BLOG NAME

REALTIME ECONOMICS

Reconciling the tension between green spending and debt sustainability

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Governments in advanced economies face two major challenges.

The first is the need to fight global warming. The Paris Agreement calls for limiting the increase in world temperature to 1.5°C above the preindustrial average. The European Union has agreed to reduce greenhouse gas emissions by 55 percent in 2030 relative to 1990, and to reach net zero CO2 emissions by 2050. This will be expensive.

The second is to keep public debt under control. As a result of drift, but also of the 2007–10 global financial crisis and the COVID pandemic, ratios of public debt to GDP have reached historic levels. In many members of the European

Union, they exceed 100 percent. Avoiding debt explosion is of the essence. Even leaving aside externalities from default of a major sovereign, the risk of default makes fiscal policy, and indeed macroeconomic policy in general, extremely hard to use.

The tension between the two is obvious, and indeed at the center of disagreements about new EU fiscal rules being discussed in Brussels right now. How to best reconcile the two?

The first step is to establish the margins of maneuver on each of the two fronts.

Take global warming. Estimates of the cost of mitigation and adaptation in advanced economies cover a wide range, from 1 to 3 percent of GDP annually, divided between private and public investment. The issue here is the likely implication for government budgets. The answer depends very much on the tools used by the government to achieve the transition from brown to green energy, namely the size of public infrastructure investment and the nature of incentives given to the private sector. By far the more important decision is whether to tax brown energy, whether through carbon taxes or the sales of carbon permits, or instead to subsidize green energy.

The choice has first order fiscal implications. For example, in 2024 the French state intends to spend about €40 billion, about 1.5 percent of GDP, on measures to fight global warming. But thanks to carbon fees and other taxes, it expects to get €26 billion, about 1 percent of GDP, in revenues, leading to a net increase in green spending of 0.5 percent of GDP. In contrast, the United States, in the Inflation Reduction Act of 2022, has decided to act through subsidies, at a cost of perhaps $120 billion a year, also roughly 0.5 percent of GDP.[1] Thus the difference in strategies, leaving aside nonfiscal implications (subsidies are substantially less efficient and costly per ton of CO_2 saved), may cost the state about 0.5 percent + 0.5 percent, so 1 percent of GDP. The fiscal case for taxes rather than subsidies is very strong, and, if done right, the annual fiscal cost can be limited.

Take debt sustainability. It is essential to avoid a debt explosion that would eventually lead to default and major economic costs. Put another way, it is essential that the path of debt lead, with high probability, to a stable debt-to-GDP ratio. This is obviously not the same as requiring a reduction in the debt ratio. Such a reduction may be highly desirable, but it is not as existential as sustainability. Debt sustainability even allows for some increase in the debt ratio over time, so long as it leads, with high probability, to a stable debt ratio in the long run.

Is any debt ratio, if stable, really feasible? The case of Japan and its very high debt ratio, and the fact that many countries have debt ratios that would have been thought dangerous a while back but are not considered at risk today, indicate that the debt ratio can be high, although surely not infinite. The main effect of debt is indirect and depends very much on the difference between the interest rate and the growth rate, $r - g$. If the difference is positive, then the higher the level of debt, the higher the primary surplus a country must sustain to maintain a stable debt ratio.[2] With $r - g$ close to zero, however, the debt

ratio has little influence on the required primary surplus. If a country increases its debt ratio from 100 percent to a stable 110 percent, its debt will not be seen as being unsustainable ("stable" is the important word here).

Now we can thread the needle.

The first step is to start with an assessment of sustainability. Under the current and intended policies, is the debt ratio likely to stabilize or to explode? As has been made clear by the discussion of EU rules, simple numbers will not do. The right tool to address the question is a stochastic debt sustainability analysis, which makes it possible to take into account all relevant aspects and country idiosyncrasies, such as implicit liabilities, future sales of assets, etc., as well as the uncertainty associated with growth rates, interest rates, and other variables. It delivers a distribution of debt over the medium run. By implication, it gives the probability that debt converges to a stable ratio and is thus sustainable.

For our purposes, the essential message is that the simulation must include all revenues and all spending, green or not. If green spending leads to higher debt, that debt must be financed, no matter what essential function the debt was used for. In other words, green spending does not get a debt pass.

Sometimes, public investment plausibly leads to higher government revenues, either directly, for example, in the case of tolls on new highways, or indirectly because it plausibly increases growth and, by implication, government revenues. But this result is not likely here. If anything, the transition to green energy is likely to decrease growth, at least for some time. And the transition may further decrease revenues. A recent study by the French Ministry of Finance suggests that, given the existing high taxes on gas relative to electricity, the shift to electric vehicles may eventually reduce government revenues by 0.3 percent of GDP.

Along the same lines, a simplistic interpretation of the so-called golden rule of public finance, allowing automatically for debt financing of green investment, would simply be wrong. Again, debt is debt, and public investment does not automatically or even typically generate enough revenues to fully finance the interest on debt. This is even more the case for green public investment.

Nor does the argument hold that one should automatically allow for debt finance because green spending is necessary to save the world. It may well be that such spending is necessary, and showing the potentially catastrophic implications of a no-action counterfactual can be extremely useful in convincing voters of the need for action. A separate green budget may help in showing how the money is used and whether the goal will be achieved. But debt must remain sustainable.

Along related lines, some observers have suggested that green investment be financed by specific green debt. The returns to separating debt in two parts are likely to be small. The evidence is that investors are unlikely to accept much lower returns on green debt than for nongreen debt, and that the market for green debt is less liquid and will likely command a premium. In the end, what matters is total debt, green or not.

What, then, is the margin that can be used to meet both goals? It is the speed at which debt ratio is stabilized.

Here is the simple math: Many countries have today a value of $r - g$ close to zero. For the moment, assume that it is equal to zero and ignore uncertainty. Then the stabilization of the debt ratio simply implies that primary balances eventually go to zero.

Now reintroduce uncertainty and the need for debt to be sustainable with high probability, thus with probability higher than 50 percent. The end goal must then be somewhat more ambitious, namely some positive level of the ratio of primary balances to GDP.

The important point here is that the end constraint, be it zero or small positive primary balances, cannot be changed. But the speed at which it is reached is the margin the government has in order to achieve it.
Admittedly, the math is particularly simple when $r - g$ is equal to zero. But the logic generalizes easily. If, as I believe is quite likely in many countries, $r - g$ returns to a negative value in the future, the adjustment can be more limited. If, for example, $r - g = -1$ percent and the debt ratio is initially equal to 100 percent, then, ignoring uncertainty, the end goal is a 1 percent primary deficit rather than primary balance. If and when such a decrease in interest rates happens, indeed if there is any unexpected change in the macroeconomic environment, the plan can and must be readjusted. For the time being, however, governments have to finance themselves at the current rates, and it is reasonable for them to work under the assumption that $r - g$ is and will (in expected value) remain equal to zero. A decrease would definitely help, but they cannot bet on it.

Back to speed. Governments cannot eliminate primary deficits overnight. Many are starting with substantial primary deficits, between 2 and 4 percent of GDP. There are both political constraints and macroeconomic constraints that limit the speed of adjustment.

Political constraints: Reducing deficits means de facto reducing some popular spending or increasing some unpopular taxes. (One can always hope that reforms will increase growth, increase government revenues, and naturally decrease the deficit. The historical evidence is again that one should not count on it.) Voters in some countries may be more worried about debt and more willing to sacrifice; voters in others may be less open.

Macroeconomic constraints: Fiscal consolidation decreases demand. The room for monetary policy to help by decreasing rates is limited, especially if it hits the zero lower bound, or when the country is part of a common currency area and has to adjust more than other members.

Let me put some numbers on the table. Suppose that, in the absence of green spending and starting from a 3 percent primary deficit, a government thought, taking into account uncertainty and the need to aim for a small primary surplus, that a reduction of the primary deficit of 0.5 percent of GDP annually for seven years, so as to reach a primary surplus of 0.5 percent of GDP at the end, was the

right way to do it, that it balanced the need to stabilize debt on the one hand and political and macroeconomic constraints on the other. So long as primary deficits remain positive, the debt ratio will increase. At the end of seven years, if things go as expected, the debt ratio will be stabilized, and indeed will start to decrease at 0.5 percent per year, but meanwhile it will have increased by 6.5 percent.

Now suppose that the government must spend 0.5 percent more on green spending forever (one may reasonably argue that the required spending will decline over time, but this is probably too far in the future to be relevant for this fiscal exercise). The overall adjustment of the nongreen budget must be 0.5 percent higher, so 4.0 percent. The government could increase the adjustment speed to 0.57 percent annually and still reach the target in seven years, but this speed may be infeasible politically. A better solution is probably to do it over a longer span, say eight years, at an unchanged 0.5 percent per year. Because primary deficits will last longer, the increase in the debt ratio will be larger, namely 10 percent. But it is still worth it: It achieves the green goals, and if debt was sustainable at 100 percent, it is almost surely still sustainable at 110 percent. If $r - g$ becomes more favorable later, because of either higher growth or lower interest rates, and becomes, say, equal to –1.0 percent, the program can be readjusted: fewer years, say six instead of seven, at 0.5 percent, or a slower adjustment, 0.42 percent for seven years.

Too fast an adjustment is infeasible and potentially counterproductive. But a long, steady adjustment, even at reasonable speed, raises two issues, credibility and adjustment fatigue.

Credibility is of the essence. The government cannot announce a smoke and mirrors plan, “eliminating waste and fraud,” or assume optimistically high growth rates. Investors and rating agencies will not buy it and will downgrade the debt, leading to an increase in spreads and a harder adjustment. This situation implies explaining to voters the fact that the fight against global warming will be costly, the need for fiscal adjustment, and the likely unpopular coming measures from the start, admittedly not an easy thing to do.

Avoiding adjustment fatigue is surely a major challenge. There is no magic recipe, but a discussion involving opposition parties, even if it is unlikely to bring agreement, is likely to increase salience and is probably useful. In the end, something needs to be done, and there is no better alternative than a credible, reasonable, medium-run adjustment.

The bottom line: Fiscal adjustment is needed and so is an increase in green spending. The increase can be limited if the government relies on carbon taxes and fees rather than subsidies, but, in the end, the fight against global warming will cost the state and implies an eventual larger decrease in the nongreen primary deficit. Slow and steady adjustment implies an increase in the debt ratio for some time; it is an acceptable cost to pay. Asking for faster adjustment or even for debt reduction any time soon is overly ambitious and dangerous.

The author has benefited from many discussions with Francesco Giavazzi, Jean Pisani-Ferry, Guido Lorenzoni, and Jeromin Zettelmeyer. Pisani-Ferry’s

views on the topic can be found here, and Zettelmeyer's views can be found here.

NOTES

1. The official estimates of the cost are lower, $50 billion a year, but Goldman Sachs projects that the cost is likely to be substantially higher as more firms will want to benefit from the subsidies than is assumed in the official estimates.

2. The simple arithmetic: The ratio of the primary balance to GDP, x, needed to maintain a stable debt ratio, b, is given by $x = (r - g)b$.

DATA DISCLOSURE

This publication does not include a replication package.

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