1. SHORT-TERM FISCAL SUSTAINABILITY ANALYSIS

Main takeaways

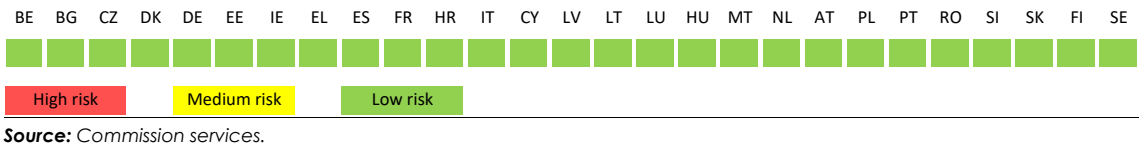
Short-term fiscal sustainability risks are overall considered to be low thanks to improved public finances and unchanged macroeconomic imbalances in Member States. *According to the early-warning indicator used by the European Commission, the S0 indicator, all countries have values of S0 below its critical threshold indicating overall low risks of fiscal stress in 2023. Short-term fiscal sustainability risks declined compared with previous years. They were considered high in two countries in the Fiscal Sustainability Report 2021 and in seventeen countries during the global financial crisis. In most Member States, fiscal variables improved in 2022 compared to 2021. At the same time, the outlook on macroeconomic imbalances across the EU (as captured by the S0 sub-index of financial-competitiveness variables) resembled, in 2022, the results of the previous year.*

Government gross financing needs, an important predictor for short-term fiscal sustainability risks, are estimated to have fallen in 2022, but to have remained sizeable in six Member States. *Gross financing needs for the EU as a whole are estimated to have declined from around 22% of GDP in 2020 to 19% in 2021 and 17% in 2022. They are expected to remain stable over the forecast horizon, also thanks to the NextGenerationEU package and despite the monetary tightening of many central banks in the EU. Nevertheless, gross financing needs are expected to have remained sizeable in six Member States in 2022 (Italy, France, Spain, Belgium, Austria and Germany). Higher government deficits and debt redemptions are the main drivers of gross financing needs.*

However, the short-term outlook is surrounded by a high degree of uncertainty, in particular due to the effects of Russia's war of aggression against Ukraine and the energy shock*. In 2022, the EU economy has proved surprisingly resilient benefitting from strong growth momentum from 2021. However, the EU economy is currently at a turning point and is expected to grow only slowly in 2023. The rising interest rates are already leading to increased interest spending and the ECB and most EU central banks are expected to keep hiking policy rates throughout 2023.*

An analysis of the ease of (re-)financing government debt, based on different indicators of financial markets' perceptions of sovereign risk, points to a certain degree of uncertainty*. Sovereign yields have recently increased in the EU, following the sharp increase in inflation and the tightening of monetary policies. This has been particularly the case in some high-debt countries. This represents a significant change in financing conditions compared with past years. At the same time, in many Member States, interest rates are expected to feed only gradually into the government debt burden, as debt maturities have been lengthened over time. The ECB indicator of sovereign bond markets' stress (SovCISS indicator) also shows that stress in euro area sovereign debt markets has increased. The sovereign ratings remain nonetheless on average high and stable across the EU, though some deteriorations are observed in a few Member States.*

Table 1.1: **Overview of overall short-term risk classification**



Source: *Commission services.*

1.1. SHORT-TERM FISCAL SUSTAINABILITY INDICATOR: THE S0 INDICATOR

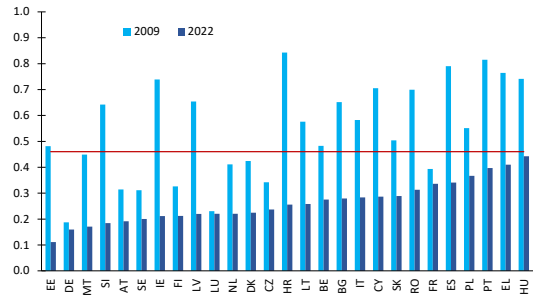
Short-term fiscal sustainability risks are assessed with the S0 indicator. The S0 is a composite indicator of macroeconomic, fiscal and financial variables to detect short-term risks of fiscal stress. S0 is based on a wide range of variables that have proven to perform well in the past in detecting situations of upcoming fiscal stress (see Box 1.1 for a detailed description). As such, S0 differs in nature from the fiscal indicators S1 and S2 presented in Chapter 3, as well as from financial market indicators of sovereign risk presented in section 1.3.

Short-term fiscal sustainability risks are overall considered to be low in all EU countries, thanks to improved public finances and unchanged macroeconomic imbalances compared to 2021. According to the early-warning indicator used by the European Commission, the S0 indicator, all countries have values of S0 below its critical threshold indicating overall low risks of fiscal stress in 2023. These results are driven by both fiscal and financial-competitiveness variables (see Graph 1.1 for the results). ([19])

Short-term fiscal sustainability risks declined compared to previous years. In 2009, S0 flagged short-term risks of fiscal stress in seventeen countries, notably due to severe macroeconomic imbalances. In the Fiscal Sustainability Report 2021, short-term fiscal risks were identified in Greece and Cyprus. ([20]) Though, the expansionary monetary policy stance until 2022 together with decisive EU actions, including the adoption of NextGenerationEU in 2020, ([21]) contributed to stabilising sovereign financing conditions and lessened risks of short-term fiscal stress.

However, the risk assessment is subject to a high degree of uncertainty. In 2022, the EU economy has proved surprisingly resilient in particular thanks to strong growth momentum from 2021. However, the EU economy is currently at a turning point. In particular, the effects of the Ukraine war and the energy shock are rippling on both the macroeconomic and fiscal side. As a consequence, the S0 indicator identifies some vulnerabilities in the short term, notably in countries with sizeable government gross financing needs and/or aggravated macroeconomic imbalances (see more details below and in section 1.2).

Graph 1.1: **The S0 indicator for EU countries (2009 and 2022)**



For more methodological explanations, including on the horizontal line / risk threshold, see Box 1.1 and Berti et al. (2012) and Pamies Sumner and Berti (2017).
Source: Commission services.

The first thematic sub-index of S0 points to some vulnerabilities on the fiscal side in seven countries (see Graph 1.2). These countries include Italy, Belgium, France, Portugal, Spain, Austria and Hungary. Fiscal vulnerabilities can be explained by the deteriorated fiscal positions in some Member States. The persistent inflationary pressure has contributed to increased interest spending. In addition, the discretionary fiscal measures to shelter households, workers and firms from the impact of war and high energy prices are already weighing on budget deficits. In some Member States, the weakened fiscal balances further increased already high levels of government debt (e.g. Belgium, France, Spain, Greece and Italy) (see Table 1.2). As a result, government gross financing needs were still considered large in six countries in 2022 (Italy, France, Spain, Belgium, Austria and Germany). However, the lengthening of average debt maturities over the past years mitigate short-term risks of fiscal stress, with a ratio of short-term debt

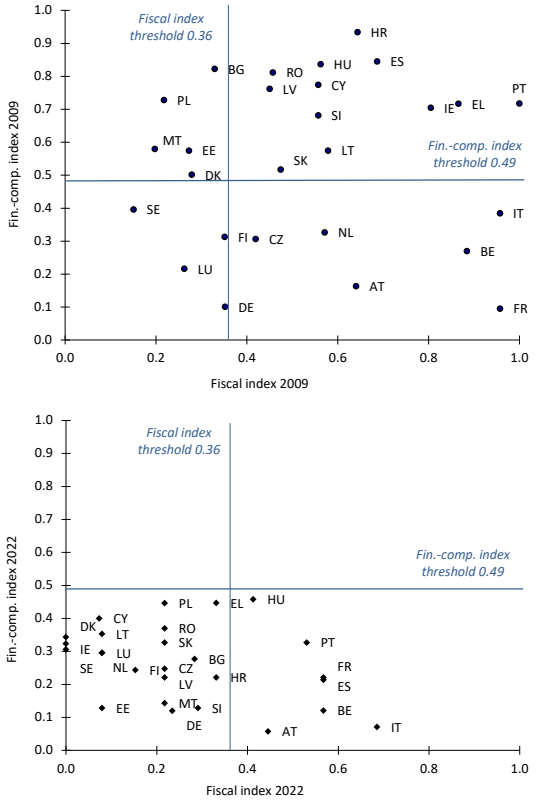
([19]) For conceptual aspects of the S0 indicator, see Box 1.1, Berti, K., Salto, M. and Lequien M. (2012), An early-detection index of fiscal stress for EU countries, *European Economy Economic Paper*, No. 475, and Pamies Sumner, S. and Berti, K. (2017), A complementary tool to monitor fiscal stress in European economies, *European Commission Discussion Paper*, No. 49.

([20]) See European Commission (2022), Fiscal Sustainability Report 2021, *European Economy Institutional Paper*, No. 171.

([21]) Earlier decisive actions include the creation of the SURE in 2020, as well as the activation of the ESM Pandemic Crisis Support facility.

(as a share of GDP) above its critical threshold only in few cases (Italy and Portugal). Moreover, despite recent increases, government interest payments and budgetary balances are still contained in 2022 compared with the developments observed during the Global Financial Crisis in several countries.

Graph 1.2: **Fiscal and financial-competitiveness sub-indices (2009 and 2022)**



(1) For more methodological explanations, see Box 1.1 and Berti, K., Salto, M. and M. Lequien (2012), An early detection index of fiscal stress for EU countries, European Economy – Economic Paper, 475; Pamies Sumner, S. and K. Berti (2017), A complementary tool to monitor fiscal stress in European economies, European Commission Discussion Paper, 49.
Source: Commission services.

The second thematic sub-index suggests limited vulnerabilities coming from the financial-competitiveness side (see Graph 1.2). In all countries, the aggregate financial-competitiveness sub-index is below its critical threshold, suggesting no short-term vulnerabilities of private and external positions. The situation significantly improved compared with 2009 (see Graph 1.2). However, some variables of this sub-index still points to vulnerabilities, namely the current account deficit, the large negative net international investment position, the low level of households' saving rate, the short-term debt of households and non-financial corporations, the private debt, as well as nominal unit labour costs (see Table 1.3).

Table 1.2: **Fiscal variables used in the S0 indicator (2022)**

	Headline balance (%GDP)	Primary balance (%GDP)	Cycl. adj. balance (%GDP)	Stabil. primary balance (%GDP)	Gross debt (%GDP)	Change gross debt (%GDP)	Short-term debt (%GDP)	Net debt (%GDP)	Gross financing needs (%GDP)	Interest-rate growth differential	Change in govt. expend. (%GDP)	Change in govt. consump. (%GDP)
BE	-5.2	-3.7	-5.6	-8.2	106.2	-3.0	8.0	90.6	19.9	-8.2	-1.3	0.0
BG	-3.4	-2.9	-3.8	-2.8	22.5	-1.5	0.0	13.9	3.5	-13.6	3.1	-0.2
CZ	-4.3	-3.3	-3.9	-3.4	42.9	0.9	1.1	27.4	9.2	-9.0	-1.3	-1.1
DK	1.8	2.3	1.6	-1.6	33.7	-3.0	4.8	9.0	8.2	-4.7	-2.6	-0.7
DE	-2.3	-1.7	-2.3	-3.9	67.4	-1.2	8.3	47.7	17.1	-6.0	-1.8	-0.2
EE	-2.3	-2.2	-1.6	-2.1	18.7	1.1	1.5	7.1	4.6	-13.6	-1.1	-0.5
IE	0.2	0.9	-2.5	-7.9	44.7	-10.6	7.3	42.8	3.6	-16.9	-2.7	-1.1
EL	-4.1	-1.6	-3.1	-23.7	171.1	-23.4	10.8	:	15.3	-14.1	-3.1	-2.0
ES	-4.6	-2.4	-3.7	-6.7	114.0	-4.3	8.1	99.1	21.0	-6.2	-1.9	-1.0
FR	-5.0	-3.2	-5.1	-4.0	111.7	-1.2	11.5	100.3	22.9	-3.8	-1.1	-0.5
HR	-1.6	-0.3	-3.2	-7.0	70.0	-8.4	4.5	:	10.6	-10.0	-1.3	-0.6
IT	-5.1	-1.1	-5.6	-6.0	144.6	-5.7	19.7	135.4	23.2	-4.3	-1.3	0.0
CY	1.1	2.6	-0.7	-8.1	89.6	-11.5	1.8	49.5	8.4	-8.8	-2.9	-0.2
LV	-7.1	-6.6	-6.9	-4.5	42.4	-1.2	1.3	36.4	5.6	-11.7	-0.6	-1.4
LT	-1.9	-1.6	-1.8	-6.8	38.0	-5.7	0.2	38.0	4.8	-18.7	0.1	-0.5
LU	-0.1	0.1	0.2	-1.5	24.3	-0.3	0.5	-7.6	3.1	-6.6	0.4	0.1
HU	-6.2	-3.2	-6.8	-7.2	76.4	-0.5	4.6	67.9	15.6	-10.8	0.9	-0.4
MT	-6.0	-4.9	-6.0	-4.5	57.4	1.1	8.0	50.0	13.0	-8.8	-1.7	-0.1
NL	-1.1	-0.5	-2.1	-3.4	50.3	-2.1	4.2	39.5	12.2	-7.1	-1.8	-0.7
AT	-3.4	-2.3	-4.1	-7.0	78.5	-3.8	5.9	58.2	18.0	-9.5	-3.7	-1.1
PL	-4.8	-3.1	-5.3	-6.2	51.3	-2.4	0.6	35.7	9.8	-13.5	-0.1	-0.7
PT	-1.9	0.2	-2.8	-9.7	115.9	-9.6	19.5	108.3	12.0	-8.5	-1.9	-1.1
RO	-6.5	-4.7	-6.3	-5.6	47.9	-1.0	2.5	41.0	10.8	-13.5	-0.3	-1.5
SI	-3.6	-2.5	-6.1	-7.6	69.9	-4.5	1.6	45.2	14.2	-11.5	-2.7	-2.1
SK	-4.2	-3.2	-4.3	-4.4	59.6	-2.6	2.2	50.6	4.3	-7.7	-1.4	-0.6
FI	-1.4	-0.8	-1.1	-4.6	70.7	-1.6	7.1	34.3	15.5	-6.9	-2.0	-0.8
SE	0.2	0.6	-0.1	-2.8	32.1	-4.2	8.9	7.6	7.5	-8.4	-0.6	-0.9
Threshold	-9.6	0.2	-2.5	2.3	68.4	8.1	13.2	59.5	15.9	4.8	1.9	0.6
Safety	>	>	>	<	<	<	<	<	<	<	<	<

Source: Commission services.

Table 1.3: **Financial-competitiveness variables used in the S0 indicator (2022)**

	Yield curve	Real GDP growth	GDP per capita (PPP, USD)	NIIP (t-1)	HH net savings (%GDP, t-1)	Private debt (%GDP, t-1)	Private credit flow (%GDP, t-1)	Short debt NFC (%GDP, t-1)	Short debt HH (%GDP, t-1)	construc-tion (% value added, t-1)	Current account (%GDP, t-1)	Change in REER (t-1)	Change in nom. ULC (t-1)
BE	1.5	2.8	84.2	59.9	5.6	169.0	3.8	23.4	1.3	5.4	0.5	-1.3	5.4
BG	0.2	3.1	41.2	-18.4	:	84.4	4.4	11.7	1.5	3.8	0.5	7.3	16.4
CZ	-1.9	2.5	62.4	-15.6	8.0	78.8	2.9	12.5	0.9	5.6	0.5	0.7	13.9
DK	1.0	3.0	93.8	77.0	1.5	214.7	12.3	36.5	2.3	5.6	8.5	3.7	6.1
DE	1.0	1.6	83.1	70.7	8.8	120.4	5.7	16.8	1.5	5.5	7.3	-1.6	7.4
EE	1.9	-0.1	57.0	-13.0	3.3	95.3	6.5	7.9	0.7	6.7	-0.1	-1.0	10.7
IE	1.6	7.9	161.7	-145.5	6.0	168.1	2.6	17.7	0.4	2.2	-4.2	-6.1	-7.9
EL	3.3	6.0	46.7	-171.9	-2.1	120.7	-0.1	8.7	3.5	1.8	-5.0	-2.7	4.0
ES	2.0	4.5	59.8	-71.5	5.9	139.1	2.5	7.2	2.7	5.6	1.2	-0.3	12.3
FR	1.5	2.6	73.0	-32.1	7.7	167.8	6.5	27.7	1.3	5.7	-0.3	0.0	4.6
HR	2.5	6.0	52.0	-35.1	3.7	86.9	3.0	3.9	2.5	6.0	1.8	-3.2	8.2
IT	2.9	3.8	67.2	8.1	4.7	113.5	3.3	11.7	2.6	5.0	3.4	-1.8	4.6
CY	2.7	5.6	63.8	-117.8	3.1	248.4	4.3	14.2	3.6	6.2	-7.5	-5.4	4.1
LV	1.9	1.9	50.8	-27.4	3.6	58.0	0.9	4.9	1.1	5.5	-0.7	3.9	14.5
LT	0.3	2.5	62.0	-7.4	1.3	53.9	5.9	4.4	0.5	7.1	4.0	-4.6	19.2
LU	1.5	1.5	185.4	30.6	4.3	340.6	53.9	72.1	1.5	5.8	4.2	5.2	11.2
HU	-0.9	5.5	54.5	-53.1	7.2	80.5	12.7	11.5	1.9	6.1	-1.9	-5.2	12.4
MT	2.1	5.7	70.3	52.8	:	131.8	9.4	10.3	2.7	4.3	-0.8	-1.8	12.9
NL	1.2	4.6	93.4	93.0	9.0	229.3	11.7	34.9	1.6	5.3	6.4	-1.2	11.2
AT	1.5	4.6	86.1	14.7	6.8	129.7	7.4	10.9	2.1	7.2	1.9	-2.2	9.9
PL	0.1	4.0	53.6	-39.5	0.4	71.6	4.0	6.9	1.8	6.9	0.3	1.4	9.9
PT	2.0	6.6	54.9	-94.7	-0.5	156.9	4.0	13.3	2.1	4.8	-0.6	-2.5	12.5
RO	1.9	5.8	53.4	-47.2	:	48.1	3.8	8.7	0.7	7.3	-5.7	0.4	14.4
SI	1.6	6.2	65.7	-6.8	7.0	66.4	3.5	7.5	1.8	6.2	5.8	-3.2	12.8
SK	1.8	1.9	47.8	-61.0	2.0	95.0	5.5	12.0	1.3	6.0	-1.8	-3.4	14.1
FI	1.5	2.3	78.6	-1.4	1.1	150.1	6.1	15.2	3.7	7.7	0.3	-1.8	6.0
SE	0.7	2.9	87.1	21.2	8.0	215.2	16.6	38.5	15.5	6.7	5.6	-2.6	5.5
Threshold	0.6	-0.7	72.7	-19.8	2.6	164.7	11.7	15.4	2.9	7.5	-2.5	9.7	7.0
Safety	>	>	>	>	>	<	<	<	<	<	>	<	<

(1) Variables indicated as "t-1" are taken in lagged values.
Source: Commission services.

1.2. SHORT-TERM GROSS FINANCING NEEDS

Government gross financing needs are an important predictor of fiscal stress events, which warrants a closer examination. While the debt stock captures solvency risks, gross financing needs mainly inform about the liquidity of government finances in the short to medium term (see Box 1.2 for more detailed information). Given the strong predicting power of GFN for short-term fiscal risks, this section provides a closer examination of GFN results.

The gross financing needs in all EU countries soared in 2020 as a result of the COVID-19 crisis. The COVID-19 crisis highlighted the importance of GFN for the analysis of short-term fiscal risks. Subsequent headwinds to public finances still warrant its close monitoring. Gross financing requirements increased by some 10 pps. of GDP in the EU/EA on average in 2020 compared with the previous year. This upsurge happened due to the concurrent effects of (i) very sizeable fiscal stimulus and liquidity support governments provided to different economic agents, (ii) the need to roll over large amounts of existing debt and (iii) the toll the recession took on growth. Specifically, government deficits and, in some cases, other net debt-creating flows widened as a result of automatic stabilisers and following discretionary measures to support firms and households during the pandemic.

GFN in the EU and the EA as a whole gradually declined in 2021 and 2022. In 2021, aggregate gross financing needs for the EU/EA have receded by about 3.5 / 3 pps. of GDP compared to 2020 to 18.6% / 20.3% of GDP. GFN are estimated to have dropped further in 2022 to 17.1% / 18.5% of GDP, respectively. They are expected to remain fairly stable until 2024 (see Table 1.4).

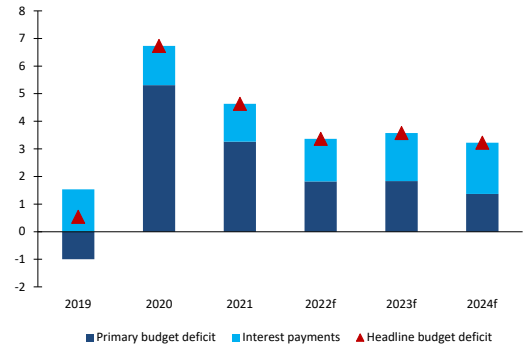
Table 1.4: **Gross financing needs (% of GDP, 2019-2024)**

	2019	2020	2021	2022	2023	2024
BE	15.6	23.5	20.2	19.9	20.5	19.5
DE	10.9	20.1	18.7	17.1	16.5	16.1
EE	1.3	10.5	2.8	4.6	3.5	5.1
IE	5.7	12.1	5.9	3.6	4.3	4.8
EL	16.3	19.7	20.6	15.3	11.0	11.6
ES	16.6	27.8	24.8	21.0	20.5	20.6
FR	16.7	28.3	24.8	22.9	23.2	23.4
IT	19.8	30.0	25.5	23.2	23.0	23.0
CY	5.8	25.5	6.3	8.4	8.5	6.5
LV	4.5	9.1	10.0	5.6	6.0	4.5
LT	6.1	15.3	6.0	4.8	9.6	4.4
LU	3.1	7.4	2.7	3.1	5.9	4.7
MT	5.3	16.1	15.8	13.0	13.0	11.6
NL	7.6	14.1	13.0	12.2	15.0	14.3
AT	8.7	18.6	16.3	18.0	16.2	15.1
PT	10.9	20.8	12.3	12.0	9.9	9.6
SI	6.9	20.8	13.5	14.2	14.1	12.5
SK	3.7	14.2	8.0	4.3	6.1	5.5
FI	8.3	19.7	12.4	15.5	16.1	16.5
EA	**13.7**	**23.3**	**20.3**	**18.5**	**18.4**	**18.2**
BG	0.5	5.5	3.2	3.5	4.0	5.1
CZ	5.3	10.7	10.9	9.2	8.6	7.5
DK	6.4	14.6	7.7	8.2	6.7	6.8
HR	14.0	21.4	13.2	10.6	12.2	13.6
HU	18.1	27.0	17.1	15.6	13.6	14.4
PL	4.6	15.6	7.6	9.8	11.2	10.2
RO	7.6	15.7	10.6	10.8	9.5	9.8
SE	5.7	12.6	8.9	7.5	6.1	6.0
EU	**12.7**	**22.1**	**18.6**	**17.1**	**16.9**	**16.7**

(1) GFN estimates / forecasts are calculated as the sum of the budgetary deficit, redemption of main debt instruments (securities and loan principal repayments), as well as stock-flow adjustments. (2) For post-programme surveillance countries (such as EL, IE, CY and PT), figures take into account official loans' repayment schedule. (3) The threshold of around 16% of GDP is considered as signalling risks based on the signalling approach (see section 2.1).
Source: Ameco, ECB, Eurostat, ECFIN desks.

The decline of GFN in recent years can be mostly explained by decreasing budget deficits. In 2021 and 2022, (primary) fiscal deficits declined markedly compared to pandemic levels (Graph 1.3). Yet, these headline deficits reflect higher government spending in response to the food and energy crises, as governments are implementing support measures such as price subsidies, tax cuts, and cash transfers, to support households. Interest expenditure, on the other hand, remained rather stable relative to GDP in recent years, but is projected to rise over the coming years as borrowing costs pick up (see Graph 1.3).

Graph 1.3: **Government budget deficit and components (% of GDP, EU, 2019-2024)**



Source: Commission 2022 autumn forecast.

GFN declined in most countries in 2022. In 2022, GFN are estimated to have fallen further compared to 2021 in most countries; in some cases fairly large drops of 3-5 pps. of GDP are recorded (Greece, Latvia, Spain, Slovakia and Malta). In several countries (Finland, Poland, Cyprus, Estonia, Austria, Slovenia, Denmark, Luxembourg, Bulgaria and Romania), GFN in 2022 are estimated to exceed their 2021 levels, but in half of these cases the increases are rather small (see Table 1.4). Larger increases, of around 2-3 pps. of GDP, are estimated for Finland, Poland, Cyprus and Estonia, where GFN levels would nevertheless remain below the threshold. In Austria, an increase of 1.7 pps. is also associated to a GFN level exceeding the threshold (see next paragraph).

However, short-term GFN are estimated to remain sizeable in six EU countries in 2022 (see Graph 1.4). GFN are estimated to remain at levels above the 16% of GDP critical threshold in six countries (Italy, France, Spain, Belgium, Austria and Germany). GFN highest estimated levels range between 20-23% of GDP in Belgium, Spain, France and Italy. GFN are more limited in Germany and Austria, where GFN would reach about 17%-18% of GDP, respectively. In all of these six countries GFN were also close to or above the critical threshold in 2021.

Graph 1.4: **Short-term gross financing needs (% of GDP, 2021 and 2022)**

(1) GFN 2021 and 2022 figures are calculated as per Table 1 in Box 1.2. The risk threshold of around 16% of GDP has been derived based on the signalling approach (see section 2.1).
(2) Blue quadrants depict countries where gross financing needs exceeded this threshold in 2021 and /or 2022.
Source: Ameco, ECB, Eurostat, ECFIN desks.

The key drivers for gross financing needs in 2022 in most countries were debt redemptions and budget deficits, while stock-flow adjustments only mattered for some countries. Debt redemptions represent the key driver of GFN in almost all countries. Following the outbreak of the COVID-19 pandemic, government debt increased in most countries. In this context, the need to fund and roll over large amounts of maturing debt (debt redemptions) increased GFN. Additionally, headline budget deficits continued to increase GFN substantially in 2022 in nearly all EU countries and in particular in Latvia, Romania, Hungary, Malta, Belgium, Italy, France, Poland, Spain, Czechia, Slovakia and Greece. Finally, stock-flow adjustments (SFA) played a minor role for the EU on average, but mattered for some countries (see Table 1.5.). In many countries, SFA had a significant impact on GFN in crisis periods, for various reasons such as tax deferrals granted by governments (larger cash-accrual differences) or when the accumulation or drawdown of cash deposits (government financial assets).([22])

([22]) In countries such as Luxembourg and Finland, SFAs have been regularly positive as surpluses of public pension funds have been used for net acquisitions of financial assets rather than to reduce public debt (see Box I.2.3 in the FSR 2021 for more information on these cases). For more details on SFA components in a crisis, see European Commission (2022), Fiscal Sustainability Report 2021, Part II: Special issue 3. 'r-g' differentials: latest

Table 1.5: **Gross financing needs by components (% of GDP, 2022 estimations)**

	Total	Components		
		Budget deficit	Maturing debt	SFA
BE	19.9	5.2	13.2	1.5
DE	17.1	2.3	13.9	0.8
EE	4.6	2.3	1.3	1.0
IE	3.6	-0.2	5.6	-1.9
EL	15.3	4.1	12.5	-1.3
ES	21.0	4.6	16.3	0.0
FR	22.9	5.0	18.6	-0.7
IT	23.2	5.1	19.0	-0.8
CY	8.4	-1.1	10.3	-0.8
LV	5.6	7.1	1.8	-3.3
LT	4.8	1.9	3.4	-0.5
LU	3.1	0.1	1.7	1.3
MT	13.0	6.0	6.3	0.6
NL	12.2	1.1	10.3	0.8
AT	18.0	3.4	13.9	0.7
PT	12.0	1.9	9.8	0.2
SI	14.2	3.6	10.1	0.6
SK	4.3	4.2	1.7	-1.6
FI	15.5	1.4	12.3	1.8
EA	**18.6**	**3.5**	**15.0**	**0.1**
BG	3.5	3.4	1.7	-1.6
CZ	9.2	4.3	3.7	1.2
DK	8.2	-1.8	9.0	0.9
HR	10.6	1.6	11.2	-2.1
HU	15.6	6.3	8.7	0.6
PL	9.8	4.8	4.9	0.0
RO	10.8	6.6	4.9	-0.7
SE	7.5	-0.2	9.1	-1.4
EU-27	**17.0**	**3.4**	**13.7**	**0.0**

(1) See notes to Table 1.4.
Source: Ameco, ECB, Eurostat, ECFIN desks.

In 2023 and 2024, gross financing needs are expected to be broadly stable compared to 2022, and to remain fairly high in seven EU countries. GFN are expected to remain above 16% of GDP in 2023 in seven countries (France, Italy, Spain, Belgium, Germany, Austria and Finland), with values above 20% in France, Italy, Spain and Belgium (see Table 1.4). They should remain sizeable due to high deficits in 2023, as well as significant debt amortisations falling due (see GFN breakdown graphs in the statistical country annexes). Compared to 2020, 2023-24 GFN are projected to decline or remain stable in all cases but the Netherlands.

A close monitoring of financing needs and gaps remains key, in particular due to strained public finances and withdrawing monetary policy support. The EU initiatives and the ECB's expansionary monetary policy stance during the COVID-19 pandemic contributed to stabilising sovereign financing conditions. During 2022, most governments continued to access markets relatively smoothly (see Section 1.3). Eurosystem asset purchases continued in the first half of 2022, helping preserve favourable financing conditions for the euro area governments. However, these purchases were gradually phased out by July 2023. Looking at highly-indebted countries, purchases of euro area government bonds under the Pandemic Emergency Purchase Programme (PEPP) and Asset Purchase Programmes (APP) amounted to 18% of GFN in Portugal, 12% of GFN in Cyprus, 8-9% of GFN in Italy, Spain, Greece, Belgium and 6% of GFN in France in 2022 (see Table 1.6). ([23]) While the level of GFN in EUR bn. will generally increase in 2023, the Eurosystem no longer conducts net asset purchases and will gradually unwind its APP portfolio.

As the ECB is expected to further tighten its monetary policy in 2023, the financing costs of the government are also expected to gradually increase further. Following the end of net asset purchases, the ECB has increased its policy rates by 250 bps. Furthermore, at its December 2022 meeting, the ECB announced that further interest rate increases would be needed in order to reach levels that are sufficiently restrictive to ensure a timely return of inflation to the 2% medium-term target. Market expectations about the future path of the ECB policy rate are consistent with about 150 bps. of additional interest rate hikes in the next six months, which would put the ECB deposit facility rate ([24]) as high as 3.5%. This should translate into higher long-term market interest rates and therefore also possibly higher financing costs for euro area governments. Furthermore, the ECB will also start to reduce its APP securities portfolio holdings at a predictable pace in March 2023, as the ECB would not reinvest in full all of the principal payments from maturing securities. The decline in APP securities holdings will amount to EUR 15bn per month on average until the end of

developments and implications for public debt sustainability, Institutional Paper 171, 25 April.

([23]) These refer only to net asset purchases (new investments compared to the existing portfolio) and so do not take into account reinvestments of maturing securities held by the Eurosystem. For this reason, net asset purchases may be negative for some countries, indicating that the existing Eurosystem portfolio of bonds issued by a specific government is actually decreasing.

([24]) In the current context of high excess liquidity in the euro area banking system, the ECB deposit facility rate has become the de facto ECB policy rate.

Table 1.6: **Gross financing needs and possible total acquisitions of sovereign bonds by the Eurosystem (2022 estimates)**

	2022			2023
	GFNs (EUR bn)	Eurosystem public sector asset purchases under APP and PEPP		GFNs (EUR bn)
		EUR bn	% of GFN	
BE	109.6	8.3	7.6	118.5
DE	657.9	61.3	9.3	676.7
EE	1.7	0.0	2.2	1.3
IE	18.0	2.5	13.8	23.5
EL	32.0	2.6	8.1	24.6
ES	273.7	23.5	8.6	281.7
FR	604.0	36.4	6.0	643.8
IT	443.2	40.0	9.0	454.5
CY	2.2	0.3	11.9	2.4
LV	2.1	0.6	30.4	2.4
LT	3.2	0.6	17.6	7.0
LU	2.4	-0.2	-7.0	4.8
MT	2.1	0.2	7.1	2.3
NL	112.8	8.2	7.3	146.7
AT	81.1	7.8	9.6	77.6
PT	28.4	5.2	18.4	24.8
SI	8.4	0.7	8.3	8.9
SK	4.6	1.7	36.2	7.4
FI	42.1	4.5	10.7	45.4

(1) The cut-off date for this table is 21 December 2022. (2) These estimates are based on cumulative net asset purchases (excluding reinvestments) conducted under the Asset Purchase Programme (APP) and the Pandemic Emergency Purchase Programme (PEPP), as released by the ECB, as of November 2022. (3) Net asset purchases under the PEPP are based on outturn data between December 2021 and November 2022 because the ECB released the data for December 2021 and January 2022 together. (4) The ECB stopped conducting net asset purchases under the PEPP at the end of March 2022 and discontinued net asset purchases under the APP on 1st July 2022. Hence, no net asset purchases are estimated for 2023. (5) GFN estimates are calculated as previously specified in this section.
Source: Commission services based on ECB data.

Q2 2023 and the subsequent pace of the decline will be determined over time. At the same time, the ECB continues to reinvest the maturing securities purchased under the PEPP, which may still cover part of euro area countries GFN in 2023. The ECB has also used the flexibility of the PEPP reinvestments with a view to countering risks to the monetary policy transmission mechanism related to the pandemic. Moreover, given the long maturity of public debts in the euro area, higher yields will increase interest expenditure only gradually.

Looking ahead, some EU initiatives such as the NextGenerationEU should continue to contribute preserving favourable financing conditions for EU sovereigns. Indeed, EU countries are currently drawing down RRF funds, and will do so until the end of the facility in 2026.

1.3. SOVEREIGN FINANCING CONDITIONS

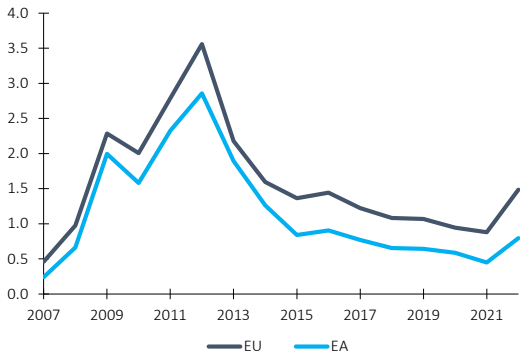
This section provides an analysis of the ease of (re-)financing government debt, based on different indicators of financial markets' perceptions of sovereign risk. Such information notably allows to identify early on signs of sustainability risks over the short term. In practice, high frequency financial data allows monitoring emergence of potentially self-reinforcing adverse fiscal sustainability developments. ([25]) While assessing the nature of such developments in real-time calls for caution, financial data provide an

([25]) For discussion of the market expectations on sovereign debt default and risks of self-fulfilling crisis channel, see Calvo G. (1988), Servicing the public debt: The role of expectations, *American Economic Review*, 78(4), 647-661. For an application of the EU sovereign crisis event see Miller, M., and Zhang, L. (2014), Saving the euro: Self-fulfilling crisis and the "Draghi Put", in: Stiglitz, J.E. and Heymann, D. (eds.), Life after debt. International Economic Association Series. Palgrave Macmillan, London.

important source of information to monitor market's perception, a driver of short-term debt dynamics and, potentially, of self-reinforcing debt dynamics.

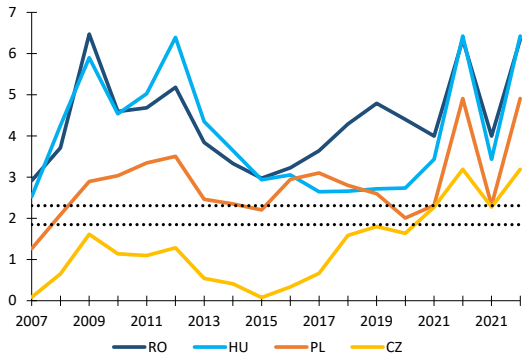
Sovereign yields spreads have increased in the EU in 2022, following the sharp increase in inflation and the tightening of monetary policies (see Graph 1.5). In this context, some countries face significantly higher financing costs. This is particularly true for some non-euro area countries (Hungary, Romania, Poland, and the Czech Republic – see Graph 1.6). Other countries, such as Italy and Spain (Graph 1.7) have also experienced a significant increase, although relatively more moderate. This represents a notable change in financing conditions compared with past years. Nevertheless, in many countries, interest rates are expected to feed only gradually into the government debt burden, as debt maturities have been lengthened over time. Moreover, financing sources remain relatively stable, with a diversified and large investor base.

Graph 1.5: **10-year government bond yield spreads vs. the German bund (EU and EA aggregates)**



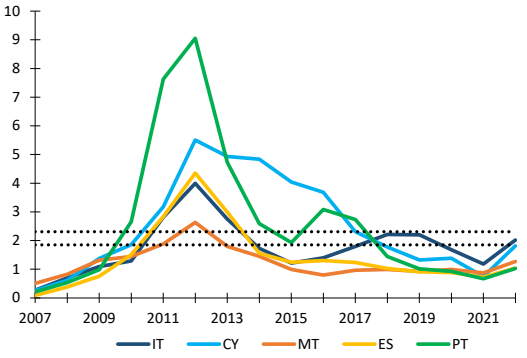
(1) Yield spreads are as of December 2022.
(2) Aggregates represent unweighted averages.
Source: Commission services based on ECB LTIR database.

Graph 1.6: **10-year government bond yield spreads vs. the German bund (selected non-EA countries)**



(1) Countries are those whose spreads are (or have recently been) above the lower risk threshold: 184.8 bps. Upper threshold: 231 bps.
Source: Commission services based on ECB LTIR database.

Graph 1.7: **10-year government bond yield spreads vs. the German bund (selected EA countries)**



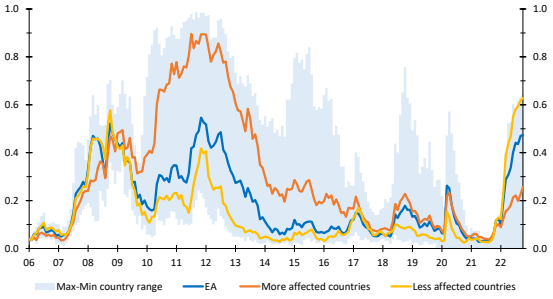
(1) Countries are those whose spreads are (or have recently been) above the lower risk threshold: 184.8 bps. Upper threshold: 231 bps.
Source: Commission services based on ECB LTIR database.

The Composite Indicator of Systemic Sovereign Stress (SovCISS) indicates that stress in euro area sovereign debt markets has increased (see Chart I.1.8). ([26]) This indicator of systemic stress for euro area sovereign bond markets currently posts a higher average level and a relatively wider gap between countries with the lowest and the highest score, compared to early 2022. The increase in the gap between the minimum and the

([26]) The SovCISS (Composite Indicator of Systemic Sovereign Stress) measures the level of stress in euro area sovereign bond markets, following the CISS (Composite Indicator of Systemic Stress) methodology developed in Hollo et al. (2012). In the SovCISS, stress symptoms are measured along three dimensions: (i) risk spreads; (ii) yield volatilities; and (iii) bid-ask spreads. For details, see Garcia-de-Andoain, C. and Kremer, M. (2018), Beyond spreads: measuring sovereign market stress in the euro area, *ECB Working Paper Series*, No. 2185.

maximum (i.e. the country range) is mostly driven by a surge in the indicator as of March 2022, which has affected countries to a different extent.

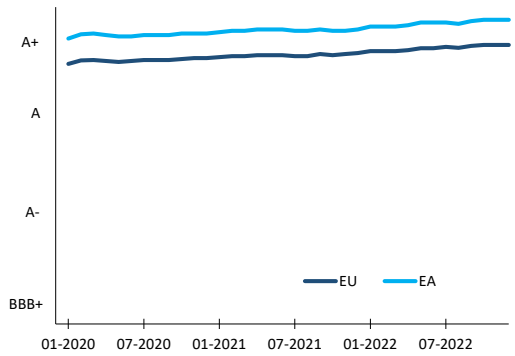
Graph 1.8: **Composite indicator of systemic stress (SovCISS) in euro area sovereign bond markets**



(1) The SovCISS focuses on stress in sovereign bond markets. It is available for the euro area and for 11 euro area countries (AT, BE, FI, FR, DE, EL, IE, IT, NL, PT, ES). Countries more affected by the crisis include EL, IE, IT, PT, ES. Less affected countries include AT, BE, FI, FR, DE, NL.
Source: Commission services based on ECB data.

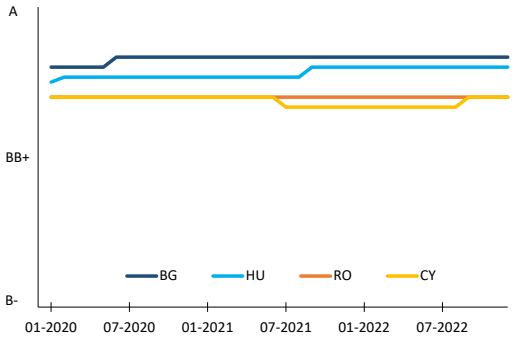
The sovereign ratings for the EU and EA remain high on average, but differences exist across countries. The relatively high ratings for the EU and EA as a whole reflect stable or improving ratings in most countries (see Graph 1.9). At the same time, ratings remain relatively low in some countries (see Graph 1.10, Table 1.7), including in some high-debt countries (see Graph 1.11).

Graph 1.9: **Sovereign debt ratings (EU and EA aggregates)**



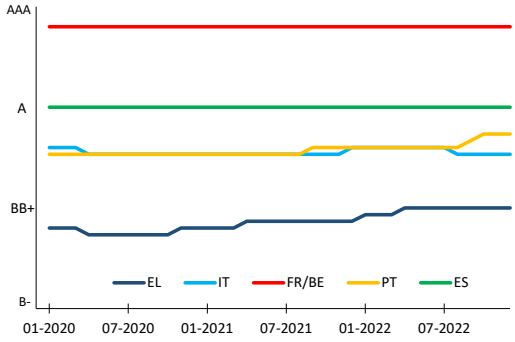
(1) Ratings are computed as simple average (using an alphanumeric conversion table) of long-term foreign currency ratings, assigned by the major rating agencies.
Source: Commission services based on Moody's, S&P and Fitch.

Graph 1.10: **Four Member States with the lowest ratings in the EU**



(1) Ratings are computed as simple average (using an alphanumeric conversion table) of long-term foreign currency ratings, assigned by the major rating agencies.
Source: Commission services based on Moody's, S&P and Fitch.

Graph 1.11: **Ratings of Member States with debt-to-GDP ratios exceeding 100%**



(1) Ratings are computed as simple average (using an alphanumeric conversion table) of long-term foreign currency ratings, assigned by the major rating agencies.
Source: Commission services based on Moody's, S&P and Fitch.

Table 1.7: **Long-term foreign currency sovereign ratings (at 9 December 2022)**

	Moody's			S&P			Fitch		
	Rating	Since	Outlook	Rating	Since	Outlook	Rating	Since	Outlook
BE	Aa3	07/03/2014	STABLE	AA	28/02/2014	STABLE	AA-	24/09/2021	STABLE
BG	Baa1	09/10/2020	STABLE	BBB	29/05/2020	STABLE	BBB	19/02/2021	POS
CZ	Aa3	05/08/2022	NEG	AA-	24/08/2011	STABLE	AA-	06/05/2022	NEG
DK	Aaa	23/08/1999	STABLE	AAA	27/02/2001	STABLE	AAA	10/11/2003	STABLE
DE	Aaa	28/02/2014	STABLE	AAA	13/01/2012	STABLE	AAA	21/11/2011	STABLE
EE	A1	31/03/2010	STABLE	AA-	31/03/2022	STABLE	AA-	19/08/2022	NEG
IE	A1	06/05/2022	POS	AA-	18/09/2022	POS	AA-	28/01/2022	STABLE
EL	Ba3	06/11/2020	STABLE	BB+	22/04/2022	STABLE	BB	14/01/2022	POS
ES	Baa1	13/04/2018	STABLE	A	18/03/2022	STABLE	A-	19/01/2018	STABLE
FR	Aa2	21/02/2020	STABLE	AA	02/12/2022	NEG	AA	15/05/2020	NEG
HR	Baa2	15/07/2022	STABLE	BBB+	14/07/2022	STABLE	BBB+	13/07/2022	STABLE
IT	Baa3	05/08/2022	NEG	BBB	26/07/2022	STABLE	BBB	03/12/2021	STABLE
CY	Ba1	19/08/2022	POS	BBB	02/09/2022	STABLE	BBB-	03/04/2020	STABLE
LV	A3	13/02/2015	STABLE	A+	21/02/2020	STABLE	A-	09/08/2020	STABLE
LT	A2	12/02/2021	STABLE	A+	02/12/2022	NEG	A	31/01/2020	STABLE
LU	Aaa	28/02/2014	STABLE	AAA	14/01/2013	STABLE	AAA	21/09/2000	STABLE
HU	Baa2	24/09/2021	STABLE	BBB	12/08/2022	NEG	BBB	22/02/2019	STABLE
MT	A2	18/09/2022	STABLE	A-	13/03/2020	STABLE	A+	17/04/2020	STABLE
NL	Aaa	07/03/2014	STABLE	AAA	20/11/2015	STABLE	AAA	11/07/2014	STABLE
AT	Aa1	24/06/2016	STABLE	AA+	26/08/2022	STABLE	AA+	07/10/2022	NEG
PL	A2	12/05/2017	STABLE	A-	12/10/2018	STABLE	A-	23/08/2013	STABLE
PT	Baa2	17/09/2021	STABLE	BBB+	09/09/2022	STABLE	BBB+	28/10/2022	STABLE
RO	Baa3	18/10/2021	STABLE	BBB-	16/04/2021	STABLE	BBB-	17/04/2020	NEG
SI	A3	02/10/2020	STABLE	AA-	14/06/2019	STABLE	A	19/07/2019	STABLE
SK	A2	05/08/2022	NEG	A+	20/05/2022	NEG	A	19/08/2022	NEG
FI	Aa1	03/06/2016	STABLE	AA+	16/09/2016	STABLE	AA+	24/01/2020	STABLE
SE	Aaa	04/04/2002	STABLE	AAA	16/02/2004	STABLE	AAA	08/03/2004	STABLE

Source: Commission services based on Moody's, S&P and Fitch.

Box 1.1: **S0 indicator: conceptual elements**

The S0 indicator allows an identification of risks of potential fiscal stress in the upcoming year, based on a number of fiscal and structural variables. S0 is more precisely an early - detection indicator of fiscal stress over a one year horizon. ([1]) Fiscal stress designates situations ranging from a credit event, a request of large official financing, to an implicit domestic government default (when high inflation) and a loss of market confidence (the latter has been the most common situation of fiscal stress during the global financial crisis in the case of European countries. ([2])

The S0 indicator is a composite indicator of fiscal stress stemming from fiscal variables and structural features of the economy. It is based on a wide range of variables that have proven to perform well in the past in detecting situations of upcoming fiscal stress. Thus, unlike the traditional medium- and long-term fiscal sustainability indicators (the S1 and S2 indicators presented in Chapters 2 and 3), the S0 indicator is not a fiscal gap indicator (i.e. it does not quantify the required fiscal adjustment to ensure sustainable public finances over a specific time horizon). The S0 indicator is neither a financial market - based indicator of sovereign risk (see section 1.3 for an analysis of the latter).

More precisely, the measurement of S0 is based on 25 fiscal and financial-competitiveness variables. Table 1 provides the list of the 12 fiscal and 13 financial-competitiveness variables that are used to construct the S0 indicator. This reflects the existing rich evidence, also from recent experience in the EU, of the role played by developments in the financial sector and the competitiveness of the economy in generating fiscal risks. ([3])

The S0 indicator is computed based on an empirical method, the so-called signalling approach. This method involves setting out endogenously critical risk thresholds, by analysing the behaviour of a large number of variables ahead of past fiscal stress events. More precisely, these critical thresholds are determined for each individual variable entering the S0 indicator, by minimising the proportion of missed crises and false alarms (or by maximising the 'signalling power'). Then, S0 is computed as the weighted proportion of variables that have reached their critical thresholds, with weights given by their 'signalling power', and the critical threshold for S0 itself endogenously derived. The same method applies for the two thematic sub-indices that reflect either the fiscal or the financial-competitiveness sides of the economy. The higher the proportion of individual variables with values at or above their specific threshold, the higher the value of S0 (and the sub-indices). The predictive performance of the S0 indicator fares well compared to other studies. ([4])

([1]) See Berti, K., Salto, M., and Lequien M. (2012), An early-detection index of fiscal stress for EU countries, *European Economy Economic Paper*, No. 475.

([2]) See Pamies Sumner, S., and Berti, K. (2017), A complementary tool to monitor fiscal stress in European economies, *European Commission Discussion Paper*, No. 49.

([3]) See Cerovic, S., Gerling, K., Hodge, A., and Medas, P. (2018), Predicting Fiscal Crises, *IMF Working paper*, No. 18 / 181; Pamies Sumner, S., and Berti, K. (2017), A complementary tool to monitor fiscal stress in European economies, *European Commission Discussion Paper*, No. 49; Bruns, M., and Poghosyan, T. (2016), Leading indicators of Fiscal distress: Evidence from the extreme bound analysis, *IMF Working Paper*, No. 16/28; Berti, K., Salto, M. and Lequien, M. (2012), An early-detection index of fiscal stress for EU countries, *European Economy Economic Paper*, No. 475.

([4]) See Cerovic, S., Gerling, K., Hodge, A., and Medas, P. (2018), Predicting Fiscal Crises, *IMF Working paper*, No. 18 / 181.

(Continued on the next page)

Box (continued)

S0's identification of short-term fiscal risks is threefold. First, S0 is a measure of overall short-term risks to fiscal sustainability. Secondly, the fiscal and financial-competitiveness sub-indices help identifying vulnerabilities coming from one of the two thematic areas, though not necessarily at the aggregate level. Additionally, they also give insights into specific areas for those countries where high values of S0 already flag overall sustainability risks. Finally, individual variables of S0 allow for identifying specific sources of vulnerability. Overall, this detailed identification of sources of short-term fiscal risk enables identifying precise areas calling for policy action at the Member State and/or the Union level.

The interpretation of risk assessment results based on the S0 analysis should be made with some caution:

- First, although the framework described above is rather comprehensive, additional dimensions that are relevant for the analysis of short-term sustainability risks are necessarily left aside. For instance, factors of a more qualitative nature or variables for which data availability is limited are not reflected by S0.

- Then, the S0 indicator is based on yearly outturn values of the different variables, and, for several variables, on values for the ongoing year. This reflects the fiscal stress identification approach underpinning the S0 indicator (whereby the build-up of fiscal and structural imbalances in the past and current years can lead to fiscal stress in the next year). While it allows complementing the traditional forward-looking perspective of the DSA, it can present some limitations in cases where real-time or foreseen developments change rapidly. ([5])

- Last, a high short-term risk signal, as highlighted by S0, does not mean that fiscal stress is inevitable (it is not a prediction), but rather that there are significant vulnerabilities that need to be addressed by appropriate policy responses.

Hence, a broader analysis of country-specific contexts should supplement the interpretation of S0 results.

([5]) For example, the announcement of the NGEU/RRF is deemed to have contributed to mitigate short-term risks, while not being fully reflected yet in outturn or current year data.

(Continued on the next page)

Box (continued)

Table 1: **Thresholds and signalling power of S0 indicator, fiscal and financial-competitiveness sub-indices and individual variables**

Variables	safety	threshold	signalling power	type I error	type II error	crisis number	no-crisis number
Headline gov. balance, % GDP	>	-9.61	0.07	0.04	0.89	44	1080
Primary govt. balance, % GDP	>	0.23	0.13	0.47	0.40	43	1058
Cyclically-adjusted govt. balance, % GDP	>	-2.50	0.23	0.52	0.25	40	981
Stabilising primary balance, % GDP	<	2.34	0.08	0.13	0.79	38	983
Gross debt, % GDP	<	68.44	0.12	0.23	0.65	40	1047
Change in gross debt, % GDP	<	8.06	0.12	0.06	0.82	39	1018
Short-term govt. debt, % GDP	<	13.20	0.20	0.14	0.67	21	430
Net debt, % GDP	<	59.51	0.20	0.18	0.62	26	586
Gross financing needs, % GDP	<	15.95	0.26	0.24	0.50	26	621
Interest rate-growth differential	<	4.80	0.08	0.11	0.82	38	977
Change in govt. expenditure, % GDP	<	1.90	0.11	0.13	0.76	41	1051
Change in govt. consumption expend., % GDP	<	0.61	0.07	0.17	0.76	38	972
Fiscal index	<	0.36	0.28	0.30	0.42	45	1083
Net international investment position, % GDP (t-1)	>	-19.80	0.29	0.47	0.24	25	500
Net savings of households, % GDP (t-1)	>	2.61	0.33	0.42	0.25	28	699
Private sector debt, % GDP (t-1)	<	164.70	0.18	0.22	0.60	20	418
Private sector credit flow, % GDP (t-1)	<	11.70	0.37	0.28	0.35	20	409
Short-term NFC debt, % GDP (t-1)	<	15.40	0.20	0.54	0.26	19	403
Short-term HH debt, % GDP (t-1)	<	2.90	0.21	0.52	0.26	19	403
Construction, % value added (t-1)	<	7.46	0.22	0.27	0.51	43	1006
Current account, 3-year backward MA, % GDP (t-1)	>	-2.50	0.34	0.35	0.31	42	983
Change (3 years) of REER based on export deflator, 37 co	<	9.67	0.11	0.18	0.71	24	460
Change (3 years) in nominal ULC (t-1)	<	7.00	0.18	0.64	0.18	38	967
Yield curve	>	0.59	0.37	0.34	0.29	35	813
Real GDP growth	>	-0.67	0.10	0.09	0.81	48	1124
GDP per capita in PPP, % of US level	>	72.70	0.22	0.44	0.33	51	1129
Financial-competitiveness index	<	0.49	0.55	0.32	0.13	52	1158
Overall S0 index	<	0.46	0.55	0.22	0.23	52	1158

(1) Variables indicated as "t-1" are taken in lagged values. (2) The signalling power is defined as (1 - type I error - type II error). See Annex A4 for more details.
Source: Commission services.

Box 1.2: Gross financing needs: definition and measurement

Gross financing needs (GFN) are primarily a flow concept informing about the liquidity of government finances in the short to medium term, while debt stock indicators capture solvency risks. ([1]) A given debt stock may be associated to very different schedules of repayment flows and thus financing needs, depending on the specific borrowing terms, such as term-to-maturity structure, amortisation schedules for principal and interest.

Gross financing needs are usually defined as the flow of payments or financing obligations the government faces to service its debt and cover its budget deficit, if any, over the next period, i.e.:

GFN = Headline deficit +
+ debt redemptions + SFA
or
GFN = Primary deficit + interest payments +
+ debt redemptions + SFA

GFN also include stock-flow adjustments to capture changes in a government's balance sheet that affect gross government debt not the budget deficit. SFA are net debt-creating flows that comprise three categories: (i) Other debt creating / reducing flows (ODF), essentially 'below the line' items (not affecting the deficit) constituting a net acquisition of financial assets, ([2]) (ii) the cash-accrual difference ([3]) to the ESA fiscal deficit, since the latter is accounted on an accrual basis and (iii) other adjustments and discrepancies. ([4])

GFN may be measured using different data sources and approaches, in both backward- and forward-looking manner. Contrary to government debt, which is an indicator well defined in the EU and measured by national statisticians using harmonised definitions set by Eurostat, GFN is an indicator built for practical or analytical purposes, which falls outside of the scope of government finance statistics. ([5]) For outturn data, such as the GFN used under S0, different sources exist to estimate GFN components, among them national statistical institutes (NSIs), national central banks (NCBs), national authorities (ministries), debt management offices (DMOs) or large data providers such as Bloomberg. For forward-looking data, a few institutions provide GFN projections, among them the European Commission and the IMF. ([6])

Therefore, GFN are versatile metrics, useful for a variety of analytical purposes. GFN estimates are a particularly valuable concept in the case of programme countries or more generally in a crisis context, to define accurately the financing requirements and the necessary sources to cover those needs, including when calibrating the size of the programme. They are also useful in regular fiscal

([1]) GFN' mixed nature notably in terms of potential adjustments from contingent liabilities' realisations or variation of assets makes it also informative about solvency-related risks.

([2]) Examples: *(i)* cash / deposits (e.g. accumulation/draw-down), *(ii)* equity (nationalisation/privatisation, below-the-line financial sector recapitalisations), *(iii)* other financial assets (e.g. participation in a common financial instrument at EU level).

([3]) The cash-accrual adjustment (or difference) to the ESA fiscal deficit commonly includes *(i)* the difference between interest paid (+) and accrued (-), e.g. deferred interest payments on certain (official) loans, *(ii)* changes in accounts payable (e.g. tax refunds not yet settled, trade credits granted by government suppliers, grants received from the EU but not yet paid to the final beneficiary, prepayments for mobile phone licences) or *(iii)* accounts receivable (e.g. tax receivable, military receivable, revenue from EU (structural) funds that is not yet received / disbursed, healthcare expenditure claw-back) or changes in arrears or clearance of called guarantees (applicable for instance when called guarantees accrue to year t, but will be paid only in the subsequent year(s)).

([4]) include valuation effects, statistical discrepancies and other changes in volumes due to reclassification of units, all of which affect debt (and gross financing needs) ex-post.

([5]) See for example Eurostat, ESA 2010, "Chapter 20 – The government accounts", where no mention is made of this indicator.

([6]) The ESM (Gabriele, C., Erce, A., Athanasopoulou, M., and Rojas, J. (2017), Debt stocks meet gross financing needs: a flow perspective into sustainability, *ESM Working paper series*, No. 24).

(Continued on the next page)

Box (continued)

surveillance to monitor potential market roll-over risks in the short to medium term.

International institutions and creditors are paying increased attention to GFN in their appraisal of fiscal risks. The same institution may use multiple GFN definitions, depending on the analytical purpose. Different financial instruments may be considered under the universe of GFN. Experts generally agree that a broader definition of GFN flows, mirroring the components of Maastricht debt stocks, seems appropriate. Such a definition would include currency and deposits, debt securities and loans, but the scope may vary depending on the purpose of the analysis.

In the Commission's Fiscal Sustainability Reports and Debt Sustainability Monitors, GFN are regularly examined in the short- and medium-term fiscal sustainability chapters. For the medium-term, Chapter 3.3 shows GFN projections up to T+10.

Similarly to the DSM 2020 and the FSR 2021, for the purpose of short-term analysis performed through S0, GFN are gauged like the medium-term measure, to evaluate all liquidity pressures EU countries are currently facing (see Table 1). Specifically, to reflect all needs that require market financing, short-term GFN are computed to include the redemption of all loans (official and commercial) reaching maturity, as well as other net debt-creating flows (stock-flow adjustments).

Table 1: **GFN definition - components and debt instruments included**

	Balance sheet items (liabilities) under government debt	Components and debt instruments included in the GFN definition
Budget (headline) deficit		x
Maturing debt	Currency and deposits	
	Debt securities	x
	Commercial loans	x
	Official loans	x
Stock-flow adjustments		x

(1) Similarly to the DSM 2020 and the FSR 2021, in this report, short and medium-term GFN are calculated in the same way, based on the definition previously used for medium-term GFN (see DSM 2019). (2) Consolidated data. (3) SFA are defined as described in the text.
Source: Commission services.

Looking ahead, a few approaches could help improve GFN estimates. Improved practices such as monitoring fiscal deficits in cash terms, identifying more accurately other debt creating / reducing flows of the stock-flow adjustment (SFA), and cooperating with national DMOs to follow more closely debt redemption and issuance plans could significantly improve GFN estimates, in real time.