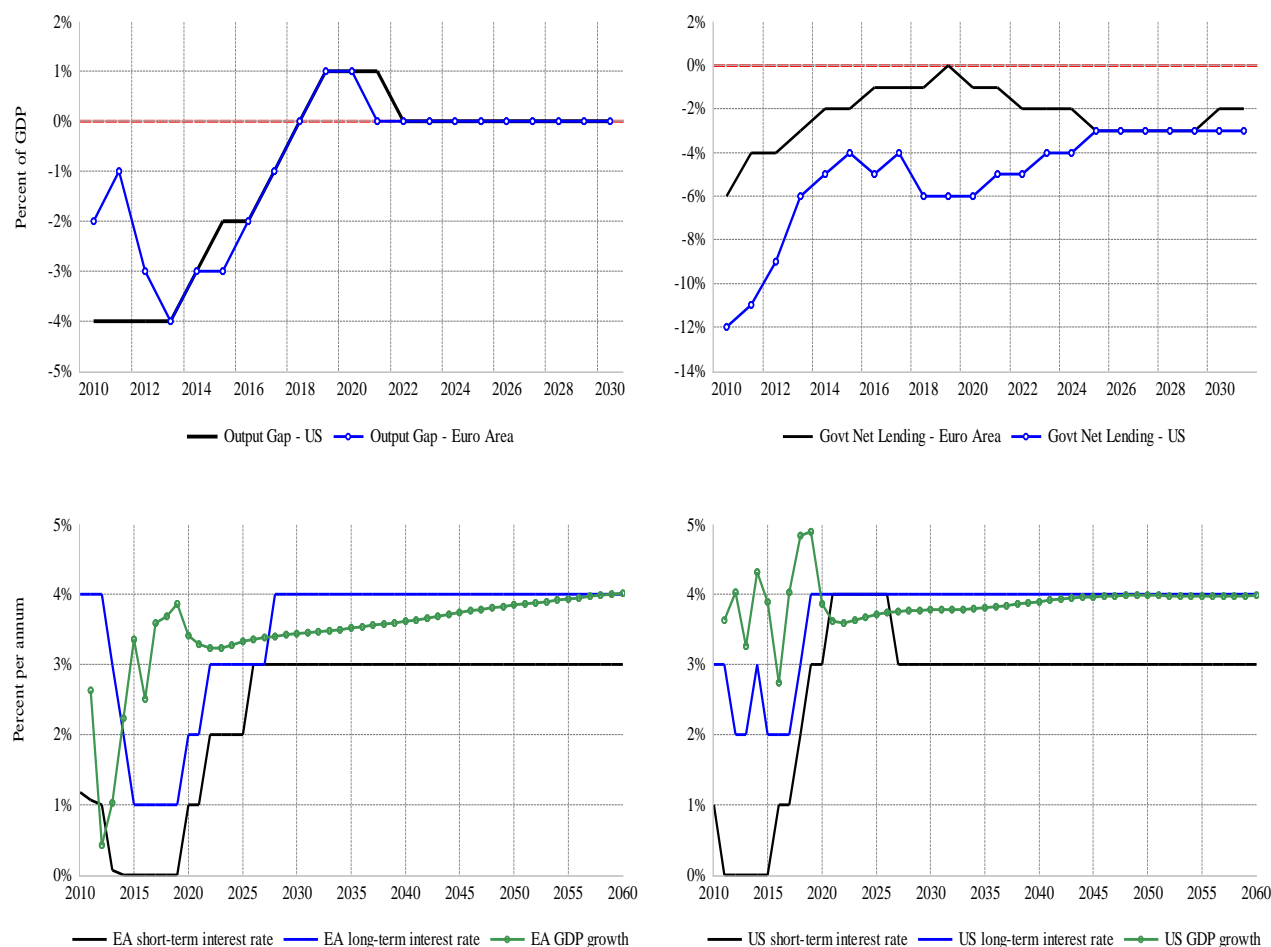


Note: Data are annual. Mean is the average of debt to GDP ratio levels for 14 euro area economies. Max is the highest ratio found, Min the smallest ratio found each year. The same country need not always be Max or Min.

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 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

Variable	Dependent Variable: Primary Balance (% GDP)			
	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.matteocioviello.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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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.

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