LONGER-TERM FISCAL CHALLENGES FACING THE EU

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EXECUTIVE SUMMARY

The pandemic, and subsequent price shocks triggered by Russia's invasion of Ukraine, have increased longer-term fiscal pressures in the EU through higher debt, higher expected real interest rates and higher public investment needs. This paper offers some simple quantitative assessments of those effects and discusses policy implications, with the following results.

First, annual increases in structural primary fiscal balances required to bring debt on a sustainable path and ensure compliance with the February 2024 agreement between Council and Parliament on the EU fiscal rules range from -1.1 to 1.1 percent of GDP. For most high debt countries, adjustments lie between 0.2 and 0.5 percent of GDP per annum.

Second, based on the debt sustainability analysis methodology of the European Commission, the required additional fiscal adjustment looks manageable by historical standards, although it is substantial in some cases. However, new "safeguards" proposed by the Council of the EU in December of 2023 will require continued fiscal adjustments to levels that may be excessive for some countries.

Third, market data suggests that the future path of real interest rates is very uncertain. Compared to the period immediately preceding the pandemic, longer-term expected real interest rates have increased by about 2 percentage points but remain

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moderately low on average, at about 1.3 percent in real terms. Whether interest rates remain at their current levels, go down again, or even increase further depends on whether the structural factors that led to low interest rates in the first place persist or unwind, with arguments on both sides. Hence, while there is a possibility that interest rates might decline again, fiscal policymakers should not make plans that assume such a decline.

Fourth, public spending needs for additional defence and climate spending run well above 1 percent of GDP per year. These needs do not appear to be incorporated in current fiscal baselines, and the December 2023 ECOFIN agreement on the revised EU fiscal rules does not allow even a temporary exemption for such spending. Hence, additional fiscal adjustment, on top of the adjustment described above, would have to be made to make room for increased climate and defence spending. A good option would have been the incorporation of a fiscally responsible green investment rule in the revised EU fiscal framework, which would have allowed a temporary exemption of EU-endorsed and monitored climate spending, provided that total fiscal adjustment ensures that the public debt ratio plausibly declines at least from the end of the adjustment period.

INTRODUCTION

Since 2020, the European Union has suffered two large shocks: first, the pandemic, then the price shocks triggered by Russia's invasion of Ukraine (referred to as 'war shocks' below). These shocks have created new fiscal challenges for the EU, through three channels. First, deficits and debt have increased. Second, there has been an impact on both actual and expected real interest rates, and hence the cost of public borrowing. Third, the shocks have accelerated and increased the need for public investment in specific areas, particularly climate and defence. This creates a dilemma: fiscal space has likely declined, but public investment needs have gone up.

We seek to contribute to the debate on how to address this dilemma by offering some simple quantitative assessments. Considering changes in debt, growth expectations and real interest rate expectations, how much has the fiscal outlook worsened compared to 2019? How much adjustment will be required to put debt on a downward trajectory and comply with the reformed of EU fiscal rules? How large are the differences in fiscal space across the EU? Is the recent increase in interest rates permanent or temporary? To what extent could higher public investment needs, particularly on climate and defence, add additional fiscal pressure? We conclude with a brief discussion on how the objectives of lowering debt and accommodating higher public investment could be reconciled.

The first part of the paper employs (1) simple methods that aim to enable comparisons both over time and across countries and make clear what is driving the results, as well as (2) a more sophisticated stochastic debt sustainability analysis based on the methodology of the European Commission that considers debt composition, ageing

costs, and cyclical variations in output, corresponding to the December 2023 ECOFIN agreement on the new fiscal rules.

1. FISCAL SPACE AFTER THE PANDEMIC AND WAR SHOCKS

Figure 1 shows the evolution of the distributions of public debt and the primary (non-interest) fiscal balance in the current 27 EU countries since 1993, the year after the signing of the Maastricht treaty. The 2022 debt ratios of countries at or below the median are not exceptionally high; they are in fact slightly below both the 1993 benchmark and post-2010-12 euro crisis levels. Primary deficits in these countries are also not exceptionally large. However, the debt ratios above the 75th percentile, representing the quarter of countries with the highest debt ratios, are at historic highs. Furthermore, these debt levels have drifted further from the median than at any time since the early 1990s.

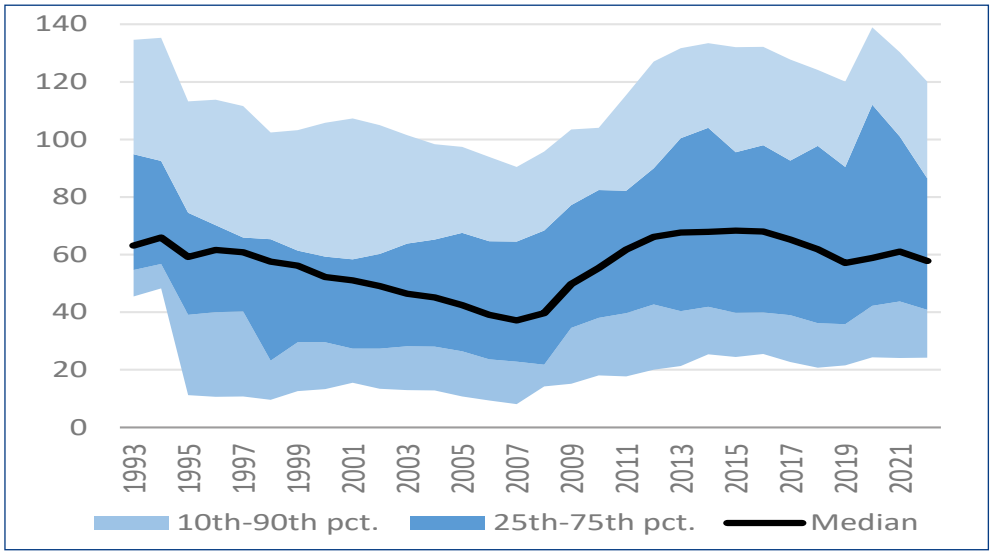
Yet, these changes do not offer a definitive assessment of how much the fiscal outlook has changed since 2019:

- Recent increases in debt and deficits may partially self-correct, as output continues to recover from its pandemic-induced plunge and temporary pandemic and energy shock-related expenditures expire. Indeed, 2021 and 2022 witnessed a rebound in the primary balance, accompanied by a decline in debt ratios (also reflecting the impact of unexpected inflation on nominal GDP).
- Current debt and primary deficits do not capture the effect of the recent rise in interest rates. Insofar as this results in higher future real interest rates, it could exert upward pressure on deficits and debt ratios in the coming years.
- Finally, long-term growth may have been affected by the pandemic, the policy response to the pandemic (such as reforms undertaken in the context of the national recovery plans) and the energy shock, with uncertain net impact.

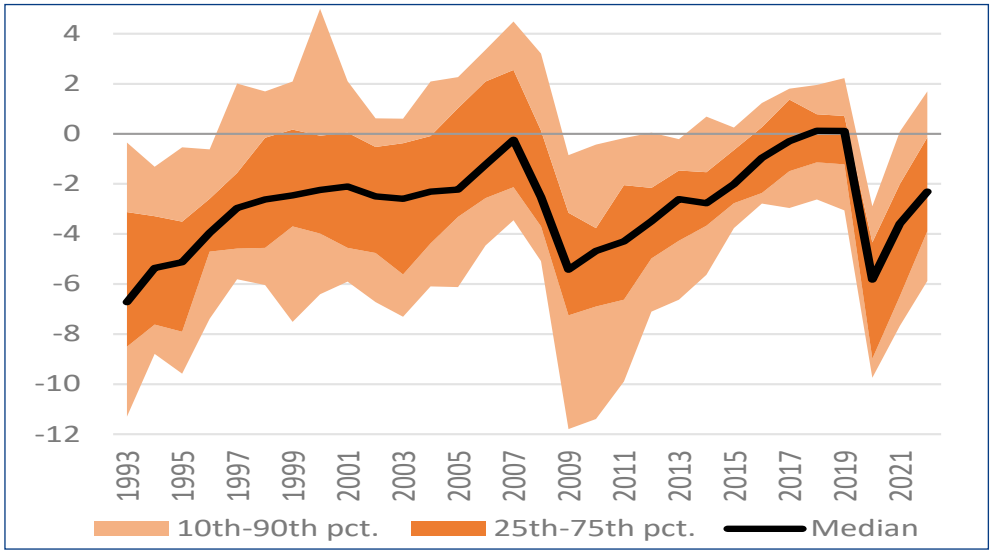
In short, while it is reasonable to assume a deterioration in the fiscal outlook due to pandemic and war shocks, the extent of this decline remains unclear. A more precise evaluation requires an examination of the drivers of longer-term fiscal pressures.

Figure 1: General government debt and primary balance in percent of GDP, current EU, 1993-2022.

1a. Debt.



1b. Primary Balance.



Source: Bruegel based on data from the IMF October 2023 World Economic Outlook.

Note: Figure 1a shows the evolution of the distribution of gross public debt in the current EU countries, 1b shows the evolution of the distribution of the primary balance. Both are expressed as shares of GDP. The solid lines in the centre show the median debt and primary balance, respectively. Dark shared areas span the 25th and 75th percentile of the distributions of debt and the primary balance, respectively, while the lighter shaded areas span the 10th and the 90th percentiles. The primary balance is defined as general government revenues minus non-interest expenditures.

1.1. Changes in the drivers of longer-term debt sustainability, 2019-2023

Figure 2 provides evidence on how the drivers of debt sustainability have changed since 2019. To identify the *longer-term* effects of the pandemic and energy price shock, we first compare 2019 five-year ahead forecasts for debt ratios from the October 2019 and October 2023 IMF World Economic Outlook (WEO), and market expectations for real interest rates.

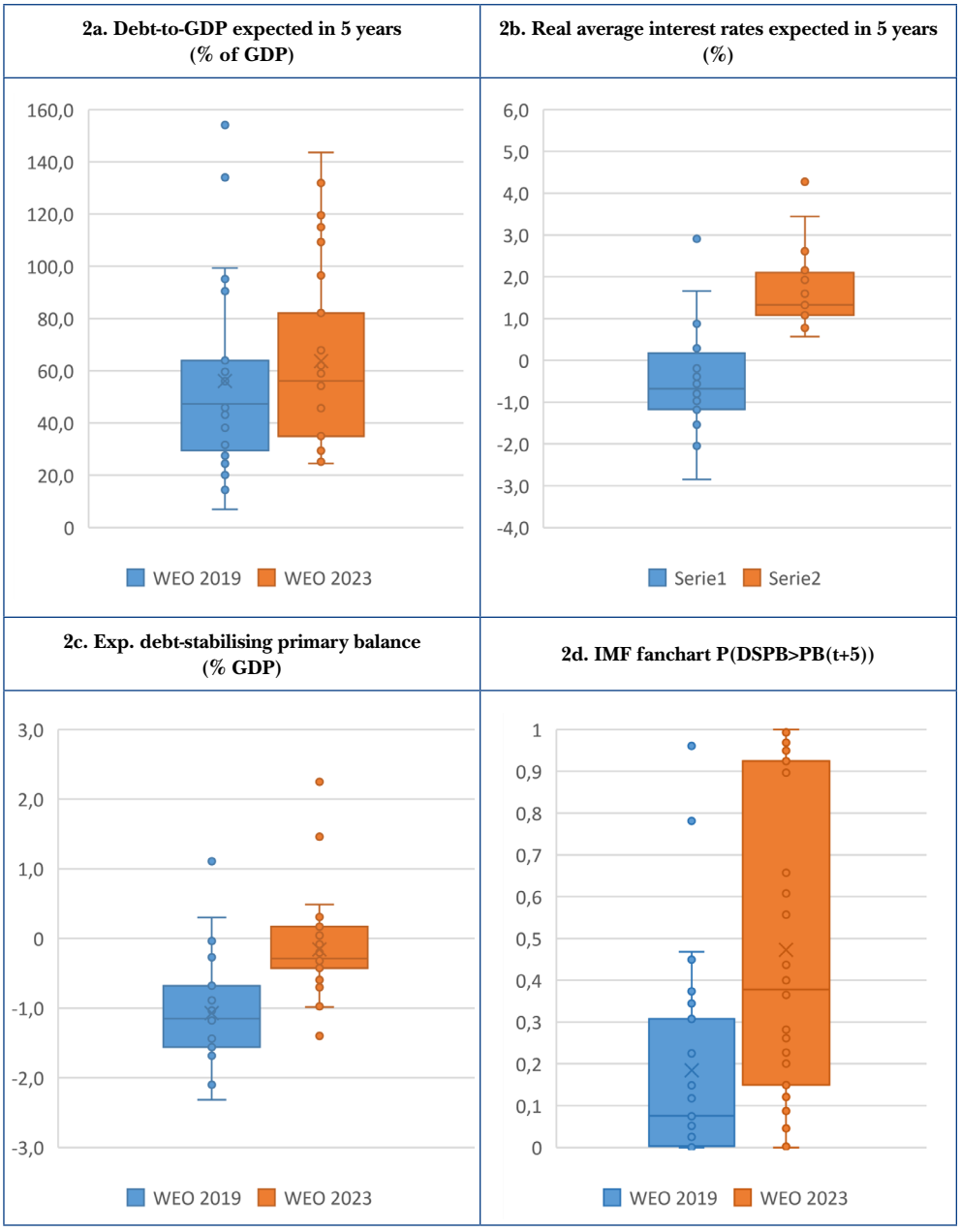
- The median of the distribution of five-year-out expected debt/GDP in the EU has increased by 10 percentage points of GDP (Figure 2a). At the same time, debt is expected to have become more dispersed, with the 25th percentile of the expected debt distribution rising by only 6 percentage points of GDP, and the 75th percentile rising by almost 15 points of GDP.
- Longer-term expected growth (not shown) has not declined; if anything, growth expected in five years is slightly higher today than it was in 2019. At the 75th percentile of the growth distribution, expected real growth is higher by 0.3 percent per year.
- Longer-term expected real government borrowing rates have increased substantially, by 2 percentage points (Figure 2b). Nevertheless, they remain moderate on average, in the order of 1 to 2 percent, and the difference between real expected borrowing rates and expected real growth continues to be negative in most EU countries[2].

A simple way of combining these factors involves the concept of the 'debt-stabilising primary balance', shown in Figure 2c. This is the primary balance that is necessary to stabilise the debt at a particular level, assuming the economy is in a steady state in which the primary balance, gross financing needs, real interest rates and real growth rates remain unchanged. If real interest rates are higher than real growth rates and the primary balance is zero, debt will grow faster than GDP, and the debt-to-GDP ratio will rise. To offset this, the debt-stabilising primary balance needs to be in surplus. Conversely, if real interest rates are lower than real growth rates and the primary balance is zero, then debt will grow slower than GDP, and the debt ratio will fall. Hence, the debt-stabilising primary balance can be in deficit.

Figure 2c shows that the steady-state debt-stabilising primary balance has risen, but not dramatically: by about 0.9 percentage point at the median and the 75th percentiles, and 1.1 percentage points at the 75th percentile. This means that an economy that could previously afford to run a primary deficit of about 1 percent of GDP forever without seeing its debt ratio rise (because its interest rate was slightly lower than its output growth), would now need to run a primary balance of about zero to achieve the same result, as long-term real interest rates have increased by more than growth (the possibility that real interest rates might decline again is examined below).

[2] The exceptions include the Belgium (r-g=0.2), Czech Republic (r-g=0.1), Greece (r-g=1), Hungary (r-g=0.8), Italy (r-g=1.7), Poland (r-g=0.3), Romania (r-g=0.6), and Spain (r-g=0.3).

Figure 2: Longer-term drivers of fiscal pressure of the EU27, October 2019 versus October 2023.



Source: Bruegel based on IMF (October 2019 and October 2023 databases of the World Economic Outlook) and Bloomberg.
Note: Figures 2a and 2b show the distributions of 5-year expectations of debt/GDP and real interest rates, respectively, according to the IMF's October 2019 and October 2023 World Economic Outlook. For example, in Figure 2a, the left box chart shows the distribution of debt/GDP expected for 2024 in October 2019, while the right box chart shows the distribution

of debt/GDP expected for 2028 in October 2023. The distribution of long-term government borrowing rates in 2b, is computed as an average of short and long-term forward rates, weighted by the original maturity structure of debt, deflated by 5-in-5 inflation swap forward rates (with the same deflator used for all euro-area countries and thus assuming no intra-euro inflation differentials). Figure 2c shows the distribution of the steady state debt-stabilising primary balance expected in five years, computed as pb = d*(r-g)/(1+g), where d is the 5-year expected debt shown in Figure 2a, g is the five-year expected growth rate, and r is the long-term expected real interest rate shown in Figure 2b. Figure 2d shows the distribution of probabilities that 5-year expectations for the primary balance will be below the debt stabalizing primary balance based on the IMF (2022) fanchart methodology. In each figure, the boxes show the interquartile range (25th to 75th percentile of the distribution), the lines inside the boxes the median and the x-crosses the mean. The 'whiskers' represent the top and bottom of the distribution, excluding outliers (observations more than 1.5 times the length of the box away from either end of the box).*

Because the future trajectory of debt drivers is subject to uncertainty, we consider a more sophisticated assessment that goes beyond the concept of a deterministic debt-stabilising primary balance. The IMF's (2022) fanchart methodology allows for a probabilistic assessment: By drawing multiple times from historical samples of debt drivers and combining them with a debt accumulation equation, one can construct various trajectories for the debt ratio, as well as for the primary balance necessary to stabilise it. The share of trajectories with a debt-stabilising primary balance above the forecasted actual primary balance is an estimate of the probability that a country will fail to stabilise its debt. The distribution of these probabilities is shown in Figure 2d. It shows that while in 2019 the median probability was only 0.1, it has now increased to 0.4. The 75th percentile saw an even larger climb from 0.3 to 0.6, implying that for these countries, an explosion of debt resulting from insufficiently high primary balances is now assessed to be more likely than a debt decline. The next section answers the question of how much extra adjustment would be needed to prevent such scenarios.

1.2. By how much do primary balances need to rise to start bringing down debt?

While the concept of steady-state debt-stabilising primary balance used in Figures 2c and 2d is a convenient measure to compare fiscal pressures over time and between countries, it may overestimate the primary balance required to stabilise debt ratios in EU countries today because it assumes that, starting in 2029, all debt is rolled over at the interest rates expected for 2029, which is higher than past rates. In fact, only a portion of the debt stock is rolled over, while most of the rest of the debt will continue to be serviced at rates corresponding to the lower rates of pre-2022 debt issuance, until the historic debt stock has matured.

In addition, the debt-stabilising primary balance is (by definition) lower than the primary balance required for declining debt, something that Article 126 of the Treaty on the Functioning of the European Union requires of all countries with debt above 60 percent. The new EU fiscal framework proposed by the European Commission in April 2023 envisions the exact level of primary balance these countries will have to reach, to be determined by a country-by-country debt sustainability analysis (DSA), the 3 percent deficit ceiling and simple rules requiring minimum deficit and debt

adjustments ('safeguards'). In a previous paper we replicated the Commission's DSA and assessed how much adjustment the April proposal would imply, and which elements of the framework would be driving the adjustment (Darvas, Welslau and Zettelmeyer, 2023).

Since the April proposal, negotiations have reached a compromise, which was agreed by the Council and the Parliament in February 2024. Table 1 presents the medium-term adjustment requirements, i.e., structural primary balances at the end of the four- or seven-year adjustment period that the agreement would imply. We based our calculation on November forecasts by the European Commission, February market expectations for interest rates and inflation, ECB data on the composition of government debt, and an updated version of our replication of the Commission's DSA methodology. Columns 1-3 show the latest European Commission forecasts for the debt ratio, the fiscal balance, and the structural primary balance (SPB) for 2024, the expected base year of the new framework. Columns 4 and 5 show the end-of-adjustment period structural primary balance that would need to be reached (at a minimum) to satisfy all five DSA criteria, which require the debt ratio to fall over the 10 years following the adjustment period assuming:

- *Baseline.* Baseline economic projections;
- *Lower SPB.* The structural primary balance is permanently lower by 0.5 percent of GDP after the end of the adjustment period;
- *Adverse r-g.* The interest rate-growth differential is permanently higher by 1 percentage point following the end of the adjustment period;
- *Financial stress.* Borrowing rates rise for one year by 1 percentage point for countries with a debt ratio below 90 percent of GDP, and 1 percentage point plus 0.06 times the gap between the debt level and 90 percent for countries with debt levels exceeding 90 percent;
- *Stochastic criterion*: Based on a five-year debt fan chart following the adjustment period, using baseline economic projections and the historical variance-covariance of shocks to debt drivers, the debt ratio falls with 70 percent probability.

Columns 6 and 7 show the end-of-adjustment period structural primary balance that would need to be reached (at a minimum) to get the overall fiscal *deficit to stay below 3%* of GDP over the next 10 years, under baseline economic projections, including expected changes in ageing costs. Columns 8 and 9 show the impact of the application of requirements by the *Excessive Deficit Procedure* (EDP) and the two safeguards. In case of a persistent deficit, the EDP requires annual adjustments of at least 0.5 percentage points until the overall deficit falls below 3% of GDP. In line with the December 2023 ECOFIN agreement, this adjustment is measured in terms of the structural primary balance in 2025-2027 and in terms of the overall structural balance from 2028. The two safeguards additionally require that:

- *Debt sustainability safeguard.* The debt ratio must fall by a minimum of 1 percentage point of GDP per year on average for countries starting with

an initial (2024) debt ratio above 90 and by a minimum of 0.5 percentage point of GDP per year on average for countries with debt ratio above 60, where the average is calculated starting from the year prior to the adjustment period (2024) or from the year in which the excessive deficit procedure is projected to be abrogated, whichever occurs last, until the end of the adjustment period.

- *Deficit resilience safeguard.* In all periods during which the structural deficit exceeds 1.5%, the annual adjustment of the structural primary balance must be at least 0.4 percentage points in the case of a four-year adjustment period and at least 0.25 percentage point in the case of a seven-year adjustment period.

Columns 10 and 11 contain the minimum structural primary balance that satisfies all criteria, including the safeguards, for the respective four- or seven-year adjustment period. Columns 12 and 13 show the average annual fiscal adjustment associated with the targeted structural primary balances, obtained by subtracting the 2024 projected SPB (column 3) and, depending on the length of the adjustment period, dividing by four or seven.

The results of the analysis show that medium-term structural primary balance targets vary considerably across countries and, depending on the adjustment horizon, range from negative for some low-debt, low-deficit countries, to positive and large for some high-debt countries. The largest SPBs to be achieved by the end of the adjustment period are, quoting first results for the four-, then for the seven-year adjustment period: 3.3 (2.9) percent of GDP for Italy, 2.3 (2.7) for Spain, 2.2 (2.3) percent for Belgium, 2.8 (2.6) percent for Portugal, and 2.4 (2.6) percent for Hungary. Among high-debt countries, the debt safeguard is the driving adjustment for just three countries, Finland in the four-year, France in the seven-year, and Spain in the four- and seven-year scenario. The deficit resilience safeguard causes higher adjustment requirements for Greece in the four- and seven-year scenarios, and for Cyprus in the seven-year scenario.

Conditional on the granting of the extension of adjustment periods to seven years for some countries, the above quoted structural primary balance targets imply annual adjustment requirements in the range from -0.65 (Denmark) to 0.68 (Belgium) percent of GDP. For most high debt countries, adjustments lie between 0.07 (Portugal) and 0.71 (Belgium) percent of GDP per annum. However, the deficit resilience safeguard may require continued fiscal adjustment beyond the horizon of the adjustment period, until a structural deficit below 1.5% is reached. This would result in targets that may be excessive in some countries, for example up to 3.3 (3.6) for Italy.

To summarise, debt pressures have increased considerably because of the pandemic and war shocks. This is not so much because of the rise in debt itself, but because of higher expected longer-term interest rates. The result remains manageable in all EU countries, in the sense that the fiscal adjustment that is needed to put debt on a continuously declining path and comply with the emerging reform of the fiscal

framework, is feasible by historical standards when assuming a seven-year adjustment period. This said, required adjustments are ambitious in several cases and policy makers will need to meet the challenge of reconciling required consolidations with the investment needs that are instrumental in facilitating the green transition.

Table 1. Fiscal adjustment requirements under proposed EU fiscal framework (in percent of GDP).

	European Commission forecasts for 2024			Min. SPB required by DSA criteria		Min. SPB required by 3% deficit cap		Min. SPB required by EDP and safeguards		Minimum SPB satisfying all criteria		Average annual fiscal adjustment need	
	Debt	Fiscal balance	SPB	4-year adj.	7-year adj.	4-year adj.	7-year adj.	4-year adj.	7-year adj.	4-year adj.	7-year adj.	4-year adj.	7-year adj.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)=max(4,6,8)	(11)=max(5,7,9)	(12)={(10)-(3)}/4	(13)={(11)-(3)}/7
Greece	152	-0,9	2,0	1,3	1,2	1,2	1,3	2,3	2,5	2,3	2,5	0,07	0,07
Italy	141	-4,4	-0,9	3,3	2,9	3,2	2,8			3,3	2,9	1,05	0,55
France	109	-4,4	-2,4	0,8	0,6	0,3	0,4		2,1	0,8	2,1	0,81	0,65
Spain	106	-3,2	-1,0	1,9	2,2	1,2	1,6	2,3	2,7	2,3	2,7	0,82	0,52
Belgium	106	-4,9	-2,4	2,2	2,3	1,7	1,8			2,2	2,3	1,14	0,68
Portugal	100	0,1	2,1	2,8	2,6	1,5	0,9			2,8	2,6	0,16	0,07
Finland	77	-3,2	-1,0	0,5	0,3	-0,7	-0,8	2,1		2,1	0,3	0,77	0,19
Austria	76	-2,4	-0,7	1,0	1,1	0,0	-0,4			1,0	1,1	0,42	0,25
Hungary	72	-4,3	1,0	2,4	2,6	1,6	2,1			2,4	2,6	0,36	0,22
Cyprus	71	2,1	3,4	-0,1	-0,5	-0,5	-0,6		-0,1	-0,1	-0,1	-0,89	-0,51
Slovenia	68	-3,3	-1,1	1,5	1,4	1,7	1,9			1,7	1,9	0,69	0,43
Germany	64	-1,6	-0,2	0,5	0,2	-0,3	-0,6			0,5	0,2	0,19	0,05
Slovakia	60	-6,5	-5,1	1,2	1,6	1,0	1,3			1,2	1,6	1,57	0,96
Croatia	59	-1,8	-1,2	0,4	0,5	-0,5	-0,5			0,4	0,5	0,38	0,24
Malta	56	-4,6	-2,7	-0,3	0,0	-0,6	-0,2			-0,3	0,0	0,60	0,39
Poland	54	-4,6	-1,8	0,0	0,3	-0,2	0,0	0,1	0,7	0,1	0,7	0,48	0,36
Romania	49	-5,3	-3,0	1,3	2,1	1,2	1,6			1,3	2,1	1,08	0,73
Netherlands	47	-1,8	-0,5	1,2	1,2	1,6	1,4			1,6	1,4	0,53	0,27
Czech Republic	45	-2,4	-0,1	-0,2	0,0	0,4	0,7			0,4	0,7	0,13	0,12
Latvia	42	-3,1	-1,7	-1,4	-1,1	-1,6	-1,5	-0,3	-0,1	-0,3	-0,1	0,35	0,22
Ireland	41	0,6	0,8	-2,8	-2,9	-1,4	-1,4			-1,4	-1,4	-0,55	-0,32
Lithuania	38	-2,3	-0,5	-1,4	-1,3	-0,7	-0,9			-0,7	-0,9	-0,05	-0,05
Sweden	30	-0,7	1,5	-2,3	-2,1	-1,2	-1,1			-1,2	-1,1	-0,67	-0,37
Luxembourg	29	-2,1	-0,6	-2,0	-1,8	-0,2	-0,2			-0,2	-0,2	0,09	0,05
Denmark	28	1,8	2,9	-3,1	-3,2	-1,5	-1,7			-1,5	-1,7	-1,10	-0,65
Bulgaria	24	-3,0	-2,7	-2,1	-1,5	-1,1	-0,7			-1,1	-0,7	0,40	0,28
Estonia	21	-2,4	0,0	-3,7	-3,5	-2,5	-2,4			-2,5	-2,4	-0,64	-0,35

Source: Bruegel based on European Commission November 2023 forecasts, Bloomberg and ECB. Note: Methodology based on European Commission (2023d). Orange and blue shading marks binding criteria for a four or seven-year adjustment respectively.

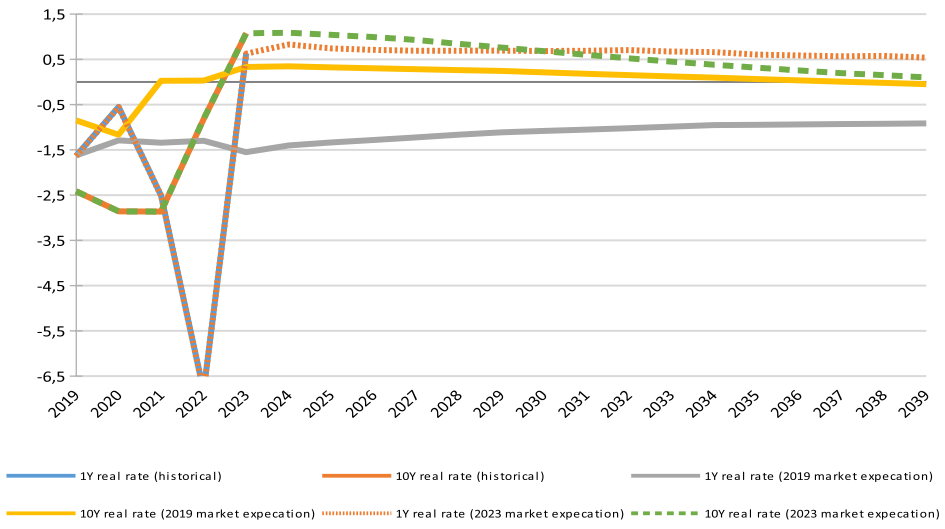
2. WILL REAL INTEREST RATES STAY AT THE CURRENTLY EXPECTED LEVELS?

As discussed in the previous section, five-year forward expectations for real interest rates have increased substantially compared to their pre-pandemic levels. Figure 3a shows the long-term trajectory of market expectations for 1-year and 10-year real interest rates based on forward swaps, corrected for swap-EU yield spreads and inflation expectations in 2021 and in 2023. Median market expectations for real rates are to stay well above the levels expected before the pandemic and war-related inflationary pressure. The large increase in expected long-term real rates over the next five years, as seen above in Figure 1b, is expected to remain large for the next two decades. The expected persistent rise in short-term real rates is even larger and equally persistent.

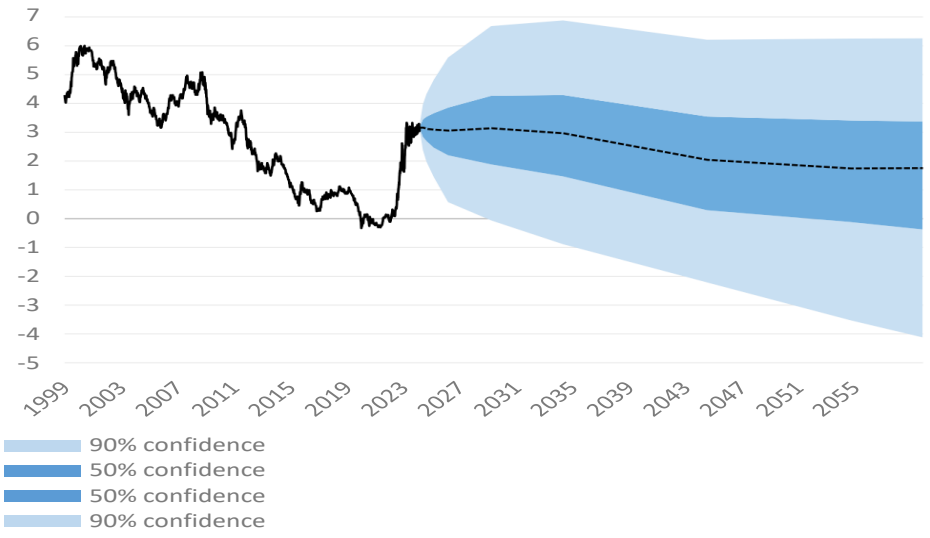
The expected rise in real rates is driven by investors' anticipation of persistently elevated nominal rates shown in Figure 3b. The 10-year euro swap rate, which closely mirrors EU yields (with a small spread, typically around 10 basis points on 10-year rates), is expected to remain stable until 2030 before slowly decreasing and stabilising just below 2% in the long run. However, the experience of recent decades has shown that the predictive power of forward rates is low. To gauge the uncertainty surrounding this baseline projection, it is possible to derive probability distributions using swap option prices. This exercise indicates that there is a 50 percent probability that rates will fall within the range of 0.3 percent to 3.5 percent in 2043, while the 90 percent confidence interval ranges from -2.2 percent to 6.2 percent (Figure 3b).

Figure 3: Euro swap rates, real interest rates, and market expectations (in %).

3a. Real 1-year and 10-year interest rate market expectations.



3b. Nominal 10-year Euro swap rate, forward rate and option-implied confidence intervals.



Source: Bruegel based on Danske Bank and Bloomberg (data retrieved 1 October 2023). Note: Figure 3a shows historical and expected real interest rates for 1-year and 10-year EU debt, based on euro swaps corrected for the average swap-EU yield spread and market inflation expectations. Figure 3b shows historical and possible future values of the 10-year euro swap rate, which reflects market expectations of the average long-term rate over the next 10 years and can thus be considered a good proxy for the 10-year EU yields. Dark and light shaded areas correspond to the 50 percent and 90 percent confidence intervals, respectively, as defined by risk-neutral probabilities derived from the option prices on 10-year-swap rates.

Given the high uncertainty around nominal market interest rate expectations, it helps to reflect on what the fundamentals behind long-term real rates may imply about the possible direction of real rates in the next few years. Before the current post-COVID-19 episode of high inflation and sharp monetary tightening, interest rates were on a steady downward trend for at least two decades (Figure 3). This fall can be explained by the saving and investment behaviour of economic agents (and hence the supply and demand for funds), as well as by the demand for safe assets.

2.1. Potential drivers of the fall in rates in recent decades

On the supply side, the decades before COVID-19 saw an increase in savings. One simple reason was higher income levels. Another major driver behind this trend was demographics, and in particular the increase in life expectancy, which pushes workers to save more of their income in anticipation of their longer retirements (Ferrero *et al*, 2017; Blanchard, 2023). At the global level, a third explanation for the increase in saving was the 'global savings glut' phenomenon identified by Bernanke (2005): some

emerging country governments – China and oil-exporting countries in particular – accumulated huge current-account surpluses resulting from reliance on exports and, in some cases, from exchange-rate interventions since the end of the 1990s. Finally, the increase in inequality in advanced countries, with an increase in wages and capital gains at the top of the income distribution and stagnation in real revenues for the bottom half of the distribution since the end of the 1970s, led to an increase in the income share of the population, characterised by a lower propensity to consume.

On the demand side, profitable, or sufficiently safe, private investment opportunities may have been lacking in advanced economies. One reason may be low population growth in advanced countries, which could translate into low future demand for goods and services and thus weighs on current investment. Other factors could also drive the decline in capital expenditure: the fall in the relative price of durable equipment; a broken financial sector or one that has wrong incentives; poor managerial incentives to invest within companies; slower productivity growth (or greater difficulty in rewarding innovators); monopoly positions in some industries leading to huge rents and disincentives to increase production; and finally, the reduced capital intensity of leading industries. The decline in public investment after the global financial crisis and the euro crisis also contributed to this lower investment trend.

Greater demand for safe assets also played a crucial role in reducing safe interest rates. First, the tighter prudential regulations adopted after the global financial crisis required financial institutions to hold safer and more liquid assets, therefore structurally increasing the demand for this type of asset. Second, the global savings glut resulted in a large increase in the international reserves held by emerging market countries, which were overwhelmingly invested in safe assets – ie sovereign bonds from advanced countries. This could in fact have been part of a more general trend, in which savings might have been concentrated in the hands of savers with a low propensity to invest in risky activities, possibly because these risk-averse savers might have a preference for 'nominal safety' or liquidity, rather than risk-adjusted returns[3].

2.2. Is the era of low interest rates over?

Beyond the current sharp increase in monetary policy rates, which is likely to be partly reversed as inflation recedes, are some of these fundamental trends reversing, resulting in a regime shift towards higher real interest rates?

[3] Several papers have sought to quantify the weights of these different drivers based on various models. For instance, Rachel and Summers (2019) explained the fall by 320 basis points in equilibrium real rates in advanced countries from 1970 to 2017 as follows: the fall in productivity growth explains 180 bps of the rate decline, demographic factors (ie lower population growth, longer retirement, length of working life) explains another 180 bps, the rise in inequality exerted a drag on real rates of 70 bps, and other private sector factors explain an additional 260 bps. Meanwhile, increases in government debt and expansions in social insurance programmes actually pushed rates up by 360 bps in the meantime.

As far as saving is concerned, one major change in recent years has been the fall in China's current account surplus, from almost 10 percent of GDP in 2007 to less than 2 percent in 2022. However, interest rates do not seem to have reacted to this fall during the pre-COVID-19 period. This could indicate that the role of the global savings glut (or at least China's contribution to it) was not as important as previously thought.

Another potential change could come from demographics. The fall in the fertility rate in most countries (Goodhart and Pradhan, 2020), and/or an increase in the retirement age to compensate for the increase in life expectancy, could also dampen the increase in saving.

The demand for safe assets is expected to remain high, mainly because of financial regulation requirements. However, two factors could affect demand in the opposite direction. First, reduced reserve accumulation from emerging economies may lessen the demand for safe assets. Second, in advanced countries, low-income workers are regaining bargaining power in a strong labour market (as is currently the case in the United States). This could reduce income inequality in favour of households with a high propensity to consume.

The trickiest evolution to predict, but also probably the most crucial, is that of investment, as noted by Blanchard (2023). Investment could go up significantly for many reasons in the coming years. Climate change could bring about fundamental changes because climate change mitigation will require huge green investment from both the private and the public sectors (see also section 3). A significant increase in carbon prices could lead to stranded assets that would need to be replaced quickly. And adaptation to higher temperatures will also lead to higher investment needs (eg in dams). Moreover, COVID-19 and current geopolitical tensions are driving firms to rethink the geography of their value chains and are pushing them towards reshoring parts of their activities to increase their resilience, which could lead to increased capital expenditures. Public investment should also increase to face these new challenges (green, defence, education, digital, healthcare, etc.). Finally, in the private sector, new investment opportunities could also arise, for instance, if artificial-intelligence technologies deliver on their transformative promises. If they materialise, these various trends would push interest rates up.

To conclude, it is possible to think of reasons why interest rates may be permanently higher than in the pre-COVID-19 years, but it is very difficult to assess the quantitative importance of these arguments[4]. Even if there are good reasons to believe that rates will eventually come back to their pre-pandemic lows after the current inflation episode subsides (Blanchard, 2023; IMF, 2023), uncertainty around the timing and extent of this decline suggests that fiscal policymakers should not take it for granted. Instead, EU policymakers should bring fiscal balances gradually towards (or in the

[4] Although its baseline scenario is for real rates to go back to pre-COVID-19 levels when inflation falls back to target in advanced countries, in its alternative scenarios, IMF (2023) tried to quantify the effects on equilibrium rates of these various possible trends (deglobalisation, lower inequality, energy transition, higher government debt, etc.), and found non-negligible effects if they were to materialise.

case of high-debt countries, above) their debt-stabilising primary balances, conditional on baseline market expectations. If rates end up being lower than suggested by current forward rates, policymakers will still be able to adjust their plans and reduce their primary balance targets in a few years.

3. FISCAL PRESSURES ARISING FROM PUBLIC INVESTMENT PRIORITIES

A potential additional source of fiscal pressure may be the failure of current spending plans to adequately account for pressing public investment needs. We briefly highlight three priority areas: defence (which is entirely public spending), climate transition (which is shared between the public and private sectors in a ratio of about one-third/two-thirds), and digital transition (which is mostly private, though it requires some public resources).

3.1. Defence

In 2006, NATO defence ministers agreed to commit a minimum of 2 percent of their GDP to defence spending – a commitment that was reinforced in 2014 in response to Russia's annexation of Crimea and turmoil in the Middle East. Countries below 2 percent spending agreed to move towards the 2 percent target within a decade (NATO, 2023b). Eurostat data for 2021 indicates a level of 1.3 percent of GDP defence spending in the EU, with only three countries (Greece, Latvia and Estonia) meeting the 2 percent threshold. Data reported by NATO (2023a) is slightly higher than Eurostat data (see Annex Figure 1) and suggests that Poland was also above 2 percent in 2021. Preliminary data for 2022 reported by NATO (2023a) suggests that actual defence spending in 2022 kept growing at the same rate as nominal GDP on average in the EU.

Defence spending will likely increase, as several countries have announced ambitious plans in response to Russia's invasion of Ukraine. NATO members might now take the 2 percent military spending requirement more seriously. Reaching that target would require 0.7 percent of GDP in additional annual defence spending on average in the EU. Some EU countries with relatively high debt levels will have to increase their defence spending more than the EU average, since such spending stood at just 0.8 percent in Portugal, 0.9 percent in Belgium and 1.0 percent in Spain. Italy's defence spending was 1.4 percent of GDP in 2021. However, the most indebted EU country, Greece, was well over the target, at 2.8 percent in 2021.

3.2. Climate transition

While climate change can affect debt sustainability through several channels, including growth and borrowing costs, the most direct medium-term channel is higher

public investment needs (Zenios, 2021). According to the central scenario in European Commission (2020b), achieving a 55 percent greenhouse gas emissions reduction by 2030 compared to 1990 requires additional total (public and private) annual investment in energy and transport of €360 billion (at 2015 prices) on average per year, corresponding to roughly 2 percentage points of annual EU GDP. Even more investment is needed beyond 2030 to reach net-zero emissions by 2050. Additionally, the costs of reducing to zero by 2027 the dependence on Russian fossil fuels requires an investment of €210 billion (presumably at current prices) in 2022-2027 and a further €90 billion in 2028-2030, according to the REPowerEU action plan (European Commission, 2022).

A significant share of this additional investment will have to be funded by the public sector. The share of public funding can be reduced by appropriate government regulation, taxation policy and a higher carbon price. Nevertheless, some public spending cannot be substituted by private investment easily, for example, when energy-network externalities cannot be properly priced. Other examples justifying public investments are informational inefficiencies and the difficulty of pricing tail risks.

Fostering private investment with the use of regulation, taxation and elimination of subsidies has limitations. For example, a significant increase in gas and electricity prices related to the war in Ukraine should be welcomed from the perspective of the green transition, as it creates strong incentives for the private sector to move away from fossil-fuel consumption. But governments throughout the EU have rushed to dampen the impact of higher energy prices. There are political limitations on energy price increases, and the same applies to tighter regulations and subsidy elimination.

Based on the National Energy and Climate Plans of EU countries for overall climate-related investments during 2021-2030 (including tax incentives and subsidies), the share of the public sector in total climate investment is about one-third (Darvas and Wolff, 2022). This implies that the public sector should fund about 0.6 percent of GDP of the total 2 percent of GDP additional climate investment needs. Estimates in Baccianti (2022) are even higher, suggesting 1.8 percent additional annual public investment needs. The increased climate mainstreaming of the EU's Multiannual Financial Framework and the green component of NextGenerationEU (NGEU) help to fill only a small portion of the funding gap. Moreover, NGEU expires in 2026, so southern and eastern EU countries that are currently receiving large amounts from NGEU will have to find new resources after 2026 to maintain their climate investment.

The IMF WEO forecasts that total economy investment (both private and public) in the EU is expected to decline from 24.6 percent of GDP in 2022 to 23.8 percent of GDP in 2028. While the components of the investment forecasts are not known, it is unlikely that the IMF baseline includes 2 percent of extra climate investment when the total investment rate is expected to decline.

3.3. Digital transition

European Commission (2020a) estimated the digital transformation investment gap at €125 billion, or 0.9 percent of GDP, per year. Some part of this funding need must be covered by the public sector, such as the cost of reaching the 100 percent online provision of key public services target of the EU's 2030 Digital Compass[5]. The public sector can play an important role in fostering digital skills and digital inclusion, and the digitalisation of small- and medium-sized enterprises, among others. Darvas *et al* (2021) estimated that NGEU would cover only a portion of the investment gap. Some countries with high public debt rank poorly in digital public services and digital skills.

CONCLUSION

Our findings and their implications can be summarised in four main points.

1. *Pandemic and war shocks have increased longer-term fiscal pressures in the EU through three channels: higher debt, higher expected real interest rates, and higher public investment needs; the required long-term increases in primary fiscal balances are 0.5 percent to 1.5 percent of GDP for most countries.*

To quantify the fiscal impact of higher debt and higher investment needs, one can compare the permanent fiscal balances that are required to stabilise debt at approximately today's level with those that were required to stabilise debt before the pandemic. These have increased by 0.9 percent of GDP on average, and by 1.1 percent to 2 percent of GDP in the 25 percent most impacted countries. Additional public spending needs for defence, climate and digital transitions – which does not appear to be incorporated in fiscal baselines, eg of the IMF – run well above 1 percent of GDP per year.

2. There are wide differences in fiscal space across EU countries, and these have widened further as a result of pandemic-related debt increases and higher expected real interest rates.

Annual increases in structural primary fiscal balances required to bring debt on a sustainable path and ensure compliance with the February 2024 Council-Parliament agreement on the EU fiscal rules, when the adjustment period lasts for seven years, range from -0.7 to 0.7 percent of GDP. For high-debt countries, adjustments lie between 0.1 and 0.7 percent of GDP per annum.

3. Fiscal pressures remain manageable even for the countries with the highest adjustment needs, in the sense that the adjustment these countries need to undertake to put their debt paths on a steadily declining path appears feasible by historical standards.

The required annual fiscal adjustment looks manageable by historical standards, although it is substantial in some cases. However, new safeguards require continued

[5] See https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targets-2030_en.

fiscal adjustments to levels that may be excessive for some countries like Italy. Moreover, no special treatment of public investment has been endorsed by the Council., This implies that countries facing minimum adjustment requirements (either 0.5% per year when an excessive deficit exists, or 0.25%-0.4% per year when the 1.5% deficit resilience margin has not yet been reached) should consolidate their current budgets faster than these minimum requirements if they wish to implement additional green investments. For political economy reasons, this is very unlikely to happen, which risks that necessary green public investment would not be implemented. A good option would be to exclude Council-endorsed and Commission-monitored green investment from the minimum annual adjustment needs for a temporary period, while ensuring that by the end of the adjustment period, the structural primary balance reaches a level which complies with all debt sustainability and deficit reduction criteria. In any case, it is essential to explore ways to undertake this investment most efficiently, including at the EU level.

4. While a decline of the real interest rate over the medium term remains a possibility, fiscal policymakers should not make plans that assume such a decline.

The main quantitative findings of this paper are based on current market expectations for real interest rates. Since 2019, these have increased by about 2 percentage points, although they remain moderate by historical standards. The median level is around 1.3 percent, while the highest levels in the euro area around 2 percent (a few countries outside the euro area face higher rates). Market implied uncertainty around nominal interest rates is very high over the next three years. Whether interest rates remain at their current levels, go down again, or even increase further depends on whether the structural factors that led to low interest rates in the first place persist or unwind, with arguments on both sides. Hence, while there is a possibility that interest rates might decline again, fiscal policymakers should not make plans that assume such a decline.

REFERENCES

Bernanke, B. (2005) 'The global saving glut and the US current account deficit', Speech (No. 77), Board of Governors of the Federal Reserve System, 10 March

Blanchard, O. (2023) 'Secular stagnation is not over', PIIE blog, 24 February 2023

Darvas, Zsolt, J. Scott Marcus and Alkiviadis Tzaras (2021) 'Will European Union recovery spending be enough to fill digital investment gaps?', Bruegel blog, https://www.bruegel.org/blog-post/will-european-union-recovery-spending-be-enough-fill-digital-investment-gaps

Darvas, Zsolt and Guntram B. Wolff (2022) 'A Green Fiscal Pact for the EU: increasing climate investments while consolidating budgets', Climate Policy, https://doi.org/10.1080/14693062.2022.2147893

Darvas, Zsolt, Lennard Welslau and Jeromin Zettelmeyer (2023) 'A quantitative evaluation of the European Commission's fiscal governance proposal', Bruegel Working Paper 16-23, https://www.bruegel.org/sites/default/files/2023-09/WP%2016_3.pdf

European Commission (2020a) 'Identifying Europe's recovery needs', https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1590742540196&uri=SWD%3A2020%3A98%3AFIN

European Commission (2020b) 'Impact assessment accompanying the document 'Stepping up Europe's 2030 climate ambition. Investing in a climate-neutral future for the benefit of our people', Brussels, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020SC0176

European Commission (2022a), 'Fiscal Statistical Tables providing background data relevant for the assessment of the 2022 Stability and Convergence Programmes', Commission Staff Working Document, May. https://commission.europa.eu/document/download/1ca1d1c3-034d-4691-af4e-bb6c5217ce33_en?filename=swd_2022_640_7_en_autre_document_travail_service_part1_v3.pdf

European Commission (2022b) 'Implementing the REPowerEU Action Plan: Investment needs, hydrogen accelerator and achieving the bio-methane targets', SWD(2022) 230 final, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=SWD%3A2022%3A230%3AFIN

European Commission (2023) 'Debt Sustainability Monitor 2022', Institutional Paper 199, available from: https://economy-finance.ec.europa.eu/publications/debt-sustainability-monitor-2022_en

Ferrero, Giuseppe, Marco Gross and Stefano Neri (2017), 'On secular stagnation and low interest rates: demography matters', ECB Working Paper No 2088, July. https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2088.en.pdf

NATO (2023a): *The Secretary General's Annual Report 2022*, https://www.nato.int/nato_static_fl2014/assets/pdf/2023/3/pdf/sgar22-en.pdf

NATO (2023b): *Funding NATO*, 22 March, https://www.nato.int/cps/en/natohq/topics_67655.htm

Goodhart and Pradhan (2020) 'The Great Demographic Reversal: Ageing Societies, Waning Inequality, and an Inflation Revival', SUERF Policy Note Issue No 197, October 2020.

Government of France (2022), 'Programme de Stabilite° 2022-2027', July.

IMF (2022) 'Staff Guidance Note on the Sovereign Risk and Debt Sustainability Framework for Market Access Countries', IMF Policy Paper No. 2022/039, International Monetary Fund, available at https://www.imf.org/en/Publications/Policy-Papers/Issues/2022/08/08/Staff-Guidance-Note-on-theSovereign-Risk-and-Debt-Sustainability-Framework-for-Market-521884

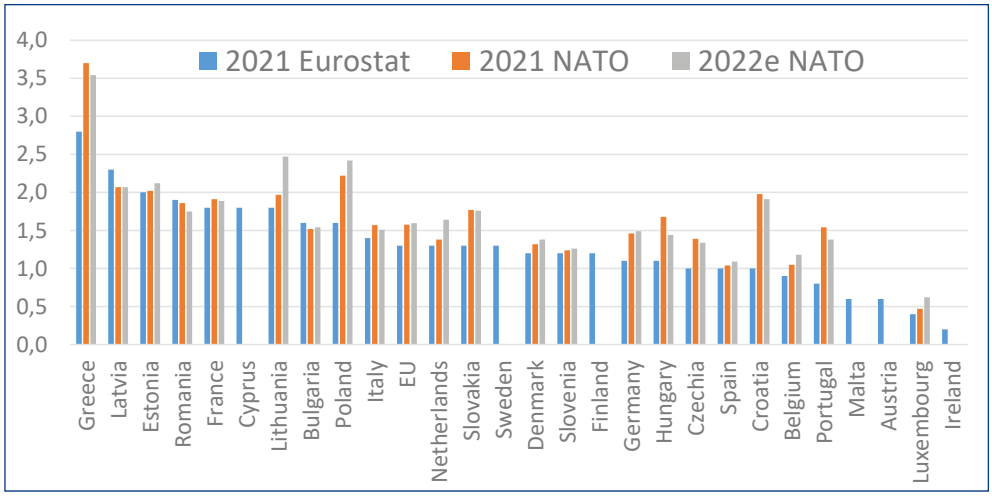
IMF (2023a) 'The natural rate of interest: drivers and implications for policy', April 2023 World Economic Outlook, Chapter 2.

IMF (2023b) 'Coming Down to Earth: How to Tackle Soaring Public Debt', April 2023 World Economic Outlook, Chapter 3.

Rachel, L. and L. Summers (2019) 'On Secular Stagnation in the Industrialized World', Brookings Papers on Economic Activity, Spring 2019

Zenios, S.A. (2022). 'The risks from climate change to sovereign debt', Climatic Change 172, 30 https://doi.org/10.1007/s10584-022-03373-4

Figure A1: Defence spending in EU countries (% GDP).



Sources: Eurostat's 'General government expenditure by function (COFOG) [GOV_10A_EXP__custom_5665704]' database; NATO (2023a): The Secretary General's Annual Report 2022, Table 3: Defence expenditure as a share of GDP (page 159).

Note: 2022e refers to an expected value for 2022 as reported by NATO (2023a). NATO data for the EU refers to the 21 NATO members of the EU as of 2022. According to Eurostat, only three countries, Greece, Latvia and Estonia reached the 2% of GDP defence spending commitment in 2021, while NATO data suggest Poland has exceeded the target as well.