When and how to deactivate the SGP general escape clause?

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Abstract

This paper analyses the conditions under which to lift the SGP general escape clause (GEC). It is advisable that the timing for lifting the GEC be Member State-specific and contingent to the Member State's return to its pre-Covid-19 output gap or real GDP level. Medium-Term Budgetary Objectives should be redesigned to take into account the debt-to-GDP level and the interest rate-growth differential. Maintaining government debt yields at low levels after the pandemic would make debt reduction less costly in terms of output.

This document was provided by the Economic Governance Support Unit at the request of the ECON Committee.

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LIST OF ABBREVIATIONS

EA	Euro Area
EU	European Union
ECB	European Central Bank
EFB	European Fiscal Board
GEC	General Escape Clause
GDP	Gross Domestic Product
MTO	Medium Term Budgetary Objective
PP	Percentage Points
SGP	Stability and Growth Pact

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EXECUTIVE SUMMARY

On 23 March 2020, the Council activated the General Escape Clause (GEC) under the Stability and Growth Pact (SGP) to provide Member States with the necessary fiscal space to respond to the Covid-19 pandemic. The Council recommended that Member States should take all necessary measures to address the pandemic, sustain the economy and support the ensuing recovery.

The Covid-19 pandemic has had unprecedented economic effects on Europe, which is experiencing its deepest recession since the Great Depression. The Euro Area (EA) contracted by 3% in the first quarter of 2020 and by 15% in the second quarter of 2020, relative to the same quarter of the previous year; the Commission forecasts EA output to be 7 pp below potential in 2020. Member States have effectively used their discretionary fiscal tools to address the pandemic. My analysis shows that output losses could have been up to two times larger if the GEC had not been activated and the provisions of the SGP had been fully applied.

This briefing paper analyses the conditions under which the GEC should be deactivated. The most important finding is that, first and foremost, lifting the GEC and returning to the prescription of the SGP should avoid making fiscal policy pro-cyclical. This implies that deactivation should take place only once the economies have recovered from the effects of the pandemic and it is clear that they are approaching their pre-Covid-19 levels. Lifting the GEC when economies are still in a downturn would prolong the recession, deteriorate public finances and ultimately defeat the purpose of activating the GEC. Institutional trust may also suffer.

The second important finding is that pre-Covid-19 economic conditions, as captured by the Commission autumn 2019 forecast of the 2020 output gap or the 2019 level of real GDP, should be taken as a reference for lifting the GEC. Each Member State should revert to the prescription of the SGP when this State's output gap has returned to its pre-Covid-19 level. Such Member State-specific return to the SGP can be implemented by deactivating the GEC, which is common to all Member States, and invoking the clause for unusual events for the countries that fall short of their pre-Covid-19 economic conditions. The analysis shows that the deactivation of the GEC based on an aggregate EA/EU pre-crisis level of GDP could cause fiscal policy to turn pro-cyclical for those States whose output gaps are still large and negative. This scenario is particularly likely if the recovery from the Covid-19 pandemic is uneven across the EA.

Government debt will increase considerably during the Covid-19 pandemic, leading to a deterioration of public finances for both low- and high-debt countries. I suggest that the large shock caused by the pandemic is an excellent opportunity for reforming the EU fiscal framework and bringing important changes to the SGP. The Medium-Term Objectives (MTOs) should become country specific and explicitly take into account the debt-to-GDP level, as well as the interest rate-growth differential of the country. Member States with higher debt levels should be given more time for debt/GDP to return to the reference level of 60%; Member States with higher and possibly positive interest rate-growth differentials need higher MTOs to ensure debt sustainability and should therefore be given longer adjustment periods.

The analysis confirms that political economy considerations play an important role in debt adjustment, as faster debt reduction necessarily implies tighter fiscal policy and larger output losses. Governments want to spread the cost of reducing debt across current and future generations and have little incentive to front-load the fiscal adjustment.

The ECB Pandemic Emergency Purchase Programme has contributed greatly to making the cost of new public debt negligible or even negative in the EA during the Covid-19 crisis, by keeping sovereign debt

yields low. Maintaining government debt yields at low levels after the pandemic would help public debt sustainability and would attenuate the negative impact of debt reduction on GDP. High-debt Member States, in particular, should take advantage of periods with low rates to reach and maintain their updated MTOs and reduce debt.

1. BACKGROUND AND AIM

Background

On 23 March 2020, the Council, based on a proposal by the Commission, activated for the first time the General Escape Clause (GEC) under the Stability and Growth Pact (SGP), in order to provide leeway for Member States to adopt emergency measures with major budgetary consequences. Against that background, the fiscal recommendations adopted by the Council in July 2020 include for all EU Member States, except for Romania (the only Member State in the corrective arm of the SGP, due to developments prior to the pandemic), the following text: "*Take all necessary measures, in line with the general escape clause of the Stability and Growth Pact, to effectively address the COVID-19 pandemic, sustain the economy and support the ensuing recovery. When economic conditions allow, pursue fiscal policies aimed at achieving prudent medium-term fiscal positions and ensuring debt sustainability, while enhancing investment (...)*."

Aim

Against the background presented above, I was asked to address the following questions:

• Discuss the framework in which the GEC could be lifted, taking into account the objectives of the SGP, including the avoidance of pro-cyclical fiscal measures. Such a framework should *inter alia* refer to the indicators used by the Commission under the SGP, including under its flexibility provisions, and the objectives of stability and growth. In this context, the role of officially notified and forecast data should be addressed.

• Assess whether other transitionary arrangements could/should be applied, notably how to take into account debt and deficit levels which have sharply increased due to the pandemic.

• Discuss in which terms the Commission and the Council should recommend concerned Member States to correct excessive deficits or adjust to their updated Medium Term Objectives (MTO), once a decision on the deactivation of the general escape clause has been made. Which periods and (transitory) paths for correction/adjustments should be foreseen? Which relevant factors should be considered in that context?

This briefing paper is organized as follows. Section 2 reviews the macroeconomic outlook and fiscal policy developments during the Covid-19 pandemic. Section 3 describes the framework and the conditions under which the GEC should be deactivated. Section 4 analyses debt sustainability after the Covid-19 pandemic and suggests making MTOs contingent on the country specific level of public debt and the interest rate-growth differential.

2. MACROECONOMIC AND FISCAL DEVELOPMENTS

The Covid-19 pandemic and the lockdown measures undertaken by governments to flatten the pandemic curve have had a dramatic impact on macroeconomic conditions. The euro area (EA) is experiencing its most severe recession since the recession of 2008/2009; the breaking of the second wave of Covid-19 ushers in a new set of restrictions that will undoubtedly further worsens macroeconomic conditions. This section shows the forecasted effects of the Covid-19 pandemic on macroeconomic and fiscal conditions.

2.1.   Macroeconomic outlook and fiscal policy developments

A number of indicators are available to assess macroeconomic conditions in the light of deactivating the GEC. This paper uses the output gap, namely the difference between actual and potential output, where potential output is the level of output that can be achieved if the economy operates at full capacity. A negative output gap arises when the economy is below full capacity, i.e. the factors of production are not fully utilized; vice versa, a positive output gap arises if the economy is above full capacity and inflationary pressure builds up. The Commission publishes output gap estimates (historical and forecast); this report uses the 5 November 2020 release of the annual macroeconomic database of the European Commission's Directorate General for Economic and Financial Affairs. There are advantages and disadvantages in using the output gap.[1] On the positive side, the output gap concept is crucial for economic policy and the goal of stabilizing the economy; on the negative side, the output gap is not directly observable and it relies on the estimate of potential output. If potential output is over- or under-estimated, policy failures can follow[2]. In the context of assessing current macroeconomic conditions, the risk in using the output gap is relatively small, as I will compare output gaps before and after (forecast for the near future) the Covid-19 pandemic. At this stage, it is unclear whether the Covid-19 pandemic will have direct long-run effects on the economy and on potential output; this is an important issue for future analysis.[3]

Alternative macroeconomic indicators that could be used to assess how and when to deactivate the GEC are real GDP growth, the unemployment rate or potential growth. Real GDP growth is not a suitable indicator, because the automatic rebound that will follow the sharp recession of the first and second quarter of 2020 is likely to be limited and, as such, it may hide long-run output losses. The unemployment rate may overestimate economic conditions during the pandemic thanks to labour market measures, such as furlough programmes, and country-specific measures, such as the suspension of layoffs. Since potential growth has little bearing on actual growth, using it as trigger for lifting the GEC could cause fiscal policy to become pro-cyclical, i.e. to become contractionary during a recession.

Figure 1 displays the Commission autumn 2020 forecast for the 2020 output gaps, the autumn 2019 forecast for the 2020 output gaps, and their difference. The Commission's autumn 2020 forecast suggests that all EA members will have negative output gaps in 2020. This forecasts is sharply in contrast with the autumn 2019 forecast for the year 2020, according to which most EA countries were expected to have positive gaps in 2020 (except Belgium, Germany, Greece and Italy). The solid line in Figure 1, labelled as shortfall, is calculated as the difference between the autumn 2020 and the autumn

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[1]   See (Cotis, et al., 2005)

[2]   For an assessment of the quality, plausibility and reliability of output gap estimates in the EU, see (Hristov, et al., 2017), (Morrow, et al., 2015) and the works presented at the 2015 conference organized by the EPC's Output Working Group https://ec.europa.eu/economy_finance/events/2015/20150928_workshop/index_en.htm

[3]   See https://www.ecb.europa.eu/pub/economic-bulletin/articles/2020/html/ecb.ebart202007_01~ef0a77a516.en.html#toc1

2019 forecasts for the output gaps for the year 2020. The line called shortfall represents the predicted deterioration in the 2020 output gap due to the Covid-19 pandemic and related lockdowns, net of the fiscal response undertaken by governments and the EU. The shortfall for the EA is -7.4%, but there is significant variation across Member States, as the shortfall reaches – 11.9% for Spain, -10% for Greece but it is -3.7% for Ireland.

Figure 1: 2020 Output Gap (% of Potential GDP) Forecast
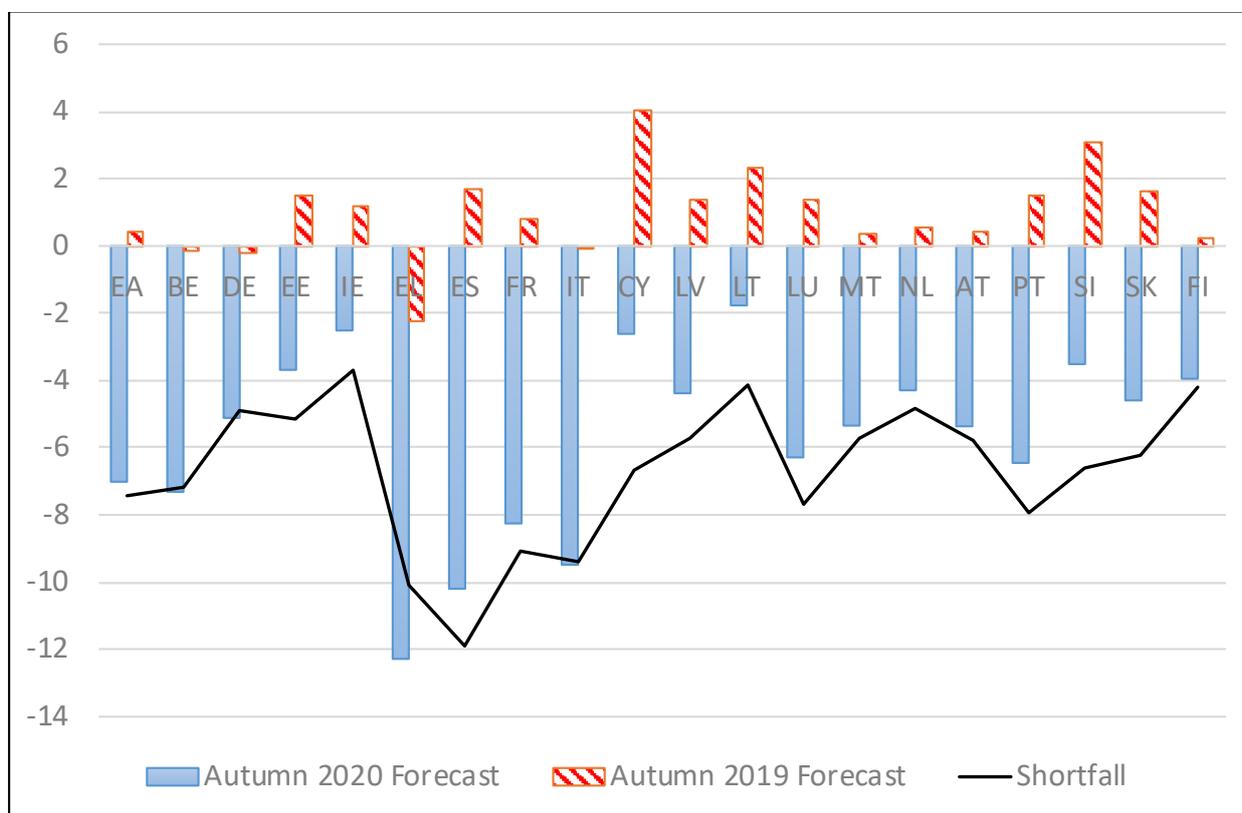
Source: European Commission, AMECO database (November 5, 2020 release)

Notes: The output gap is measured as percent of potential GDP. The shortfall is the difference between the autumn 2020 and the autumn 2019 forecast.

The heterogeneity in the 2020 output gap shortfall is driven by several forces. First, the Covid-19 pandemic hit some countries earlier and harder than others. Second, the stringency and duration of lockdowns differed significantly across countries. Third, the structure of the economy plays a role in amplifying the impact of the pandemic: countries with larger service sectors such as aviation, tourism & hospitality, are experiencing sharper contractions. Fourth, the discretionary fiscal response to the crisis by Member States' governments, as well as the automatic stabilizers, have contributed to alleviate the economic impact of the pandemic.

The activation of the GEC allowed EA governments to use discretionary fiscal tools to respond to the economic impact of the Covid-19 pandemic. The fiscal stance for year t can be defined[4] as the change in the primary structural budget balance between t and t – 1. More precisely:

Fiscal stance $_t$ = primary structural budget balance $_t$ – primary structural budget balance $_{t-1}$,

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[4]   See for instance (European Fiscal Board, 2020)

where the primary structural budget balance, and therefore the fiscal stance, are measured as percentage of potential GDP. The fiscal stance captures the change in the primary budget balance that is under direct control of government; as such, it is a suitable measure of discretionary fiscal policy. A negative fiscal stance indicates an expansionary fiscal policy.

Figure 2: Fiscal Stance and Output Gap Shortfall for 2020
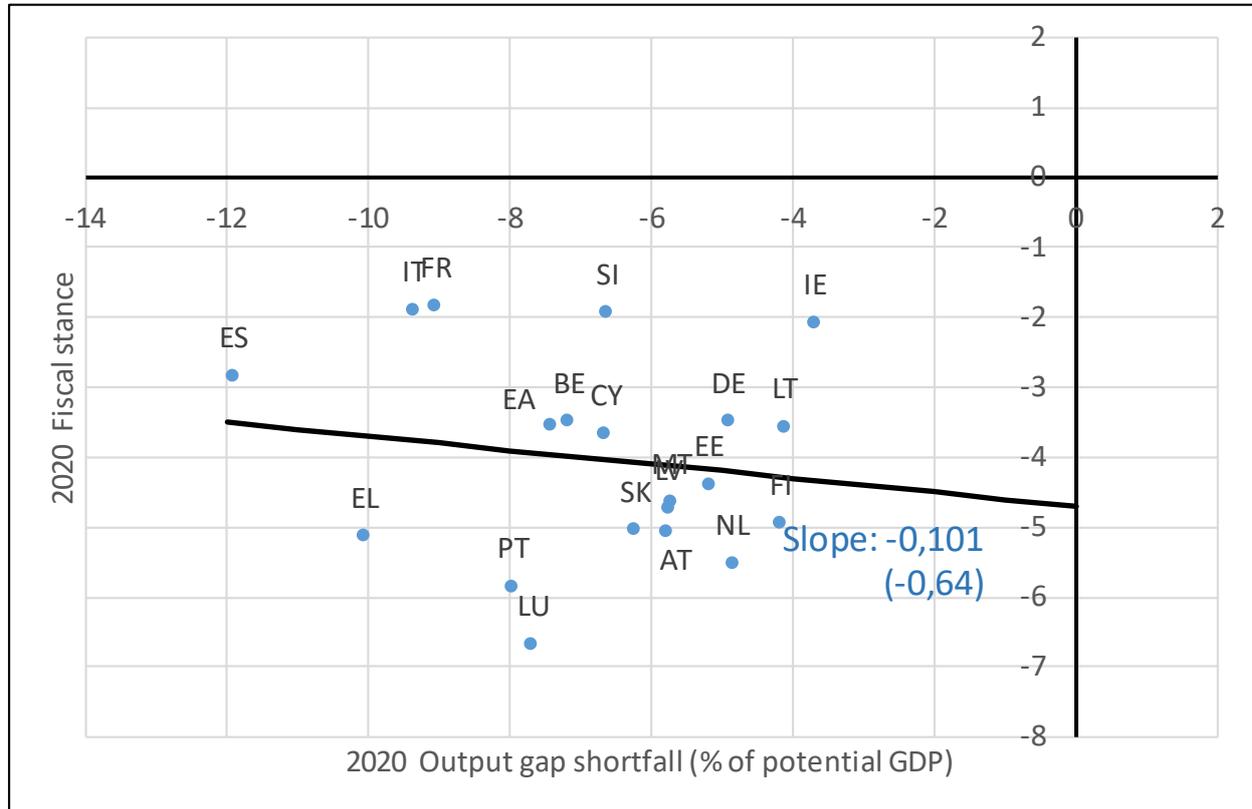
Source: European Commission, AMECO database (November 5, 2020 release)

Notes: The 2020 fiscal stance is the change between the primary structural budget balance between 2019 and 2020, as measured by the Commission autumn 2020 forecast. The 2020 output gap shortfall is the difference between the autumn 2020 and autumn 2019 forecast of the 2020 output gap. The solid line is the estimated linear regression (*t-statistic*, a measure of whether the estimated parameter is statistically different from zero, in parentheses) of the output gap on the fiscal stance.

Figure 2 shows the 2020-output gap shortfall (measured on the horizontal axis) and the fiscal stance in 2020 (measured on the vertical axis) for all EA Member States. Several points are worth emphasizing. The (forecast) fiscal stance for 2020 is expansionary and countercyclical, i.e. all EA Member States' governments are running expansionary fiscal policies in the presence of negative output gap shortfalls (and negative output gaps), in line with the logic behind the activation of the GEC. A linear regression of the output gap shortfall on the fiscal stance reveals a negative, although not statistically significant (as expressed by the low level of the t-statistic), relationship between the two variables. In Figure 2, countries are clouded around a downward sloping line indicating that weaker discretionary fiscal responses are accompanied by larger output gap shortfalls.

The economic forecast for 2021 is ridden with uncertainty. Europe is currently experiencing a second wave of infections and governments have introduced new lockdown measures to reduce the spread of Covid-19. On the bright side, a few Covid-19 vaccines have been found to be effective and will most likely be approved for general use soon. Figure 3 reports the autumn 2020 and the autumn 2019 forecasts of the 2021 output gap in the EA; as in Figure 1, the shortfall is calculated as the difference between the autumn 2020 and the autumn 2019 forecast. In its most recent update, the Commission

has further reduced its forecast for the 2021 EA output gap to -3.76%, projecting now an output gap that is 4 pp lower than the pre-Covid-19 forecast from autumn 2019. This forecast shortfall may prove to be too optimistic if the resurgence of infections and lockdowns persists in 2021 and too pessimistic if a vaccine becomes available in the first two quarters of 2021. In any case, economic slack is likely to remain significant and unevenly distributed in 2021, as depicted in Figure 3: the Commission forecasts that all EA Member States will have negative output gaps and face large shortfalls relative to pre-Covid-19 forecasts.

Figure 3: 2021 Output Gap (% of Potential GDP) Forecast

Source: European Commission, AMECO database (November 5, 2020 release)

Notes: The output gap is measured as percent of potential GDP. The shortfall is the difference between the autumn 2020 and the autumn 2019 forecast of the 2021 output gap

A reason for concern is that most discretionary fiscal responses undertaken by national government in 2020 are expected to expire in 2021. If this policy reversal materializes, the fiscal stance will be restrictive in 2021. Figure 4 shows the autumn 2020 forecast for the 2021-output gap against the forecast fiscal stance for 2021. The fiscal stance is projected to become restrictive and pro-cyclical for most EA countries, with governments tightening fiscal policy (positive fiscal stance) while their economies are still well below potential (negative output gap).

Figure 4: Fiscal Stance and Output Gap for 2021

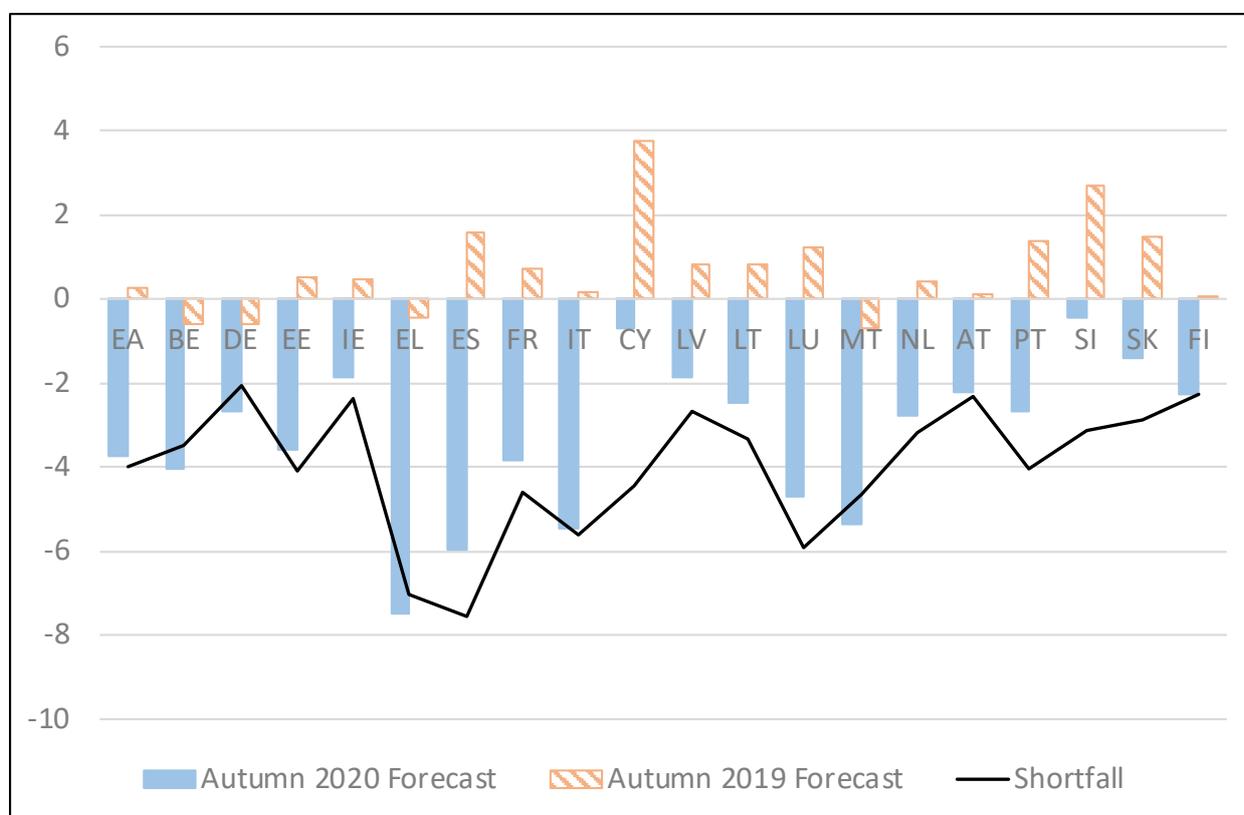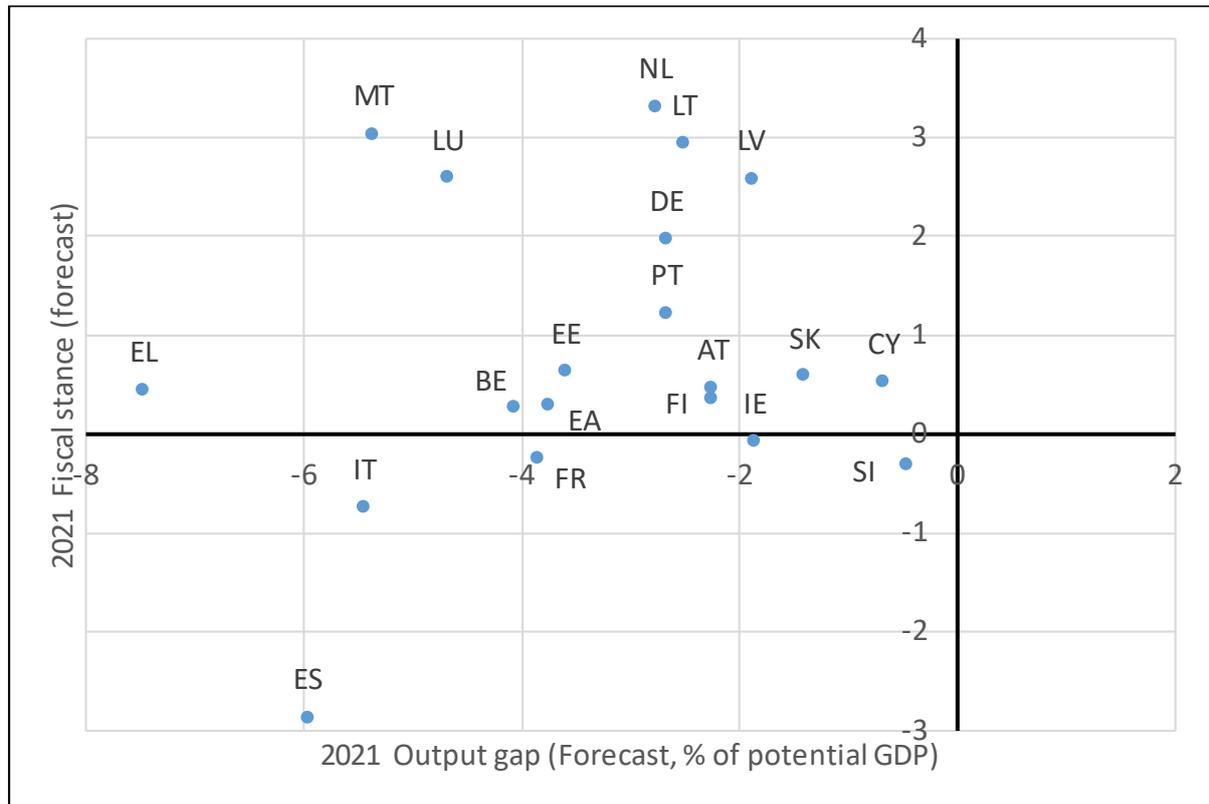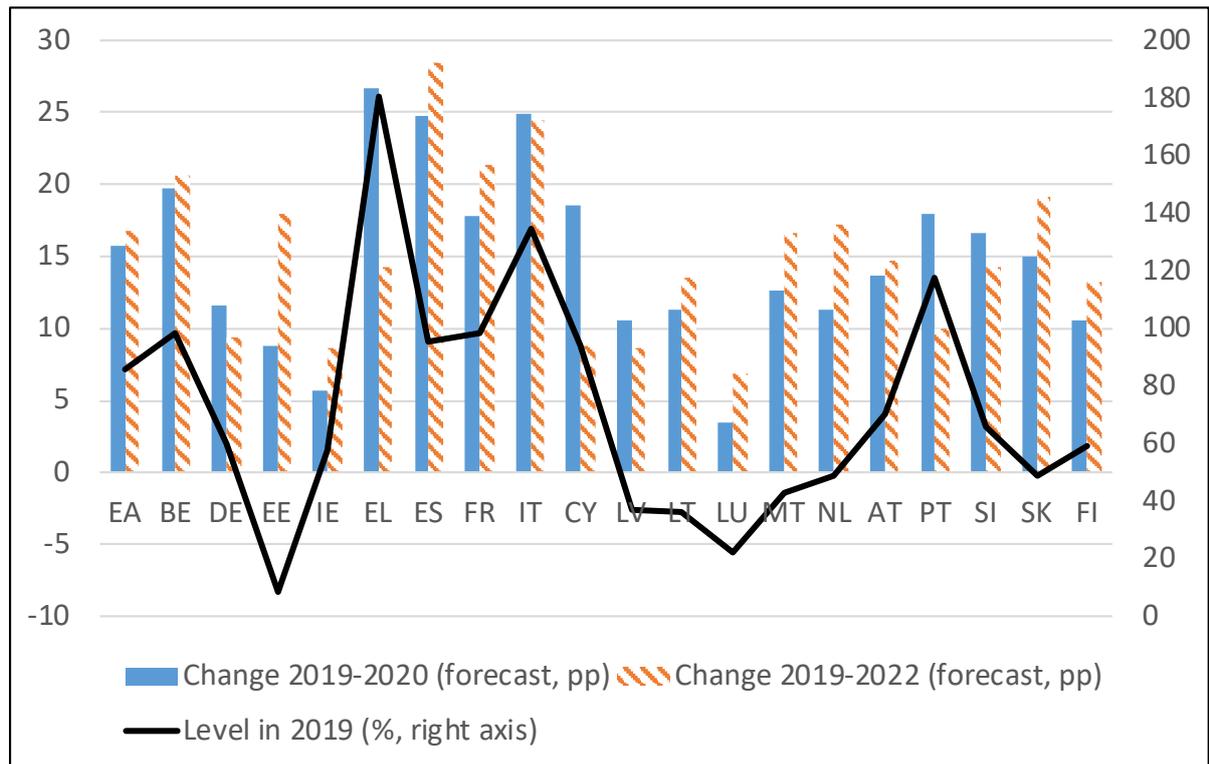*Source: European Commission, AMECO database (November 5, 2020 release)*

Notes: the 2021 Fiscal stance is the change between the forecasts of the primary structural budget balance between 2020 and 2021.

Figure 5: General government debt developments (% of GDP)

Source: European Commission, AMECO database (November 5, 2020 release)

2.2. General government debt developments

General government debt levels measured as percentage of GDP will increase substantially in 2020, because of the increase in net borrowing as well as the reduction in GDP. Figure 5 illustrates the level of the debt-to-GDP ratio in 2019 in percent (black solid line, measured on the right axis) and the forecast pp change of the debt-to-GDP ratio between 2019 and 2020 (blue bars, measured on the left axis), these indicators capture the short-run effect on public debt of both the expansionary fiscal stance and the recessionary impact of the pandemic on GDP. Figure 5 also illustrates the forecast change of debt/GDP between 2019 and 2022 (orange dashed bars, measured on the left axis), which, in this context, can be interpreted as the expected long-run impact of the Covid-19 crisis on public finances.

General government debt-to-GDP ratio in the EA is projected to increase by 15.6 pp in 2020 and by 16.7 pp in 2022. The large increase in debt ratios in 2020 stems not only from the expansionary fiscal stance adopted by governments, but also by the large reduction in GDP at the denominator of the ratio in the same year. Figure 5 however reveals that the Covid-19 pandemic will lead for most EA Member States to a long-run deterioration of public finances that government should address once the pandemic has subsided.

The cross-country distribution of the deterioration in public finances is reason for some concern, as a few high-debt countries are expected to experience a large increase in their debt-to-GDP ratio.

3. FRAMEWORK FOR LIFTING THE GENERAL ESCAPE CLAUSE

3.1. Background

The Council activated the GEC in March 2020 in order to lift the constraints implied by the SGP and to provide leeway for Member States to adopt discretionary fiscal measures with major budgetary consequences. The goal was to enable each country to "*effectively address the Covid-19 pandemic, sustain the economy and support the ensuing recovery.*" The empirical evidence presented in Section 2 suggests that activating the GEC has indeed allowed governments to use their discretionary fiscal tools, which have mitigated the economic consequences of the Covid-19 pandemic. Estimates of government spending multipliers in recessions vary from 1.5 to 3.5;[5] considering a conservative estimate of 2, the negative output gap of the EA as a whole would have been 7 percentage points lower in 2020 in the absence of a fiscal response, reaching -14 percent of potential GDP.

Regarding the question of how, when and under which conditions to lift the GEC, the following facts need to be taken into account:

1. According to the autumn 2020 forecast of the Commission, all EA Member States (except Latvia) will experience negative output gaps in 2021.

2. These forecasts use a no-policy-change assumption (only the measures that have already been adopted and that will be in place are considered).

3. Europe is experiencing a second wave of Covid-19 infections and lockdowns, which may deteriorate the economic outlook for 2021. On the other hand, it is likely that Covid-19 vaccines will become available at some point during the year 2021, which may improve the economic outlook for that year.

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[5] (Auerbach & Gorodnichenko, 2013) and (Auerbach & Gorodnichenko, 2012) estimate a government spending multiplier in recessions around 2; (Bachmann & Sims, 2012) estimate a multiplier of 3 and (Shoag, 2013) between 3 and 3.5. However, (Ramey & Zubairy, 2018) find a multiplier below 1.

4.   There is significant heterogeneity across EA Member States regarding the projected 2021 output gap, with forecasts ranging from -0.7% (Cyprus) to -7.5% (Greece) of potential GDP.

3.2.   Defining the conditions

Since Covid-19 is an unanticipated shock beyond the control of governments, I argue that the sensible condition for lifting the GEC is that *Member States return to/approach their pre-Covid-19 macroeconomic conditions.* The pandemic has triggered an unprecedented recession in the EA. When thinking about how, when and under which conditions to lift the GEC, the priority is to avoid pro-cyclicality of fiscal policies that would prolong the economic downturn and possibly lead to a two-speed EA. This is to say that the GEC should be lifted if the deterioration in economic conditions due to the Covid-19 pandemic has reversed. At the same time, Member States should use the fiscal space created by the activation of the GEC to respond to the Covid-19 crisis rather than filling pre-existing output gaps that require other reforms, e.g. labour market reforms, pension reforms, etc.

From an operational point of view, a few indicators are suitable to capture pre-Covid-19 macroeconomic conditions. The measure I recommend is *the autumn 2019 forecast of the 2020 output gap*, which is reported in Figure 6 (blue bars). If conditions were expected to be atypical in 2020, the average of the 2019 output gap and the 2019 forecast of the 2020-output gap could be chosen as the target. An alternative measure is, for each country, the pre-crisis level of real GDP.[6] The latter measure is simpler but it disregards developments in potential GDP.

My recommendation is to lift the GEC for all EU countries when output gaps have returned to the autumn 2019 forecast level for 2020. These output gaps were not necessarily optimal; the reason for choosing them as reference for lifting the GEC is that they summarize pre-Covid-19 conditions.

Alternative measures have been suggested in academic and policy circles:

Deactivation based on reaching a pre-established aggregate EA or EU target for the real GDP. The (European Fiscal Board, 2020) proposes using a pre-crisis level of real GDP of the EA or the EU as a reference. As explained in detail below, lifting the GEC based on an aggregate EA or EU level of real GDP can be suboptimal and costly (in terms of output) for those Member States that, when the aggregate EA/EU target is reached and the GEC deactivated, will not have yet returned to their pre-crisis GDP levels. The mechanism for lifting the GEC should be prepared to face heterogeneous economic conditions across the EU at the end of the Covid-19 crisis.

Deactivation based on the level/increase of the debt-to-GDP ratio. The decision to deactivate the GEC could be made contingent to reaching a pre-established level or increase in the debt-to-GDP ratio. An example of such rule is "the GEC is deactivated for country X once its debt-to-GDP ratio increases by 20 pp relative to the 2019 level." A rule of this type has two caveats. First, it is pro-cyclical: a deep recession makes the debt limit, and thereby the deactivation of the GEC, more likely. Second, country X may reach the pre-established increase in the debt-to-GDP ratio when its economy is still in recession and far from 2019 conditions.

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6   To be precise, it should be the 2019 real GDP per capital level.

Figure 6: 2020 Output Gap (% of Potential GDP, autumn 2019 Forecast)
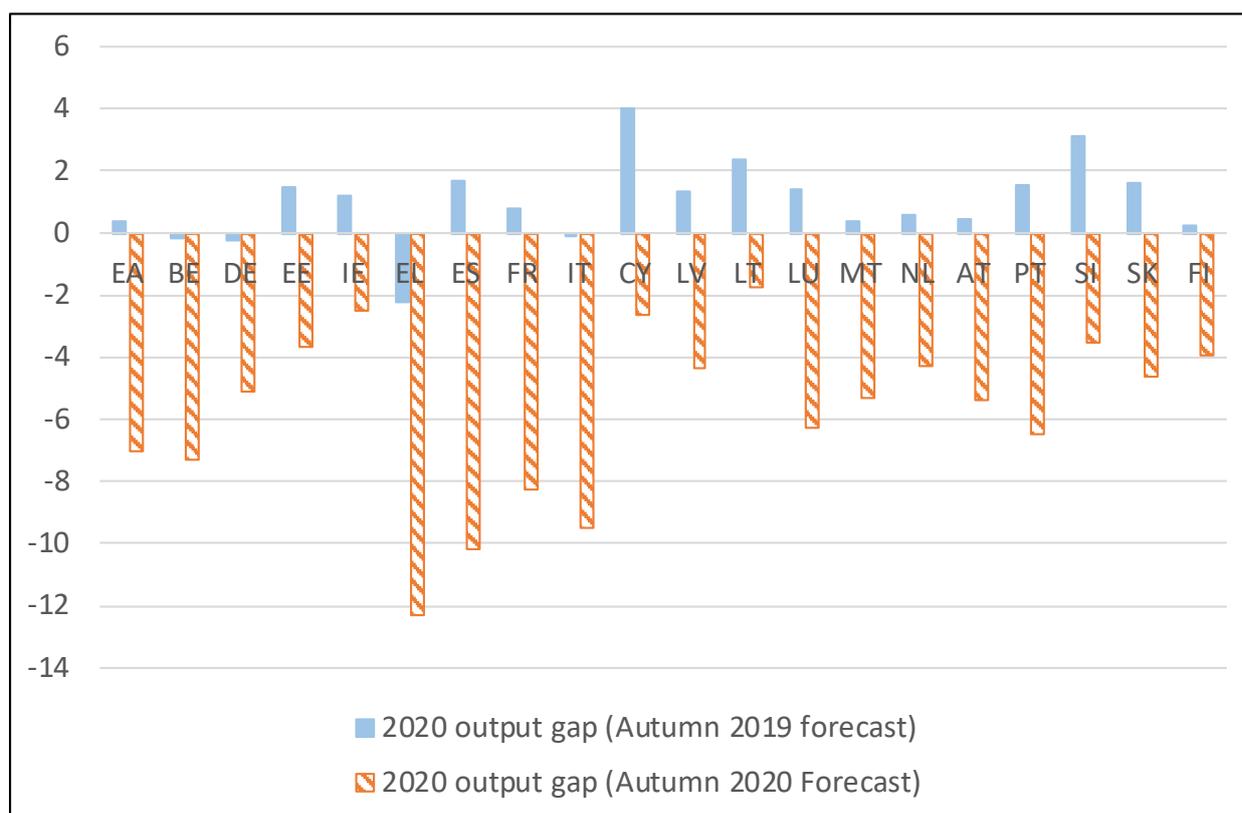
Source: European Commission, AMECO database (November 5, 2020 release)

<u>Deactivation based on snowball effect and debt sustainability.</u> The debt-to-GDP ratio is a fundamental measure of debt sustainability because it expresses what government owes in terms of the productive capacity, and thereby an indication of the capacity of the economy to repay. The snowball effect is the difference between the average interest rate paid on the debt, *i*, and the growth rate of GDP, *g*. More precisely, *i-g* is the growth rate of the debt-to-GDP ratio when the primary balance is equal to zero. Intuitively, if *i < g*, the government could run a primary budget deficit and still hold the debt-to-GDP ratio constant. If the government runs a primary budget surplus, such surplus will contribute in full to the reduction of debt. However, if *i > g*, the government must run a primary budget surplus to hold debt/GDP constant. Notice that:

- Medium- and long-term fiscal policy (including after the GEC is lifted) must take into account the snowball effect to ensure debt sustainability – I will come back to this issue in section 4. In the short run, however, fiscal policy should be allowed to deviate from its medium-term path in the event of a deep recession.
- Interest rates on government debt for EA Member States are currently at historically low levels, partially as a result of the ECB Pandemic Emergency Purchase Programme. On one hand, it would make sense to run primary budget surpluses and reduce the debt now because doing so when rates are higher will be more painful. On the other hand, reducing the debt and engaging in austerity now will further reduce output growth in the short run, possibly making *i > g*. In this case, fiscal austerity raises rather than reduces the debt-to-GDP ratio.

For these reasons, the deactivation of the GEC should not be based on the snowball effect, but on macroeconomic conditions returning to normal after the Covid-19 pandemic.

Returning to pre-Covid 19 macroeconomic conditions requires a sizable improvement in output gaps relative to current levels (see Figure 6, orange dashed bars). Such improvement requires an

expansionary fiscal stance. Moreover, the pandemic in Europe is far from contained; European economies are not on a firm recovery path and, at this point, it is unlikely that there will be a sharp recovery in 2021. Undertaking fiscal austerity while economies are still in recessions will be defeating and counterproductive.

A key issue is whether the reference condition should be aggregate or country-specific. More precisely, the GEC could be lifted for all Member States at the same time, conditional on achieving a specified EA or EU target. I refer to this option as *common lifting*. Using my recommended measure for pre-Covid-19 macroeconomic conditions, common lifting should occur once the whole EA output gap returns to (or exceeds) 0.4 pp of potential GDP, according to the autumn 2019 forecast for 2020 (see Figure 6), independently of how far each Member State is from its own autumn 2019 forecast of the 2020 output gap. Common lifting of the GEC would require a 7.5 pp improvement in the EA output gap relative to current economic conditions. Alternatively, the reference condition and the lifting of the GEC could be country-specific. Using my recommended measure, the GEC should be lifted for a specific Member State once its output gap has returned to the 2019 level forecast for the year 2020. I refer to this option as *member-specific lifting*. These two options are discussed in detail below.

3.3. Common versus member-specific lifting

Each arrangement has pros and cons. The main benefits of common lifting are of practical nature for the Commission/Council and it avoids a patchwork-style return to the SGP. The main cost is the risk that lifting the GEC will cause fiscal policy to be pro-cyclical for Member States whose output gaps are still large and negative. This scenario is particularly likely if the recovery from the Covid-19 pandemic is uneven across the EA or if the resurgence of Covid-19 generates divergent economic dynamics within the EA.

For member-specific lifting, the disadvantage is that it implies a patchwork-style return to the SGP. Its main advantage is that fiscal support is withdrawn only when the economy has rebounded from the Covid-19-related recession.

To better understand the difference between common and member-specific lifting and quantify the economic impact of lifting the GEC at different stages of the recovery from the Covid-19 pandemic, I build a simple model of a small open economy. The economy produces and consumes; it imports and exports from the rest of the EA. I abstract from monetary policy because the policy rate is effectively at its zero lower bound and use a real model with a constant (and very low) real interest rate. Fiscal policy consists of government spending and a proportional tax levied on labour income; the government can issue public debt that pays the real interest rate. Without loss of generality, I analyse the case where government spending is the discretionary tool used in response to the shock, while the labour income tax adjusts to ensure that public debt dynamics is stable. The opposite assumption, i.e. labour income tax is the discretionary tool used in response to the shock while government spending adjusts to ensure debt stability is possible and would deliver qualitatively similar results. The model equations are presented in Annex 1.

The model is intentionally simple in order to focus on the effects of fiscal policy. The model requires government debt not to grow indefinitely over time, i.e. it imposes debt stability. This feature of the model holds at all times and after any shock; it holds at the initial equilibrium and afterwards. I analyse the situation where, following the Covid-19 shock, the government raises spending to stimulate the economy and, as a result, government debt increases. Because debt stability is hard-wired in the model, the labour income tax goes up with the Covid-19 shock. This feature of the model is counterfactual, as tax rates have been temporarily reduced during the pandemic. However, the model is correct in predicting that tax rates will have to increase at some point in the future if debt has to return to its pre-

crisis level. Relative to the evidence, the impulse responses of the model front-load the increase in the labour income tax rate and possibly overestimate the (negative) short-run impact of Covid-19 pandemic on output and vice versa for the medium run impact.

To capture the economic impact of the Covid-19 pandemic, I add a temporary Covid-19 shock. Following recent literature,[7] the Covid-19 shock is modelled as a shock to the discount factor β that makes consumers more cautious and reduce their consumption. As a result, consumers shift consumption from the present to the future. The economic disruptions caused by the Covid-19 pandemic include the impossibility to consume some goods/services; giving a positive shock to the discount factor of consumers delivers a fall in private consumption in line with the empirical evidence. To capture the lockdown of productive capacity, I could add a labour supply shock via a temporary labour disutility shifter. This shock would lead to an increase in wages and unit labour costs, which would further contribute to reduce output. For simplicity, I use only the Covid-19 shock to the discount factor.

The economy and the shocks are calibrated to match some figures for the Italian economy in 2019. Government spending is 20% of GDP[8] and public debt is 135% of GDP. One period in the model is equivalent to one year and the gross real interest rate is set to R = 1.0064 to match current yields for Italy.[9] For simplicity, I assume that the debt-to-GDP ratio is constant at the initial equilibrium, namely before the Covid-19 shock. I choose the size of the Covid-19 shock and the size of the discretionary fiscal response (government spending) to match the (forecast) output gap of Italy in 2020 under the second scenario explained below. I then use my model to produce impulse responses under alternative policy assumptions.

Figure 7 shows the impulse responses of a number of variables in the model. For each subplot, years are indicated on the horizontal axis. Each variable is displayed as percent deviation from steady state, namely from the initial equilibrium. The Covid-19 shock, displayed in the last subplot, occurs in year 1 and it is assumed to shrink in size by 50% every following year. I consider three scenarios. The first scenario (blue solid line) assumes that the government cannot engage in expansionary fiscal policy and continues to keep its general surplus balance at zero. This scenario aims to captures the impact of the Covid-19 pandemic if the GEC had not been activated and fiscal policy had been constrained to keep the general budget surplus in balance, i.e. equal to zero. I refer to this scenario as "no activation."

The Covid-19 shock mechanically reduces consumption. The fall in aggregate demand causes a reduction in employment (hours worked) and GDP. In this scenario, the government cannot raise government spending in response to the Covid-19 pandemic and it must adjust tax revenues to keep the budget surplus equal to zero. Because labour income falls, the government must raise the income tax, which further reduces economic demand. Notice that the fiscal stance is pro-cyclical and restrictive: the economy is in a recession and the income tax rate goes up. Although the debt remains constant (the surplus to GDP is equal to zero), the debt-to-GDP ratio goes up due to the reduction in GDP. The model predicts an output gap of 21 pp.

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7   See FRNBY DSGE Model Documentation

8   In the model, government spending refers to purchases of goods and services but excludes government transfers. In 2019, Italy's government outlays represented 45% of GDP while purchases of goods and services (from national accounts data) represented 19% of GDP.

9   Yield on Italian 10-year government bonds on November 20, 2020; source: Eurostat.

Figure 7: Model Simulation of Lifting the GEC
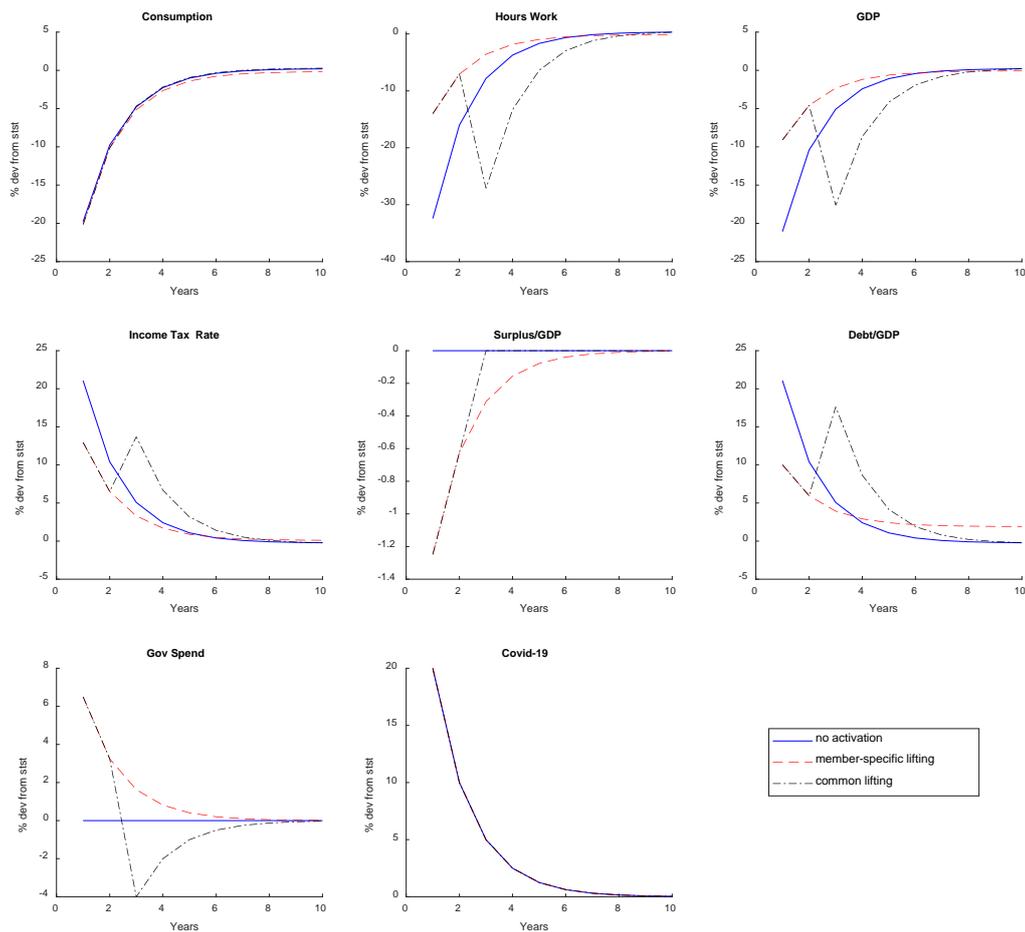
Notes: Years are indicated on the horizontal axis. All variables are reported as % deviation from the initial equilibrium value. If Debt/GDP is equal to 1 at the initial equilibrium, an increase by 20 pp means that Debt/GDP goes to 1.2. The Covid-19 shock occurs in period 1.

The second scenario (dashed red line) in Figure 7 assumes that: a) following the Covid-19 shock, the GEC is activated and the government increases spending to counteract the pandemic; b) fiscal stance is expansionary and the debt-to-GDP ratio increases by 10 pp; and c) the GEC is lifted when the output gap returns to zero, namely when GDP returns to its initial level, which occurs in year 6. I refer to this scenario as member-specific lifting. I calibrate the increase in government spending to deliver a negative output gap of 10%, as projected for Italy in 2020; this implies an increase in government spending equal to 6.5 % of GDP. The increase in public spending partly compensates the fall in aggregate demand, so that the recession is less severe (-10% versus -21%) and employment falls by 14% (against 32% in the case of no activation). Since the recession is milder, the reduction in labour income is more contained and the labour income tax goes up less, relative to the case of no activation. Moreover, the increase in the debt-to-GDP ratio is substantially lower relative to the case of no activation because the Covid-19 pandemic is less recessionary. From the perspective of the model, the activation of the GEC clearly results in lower output gaps and more sustainable public finances (as captured by the debt ratio).

The third scenario assumes that the GEC is lifted in year 3, which would correspond to 2022. Starting in year 3, the government must bring its general balance surplus to zero, even though the output gap in year 2 is still at -5%. I assume that the government cuts spending by 4 pp (to 16% of potential GDP) in year 3,[10] which is line with the projected tightening of the fiscal stance for Italy for the year 2021, and raises the income tax to ensure that the budget is balanced. I refer to this scenario as common lifting (black dash dotted line) in Figure 7. In this scenario, the GEC is lifted when GDP is still below potential and, in year 3, the output gap widens to -19%. The output gap worsens by 11 pp between year 2 and 3. This deterioration arises because: a) fiscal support is withdrawn while the economy has not recovered yet; and b) because the income tax increases sharply to bring the budget in balance, as required by the no-activation scenario. The combination of cutting government spending and raising taxes to generate a balanced budget causes a double-dip recession. The output loss between years 3 and 8 is significant: this is the area between the GDP dashed red and the GDP dash-dot black response in Figure 7.

For the analysis in Figure 7, I assume that lifting the GEC is unanticipated. Figure 8 in Annex 2 shows the case where the lifting of the GEC is announced in year 2 to take place in year 3. Since agents anticipate higher taxes in year 3, they raise hours worked in year 2 and reduce them in year 3. The result is higher volatility, with a milder negative output gap in year 2, but a larger negative one in year 3.

The simulations performed here are robust to several changes. The responses to the Covid-19 shock and to discretionary fiscal policy remain similar for different debt ratios. For simplicity, I have assumed that external demand for domestic product remains unchanged; such assumption is likely to overstate external demand during the Covid-19 pandemic, but it may understate it if the rest of the EA recovers at a faster pace than the country under analysis.

To summarise, the model analysis confirms that activating the GEC significantly alleviated the economic impact of the pandemic. It also shows that lifting the GEC while the economy has not yet recovered causes large output losses and a temporary worsening of public finances.

4. POST-COVID-19 FISCAL POLICY

In accordance with the preventive arm of the SGP, all EU countries are expected to reach their MTOs, or to be heading towards them by adjusting their structural budgetary positions at a rate of 0.5% of GDP per year as a benchmark. Countries with excessive and potentially risky debt burdens are expected to make faster progress. All countries are generally required to do more when economic conditions are favourable, so they can have more fiscal space when conditions are tough. At the same time, the required pace of adjustment is reduced when economic conditions are unfavourable. In this section, I suggest how post-Covid-19 fiscal policy could be adapted to address the debt accumulated during the pandemic.

4.1. Debt sustainability pre- and post-Covid-19 pandemic

There is considerable uncertainty in the forecast of general government debt for 2021 and 2022. The economic recovery may be delayed by the second wave of infections and lockdowns that Europe is currently experiencing; the likely arrival of a vaccine may lead to a fast economic rebound. In any case, the level of debt accumulated by the end of the pandemic depends on the fiscal response and the decision to continue giving leeway to governments to respond to Covid-19 pandemic.

The Commission debt forecasts for 2022 are reported in the first column of Table 1. For this paper, I take the Commission debt forecasts for 2022 as the level of general government debt that Member

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[10]   The forecast fiscal stance for Italy is -1.88 (2020), -0.73 (2021) and 0.76 (2022).

States will have by the end of the Covid-19 pandemic. These forecasts may be optimistic for a number of reasons. First, they assume that discretionary policies enacted in 2020 will be mostly reversed in 2021 and that the fiscal stance will become contractionary in 2022. In the light of the current second wave of infections and lockdowns, this path of fiscal policy may be optimistic. Moreover, EA Member States will require fiscal space in 2021 and until the recovery is well under way.

Column 1 of Table 1 reports the Commission debt forecasts for 2022 in billion euros. In column 2 of Table 1, I calculate the 2019 debt as percent of 2019 nominal potential GDP. This figure captures the burden of public debt in 2019 if the economy had been at full capacity. Debt to potential GDP ratios vary from 9% (Estonia) to 168% (Greece). In column 3, I calculate the forecast 2022 debt as percent of forecast 2022 nominal GDP; column 4 displays the change between the 2019 and the 2022 debt to potential GDP ratio for each Member State. As a whole, the EA debt to potential GDP ratio is expected to increase by 15.3 pp.

The yield on sovereign bonds plays a fundamental role in the arithmetic of debt sustainability and convergence. The standard public debt accumulation equation can be written as:

$$d_t - d_{t-1} = d_{t-1} \frac{i-g}{1+g} - pb_t$$

where d_t is the government debt-to-GDP ratio in year t, d_{t-1} is the government debt-to-GDP ratio in year t-1, pb_t is the primary surplus as % of GDP in period t, i is the average nominal interest rate paid on government debt and g is the rate of growth of nominal GDP. $i - g$ is the snowball effect; it captures the growth rate of the debt-to-GDP ratio if the primary budget surplus is zero. For countries with a negative snowball effect, the cost of servicing the debt is lower than the growth of GDP and, as a result, the debt-to-GDP ratio falls even if $pb = 0$. Countries with a positive snowball effect, on the other hand, must choose $pb > 0$ and high enough to ensure long-run debt sustainability. In this context, the ECB's Pandemic Emergency Purchase Programme (PEPP) is playing an important role in keeping i low and helping sustainability. The SGP has a debt-to-GDP reference value of 60%; Member States with debt ratios above the reference value are expected to run primary budget surpluses and converge to 60% in a period of 20 years.

Given an initial debt-to-GDP ratio d_{t-1}, the constant primary budget surplus necessary to achieve a pre-specified reference level for debt/GDP in n years can be calculated as follows:

$$pb^* = d_{t-1} \frac{i-g}{1+g} + \frac{1}{n} (d_{t-1} - d^*)$$

where d^* is the reference level for the debt-to-GDP ratio. In Table 1, I calculate pb^* for each Member State as follows. I set a lower bound of zero for pb^*. d_{t-1} is the forecast 2022 debt to potential GDP ratio and d^* is equal to 60%, consistent with the SGP. Calculating pb^* requires assumptions on the future levels of i and g. Forecasting yields and potential growth is difficult during ordinary times and more so during deep recessions. Moreover, the period since the global financial crisis has been characterized by low yields and low inflation for several countries, but high yield and low growth for those at the centre of the EA debt crisis. For each Member State, I set g equal to the average growth of nominal potential GDP in the last 20 years. For the cost of debt, I consider two scenarios: high and low. For the high scenario, i is equal to the average long-term government bond yield over the last 20 years. For the low scenario, I set i equal to current long term government bond yields for a period of 10 years and, after that, at the level assumed for the high scenario. Table 2 reports nominal potential GDP growth and long-term government bond yields in the two scenarios for each Member State.

Table 1: Debt Sustainability after Covid-19 Pandemic

Country	2022 Debt	2019 Debt/GDP, %	2022 Debt/GDP, %	Change 2019-22 %	Under High interest rate scenario			Under Low interest rate scenario
	EUR bn.				n=20	n=40	n=60	n=20
					pb*	*pb**	*pb**	*pb**
Belgium	585.4	99.3	118.7	19.3	2.4	0.9	0.4	0.5
Germany	2519.3	61.1	71.0	9.9	0.5	0.2	0.1	0.0
Estonia	7.9	9.0	26.7	17.7	0.0	0.0	0.0	0.0
Ireland	251.0	61.0	68.3	7.2	0.0	0.0	0.0	0.0
Greece	353.5	168.2	176.9	8.7	13.2	10.3	9.3	6.0
Spain	1532.9	97.7	121.1	23.4	2.8	1.3	0.8	0.8
France	2995.9	98.4	117.3	18.9	3.0	1.5	1.0	1.1
Italy	2841.7	135.9	155.6	19.7	7.4	5.0	4.2	4.5
Cyprus	23.7	101.0	105.9	4.9	3.1	2.0	1.6	0.8
Latvia	14.7	39.0	46.6	7.6	0.0	0.0	0.0	0.0
Lithuania	26.6	38.4	51.2	12.8	0.0	0.0	0.0	0.0
Luxembourg	19.2	22.6	28.3	5.7	0.0	0.0	0.0	0.0
Malta	8.4	45.7	60.0	14.4	0.0	0.0	0.0	0.0
Netherlands	549.7	50.4	66.8	16.4	0.0	0.0	0.0	0.0
Austria	354.7	71.8	86.5	14.7	0.9	0.3	0.1	0.0
Portugal	281.4	125.4	133.1	7.6	5.9	4.0	3.4	2.5
Slovenia	41.0	70.2	83.7	13.5	0.0	0.0	0.0	0.0
Slovakia	67.8	49.9	69.7	19.8	0.0	0.0	0.0	0.0
Finland	184.4	60.3	73.8	13.5	0.4	0.0	0.0	0.0

Source: European Commission, AMECO database (November 5, 2020 release), Eurostat and author's calculations.

Notes: 2019 and 2022 debt are calculated as % of potential GDP. 2022 debt and 2022 potential GDP are autumn 2020 forecasts. High interest rate scenario assumes that interest rates are equal to the average of long-term government bond yields over the last 20 years (see Table 2). Low interest rate scenario assumes that interest rates remain at current level of government bond yields (see Table 2) for 10 years and then increase to the same levels as in the high scenario for 10 years. *pb**=constant primary budget surplus necessary to achieve a pre-specified reference level for debt/GDP; n=20 means that *pb** is calculated assuming that the debt-to-GDP target of 60% is reached in 20 years.

In column 5 of Table 1, pb^* (the necessary constant primary budget surplus) is calculated for n=20 in the high interest scenario. Nine Member States report a zero in column 5 because they are expected to reach the debt target within 20 years keeping the primary budget in balance, thanks to a negative snowball effect ($i - g$ negative). All other Member States are required to run primary surpluses to achieve the debt target in 20 years. The primary budget surpluses of high-debt countries are too high

to be realistic: Greece should run every year a primary surplus of 13.2% of GDP, Italy 7.4% and Portugal 5.9%. The implication of this finding is that the SGP, in its current format, risks becoming implausible unless the speed and rate at which countries are expected to converge to the 60% target are formulated differently for different countries, taking into account the level of the debt-to-GDP ratio and the interest rate-growth differential *(i-g)*.

I calculate pb^* for n=40 in column 6 and for n=60 in column 7 of Table 1. Intuitively, countries with higher debt ratios need a longer time to return to the 60% target. The required primary budget surpluses under these alternative assumptions fall for all countries and they fall to more realistic, but still fairly high, levels for Italy and Portugal, but remain unrealistically high for Greece (9.3%). A sensible reform of the MTOs could keep 20 years as the required horizon to achieve the debt target except for countries with a 2022 debt-to-GDP ratio above a given threshold, for eample 130%; for these countries, a period of 40 or 60 years should be granted explicitly. Even if granted a longer horizon, the necessary constant primary budget surplus is not viable for Greece and extremely demanding for Italy. I argue that a strategy to keep government bond yields low for a certain period after the pandemic would bring the necessary constant primary budget surplus to manageable levels for high-debt countries and substantially reduce the time necessary to reach the debt target.

The required primary budget surpluses are sensitive to the average interest rate-growth differential, *(i-g)*. As shown in Table 2, in October 2020 government bond yields were negative for most EA member governments; for high-debt countries, yields were positive but at historical lows: 0.9% for Greece, 0.77% for Italy, 0.17% for Spain and 0.18% for Portugal.[11] Interest rates are expected to remain low for a long time. If future growth rates are in line with those of the last 20 years, yields are likely to remain below growth rates for many EA countries for a while, thereby making the cost of public debt negligible or even negative, as argued by (Blanchard, 2019).

Column 8 of Table 1 reports the primary budget surplus consistent with reaching the debt target of 60% in 20 years under the low interest rate scenario. As a reminder, the low scenario assumes that *i* is equal to current long term government bond yields for a period of 10 years (until 2031) and, after that, is equal to the average of long-term bond yields in the last 20 years. Moreover, I assume the government runs the same primary balance pb^* both when yields are low and high; this implies that the government reduces the debt at a faster pace during the period when yields are low relative to the period when yields are high. The necessary constant primary budget surpluses under the low interest rate scenario are attainable even if the adjustment period is kept at 20 years. This confirms Blanchard's view that low interest rates make debt sustainable, but it also shows that low interest rates are a golden opportunity to reduce debt. This finding highlights the role played by the ECB's Pandemic Emergency Purchase Programme in reducing the cost of debt and enabling debt sustainability.

A few points are worth emphasizing. Column 8 assumes that interest rates are low for 10 years and then high for the following 10 years. First, if high-debt countries significantly reduce their debt during the low interest rate period, the risk premium and yields may fall. As a result, the yields used for the high-interest period (average over the last 20 years) could overestimate the actual cost of debt between 2031 and 2041 and pb^* could be reduced. Second, a shorter low interest rate period can be compensated by a longer adjustment period without raising pb^*. Third, the necessary constant primary budget surplus represents the average surplus to be achieved over the business cycle; the target primary surplus should be above pb^* when economic conditions are favourable and below during

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[11]   Source: Eurostat.

recessions. The cyclical adjustment of *pb** should account for the empirical evidence that fiscal multipliers are larger in recessions than in expansions.

Table 2: Long-term Government Bond Yields and Potential GDP Growth

Country	Long-term gov. yields	Current gov. yields	Potential GDP growth
	Average 2000-2019	October 2020	Average 2000-2019
Belgium	3.17	-0.34	3.64
Germany	2.70	-0.61	2.81
Estonia	3.31	-0.08	6.90
Ireland	3.87	-0.22	6.91
Greece	7.08	0.90	2.80
Spain	3.71	0.17	3.93
France	3.01	-0.30	2.93
Italy	3.91	0.77	2.19
Cyprus	4.78	0.44	3.95
Latvia	4.48	-0.23	7.13
Lithuania	4.28	0.16	6.19
Luxembourg	2.74	-0.54	5.41
Malta	3.64	0.38	5.82
Netherlands	2.89	-0.53	3.56
Austria	3.01	-0.40	3.47
Portugal	4.61	0.18	2.91
Slovenia	3.87	-0.13	5.64
Slovakia	3.60	-0.35	7.35
Finland	2.93	-0.38	3.36

Source: European Commission, AMECO database (November 5, 2020 release) and Eurostat.

Notes: Yields and potential GDP growth are nominal, annual and in %.

4.2. The political economy of debt reduction

Section 4.1 discussed alternative paths of post-Covid-19 debt reduction. One key finding is that countries with higher debt ratios need longer adjustment periods; forcing adjustment in a relatively short period requires running large primary budget surpluses. But what are the costs of running large primary surpluses? Are there benefits from reducing the debt-to-GDP ratio at a fast pace?

To answer this questions, I make use of the model described in Section 3. Without loss of generality, I calibrate the economy to be at the initial equilibrium with a debt-to-GDP ratio of 60%; government

spending represents 20% of GDP and the labour income tax is 31.3%. Due to the Covid-19 pandemic, the economy experiences a 50% increase in public debt. Along the lines discussed in section 4.1, the government can choose different rates of adjustment. I compare three cases: the government chooses a primary surplus of 1% of GDP (blue solid line, slow adjustment); a primary surplus of 2% of GDP (red dashed line, medium adjustment); a primary surplus of 4% of GDP (black dash-dot line, fast adjustment).

Figure 8 shows the dynamics of the economy for the three adjustment cases. For this analysis, I assume that the labour income tax is adjusted to generate the chosen primary surplus. The speed of adjustment dictates the increase in the labour income tax: a faster adjustment calls for a larger primary budget surplus, which in turn requires a larger increase in the labour tax. But a larger increase in the income tax rate discourages workers and reduces employment (hours worked) and GDP more. All three adjustments are recessionary, but the faster the adjustment, the deeper the initial recession. This explains the dynamics of the debt-to-GDP ratio, which displays the largest increase for the fast adjustment.

The benefit of faster adjustment is that debt and debt-to-GDP return faster to their initial equilibrium. GDP and private consumption are lower in the first 30 periods with the fast adjustment, but are higher afterwards.

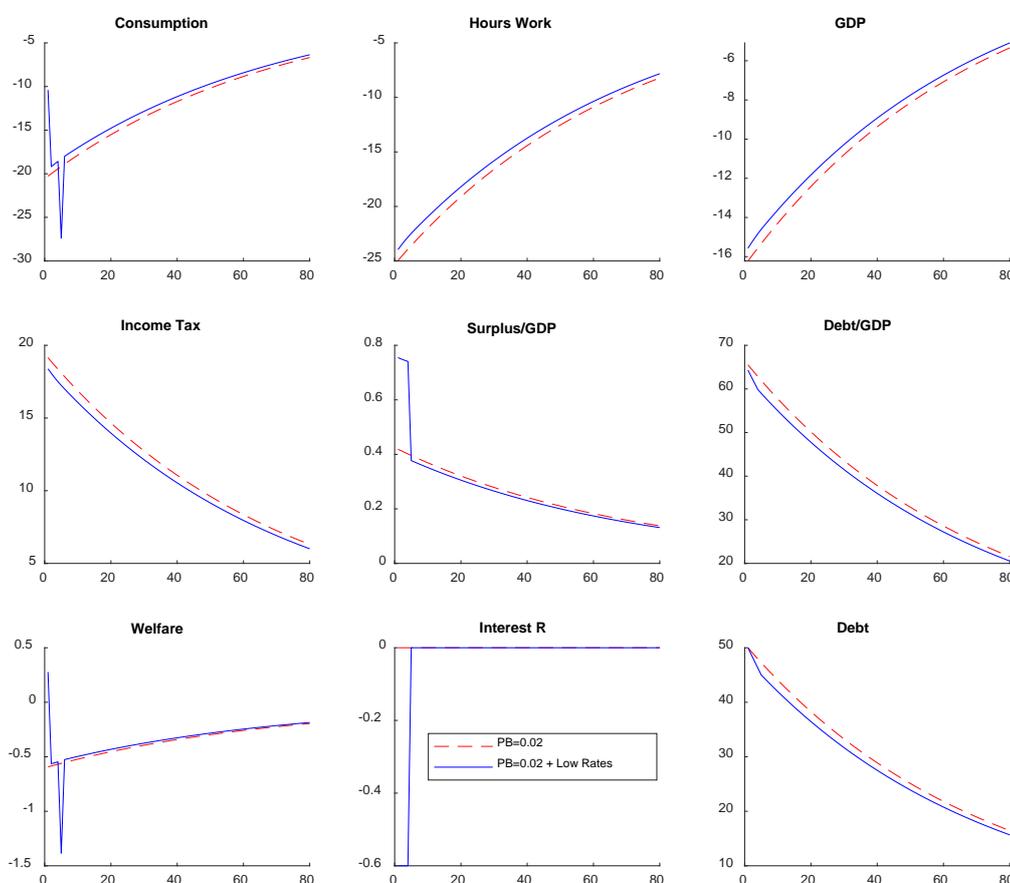**Figure 8:** Model simulation of debt adjustment
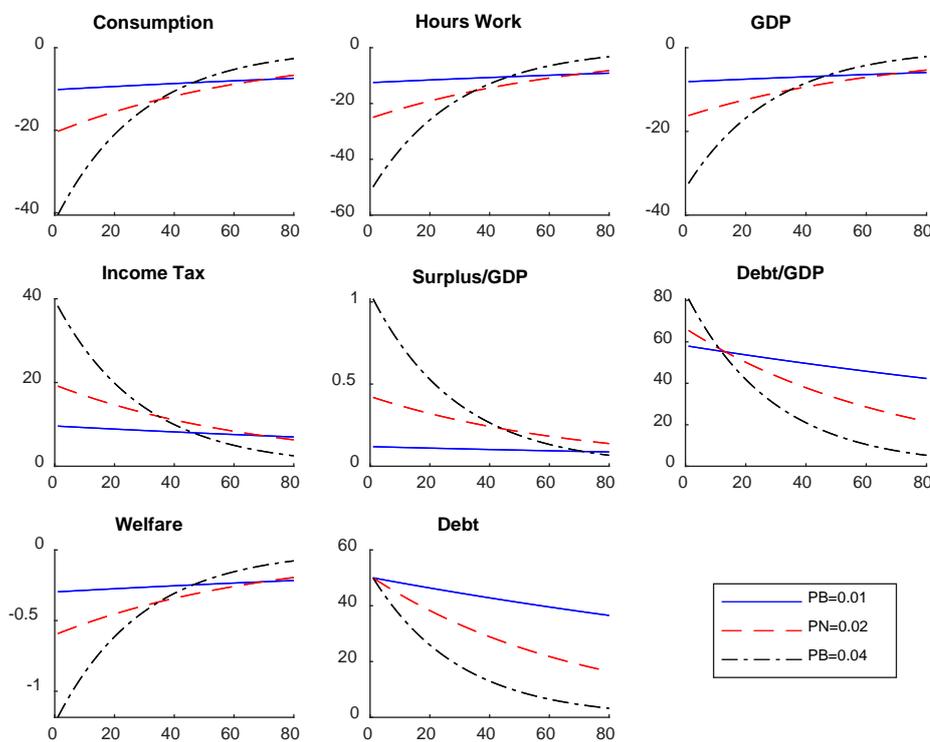
Notes: Years are indicated on the horizontal axis. All variables are reported as % deviation from the initial equilibrium value except the general surplus to GDP, which is reported as deviation from the initial equilibrium. Debt/GDP is equal to 0.6 at the initial equilibrium in period zero; in period 1 debt increases by 50%.

Welfare measures the utility of the agent in the economy, which depends on consumption (positively) and labour (negatively); it is a very important variable that measures the well-being of the agent. Because faster adjustments front-load the fiscal correction, the agent is worse off in the short run if the

government chooses higher primary budget surpluses. Governments seeking re-election may prefer to maximize the short-run utility of the voter and thereby choose a slower pace of adjustment.

Another key finding of section 4.1 is that the path of debt reduction is sensitive to the interest rate-growth differential. In particular, keeping sovereign debt yields at current levels would allow governments to reduce debt more aggressively and move faster toward the debt/GDP target. Consider the same economy and shock of Figure 8; for simplicity, I focus on the case where the government chooses a primary budget balance of 2% of GDP. I assume that the central bank reduces the interest rate for 4 periods after the shock to public debt and then brings it back to its original level from period 5 onwards. In Figure 9, all variables, except the general surplus to GDP ratio, are reported as % deviation from the initial equilibrium. The size of the interest rate reduction is such that the interest rate goes from 0.6% to 0%. The economy with the rate reduction (blue solid line) is compared to the economy without any change in the interest rate (red dashed line). A temporarily lower interest rate allows the government to reduce debt more aggressively: the general surplus to GDP is higher in the first 4 periods because the cost of servicing debt is lower and a larger fraction of the primary surplus can be devoted to reducing the debt. As a consequence, the labour income tax goes up less and the recession is mitigated. Agent's welfare is higher relative to the case without a temporary rate reduction.[12]

Figure 9: Model simulation of debt adjustment with interest rate reduction

Notes: Years are indicated on the horizontal axis. All variables are reported as % deviation from the initial equilibrium value

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[12]　Consumption and welfare display large changes in the periods where the rate is reduced and increased. In this model, the interest rate drives the consumption-saving choice of the agent; as the interest rate falls, the agent saves less and consumes more and vice versa when the rate is increased.

except the general surplus to GDP, which is reported as deviation from the initial equilibrium. Debt/GDP is equal to 0.6 at the initial equilibrium in period zero; in period 1 debt increases by 50%. In period 1 the interest rate is reduced by 0.6% (from 0.6% to 0%) and it is kept at this level for 4 periods; in period 5 the interest rate is permanently raised by 0.6%.

5. CONCLUSIONS

In March 2020, following the outbreak of Covid-19, the Commission, in agreement with the Council, activated the GEC of the SGP, which allows Member States to deviate from the requirements of the Pact and to use discretionary fiscal policy to address the Covid-19 pandemic, sustain the economy and support the ensuing recovery. Thanks to the activation of the GEC, the fiscal stance has turned strongly expansionary in 2020 in the EA. Nevertheless, the EA is experiencing an unprecedented recession with a forecast 2020 output gap of -7%.

This paper analyses the conditions under which the GEC should be deactivated. Since Covid-19 is an unanticipated shock beyond the control of governments, the paper recommends that the GEC is deactivated when Member States return to their pre-Covid-19 macroeconomic conditions, as captured by the Commission autumn 2019 forecast of the 2020 output gap or the 2019 level of real GDP. The decision on how and when to deactivate the GEC should give priority to avoiding pro-cyclicality of fiscal policies that would prolong the economic downturn. This requires that each Member State reverts to the prescription of the SGP when this Member State's output gap or real GDP has returned to its pre-Covid-19 level. Technically, this can be implemented by deactivating the GEC, which is common to all Member States, and invoking the clause for unusual events for the countries that fall short of their pre-Covid-19 economic conditions. Deactivating the GEC based on an aggregate EA/EU pre-crisis level of GDP could cause fiscal policy to turn pro-cyclical for Member States with negative output gaps.

According to the Commission autumn 2020 forecast, EA government debt measured as percentage of potential GDP will increase by 15 pp between 2019 and 2022. Post-Covid-19 fiscal rules should be reformed to address the debt accumulated during the pandemic, as well as to improve on the shortcomings of the SGP in its current form. The paper argues that the new fiscal rules should explicitly account for country-specific elements such as the initial post-pandemic, i.e. 2022, level of debt/GDP and the interest rate-growth differential. Countries with higher debt-to-GDP ratios and/or less favourable interest rate-growth differential should be given longer adjustment periods to achieve the debt target of 60%. The paper shows that, assuming an interest rate-growth differential equal to the average over the last 20 years, countries with debt/GDP ratios above 130% need an adjustment period of 40 to 60 years (or more) to achieve the debt target.

The ECB Pandemic Emergency Purchase Programme has brought yields on government debt of EA Member States at historically low levels. The paper studies fiscal rules under the assumption that the interest rates on government debt for EA Member States are kept at current levels for a certain number of years after the Covid-19 pandemic. The analysis shows that, if interest rates are kept at current levels for 10 years after the pandemic, all countries, including those with high debt ratios, could achieve the debt target in 20 years. By making the cost of public debt negligible, low interest rates may weaken the incentive to reduce debt. Once the recovery from the pandemic is completed, the analysis recommends that EA Member States, and in particular those with high debt ratios, take advantage of low interest rates by achieving their updated MTOs and reducing, rather than increasing, debt at a faster pace than it would have been otherwise possible.

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ANNEX

1. THE MODEL

Households

At date 0, the expected discounted sum of future period utilities for household members is given by $\sum_{t=0}^{\infty} x\beta^t U(C_t, L_t)$ with

$$U(C, L) = \frac{C^{1-\frac{1}{\sigma}}}{1 - \frac{1}{\sigma}} - \kappa \frac{L^{1-\frac{1}{\eta}}}{1 - \frac{1}{\eta}}$$

where $\beta < 1$ is the subjective time discount factor, σ is the elasticity of intertemporal substitution, η is the Frisch labor supply elasticity. C_t is consumption and L_t is labor supplied for production. κ captures the disutility of supplying labor.

In return to supplying labors to producers, households earn real wage, W_t for each hour of work supplied. Labor income is $W_t L_t$; disposable labor income is $(1 - \tau_t) W_t L_t$. Households are the ultimate owners of firms and they receive profits, Π_t. Every period, households purchase internationally traded bonds, B_t, that pay out in units of the consumption good. The real price of these bonds $1 / R_t$, where $R_t = 1+r_t$ is the gross real interest rate and r_t the net interest rate. Households also buy national debt D_t, which pays out one unit of the consumption good and whose price is also $1 / R_t$. Households choose consumption, C_t, labor supply, L_t, and bond holdings B_t and D_t, to maximize the expected discounted sum of future period utilities subject to a sequence of budget constraints:

$$C_t + \frac{B_t}{R_t} + \frac{D_t}{R_t} = W_t L_t (1 - \tau_t) + \Pi_t + B_{t-1} + D_{t-1}$$

Firms

Output is produced from labor by perfectly competitive firms using

$$Y_t = Z_t L_t^{1-\alpha}, \quad \alpha \in (0,1)$$

Firms choose labor in order to maximize their profits

$$\Pi_t = Z_t L_t^{1-\alpha} - W_t L_t$$

Government

Government debt is assumed to have maturity of one period. In period t the government purchases goods and service G_t, raises tax revenues $\tau_t W_t N_t$, issues new debt D_t at the price $1 / R_t$ and pays maturing debt D_{t-1}. The budget constraint of the government is

$$G_t + D_{t-1} = W_t L_t \tau_t + \frac{D_t}{R_t}$$

2. ANNOUNCED LIFTING OF THE GEC

Figure 10: Model Simulation of Announced Lifting the GEC
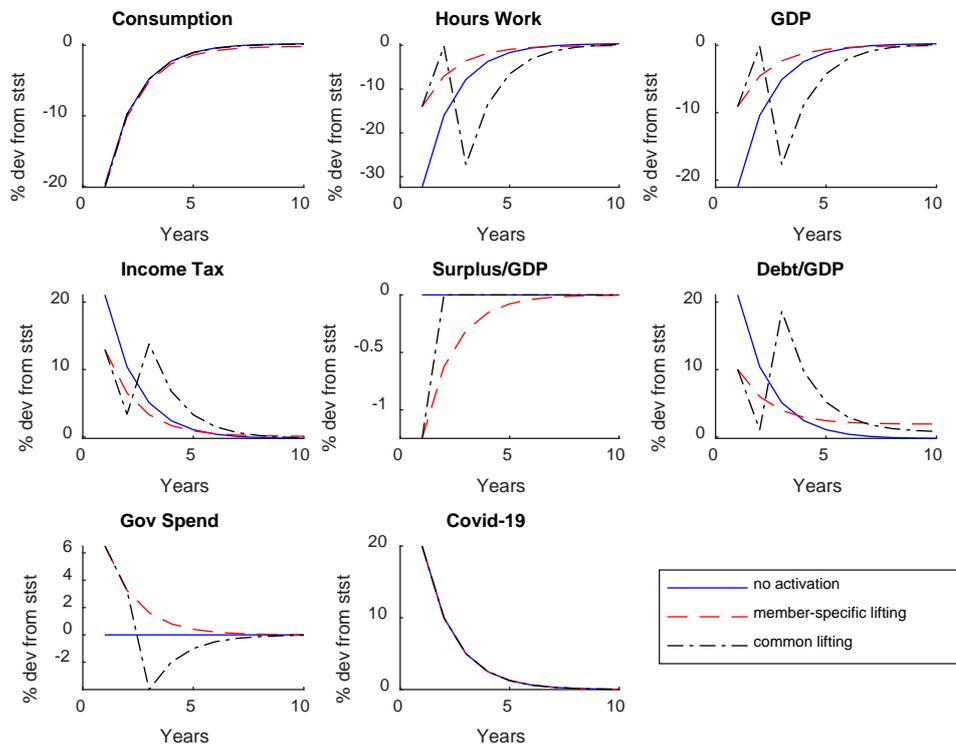
Notes: Years are indicated on the horizontal axis. All variables are reported as % deviation from the initial equilibrium value. If Debt/GDP is equal to 1 at the initial equilibrium, an increases by 20 pp means that Debt/GDP goes to 1.2. The Covid-19 shock occurs in period 1.

This paper analyses the conditions under which to lift the SGP general escape clause (GEC). It is advisable that the timing for lifting the GEC be Member-State-specific and contingent to the State's return to its pre-Covid-19 output gap or real GDP level. Medium-Term Budgetary Objectives should be redesigned to take into account the debt-to-GDP level and the interest rate-growth differential. Maintaining government debt yields at low levels after the pandemic would make debt reduction less costly in terms of output.

This document was provided by the Economic Governance Support Unit at the request of the ECON Committee.