Should we be worried about debt sustainability in advanced economies?

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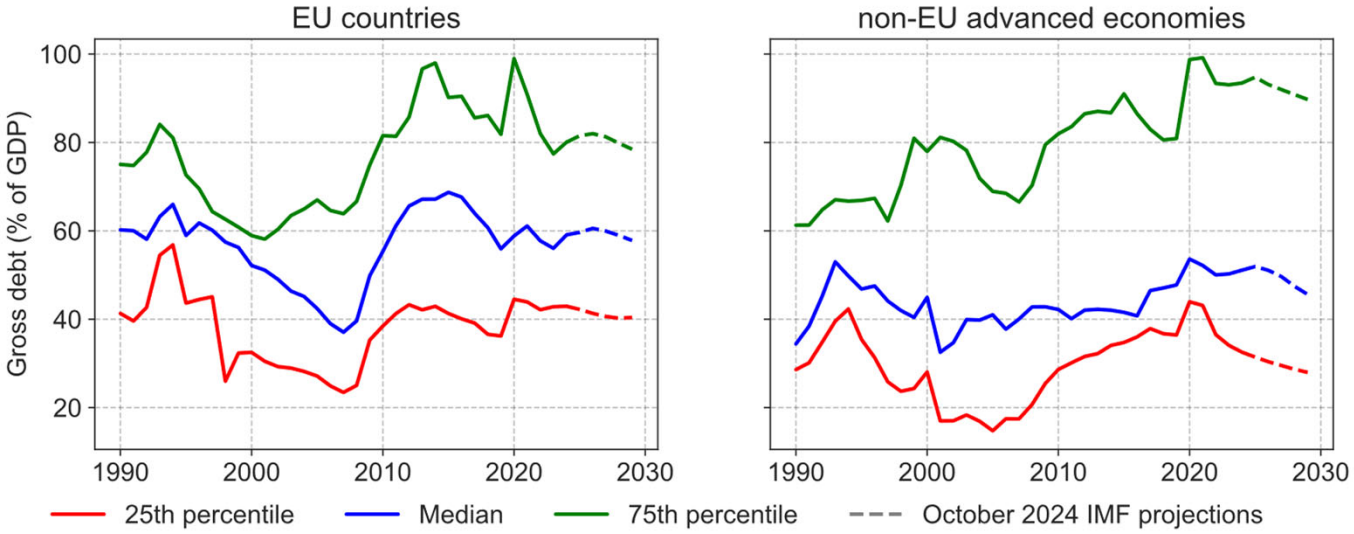
based on ongoing work with Zsolt Darvas, Lennard Welslau and Gon Huertas

Motivation

1. Debt/GDP in advanced countries went up a lot during Covid. Down due to post-Covid recovery and the inflation shock, but still at near-historic highs (except in wartime). IMF projects it to stay there
2. Real interest rates have risen by about 2 percent relative to the pre-Covid levels
3. Growth prospects are weak in many advanced countries (particularly energy-intensive EU).

1-3 look like trouble. IMF is worried. How worried should we be?



Method

1. Compute (structural) primary balance (SPB, excess of revenues over non-interest expenditures) required to keep debt stable or bring it down. Call this SPB*
2. Decide whether overcoming difference between current SPB and SPB* over the medium term looks manageable (Why medium term? (1) political cycle; (2) adjustment horizon of EU fiscal rules).

Several ways to do 1.

A. SPB*(2029,SS): projected steady-state debt stabilising primary balance in 2029.
   - SPB*(2029,SS) = $(r-g)D_{2029}$ using October 2024 WEO projections

B. SPB*(7,EU): Requirements of the new EU fiscal rules based on June 2024 "reference trajectories" of the European Commission, assuming 7-year adjustment period.
   - Debt sustainability analysis plus "safeguards" (min. speed of debt reduction, max. long-term overall deficit of 1.5%).

C. SPB*(7,70; EC): Stochastic debt sustainability analysis based on EC methodology, based on November 2024 EC projections
   - SPB* that reduces debt with 70 percent probability after 7 years given projected growth, interest rates, aging costs.

D. SPB*(5,50) and SPB*(7,70) : Our own stochastic debt sustainability analysis (improved version of EC methodology), based on November 2024 EC projections.
   - SPB* that reduces debt with 50/70 percent probability after 5/7 years given projected growth, interest rates, aging costs.
   - At high debt levels, our SPB*(7,70) is somewhat "tougher" than SPB*(7,70; EC) (treatment of uncertainty)

Step 1. adjustment requirements to stabilise debt for selected countries

	EC Spring forecasts for 2024			SPB*(5, SS)	SPB*(7, EU) June 24	SPB*(7, 70, EC) (prel.)	SPB*(5, 50) (prel.)	SPB*(7, 70) (prel.)	Required fiscal adjustment			
	Debt	Fiscal balance	SPB						SPB*(7, EU)	SPB*(7, 70; EC)	SPB*(5, 50)	SPB*(7, 70)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)=(5-3)	(10)=(6)-(3)	(11)=(7)-(3)	(12)=(8-3)
Greece	153.1	-0.6	2.2	1.4	2.8	2.1	-2.1	-0.3	0.6	-0.1	-4.3	-2.4
Italy	136.6	-3.8	-0.4	2.4	3.3	2.5	2.4	3.9	3.7	2.9	2.8	4.3
United States	124.1	-7.8	-3.7	0.6	n.a.	1.2	2.2	4.0	n.a.	4.9	5.8	7.6
France	112.7	-6.2	-4.0	0.3	1.2	0.9	1.7	3.7	5.2	4.8	5.6	7.7
Spain	102.3	-3.0	-1.1	0.5	2.7	1.5	0.0	1.3	3.8	2.6	1.1	2.4
Belgium	103.4	-4.6	-2.0	0.2	1.5	0.8	0.3	1.9	3.5	2.8	2.4	3.9
United Kingdom	101.6	-5.1	-2.0	1.0	n.a.	0.1	-0.1	1.1	n.a.	2.2	1.9	3.1
Hungary	74.5	-5.4	0.2	0.3	3.3	2.0	0.9	2.7	3.1	1.8	0.7	2.5
Germany	63.0	-2.2	-0.3	-0.1	0.1	1.4	-0.9	-0.5	0.4	1.7	-0.5	-0.1
Slovakia	58.9	-5.8	-4.1	-0.3	1.3	0.7	0.6	1.0	5.4	4.8	4.7	5.1
Poland	54.7	-5.8	-3.0	0.1	1.2	3.4	0.2	0.6	4.2	6.4	3.2	3.6
Romania	52.2	-8.0	-5.4	0.1	0.8	-0.8	-0.5	0.3	6.2	4.6	4.9	5.6

Shading denotes SPB* above 3 percent of GDP and adjustment needs above 3.5 percent of GDEP, respectively

Note: see previous slide for definitions of SPB*(5,SS), SPB*(7,EU), SPB*(7,70; EC), SPB*(5,50), and SPB*(7,70).

1. To stabilize/reduce debt with 70 percent probability, 7 countries require adjustment of 3.5 percent of GDP or higher.
2. In two cases – the United States, and France – the adjustment requirement exceeds 5 percent of GDP.
3. Several also need to reach SPB *levels* above 3 percent of GDP and keep them high for a while – but not forever.

Step 2. Is the required adjustment plausible? Three reasons to worry

1. Historically rare.
   - See table to the right, in the spirit of B. Eichengreen & U. Panizza (2014).
2. Fiscal fatigue literature (A. R. Ghosh eta al 2013).
   - Feedback from higher debt to higher primary balance may weaken at high levels of debt
   - Implies a ”debt limit”: the debt ratio $\bar{d}$ that solves:

     $$\mu + f(\bar{d}) = (r - g)\ \bar{d}$$

     where μ is determinant of the primary balance that independent of the debt level, and $f(\bar{d})$ is the endogenous (possibly concave) feedback from debt to the primary balance.

   Might this explain steadily rising debt at high levels?
3. Weak growth, high polarisation in many countries (S.Arslanalp and B. Eichengreen, 2023)

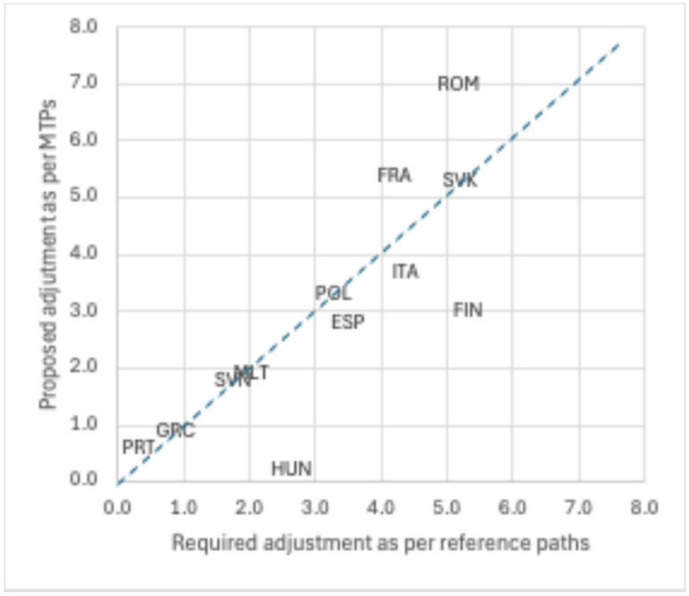
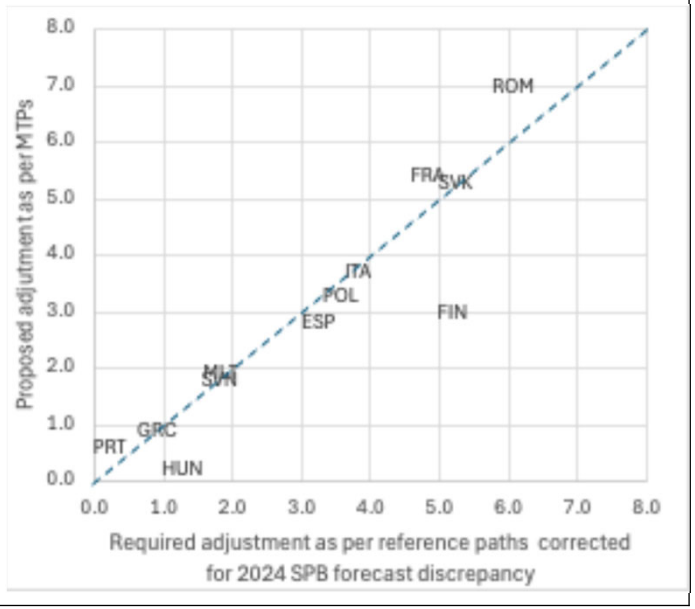
Relative frequency of higher or equal adjustment in 2-7 years

	Fiscal adjustment to reach SPB*(7, 70)	Sample: 1970-2022		Sample: 1990-2022	
		AE/EU sample	Own country sample	EU sample	Own country sample
Italy	4.3	0.08	0.06	0.08	0.09
US	7.6	0.01	0.02	0.01	0.03
France	7.7	0.02	0.00	0.02	0.00
Spain	2.4	0.18	0.18	0.18	0.23
Belgium	3.9	0.09	0.06	0.09	0.03
UK	3.1	0.13	0.22	0.13	0.21
Slovakia	5.1	0.05	0.09	0.05	0.09
Poland	3.6	0.10	0.05	0.10	0.05
Romania	5.6	0.04	0.02	0.04	0.01

Source: IMF Public Finances in Modern History database

One reason to worry a bit less: EU countries seem to be accepting adjustment requirements of new fiscal framework.

Comparison of fiscal adjustment proposed in European Commission's 'reference trajectories' and in country medium-term fiscal structural plans (MTPs) submitted by 5. November 2024 (in % of GDP)

Without correcting for differences between 2024 SPB projected by the reference path and the MTPs	After correcting for differences between 2024 SPB projected by the reference path and the MTPs
	

Another reason to worry a bit less: 'fiscal fatigue' may not be a major concern

Several countries have raised primary balances in reaction to high debt levels

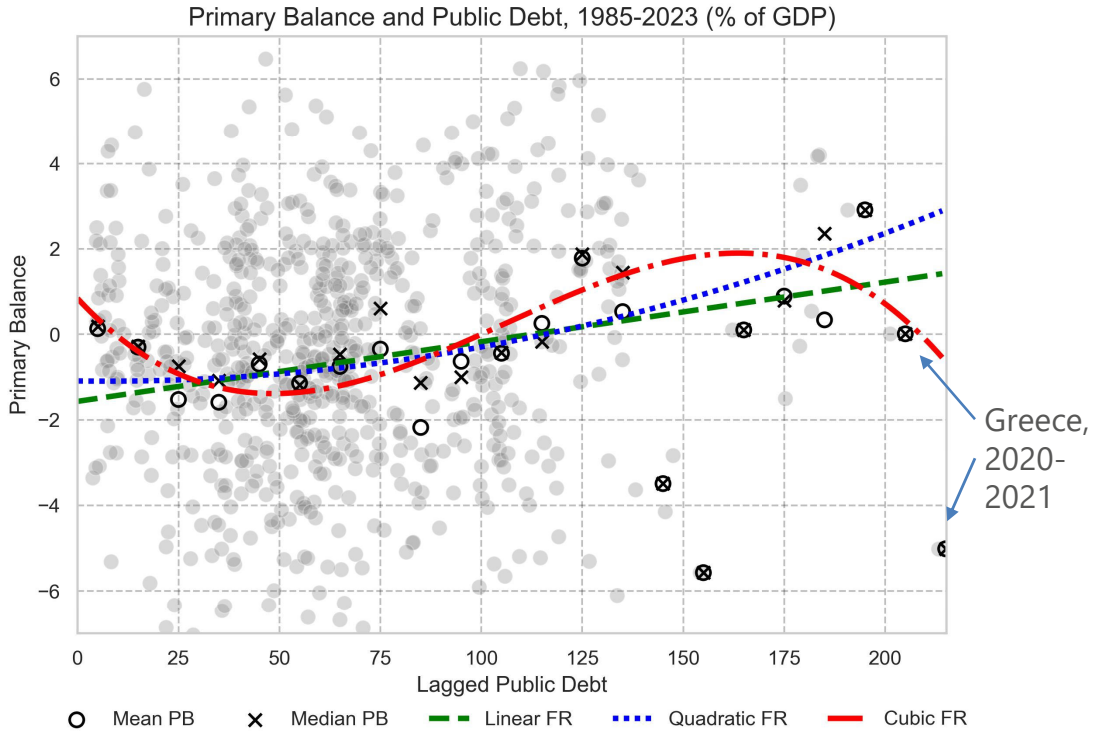
Estimating a Ghosh et al. (2013) style cubic fiscal reaction function on data up to 2023, we find:

- poor/flatter cubic fit, reflecting wide dispersion of primary balances at high debt levels
- second inflection point is statistically significant, but sensitive to 2020 and 21 Greece datapoints

Suggests that if fiscal fatigue exists, it occurs at very high debt levels (> 200 percent of GDP).

Caveat: risk premia are also endogenous to debt levels. Even without fiscal fatigue, this could lead to an intersection between the fiscal reaction function and the payment schedule.

- But this could be addressed by the TPI.



Note: regressions include country and time fixed effects, controll for output and expenditure gap, errors modelled as AR(1).

Conclusion

1. To put debt trajectories on a path that stabilises or declines with reasonable (70 percent) probability within 5-7 years, many advanced/EU countries require large fiscal adjustment.
2. Largest adjustment needs are in the US, France, Slovakia, Romania, Italy, Poland, and Hungary.
3. Fiscal adjustments of the required magnitude are historically rare.
4. Nonetheless, almost all EU countries with high adjustment needs have by now put forward "medium term fiscal-structural plans" that are consistent with the new EU fiscal rules and would deliver this adjustment if implemented (main exception: Hungary).
5. No evidence of "fiscal fatigue" at current debt levels.
6. Low growth and high polarisation create headwinds to adjustment.
7. Key question: how much will the EU fiscal framework help offset these headwinds?

Thank you!

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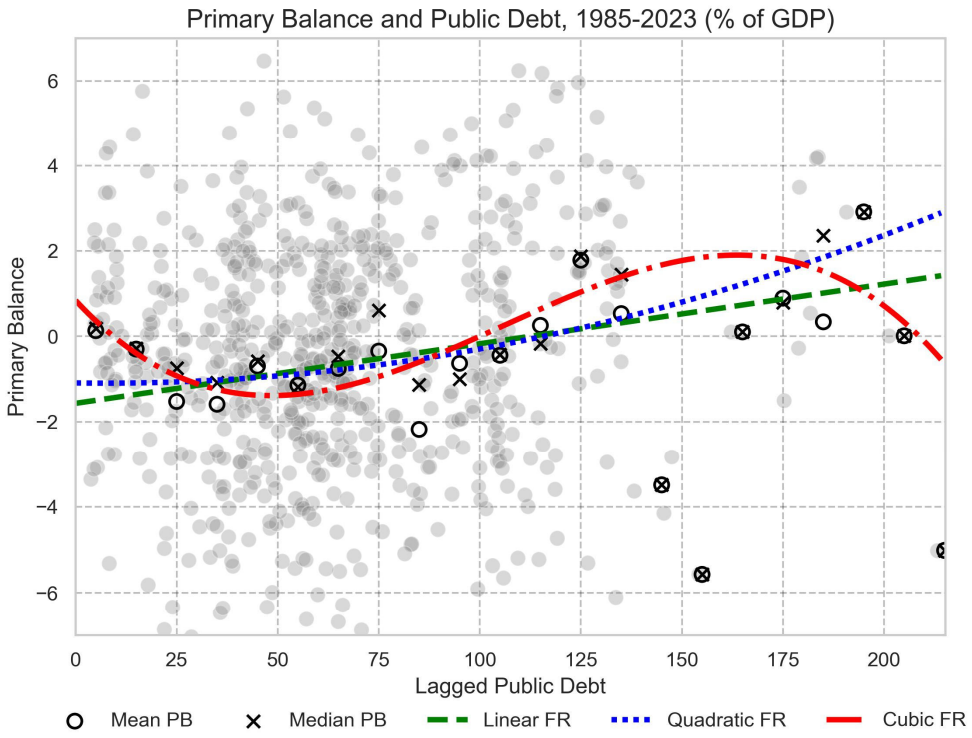
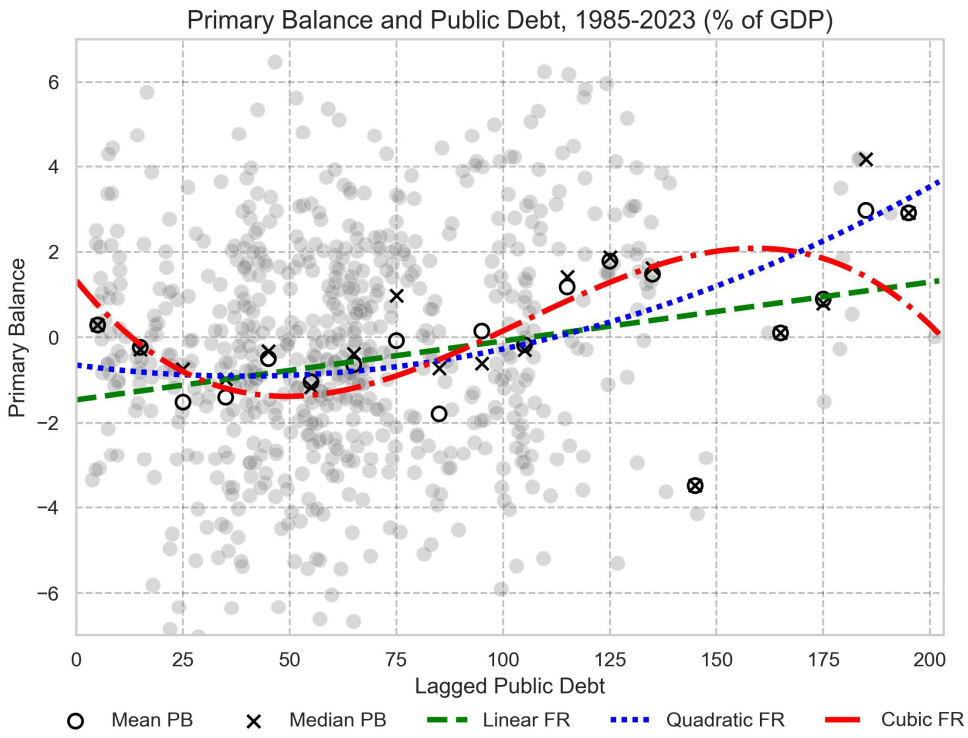
Role of 2020-21 outlier in fiscal fatigue regression

Full dataset





Labelled data